PAKISTAN International Airlines
Great People to Fly With

CORPORATE

Safety Management System Manual (SMSM)

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FLIGHT STANDARD DIRECTORATE
ACCEPTED
CAA PAKISTAN
18 MAY 2026

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Ref: HQCAA / 1076 / 021 / FSAC / 9880 Dated: 18th May, 2026

Dear Sir,

SMS MANUAL EDITION-VIII REVISION-00
M/S PAKISTAN INTERNATIONAL AIRLINES CORPORATION LIMITED

Reference letter CS / SMS / 2026 / dated 05th May, 2026.

2. Enclosed please find duly accepted and stamped ***SMS Manual Edition-VIII Revision-00***.

3. You are being advised to ensure that in case of any contradiction between the ***SMS Manual Edition-VIII Revision-00*** and Civil Aviation Rules, Air Navigation Orders, Air Safety Circulars or any other Instructions / Directives issued by Pakistan Civil Aviation Authority from time to time the later shall have precedence.

Encl: ***As Stated***

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Copy to:-

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RECORD OF REVISIONS

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CHAPTER – 1

DOCUMENT CONTROL

This manual is prepared for ensuring Organizational compliance with the requirements of PCAA ANO-001-XXSP 3.0 laid down as per applicable ICAO annexes. Chapters are based on format given in ANO-001-XXSP 3.0 (Appendix – B) and contains fourteen (14) chapters as defined in afore-mentioned ANO. The chapters are further subdivided into sub-chapters which have been defined in Table of Contents (TOC) of this manual.

Every new issue / revision must be accepted by the PCAA prior to its use. The Head of Safety (Safety Manager), on behalf of the Accountable Executive, is the person responsible for finalizing changes, additions or deletions to the SMS manual whenever any new or amended regulation on SMS is issued by the PCAA (SSP / Flight Standards Directorate / Airworthiness Directorate). *This document is a living document* and will be revised at intervals (reviewed at least annually) to take into account changes in regulations, improvements in existing system, feedback from industry and recognized best practices. Any PIA employee may suggest improvements or corrective changes. The Head of Safety will evaluate the proposed change prior to incorporation, as necessary. For proposed changes, PIA employees will use PIA official email and communicate on dgm.sms@piac.aero or pksms@piac.aero. Alternatively, a written application to Corporate Safety may also suffice. While proposing changes, the employee must identify himself / herself and provide a brief description for the reason the change is being proposed. The record of such proposals will be maintained by Head of Safety office as a hard or soft copy.

Upon satisfactory evaluation of any proposed change(s), Head of Safety after approval by the Accountable Executive shall forward the case to PCAA for their acceptance. One (01) hard and one (01) soft copy shall be dispatched to PCAA for each of three offices (SSP, Flight Standards Directorate, Airworthiness Directorate), unless less number of hard copies is acceptable by PCAA and SSP to reduce environmental impact.

Note: Revision will be highlighted by side bars on the right side of the pages, whereas, in case of new **Issue / edition** the whole document will be revised and no side bars will be placed. Furthermore, a summary of changes document will be produced, highlighting the changes in the manual with each revision and this will be added as an annex to the manual "Annex A", and must be referred-to by the authorized individual before making any changes / updating the SMS manual. This Annex will also provide notes, where required, for future updates of certain section / clauses, as may be necessary, and must be referenced to for future updates.

Each page is marked with Issue and Revision number on top right corner of page which shall be updated upon any amendment. Large number of amendments will be covered by issuance of a new issue / edition of manual while minor amendment(s) will be covered through revision change of manual. Revised pages shall also be updated / reflected in 'List of Effective Pages'.

The document name is on the left corner and control number is in the centre of each page header. The chapter number along with page number of the total chapter's pages is on the top right of the page header, just above the manual Issue, revision number and date.

CONTROLLED PAGE

Organization	Activity	Name Designation	Signature
PIA	Prepared By Document Manager	First Officer Jehanzeb Khan (Deputy General Manager Safety Management System)	
PIA	Reviewed by SMS Manager or Equivalent Operator	Captain Tariq Mohsin Panhwar (Chief of Safety)	
PIA	Internally Approved & Recommended for Acceptance by Accountable Executive	Air Vice Marshal Muhammad Amir Hayat (Chief Executive Officer)	
	Acceptance by PCAA Director Airworthiness	Engr IMRAN AYAZ Director Airworthiness Pakistan Civil Aviation Authority Airworthiness Directorate JIAP, Karachi, Pakistan	
	Acceptance by PCAA Director Flight Standards	CAPT AMIR AFTAB Sr Adl Dir Flight Inspector (Pilot) Flight Standards Directorate Pakistan Civil Aviation Authority	

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To PCAA SSP Branch	Name Designation	Date & Sign
	MUZAFFAR NAEEM	19/5/26
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	WASIM AHMED KHAN MANAGER SMS	19/5/2026

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Deputy Director SSP
HQs Civil Aviation Author

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CROSS REFERENCE TABLE AGAINST ANO-001-XXSP-3.0

ANO-001-XXSP CLAUSE / PARA #	REQUIREMENT	SMSM REFERENCE
C1 (C1.1, C1.2 & C1.5)	Regulatory safety requirements for service providers to implement Safety Management System	2.1
C (note)	Minimum SMS framework requirements. The service providers can establish more stringent internal requirements	SMSM
D2 (2.1)	Requirements for Service Provider's SMS	SMSM
D3 (3.1 -3.3)	SMS of a service provider shall be established as per framework elements in Appendix 'A' commensurate with size & complexity of organization and SMSM shall be as per Appendix 'B'. SMSM to be acceptable to relevant Regulatory Directorate(s) with accepted copy to SSP branch	SMSM
D.4 (4.1 and 4.2)	The service provider shall carry out a gap analysis before implementing an SMS. This compares the service provider's existing safety management processes and procedures with the SMS requirements as determined by the regulator. The gap analysis identifies the gaps that should be addressed through an SMS implementation plan that defines the actions needed to implement a fully functioning and effective SMS.	SMSM (Appendix 'C' Cross ref. Table)
D5.1.1 and D5.1.2	Service provider's SMS shall identify safety hazards and ensure remedial actions to maintain agreed safety performance.	Chapter 7
D5.1.3	Service provider's SMS shall Provide for continuous monitoring and regular assessment of the safety performance	Chapter 9
D5.1.4	Service provider's SMS shall Provide for continuous improvement of overall performance.	Chapter 11
Appendix 'A' 1,2,3 and 4	Safety policy and objectives, safety risk assessment, safety assurance and safety promotion.	SMSM
Appendix 'A' 1.1 and 1.2, Management Commitment	An environment where SMS can be effectively established and managed and Safety Policy: Organizational commitment, provision of necessary resources, include safety reporting	Chapter 4

	procedures, acceptable behaviours, signed by Accountable Executive, communicated in organization & periodically reviewed	
Appendix 'A' 1.3, Management Commitment	Safety Objectives: basis of safety performance monitoring & measurement, reflect commitment to maintain or continuously improve organizational SMS, communicated & periodically reviewed	Chapter 4
Appendix 'A' 1.4, Management Commitment	Requirement of a safety policy in accordance with the international and national regulations, to include statement for resource provision, commitment to safety, appropriate reporting procedures and support to such, signed by the Accountable Executive, reviewed from time to time and communicated throughout the organization.	Chapter 4
Appendix 'A' 1.5, Safety Accountability & Responsibilities	Identify Accountable Executive who is accountable for SMS implementation / maintenance, clear definition of Safety Accountabilities throughout the organization, direct accountability on part of senior management, identify responsibilities of all management & employees with respect to safety performance, document & communicate accountability, responsibilities & authorities, management level to decide	Chapter 5 & Chapter 7
Appendix 'A' 2, Appointment of key safety personnel	Appointment of a Safety Manager responsible for implementation and maintenance of SMS	Chapter 5
Appendix 'A' 3, Coordination of emergency response planning	Service provider shall establish and maintain an emergency response plan for accidents and incidents in aircraft operations and other aviation emergencies and shall also ensure that emergency response plan is properly coordinated with the emergency response plans of other organizations that interface during the provision of products / services.	Chapter 14
Appendix 'A' 4.1-4.5, SMS documentation	The service providers SMS manual shall have safety policy, objectives, procedures, processes, accountability, responsibilities, an authority for SMS processes and procedures.	SMSM
Appendix 'A' 4.6-4.15, SMS documentation	The service provider shall develop and maintain SMS operational records as part of its SMS documentation. It also includes	Chapter 1, Chapter 7, Chapter 9 & Chapter 13

	the compilation and maintenance of operational records substantiating the existence and ongoing operation of SMS.	
Appendix 'A' 5 and 6, Hazard Identification	Develop and maintain a process to identify hazards associated with aviation products based on reactive and proactive methods	Chapter 6 & Chapter 7
Appendix 'A' 7, Safety Reporting System	Service provider to provide sufficient protection to encourage people to report safety issues and errors. The voluntary safety reporting shall be confidential and shall be followed up by the custodian (generally safety manager)	Chapter 6 and Chapter 8
Appendix 'A' 8, Safety Risk Assessment & Mitigation	There shall be a process to ensure identification, analysis, evaluation assessment, and control of safety risks associated with hazards. Resource allocation and prioritization for decisions for effective safety management.	Chapter 7
Appendix 'A' 8.2, Safety Risk Assessment & Mitigation	There shall be a data driven approach for decision making.	Chapter 7
Appendix 'A' 8.3, Safety Risk Assessment & Mitigation	There shall be a prioritization process for safety risks management.	Chapter 7
Appendix 'A' 9 (9.1-9.13), Safety Performance Monitoring & Measurement	Develop and maintain the means to verify the safety performance and validate the effectiveness of safety risk controls	Chapter 11
Appendix 'A' 9 (9.14-9.25) 10 and 11 Safety Performance Monitoring & Measurement	Performance shall be verified in reference to SPIs and SPTs in support to organizational safety objectives	Chapter 4 and Chapter 9
Appendix 'A' 12 Management of Change	Develop & maintain a process to identify changes, which may affect the level of safety risk associated with aviation products or services and to identify & manage safety risks associated	Chapter 12
Appendix 'A' 13 Continuous Improvement of SMS	SMS Effectiveness evaluation through variety of methods.	Chapter 9 and Chapter 11
Appendix 'A' 14 Training and Education	Develop & maintain a safety training program, to ensure personnel competence to perform SMS duties. Scope of training to be as per individual's	Chapter 10

	role in SMS and minimum items in the training shall include safety policy, safety roles and responsibilities, basic SRM, safety reporting systems, SMS processes and procedures and Human Factors. Safety Manager to ensure availability of SMS training records.	
Appendix 'A' 15 Safety Communication	Develop & maintain formal means of communication ensuring personnel to be aware of SMS as per their positions, conveying safety critical info; explaining why particular actions are taken & why safety procedures are introduced / changed. Formal means shall include safety policy, procedure, newsletter and bulletins.	Chapter 10
Appendix 'B'	Format and Chapters of the SMS Manual to be as per Appendix 'B'	SMSM

DOCUMENTATION GAP ANALYSIS (ANO-001-XXSP-3.0 APPENDIX 'C')

Appendix 'C' 1 (1.1 – 1.6) Management Commitment & Responsibility	Existence of Safety Policy which reflects organizational commitments for SMS with clear statement of provision of necessary resources. Policy to include safety reporting procedures and indicates unacceptable operational behaviours & conditions under which disciplinary actions would not apply.	Chapter 4
Appendix 'C' 1 (1.7 – 1.9) Management Commitment & Responsibility	The Safety Policy shall be signed by the A/E, communicated throughout the organization and must be periodically reviewed.	Chapter 4
Appendix 'C' 1 (1.10 – 1.12) Management Commitment & Responsibility	There shall be formal process to develop set of coherent safety objectives which shall be linked to safety performance indicators (SPIs), safety performance targets (SPTs) and action plans. These safety performance indicators shall be publicized and distributed.	Chapter 4 & Chapter 9
Appendix 'C' 2 (2.1 – 2.6) Safety Accountabilities	A/E has the ultimate safety accountability and responsibility and is responsible for ensuring the SMS is properly implemented, having full control over finances, human resource and has direct responsibility for conducting organizational affairs. The A/E shall have the final authority to ensure operations are authorized to be conducted under the operator's certificate.	Chapter 4 & Chapter 5
Appendix 'C' 2 (2.7 – 2.9) Safety Accountabilities	Accountabilities of all members of management and employees to be identified with respect to safety performance of SMS. The responsibilities, authorities and accountabilities to be documented and communicated throughout the organization.	Chapter 5
Appendix 'C' 3 (3.1-3.2) Appointment of Key Safety Personnel	Day to day operations shall be managed by a qualified person's appointment who shall fulfil required job functions and responsibilities.	Chapter 5
Appendix 'C' 3 - 3.3 Appointment of Key Safety Personnel	Safety authorities, responsibilities and accountabilities of personnel at all levels need to be defined.	Chapter 5
Appendix 'C' 4 Coordinate	According to size, complexity and nature of organization shall have an emergency	Chapter 14

Emergency Response Planning	response and contingency plan and associated procedures are coordinated with the contingency procedures of other organizations. & a process to distribute and communicate the coordination procedures to personnel involved in such interaction.	
Appendix 'C' 5 (5.1, 5.2 & 5.3) Documentation	The organization shall have hazard documentation and its management in paper or electronic form in a manner that it describes the SMS and consolidated interrelationship between SMS components.	SMSM
Appendix 'C' 5 (5.4 - 5.9) Documentation	SMS implementation plan meets the organizational safety objectives, is developed by personnel having appropriate experience base through required resource allocation including time. This phased SMS plan is endorsed by the senior management and regular review is carried out by Senior management.	SMSM
Appendix 'C' 5 (5.10) Documentation	SMS implementation plan shall explicitly address the coordination between the service provider's SMS and the SMS of other organizations, the [organization] must interface with during the provision of services.	Chapter 3 (3.3)
Appendix 'C' 5 (5.11- 15.14) Documentation	SMSM shall be the key instrument for communicating the organizational approach towards safety as a whole. It inculcates documentation of the safety policy, objectives procedures, accountabilities and it articulates the role of safety risk management as initial design activity & safety assurance as continuous activity. Relevant portions of SMS shall be documented in other organizational approved documents.	SMSM & Other Organizational Departmental Documents
Appendix 'C' 5 (5.15 - 15.17) Documentation	There shall be a record system in compliance with regulatory requirements and industry best practices that supports operational requirements. This shall be through a controlled process to ensure identification, legibility storage, protection, archiving, retrieval, set retention times and disposition of records is managed systematically.	Chapter 13

Appendix 'C' 6.1 & 6.2 Hazard Identification	There shall be a formal safety data collection and processing system which includes reactive, proactive and predictive methods of data collection.	Chapter 6 and Chapter 7
Appendix 'C' 6.3 Hazard Identification	There shall be reactive processes that capture the information relevant to safety risk management.	Chapter 6 and Chapter 7
Appendix 'C' 6.4 Hazard Identification	There shall be training relevant to reactive methods of safety data collection.	Chapter 10
Appendix 'C' 6.5 Hazard Identification	There shall be communication relevant to reactive methods of safety data collection.	Chapter 10
Appendix 'C' 6.6 Hazard Identification	The reactive reporting process shall be simple, accessible and commensurate with the size of the service provider	Chapter 6
Appendix 'C' 6.7 Hazard Identification	Reactive reports shall be reviewed at appropriate level of management.	Chapter 7
Appendix 'C' 6.8 Hazard Identification	There shall be a feedback process to notify contributors that their reports have been received and to share the results of the analysis	Chapter 6
Appendix 'C' 6.9 Hazard Identification	The service provider shall have proactive processes that actively look for the identification of safety risks through the analysis of the organization's activities	Chapter 6 and Chapter 7
Appendix 'C' 6.10 Hazard Identification	There shall be training relevant to proactive methods of safety data collection	Chapter 10
Appendix 'C' 6.11 Hazard Identification	There shall be communication relevant to proactive methods of safety data collection	Chapter 10
Appendix 'C' 6.12 Hazard Identification	The proactive reporting shall be simple, accessible and commensurate with the size of the service provider	Chapter 6
Appendix 'C' 6.13 & 6.16 Hazard Identification	The service provider shall have predictive processes that provide the capture of system as it happens in real-time operations and shall commensurate with the size of the organization.	Chapter 6 and Chapter 11

Appendix 'C' 6.14 Hazard Identification	There shall be training relevant to predictive methods of safety data collection	Chapter 10
Appendix 'C' 6.15 Hazard Identification	There shall be communication relevant to predictive methods of safety data collection	Chapter 10
Appendix 'C' 7.1 Safety Risk Assessment & Mitigation	There shall be a formal process to ensure analysis, assessment and control of safety risks in the organization's operations.	Chapter 7
Appendix 'C' 7.2 Safety Risk Assessment & Mitigation	SMS documentation shall clearly articulate the relationship between hazards, consequences and safety risks	Chapter 7
Appendix 'C' 7.3 Safety Risk Assessment & Mitigation	There shall be a structured process for the analysis of the safety risks associated with consequences of identified hazards, expressed in terms of probability and severity of occurrence.	Chapter 7
Appendix 'C' 7.4 Safety Risk Assessment & Mitigation	There shall be criteria for assessing safety risks and establishing safety risk tolerability, which shall be the acceptable level of risk organization is willing to accept.	Chapter 7
Appendix 'C' 7.5 Safety Risk Assessment & Mitigation	The service provider shall have safety risk mitigation strategies that include corrective/preventive action plans to prevent recurrence of reported occurrences and deficiencies	Chapter 7
Appendix 'C' 8.1 Performance Monitoring & Measurement	Service provider shall implement an internal process to verify the safety performance of the organization and to validate the effectiveness of safety risks controls	Chapter 7 and Chapter 11
Appendix 'C' 8.2 Performance Monitoring & Measurement	The tools included in the processes of evaluating organizational safety performance shall be Safety reporting systems /Safety studies/Safety reviews /Safety audits /Safety surveys /Internal safety investigations	Chapter 11
Appendix 'C' 8.3 Performance Monitoring & Measurement	SPIs & SPTs shall be set for performance monitoring.	Chapter 9
Appendix 'C' 8.4 Performance	Safety reports shall be reviewed at appropriate level of management.	Chapter 6 and Chapter 7

Monitoring & Measurement		
Appendix 'C' 8.5 Performance Monitoring & Measurement	There shall be a feedback process to notify contributors that their reports have been received and to share the results of the analysis.	Chapter 6
Appendix 'C' 8.6 & 8.9 Performance Monitoring & Measurement	Corrective & preventive actions shall be generated in response to hazard identification and a process for evaluating the effectiveness of the corrective/preventive measures that have been developed.	Chapter 7
Appendix 'C' 8.7 Performance Monitoring & Measurement	There shall be procedures in place to conduct internal safety investigations	Chapter 8
Appendix 'C' 8.8 Performance Monitoring & Measurement	There shall be a process to ensure that occurrences and deficiencies reported are analyzed to identify all associated hazards	Chapter 6 and Chapter 7
Appendix 'C' 8.10 Performance Monitoring & Measurement	There shall be a process to monitor internal reporting process.	Chapter 6
Appendix 'C' 8.11- 8.12 Performance Monitoring & Measurement	There shall be an audit function with the independence and authority required to carry out effective internal evaluations and cover all functions, activities & organizations within the service provider.	Chapter 11
Appendix 'C' 8.13 Performance Monitoring & Measurement	There shall be selection/training processes to ensure the objectivity and competence of auditors as well as the impartiality of the audit process	Chapter 11
Appendix 'C' 8.14 - 8.16 Performance Monitoring & Measurement	There shall be a procedure for reporting audit results and maintaining records. In addition there shall be procedure to outline timely corrective and preventive actions implementation subsequent to audit results, which shall be reported through a process & verification of these actions taken.	Chapter 11 and Chapter 13
Appendix 'C' 8.17 Performance	There shall be a process to monitor and analyse trends.	Chapter 11

Monitoring & Measurement		
Appendix 'C' 9 (9.1-9.4) The Management of Change	There shall be a formal process to identify changes within the organization, which may affect established processes and services and shall analyse changes to operations or key personnel for safety risks. There shall be established arrangements to ensure safety performance prior to implementing changes and a process to eliminate or modify safety risk controls when are no longer needed due to changes in the operational environment.	Chapter 12 and Chapter 7
Appendix 'C' 10.1 – 10.3 Continuous Improvement of SMS	There shall be a formal process to identify the causes of substandard performance of the SMS and; a mechanism to determine the implications of such and to eliminate or mitigate this substandard performance.	Chapter 11 and Chapter 7
Appendix 'C' 10.4 Continuous Improvement of SMS	The organization shall have a process for the proactive evaluation of facilities, equipment, documentation and procedures (through audits and surveys, etc.)	Chapter 11
Appendix 'C' 10.5 Continuous Improvement of SMS	The organization shall have a process for the proactive evaluation of individual's performance to verify fulfilment of that individual's safety responsibilities.	Chapter 5
Appendix 'C' 11.1 – 11.2 Training & Education	There shall be a documented process to identify the training requirements so that the personnel are trained and competent to perform their SMS duties and training shall be provided according to individual's involvement in implementation of SMS.	Chapter 10
Appendix 'C' 11.3 Training & Education	There shall be safety training incorporated in the indoctrination training upon employment.	Chapter 10
Appendix 'C' 11.4 Training & Education	There shall be emergency response/contingency training for affected personnel	Chapter 14
Appendix 'C' 11.5 Training & Education	There shall be a process to measure effectiveness of Safety training.	Chapter 10
Appendix 'C' 12.1 – 12.2 Safety Communication	There shall be a communication process to permit effective functionality of SMS and this process shall commensurate with size and scope of the organization.	Chapter 10

Appendix 'C' 12.3 Safety Communication	There shall be a suitable medium to establish and maintain safety critical communication which provides direction regarding SMS documents	Chapter 10
Appendix 'C' 12.4 Safety Communication	There shall be dissemination of safety critical information throughout the organization and effectiveness of this communication shall be monitored.	Chapter 10
Appendix 'C' 12.5 Safety Communication	There shall be a procedure that explains why particular safety actions were taken and why safety procedures were introduced or changed.	Chapter 10

DISTRIBUTION LIST

INTERNAL

POSITION	COPY NUMBER	FORMAT
Chief Executive Officer	-	Soft Copy
Head of Safety (Safety Manager)	Master	Hard Copy
Chief of Flight Operations	-	Soft Copy
Chief Technical Officer	-	Soft Copy
Chief Engineer (QA)	-	Soft Copy

EXTERNAL

POSITION	COPY NUMBER	FORMAT
Director Flight Standards, PCAA	1	Hard & Soft Copy
Director Airworthiness, PCAA	2	Hard & Soft Copy
President SIB, PCAA	3	Hard & Soft Copy
Additional Director SSP, PCAA	4	Hard & Soft Copy

Master Copy is retained by Head of Safety in his office.

In addition to above distribution list, a soft copy of current (latest revision) shall be uploaded on PIA intranet by DGM SMS within seven (07) working days. An e-mail shall be flashed throughout the organization after uploading of accepted SMS manual. All Chiefs/Directors, General Managers, Stations Heads, Operational Managers shall be responsible to ensure that subject information is passed down the line to all PIA employees. The same distribution and control process shall be followed at all approved operational and maintenance locations of PIA. Any printouts from intranet shall be considered un-controlled copy for information and reference only.

Chief Engineer (QA) shall be responsible to upload a copy of latest manual on PCAA Airworthiness Management System (AMS) within seven (07) working days after receipt of same through standard uploading procedure.

It is the responsibility of the office to retain hard copy to ensure that the copy of SMS Manual is updated with the latest amendments. The hard copies of this manual are required to be kept in good physical condition.

For updating the contents of the manual, new soft copy will replace existing soft copy and individuals are responsible to ensure that only latest soft copy is available for their reference to avoid any confusion. However, for manual updating, once hard copies of changes have been attained, the following format will be filled by the responsible office to keep record. DGM SMS shall be responsible to update hard copy maintained at Head of Safety office.

CONDITIONS OF USE

Following conditions apply and shall be strictly observed by the holders of this manual:

1. This manual is the property of Pakistan International Airlines.

2. The contents of this manual shall not be communicated in part or as a whole to any person not employed by PIA without the consent of Head of Safety or his/her delegate.

3. The contents of this volume do not supersede the PCAA regulations and mandatory requirements or established Airline policies and regulations. Any possibilities of such contradiction, if found, shall immediately be highlighted to Head of Safety for further action.

Note: **This manual is not gender specific.**

LIST OF ABBREVIATIONS

ABBRIVATION	DESCRIPTION
ACOH	AIRCRAFT OVERHAUL
AE	ACCOUNTABLE EXECUTIVE (CEO/MD ETC)
AMO	APPROVED MAINTENANCE ORGANIZATION
ANO	AIR NAVIGATION ORDER
ASM	ASSISTANT STATION MANAGER
ASR	AIR SAFETY REPORT
ASSR	AIRCRAFT SCHEDULER SITUATION ROOM
ATLB	AIRCRAFT TECHNICAL LOGBOOK
ATS	AIR TRAFFIC SERVICE
CMD	COMPONENT MAINTENANCE DIVISION
BASI	THE BUREAU OF AIRCRAFT SAFETY INVESTIGATION
BASIP	THE BUREAU OF AIRCRAFT SAFETY INVESTIGATION PAKISTAN
CAME	CONTINUING AIRWORTHINESS MANAGEMENT EXPOSITION
CAMO	CONTINUING AIRWORTHINESS MANAGEMENT ORGANIZATION
CARs 1994	CIVIL AVIATION RULES
CBT	COMPUTER BASED TRAINING
CFT	CROSS FUNCTIONAL TEAM
CoFO	CHIEF OF FLIGHT OPERATIONS
COSCAP	COOPERATIVE DEVELOPMENT OF OPERATIONAL SAFETY AND CONTINUING AIRWORTHINESS PROGRAMS
CPIT	CABIN PROCEDURAL INVESTIGATION TOOL
CVR	COCKPIT VOICE RECORDER
CoMO	CHIEF OF MAINTENANCE OPERATIONS
CCAO	CHIEF CONTINUING AIRWORTHINESS OFFICER
DCE	DEPUTY CHIEF ENGINEER
DGM SMS	DEPUTY GENERAL MANAGER SAFETY MANAGEMENT SYSTEM
GM CQSA	GENERAL MANAGER CORPORATE QUALITY & SAFETY ASSURANCE
DCC	DEFECT CONTROL CENTRE
DQC	DEPARTMENTAL QUALITY CONTROL
E & M	ENGINEERING & MAINTENANCE
EASA	EUROPEAN AVIATION SAFETY AGENCY
ERC	EMERGENCY RESPONSE CENTRE / EVENT RISK CLASSIFICATION
ERP	EMERGENCY RESPONSE PLAN
QA	QUALITY ASSURANCE
EXT	EXTENSION (TELEPHONE)
FAA	FEDERAL AVIATION ADMINISTRATION
FAR	FEDERAL AVIATION REGULATION
FCM	FLIGHT CONTROL MANAGER
FDA	FLIGHT DATA ANALYSIS
FDM	FLIGHT DATA MONITORING
FOM	FLIGHT OPERATION MONITORING
FOQA	FLIGHT OPERATION QUALITY ASSURANCE
FSF	FLIGHT SAFETY FOUNDATION
FSO	FLIGHT SAFETY OFFICER
GOC	GROUND OPERATION CONTROL
GSO	GROUND SAFETY OFFICER
HF	HUMAN FACTORS
HIRA	HAZARD IDENTIFICATION AND RISK ASSESSMENT

HIRM	HAZARD IDENTIFICATION AND RISK MANAGEMENT
HRT	HUMAN RESOURCE TRAINING
HSE	HEALTH SAFETY ENVIRONMENT
IBIS	INTERNATIONAL BIRD STRIKE INFO SYSTEM
ICAO	INTERNATIONAL CIVIL AVIATION ORGANIZATION
IOSA	IATA OPERATIONAL SAFETY AUDIT
ISO	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
KPI	KEY PERFORMANCE INDICATOR
L	LIKELIHOOD
MEDA	MAINTENANCE ERROR DECISION ANALYSIS
MoC	MANAGEMENT OF CHANGE
MOCR	MANAGEMENT OF CHANGE REGISTER
MOE	MAINTENANCE ORGANIZATION EXPOSITION
MOR	MANDATORY OCCURRENCE REPORT
NOK	NEXT OF KIN
NTSB	NATIONAL TRANSPORTATION SAFETY BOARD
OEM	ORIGINAL EQUIPMENT MANUFACTURER
OPS	OPERATIONS
OSHA	OCCUPATIONAL SAFETY AND HEALTH AGENCY
P	PROBABILITY
PAF	PAKISTAN AIR FORCE
PCAA	PAKISTAN CIVIL AVIATION AUTHORITY
PEAT	PROCEDURAL EVENT ANALYSIS TOOL
PIA	PAKISTAN INTERNATIONAL AIRLINES
RBI	RISK BASED IOSA
R/T	RADIO TELEPHONY
R N E	ROUTINE, NON-ROUTINE, EMERGENCY
SAG	SAFETY ACTION GROUP
SIB	SAFETY & INVESTIGATION BOARD
SMS	SAFETY MANAGEMENT SYSTEM
SME	SUBJECT MATTER EXPERT
SOP	STANDARD OPERATING PROCEDURES
SIMS	SAFETY INFORMATION MANAGEMENT SYSTEM
S	SEVERITY
SLA	SERVICE LEVEL AGREEMENT
SPI	SAFETY PERFORMANCE INDICATOR
SSP	STATE SAFETY PROGRAM
TCAS	TRAFFIC COLLISION AVOIDANCE SYSTEM
TCAS(RA)	TRAFFIC COLLISION AVOIDANCE SYSTEM (RESOLUTION ADVISORY)
TCAS(TA)	TRAFFIC COLLISION AVOIDANCE SYSTEM (TRAFFIC ADVISORY / TRAFFIC ALERT)
VHF	VERY HIGH FREQUENCY
WBH	WIDEBODY HANGAR

TERMINOLOGY

- Accountable Executive (AE) is the Chief Executive Officer (CEO) of the organization.
- Head of Safety refers to Chief of Safety or Safety Manager of the organization and reports directly to CEO / President / Accountable Executive. All safety matters including SMS / OHS / HSE etc. of the organization come under the jurisdiction of the Safety Manager.
- Corporate Safety Department refers to SMS Managing Core Office of the Safety Setup.
- Managerial staff / Managers refer to individuals whom may be acting in a managing capacity as Director / Chief / Chief Engineer / Deputy Chief Engineer / General Manager / Chief Pilot etc.
- The term organization refers to PIA including its constituents such as Flight Operations Department, Engineering and Maintenance Department etc.
- PIA refers to the organization, Pakistan International Airline, or the PIACL.

CHAPTER – 2

SMS REGULATORY REQUIREMENT

2.1 MAJOR RULES / REGULATIONS DEMANDING SMS IMPLEMENTATION

ICAO has demanded implementation of State Safety Program (SSP) in aviation industry through Annex 19 all over the world. Pakistan CAA being the regulatory authority for all civil aviation activities in Pakistan has adopted the requirements of ICAO through implementation of Safety Management System (SMS) in all airlines, Approved Maintenance Organizations, Training Organizations, etc.

Pakistan International Airlines (PIA), a service provider, is an AOC holder (AOC Ref: AOC-003/96-AL) for RPT, (AOC-023/10-CH) for charter and (AOC-024/10-AW) for AERIAL WORK under PCAA ANO-024-FSXX, an Approved Maintenance Organization under PCAA ANO-145 (AMO Ref: PCAA.145.001) and Approved Training Organization under PCAA ANO-007-LCXX.

PCAA ANO-001-XXSP-3.0 demands the implementation of SMS in PIA's Flight Operations, Engineering & Maintenance, Flight Services, Ramp Services and Training departments / divisions as per the laid down requirements.

The Safety Management System (SMS) implies to all activities of PIA, may these be the core functions and departments or otherwise. Applicable regulations for SMS implementation include:

1. Civil Aviation Rules (CARs) 1994 Part XV
2. PCAA ANO-001-XXSP
3. PCAA ANO-024-FSXX
4. PCAA ANO-020-FSXX
5. PCAA ANO-028-FSXX
6. PCAA ANO-145-AWRG
7. PCAA ANO-007-RGLC
8. PCAA ANO-004-XXSP
9. ICAO Annex 19
10. ICAO Annex 13
11. ICAO Annex 11
12. ICAO Annex 14
13. ICAO Annex 06
14. ICAO Annex 08
15. ICAO Doc 9859
16. ICAO Doc 9422

CHAPTER – 3

SYSTEM DESCRIPTION

3.1 INTRODUCTION TO PIA (ORGANIZATION) FOR SMS IMPLEMENTATION

Like other operational industries, aviation also presents its own particular nature of being dynamic with its complexity and variations.

The individuals involved in any aviation setup are inter-dependent in terms of fulfilling their tasks in a safe manner and hence safety management cannot be in isolation but a managed system has to be implemented for ensuring the required safety measures not only at the front line but also at top hierarchy of management for improved and safe decision making.

PIA carries out regular air transportation business and is required to ensure safety of not only the passengers and the aircraft(s) but also its employees and assets. There are multiple activities that take place within PIA for being able to culminate its service provision safely, along with the core functions of the airline. PIA is also involved in activities such as food preparation, training provision to third parties to a scope as approved by PCAA, maintenance activities for PIA itself and for external clients etc.

The Safety Management System (SMS) implies to all activities of PIA, may these be the core functions and departments or otherwise.

Additionally, in PIA the SMS may also integrate operational safety along with employee health and safety management, although managed by the HSE setup, for enhanced productivity and collective efforts, producing better results and improving employee support for the SMS program. Besides integrated approach for better administrative efficiency and employee morale, the SMS setup remains bifurcated from non-operational issues (not directly or indirectly related to operational aviation activities), occupational health and environmental issues, which are managed by respective HSE systems.

Being one of the major airlines of Pakistan, it is important that safety shall be upheld within all PIA functions to ensure safe air travel, the contemporary and effective way for which is to follow a robust SMS program.

3.2 MAJOR AREAS FOR SMS IMPLEMENTATION

Although all of airline's organizational activities fall under the criteria for SMS implementation, however some major areas which require particular attention are; Flight Operations, Engineering and Maintenance, Flight Services, Passenger Handling Services, Cargo and Ramp Services Department. The responsibility to ensure safe practices does not lie with the management only but it is distributed amongst all tiers of the organization, and every individual is responsible within their domain to ensure safe practices and also to support the SMS implementation as a whole, as defined further within this manual.

3.3 SCOPE AND INTEGRATION OF SMS IN PIA

The organizational procedures, policies, processes, personnel involved in aviation operations (directly or indirectly), operational & maintenance facilities, equipment and buildings under control by all the PIA departments mentioned earlier (as mentioned in Para 3.1) come under the scope of SMS and are subject to company's audit program to ensure the implementation of SMS.

It is pertinent to mention that other departments and domains of the organization are also subject to the fulfilling the requirements of SMS, but operational departments as stated earlier, which have direct impact on safety are considered to be of the primary significance.

The process of risk mitigation/management subsequent to hazard identification is applied to all pertinent areas of the organization and hired services to ensure safety of activities.

The hired services also come under the provision of organization's SMS e.g. fuelling agents, catering, ground handling and food uplift etc.

The SMS Manual, SMS implementation related documentation and safety information shall be shared with third parties / service providers / externally contracted parties and theirs to be demanded to evaluate the differences and bridge the gap. Communication shall be ensured amongst their safety personnel and PIA SMS either directly by Corporate Safety or through the SAGs. Issues such as training differences, reporting of third-party employees to PIA SMS and Emergency Response Plan coordination shall be evaluated and resolved. Service Level Agreements (SLAs) or contracts must be utilized to ensure that SMS implementation extends beyond the organizational limits through mutual coordination. The responsibility for information sharing and managing the gap for SMS implementation from third parties lies with the Department(s) signing the contract / SLA and affected departments.

CHAPTER - 4

SAFETY POLICY

4.1 SAFETY POLICY OF PAKISTAN INTERNATIONAL AIRLINES CORPORATION LIMITED

As **Chief Executive Officer – PIACL**, I affirm the management's unwavering commitment to Operational Safety, Occupational Health & Safety (OH&S), Aviation Security, Environmental Protection and Quality Management. These domains form the foundation of PIACL's Safety Management System (SMS), ensuring compliance with the principles of proactive safety management and continuous improvement.

PIACL shall maintain **clear lines of accountability and responsibility** for the implementation of this Policy across all organizational levels; from the Undersigned to Departmental Heads, Functional Managers and Front- line Employees. This Policy shall be communicated to all Contracted organizations, including service providers and handling agencies. The management is committed to **awareness, understanding, implementation** and **promotion** of this Policy throughout the organization.

PIACL will ensure **continual improvement** in operational safety through **proactive identification and management of safety risks**, adoption of best industry practices, training and innovation. The promotion and maintenance of **positive safety culture** shall serve as the cornerstone of a robust SMS and compliance framework. In addition, PIACL shall actively manage **human performance limitations** by recognizing physiological, psychological and workload factors that may affect safety and by implementing strategies to **mitigate fatigue, stress** and other **human factor risks**.

Data- driven reviews of this **Policy and Safety Objectives** shall be conducted annually by the Undersigned along with Senior management, based on **Safety Performance Indicators (SPIs)**, analysis of undesired **operational outcomes** and **Corrective & Preventive Actions** aimed at eliminating root causes. All internal and external changes affecting operations shall be managed through a **Management of Change** process to ensure controlled risk and smooth transition. PIACL guarantees that **no employee shall face punitive action** for reporting hazards or safety concerns, thereby fostering **voluntary reporting** and **self- analysis without fear**.

PIACL practices **Just Culture**, encouraging **open communication, voluntary reporting** and **confidentiality.** Reports shall be handled with **fairness and integrity**, distinguishing between the **human error, at- risk behavior** and **reckless violations**. This approach promotes **balanced accountability**, strengthens **trust** and supports **continuous improvement**.

As **Accountable Executive**, I commit to **employee participation** and **effective implementation** of PIACL's **Safety**, **OH&S, Aviation Security, Environmental** and **Quality Management Systems**. Adequate **financial, infrastructural** and **human resources** shall be provided to ensure safe, secure and compliant operations. All **operational plans** shall align with this Policy and the Organization's **Safety Objectives**.

PIACL is dedicated to **Environmental Management** by **identifying, managing** and **minimizing environmental impacts**, promoting sustainability and complying with all applicable regulations and standards.

PIACL enforces a **zero- tolerance policy** on **psychoactive substances and drugs**. No operation shall be conducted under their influence. The organization mandates **prevention, detection** and **fair management** of misuse among safety- sensitive personnel to safeguard **operational safety** and **regulatory compliance**.

PIACL shall minimize **Safety, Security** and **Compliance Risks** by adhering to Air Operator Certificate conditions, statutory and regulatory requirements, international standards and organizational procedures. All employees shall uphold these requirements **without prejudice or delay**, ensuring **unbiased and consistent actions.**

I pledge my **full commitment** to **PIACL's Safety Objectives**. Safety, security, and compliance are our shared values, guiding every decision and sustaining a culture where **safety remains at the heart of our operations.**

Air Vice Marshal MUHAMMAD AMIR HAYAT
Chief Executive Officer (Accountable Executive)
Pakistan International Airlines Corporation Limited

DATED: 20TH APRIL 2026

4.2 NATURE OF SAFETY POLICY:

- The safety policy of the organization, which must be signed by the Accountable Executive shall be communicated and made available for reference to all constituents of the organization. It is a statement of intent by the Accountable Executive of PIA to express one of the foundational ideas behind organizational processing and also to communicate each individual's responsibility of adhering to it. The Safety Policy is pasted at different locations throughout the organization, however, it is available on PIA intranet for reference and it is the responsibility of each departmental head to ensure that the policy is communicated to department's respective employees.

- The Accountable Executive has the final authority for work authorized to be conducted under all operational and maintenance activities.

- All procedures, processes and systems developed in the organization shall be in-line with the policy and must ensure safe operations.

- Managers and supervisors throughout the hierarchy must also assure that any direction or delegation of duty by themselves must not be against the 'Safety Policy'. Furthermore, all individuals employed for the organization's operations and processes are part of the implementation for SMS and active involvement of all is necessitated for efficiency of SMS.

- The 'Corporate Safety Policy' would be reviewed at least annually during MRC or SRB, in case of change of the Accountable Executive of the organization or as required. Record of review of Safety Policy shall be kept by Head of Safety in his office and presented to the PCAA whenever called for.

- The review and update of the safety policy is carried out through appropriate inputs from work-force (as required) and key safety personnel to ensure that the policy remains practically relevant.

- Upon change of Accountable Executive, the new incumbent shall endorse the policy and same shall be notified to the PCAA.

4.3 ORGANIZATIONAL GENERAL SAFETY GOALS & OBJECTIVES

The corporate and departmental safety objectives are to be based on the need of time (regulatory, safety and efficiency requirements etc) and as an extension to achieve the safety policy requirements. The organizational Safety Objectives will be disseminated throughout the organization through the SMS manual, SMS training and other appropriate measures. Furthermore, the departmental objectives shall be in-line with the organizational / corporate objectives.

The corporate safety objectives setting shall be carried out and reviewed (for relevance with safety requirements) by Head of Safety along with the involvement of required experts, whereas, the departmental objectives shall be taken care by relevant SAG, Departmental head and Head of Safety. The process of reviewing safety objectives shall be carried out at least with every SMSM review / update, safety policy review or if the objectives' relevance is questioned such as due to a negative safety event. Management Review Committee (MRC) / Safety Review Board (SRB) meeting(s) can be utilized for objectives review as well as it can be done through other standard organizational communication processes.

Safety objectives are set and performance is monitored against achievement of these for seeking continuous improvement in the implementation of SMS. Performance monitoring is carried out either through objective monitoring or relevant SPIs. For Safety Objectives to be achieved, there shall be a plan in place, which shall identify the means of implementation, monitoring and review for the Safety Objectives.

The objectives are based on the fact that the core ideology of service provision by PIA is to ensure safe, reliable & comfortable air travel to all its customers and to avoid aircraft accidents / incidents. However, direct monitoring of all aspects of objectives may not always be carried out.

Below are organizational approved safety objectives;

a) PIA must ensure that the actions, processes and decisions are in line with the laid down latest PIA Safety Policy. The actions shall ensure provision of resources, promotion of Just and Safety Culture, Compliance with applicable regulations, ensuring required safety communication.

b) PIA will assure continual improvement through engagement of competent human resource, ensuring Management of Change and improvement in safety audits.

c) To decrease aircraft related occurrences and improve HIRM through safety reporting.

d) Promotion of Safety Culture.

Furthermore, the objectives are described below as a1, b1, c1 and d1;

a1. ADHERENCE TO SAFETY POLICY

The organization as a whole must ensure that the actions, processes and decisions are in line with the laid down latest PIA Safety Policy, it shall include but is not limited to;

i. Strive continuously to improve on SMS elements on reality grounds.

ii. Provision of all required appropriate resources including financial, technological and human resource.

iii. Safety provision to be primary responsibility of all employees of the organization, and one of the highest priorities shall be given to uphold safety by all tiers of the organization.

iv. Two-way Safety communication throughout the organization and ensure positive dissemination of safety information.

v. Ensure appropriate measures for risk mitigation of identified hazards.

vi. Implementation of "Just Culture" in true spirit.

vii. Promoting Safety culture within the organization.

viii. Compliance with latest National and International legislative, regulations and standards.

ix. Management is responsible for monitoring of SMS activities to ensure reliable functioning and improve safety performance.

x. Ensure technical job specific and safety related training to be imparted to employees of PIA.

xi. Ensure skilled & competent staff is employed to implement safety strategies & execute procedures.

xii. Ensure that externally hired services are at-least at par with our PIA safety requirements.

Direct monitoring of all aspects of safety policy may not always be carried out, however any known deviations against the committed Safety Policy are to be considered as against the objective unless carried out in accordance with SMS principles.

b1. CONTINUAL IMPROVEMENT

'Step by step' approach towards safety improvement by;

i. PIA employees and staff executing duties for PIA shall be thoroughly trained (technically, administrative training as well as Safety training etc) through training need analysis (TNA).

ii. Improvement in provision of SMS training for all operational staff in terms of its quality.

iii. Systems, equipment, procedures and operational changes entailed to be streamlined with latest SMS requirements shall be improved through the process of Management of Change (MoC).

iv. Better performance shall be strived to be achieved in regular and specialized audits. PIA is to make efforts in decreasing the number of internal safety / SMS based audit findings each year, and avert repetitive findings from previous years.

For PIA continuous improvement processes refer Chapter 11 'Continuous Improvement & SMS Audit' of this manual.

c1. HAZARD IDENTIFICATION & RISK MANAGEMENT

It is an organizational commitment for the risk level to be kept at or below an acceptable limit of all identified operational safety and security hazards that may be existing or potential.

All known operational hazards will be risk assessed and mitigated to an acceptable level for continued safe operations;

i. To decrease number of aircraft occurrences.
ii. To decrease the number of ground occurrences.
iii. Increased hazard reporting.
iv. Improved HIRM Process quality & efficiency.

d1. SAFETY PROMOTION

PIA believes in the fact that without involving all parts / individuals of the organization in matters of safety, it would be practically impossible to achieve the maximum benefit of the implementation of the SMS. Hence, safety is promoted through various means including safety communication, Just Culture implementation, safety reporting encouragement, safety data transparency for pertinent functions etc.

4.4 DEPARTMENTAL OBJECTIVES

The organizational objective setting does not limit a departmental objective, however there shall be no contradiction to it; i.e. department can have its own objectives that are substantial at departmental level but this must not direct the efforts away from the organizational objectives' management e.g. a department cannot have its objective set that would diverge the required efforts away from the safety management requirements of the organization, which is laid down through organizational objectives.

Although the objectives are ideally measureable, however in case of objectives being difficult to measure or having a large scope, then these are then further monitored through indicators which are representative of particular objective(s).

Safety Performance Indicators (SPIs) / Safety KPIs are hence further utilised to define departmental objectives in terms of being Specific, Measurable, Achievable, Realistic & Time bound (SMART).

Following are generally the main departmental safety objectives for effective SMS implementation:

i. Flight Operations – Minimizing Air & Ground occurrences / incidents caused by operational issues.

ii. Operational Control & Dispatch – Improved Safety of flight operations, improvement in management of in-flight weather and other anomalies.

iii. Engineering & Maintenance – Minimizing Air & Ground occurrences / incidents caused by technical anomalies, Minimizing Human error in aircraft maintenance and minimizing unscheduled maintenance.

iv. Cabin Operations – Minimizing Human Errors in cabin operations, improving cabin safety during flight operations.

v. Ground Handling – Minimizing Ground occurrences / incidents involving aircraft, personnel, equipment or vehicles caused by operational or technical issues. & minimizing anomalies caused by ground handling that can affect the safety of aircraft operations.

vi. Cargo – Minimizing cargo handling / management related occurrences.

vii. Operational Security – Minimize security threats (Unauthorized interference or unauthorized access events, security of aircraft, personnel or passengers etc).

Safety objectives and safety KPIs may inculcate non safety targets if these are directly / indirectly affecting the implementation of SMS.

The safety KPIs, the SPIs, which are based on the objectives, may change with the Airline's requirement and performance in each of its areas, these are measured at pre-defined time period along with statement of implementation plan to control the SPI, deliverables and responsibility delegation for execution of the plan. The departmental and corporate SPIs are maintained (developed, evaluated and updated) in separate controlled document(s).

An example of corporate or departmental SPI would be 10% decrement or (x number max) inadvertent slide deployment in a given period of time, which will be evaluated through cross comparison with actual performance every quarter.

Generally, the preset value of targets for SPIs shall be proposed by evaluating past safety performance by respective Departmental SAGs and approved by Departmental Head in consultation with Head of Safety / Safety Manager.

Corporate SPIs on the other hand shall be selected by Head of Safety / Safety Manager from either Departmental SPIs based on their significance, risk level and targets or a unique corporate SPI may be chosen for better objective(s) monitoring and shall be approved by the Accountable Executive.

Head of Safety / Safety Manager shall ensure that the selected SPIs have the same targets with the relevant department(s) as being monitored against by Corporate Safety which are approved by the Accountable Executive.

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CHAPTER – 5

SAFETY ACCOUNTABILITY AND KEY PERSONNEL

5.1. ORGANIZATION OF THE CORPORATE SAFETY DEPARTMENT: CHART – C1, C2, C3, C4 & C5

The office of the Head of Safety / Safety Manager is established in compliance to ANO-001-XXSP- 3.0 and fulfilment of safety related requirements of the Part XV-Accidents and Incidents CARs 1994, ANO-020-FSXX-3.0 & ANO-028-FSXX-3.0,ANO-145-AWRG-3.0, ICAO Annex 13, Annex 19, relevant chapters of Annex 6, Annex 11, Annex 14 and ICAO DOC 9859, Attachment E to Annex II & DOC 8181, and PIA management directives.

The PIA SMS Manual describes the principal functions of the Corporate Safety Department. The Operations Manual (OM) and other relevant Company documents and manuals also refer to the scope of its activities.

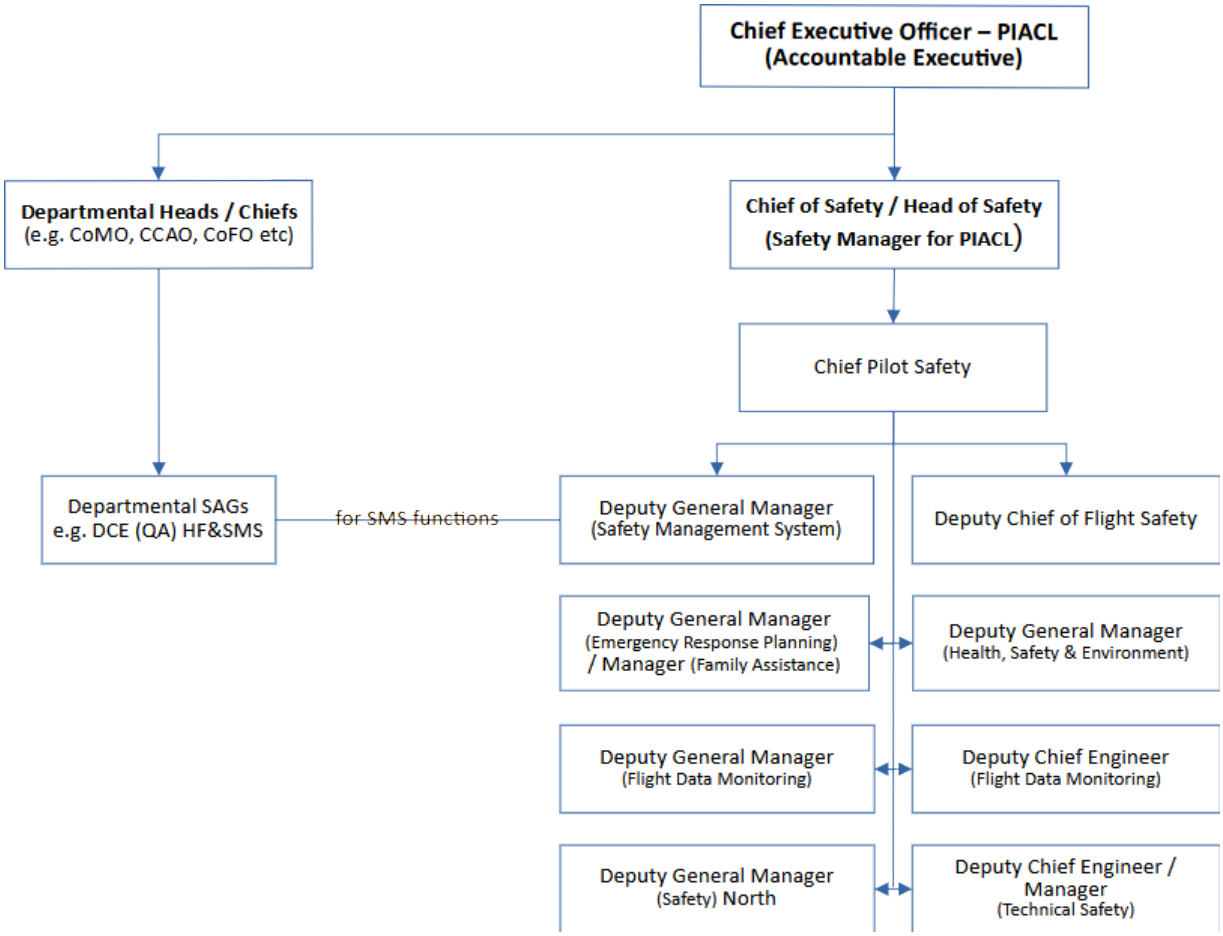
The PIA organizational chart, depicting the reporting line of Head of Safety / Safety Manager is shown on Chart C-1. Furthermore, an exposition of the same is produced in charts C2, C3, C4 and E & M SAG in C5. However, for latest position updates, organizational chart shall be referred to.

The Authority, Responsibility and Accountabilities defined subsequently are available and communicated to all constituents of the organization through this manual (SMS). Each individual is placed in a certain role after organizational process of verification to ensure that the individual would be able to perform in that role and subsequently evaluated through the H.R process of performance appraisal against their duties and responsibilities and in case an individual falters due to negligent, reckless or violating conduct, the information shall be communicated by the Corporate Safety Department through SAGs and/or relevant Department to raise a negative appraisal.

All managerial and non-managerial staff need to ensure that operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with applicable regulations and standards of PIA.

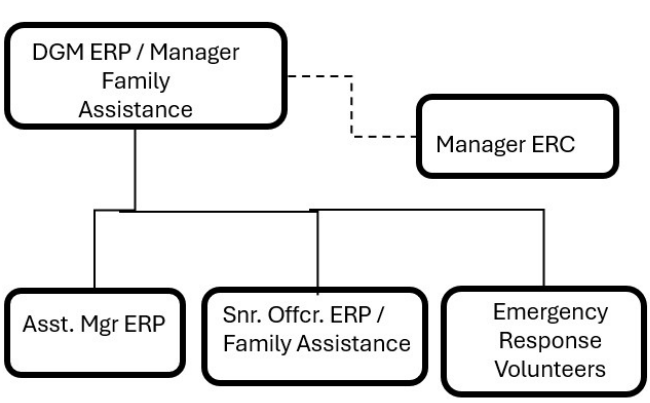
The authority is delegated within the organization by the Accountable Executive, although irrespective of other functions, the AE is accountable on behalf of the PIA for the implementation and maintenance of the SMS throughout the organization and to ensure operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), the applicable regulations and relevant standards, for which the AE carries out planning and manages allocation of resources for managing safety and security risks.

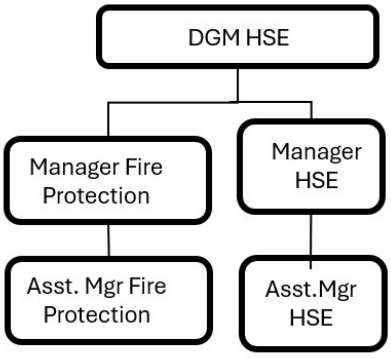
C-1



Note: SAG teams administratively report to departmental heads who are also made part of the SAG to ensure administrative and functional support.

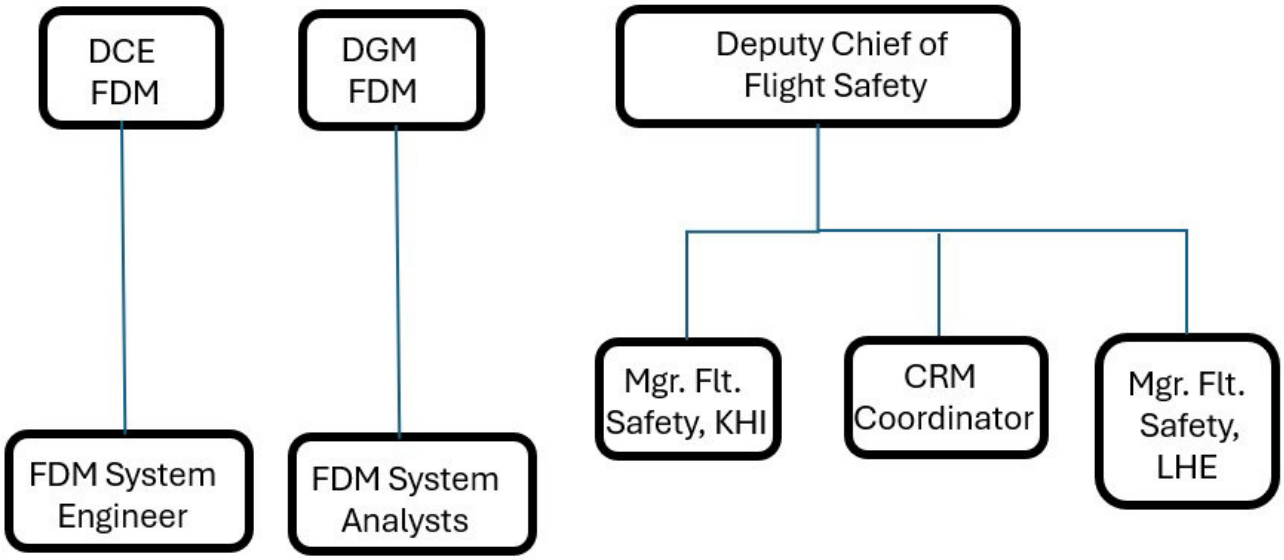
C2



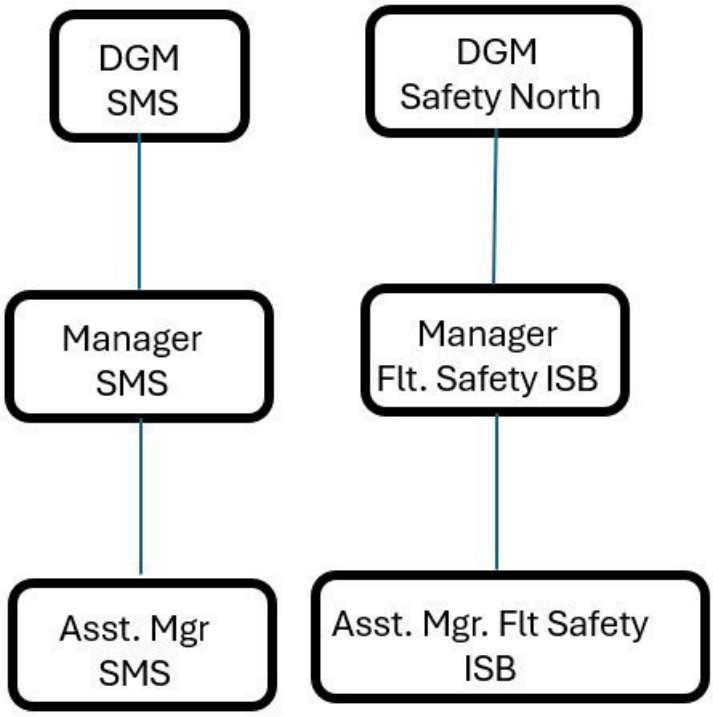


* If Section is lead by a Manager, then Manager ERC functionally reports to Manager Family Assistance

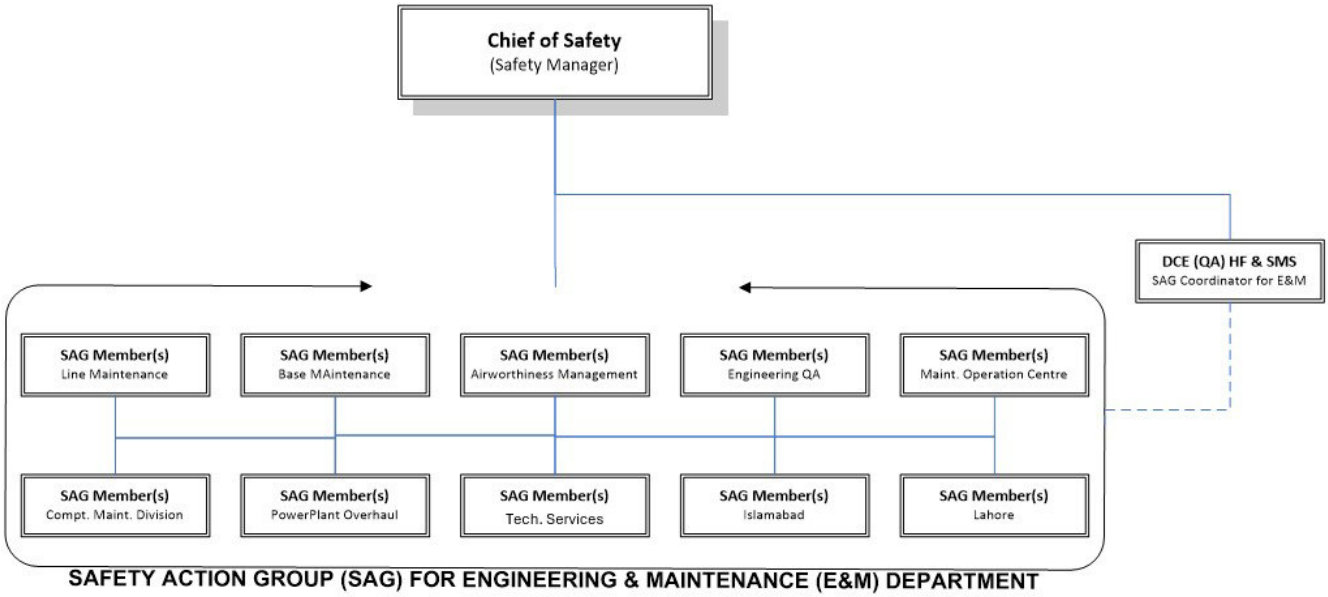
C3


DCE FDM
DGM FDM
Deputy Chief of Flight Safety
FDM System Engineer
FDM System Analysts
Mgr. Flt. Safety, KHI
CRM Coordinator
Mgr. Flt. Safety, LHE

C4


DGM SMS
DGM Safety North
Manager SMS
Manager Flt. Safety ISB
Asst. Mgr SMS
Asst. Mgr. Flt Safety ISB

C5


Chief of Safety
(Safety Manager)
DCE (QA) HF & SMS
SAG Coordinator for E&M
SAG Member(s)
Line Maintenance
SAG Member(s)
Base MAintenance
SAG Member(s)
Airworthiness Management
SAG Member(s)
Engineering QA
SAG Member(s)
Maint. Operation Centre
SAG Member(s)
Compt. Maint. Division
SAG Member(s)
PowerPlant Overhaul
SAG Member(s)
Tech. Services
SAG Member(s)
Islamabad
SAG Member(s)
Lahore
SAFETY ACTION GROUP (SAG) FOR ENGINEERING & MAINTENANCE (E&M) DEPARTMENT

5.2 FUNCTIONS OF CORPORATE SAFETY DEPARTMENT

PRIMARY FUNCTION

SAFETY MANAGEMENT

ASSIGNED RELATED/SUB FUNCTIONS (not limited to only these)

SAFETY ASSURANCE OF AIRLINE OPERATION	SAFETY PERFORMANCE MONITORING	HAZARD ANALYSIS AND RISK MANAGEMENT
SPOT CHECKS / SAFETY INSPECTIONS	INVESTIGATION OF ACCIDENTS/ INCIDENTS	HSE & FOOD & WATER HYGIENE PROGRAMS
SAFETY PROMOTION	RAMP INSPECTIONS/SPOT CHECKS	FIRE PROTECTION SERVICES
LIAISON WITH INTERNAL & EXTERNAL REGULATORY & SAFETY BODIES	FLIGHT DATA MONITORING & ANALYSIS	CRM TRAINING
SAFETY INFORMATION DISSEMINATION	SAFETY AUDITING THROUGH CENTRALIZED INDEPENDENT COMPLIANCE/CQA DIVISION	EMERGENCY RESPONSE PLANNING
SAFETY TRAINING OF CABIN & COCKPIT CREW	ESTABLISH MANDATORY OCCURRENCE REPORTING SYSTEM	ESTABLISH AND MAINTAIN CONFIDENTIAL REPORTING SYSTEM
CERTIFICATION OF EMERGENCY EQUIPMENT LOCATION CHARTS	OVERSEE SAFETY ASPECTS OF LEASED AIRCRAFT/CONTRACTS	SAFETY TRAINING OF GROUND PERSONNEL

5.3 SAFETY ACCOUNTABILITY, AUTHORITY & RESPONSIBILITIES FOR KEY PERSONNEL IN MANAGING SAFETY

5.3.1. HEAD OF SAFETY / SAFETY MANAGER - RESPONSIBILITIES

The Head of Safety / Safety Manager or his delegate shall have unrestricted access to all departmental information at all levels to implement and manage the Airline's Safety Management System on behalf of the Accountable Executive(CEO, PIA). One of the primary responsibilities of Head of Safety / Safety Manager is to provide information and advice on all Safety related matters to Accountable Executive.

The Head of Safety / Safety Manager is the designated Safety Manager who is appointed for implementation and maintenance of SMS. Furthermore, this individual reports directly to the Accountable Executive i.e., CEO, PIA for:

i. Establishing, maintaining and promoting Safety Management System at PIA (through SMS processes)
ii. The Head of Safety / Safety Manager is responsible for monitoring the implementation of the safety policy and providing an independent overview of aspects and activities impacting safety.
iii. The Head of Safety / Safety Manager is responsible to ensure maintenance, review and revision of the safety program; timely advice and assistance on safety matters to managers at all levels; and managing the hazards reporting system.
iv. Head of Safety is to ensure by provision of information and advise to Departments or AE that operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with applicable regulations and standards of PIA. All applicable laws, regulations and requirements with respect to safety shall be ensured by PIA.
v. Prevention of accident / incident on pro-active basis, accident / incident investigation services and promotion of general Safety culture and awareness in PIA.
vi. Conducting investigations into incidents, serious incidents and accidents involving Company equipment and personnel.
vii. Maintaining the air safety reporting (ASR) occurrences and other safety related data base.
viii. Monitoring airline flight safety trends and taking corrective actions.
ix. Coordinating with PCAA and establishing its mandatory occurrence reporting system.
x. Liaising with all Departmental heads on Safety matters and assisting them in risk management within their respective areas of responsibilities.
xi. As Chairman of the PIA Safety Committee convene its periodic meetings and accurately record the proceedings of such meetings.
xii. Ensure convening of MRC/SRB for continuous performance review.
xiii. Dissemination of Safety related information to relevant personnel/departments in the Airline and to external safety agencies.
xiv. Liaising with the safety departments of equipment manufacturers, regulatory agencies and other Safety organizations.
xv. Assisting regulatory bodies involved in the investigation of accidents, keep Accountable Executive informed about preliminary findings and on investigations progress. Advising immediate remedial measures to address high safety concerns or possible regulatory violations.
xvi. Ensure that safety surveys/ audits of airfields before they are cleared for PIA's scheduled air operations.

xvii. To ensure that departmental / divisional risk management process is proactive and concurrent and that all safety concerns / issues are dealt with on priority basis.

xviii. Maintaining familiarity with all aspects of the Airline's operational activities and personnel training in flight safety aspects.

xix. Ensure development and enhancement of the Emergency Response Plan and assisting in appropriate emergency management during a crises or disaster situation.

xx. Ensuring proper management of the functions of Safety. Carrying out regular safety audits, periodic airfields surveys, spot-check inspections, any other safety measurement methods. Conduct annual overall safety assessment of the Airlines' operational departments.

xxi. Establishing a non-punitive and confidential hazard reporting system enabling Staff to communicate significant safety concerns.

xxii. Establishing and operation of a systematic Flight Safety & Flight Data Monitoring and Analysis program which is non-punitive in nature and aimed at taking proactive measures to improve Airline flight safety standards.

xxiii. Establishing and managing Human Factors, Crew Resource Management& SMS training programs that conform to industry standards and meet regulatory requirements.

xxiv. Ensure proper safety related documentation and record management.

xxv. Planning and controlling the financial budget of the Corporate Safety Department.

xxvi. Establishing a non-punitive and confidential hazard reporting system enabling Staff to communicate significant safety concerns.

xxvii. Ensure timely scheduled data backup mechanism is in place.

xxviii. Ensure monthly/quarterly meetings of all SAGs are taking place,

xxix. Keeps in view the continuous performance review of SMS implementation and advises need for improvement to A/E.

xxx. Providing safety assurance to operational recruitments, procurement and induction of aircraft (leased new or used), technical ground support equipment, evaluation assurance and monitoring of safety capabilities of vendors, wet-lease or dry-lease partners specifically in case of non-IOSA registered air operators, code share partners and other outsourced services / business support agencies.

xxxi. Conducting annual periodic reviews of the PIA Safety Management System Manual for its adequacy and currency.

xxxii. Performing any other duties and responsibilities as assigned from time to time, by the Accountable Executive.

5.3.2. SPECIAL AUTHORITY VESTED IN HEAD OF SAFETY / SAFETY MANAGER FOR MATTERS PERTAINING SAFETY

i. The Head of Safety / Safety Manager, on behalf of the Accountable Executive, exercises full executive authority over all aircraft accident/incident investigation processes and the management of PIA personnel performing the investigations.

ii. He is authorized to issue instructions on the procedures for reporting and investigation of accidents and incidents involving PIA aircraft or ground equipment impacting the safety of their future operations.

iii. Have immediate and unrestricted access to all PIA employees, software tools, electronic data bases, operational records/ documents (controlled or uncontrolled), relevant information,

equipment or other sources of evidence deemed necessary for investigative purposes within his charter of duties.

iv. Report directly to the Accountable Executive and coordinate with concerned Departmental Heads, on accidents or incidents or other matters affecting safety of operations either in air or on ground.

v. Carry out special investigations based on terms of reference given by the Accountable Executive.

5.3.3. DCE HF & SMS (QA) – RESPONSIBILITIES

DCE HF & SMS is responsible to assist the implementation of SMS in Engineering & Maintenance including implementation Human Factor program management, in coordination with Corporate Safety.

Duties and responsibilities of DCE HF& SMS include

i. To coordinate with all Chief Engineers and the respective divisional SAG members of CAMO and AMO for conducting Hazard Identification & Risk Management, oversee the implementation of mitigating actions, and timely updation in the SMS dashboard for closure by Corporate Safety.

ii. To act as a Coordinator of the Departmental SAG meetings and record the decisions made in the meetings, ensuring follow-up actions to be marked and brought up in later meetings for finalization.

iii. To participate as a SAG member in the departmental / divisional risk management process to ensure that it remains proactive (where required) and concurrent with all safety concerns / issues, and issues are prioritized, dealt with on priority-wise basis.

iv. To be aware of all safety and service quality requirements and to provide assistance to management in his responsibility for the outcomes and findings of all internal and external safety audits.

v. Assist E & M or Corporate Safety departments to conduct safety surveys, request corrective actions against findings and generate reports to communicate Safety related matters to concerned divisional heads, Head(s) of E&M and Head of Safety / Safety Manager directly or through his delegate.

vi. To assist E & M for compliance with all Safety standards and regulatory requirements applicable to operational areas under departmental jurisdiction at all time during normal operations.

vii. To ensure strict compliance to the department / division operational safety functions and also advise E & M for provision of necessary resources.

viii. To participate and ensure the effective functioning of SAG with respect to Safety issues and Risk mitigation procedures.

ix. To assist in management reviews, to present progress on the remedial actions against significant findings, maintaining effective feedback system on Safety matters and implementation of remedial actions by respective divisions.

x. Evaluate or review plans, contents, pre-qualification rules and durations for any initial and continuation training on Safety Management System for departmental / Head of Safety's approval.

xi. Ensure free access for PCAA personnel to PIA facilities, in relation to the aircraft / aircraft components with respect to Safety Assurance.

xii. Devote time and effort to activities for continual improvements, in respect of Safety Assurance

5.3.4. Deputy Chief of Flight Safety – Responsibilities

The Deputy Chief of Flight Safety (DCFS) is responsible to assist Head of Safety / Safety Manager in all flight safety matters. In the absence of Head of Safety / Safety Manager, DCFS will look after the Safety functions, in addition to his own duties, with due delegation of authority.

The DCFS is responsible to assist the Head of Safety / Safety Manager on:

i. Prevention of accident / incident on pro-active basis, accident/incident investigation services and promotion of flight safety and awareness.
ii. Conducting investigations into incidents, serious incidents and accidents involving Company equipment and personnel.
iii. Maintaining the air safety reporting (ASR) occurrences data base.
iv. Monitoring corrective actions and flight safety trends.
v. Establishing PCAA's mandatory occurrence reporting system.
vi. Dissemination of Flight Safety related information to relevant personnel/departments in the Airline and to external safety agencies.
vii. Publishing the periodic Airline Flight Safety Magazine.
viii. Planning and controlling the Flight Safety Budget.
ix. Planning and implementation of Ground Safety Officers monthly rosters.
x. Providing assistance to the regulatory bodies involved in the investigation of accidents, keep the Head of Safety / Safety Manager informed about preliminary findings and on the day to day progress of investigations. Advising immediate remedial measures to address high risk safety concerns or possible regulatory violations.
xi. On Directives or on behalf of Head of Safety / Safety Manager carrying out safety surveys and audits of airfields before they are cleared for PIA's scheduled air operations.
xii. Carrying out regular safety audits, periodic airfields surveys, spot-check inspections, any other safety measurement methods. Conduct annual overall safety assessment of the Airlines' operational departments.
xiii. Arranging / assisting in arrangement of periodic Meetings to discuss safety related issues.
xiv. Performing any other duties and responsibilities, as assigned from time to time, by the Head of Safety / Safety Manager.

5.3.5. Deputy Chief Engineer – FDM System Automation – Responsibilities

The Dy. Chief Engineer FDM is responsible to assist the Head of Safety / Safety Manager for:

i. Establishing a system for managing FDM system processes as per applicable regulatory requirements.
ii. Ensure smooth running of 'data acquisition' function from aircraft and subsequent Flight Data Processing in FDM Software. Also, to create & modify FDM Software application in window & SQL 2000 environment, applicable.
iii. Maintain FAP update & managing the system by utilizing the FAP editor/Fleet editor & Security tool of FDM Software.
iv. Ensuring that comprehensive monthly reports are generated, forwarded to relevant authorities and emerging undesirable trends are highlighted.

v. Ensuring that FDA data is protected/secured/safe guarded against un-intended or miss-use and regular backups are maintained.
vi. Taking necessary steps to assist the management in building positive Safety culture and trust between the management and pilots.
vii. Ensuring that FDA program is successfully implemented to cover entire operations and is adding value to the overall Safety Management of the Airline. Also, to ensure that the FDM system remains serviceable and consistently running, to provide comprehensive and valid data, by ensuring regular up-gradation/modification as and when required.
viii. Defining appropriate & progressive aims and objectives for FDA Program (both short term and long term) and track performance accordingly.
ix. Ensuring that FDM related software agreements and other contracts are maintained properly with respect to technical requirements.
x. Assessing the adequacy and suitability of hardware and software tools to run the FDM program, Flight Safety and other programs conducted for overall safety management of PIA. Also for ensuring dissemination of system automation information as and when required and ensuring FDM program administration.
xi. Ensuring appropriate database management for Aircraft Performance, Condition Monitoring and Trend Monitoring.
xii. Liaison, Sharing & Exchanging FDM/FDA information with relevant external entities (with prior written approval from concerned authority; of the extent of information sharing) e.g. regulatory bodies and original equipment manufacturers etc.
xiii. Overall coordination for FDM & FDA program with departmental coordinators and keep a record of meetings and related follow-ups.
xiv. In addition to FDM, monitoring of all systems for their respective due time up gradation or necessary enhancement.
xv. Supervising & provisioning of expert guideline for Network, Computer and their peripherals interfacing and system installation in Corporate Safety Department.

5.3.6. DEPUTY GENERAL MANAGER SMS – RESPONSIBILITIES

i. Prime job responsibility is to implement Safety Management System in PIA according to relevant legislation and regulations.
ii. To have direct access to the Operational heads through Head of Safety / Safety Manager for matters related to Safety and to provide information and advice on such matters.
iii. To assist Head of Safety / Safety Manager for establishment of Safety Indicators and keep track of Airline's Safety Performance based on set Safety Targets/Goals.
iv. To strive for improving the organizational safety level through a continuous process of risk assessment and risk mitigation strategies. Liaison with other department heads / representatives for facilitating Risk Management and SMS Implementation at PIA.
v. To promote and facilitate a positive safety culture and support non-punitive approach in implementing Safety Program.
vi. To maintain and up-to-date reference to the applicable national, regulatory laws and regulations as well as industry standards and recommended practices.
vii. To ensure that all safety concerns/issues are dealt with on priority basis and the departmental Safety Action Groups are functioning properly and organizational risk management process is proactive and concurrent.

viii. To ensure effective performance of the flight accident prevention program and ensure communication and coordination with appropriate operations and maintenance managers.
ix. To ensure that corrective and preventive actions are taken at the root-cause levels on all audit non-conformities and audit findings in an acceptable manner and within reasonable time frames.
x. To foster positive relationship with regulatory authorities, agencies and service providers outside the organization and establish other contacts at working levels as appropriate for matters related to SMS.
xi. To ensure that safety audits covers all important aspects of the organization and that safety audits are performed regularly to identify gaps or opportunity for improvement in the system.
xii. To ensure that SMS organization is competent and aware of the required SMS requirements.
xiii. To ensure implementation and development of accident prevention management plan and Flight Safety Program as per regulatory requirements.
xiv. To ensure that the SMS is kept up to date in line with the latest regulation, ANOs, ICAOs documents etc.
xv. The DGM SMS is also responsible for maintaining PIA's Safety Management System and advises Head of Safety / Safety Manager on matters related to effective and efficient Safety Management.
xvi. To strive for proper SMS Database Management.
xvii. To perform Admin duties for web-based safety reporting system.

5.3.7. Deputy General Manager FDM - Responsibilities

i) Establishing a system for monitoring FDM system processes as per CAA ANO-28.
ii) Ensuring that comprehensive fortnightly / monthly reports are generated and forwarded to relevant authorities and highlighting emerging undesirable trends for proactive decision making.
iii) Assist General Manager / Head of Safety in building positive safety culture and trust between pilots and management.
iv) Provide analysis and data support using reactive, proactive, and productive methodologies for contributing to a complete Safety Management System.
v) Screen data to ensure its accuracy and integrity when presented.
vi) Receive information from the management for any particular flight anomaly and analyze the relevant data for Safety Investigations.
vii) Advise General Manager / Head of Safety / Chief of Flight Operations regarding improving trends and also trends which require risk mitigation.
viii) Assist General Manager / Head of Safety in analyzing events which warrant pilot counseling as per ANO-28 and FDM SOP.
ix) Prepare a summary, whenever needed, of even low severity events which can potentially become hazards and detrimental to safety of operations.

5.4. ACCOUNTABILITY, RESPONSIBILITY AND AUTHORITY FOR MANAGING SAFETY

The ultimate responsibility, accountability for operational Safety and implementation of SMS program lies with the Accountable Executive. Being on the top of the tier for assuming safety responsibility, Accountable Executive has complete power & authority for making decisions to manage safety and in order to do so may acquire or manage resource provisions including finance and human resource.

Each managerial and non-managerial position assuming responsibilities as defined in this chapter, are vested with authority to carry out the required functions within the criteria laid down by company procedures and relevant legislative, standard etc.

With the defined non exhausting safety responsibilities, the individuals are accountable to report to the higher level of management within the hierarchy of the organization.

Note: Please refer to the Corporate Job Description Manual for latest JDs. Corporate Job Description Manual is the prime reference in this regard supported by responsibilities stated in respective policy/operational manuals, SOPs and CSMS and Corporate Quality Manual.

5.5. ACCOUNTABILITY, RESPONSIBILITY & AUTHORITY OF ALL MANAGEMENT POSITIONS

As with the key position holders for implementation of SMS within the organization, all other managers are accountable to the higher echelons for maintenance and enhancement of safety within their areas of responsibility, for which they are authorized to carry out the respective tasks in accordance with company and regulator's orders, regulations and legislatives.

The key safety responsibilities of all managerial positions are as follows;

i. Provision of safe workplace, equipment and safe system of work for the employees.
ii. Ensure employees (front line personnel in particular) are trained for the particular task, competent and have undergone safety training (SMS training).
iii. Review and adhere to applicable safety laws, regulations and standards.
iv. Carry out hazard identification and risk management within the area of their responsibilities.
v. Regularly monitor and review the safety performance within their areas of responsibility.
vi. Encourage safety reporting of the personnel within their areas.
vii. Assist employees in understanding the safety aspects of particular tasks within their areas.
viii. Ensure provision of personal safety equipment and emphasis on the mandatory usage of such equipment(s).
ix. Take reactive and / or preventive measures to avoid unsafe working conditions.
x. Promote safe working methods amongst the employees within their domains.
xi. Avoid risk taking and rationalize the risk before carrying out or allowing any activity within their area of responsibility.

5.6. ACCOUNTABILITY, RESPONSIBILITY & AUTHORITY OF NON-MANAGERIAL POSITIONS

In any organization the extent of implementation of safety systems is in majority achieved through the workforce, especially the front line personnel. Hence these non-managerial individuals are authorized through PIA's safety policy to carry out actions in the interest of safety.

The non-managerial staff is accountable to fulfill their responsibilities as follows:

i. Personnel are required to conduct themselves in a manner that is consistent with the company safety rules and policies.
ii. Refer to latest applicable SOPs, safety related laws, regulations and procedures and ensure their actions commensurate with it.
iii. Use equipment, personal protection and procedures as devised for the operations.
iv. Report identified hazards through appropriate reporting channel.
v. Voluntarily report safety breaches (unsafe acts and unsafe conditions)
vi. Where applicable take necessary action to mitigate safety issues.
vii. Be familiar with the safety aspects of operational field where they work.
viii. Prevent unsafe acts or conditions and avoid undue risk.
ix. Take the safest course of action keeping in view the company's efficiency and productivity requirements.
x. All employees of the Organization are required to follow the Safety Management System Manual, with particular understanding of the hazard identification procedure, including use of SIMS, Safe Card, and all other reactive and proactive means of reporting. Employees are encouraged to identify threats/hazards to their managers / supervisors such as their DCEs in Engineering and Maintenance for respective staff, and suggest remedial measures to reduce or eliminate or minimize the risk.
xi. It is an individual responsibility to act according to PIA, National and International statutory requirements, for which organizational manuals are available on PIA Intranet and relevant documents of other organizations shall be attained for respective sources.

As individual employees are responsible for their actions, each is also accountable to his or her GM for the safe performance of their functions and may be called on to justify their actions. Although individuals will be accountable for their own actions, Departmental Divisional Heads are accountable for the overall performance of the group that reports to them.

The reporting lines on the organizational chart depict the management levels and accountabilities. For particular activities, in operationally critical areas the effective delegation of responsibilities must be established when principal office holders are unavailable.

5.7. MANAGEMENT REVIEW COMMITTEE, SAFETY REVIEW BOARD & SAFETY COMMITTEE

Management Review Committee (MRC) is a structured committee of top level management which includes all Departmental heads and is headed by the Accountable Executive. The MRC meeting is a formal review to evaluate the effectiveness of the Organizational Management system including aspects of safety and quality. The MRC meetings are held atleast once for each year.

Safety review Board (SRB) is similar to MRC with the exception that safety matters are exclusively managed. SRB is also headed by the Accountable Executive and includes all relevant departments including the Chief Financial Officer. SRB meeting shall also be held atleast once for each year.

The safety committee activity shall be headed by Head of Safety / Safety Manager on behalf of Accountable Executive. COMO & CCAO / Director(s) Engineering & Maintenance, Director Flight Operations / Chief of Flight Operations (CoFO), Chief Pilot (Standards), Equipment Chief Pilots, Chief Engineer (QA), Dy. Chief of Flight Safety, DGM – SMS, DCE HF & SMS (QA) shall be the attending members, however, The minimum quorum shall have Chief of Safety, COMO & CCAO, CoFo or Chief Pilot Standards, CE QA, DGM SMS or DCFS and the rest of the members may be represented by their qualified delegates who shall be authorized to respond and assist in decisions making during the meeting, or as required. Besides the above mentioned members, chair may invite any other departmental / divisional head as co-opted member to address their related safety issues. This can also be referred to as coordination meetings. Safety Committee meetings are convened at least twice a year or more frequently (as required).

SRB and Safety Committee meetings are convened for the purpose of:

i. To review SMS of PIA and safety performance.
ii. To work in conjunction with the SAG (Safety Action Group) working.
iii. To review SAG proposals through justified risk assessments.
iv. To review actions taken by line managers and their effectiveness.
v. To review matters of safety put up by Head of Safety / Safety Manager.
vi. To ensure advice on appropriate allocation of all resources.
vii. To review (if required) the safety matters pertaining to contractors

Safety performance is reviewed by analysis result of internal audits, inspections, safety data, safety recommendations and investigation outcomes to ensure proper functioning of airlines operations, as well as capability to respond to external audits such as AOC, IOSA, etc.

Management Review Committee (MRC) is the highest forum which may have embedded functions of Safety review Board (SRB) / Safety Committee.

Minutes of above mentioned committee / board meeting(s) shall be maintained and distributed to all concerned by Head of Safety or his designated representative. Records shall be retained at Head of Safety office for atleast three (03) years from the date of convening of meeting(s).

5.8.1. SAFETY ACTION GROUPS (SAGs)

Safety Action Group (SAG) is a platform for dealing with safety related issues pertinent to the department / division. It shall have representation of all divisions from the Department. The SAG members are mainly the Management staff, but front line personnel or supervisory level staff may also be made members permanently or temporarily as per requirement. Furthermore, members as appropriate to each SAG from the following divisions of each department must be part of the SAG; Training, Operations, Planning, Standards / Monitoring, Scheduling etc. For Engineering and Maintenance SAG, the minimum composition of SAG contains members from

1. E&M contain members from Line Maintenance, Base Maintenance, Maintenance Operations Centre, Airworthiness Management, and Engineering QA.

.

The members of SAG may be added as per requirements of each departmental SAG and as per following criteria:

a) Individual expertise (administrative, technical etc.)
b) Level of Safety knowledge
c) Divisional lead / designated representative / nominated deputy

List of Departmental SAG members shall be prepared by Departmental head in coordination with concerned SAG coordinator and approved by the Head of Safety. For Corporate Safety division, SAG members list shall be prepared by DGM SMS and approved by the Head of Safety. The list(s) shall be maintained by relevant department's SAG coordinator(s).

5.8.2. SAG COORDINATOR / SAG FUNCTIONS' MANAGER DUTIES & RESPONSIBILITIES:

Each SAG shall have atleast one or more SAG coordinator(s) who is responsible;

i. To maintain liaison with Corporate Safety Department in the matters of SAG functions.
ii. To coordinate for relevant SAG / Departmental SAG meetings.
iii. To ensure recording the decisions made in the SAG meetings, further ensuring follow-up actions to be marked and brought up in later meetings for finalization.
iv. To participate as a SAG member in departmental / divisional risk management.
v. To work for effective and efficient HIRM process. This includes corresponding with relevant individuals / offices within respective Department.
vi. To act as an integral part of SMS implementation process.

The duties and responsibilities for SAG coordinator may be over and above regular duties of individuals functions that they may be performing in a designated role.

5.9. SAFETY AUTHORITIES AT DIFFERENT LEVELS OF MANAGEMENT

Below is a table that defines authority to manage safety issues at different tiers in the organization, including risk acceptability.

Levels of Management	SMS Role	Authority
Accountable Executive / Chief Executive Officer	Accountable Executive.	To appoint Corporate Safety Manager to manage day to day SMS implementation on CEO's behalf. In case of any Safety or Security concern/threat to aircraft operation, CEO is authorized to stop/limit/restrict operations and/or demand immediate corrective/preventive actions.CEO is authorized only to decrease the risk tolerability levels assessed by Safety Action Group(s).Authority to adopt/implement risk based decision making in the organization.
Head of Department &/or Independent Divisions/Sections reporting to Accountable Executive.	SAG Member/ SMS Dept./ Div. Lead	Authority to appoint/nominate SAG members and/or form more than one SAG to cater for adequate hazard identification for particular safety critical area(s), sub-function(s), task(s) and/or activity. Authority to take risk based decisions to provide resources for ensuring Safety & Security of operations. In case of any Safety or Security concern/threat to aircraft operations, he/she is authorized to recommend stopping/ limiting/ restricting operations to the accountable executive.
Divisional Heads/DGMs/DCEs/ DCPs reporting to department head	SAG Member/ SMS Div. Lead	Authority to invite any employee to SAG meetings and investigate operational non-routine occurrences. Authority to take risk based decisions to demand/initiate minutes for resources for ensuring Safety & Security of operations. In case of any Safety or Security concern/threat to aircraft operations he/she is authorized to recommend risk based (stopping/ limiting/ restricting operations) action to departmental head. Based on verbal inputs from operational supervisors/staff they are authorized to raise a Safety report. Authority to remove/replace operational supervisors for ensuring safe & secure operations.
Operational Supervisory Staff/Officers	SAG Member/ SMS member	Based on verbal inputs from operational staff they are authorized to raise a Safety report. Authority to restrict access and/or take appropriate action against staff in case he/she has objective reason & evidence that particular person is posing a threat to the safety and security of aircraft or operations.

5.10. LINES OF SAFETY ACCOUNTABILITIES

Safety accountabilities run parallel with the administrative structure of the organization depicted by organization charts showing reporting hierarchy. Heads of all operational departments are directly accountable to the Accountable Executive for the following:

i. Implementation of all elements of SMS framework within their department, in line with broader SMS implementation/integration plan.
ii. Represent their department in Safety Review Board Meetings / MRC / Safety Committee, internal SAG and external safety meetings.
iii. Setting SMART departmental/divisional Safety Performance Targets and KPIs.
iv. Regular communication of performance reports for senior management review.
v. Timely reporting of occurrences and adequately responding to queries and complaints.
vi. Ensure reporting incidents / near misses / accidents to Corporate Safety on a mandatory basis.
vii. Effective & timely implementation of corrective & preventive actions and/or safety recommendations.

Timely provisioning of adequate resources / implementation of strategies for risk mitigation for safety & security of aircraft operations in particular and other operations in general.

5.11. THE ROLE OF CORPORATE SAFETY DEPARTMENT

Establish and maintain an effective 'Safety Management System' (SMS) program in the Airline aimed at the systematic management of the risks associated with flight operations, related ground service operations and engineering & maintenance activities in order to achieve the highest levels of safety performance.

5.11.1. CORPORATE SAFETY RESPONSIBILITIES FOR MANAGING SMS

i. Establish and maintain an updated data base to record histories of all past accidents, incidents and occurrences and to determine or predict future trends.
ii. Investigate accidents and incidents to establish their root causes and to recommend measures for preventing their recurrence.
iii. Advise top management on associated safety regulations, safety standards and any changes there to, in a timely manner.
iv. Initiate a program of internal Safety Audits at specified intervals (frequency not to exceed once a year), and to verify implementation of audit observations and recommendations of the Flight Safety Committee meeting points.
v. Recommend specialist surveys on matters affecting flight safety.
vi. Establish and maintain the Company's Confidential Hazards Reporting and Investigation system.
vii. Establish and maintain Air Safety Reports (ASR) data base.
viii. Identify human errors involved in the aircraft incidents and hazardous events and recommend measures for their avoidance.

Implement effective Risk Management to proactively assess risks and take actions to mitigate their effect as low as reasonably practicable.

5.12. SAFETY MANAGEMENT SYSTEM STRUCTURE IN PIA:

SMS is implemented through the respective divisional, sectional or station's management personnel, specifically, by a group of experienced personnel nominated as members of **Safety Action Group (SAG)** by the Divisional Head.

SAG meetings are chaired by the Chiefs / GMs or their delegated staff, for example in Engg. & Maint. The COMO and CCAO head and chair the SAG meetings or can delegate Chief Engineer(s) if for reasons they may not be available. SAG is required to meet on at least a monthly basis to undertake following functions for ensuring SMS implementation. There could be more meetings than one, all divisions may not be required to be part of all the meetings, subject to the issues not being part of their domain.

The SAG meetings are conducted to;

a) Review and analyze the SIMS / Software based HIRM reports/issues and safety trends
b) Identification & review of identified existing & potential operational safety hazards
c) Identification and review of risks (consequences) of identified hazards and risk level assessment of consequences
d) Identification and review of existing controls & guards (defenses) that are already available in the system, and their impact on the base risk level, to calculate the existing/ actual risk level
e) Identify new or additional controls and guards (solutions) to bring the existing/actual risk level to the organizational minimum acceptable risk level or to totally eliminate the risks, if possible
f) To take initiatives based on risk assessment and ensure that the overall system risks are reduced to an acceptable level and/or maintained at lowest levels
g) To follow-up on management decisions and ensure effective implementation of controls
h) To generate performance reports for management review in coordination with DQC and solicit decisions from applicable levels of management
i) To define objectives based on safety performance and SMS implementation and ensure their achievement and analysis for identifying areas for continual improvement
j) To give inputs on significant issues to Safety Committee, SRB and MRC

Minutes of SAG meetings are recorded by the SAG coordinating staff (delegated for coordination and other tasks) such as the Deputy Chief Engineer (QA) HF & SMS in Engineering and Maintenance.

The minutes are maintained by each of the SAG in hard copies (additionally, soft copies may be retained) at the respected office of SAG coordinator and soft copies are communicated by the SAG coordinator with the Safety Manager either directly or through his designated representative of Corporate Safety.

CHAPTER– 6

VOLUNTARY AND MANDATORY SAFETY REPORTING SYSTEM

6.1 SAFETY HAZARD REPORTS GATHERING METHODS

While maintaining continued operations, there is always an inherent safety risk in aviation operations which may not be eliminated but can be mitigated to an acceptable level through cost benefit analysis. This is done through a process of 'Hazard Identification, Risk Assessment & Management'.

Safety hazard identification (safety & aviation security hazards) is the foremost building block of the process to manage the organizational SMS and is carried out through various modes. Some of the sources of safety hazard information which are initiated and processed as per applicable regulations are given below:

a) Differences from Legislatives (PCAA or International CAA) standards and regulations.
b) OEM / Manufacturer information.
c) Investigations (internal and industry data).
d) Incident & Accident data (internal and external).
e) Audits, spot checks, surveys, safety assessments and inspections.
f) Task analysis (By identification of hazards in each step of tasks being performed).
g) Predictive evaluations (brainstorming / rational analysis)
h) Flight Data Analysis (Predictive Approach)
i) Mandatory / Voluntary / Confidential safety reporting

The internal safety reporting which is voluntary in nature but nevertheless one of the most important of all sources in identifying hazards at the front-line including the anonymous / confidential employee reports received through regular confidential reporting system such as:

j) Web based SMS reporting application (refer Chapter 6, this chapter, for details),
k) Phone calls,
l) Paper based safety reports on Form No.: CS/SMS/HR/01. All such forms shall be forwarded to Corporate Safety (Head of Safety or DGM SMS) for maintaining centralized records,
m) Electronic mails (action to be carried out after confirmation of hazard and record shall be maintained),
n) Verbal reporting to Corporate Safety directly.

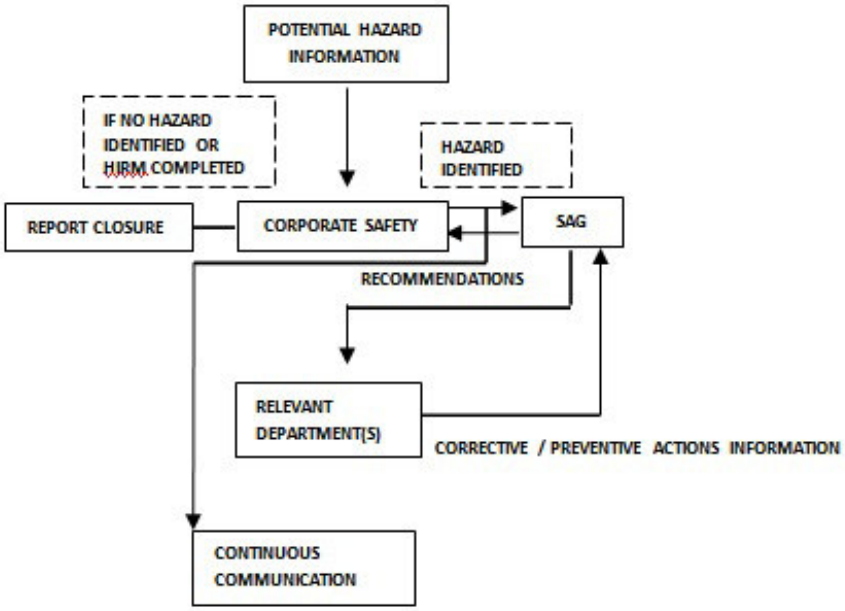
Record of phone calls and verbal reporting shall be maintained officially by relevant management (Corporate Safety) as a hard copy by the Safety Manager / Head of Safety or his delegate and anonymity shall be ensured if desired by the reporter. Corporate Safety shall raise a safety report in Web based SMS reporting application for actions and follow up. One of the official numbers to call (other being contacts of Corporate safety Managerial staff) for safety reporting is 021-99044486, however required information of the safety concern and the reporter for identification or follow up communication shall be provided for the report to be validated.

The table next depicts most of the sources (as stated above) within PIA for hazard data collection. All below mentioned reporting mediums are to be communicated by responsible department(s) / officials through official mail or through email etc.

Note: Forms such as the MOR, CAAF-114-AWRG are sent to PCAA and / or BASIP, furthermore these are also used by PIA for hazard data gathering.

DESCRIPTION OF EVENT / HAZARD	REPORTING RESPONSIBILITY	DOCUMENT	
Accident Reporting *(Mandatory Reporting)*	Pilot-in-command	De-Brief/ASR	APP A1 - Electronic & APP 'A2'
	Head of Safety	MOR-1 (CAA Form F.1-41)	APP 'B-1' - Electronic
	Chief Engineer AWM	CAAF-114-AWRG	APP 'B-2'
Incident Reporting *(Mandatory Reporting)*	Pilot-in-Command	De-Brief/ASR	APP A1 - Electronic & APP 'A2'
	Head of Safety	MOR (CAA reporting portal	APP 'B-1' - Electronic
	Engineering & Maintenance – CE AWM	Delay / Defect / Incident Report (DE/92/001)	APP 'L'
Air Safety Reporting / Hazard reporting *(Mandatory & Voluntary Reporting)*	Cockpit crew	ASR Form	APP 'A-A2'
Confidential Reporting *(Mandatory & Voluntary Reporting)*	All PIA Employees	CS/SMS/HR/01	APP 'D'
Occurrence Reporting (Additional) **E forms will be completed by the operating crew and will be forwarded to operations control.**	E series forms to Head of Safety will be routed through General Manager Central Control	De-Brief Reports Bird Strike Report Near Miss Lightning Strike	APP 'A-1' APP 'E-1' APP 'E-2' APP 'E-3'
SIMS / web-based application for confidential reporting – Details in 6.4 *(Voluntary Reporting)*	All PIA Employees	A web-based application for confidential reporting for registered reporters	
Hazard Identification through Safety Risk Assessment (SRA)	Safety Action Groups (SAGs) & Corporate Safety	Safety Action Group (SAG) Meetings Minutes	
		Management of Change (MoC)	
		Incident / accident investigations	
		Hazard / Risk Register(s)	
Flight Data Analysis	Head of Safety	FDA monthly trends	
Hazard Reporting	Head of Safety	Anonymous or confidential reporting through telephonic conversation or Emails etc. ***Note: Record of both shall be maintained and any action shall be subject to confirmation of such hazard.***	
Hazard Reporting	1. Situation Room 2. Managerial Employees 3. Staff	Through emails to Corporate Safety and / or Emergency Response Centre (ERC)	

6.2 PROCESS FLOW FOR SAFETY REPORTING AND REMEDIAL ACTION(S)



* Required review is carried out by SAGs for HIRM effectiveness

6.3 PIA's INTERNAL PROCEDURES FOR SAFETY HAZARD REPORT MANAGEMENT

The information received by the organizational SMS directly is handled by Corporate Safety and shall be evaluated for it to qualify for containing safety hazard information by competent staff at Corporate Safety (DGM SMS / DCFS or likes thereof). Once it qualifies as being a safety hazard then it is processed as detailed in chapter 7 for risk assessment, root cause analysis and risk mitigation.

In case if the information does not qualify as a safety hazard either directly or as an indirect safety hazard, it shall be disposed off. However, record shall be maintained for such (for confidential reports the record is maintained in SMS software by report handling staff) and when reported by individual(s), the reporter shall be informed accordingly. Evaluation of mentioned qualification of information is carried out by careful analysis to verify if the reported potential hazard is by direct or by indirect means and affecting or may affect operational aviation safety. In case of OHS issues, these are forwarded to HSE.

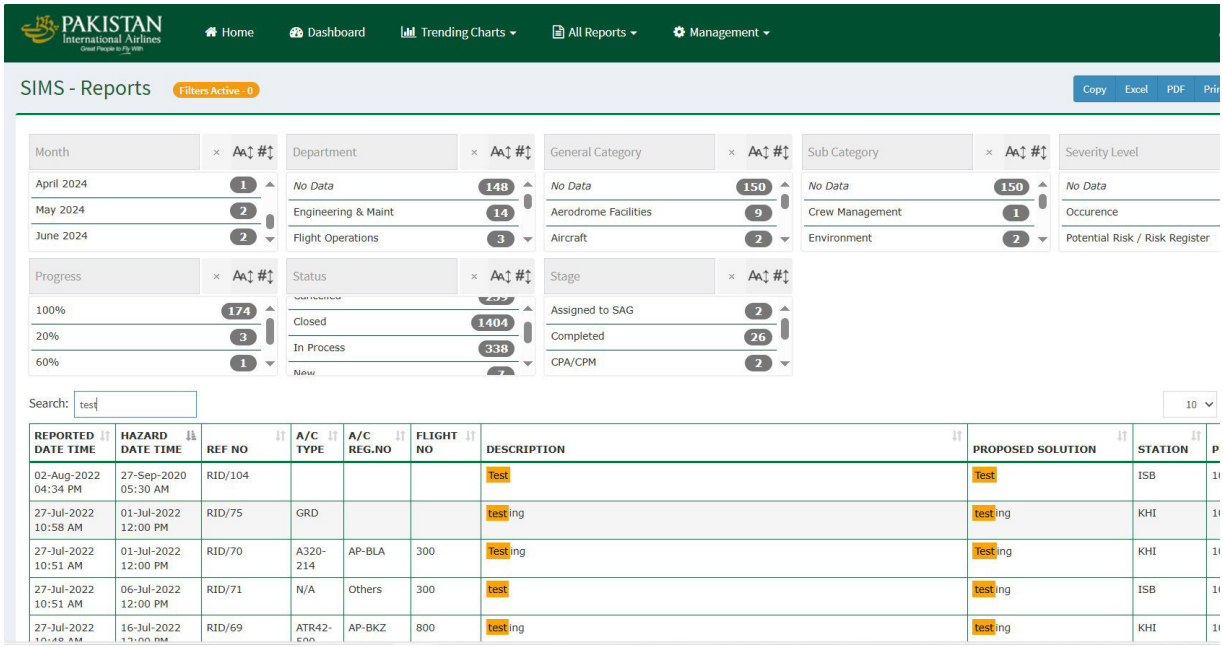
6.3.1 NON-ROUTINE OCCURRENCES, IRREGULARITIES AND REPEAT OCCURRENCE(S)

Investigation of all non-routine occurrences and irregularities highlighted through inspections and / or reports having "Safety concerns" will be initiated by Deputy Chief Flight Safety, DGM SMS or DGM HSE, who may include relevant technical personnel from concerned Department to assist in the investigation, if needed.

In case of minor incidents or hazardous conditions reported, a report of facts may be requested from the department concerned. Root Cause Analysis (RCA) will be carried out by the concerned Department / Section in coordination with Corporate Safety as per PIA investigation procedures (Refer Chapter 8) for recommendation of corrective and preventive actions. During the course of investigation of non-routine occurrences & irregularities, if significant deficiencies are identified within the system, a formal investigation for these may be initiated upon recommendation of Deputy Chief of Flight Safety, DGM SMS or DGM HSE.

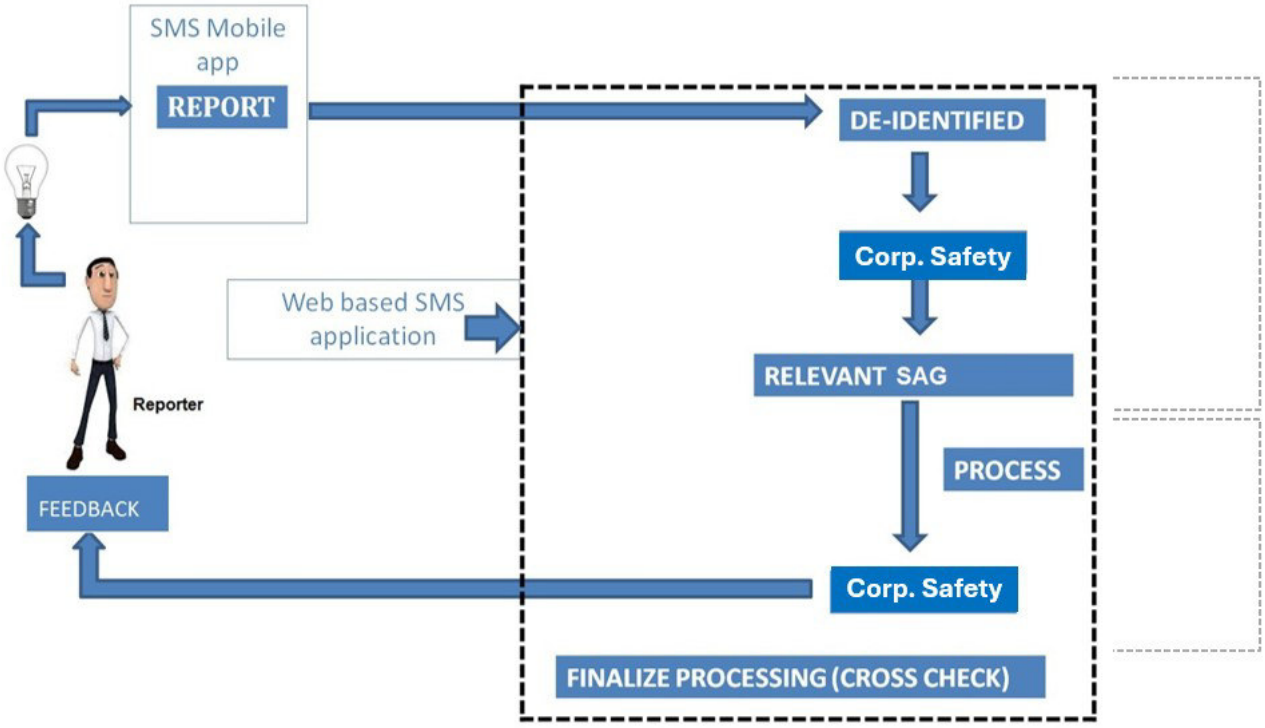
6.4 SAFETY DATA COLLECTION THROUGH WEB BASED APPLICATION / SOFTWARE

A phone application and web-based software tool (both interlinked to work in conjunction) are also utilized for anonymous, confidential or voluntary reactive, proactive and possibly predictive (reporters predictive perspective) reporting, HIRM and feedback to the reporter. This is in addition to the other reporting methods through ASR, confidential reporting forms etc.



SMS web-based solution provides PIA Corporate Safety a platform to receive confidential safety reports (anonymous to regular users), analyse these, record actions taken and manage safety issues in collaboration with SAGs and respective departments. It promotes the confidential reporting culture by using options to filter out the reporter's identification information from report's contents, however in case of extreme requirement to de-identify the reporter, a special account 'Super-Admin' is utilized to identify the reporter and activity of de-identification is logged.

The flow chart of report processing using mobile app & web-based software is next;



The report is generated using the mobile app "PIA Connect" by the reporter and the information is automatically sent to the web-based SMS information management system. Where it is received by the Corporate Safety (DGM SMS or other Admin), it is initially analysed and forwarded to the SAG's area it is pertinent to.

Once the HIRM process is completed by the SAG, the report is finalized and then after a cross check for processing, Corporate Safety closes the report along with sending feedback to the reporter for report processing (the feedback is received by the reporter through the mobile app).

6.4.1 Key Roles and Workflow in Web / Mobile based SMS Reporting Application

There are 4 key roles designed in the application from reporting, risk management till feedback provision with their assigned roles described in subsequent sections.

a. Reporter
b. Admin
c. Super Admin
d. SAG Coordinator / USER

a. Reporter

Reporter can be any person having access to web (mobile) based PIA reporting app, who can identify a hazard and generate safety report. The ideal function of a reporter is to submit reports of potential safety hazards observed during every day work, however, events / incidents that have already occurred can be reported as well.

b. Admin

Normally admin duties are performed by DGM SMS. Initially the report is received on the web-based software by the Corporate Safety 'Admin', who is responsible for sorting out the reports according to the domain they may fall in, and then forward the report to relevant SAG for HIRM process, which will also be evaluated and adjusted by Corporate Safety, as required.

Initial filtration is carried out by the 'Admin' by filtering the reports that do not pertain to matters of safety and these unrelated reports are discarded (closed without any actions) or closed along with feedback to the reporter to seek an administrative channel for reporting non-safety issues.

Admin has the authority to create, edit and delete USER accounts, SAGs and other such information.

c. Super-Admin

This role has all the powers of the 'Admin' and an additional feature of being able to de-identify the reporter. Hence, for the same reason the account is not utilized under normal circumstances and is used only in case of dire need.

The super-admin account is controlled by GM Corporate Safety / Head of Corporate Safety himself / herself and may be handed over to a responsible individual(s) who is not involved in general processing of the safety reports.

Once the account is accessed to identify the reporter in coordination with DGM SMS, the information along with the reason for de-identification is documented by DGM SMS.

d. SAG Coordinator / USER:

A user account is created in the web-based reporting application; this user account is pertinent to its SAG. Hence, the account(s) are being used generally by the coordinator(s) only and are utilized to process the safety reports.

The coordinators access the web-based safety reporting database, processes it along with the relevant SAG(s) and finalizes the report, and 'in-process reports' are discussed in SAG meetings.

6.4.2 SALIENT FEATURES OF THE WEB BASED REPORTING APPLICATION

The following are the salient features of the web-based safety reporting application, however due to the fact that continual improvement of the software itself is on the way, there may be slight changes from time to time for improvement of the system;

a) Only PIA employees are allowed by the system to make an account, hence fake reporting has been ruled out.
b) Anonymous chat function is available to acquire more information from the reporter without the need to identify the individual. This function is accessible only from the Admin's account.
c) The status of the report changes from 'OPEN' to 'Work in Progress' when the report is forwarded to any SAG for process initiation.
d) Status of the report changes to closed and is visible to reporter once the report is closed after processing; the reporter also sees feedback from Corporate Safety regarding their report.

6.5 DEFINITIONS FOR OCCURRENCES / SAFETY EVENTS

6.5.1 AIRCRAFT ACCIDENT

1. The Civil Aviation Rules (The Gazette of Pakistan, Extra, Oct.3, 1994, Part XV Accidents and Incidents) defines an aircraft accident as follows:
An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such times as all such persons have disembarked, in which:

a) A person is fatally or seriously injured as a result of:
   i. being in the aircraft, or
   ii. by direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
   iii. direct exposure to jet blast;
   Except when
   iv. the injuries are from natural causes, or are self-inflicted, by other persons, or
   v. the injuries are to persons secreting themselves outside the areas normally available to the passengers and crew; or

b) The aircraft sustains damage or structural failure which adversely affects:
   i. The further performance or flight characteristics of aircraft.
   ii. the airworthiness of aircraft which would normally require major repair or replacement of the affected component(s);
   Except when
   iii. the damage is limited to the engines, its cowling or accessories,
   iv. the damage is limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin.
   v. If the aircraft is missing.or is completely inaccesible.

2. For statistical uniformity only, an injury resulting in death within thirty (30) days of the date of the accident is classified as **'Fatal injury'**.

3. For the purposes of this manual, **'Serious injury'** shall be defined as injury that requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or results in a fracture of any bone (except simple fractures of fingers, toes, or nose).

4. An aircraft is considered to be **'missing'** when the official search has been terminated and the wreckage has not been located.

5. An aircraft accident is reportable to PCAA and to the State in which it occurs and to the State of its Registry (if other than Pakistan) on the online **MOR** filing provision (Refer Appendix 'B-1').

NOTE: Self-inflicted injuries, suicides or deaths by natural causes and deaths/injury not connected with the operation of the aircraft are not reportable under this procedure.

6.5.2 SERIOUS INCIDENTS

Serious Incident is an incident involving circumstances indicating that an accident nearly occurred.

The incidents listed below are typical examples of incidents that are likely to be serious incidents. This list is not exhaustive and only serves as guidance to the definition of serious incidents:

1. Near collisions requiring an avoidance manoeuvre to avoid a collision (some TCAS RA) or an unsafe situation where an avoidance action would have been appropriate.
2. Controlled flight into terrain only marginally avoided.
3. Aborted take-offs on a closed or engaged runway.
4. Take-offs from a closed or engaged runway with marginal separation from obstacle(s) or rejected take offs near V1 due technical reasons.
5. Landings or attempted landings on closed or engaged runways.
6. Gross failures to achieve predicted performance during take-off or initial climb.
7. Fire and/or smoke in the cockpit, passenger compartment, in cargo compartments or engine fires, even though such fires were extinguished by the use of extinguishing agents.
8. Events requiring the emergency use of oxygen by the flight crew.
9. Aircraft structural failures or engine components disintegration.
10. Multiple malfunctions of one or more aircraft systems seriously affecting the operation of the aircraft.
11. Prolonged flight crew incapacitation during flight.
12. Low remaining fuel quantity, requiring the declaration of an emergency by the pilot.

6.5.3 AIRCRAFT INCIDENT

1. An incident in relation to an aircraft is an occurrence other than an accident or serious incident associated with the operation of an aircraft which takes place either on the ground or in flight (blocks off to blocks on) in which:

   a) The aircraft suffers damage or a person suffers injury in circumstances other than those specified in the defination of accident or serious incident;
   b) The aircraft has a forced landing without declaring emergency;

c) The aircraft lands at a scheduled aerodrome in an un-airworthy condition;
d) The aircraft is compelled to land due technical reasons at the aerodrome of departure without completing the schdelued flight. Exceptions are thereif return is due to weather
   I. conditions en-route or at airfield of intended landing.
e) The aircraft lands owing to conditions which make continuation of the flight un-safe.
f) The safety of the aircraft or its occupants or of any other person's or property is jeopardised.

2. When third party injury or damage is caused or there is a serious possibility of damage by an aircraft to persons, property or other aircraft either on the ground or during flight.

3. When there is damage to the aircraft as to make it unfit for immediate flight as a result of collision with vehicles, equipment or obstructions.

4. Between the times all engines have been started for commencement of flight and before they are stopped after completion of flight,

   a. It becomes necessary to shut down an engine.

   b. There is a significant un-intended loss of power.

5. When the safety of the aircraft, its passengers or crew is, or could have been, jeopardized by any untoward occurrence including aborted take-off due to;

   a) Any external part of the aircraft becoming detached.
   b) Any defect which adversely affects the handling characteristics of the aircraft such as:
      i. Hydraulic system failure
      ii. Landing gear system, tire or wheel failure
      iii. Flight control system defect

   c) Pressurization failure
   d) Severe vibrations of airframe or engine
   e) Severe turbulence
   f) Leaving the paved surface during taxiing, take-off, or landing without causing extensive damage.
   g) Bird strike
   h) Lightning strike
   i) All TCAS RA maneuver, Air miss/Near Miss / ATC incidents.

6. When there is any significant load sheet or loading error, load insecurity, un-identified fumes, fuel leakages or damage caused by cargo or baggage in flight.

7. When a crewmember is incapacitated due to illness, the injudicious use of drugs, alcohol, etc.

6.5.4 AIRCRAFT OCCURRENCE

The term 'aircraft occurrence' is generally used for aircraft accident / serious incident or incident.

6.5.5 MANDATORY OCCURRENCE REPORT

All aircraft accident, serious incident or incidents are to be reported under the mandatory occurrence reporting scheme. Any event that is required by the PCAA to be reported through MOR, shall be reported when it occurs.

Relevant PCAA office shall also be informed within 48 hours by Corporate Safety after the receipt of information in case of occurrence of a high severity issue involving plants or equipment damage and / or human injury.

6.5.6 REPORTABLE OCCURRENCE (PIA EMPLOYEE MANDATORY REPORTING)

All accidents, serious incidents and incidents are reportable occurrences. However, along with these the employees are mandatorily required to report hazardous conditions and/or events.
All hazardous events (the term hazardous event is defined as an event which is not categorized in the definition of MOR, but if not addressed will / may result in serious consequences) as listed earlier and in addition are listed below, shall be reported immediately to Corporate Safety.

The following are some of the events / occurrences that require reporting(s):

1. When a **system defect** with a built-in redundancy occurs which may adversely affect the handling characteristics of the aircraft and may render it unfit to fly;
2. When there is a warning of **fire** or **smoke warning**;
3. When it is known that **safety equipment** or **procedures** are defective or inadequate;
4. When it is known that deficiencies exist in **operating procedures, manuals or navigational charts**;
5. When there is **incorrect or improper loading** of fuel, cargo or dangerous goods;
6. When **ground damage to aircraft** occurs.
7. When significant **handling difficulties** are experienced.
8. When there is a **navigation error** involving a significant deviation from the track.
9. When the **limiting performance parameters are exceeded** for the aircraft configuration or when significant **unintentional speed change** occurs.
10. When **communication fails** or is impaired for prolonged duration.
11. Whenever a **GPWS warning** occurs.
12. Whenever a **Stall warning** occurs.
13. Whenever a **heavy or hard landing check** is required.
14. Whenever serious **loss of braking** occurs.
15. When the aircraft lands with less than required **reserve fuel**.
16. When significant turbulence, wind shear or other **severe weather** is encountered.
17. When crew or passengers become **seriously ill** on board,
18. When there is difficulty in controlling unruly, violent, armed or intoxicated passengers or when passenger restraint device is used.
19. When toilet smoke detectors are activated.
20. When any part of the aircraft or its equipment is sabotaged or vandalized;
21. When security procedures are breached, affecting the safety of aircraft and its occupants.
22. Any other event considered having serious safety implications.
23. Occurrences related to aircraft ground handling and related services
24. Occurences related to aerodrome acticities and facilities

25. Occurences related to handling of passengers, baggage, mail and cargo
26. Occurences related to injury, emergencies and other critical situations

***Note:** For both routine and contracted operations a report must be submitted to the responsible regulatory authorities, following an act of unlawful interference on board a contracted aircraft.*

6.5.7 REPORTABLE DEFECTS (ENGINEERING & MAINTENANCE)

As per the PCAA ANO-004-XXSP and AWNOT-009-AWRG, most of the following kinds of defects are classified as reportable defects and are iterated for staff & E & M Managers to ascertain that the listed events or hazards potentially culminating into these are **mandatorily reported to Corporate Safety** along with the requirement of the AWNOT:

1. Engine failure, shut down or malfunction because of a defect. Or damage to engine accessories, propeller, pitch mechanism failure or unexpected performance such as feathering or pitch angle issues. Thrust reverser(s) fail to deploy or inadvertent deployment, power or propeller control issues, engine starting or shutting down issues etc.
2. A defect causing earlier retirement of part before completion of its life which is of significant nature, such as in power plant.
3. Exceedance of normal parameters of equipment.
4. Foreign Object Damage (FOD).
5. Damage to aircraft structure during ground phase or inflight operations. This shall include principal structure and in case of loss of any structural part in flight.
6. Leakage of fuel, oil, hydraulic fluid etc which may be considered to pose risk to aircraft or ground occupants and/or equipment, which includes bio-hazard. This applies to both maintenance as well as aircraft in-service for flight operation phases.
7. Maintenance Errors which may have resulted in an occurrence or are considered hazardous and may have been potential threat.
8. Non-Compliance of SOPs or laid down OEM procedures for maintenance.
9. Significant flight control problems.
10. Significant contamination of fuel.
11. Fuel starvation in flight as the result of a defect.
12. Uncontrolled or uncontrollable variable pitch propeller.
13. Failure of a component vital to engine operation.
14. Defects causing or likely to cause failure of the under-carriage to retract or extend properly, or to support the aircraft.
15. Defect causing or likely to cause failure of any flight or engine control system.
16. Defects causing or likely to cause failure of an actuating systems for flaps, under carriage, brakes etc.
17. Defects introducing hazardous instrument indications.
18. Critical A.C. or D.C. power system or electrical component failure.
19. Malfunction of emergency equipment.
20. Defects introducing serious malfunctioning of avionic components, excessive errors or other serious abnormalities in the operation of radio navigation systems are typical of reportable defects in this group.
21. Defects causing or likely to cause fires, smoke or toxic gases.
22. Defects causing or likely to cause contamination of the cabin, cockpit or baggage compartment.
23. Aircraft component or system defects that result in taking emergency action in flight e.g. loss of cabin pressure, necessitating forced descent or deployment of oxygen masks.

24. Failure, cracks, permanent deformation or corrosion in any portion of the aircraft the failure of which would seriously endanger the aircraft, unless the extent of the defect is less than the maximum acceptable to the manufacturer or to the Director Airworthiness.
25. Defects causing any abnormal vibration or buffeting.
26. Serious defects observed on an Engine/Component being tested after a repair or overhaul by the shop.
27. Hazardous defects/occurrence in any part of the maintenance and overhaul facilities of an organization.
28. Any other defects which the reporter considers may affect the safety of the aircraft or its occupants or cause the aircraft to become a danger to other persons or property.

6.5.8 STATUTORY OCCURRENCE REPORTING REQUIREMENTS

The statutory occurrence reporting requirements will have been deemed to be fulfilled when operational occurrences (as per CARs # 270 & 271 and ANO.91.0020) have been reported through the PCAA approved the Mandatory Occurrence Report procedures and latest instructions for its circulation followed.

When assessing the need to report an incident it is particularly important to bear in mind instructions in statutory instruments about the aircraft having been endangered, or would have been endangered, if no corrective action had been taken.

Reportable Engineering events having safety implications and found during overhaul or routine aircraft maintenance will be reported to PCAA through the office of the Corporate Safety, or Chief Engineer Quality Assurance as required by latest AWNOT-009-AWXX, and instructions in MOE / CAME and associated Engineering and Maintenance procedures.

6.5.9 'NEAR COLLISION', AIR TRAFFIC CONTROL AND OTHER SPECIAL INCIDENTS

The special reporting procedures covers MORs but also need to be reported on special forms developed for this purpose such as 'Near Collision', 'Bird Strike' etc.

6.5.10 AIRCRAFT PROXIMITY (NEAR MISSES)

A situation where in the opinion of the pilot in command or the air traffic service personnel, the distance between aircraft as well as their relative positions and speed had been such that the safety of the aircraft involved may have been compromised.

Due to the specific nature of these incidents and detailed information required for the investigation of these occurrences, the particular report form shall be used. (A copy of this, along with other reporting proforma is provided in **Appendix 'E-2'**).

The Air Traffic Incident report shall be filed by the pilot-in-command whenever he considers that his aircraft might have been endangered by the close proximity of another aircraft in flight to the extent that a risk of possible collision existed.

The 'Near Miss' Reporting Form (Appendix E-2) is intended for use by a pilot for filing a report on an air traffic incident after arrival or to confirm a report made initially by radio during flight;

6.5.10.1 Reporting of Air Traffic Incidents by Pilots

A pilot shall proceed as follows when involved in an Air Traffic Incident:

a) During flight, use the appropriate air ground frequency for reporting incident of major significance; particularly if it involves other aircraft so as to ascertain relevant facts immediately.

b) As soon as possible after landing submit the completed 'Near Miss' Reporting Form (given at Appendix E2).
   i. Confirm the report of an incident made initially as in (a) above, or make initial report of such an incident if it had not been possible to report it by radio.
   ii. Report an incident which did not require immediate notification at the time of its occurrence.
   iii. An initial air traffic report made by radio shall contain the following information.
      A. Type of incident, e.g., near miss (A/C proximity)
      F Radio call sign of aircraft making report
      J. Position, heading or route, true airspeed
      K. Flight Level, altitude and aircraft attitude
      L. IMC or VMC flight
      M- Date & time of incident in UTC
      N- Description of other aircraft
      O- Brief details about the incident, including where possible the sighting distance and miss distance
   iv. The confirmatory report of an occurrence (occurring within or outside Pakistani airspace) of major significance initially reported by radio shall also be submitted to the ATS Reporting office of the aerodrome of landing on the 'Near Collision' Reporting Form. (The pilot shall complete Sections 1 and 2 supplementing the details of the initial reports as necessary). When this is not possible, a complete incident report on the prescribed Performa shall be submitted to office of the Head of Safety (Corporate Safety), who shall carry out preliminary investigation and onwards submit the same to the PCAA so as to reach not later than 48 hours after the occurrence of the incident.

6.5.11 Handling of 'Near Miss' Reporting Forms

The purpose of the form is to provide investigatory authorities with the maximum possible information on an air traffic incident so as to enable them to report back with the least possible delay to the pilot or concerned operators about the results of the investigation of the incident and if appropriate, the remedial actions taken.

6.5.12 Bird Strikes & Lightning Strikes

Special report forms placed at **Appendices 'E-1' & 'E-3'** are provided for reporting these types of occurrences.

Whenever a special report form has been used and significant damage to the aircraft or injury is subsequently confirmed, it will be the responsibility of the Station Maintenance Manager or the Reporting Official to additionally raise a report so that Mandatory Occurrence Report (MOR) and CAAF-114 can be raised.

6.5.13 FLIGHT PHASES

Flight Phase	Code	Definitions
PRE- FLIGHT	PRF	This phase begins with the arrival of the flight crew at an aircraft for the purpose of flight; it ends when a decision is made to depart the parking position and/or start the engine(s). *Note: The Pre-flight phase assumes the aircraft is sitting at the point at which the aircraft will be loaded or boarded, with the primary engine(s) not operating. If boarding occurs in this phase, it is done without any engine(s) operating. Boarding with any engine(s) operating is covered under Engine Start/Depart.*
GROUND SERVICING	GDS	This phase begins when the aircraft is stopped and available to be safely approached by ground personnel for the purpose of securing the aircraft and performing the duties applicable to the arrival of the aircraft (i.e. aircraft maintenance, etc.); it ends with completion of the duties applicable to the departure of the aircraft or when the aircraft is no longer safe to approach for the purpose of ground servicing. *Note: The GDS phase was identified by the need for information that may not directly require the input of flight or cabin crew. It is acknowledged as an entity to allow placement of the tasks required of personnel assigned to service the aircraft.*
ENGINE START DEPART	ESD	This phase begins when the flight crew act to have the aircraft moved from the parked position and/or take switch action to energize the engine(s); it ends when the aircraft begins to move under its own power. *Note: The Engine Start/Depart phase includes: the aircraft engine(s) start-up whether assisted or not and whether the aircraft is stationary with more than one engine shutdown prior to Taxi-out, (i.e., boarding of persons or baggage with engines running). It includes all actions of power back for the purpose of positioning the aircraft for Taxi-out.*
TAXI OUT	TXO	This phase begins when the crew moves the aircraft forward under its own power; it ends when thrust is increased for the purpose of Take-off or the crew initiates a "Taxi in" phase.

		Note: This phase includes taxi from the point of moving under its own power, up to and including entering the runway and reaching the Take-off position.
REJECTED TAKE OFF	RTO	This phase begins when the crew reduces thrust for the purpose of stopping the aircraft prior to the end of the Take-off phase; it ends when the aircraft is taxied off the runway for a "Taxi in" phase or when the aircraft is stopped and engines shutdown.
TAKE OFF	TOF	This phase begins when the crew increases the thrust for the purpose of lift-off; it ends when an Initial Climb is established or the crew initiates a "Rejected Take off" phase.
INITIAL CLIMB	ICL	This phase begins at 35 feet above the runway elevation; it ends after the speed and configuration are established at a defined manuevering altitude or to continue the climb for the purpose of cruise. It may also end by the crew initiating an "Approach" phase. *Note: Manuevering altitude is based upon such an altitude to safely manoeuvre the aircraft after an engine failure occurs, or predefined as an obstacle clearance altitude. Initial Climb includes such procedures applied to meet the requirements of noise abatement climb, or best angle/rate of climb.*
ENROUTE CLIMB	ECL	This phase begins when the crew establishes the aircraft at a defined speed and configuration enabling the aircraft to increase altitude for the purpose of cruising; it ends with the aircraft established at a predetermined constant initial cruise altitude at a defined speed or by the crew initiating a "Descent" phase.
CRUISE	CRZ	The cruise phase begins when the crew establishes the aircraft at a defined speed and predetermined constant initial cruise altitude and proceeds in the direction of a destination; it ends with the beginning of Descent for the purpose of an approach or by the crew initiating an "Enroute Climb" phase.
DESCENT	DST	This phase begins when the crew departs the cruise altitude for the purpose of an approach at a particular destination; it ends when the crew initiates changes in aircraft configuration and/or speeds to facilitate a landing on a particular runway. It may also end by the crew initiating an "Enroute Climb" or "Cruise" phase.
HOLDING	HLD	This phase begins when the crew initiates changes in aircraft configuration and/or perform manoeuvre for the purpose of holding on air. It ends when the aircraft terminates holding and returns and/or resumes the previous manoeuvre before the holding, or proceed with the new instruction or clearance. The ground holding does not count as holding flight phase; instead, it would be classified into "Taxi in" or "Taxi out" phase.

APPROACH	APR	This phase begins when the crew initiates changes in aircraft configuration and /or speeds enabling the aircraft to manoeuvre for the purpose of landing on a particular runway; it ends when the aircraft is in the landing configuration and the crew is dedicated to land on a specific runway. It may also end by the crew initiating a "Go around" phase.
GO AROUND	GOA	This phase begins when the crew aborts the descent to the planned landing runway during the Approach phase, it ends after speed and configuration are established at a defined manuevering altitude or to continue the climb for the purpose of cruise (same as end of "Initial Climb").
LANDING	LND	This phase begins when the aircraft is in the landing configuration and the crew is dedicated to touch down on a specific runway; it ends when the speed permits the aircraft to be maneuverer by means of taxiing for the purpose of arriving at a parking area. It may also end by the crew initiating a "Go around" phase.
TAXI IN	TXI	This phase begins when the crew begins to manoeuvre the aircraft under its own power to an arrival area for the purpose of parking; it ends when the aircraft ceases moving under its own power with a commitment to shut down the engine(s). It may also end by the crew initiating a "Taxi out" phase.
PARKED POST ARRIVAL	AES	This phase begins when the crew ceases to move the aircraft under its own power and a commitment is made to shut down the engine(s) and ancillary systems of the aircraft for the purpose of leaving the flight deck; it ends when the flight and cabin crew leaves the aircraft. It may also end by the crew initiating a "Pre-flight" phase. *Note: The Arrival/Engine Shutdown phase includes actions required during a time when the aircraft is stationary with one or more engines operating while ground servicing may be taking place (i.e., deplaning persons or baggage with engine(s) running, and/ refuelling with engine(s) running).*

6.5.14 IN-FLIGHT

An aircraft is in flight from the moment when, after embarkation of its crew for the purpose of taking off, it first moves under its own power, until the moment when it next comes to rest after landing.

6.6. AIRCRAFT SUBJECT TO ACCIDENT / INCIDENT REPORTING PROCEDURES

1. All PIA aircraft
2. Aircraft on charter / wet lease to PIA
3. Chartered or Leased aircraft of a company which has made arrangements with PIA for the application of PIA's Accident and Incident Procedures;

4. Aircraft of other airlines and operators, that are handled by PIA (e.g. aircraft belonging to code-share / wet lease partners) which have been involved in an accident. Such accidents must be reported immediately and actions taken to record evidence until a representative of the aircraft owners or of the national investigating authority arrive to take charge.

6.7. REPORTING OFFICIAL FOR OCCURRENCES

The Reporting Official is the senior PIA official of the Reporting Station or a responsible official appointed by that person to act for him.

1. In the case of incidents of a purely technical nature, the Station Maintenance Manager (or equivalent) will act as Reporting Official.
2. All senior officials shall ensure that individuals nominated from various stations fully understand their duties and responsibilities. It is necessary for the nominees to delegate their responsibilities while absent or off duty.
3. If an accident or incident takes place away from the base or at an airport where PIA is not represented, the Commander of the aircraft will act as the Reporting Official. If he / she is notable to report, then the nearest PIA station is required to provide necessary reporting services.

6.8. REPORTING STATION

The Reporting Station is normally the Station at which the Reportable Incident / Accident occurs or its nearest Station. If the aircraft is airborne at the time but the flight is not interrupted, it is the next station of Call. If an aircraft becomes overdue or missing the Reporting Station for immediate signal action is the Station first informed by ATC.

6.9. INVESTIGATION OFFICIALS

Head of Safety or an authorized member of the Corporate Safety Department will appoint qualified investigators to investigate a particular occurrence (Refer Chapter 8)

6.9.1 PIA EVIDENCE COLLECTION / RETAINING PROCEDURE

The mandatory accident flight recorded data and other exhibits shall be offered to the representative of the State concerned, in accordance with local regulations. Certified copies of all such documents or photographs of exhibits, if applicable, shall be retained for PIA investigation which will continue in the normal manner. The PIA investigating officer shall work in conjunction with the representatives of the concerned State and offer to them all possible assistance.

6.10. INCIDENT MANAGEMENT COMMITTEE (IMC)

The incident management committee (IMC) within PIA has the function to manage incidents (minor or serious) and strive to avoid recurrence.

6.10.1 COMPOSITION

The committee comprises of Head of Safety as the head and DGM SMS, DCFS, DGM HSE and Corporate Safety staff as the members of the committee.

For investigative purpose or support functions individual(s) can be co-opted.

6.10.2 FUNCTIONS

The main function of the committee is to manage an occurrence in order to avoid recurrence in future, for which the following process is carried out;

a) Immediate remedial actions to avoid further repercussions of the event
b) Relevant investigative evidence collection
c) Information communication to PCAA & BASIP
d) FDA (Flight Data Analysis), if applicable
e) Technical analysis / Investigation
f) Risk Assessment
g) Investigation to find causal factors (direct & indirect) and root cause analysis
h) Generation of corrective and preventive control measures as recommendations to be followed
i) Follow up on the recommendation compliance.

6.11. REPORTING PROCEDURES

One of the important aspects of an efficient SMS is an effective HIRM process and so the hazard reporting is initial key component that would further expand into calculation of risk and appropriate control implementation.

There is an internal process that is utilized in PIA for SMS, and there is another mandatory process followed for reporting information to PCAA (regulator) to ensure communication of occurrences and then the same database is also made part of the SMS hazard register to be utilized for risk assessment etc.

a. Internal Reporting of Hazards (Mandatory Reports)

There is a mandatory requirement for reporting of certain issues, conditions / incidents. These are the ones that mandate raising an MOR or CAAF-114-AWRG. However, when it comes to internal reporting to Corporate Safety by managerial and non-managerial staff.

The following are additional conditions mandating a report to be raised internally to Corporate Safety;

i. Any hazard (existing or latent) which is considered to be associated with high severity event.
ii. Any human injury while on duty.
iii. Near miss or significant nature involving humans, equipment, aircraft, infrastructure etc.

iv. Unsafe operations or practices being planned or executed.
v. Non-Compliance with relevant International or Local regulations (inadvertent or deliberate)
vi. When PIA personnel or third-party services carry out unsafe acts.
vii. Any security threat.
viii. Technical or operational anomalies rendering an aircraft to be unusable for flight operations due to reduced technical or operational performance / redundancy.

a.1. Additional Non-Punitive Reportable Occurrences

i. Facility and navigation aid inadequacies;
ii. Hazardous conditions;
iii. Air traffic incidents;
iv. Bird strikes;
v. Dangerous goods incidents; and
vi. Acts of unlawful interference.
vii. Tool(s) lost during maintenance
viii. Ground Service Vehicle Breakdown

b. Internal Reporting of Hazards (Voluntary Reports)

PIA commits towards making a conducive environment for voluntary safety reporting by its laid-out policy of no un-just action towards personnel reporting their own or others' errors / mistakes or system deficiency. Additionally, along with the above stated immunity, PIA ensures that confidential reporting system is maintained with trust and reliability so that confidentiality is ensured. However, 'Just Culture' is to be assured to ensure non-acceptable behaviours do not take advantage of the protection provided to unintentional errors.

c. Channels for Internal Reporting of Hazards

Channels to be utilized by employees for raising an internal report of mandatory nature are described in the beginning of this chapter. Voluntary report shall be raised through the same channel(s), the restriction to confidential reporting does not apply, subject to the issue being reported in not falling under the mandatory report raising criteria.

6.11.1 Mandatory Occurrence Reporting (MOR) Procedures

Statutory requirements call for the reporting of all significant events to the PCAA. These requirements are laid down in Civil Aviation Rules 270, 271 and ANO-004-XXSP. The responsibility for filing report(s) is placed on the following (as appropriate):

1. Pilot-in-Command (Through Corporate Safety)
2. An Officer authorised by the Head of Safety
3. Deputy Chief Engineer (concerned) from PIACL CAMO or AMO

Each shall make a report to designated office of PCAA or BASIP of any **reportable occurrence** which he / she has discovered and which qualifies against the criteria prescribed in Civil Aviation Rules 1994 and ANO-004-XXSP or any other PCAA regulation on the subject.

6.11.2 Responsibility for Reporting the Occurrence

In order to meet statutory requirements (in consonance with CAR 270 & 271 and other PCAA regulations) and PIA policies / procedure, it is the duty of the Pilot in Command, Situation Room & DCC personnel, Aircraft Engineer present at, or at the nearest station, and the Reporting Official to ensure that the correct reporting action is taken as soon as possible after the event.

All aircraft accidents, serious incidents and incidents must be reported through the Mandatory Occurrence Reporting (**Appendix 'B-1'**).

Reportable technical occurrences having safety implications observed during overhaul or routine aircraft maintenance will be reported to PCAA through the PIACL CAMO, as required by ANO-004-XXSP and **AWNOT-009-AWRG.**

6.11.3 Notification of Accidents / Incidents to PCAA

The pilot in command, aircraft engineers, ramp supervisors, area managers and concerned employee(s) are responsible to report the occurrence to Situation Room or nearest PIA responsible office such as operations, maintenance office or traffic office, who in turn are responsible to inform the same to Situation Room in Karachi using telephone, fax and any other fastest possible means of communication (While reporting Check Lists given at different appendices are to be completed).

On receipt of the information from above sources, the Duty Flight Operation Manager at Karachi is responsible to inform the occurrence / event to office of the Head of Safety, or to officer(s) designated by him on telephone as soon as possible. He is also responsible to inform other officials as per his check list (based upon the severity of the occurrence).

Punctuality and Delay Incident Report which covers accidents / incidents or hazardous conditions is sent to Head of Safety before 0900 hrs. covering preceding 24 hours by the Chief of Central Control. However, on holidays or weekends, the above report is submitted to Head of Safety on the first working day before 0900 hrs. In all cases, accidents / incidents are conveyed to the responsible officials by telephone even on holidays and weekends.

Corporate Safety will be responsible for notifying the accident, serious incident or incident to designated offices of the PCAA or the BASIP, as applicable.

The CAR 1994 Rule 270 and ANO-004-XXSP require this information to be provided to PCAA immediately by quickest means in case of accident or serious incident; CAR Rule 271 requires this information to be provided to PCAA within 48 hours in case of an incident.

6.11.4 AIRCRAFT ACCIDENT COMMUNICATION THROUGH EMAIL OR ANY APPROPRIATE WRITTEN INFORMATION SOURCE-– GENERAL

1. When an accident occurs, an aircraft accident information is to be sent to the Situation Room and to the Corporate Safety Karachi by the Reporting Official as soon as possible even if other appropriate documentary sources of information are not readily available.
2. The Situation Room will immediately initiate action to contact staff according to the appropriate Notification List as given in ERP Procedures.
3. The provisions of this section shall also be followed when any incident occurs, which in the opinion of the Reporting Station, warrants the use of this procedure.
4. The Flight Operations Control (Situation Room) and office of the Head of Safety, shall be informed at addresses given below;

Situation Room, PIA, Head Office, Karachi.
Telephone: 021-9904-3961 &9904-4972
Fax:021-99242361
Email: khiovpk@piac.aero

Corporate Safety Department, PIA, Head Office, Karachi.
Telephone: 021-9904-4486, 9904-3524
Fax:021-99242322
E-mail: pksafe@piac.aero & khiofpk@piac.aero

5. The Reporting Official will copy all stations along the route (transit stations) if electronic email or such medium is being used.
6. On receipt of the message the office of the Head of Safety or his representative is responsible for notifying the Director General PCAA, or BASIP.
7. The Reporting Official must not delay dispatch of the message even if he is unable to provide all details initially. He is to put 'Not Known' in the relevant section if info is not known at that time. Later when he has obtained the necessary information, he shall send it subsequently as quickly as possible.
8. The text of all subsequent relating to an accident shall include with the registration mark of the aircraft concerned.

6.11.5 AIRCRAFT ACCIDENT COMMUNICATION TEXT

1. The standard format MUST be used- as given at **Appendix 'B-1'** MOR PCAA along with some additional information, as given further;
2. Prefix **'AIRCRAFT ACCIDENT'**
3. Name, Designation and telephone number of the officer reporting the accident/ incident.
4. Name of the Airport from which the message originated.
5. Type, Nationality and registration mark of the aircraft.
6. Name of the owner, operator and hirer (if any) of the aircraft.
7. Name of the Pilot.

8. Date and time (UTC) of the accident / incident, together with conditions of light (e.g. day, dusk, dark, moon, dawn, twilight etc.).
9. The last point of departure, the point of intended landing of the aircraft, service number and the nature of flight.
10. The location of the accident / incident with reference to some easily defined geographical point. (If in open country, by latitude and longitude or distance and bearing from a prominent place).
11. Total number of persons on board the aircraft,

    a) number of fatalities,
    b) Number of seriously injured.

The following information is required for passengers:

i. Surname followed by initials or first name.
ii. Gender
iii. Particulars of death or injury, giving present location.
iv. Nationality of passengers killed or injured.
v. Station of embarkation and intended destination.
vi. Contact addresses, if proceeding by the next available service to their destination.

If there are no casualties the words **'No Casualty'** are to be included. Each passenger shall be numbered to avoid confusion through transmission errors, and when known, staff passengers shall be listed separately.

J. The nature and cause of the accident / incident as far as known.
K. The nature and extent of damage to the aircraft.
L. Weather conditions.
M. General summary of the accident / incident / occurrence.

6.11.6 Telephonic Reports

In addition to the dispatch of an aircraft accident written text, the Reporting Official shall immediately telephone preliminary advice of the accident to the Situation Room, PIA Head Office Karachi. This telephone advice shall include as much authentic information about the event as possible as well as the number and type of casualties (crew, passengers and PIA staff separately, where known).

6.11.7 Notification of Accidents to Local Authorities

The pilot in command (if in sound physical condition and mental health) and the reporting official are responsible for notifying the local authorities about the accident without delay.

6.11.8 Mandatory Occurrence Report – Electronic Form (See Appendix 'B-1')

Pilot in Command, or in his absence, the First Officer or PIACL local representative, will complete an Air Safety Report on an accident or incident as soon as practicable after the occurrence.

Pilot in Command / local representative will hand over the original information document to the PIA representative such as Flight Operations or Agent at the scene of the occurrence or at the next Station at which the aircraft lands after the occurrence.

The purpose of the information provision is the speedy notification to all concerned of the general details of the occurrence and to fulfil the requirements of Civil Aviation Rules 1994 in respect of Mandatory Occurrence reporting.

Office of the GM Corporate Safety is responsible for notifying it to the designated PCAA office by utilizing the MOR reporting procedures.

NOTE:

The Reporting Official is responsible for sending an Incident Report / email to Situation Room & Corporate Safety for further processing.

6.11.9 E-MAIL OR INCIDENT SIGNALS

The Reporting Official shall send an e-mail or Incident Signal based on the Mandatory Occurrence Reporting info, to **pksafe@piac.aero** and to khiovpk@piac.aero and **khiofpk@piac.aero**. It shall be titled MANDATORY OCCURRENCE REPORT (ref. MOR at Appendix 'B-1').

6.11.10 TECHNICAL INCIDENT REPORTING PROCEDURE

Upon receipt of information from Aircraft Engineer (LM) or contracted AMO as first-hand information of the occurrence, DCE (Situation Room & DCC) shall submit CAAF-114-AWRG in PCAA MOR portal. The incident is then investigated by investigators authorised by Chief Engineer (QA) and the report generated is sent to the concerned, identifying the root cause(s) and recommendations made for the remedial and preventive actions related to the occurrence.

6.12. APPENDICES

1.	**Captain's De-Brief**	**---**	**Appendix "A-1"**
2.	**Air Safety Report (ASR)**	**---**	**Appendix "A-2"**
3.	**Mandatory Occurrence Report**	**---**	**Appendix "B-1" – Electronic Reporting**
4.	**Aircraft Occurrence Report (CAAF-114-AWRG)**	**---**	**Appendix "B-2" – Electronic Reporting**
5.	**Confidential Aviation Incident Report**	**---**	**Appendix "D"**
6.	**Near Miss**	**---**	**Appendix "E-2"**
7.	**Aircraft Lighting Strike Reporting Form**	**---**	**Appendix "E-3"**

APPENDIX "A-1"

Electronic Copy of DBR

Captain Debrief Report

Flight Date:	Flight No:	
Sector:	Aircraft:	
STD:	ATD:	Delay on Dep:
STA:	ATA:	Delay on Arr:
Captain ID:	Captain Name:	

Debrief:

APPENDIX "A-2"

CS/02/ASR/2026 Rev 01
26th Feb., 2026

PAKISTAN International Airlines

Case Reference No.:_____

AIR SAFETY REPORT (ASR)

❑ Accident	❑ Serious Incident	❑ Incident	❑ Hazard

Type of event (Tick ✓ all that apply)	AIRPROX/ ATC	TCAS RA	WAKE TURBULENCE	OTHERS

Captain		First Officer	

Date & time (UTC)	Location e.g. 27 NM South of Islamabad (include latitude & longitude if possible)

Flight number		Aircraft Type		Aircraft Registration	

Time of departure		Last departure point	Next intended point of landing	Runway used
	❑ UTC			

Phase of flight			Flight Rules	Flight Conditions		Altitude	
❑ Parked	❑ Init Climb	❑ Holding	❑ IFR	❑ VMC	❑ Day	Speed	
❑ Towing	❑ Climb	❑ Approach	❑ VFR	❑ IMC	❑ Night		
❑ Taxing	❑ Cruise	❑ Landing			❑ Dawn	Airspace (DPKR, OPLR etc)	
❑ Takeoff	❑ Descent	❑ Circuit			❑ Dust		

Weather conditions	

Turbulence		Icing		Precipitation			
❑ Light	❑ Severe	❑ Light	❑ Heavy	❑ Rain	❑ Heavy	❑ Light	❑ Snow
❑ Extreme	❑ MOD	❑ MOD	❑ NA	❑ Sleet	❑ MOD	❑ Hail	

Visibility		Wind		Cloud	

Please fully describe the occurrence: All relevant documentation should be forwarded to Corporate Safety Management. Include your suggestions on how to prevent similar occurrences.

Event and Cause:
Please use reverse side as necessary

OTHER INFORMATION AND SUGGESTIONS FOR PREVENTIVE ACTION

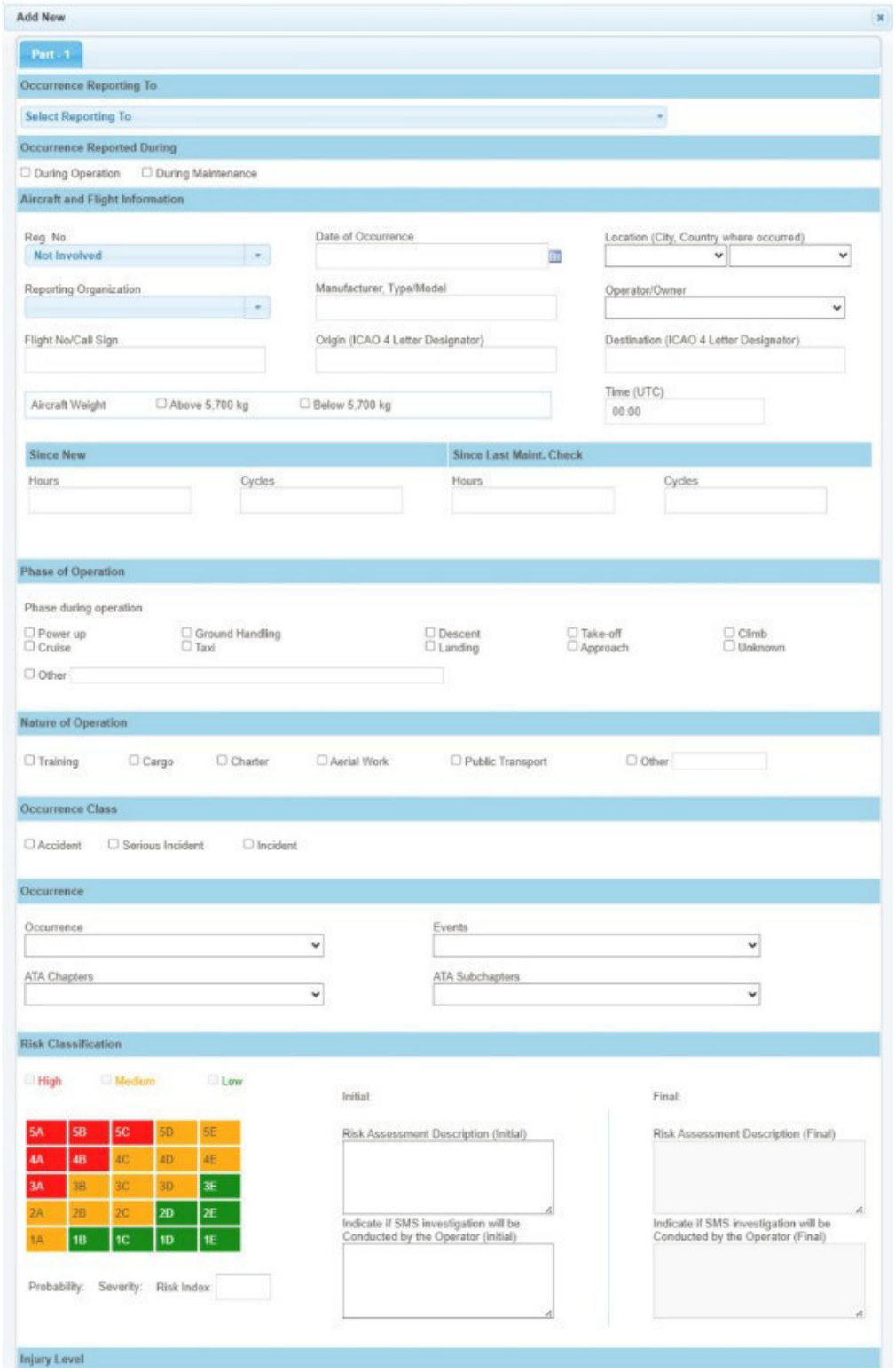
REPORTABLE OCCURRENCES

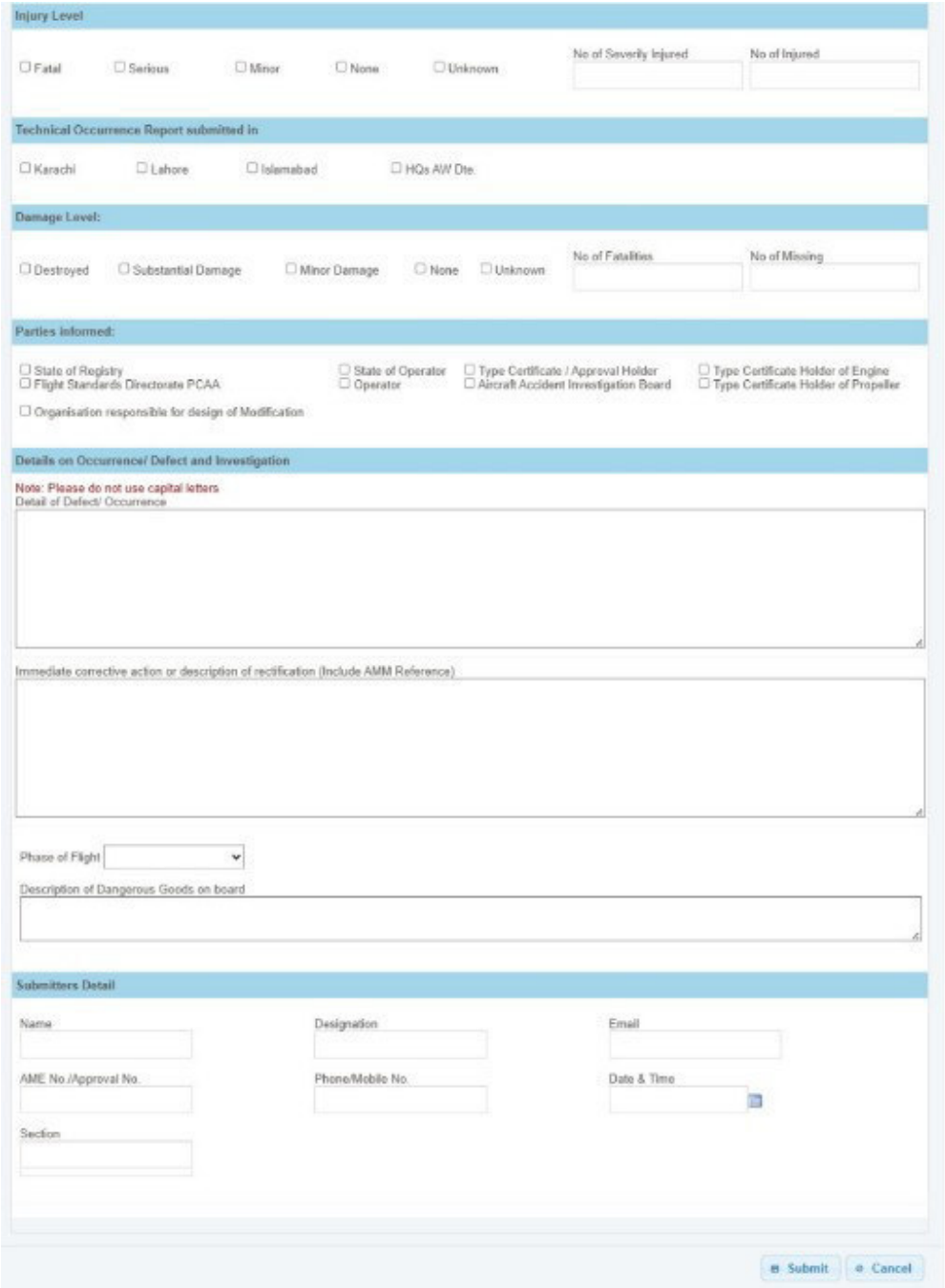
1. When a system defect with a built-in redundancy occurs which may adversely affect the handling characteristics of the aircraft and may render it unfit to fly;
2. When there is a warning of fire or smoke warning;
3. When it is known that safety equipment or procedures are defective or inadequate;
4. When it is known that deficiencies exist in operating procedures, manuals or navigational charts;
5. When there is incorrect or improper loading of fuel, cargo or dangerous goods;
6. When ground damage to aircraft occurs.
7. When significant handling difficulties are experienced.
8. When there is a navigation error involving a significant deviation from the track.
9. When the limiting performance parameters are exceeded for the aircraft configuration or when significant unintentional speed change occurs.
10. When communication fails or is impaired for prolonged duration.
11. Whenever a GPWS warning occurs.
12. Whenever a Stall warning occurs.
13. Whenever a heavy or hard landing check is required.
14. Whenever serious loss of braking occurs.
15. When the aircraft lands with less than required reserve fuel.
16. When significant turbulence, wind shear or other severe weather is encountered.
17. When crew or passengers become seriously ill on board,
18. When there is difficulty in controlling unruly, violent, armed or intoxicated passengers or when passenger restraint device is used.
19. When toilet smoke detectors are activated.
20. When any part of the aircraft or its equipment is sabotaged or vandalized;
21. When security procedures are breached, affecting the safety of aircraft and its occupants.
22. Any other event considered having serious safety implications.

Reportee:	Cell:	Email:

This form is to be filled up by the flight deck crew for onward submission to the Corporate Safety for analysis and to be included in the database.
E-mail: dcfs@piac.aero & pksafe@piac.aero

APPENDIX "B-1" – Electronic MOR




Injury Level
Fatal
Serious
Minor
None
Unknown
No of Severly Injured
No of Injured
Technical Occurrence Report submitted in
Karachi
Lahore
Islamabad
HQs AW Dte
Damage Level:
Destroyed
Substantial Damage
Minor Damage
None
Unknown
No of Fatalities
No of Missing
Parties Informed:
State of Registry
Flight Standards Directorate PCAA
State of Operator
Operator
Type Certificate / Approval Holder
Aircraft Accident Investigation Board
Type Certificate Holder of Engine
Type Certificate Holder of Propeller
Organisation responsible for design of Modification
Details on Occurrence/ Defect and Investigation
Note: Please do not use capital letters
Detail of Defect/ Occurrence
Immediate corrective action or description of rectification (Include AMM Reference)
Phase of Flight
Description of Dangerous Goods on board
Submitters Detail
Name
Designation
Email
AME No./Approval No.
Phone/Mobile No.
Date & Time
Section
Submit
Cancel

APPENDIX "B-2"

	PAKISTAN CIVIL AVIATION AUTHORITY AIRCRAFT OCCURRENCE REPORT	CAAF-114-AWRG-8.0

AIRWORTHINESS DIRECTORATE

This form is to report technical occurrences to the Airworthiness Directorate, Pakistan Civil Aviation Authority (PCAA) in accordance with ANO-145 / ANO-M and AWNOT-009. Technical occurrence reports concern technical occurrences, flight operational occurrences, incidents or accidents that happened or were detected due to a technical defect on the aircraft, either on the ground or during the flight. For definitions refer to current issue of AWNOT-017-AWRG.Other reporting obligations, e.g. according to ANO-002-SBXX (Incident Reporting System) remain unaffected by this occurrence report. The form containing at least the basic information regarding Occurrence / Defect is to be submitted within 48 hours of the incident / occurrence / detection.

Part – I (Below details are to be submitted within 48 hours of the incident / occurrence)

1. Report Type

☐ 1.1 Initial Notification *(Follow-up report required to be submitted immediately after completion of all investigation formalities)*
☐ 1.2 Notification of Finding with complete investigation Results
☐ 1.3 Follow-up report on earlier notification

2. Aircraft and Flight Information

2.1 Flight no.:	2.2 Origin:		2.3 Destination:		2.4 Operator/Owner:		
2.5 Manufacturer, Type/Model	2.6 Serial No.	2.7 Registration No.	Since New		Since Last Maint. Check		2.12 Year of Build
			2.8 Hours	2.9 Cycles	2.10 Hours	2.11 Cycles	

2.13 Mass Group:	☐ Above 5,700 kg	☐ Below 5,700 kg	2.14 Engine Type/Model:			
2.15 Nature of Operation	☐ Public Transport	☐ Cargo	☐ Training	☐ Charter	☐ Aerial Work	☐ Others:

3. Reference Information

3.1 Reporting Organization:	3.2 Date of Occurrence / Finding: DD MM YYYY	3.3 Location (City & Country):	3.4 Local Time:

3.5 Occurrence Class	☐ Accident	☐ Serious Incident	☐ Incident		
3.6 Occurrence Category:	☐ Ground Occurrence	☐ Heavy / Hard Landing	☐ In-flight Shut down	☐ Land Back	☐ Lightning Strike
	☐ Aircraft Diversion	☐ Aircraft not operated	☐ Engine Flame out	☐ Bird Strike	☐ FOD
	☐ Cabin depressurization	☐ Rejected T/O	☐ Fire	☐ Others	
3.7 Injury Level:	☐ Fatal	☐ Serious	☐ Minor	☐ None	☐ Unknown
3.8 ATA Code and Title:		3.9 Org. Report Ref. No.:			
3.10 Technical Occurrence Report submitted in	Field Office:	☐ Karachi	☐ Lahore	☐ Islamabad	☐ HQs AW Dte.

4. Detection Phase and Notification *(tick appropriate box)*

☐ Maintenance Phase:		☐ Flight Phase:		
☐ During scheduled base maintenance	Specify Maintenance Level:	☐ Power up	☐ Cruise	☐ Ground Handling
☐ During scheduled line maintenance		☐ Taxi	☐ Descent	☐ Unknown
☐ During non-scheduled maintenance	Specify Inspection:	☐ Take-off	☐ Approach	☐ Landing
☐ Others:		☐ Climb	☐ Other, specify:	

Damage Level:	☐ Destroyed	☐ Substantial Damage	☐ Minor Damage	☐ None	☐ Unknown
Parties informed:	☐ State of Registry	☐ Operator	☐ Organisation responsible for design of Modification		
	☐ State of Operator	☐ Type Certificate/ Approval Holder	☐ Type Certificate Holder of Engine		
	☐ Flight Standards Directorate PCAA	☐ Aircraft Accident Investigation Board	☐ Type Certificate Holder of Propeller		

5. Details on Occurrence / Defect and Investigation

5.1 Details of Defect / Occurrence:

5.2 Rectification Description (Include AMM references):

Submitters Details:

Name:	Designation:	Email:	Section:
AME No./ Approval No.	Phone/ Mobile No.	Date:	

NOTE: Whenever information on faults, malfunctions, defects and other occurrences that cause or might cause adverse effects on the continuing airworthiness relates to an engine or propeller, such information shall be transmitted to both the organization responsible for engine or propeller type design and the organization responsible for aircraft type design and the organization responsible for the design of the modification, when the continuing airworthiness safety issue is associated with a modification, where applicable. (Refer latest issue of AWNOT-009-AWRG)

APPENDIX "D"

CS/SMS/HR/01/2026 Rev 01
10th March, 2026

PAKISTAN International Airlines

Case Reference No.: _____

CONFIDENTIAL SAFETY REPORTING FORM

1. Reporter Details *(Optional – May be submitted anonymously)*

Full Name:	
Employee ID:	
Department / Division:	
Station:	
Contact Details (Email / Phone):	

Hazard		Occurrence		Event	

Type of event (Tick ✓all that apply)

Any purpose solution

2. Occurrence Information *(to be filled as required)*

Date of Event:	
Time of Event:	
Location (Airport / Facility / Aircraft Reg):	
Flight Number *(if applicable)*:	
Phase of flight *(if applicable)*:	
Aircraft Type *(if applicable)*:	
Weather Conditions *(if relevant)*:	

❑ VMC	❑ IMC	❑ IFR	❑ VFR

3. Detailed Description of Event / Hazard

Please describe what happened, sequence of events, equipment involved, persons involved (no blame), and any contributing factors (environmental, organizational, human factors).

_____

_____

_____

_____

_____

4. Suggested Corrective / Preventive Actions (Optional)

_____

_____

_____

_____

Confidentiality & Data Protection Statement

All reports will be handled in accordance with the organization's SMS Manual and Just Culture Policy. Reporter identity will be protected to the maximum extent possible. Information will be used strictly for hazard identification, risk management, and safety improvement.

When complete, drop in Suggestion box or Email to Corporate Safety:
pksafe@piac.aero/pksms@piac.aero for analysis and to be included in the database

APPENDIX "E-2"

PIA

Pakistan International
Air Traffic Incident Report
NEAR MISS
SECTION-I GENERAL

To Addressees
AFTN OPHQYAYX
TLX 25534 CAAPK
CONTROLLING STATION MAIL:
khiofpk@piac.aero, pksafe@piac.aero
khiovpk@piac.aero

NO TO BE TRANSMITTED

Type of Incident	A	Near Collision (Ref: MNL-001-OPAT-3.0, Appendix "M")
Name of Pilot-In-Command Making Report	B	
Operator	C	
Registration/ Identification Of Aircraft	D	
Aircraft Type	E	
Call Sign/ Flight No. Frequency And In Communication With Station	F	
Aerodrome Of Departure	G	
Aerodrome Of First Landing And Destination If Different	H	
Type Of Flight Plan IFR/ VFR	I	
Position At Time Of Incident Heading Or Route -- TAS	J	
Flight Level, Altitude Or Height Altitude (Climbing / Level/ Descending)	K	
Flight Weather Condition At Time Of Incident IMC / VMC _____ Above/ Below _____ Cloud/ Fog / Haze In Between Layers _____ Horizontal Distance From Cloud Flying Into / Out Flight Visibility	L	
Date And Time Of Incident In UTC Reported To ATC	M	
SECTION - II		
Description Of Other Aircraft If Relevant: Type ___ High Low Wing ___ Number Of Engines Call Sign ____ Registration ____ Making ____ Colour _____ Lighting_____ Other Visible Details	N	
Description Of Incident: If Desired Add Comment Or Suggestion, Including Your Opinion On The Probable Cause Of The Incident. (In Case Of Near-Miss Give Information On Respective Flight Paths Estimated Vertical And Horizontal Sighting And Miss Distance Between Aircraft And Avoiding Action Taken By Either Aircraft.)	O	

Date and Time _____

Place _____

Signature / Function Of Person Submitting Report _____

Signature / Function Of Person Receiving Report _____

APPENDIX "E-3"

Pakistan International
AIRCRAFT LIGHTING STRIKE REPORTING FORM
(Cross out applicable boxes)

Reg.No_____ Reg. Owner _____ Type of A/C_____

Flight No. PK- _____ Date & Time of Occurrence_____

Air Field / Sector (give approx. location) _____

Type of Flight

Schd. Pax	Non-Schd Pax	Schd Cargo	Charter
Ferry	Positioning	Training	Test

Flight Phase

Taxi		Takeoff Roll		Climb	
Cruise		Descent		Emg. Descent	
Holding		Let Down		Approach	
Landing		Landing Roll		Unknown	

Meteorological Information

Outside Air Temperature _____

Degree of Turbulence

Nil		Light		Mod		Severe	

Precipitation

Nil		Fog		Rain		Snow		Hail	

Weather Condition

Frontal		Thunderstorm		Stratified		Other	

Weather Radar

Used	Yes	No	Helpful	Yes	No	
Was updated weather forecast for the area provided by ATC/MET				Yes	No	

If turbulence was encountered, other Information;

Was Aircraft Controllability a problem?	Yes	No
Was procedure for flight in turbulence followed?	Yes	No
Were Crew & Passengers seated prior to encountering turbulence?	Yes	No

Did Damage occur to Aerials?

HF	Yes	No		VHF	Yes	No
ADF	Yes	No		ILS	Yes	No
VOR	Yes	No				

Any compass Interference		Yes	No
Damage to Wind Screen		Yes	No
Lighting Strike Evaluation	Light	Moderate	Severe

Detail of Damage: _____

_____

_____

_____

_____

Comment (if any): _____

_____

_____

_____

_____

_____
CAPTAIN

Note:
All Aircraft lighting Strikes are to be notified on this form to CAA within 24 hours.

CHAPTER – 7

HAZARD IDENTIFICATION AND SAFETY RISK ASSESSMENT

7.1 HAZARD IDENTIFICATION, SAFETY RISK ASSESSMENT AND MANAGEMENT

Hazards being the potential threats, possibly causing undesired / unsafe outcomes, need to be identified before the associated risk of its consequences are evaluated for further actions. The process of hazard identification is based on the premise that the hazard is any condition, equipment, human resource, procedure or policy etc. that can pose a threat to the organization itself or its components such as personnel, aircraft, buildings (Hangars, stockrooms, tool stores, workshops) and equipment etc. Once hazards are identified by any available source as described in Chapter 6, the HIRM is further carried out by:

1. Identifying underlying risk of consequences and assess the risk through alphanumeric or numeric quantification.
2. Evaluate the risk with existing controls and control effectiveness.
3. If the risk level is above acceptable value then, propose and implement additional control to mitigate the risk through a corrective action plan (CAP).
4. Assess risk after the application of controls, which must be acceptable.
5. Ensure that risk-based initiative does not increase the overall risk level.
6. A follow up on the implementation and effectiveness of controls applied.
7. Communicate mitigation of the risk to the reporter, employees or as appropriate.

HIRM shall be periodically reviewed. The process shall also be repeated whenever there is a significant change to the organization, its staff, procedures or equipment. The line manager has the responsibility for setting in place measures to remove or mitigate the risks of the identified hazard. The Departmental head will monitor the completion of this task. The review of controls is also a responsibility of the departments and associated SAGs.

The data collected by 'Hazard Identification & Risk Management' process is utilized for generation of safety performance reports for soliciting management's course of action, objective setting and revision, and to identify areas requiring particular attention.

Significant issues are evaluated / processed in Safety Review Board Meeting and Management Review Committee Meeting.

It is an organizational commitment for the risk level to be kept at or below an acceptable limit of all identified operational safety and security hazards that may be existing or potential.

The semi-quantative analysis will be considered as primary method to ensure that the risk has been mitigated or inherently lower than PIA's acceptable level. However, through qualitative analysis the risk can be brought to ALARP (As Low as Reasonably Practicable) level.

The data collected by 'Hazard Identification & Risk Management' process is utilized for generation of safety performance reports for soliciting management's course of action, objective setting and revision, and to identify areas requiring particular attention. The HIRM data is either collected and processed through software/softcopy information or as conventional hard copy.

The hazard identification process must take place in a non-punitive (or JUST) safety culture, as otherwise the efficiency of the HIRM would be compromised.

Despite the fact that HIRM processing is carried out with Corporate Safety in the loop, it is the responsibility of each concerned SAG to ensure HIRM process is carried out for hazards identified and fulfil the mandatory requirement to find and address the root cause and causal factors within their domain, in coordination with Corporate Safety, Head of Safety or his delegate, who would assist for appropriate processing and actions. The risk assessment will be carried out either by concerned SAGs in coordination with Corporate Safety's qualified staff, who would be verifying the assessment's quality and making any necessary amendments or the Corporate Safety will carry out risk assessments, making any necessary changes when improvement action requirement is raised by relevant SAG through standard communication process. The risk assessment records are maintained by Corporate Safety as hard copies for the below mentioned form or a soft copy for software-based risk assessments. The hazard assessment form (Form No.: CS/SMS/HIRM/01) – Appendix 7A - will be attached as a hard copy to safety hazard report(s) such as an ASR or Captain's Debrief, which are manually maintained and a record of safety risk assessments and mitigation action(s) shall be attached along. The hazard assessment format for electronically processed data is maintained on the web-based application. Centralized control of all risk assessments is maintained by Corporate Safety and hazard reports are only closed after satisfactory actions verified by Corporate Safety.

For ease of processing, each SAG shall have various members, preferably from all divisions / functions that a department has, such as for the Engineering and Maintenance SAG, Chief Engineer (concerned) shall make nomination of SAG member(s) from the respective divisions. Safety hazard / deficiency identified during aircraft / aircraft component maintenance or other activity shall be reported to Corporate Safety in coordination with relevant SAG.

The SAG coordinators {individual(s) to coordinate with Corporate Safety on behalf of concerned SAG} are responsible to support the SAG functions and report to Corporate Safety. Relevant sectional in-charge(s) are responsible in the SAG for HIRA which may be required for either MoCs or events / unsafe conditions etc. However, SAG coordinator(s) shall assist sections for implementation of SMS.

7.2 REACTIVE AND PROACTIVE REPORTING

Hazard Identification process may be carried out by;

- Reactive process responds to events that have already occurred (e.g. occurrence reporting).
- Proactive method actively seeks to identify potential hazards (e.g. monitoring day-to-day operations).

However, a predictive method also exists along with the reactive and proactive. In the predictive method future hazards that are probable are identified (e.g. FDM, Engine Trend Monitoring or predicting hazardous safety and aircraft security conditions due to geopolitical situations etc).

In addition to internal safety assessments and audits, the PIA management utilizes the following hazard identification inputs and methods:

7.2.1 TYPES OF HAZARDS

PIA SMS program covers all types of Hazards in its reporting mechanism. Following are a few non-exclusive examples of some hazards, which are to be reported and analysed through risk assessment and required mitigation procedures:

a) Aircraft Flight Analysis

i. Failure to obtain and/or maintain flying speed
ii. Failure to maintain direction control
iii. Improper level off
iv. Improper operation of flight controls
v. Aircraft high closure rate

b) Flight Operations Hazards (Other)

i. Inadequate pre-flight planning for route, altitude, fuel, time etc.
ii. Improper in-flight decisions or planning
iii. Misjudgement of distance and speed
iv. Inadequate pre-flight preparation
v. Inadequate procedural adherence
vi. Mismanagement of fuel
vii. Failure to see and avoid objects or obstructions
viii. Hostile environment operations (For UN Charter operations only)
ix. Non-radar environment operations
x. Low visibility operations
xi. Onboard Cabin hazards

c) Maintenance Hazards

i. Undocumented cannibalization of aircraft parts
ii. Undocumented maintenance on aircraft
iii. Tire servicing with insufficient or improper pressure indicator or tools
iv. Improper aircraft jacking
v. Aircraft Towing without authorization
vi. No information/intimation of Missing tools
vii. Maintenance of aircraft without consulting AMM / other relevant documents and not following SOP's

d) Ground Equipment Operations

i. Operation of ground equipment without authorization / permission
ii. Vehicles driving without permit license
iii. Aircraft not chocked during parking

e) Ground Hazard

i. Birds menace / droppings on Aircraft during groundings
ii. Improper receiving of Unserviceable (U/S) components and loss of components
iii. Unattended, U/S and consumable items outside cages
iv. Transportation of Engine for dispatch to cargo

7.3 RISK ASSESSMENT TECHNIQUES

The semi-quantitative risk assessment is carried out by application of the processes based on ICAO guidelines, the risk assessment shall utilize alpha-numeric technique for standard risk assessments. However, the 'numbers-only' based risk assessment is part of the archived data and some tools, and this will be utilized with such. The risk assessment elements are given in the tables below;

PROBABILITY / LIKELIHOOD OF OCCURRENCE		
Qualitative definition	**Meaning**	**Value**
Frequent	Almost sure to occur (has occurred frequently). A monthly occurrence would fall in this category	**5**
Occasional	A high chance of occurrence. Could occur/have occurred once in six months	**4**
Remote	Medium chance of occurrence. Could occur/have occurred once in a year	**3**
Improbable	Very unlikely to occur, could happen once in every 2-5 years	**2**
Extremely improbable	Almost inconceivable that the event will occur. Not heard of it in past 5 to 10 years	**1**

Table: 7.3(a)

The table above shows probability / likelihood value selection based on the time periods, which would be retrieved from the data available or may be used by rational predictions based on available industry data and logical deductions.

SEVERITY OF OCCURRENCE		
Aviation definition	**Meaning (Consider both potential or historical aspects)**	**Value**
Catastrophic	• Equipment destroyed • Multiple deaths	**A / 5**
Hazardous	• A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely. • Serious injury (resulting in permanent disability, loss of limb etc) to a number of people • Individual Fatal Injury • Major equipment damage.	**B / 4**
Major	• A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in work load, or as a result of conditions impairing their efficiency. • Serious incident. • Injury to person(s).	**C / 3**
Minor	• Nuisance. • Operating limitations. • Use of emergency procedures. • Minor incident.	**D / 2**
Negligible	• Little consequences.	**E / 1**

Table 7.3(b)

The above table shows severity, and based on the variables given within the table, the numbers or alphabets must be selected to carry out risk assessment procedure, or to evaluate previous risk assessment. Most credible outcome / situation is taken into account for selection of severity variable, for which the following or similar questions would help;

1. How many lives may be lost (employees, passengers, bystanders and the general public)?
2. What is the likely extent of property or financial damage (direct property loss to the operator, damage to aviation infrastructure, third-party collateral damage, financial and economic impact for Airline)?
3. What is the likelihood of environmental impact (spillage of fuel or other hazardous product, and physical disruption of the natural habitat)?
4. What are the likely political implications and/or media interest?

Once the values are deduced with the help of the above guidelines, both are multiplied to form a number or alphanumeric;

Probability/Likelihood × Severity = Risk Level

This risk level is further utilized with the guideline as given in the table below, for further mitigation actions and tolerability

Risk Tolerability Table

A	B	C	D	E	F
Risk Level Alpha-numeric	**Risk Tolerability**	**Decision-making Management level**	**Allowable time for decision-making**	**Colour Code**	**Time for Risk Mitigation & Report Closure**
1B,1C,1D 1E,2C,2D 2E and 3E	Acceptable, management may review impact in context of any potential change in environment. However, existing controls shall be ensured to be in place.	Manager / Asst. Manager	2 months Or to be approved in SAG	Green	4 Months
3D, 4D 4E and 5E	Risk control/mitigation is required as per SMS principles	Manager / Asst. Manager	2 months Or to be approved in SAG	Yellow	4 Months
2B, 3C, 5D	Risk control/mitigation requires management decision on regular basis	Manager / Asst. Manager	30 days	Yellow	3 Months
1A,2A,3B and 4C	Unacceptable without mitigation, Risk control/mitigation requires management decision on priority basis. Implementation of decisions shall be on priority basis. If existing mitigation measures in place then review of controls to be carried out	DGM	15 days	Yellow	1 Month
3A,4A,5A,4B,5B and 5C	Unacceptable under the existing circumstances, requires immediate action and/or stopping of operations by the concerned authorities	General Manager (GM) / Departmental Head, in coordination with the AE	3 days	Red	15 Days for initial effective risk mitigation

Table 7.3(c)

Even if the risk level is low, based on qualitative analysis of a risk the management may decide to take actions as deemed necessary. However, for accepting risk in green or yellow colour without any actions, the relevant department's / division's DGM / DCE shall write formally, citing why action is not being

considered and how the risk is being accepted. In case of repeated event(s), the decision of risk acceptance will be reviewed as well.

If risk mitigation is not effectively executed within the timelines as defined in column 'F' of table 7.3, then an extension may be requested by the respective GM for a maximum of 1 month for green and yellow colour coded risk levels and 15 days for red colour coded risk. The approval of the extension(s) shall be acceptable by Head of Safety and approved by Departmental Head. Subsequent extensions may be requested by Departmental Head(s) and approved by Accountable Executive, which shall be subject to the acceptance of Head of Safety.

All identified hazards are to be critically assessed and ranked in order of their risk potential. They may be assessed subjectively by experienced personnel (subject matter experts – SME) who are part of SAGs (regular or co-opted) or they may be assessed using more formal analytical techniques. Information that may contain hazards, once received by Corporate Safety and relevant SAGs shall be initially assessed to qualify as being the one containing hazard information and then must be assessed and mitigated within the prescribed timelines. The hazards shall be recorded in the hazard register, analyzed critically in terms of their severity and probability and prioritized for subsequent action(s) based on controlling higher risks first by provision of more resources, similarly maintaining SPTs and regulatory requirements as well. All hazard sources including reporting forms and electronic medium such as the web-based reporting (confidential reports) shall be received by Corporate Safety and then through SAGs the issues will be mitigated by designating actions to each SAG. Corporate Safety along with SAG support will follow up on the HIRM process to be completed in prescribed time and mitigation actions taken by the relevant Department(s).

The concerned SAGs can define more relevant severity & probability / likelihood definitions based on relevance to the risk type. However, if any such tables are made then these must be communicated to Head of Safety for approval.

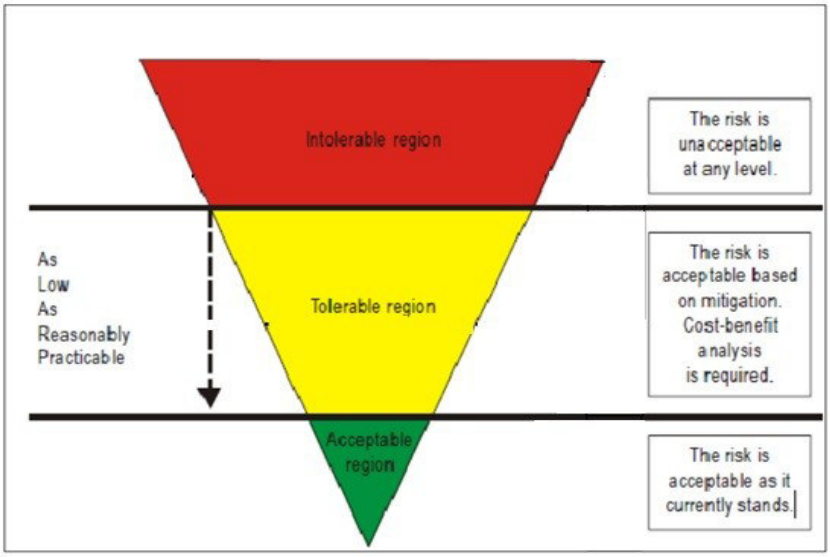


Figure 7.3 (d)

Yearly departmental Safety Action Group (SAG) meeting schedule and its minutes shall be communicated to Corporate Safety. This is for monitoring regularity of SAG meetings and progress in management of risks respectively; any deviation in the SAG meeting schedule shall be intimated similarly and an approved revised date shall be communicated to all concerned. Accountable Executive shall be informed about the status of SAG meeting regularity.

Risk Assessment Matrix

PROBABILITY					
5	5A - (25)	5B - (20)	5C - (15)	5D - (10)	5E - (5)
4	4A - (20)	4B - (16)	4C - (12)	4D - (8)	4E - (4)
3	3A - (15)	3B - (12)	3C - (9)	3D - (6)	3E - (3)
2	2A - (10)	2B - (8)	2C - (6)	2D - (4)	2E - (2)
1	1A - (5)	1B - (4)	1C - (3)	1D - (2)	1E - (1)
	5/A	4/B	3/C	2/D	1/E

SEVERITY

Table 7.3 (e)

The above table shows risk matrix based on the ICAO alphanumeric risk calculations. PIA shall use the same and for historic data, numeric (only) values are also retained in the matrix.

7.4. HAZARD REGISTER (LOG) / RISK REGISTER

Reactive: The HIRM process is carried out on all sources of hazard information through various means, for example if Captain's debrief is maintained as a hard copy, the HIRM process will be carried out manually and record will be maintained accordingly, in this case with Corporate Safety. Similarly, the web-based application for confidential reporting will be managed electronically along with its HIRM process.

However, a centralized electronic register (also referenced as the SMS Dashboard) shall be maintained by Corporate Safety that will include all sources of hazard information for data integration, linking of same events through different sources, linking of similar events of repeated nature, traceability of events / safety hazards, correct assessment of probability of an event and trend monitoring. With the help of hazard register one shall be able to identify seriousness and segregate data based on nature of hazard, hazard area(s), risk level, corrective actions taken and root causes. Some entries of the register will also be proactive in nature.

Proactive: Similar to the mentioned hazard register / risk register from reactive sources of information, a proactive hazard register (developed through task analysis and existing hazard data) shall also be

maintained and managed by SAGs in coordination with Corporate Safety. This controlled Hazard Register not only helps in the risk assessments but also is used for data-driven approach for safety decision making and control selection / implementation by knowing the probability of events / hazards and also evaluating previous controls' effectiveness. It is evaluated that rather the controls being suggested / placed are putative by nature or will be effective.

The proactive hazard register shall be utilized as a live document and must be reviewed;

- At least after every three months; or
- If an event occurs, and it is already not part of the register then it must be added to it; or
- If an event occurs and is already mentioned in the register, risk assessment must be reviewed, modified and risk-based actions shall be initiated, as required.

  *N.B: SAGs are monitoring the SMS Dashboard / centralized electronic register and any event would be reflected as a new entry, triggering actions by SAGs as defined above.

This review and update shall be carried out by respective SAG and coordinated with Corporate Safety (Normally the office of DGM SMS) for final review and endorsement. The document will be kept live on cloud application and a change log will be filled to track the changes of the register.

The proactive hazard register / risk register shall have the minimum contents as; identified hazards during different activities, who or what is at risk, potential consequences, initial risk without considering controls, risk with existing controls being considered in place and final risk with or without any additional controls (additional controls if needed).

7.5. ROOT CAUSE ANALYSIS (RCA)

It is important that the root cause for any potential / existing hazard or occurrence shall be identified along with causal factors in order to introduce mitigation strategy for management (corrective and preventive controls application).

The root cause analysis can be carried out with the help of different models with respect to suitability; some models that may be utilized within PIA are given below;

1. Five (5) Why Model
2. Fishbone Diagram / Cause and Effect Model
3. Paretos Analysis
4. Bowtie
5. Brainstorming / Task Analysis

7.6. 5 Why Model:

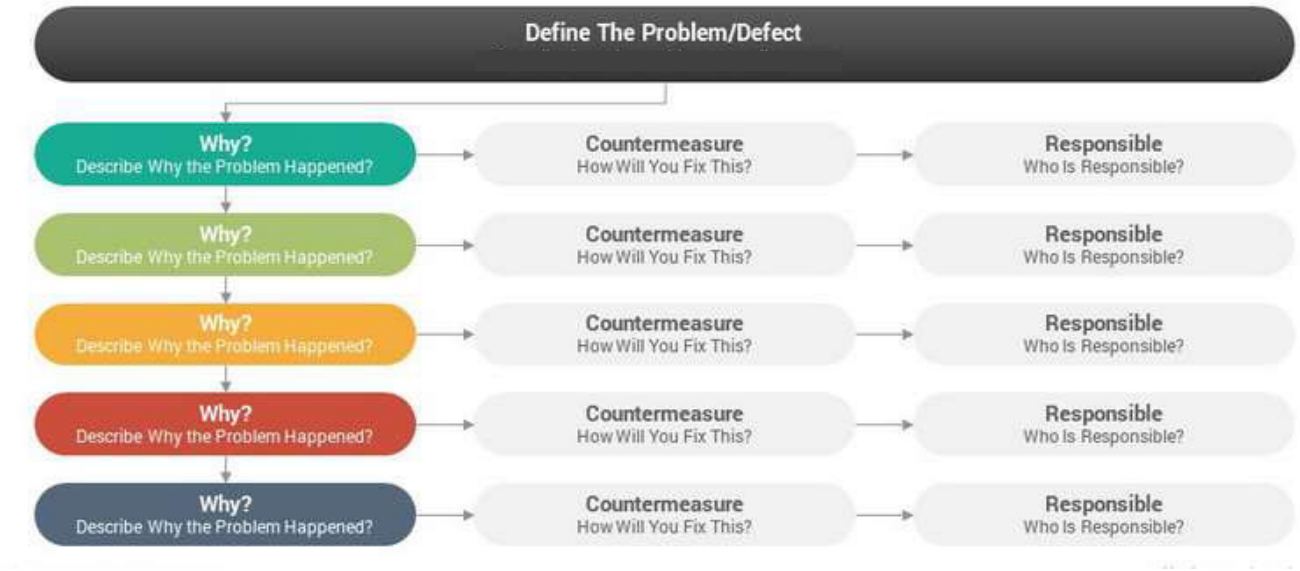
One of the most commonly used and recommended RCA model for PIA is the 5 why model in which the root cause is identified by subject matter experts and individuals having understanding of functional safety as well as human factors. Personnel having knowledge and experience of the RCA shall assist the process directly or monitor the RCA evaluation for acceptance.

During this RCA a track back is carried out from the final hazard or event, hazardous situation or occurrence (potential or existing) by asking 'WHY' the situation or issue materialized as such, then in series further similar questioning (WHY) to each event or condition would track further back until the root cause is revealed. Generally, a suitable in-depth analysis is carried out by asking 'WHY' for five times, however, if the root cause is found out before the five steps of this RCA, further steps may not be required.

The root cause needs to have sufficient depth so that corrective & preventive actions would be useful in long term and until such depth is achieved the interrogative steps shall be continued (even more than five times, if required).

5 Why model shall also be used to identify causal factors, that is if there are multiple reasons that caused an event, hazard, or unsafe situation then each of these shall be questioned separately until the in-depth causes are identified.

Measures shall be taken to ensure that each cause is controlled / mitigated and responsible individual(s) shall be identified who will take corrective / preventive actions. Furthermore, separate controls may need to be implemented for each issue that is known through RCA at various steps if these are not mitigated by the final / consolidated corrective & preventive action plan.



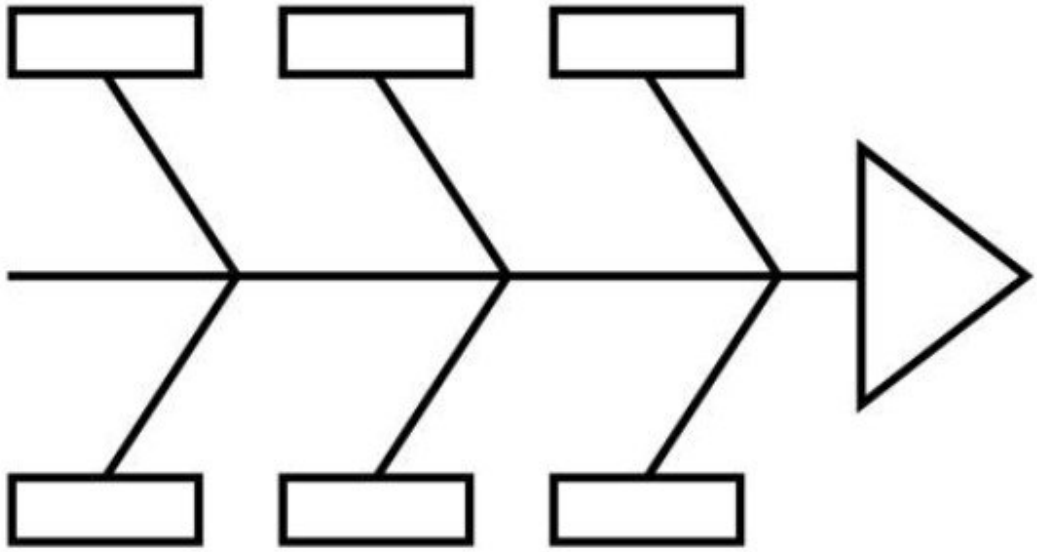
7.7. FISHBONE MODEL

The model can be utilized after an occurrence or proactively as well, in which the indicators can be traced to their causes before a mishap takes place, and it is non-linear model and supports integration of different categories within the items involved in operations and this model assists in objective

investigation. It is a visual tool used within Safety Management Systems (SMS) to identify the root causes of safety incidents or risks. It maps out the relationship between a specific "Top Event" (the risk) and the various factors that contributed to it, resembling the skeleton of a fish.

The head of this fish skeleton represents the risk event or the safety problem / issue under investigation, the spine is the central connection between the head and the categories of causes and the fins are the various categories such as human, machine, systems, policies/procedures, material and environment. Each of the branches and sub-branches to each of the fins are the detailed specific contributory factors and underlying root causes. In this manner not only the obvious causes but also latent causes can be identified.

The Fishbone model should be utilized keeping in view the complexity of the investigation, the risk, benefit analysis of using the model and avoiding over-simplification at times.



7.8. RISK MITIGATION

The mitigation strategy application may reduce the probability of occurrence or the severity of the consequences and shall follow the hierarchy as given below keeping the cost benefit in view;

1. Elimination (By altogether changing requirements, processes, revision of system design etc).
2. Substitution (By using alternate or substitute methods, equipment etc).
3. Engineering of Controls (Isolate, distance the hazard/risk etc).
4. Administrative controls (Changing SOP, modification of procedures, changes to staff arrangements etc)
5. Personal Protection (Individual[s] protection equipment etc)

More than one mitigation measure may be required to control the risk. It is also important to avoid controls that may introduce new hazards.

Mitigation shall be carried out so as a corrective action will correct the problem and there shall be a preventive action which will avert future possibilities of such event or hazardous state. The mitigation strategies can be devised as a short term and long-term strategy and both can be applied in parallel for better effectiveness and immediate control against unacceptable risk.

Once safety controls are applied their effectiveness might change with time and hence a review may be required for evaluating the control effectiveness. Hence, case specific reviews shall be carried out for the applied / introduced controls, these can be implemented through event monitoring, SPT monitoring, case to case basis review through the SMS hazard register software. The same is also utilized along with the process of management of change that if an existing control is no longer needed and has become redundant in order to remove or upgrade the control.

Hazard Identification & Risk Management – (HI & RM) Form No.: CS/SMS/HIRM/01

Section I—General Information for Occurrence / Hazard Report

Case Reference No.:_____
Station / Location:_____
Aircraft Type / Registration: _____

Date of Occurrence:_____
Equipment/Area Involved:_____

Section II—Occurrence

Describe the Occurrence that caused the event.

Section III—Event Risk Classification (ERC)

Risk Level & Color

Section IV

Hazard:

Consequence(s):

Section V-- Existing Risk Assessment

Probability/Likelihood × Severity = Risk Level

[ ] X [ ] = [ ]

Section VI—Controls / Recommendations

1) _____
2) _____
3) _____
4) _____
5) _____

Attach Additional sheet, if required

Section VII—Final Risk assessment post Control Implementation

Probability/Likelihood × Severity = Risk Level

[ ] X [ ] = [ ]

CHAPTER–8

SAFETY INVESTIGATION PROCEDURES

8.1 PIA INVESTIGATION POLICY

All known incidents, serious incidents, accidents or when appropriate even hazardous conditions are investigated internally by PIA to the extent possible that causal factors and root cause is established and safety recommendations are generated in order to avoid future recurrence (not to apportion blame or liability), strengthen the SMS of PIA, reduce PIA's risk level and improve performance of relevant risk control(s), identify system vulnerabilities, develop strategies for improvements through a Corrective Action Plan (CAP) based on cost benefit analysis and produce resilience. The investigations shall also highlight trends of same or similar causal factors. However, in case of PCAA or Pakistan's authorized aviation accident investigation agency restricts access to occurrence data then investigation may be carried out by the authority that is delegated by the Government of Pakistan.

All potential hazard data being received by Corporate Safety shall be analyzed to qualify as hazard data and then investigated as required, to produce useful information including corrective actions.

Investigation of all non-routine occurrences and irregularities highlighted through inspections and / or reports having "Safety concerns" may also be initiated by Corporate Safety.

When a safety investigation is to be carried out, Head of Safety may delegate a particular investigation officer or the departmental representatives may work collectively to investigate the event. All of the PIA's staff must extend their support to culminate the safety investigation in a useful manner. The investigation will be carried out by an authorized safety investigator or under the investigator's supervision by departmental representative(s), subject matter experts, safety committee or safety managerial staff. The safety investigator must be qualified through "Safety Investigation Course" or "Accident/Incident Investigation Course" and authorized by the Head of Safety to conduct safety investigations.

Corporate Safety division may delegate representatives of other department(s) to investigate the event; however, the correctness of the report shall be verified at Corporate Safety before accepting the report. This is subject to fulfilling requirements of a qualified investigator.

In case of minor incidents / safety concerns, a factual report may be acquired from the concerned Department. However, during the course of investigation, if significant deficiencies are identified in the system, a formal investigation may be initiated at the direction of Head of Safety or his / her authorized delegate.

ICAO Annex 13 shall be the foundation document for any accident and PAKISTAN'S AUTHORIZED AVIATION ACCIDENT INVESTIGATION AGENCY is the investigative authority. Corporate Safety would liaise with the authorities for any occurrence investigation.

8.2. AUTHORITY TO ORDER INVESTIGATION

For reported hazards, investigative activity will be carried out by Corporate Safety along with assistance from relevant SAGs. However, in case of an incident, an internal investigation initiation authority lies only with Head of Safety for the Accountable Executive. Pakistan's authorized aviation accident investigation agency or PCAA may require PIA to carry out an investigation as well.

In the absence of Head of Safety, Corporate Safety staff may gather information and other data post incident for first-hand information to be made available when investigation is directed to be conducted. For events requiring investigation by Pakistan's authorized aviation accident investigation agency, PIA shall carry out a parallel investigation with the available data, if not restricted by Pakistan's authorized aviation accident investigation agency or Government of Pakistan.

The removal of the aircraft recorders in case of an investigation from the aircraft is determined by the investigating authority (Head of Safety or as stated above) with due regard to the seriousness of an occurrence and the circumstances, including the impact on the continuity of operations.

It is in authority of Head of Safety or authorized delegate to conduct / assist in the safety investigation process, it is acceptable that members may be co-opted from inside or outside PIA (subject matter specialists), demand statements from involved or witnesses & conduct "question & answer" sessions as deemed necessary. An unrestricted access to all data is necessary for efficient investigation.

Head of Safety or authorized delegate is responsible to carry out an investigation with the primary objective of establishing the causes of the occurrence; determine the contributory factors and root cause in order to generate corrective and preventive safety recommendations (including disciplinary action as per Just Culture policy). It is also a responsibility to advise release of evidence material for usage or storage after completion of safety investigation.

The inquiry / investigation conducted by state or its authorized representative(s) must be in-line with the latest regulations and law of the state.

8.3. SAFETY INVESTIGATION PROCEDURE & PRINCIPLES

The safety investigation process may require utilization of varying data and techniques as per latest known principles, tools and availability. Maximum utilization of data shall be observed for required collation and to culminate the investigation.

The investigator actions must adhere to the following qualities for conducting safety investigations:

a) Honesty
b) Integrity
c) Fact finding outlook
d) Transparency
e) Impartiality
f) Objectivity

PIA personnel in whose domain the event / condition falls for which investigation is being carried out is responsible for protection of evidence, however Head of Safety or his delegate is authorized to hold any PIA personnel responsible for protection of evidence, subject to the fact that it shall not hamper the personnel's regular duty, otherwise the individual may be absolved of the regular duties for a time period if deemed necessary.

Once the safety investigation is complete, a report must be generated inculcating all important factors. In case of expected delays, an initial or/and interim report may be generated until finalization of the investigation.

Furthermore, the SOP for safety investigations, CS/SOP-INV/FS/03 for managing the safety related investigations will be updated from time to time and will also identify the approved safety investigators.

8.3.1 STANDARD ITEMS FOR SAFETY INVESTIGATIONS

During the course of Safety investigation, some or all of following details along with additional information are looked-into, which depends on nature of investigation and an advisory checklist is presented below:

SR. NO	INFORMATION REQUIRED	ANY REMARKS
1	What happened?	
2	When it happened?	
3	Where it happened?	
4	Who was involved?	
5	What equipment was involved?	
6	What was the outcome (local / organizational)?	
7	Has any similar event occurred earlier?	
8	Any pre-existing condition(s)? ● Environmental factor(s) ● External condition affecting individual (psychological) ● External condition affecting individual (physical) etc. ● Psychosocial factors affecting individual(s)	
9	Any known supervisory lapse(s)? ● Inadequate supervision ● Planned inappropriate operation ● Failure to correct known issues ● Supervisory violation(s)	
10	Organizational Influence(s) ● Inadequate resource(s) ● Organizational culture ● Organizational policy / procedure(s) / process(es)	
11	Individual Action(s) ● Errors ● Negligence ● Recklessness ● Violation(s) ● Sabotage	

SR. NO	INFORMATION REQUIRED	ANY REMARKS
12	Job Factor(s) ● Under / Over task ● Conflicting demand(s) ● Job distraction(s) ● Inadequate procedure(s) ● Insufficient training(s) ● Lack of job understanding ● Insufficient ergonomics / equipment understanding	
13	Human Factor(s) ● Lack of knowledge / skill / experience / competence ● Physical stress / fatigue ● Physical state (alcohol or drugs) ● Psychological state (stress / morale / distraction) ● Psychosocial factors (peer pressure / culture / norms)	
14	Relevant Document(s)	
15	Is it recurring event or similar occurrence by the involved?	
16	Is it recurring event in organization?	
17	Root Cause(s) identified?	
18	Other Causal factor(s) identified?	
19	Corrective / Remedial Actions?	
20	Corrective Action Plan time-line (priority wise)?	

8.3.2 SYSTEM PROCEDURE FOR SAFETY INVESTIGATIONS

In order to standardize the process of Safety occurrence / hazard Investigation within Corporate Safety the following are responsible;

a. Head of Safety
b. Deputy Chief of Flight Safety
c. Deputy General Manager SMS
d. Deputy General Manager HSE (To carry out HSE related investigations)
e. Qualified Investigators
f. Co-opted Members (Subject Matter Experts etc)

After receipt of any occurrence report, Manager Safety Karachi / Delegate of Corporate Safety will categorize the incident and file a Mandatory Occurrence Report (MOR) with PCAA, as required, as per CARs. Furthermore, occurrence report shall be updated in the database by Manager Safety Karachi / designated staff member (data input as softcopy). Event Risk Classification (ERC), which is adopted by PIA, will be carried out by any one or more of the three of the above mentioned members of Corporate Safety team along with the respective SAG / Departmental delegates, and as required, Head of Safety will nominate an Incident Management Committee (IMC) for carrying out safety investigation.

ERC is an initial risk classification process which is carried out so that the event / occurrence can be prioritized and handled accordingly. High ERC risk value events / occurrences will be dealt with priority for their investigation and remedial actions than the ones with lower ERC risk values. The process of ERC will be carried out within 3 working days of the event / occurrence report, based on the available information.

After finalizing the Investigation, Incident Management Committee (IMC) will communicate with the concerned departments to discuss the safety recommendations and agree on the time period required to implement the same. Consequently, the safety recommendations will be dispatched by Manager Safety Karachi / designated staff member after acceptance of time period by the concerned departments. Furthermore, implementation evidence for the safety recommendations will be updated by Manager Safety Karachi / designated staff member in the database with a tracing ID.

After review and acceptance of the implementation evidence by the IMC and the investigation closure, information of the closure shall be made available to the concerned departments by the Head of Safety or his delegate(s), which is through the safety database management and its access to designated staff from the departments.

In case of delay in implementation of the safety recommendations by the concerned departments, reminders will be sent and "OPEN" or "In Process" status will be uploaded on the Safety Dashboard (Safety Information Display) which will be reviewed by the SAGs, Departmental Heads and the Accountable Executive.

8.4. EVENT RISK CLASSIFICATION (ERC)

ARMS (Aviation Risk Management Solutions) was an industry working group established in 2007 for finding solutions of Operational Risk Assessment, in which ERC was developed, which is the first review of events in terms of urgency and the need for further investigation or immediate actions. This also attaches a risk value to each event, which is useful along with the standard risk assessment technique, that would be carried out once hazards and risks are clearly identified. ERC may be revised based on the results of investigation(s).

ERC considers that if the event would have escalated in an accident, then the ERC calculation value is based on two questions:

1. What would have been the most credible accident outcome?

2. What was the effectiveness of the remaining controls between the actual occurrence and the most credible outcome?

The term 'most credible outcome' relates to the first question and is looking to identify the accident outcome that is of most concern when this type of incident occurs, or put another way 'what is the accident one is trying to avoid by having these incidents reported?' This question is not asking for the most probable outcome, as that in case of some reported events, usually "nothing" is probable outcome and therefore ignores any risk that the event carries, but neither is it necessarily looking for the worst possible outcome as the worst case scenario would often not be the most obvious accident to expect. For example, a low speed runway overrun or a ground collision during taxiing would be an accident but seldom one with 100% fatalities.

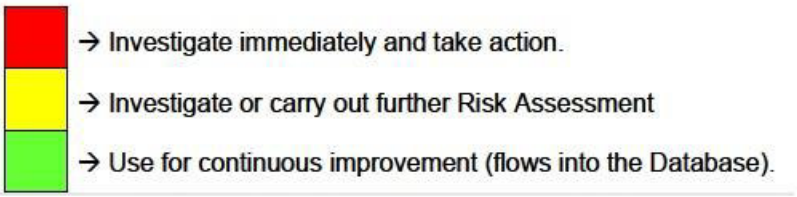
The other question relates to the effective controls at the time of event and failed controls / barriers will be ignored.

For utilizing the table (10.4A) one of the rows below question 1 is selected from the four given rows, which is based on the answer to the question. Question 2 block is laterally entered in the same row, which was selected as an answer to question 1 and based on the answer to question 2, a column is selected, which when coincides with the pre-selected row gives a colour and a particular risk number.

Question 2				***Question* 1**		
What was the effectiveness of the remaining Barriers between this event and the most credible accident scenario?				If this event had escalated into an accident outcome, what would have been the most credible outcome?		
Effective	Limited	Minimal	Not effective			Typical accident scenarios
50	102	502	2500	Catastrophic Accident	Loss of aircraft or multiple fatalities(3 or more)	Loss of control, midair collision, uncontrollable fire onboard, explosions, total structural failure of the aircraft, collision with terrain
10	21	101	500	Major Accident	1or 2 fatalities, multiple serious injuries, major damage to the aircraft	High speed taxiway collision, major turbulence injuries
2	4	20	100	Minor Injuries or damage	Minor injuries, minor damage to aircraft	Pushback accident, minor weather damage
1				No accident outcome	No potential damage or injury could occur	Any event which could not escalate into An accident, even if it may have operational consequences (e.g. diversion, delay, individual sickness)

10.4A

Based on the colour that was identified by ERC table, actions are taken as promulgated below;



8.5. DATA PROTECTION POLICY AND DISSEMINATION OF INVESTIGATION REPORTS

The investigation reports (interim/final) will be disseminated internally to relevant departments and shall be available for PIA employees, whom may request to review for learning purpose, however discretion shall be exercised for such requests.

The information pertinent to events/conditions of safety breaches that is evident through safety investigation reports shall be disseminated to the relevant staff, as required, through already established communication medium for safety purpose (information must be de-identified) with the written consent of Head of Safety.

Subsequent to provision of reports to relevant departments, a formal response for actions taken and/or planned must be forwarded to Corporate Safety within 30 days, however subject to the risk and priority, Corporate Safety may require an early response.

Information relating to an accident or incident must not be made available to any individual / entity not related to the investigation without the consent of Head of Safety. Particular care must be taken to observe this requirement when requests originate from outside PIA sources.

Externally, Pakistan's authorized aviation accident investigation agency and PCAA will be provided with the investigation reports if PIA Corporate Safety was directed to investigate an event or condition by the authority. The investigation reports of events/conditions shall also be shared for the internal investigation reports (investigations not directed to be conducted by PCAA or Pakistan's authorized aviation accident investigation agency when required to do so or may share on voluntary basis with Pakistan's authorized aviation accident investigation agency and/or PCAA.

The safety investigation reports shared with external agencies will be de-identified unless specifically required by law.

In case of accident or serious incident, the GM (Public Affairs) may conduct media briefings in consultation with PIA senior management, Emergency Director (Head of Safety) and shall keep close liaison with Corporate Safety Department.

For investigations conducted by Corporate Safety Department, all requests for copies of statements, photographs, flight recorded data, cockpit voice recorder readouts or any other evidence shall be communicated in writing. No press releases or statement shall be issued to the media regarding outcomes of investigation proceeding being conducted by PCAA or PAKISTAN'S AUTHORIZED AVIATION ACCIDENT

INVESTIGATION AGENCY. However, clarifications on certain essentials matters may be communicated to the press after getting top management's approval to clarify true picture of events based on available facts at that point in time.

8.6. DOCUMENT AND RECORDS: CONTROL OF EVIDENCE

In the event of an accident, an incident or even a hazardous situation requiring an investigation, the following documents altogether or ones considered necessary shall be immediately secured by Head of Safety or his/her authorized delegate who will control their custody during the investigation:

a) Aircraft (Maintenance Records, Life histories etc)
b) Crew (Personal, Training, Medical Records etc)
c) Flight (Flight log, Tech. Log, Load sheet, Seat plan, De-Brief, Flight Plan [if available] etc)
d) Flight Data Recorder readouts.
e) Any other document /resource related to investigation proceedings
f) Aircraft related manuals (Training, operating or servicing)

Additionally, any other items of evidence as required by Head of Safety or his/her delegate(s) shall be made available upon requirement for investigation purpose.

The process of investigation will be recorded with Corporate safety.

8.7. DOCUMENTS ARCHIVING:

Ref: Ch-13, Table: 13.2

8.8. JUST CULTURE / NON-PUNITIVE SAFETY REPORTING POLICY

PIA and all of its departments follow a non-punitive reporting policy. Voluntary & confidential reporting is encouraged at all levels and the management to demonstrate a just culture. Front line operational personnel are in the best position to observe and identify operational hazards, operational deficiencies and conditions that could lead to accidents and incidents and hence reporting such becomes an important part of the hazard identification process.

All employees are responsible for reporting of safety related occurrences, hazards, unsafe acts / conditions, latent factors and inadvertent mistakes. Reporting unpremeditated or inadvertent errors will not result in any disciplinary or punitive action against the reporter or other individuals involved unless, of course, such deviations result from illegal activity, violation, wilful misconduct or other egregious actions.

Reports submitted are dealt with strict confidentiality with regards to the identity of the person or information leading to the identity of the person. Any employee who reports an error under this policy is never disclosed unless agreed to by the employee or required by law, and such de-identification will be recorded by Corporate Safety.

Non-punitive voluntary reporting of safety occurrences, hazards, unsafe acts / conditions and inadvertent mistakes is a key component of the PIA Safety Management System. The necessary procedures for ensuring cultural environment and safe practices are endorsed and approved by the Accountable Executive. In case of voluntary reporting of self-error the Head of Safety or his delegated individual(s) manage the report confidentially and improvements to the system are sought through implementation of the 'Problem Finding Tree' as given in this chapter.

The substance of reports, if required, is to be disseminated in the interest of safety, health and environment. Therefore, reporting situations, events and practices that compromise safety, health and environment, shall become a priority for all employees. Reports are recorded in a database maintained at Corporate Safety.
Reporting forms for different situations / occurrences are provided in operational areas and reports may be filled on the same or plain paper or even conveyed telephonically to the Corporate Safety office or its delegates.

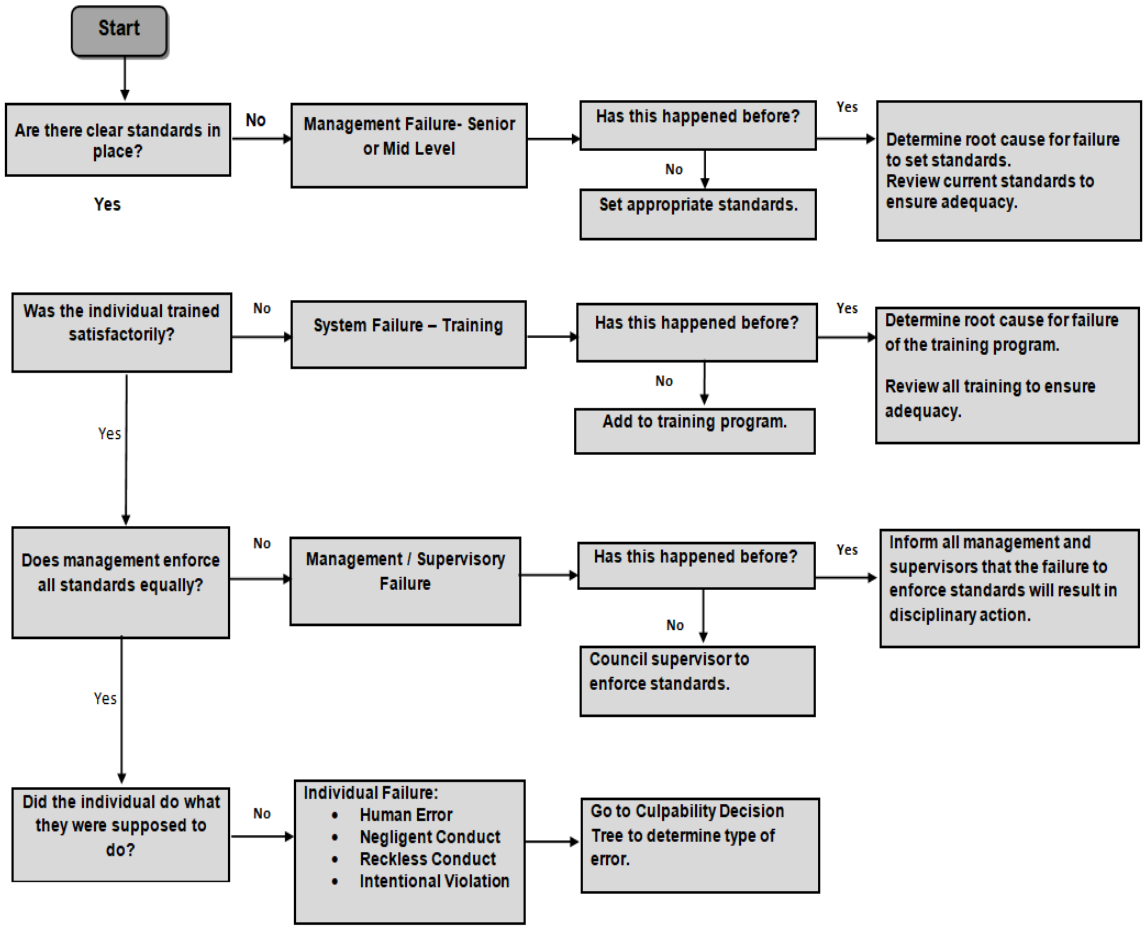
The Departmental head is responsible to implement non-punitive safety culture, ensuring that the Organization remains in compliance with the PCAA applicable regulations, demonstrate relevant knowledge and adequate extent of experience related to technical and managerial activities.

Support and sub-ordinate staff and managers shall provide assistance for system development and surveillance for Safety Management System requirements, laid down in the ICAO Safety Management Manual.

Respective managers / Chief Pilots / Chief Engineers shall be responsible for implementation of Safety Management System (SMS) in their respective divisions and sections. Personnel at divisional level shall be involved for system implementation with regular hazard identification and risk assessments.

8.9. DISCIPLINARY ACTION

Any disciplinary action or action against an individual for a safety or potential safety breach must be taken by any departmental head only after consultation with Corporate Safety (Head of Safety or his authorized delegate). The action must be in compliance with the "Just Culture Policy" and it must be justifiable to be in-line with culpability model in 'Culpability Chart', which shall be referred to in conjunction with the 'Problem Finding Tree':


Start
Are there clear standards in place?
No
Management Failure- Senior or Mid Level
Has this happened before?
Yes
Determine root cause for failure to set standards.
Review current standards to ensure adequacy.
No
Set appropriate standards.
Yes
Was the individual trained satisfactorily?
No
System Failure – Training
Has this happened before?
Yes
Determine root cause for failure of the training program.
Review all training to ensure adequacy.
No
Add to training program.
Yes
Does management enforce all standards equally?
No
Management / Supervisory Failure
Has this happened before?
Yes
Inform all management and supervisors that the failure to enforce standards will result in disciplinary action.
No
Council supervisor to enforce standards.
Yes
Did the individual do what they were supposed to do?
No
Individual Failure:
Human Error
Negligent Conduct
Reckless Conduct
Intentional Violation
Go to Culpability Decision Tree to determine type of error.

**** If the individual has carried out task as he/she was supposed to do and there was still an undesired outcome then the individual is not considered responsible for it.

Fig: 8.10 a Problem Finding Tree

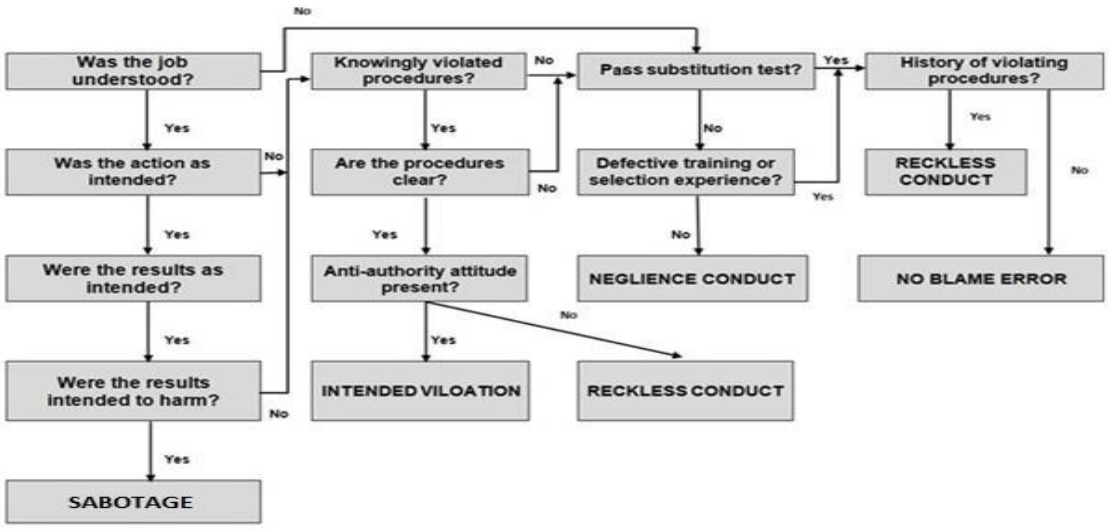


Fig: 8.10 b Culpability Chart

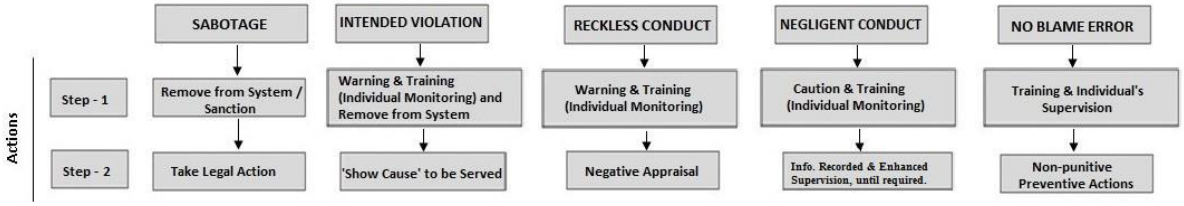


Fig: 8.10 c (Just Culture Actions)

Note: PIA & State Policy, Procedures and Law may supersede above.

Appreciating a PIA employee by any department for matters pertaining to safety may also be consulted with Corporate Safety. Although appreciation is always a good tool that may be used to promote safety, but it is important that this tool shall be utilized with diligent consideration.

* **(Ch.13) Archiving of sms records.**
** **(James Reason Culpability Model)**
*** **EASA, "AMC1OPO. GEN. 210 (a) Management System, in EU Regulation 965/2012,2012**

CHAPTER – 9

SAFETY PERFORMANCE MONITORING AND MEASUREMENT

9.1 SAFETY PERFORMANCE INDICATORS (SPIs)

In order to analyse if the organization is heading in a correct direction and improving on safety or not, a method of quantification and follow up of safety is utilized.

A measure or metric is used to express the level of safety performance achieved within the system. This metric may be a department and activity specific and is known as an SPI.

a) Lagging Indicators

'Lagging indicators of safety' measure specific events / occurrences that have already occurred and being safety outcome measurement are used for trending, and statistical analysis for effectiveness of safety performance subsequent to corrective / preventive actions taken.

These lagging indicators are outcomes which are generally negative in nature and are aimed to be avoided, the following are some examples;

i. Destabilized approaches
ii. Go-around followed by destabilized approach
iii. Ground vehicle collision
iv. In-flight diversion due medical emergency
v. Bird-strikes
vi. In-flight diversion due technical issues
vii. On-ground ramp return due technical anomalies
viii. Equipment damage during maintenance actions

b) Leading Indicator

These are indicators are input for the safety program and are based on proactive risk management principle. These effect the future performance / output of the process and hence modification to the 'leading indicators' or the elements that are represented by these SPIs effect the outcome of the safety performance.

Leading indicators producing negative outcomes are called "negative indicators" & ones producing positive outcomes are called "positive indicators".

Due to the fact that positive leading indicators (SPIs) can be used to strengthen and improve the system's safety, these must be given due importance as well. The following are some examples of leading SPIs

i. Safety training
ii. Awareness sessions for staff
iii. Percentage of employees over "Z" number of years working with the organization (less employee turnover)
iv. SAG meeting frequency
v. Hazard reports

9.2 SAFETY PERFORMANCE INDICATORS (SPIs) DEVELOPMENT

PIA shall identify top safety risks based on the analysis of incidents and reporting data along-with any predictive analysis of emerging risk, and the controls available to manage the issue(s). The top safety risks need to be managed through objective setting, which will be monitored through SPIs.

This SPI formation in addition to the general criteria shall include the following:

i. **Description**: A brief yet clear explanation of the indicator, the related metric and what it will measure; e.g. the number of, percentage of, average of, rate of something.

ii. **Indicator type**: The indicator may be activity-related (or leading), i.e. measuring current or future events and activities and reporting on how well the organization is doing, e.g. audit or inspection results, completion of tasks or projects. Or the indicator may be outcome-related (or lagging), i.e. measuring past events and identifying the conditions within a system after events have happened.

iii. **Rationale**: The identified objective's connection with the indicator can be explained and what the measurement and monitoring of the indicator supports.

iv. **Calculation method or formula**: if applicable, the specific or technical formula available for the calculation of the indicator value.

For example, the SPI 'Ratio of findings per inspection' can be described as the number of findings per number of inspections and is a leading indicator. The rationale is that findings raised during an audit inspection indicate a safety concern. Since more inspections would be expected to generate more findings, therefore, a ratio of findings (instead of just the number of inspections) would be a more appropriate indicator for comparison, and this shall be measured as (Total number of findings / total number of inspections) x 100.

In continuation, the above goal and indicator will give a good picture of the organization if the ratio is less, although in turn this will also induce an inherent risk of ineffective audits as well. Therefore, in such a case another SPI may also be required to be developed to monitor the quality of these audit inspections. In this case if the percentage of clean inspections (i.e. inspections without any findings) becomes too high, this may indicate a problem in the conduct or scope of inspection activities.

9.3 SPIs IN PIA

The Safety objectives are elaborated by specific indicators which are SPIs and these are utilised to measure the extent of achievement of associated safety objective(s). The SPIs are defined by each department (departmental head(s) along-with SAG & key safety personnel – for example in E & M, Chief of Maintenance Operations and Chief Continuing Airworthiness Officer are assisted by SAG and all Chief Engineers) on Form No. CS/SMS/SPI/01 (Appendix-9A) in consultation and final acceptance of Corporate Safety and are reviewed by concerned SAGs (communicated to Corporate Safety as well) for possible revision(s) during the preset review period for each SPI (atleast quarterly) or as and when required (e.g. in case a trigger value is busted).

The SPIs record will be maintained by each relevant departmental SAG and another copy will be kept at Corporate Safety. However, corporate level SPIs are monitored by Corporate Safety on a monthly basis.

9.4 SAFETY PERFORMANCE TARGETS (SPTs)

When the SPIs are identified for various activities, these are then utilized for measuring safety performance by direct measurement and by a comparative analysis with the available data of previous time period or from the industry. For example;

- 'X' number of destabilized approaches per 1000 flights may be acceptable and target shall be at or below this value.

OR

- 10% decrement from earlier time period {'Y' month(s)} in destabilized approaches must be the target for a specified time period.

9.5 ACCEPTABLE LEVEL OF SAFETY PERFORMANCE (ALoSP)

The minimum acceptable level of safety performance is determined through SPIs and target value setting of these. The target for each SPI is set and is considered minimum acceptable level and evaluated for compliance.

If target level is not satisfied and alert level is triggered, then appropriate follow up measures (root cause analysis & risk mitigation strategy) must be executed to counter the deviation.

The alert and target levels are reviewed and reset for each new monitoring period, based on preceding periods data and results.

The high-risk safety issues identified within the organization are catered through formation of SPIs and in case if the Safety Performance Targets (SPTs) of these are busted, relevant PCAA office may be communicated by Corporate Safety within one week from the date of establishment of information, which would be as per the PCAA requirement.

As required, PCAA shall also be informed in case of deterioration of safety performance monitored through SPIs, any other metrics, important trends (e.g. engine trends) and issues being monitored by PIA's management.

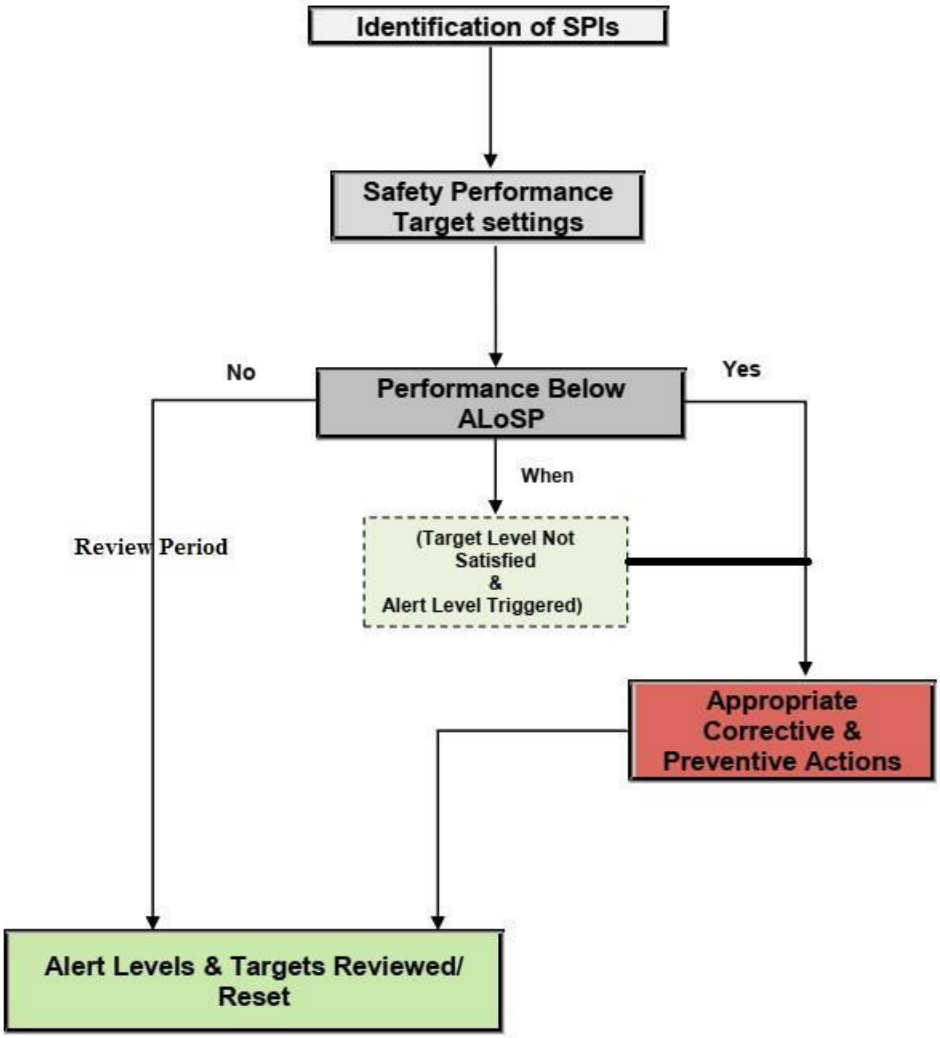


Fig: SPIs & Safety Target Process

9.6 SAFETY PERFORMANCE PROCESS, MONITORING AND REVIEW

Safety performance of PIA is monitored through information gathering through different sources (e.g. audit, inspections, MOR data etc) and then carrying out statistical analysis for comparative study of the particular SPI amongst different time periods when the previous data is available or develop SPIs and set targets by rationally utilizing available information.

The process involves setting SMART (Specific, measurable, achievable, realistic and time-bound) SPI targets (SPTs) and then analysis is carried out to determine outcome for the time-period and appropriate measures are taken.

For carrying out the analysis, a method is utilized for SPIs which is explained in this chapter. The SPIs are developed by identifying safety concerns known through globally available data or areas of serious concerns based on the high severity of the possible occurrence / occurrences, or frequent repetition of events / hazards reported, these are then also evaluated against the existing safety objectives and either the objectives or SPIs may be modified accordingly to cater for safety concerns. Safety objectives may be directly or indirectly monitored by identifying an indicator which would represent the safety performance. Targets shall be set based on the performance of previous period, which could be previous year(s) or quarter(s) etc, and other sources such as international data for same or similar SPI shall also be reviewed for it. The target setting has to take into account the available controls for improvement and any new controls that are introduced. The monitoring and measurement of safety performance directly affects the need of identification of new controls and modification of existing controls, as required.

Besides setting targets, PIA determines an alert trigger value for each SPI, which will be monitored within a predetermined period, normally on monthly basis. If the SPI busts this predetermined triggering alert value, an evaluation, decision, adjustment or change to remedial action (safety control) shall be carried out. This alert trigger value is based on the guidelines of ICAO Doc 9859.

As initially, a data point average of the available previous time period is calculated and appropriate target is set (e.g. 5% less than previous time period) for the next period. The standard deviation (SD) is calculated and values for 'average +1SD', 'average + 2SD' and 'average + 3SD' are calculated and monitored.

If the following is breached;

- Average +1SD - Three times in three consecutive months.

- Average + 2SD - Two times in two consecutive months.

- Average + 3SD - One time in one consecutive months.

the alert level is triggered and appropriate remedial action is initiated by an assessment of the situation followed by re-planning of actions.

It is the responsibility of department head to ensure that the process of risk management is being carried out in all activities requiring management of risk. Corporate Safety further monitors the working of each department and assists each, as required. The safety performance review is carried out at departmental level through SAG and at MRC / SRB level, in order for revising the Safety Objectives or setting up priorities

such as financial management of the airline and supporting the process of improvement of PIA's safety system.

Safety performance indicators (SPIs) shall be set / adjusted in a manner that these are traceable and comparable with safety performance indicators of the previous review periods, and any deletion or addition of safety performance indicators shall require justification and agreement from Head of Safety after recommendations from DGM SMS, GM CQSA or Chief Engineer (QA).

SPIs shall be approved from the concerned department Chief / or designated individual managing authority in coordination with Corporate Safety and finally acceptance from relevant state regulatory authority. Targets set on these Safety KPIs / SPIs shall be based on performance achievement of the previous period but shall be improvement oriented. SPIs and targets shall serve as a tool for validation of effectiveness of safety risk mitigation actions, in case of deterioration and busting of targets or alert levels (as defined above) the controls applied through HIRM process will be evaluated / reviewed and required modification(s) will be made to existing controls or new controls will be placed, if required (Refer to Chapter 7 for HIRM process description).

SPI targets may be set through simple qualitative analysis and decision making as well, which shall be documented. Furthermore, monitoring of safety indicators, which are the monitored SPIs, is required to review these for potential addition as a targeted SPI.

9.7 SPIs AND ORGANIZATION'S SAFETY OBJECTIVES

Specific SPIs are developed to be monitored and analysed in order for PIA to ascertain its realistic position with respect to the laid-out Safety Objectives, which are in turn an extension of the Safety goals and Policy of the airline.

9.8 REGULATORY ACCEPTANCE PROCESS OF SPIs

The SPIs developed by PIA are of high and low consequences, hence the SPIs developed shall be utilized for performance monitoring, risk management and review followed by resetting of safety performance targets.

Acceptance of SPIs and SPTs and acceptance of any change in SPIs by relevant State regulatory authority depends on latest policy of the authority. Forwarding of these SPIs, SPTs and achievement on a quarterly basis and information on busting of alert level of any SPI will be carried out by the relevant SAG to regulatory authority within 7 days through standard communication channel(s), in communication with Corporate Safety.

SPIs & SPTs may be acquired by SSP office Pakistan in order for the setting up state SPIs or acceptance of SPI targets for PIA corporate SPIs.

9.9 APPENDIX – 9A (DEPARTMENTAL SPIs)

PAKISTAN International Airlines Great People to Fly With

SAFETY PERFORMANCE INDICATORS FOR THE YEAR ( ) Rev #

OF DEPARTMENT

Form No. CS/SMS/SPI/01

Dated August 04,2020

Sr. No.	SPI (s)	Base line	Target (Previous Year)	Target (This Year)	Controls/ Implementation plan	Review Frequency	Responsible Division/ Section	Responsible Individual (s)
1								
2								
3								
4								

Prepared By Departmental SAG Coordinator	Approved By Departmental Head	Reviewed /Agreed By Head Of Safety

*Note: Extra sheet(s) may be used, if required

9.10 APPENDIX – 9B (DEPARTMENTAL SPIs Review Document)

PAKISTAN International Airlines Great People to Fly With

Ref: CS/SMS/SPI/02
Date: _____

Achievement Status Safety Performance Indicator (SPIs) of _____ Deptt. / Div. From _____ to _____

Sr. No.	SPI (s)	Base line	Target (previous year)	Target (this year)	Controls/ Implementation plan	Review Frequency	Responsible Division/ Section	Responsible Individual (s)	Performance	Remarks
1										
2										
3										
4										

*Note: Extra sheet(s) may be used, if required

Prepared By: Reviewed By: Reviewed By (Corp. Safety): Approved by (Deptt. Head):

CHAPTER – 10

SAFETY TRAINING AND SAFETY COMMUNICATION

10.1 SMS AWARENESS & TRAINING PROGRAM

a) Training for All Employees

SMS training and awareness is an integral part of SMS implementation, and an initial SMS training is mandatory for all operational staff (air and ground crew). General SMS awareness training shall be completed in one (01) day, a minimum of 3 hours, and shall be provided to pilots, cabin crew, engineers, technicians, maintenance planners, PHS staff, RSD staff, cargo staff, catering personnel, flight dispatchers, operations engineers and even non-operational safety critical personnel affecting safety through their decision making such as the scheduling staff.

Initial (indoctrination) as well as the biennial (two year) Safety / SMS recurrent training is completed for all crew and staff to the extent of their involvement in the organization's SMS program. The SMS recurrent training is part of PIA's overall training program and same contents as of initial training are utilized along with discussion on practical implementation, shortcomings and improvements sought from the organizational SMS e.g. recent SMS / Safety bulletins. In recurrent training any changes to the safety related policies, procedures or processes shall be discussed as well along with current issues and lessons learnt from safety events etc.

b) Training for SAG and other Safety Management Positions

Subsequent to the basic SMS training, additional training may be required, which is subject to the individual's SMS roles and responsibilities, and this training is devised to an extent of their involvement within the Organization's SMS program. The individuals such as Head of Corporate Safety, DGM SMS and member(s) of SAG shall all be required to undergo five (05) days SMS training by PCAA / equivalent. However, until the opportunity for 05 days SMS course is availed, efforts for which shall be made without delay, the mentioned individuals will have to undergo an additional enhanced training which shall be completed in one (01) day, a minimum of 3 hours, as per requirement, catered for individual(s).

c) Individual Cases for Enhanced training

The training Need Analysis (TNA) is generalized for different cadres of employees and training is based on it (Refer Table at the end of section 11.1). However, based on departmental requirement(s), TNA based on individual case(s) may direct enhanced SMS training for such individual(s). e.g. a technician is normally required to undergo an SMS course (General SMS awareness) but in case if this individual is included in Engineering & Maintenance department's SAG, he may be required to undergo three (03) or five (05) days course by the PCAA if the SAG believes that this will bring increased productivity with SAG activities.

d) SAG Members and Managerial Positions

All SAG members, unless opportunity is availed for a 5-day PCAA / equivalent course, shall have to undergo an additional enhanced training which shall be completed in one (01) day, a minimum of 3 hours. This must include modules / discussion pertinent to SMS implementation, just culture concept & its implementation, the foundational 8 building blocks of SMS and cost benefit analysis. The additional concepts are important to be understood in order to execute correct decisions while conducting SAG activities such as risk management.

e) General Managerial Positions

For general managerial staff, a training is devised that covers all elements of understanding their SMS responsibilities, cost benefit analysis while making safety related decisions and just culture etc. This training shall also be completed in one (01) day, a minimum of 2 hours.

f) SMS Training Management and Record

All departments will manage SMS training (initial and recurrent) for their staff with a pre-defined procedure, such as for Engineering and Maintenance, HRT would maintain the training record of SMS along with the other training records (all departments to manage training records in a form that it is available upon requirement from Safety Manager / Head of Safety), the SMS training shall be maintained as per the individual's role in organization, if selected as a SAG member, the SAG coordinator is responsible to inform HRT.

When additional training is required as SAG member, the SAG will inform its departmental training management section / HRT of the requirement and the same will be arranged by HRT. Once training is completed, information will be communicated to SAG by the training section / HRT. PCAA SMS training shall be coordinated through Corporate Safety.

The SMS training is conducted preferably during regular classroom sessions. However, to ensure continuity, recurrent training may be conducted through on-line and read & sign methods. Concerned departmental head is responsible for ensuring that its employees are adequately trained to perform their functions in the best manner.

g) SMS Training levels

Through the SMS training employees receive information for ongoing safety issues, safety risk profile and specific hazards existing in the workplace, why safety procedures may have been changed or additionally introduced. They are also informed about the initiatives taken to address known safety issues and other generic safety related information.

The SMS Awareness program includes modules based on SMS information and are conducted in-house, each completed within one (01) day (both initial and recurrent), a minimum of 3 hours, except for PCAA three (03) or five (05) day trainings. The following are three (03) levels of in-house trainings:

- Module for General SMS Awareness for All Employees
- Module for Members of Safety Action Group
- Module for SMS Implementation by Managers

These modules have their contents extracted from the PCAA training content which is consolidated by Corporate Safety and approved by the Head of Safety in coordination with departments including PIA Training Centre as per training requirements mentioned above.

SMS training may be modified by departments according to the needs of specific cadre of staff and their practical involvement for operational areas as well as considering utilization of the training time and emphasizing on relevant topics. However, approval shall be sought from Corporate Safety for such changes.

The training content will be reviewed every two years and approved by Corporate Safety, which the department(s) imparting training is / are responsible to ensure its latest and approved content, through approved instructors.

h) SMS Training Instructors

These modules are conducted on regular basis by qualified instructors / facilitators who shall have undergone a complete five (05) days course by PCAA / equivalent and shall have either completed "Train the Trainer / Instructional Techniques" course or have previous instructional experience or has been evaluated for such. All trainers must be approved by Head of Safety.

The instructors shall be evaluated, as necessary, by the Head of Safety or his delegate such as DGM SMS before being authorized for imparting SMS trainings. There shall be an annual review and re-approval each year for the SMS instructors.

The following table shows basic contents of each SMS module and there may be more content added as per contemporary requirement:

Subject		General SMS Awareness	Members of SAG	For SMS Implementation by Managers
1	Evolution of Safety thinking	✓	✓	✓
2	Definition of Safety & SMS	✓	✓	✓
3	PIA Safety Policy	✓	✓	✓
4	Hazards & Risks	✓	✓	✓
5	Risk Assessment/management	✓	✓	✓
6	Safety reporting systems	✓	✓	✓
7	Positive Safety Culture	✓	✓	✓
8	Swiss Cheese model	✓	✓	✓
9	Concept of Accident causation		✓	✓
10	Approach to accident/incident analysis & Human Factors concept	✓	✓	✓
11	Strategy towards Risk management	✓	✓	✓
12	SMS Implementation steps		✓	✓
13	Safety Responsibilities	✓	✓	✓
14	Just Culture (in-depth)		✓	✓
15	Just Culture (Basic)	✓		
16	Cost Benefit Analysis		✓	✓
17	Cultures affecting Safety		✓	
18	8 Building blocks of SMS		✓	✓
19	Safety Space & Safe system Qualities		✓	✓
20	Safety Reporting & relevant Software(s) / App and reporting channels	✓	✓	✓ (as required)
21	(Reactive, Proactive & Predictive Data Collection)		✓	✓

10.2. SMS TRAINING / AWARENESS FOR ACCOUNTABLE EXECUTIVE

The Accountable Executive along with other departmental heads, need to be affluent with concepts of SMS for which either previous training in conjunction with the training after joining the organization, familiarization or briefing shall be conducted for meeting the appropriate requirement. The training may be conducted by the Head of Safety or his authorized delegate, who fulfils the SMS instructor requirement.

The training session shall be half day, 1.5 hours at the least, and will provide the Accountable Executive with a general awareness of the organization's SMS, including SMS roles and responsibilities, safety policy and objectives, safety risk management and safety assurance.

10.3. SMS TRAINING / AWARENESS FOR SAFETY MANAGER

In order for SMS to be implemented and relevant activities managed for the airline, the manager in-charge (SMS Manager) with delegated authority must have required knowledge and understanding of SMS through formal course – complete five (05) days SMS course from PCAA / equivalent and a training on Safety Investigations.

10.4. TRAINING RECORD

a. All Safety/SMS training imparted to the crew and staff are recorded in relevant training database and it also may be placed in their training files. The database is maintained by the individual departments.
b. The training record for initial & recurrent trainings shall be retained for at least 5 years.
c. It is the responsibility of the departmental head to ensure record is maintained properly.
d. An account of training records of all employees shall be maintained by Head of Safety to be communicated to Accountable Executive.
e. Training record of Accountable Executive is to be maintained by Head of Safety.

10.5. EFFECTIVENESS OF SMS TRAINING

The following are some basic assessment methods that may be utilized for evaluating the effectiveness of SMS / Safety trainings:

a. The general understanding of employees for SMS, which may be deduced by monitoring the overall performance of the airline with respect to safety and factors as safety reporting, performance of aircraft operations through FDM (Flight Data Monitoring), ASRs (Air Safety Reports), observations during regular operations and audits/inspections etc
b. Comparative analysis on the violations / negligent conducts with previous time period, available industry/human factors data.
c. Risk registers and risk management carried out by different departments of the airline.
d. SMS concept utilization for management decisions such as 'risk-based decision making', 'change management' and risk assessment etc.

Progress and efficiency of SAGs (Safety Action Groups), the type of problems that are being dealt with (safety violations or misunderstandings of basic safety regulations / best practices creating issues in general would point out towards inefficient system) and delayed actions on SAG's part are also a sign of system working at less than optimum.

10.6. SMS TRAINING REQUIREMENT FOR EXTERNAL SERVICE PROVIDERS

All services which are accessed and utilized by PIA through outsourcing, need to be at least at par with PIA SMS standards, the training is no exception. Hence, the training of outsourced services personnel shall be as per the above-mentioned requirements of recency and content of training (subject to role of those individuals in the airline activity).

However, in case of any difference from above standards, exception may be acceptable on case-to-case basis, subject to risk assessment and mitigation of any unacceptable risks arising from the gap with PIA training requirements. The SMS training and awareness shall be made part of the Service Level Agreement (SLA) and respective department (one initiating agreement) is responsible for ensuring such and departments are responsible to assure effective SLAs.

10.7. COMMUNICATION PROCESS FOR SMS AWARENESS & SAFETY PROMOTION

The safety communication helps develop a safety culture and shall be transparent, correct and shall have continuity. Furthermore, safety promotion is linked closely with safety training and the dissemination of safety information. Safety promotion plays an important role in the maintenance of safety, as it is the means by which safety issues are communicated within the organization. These issues may be addressed through staff training programmes or less formal mechanisms. In order to propose solutions to identified hazards, staff must be aware of the hazards that have already been identified and the corrective actions that have already been implemented. The safety promotion activities and training programs shall therefore address the rationale behind the introduction of new procedures.

For a safety message to be learned and retained, the recipient first has to be positively motivated. Unless this is achieved, much well-intended effort may be wasted. Safety topics are selected for promotional campaigns based on their potential to control and reduce losses. Selection is therefore based on the experience of past accidents, incidents or near misses, matters identified by hazard analysis and observations from routine safety audits, information on why an action has been taken or procedure / policy has been changed and how this affects the overall safety.

Nominated SMS coordinators and the departmental SAGs are closely linked with SMS Section of Corporate Safety Department and all shall excel to communicate appropriate safety information. Safety critical information is disseminated to personnel in accordance to their roles and position within the organization, some of the main mediums for safety information dissemination are given below:

- Information Bulletins
- Safety Circulars
- QHSE Newsletter
- Safety Magazine/Bulletin
- Email Alerts
- Web based SMS Software
- Safety Procedures and Policies
- Intranet
- Informal work-related meetings & Tool-Box Talks
- Workshops e.g. CRM
- Meetings & Briefings
- Conferences / Seminars
- Videos / Posters
- Spoken and Written word

The effectiveness of organizational safety communication is evaluated through direct observations as well as general behavioural trends. For example, circulars to flight crew regarding flight operations can be evaluated through FDM data analysis and similarly information passed on to crew and maintenance staff for documentation errors in the aircraft technical logbook (ATLB) can be measured by reporting of lesser number of events of ATLB filling errors.

CHAPTER–11

INTERNAL AUDIT & CONTINUOUS IMPROVEMENT

11.1. CONTINUOUS IMPROVEMENT

Continuous improvement of overall performance is a necessary requirement for managing changing variables with time and hence it is important to first evaluate the current state of the organization for suitability, adequacy and effectiveness. The evaluation is carried out by performance monitoring and measurement through following means:

a. Safety Audits
b. Safety Reporting (Reactive & Proactive)
c. Safety Review
d. Flight data analysis (FDA)
e. Safety Surveys & Safety Studies

Safety performance monitoring and regular review is carried out by relevant Safety Action Groups (SAGs), Flight Safety Committee / Safety Review Board (SRB). Management Review Committee (MRC) is the highest forum which may have embedded functions of SRB for monitoring and assessing the Safety Management System program's performance at least once a year. In MRC senior management of the airline reviews to ensure the appropriate allocation of resources, result of internal audits, safety recommendations and investigation outcomes to ensure proper functioning of airlines operations, as well as capability to respond to external audits such as AOC, IOSA, etc.

a. Safety Audits

Safety Audits are conducted by Internal & External Audit Teams. Current IOSA & SMS Audit checklist is used keeping in view the following important areas while auditing:

i. Analysis of all accident / incident rates
ii. Analysis of confidential safety reports (including web-based reports)
iii. Outcomes of Investigations and its recommendations
iv. Flight Data Monitoring process statistical trends reports
v. Analysis of concerned employees feed back
vi. Spot check and/or spot interview with employees
vii. Review of inspection / audit reports conducted by other agencies such as Quality Assurance and yearly AOC inspection by PCAA

General Manager Corporate Safety & Quality Assurance in coordination with Chief of Safety/Chief Pilot Safety develops the Corporate Safety Audit Plan which is a part of Corporate Audit Plan covering all the department and Stations , audit plan is approved by CEO /Accountable Executive.

Corporate Quality & Safety Assurance qualified Internal Audit team is responsible for conducting periodic safety oversight audits of key operational areas at all airports of the network. Chief of Safety/Chief Pilot or his delegate may conduct spot checks, analyze specific FDA and/or FOQA reports, confidential reporting system and review feedback of other agencies on safety performance monitoring, annual review of PCAA AOC inspection reports and monitor the response of the concerned departments / sections towards closing of AOC audit non-conformities.

b. Safety Reporting (Reactive & Proactive)

As discussed in detail in Chapter 7 of PIA SMS Manual, hazard identification is important for risk management and safety reports are one of the channels through which hazards are identified.

Factors such as number of safety reports received, type of reports, quality of reports and time taken for SAGs to process each report, are a few trend analyzing parameters that can be utilized to assess SMS effectiveness, that adequate actions are being taken and Safety culture of the organization.

c. Safety Review

Safety is assessed through SPIs (Safety KPIs) and fulfillment of other safety related requirements during reviews at departmental level, SAG meetings, MRC or SRB.

Gap Analysis may be carried out for planning actions to achieve safety targets.

d. Flight Data Analysis (FDM – Program)

As per the PCAA requirements (ANO-028-FSXX, aircraft having certificated MTOW above 27 tons to establish and maintain FDM program), PIA is running an FDM program, which being part of SMS and utilizing 'Just Culture', a pro-active (predictive for targeting unsafe precursors) and non-punitive program for analyzing flight data recorded during routine flights.

D1. Utilization of FDM can support the SMS by;

I. Identifying areas of operational risk and quantifying current safety margins.
II. Identifying and quantifying operational risks by highlighting when non-standard, unusual or unsafe circumstances occur.
III. Using the FDM information on the frequency of occurrence, combined with an estimation of the level of severity to assess the safety risks and to determine which may become unacceptable if the discovered trend continues.
IV. Placement of appropriate procedures for remedial action(s) once an unacceptable risk, a flight safety risk, actually is present or predicted by trending identification.
V. Confirmation of the effectiveness of any remedial action by continued monitoring.

D2. Additionally, the program may be utilized to analyze technical aircraft data in order to:

I. Support defect troubleshooting after specific occurrences.
II. Monitor aircraft systems to predict anomalies.

D3. The FDM program process is as follows

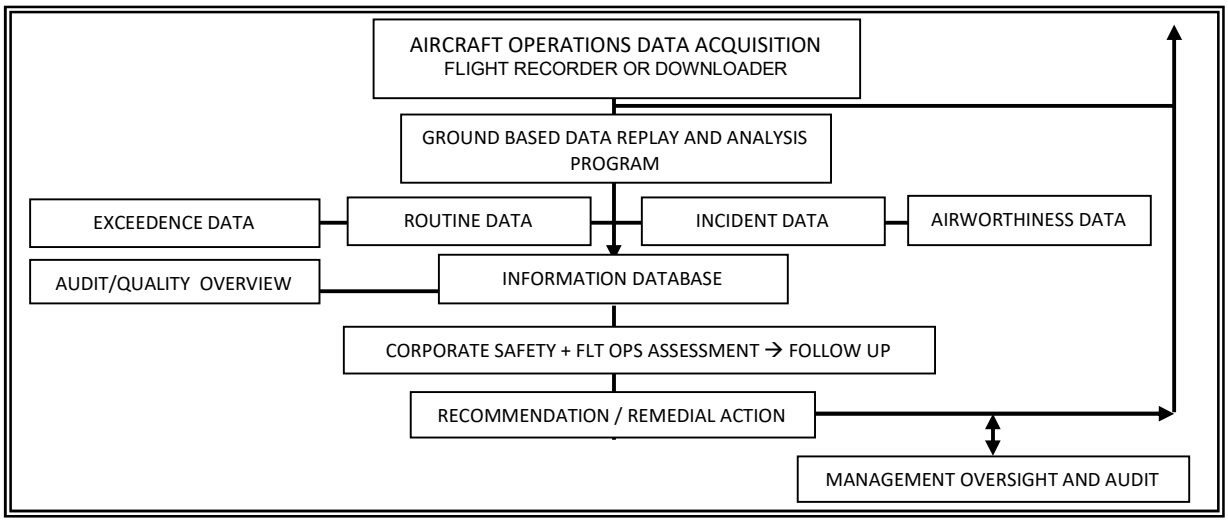
I. Data is acquired from the aircraft by PIA Engineering & Maintenance department and forwarded to Corporate Safety (DCE FDMs Office).
II. Data is processed at Corporate Safety using FDM software, monthly reports are generated and are made available for analysis.

III. FDM Analyst analysis the data of routine and non-routine operations to highlight any exceedances in particular or analyze the events and their trends, and shall recommend corrective actions or highlight particular areas of deviations to the respective department

IV. Flight Operations Department is mandated by PIA policy to consider analysis and further follow-up on the high risk areas for corrective / preventive actions, however Corporate Safety may recommend corrective / preventive actions, which would normally be accepted by Flight Operations Department or otherwise appropriate reasoning shall be documented for non-adherence to recommendations.

V. After implementation of corrective / preventive controls, the FDM monitors forthcoming data to analyze the effectiveness of the applied control.

Detail of FDM activity in PIA is documented in standard operating procedure (CS/CP-01)



THE FDM PROCESS
Fig: 11.1dx

Head of Safety is responsible for maintaining the FDM program along with ensuring the confidentiality & archiving of the data.

The FDM analysis would typically focus on events that fall outside normal operating boundaries, as determined by operational standards, or the aircraft manufacturer's limitations. Furthermore;

i. Unless an FDM event requires immediate action in the interest of safety, significant FDM events will be aggregated for further review by a Corporate Safety delegates / Flight Operations department.

ii. Crew member identities will be de-identified before making the data available for analysis. However, FDM programmes could include a crew liaison officer (as delegated by Head of Safety) who is normally provided with a secure means of determining crew identity to enable follow-up inquiry and feedback with a particular flight crew concerning a particular FDM event. In case crew is de-identified, a record shall be maintained by DCE FDM or by the individual, who is delegated by Head of Safety for the same.

iii. FDM analysis focuses on the trend analysis of aircraft operation (fleet and operation-wise) as well as individual trends shall be monitored if serious safety concerns are figured through the operating patterns of the individual.

e. Safety Surveys & Safety Studies

Safety related information may be extracted by PIA through carrying out surveys or safety studies (atleast yearly or more frequent) either by its own resources or individual(s) / other parties than PIA.

The survey or study may target a specific group of employees, a department or it may be generic in nature for all employees and similarly may inculcate industry information in general. However, relevant SAGs must be a part of surveys for maintaining record(s) of the activity. Survey can be conducted by interviewing relevant personnel or maybe by asking people to fill in a simple questionnaire in paper or electronic format.

PIA can benefit from surveys or studies by focusing on its particular areas of interest and explicit information from within the organization to reflect the actual state of functioning, so that corrective or proactive preventive measures may be applied / re-directed. As required, subsequent actions shall be taken directly through SAGs or departments, or the result of the survey shall be shared with Accountable Executive in MRC or through SRB for actions initiation. Subsequent to the actions taken for improvement, a predetermined time shall be documented, after which a reassessment of the situation will be carried out to evaluate the results. The reassessment may be carried out through another follow up survey(s). SAGs shall play a part in coordination with Corporate Safety to develop, disseminate and evaluate the surveys.

The surveys shall be evaluated by Corporate Safety with required technical support or by the party which conducted the survey who shall share the results with Corporate Safety.

11.2. SMS AUDITS

The main objective of the SMS audit is to:

- To check how healthy is the system running through out the Organization
- To give directions and trainings by identifying the opportunities for improvement.

The scope of SMS audit, at a minimum, shall be the PIA SMS Manual, satisfying SSP Pakistan & ICAO requirements which cater for the four (04) pillars & twelve (12) elements of SMS as defined in ICAO Doc 9859 and other associated ICAO documents.

SMS audits shall be carried out throughout the organization at least once every two (02) years by Corporate Quality & Safety Assurance Division reporting to Accountable Executive /CEO PIACL, The Division is mandated and primarily responsible to conduct Internal Audits on different regulations and standards such as IOSA , ISO 9001 and SMS Audits. to conduct SMS Corporate Internal Audit Plan shall be prepared by DGM CQA, reviewed by General Manager (GM) CQSA in coordination with Chief of Safety/Chief Pilot Safety and approved by the Accountable Executive.

Date of audit and checklists to be used are published and delivered to relevant departments by Corporate Safety or the delegated office(s) before the audit.

Audits shall be conducted by team comprising of a Lead Auditor and his / her team that may have supporting staff but the auditors shall have the required training on SMS (05 days PCAA / equivalent

course) the auditing techniques course and ideally previous experience of auditing. These auditors shall be selected based on their previous record to ascertain the required competence and assuring that impartiality will be maintained.

Every audit shall include the following activities:

1. Initial intimation to auditee department / division
2. Opening Meeting held by Lead auditor with departmental head concerned or his nominee (not below General Manager / equivalent level)
3. Audit activity and evidence(s) collection
4. Finalization of Findings / Non-Conformance Reports
5. Closing Meeting
6. Post audit activity / closure of audit

The findings identified in the audit are addressed to concerned departmental head on Form # QA/F/03 for identifying root cause(s) and proposing Corrective Action Plan (CAP) along-with implementation timeline(s) which is mentioned in detailed in Corporate Quality Manual Chapter 11,

i) **For Level I Major** Findings: RCA & CAP shall be required to be submitted in 24hours and 07 days are given to ensure implementation of Corrective Action
ii) **For Level II Minor** Findings: RCA & CAP shall be required to be submitted in 10 Days and 60 days are allowed to ensure implementation of Corrective Action
iii) **For Level III Observations** RCA & CAP shall be required to be submitted in 10 Days and 90 days are given to ensure implementation of Corrective Action

Once responses are received and accepted, auditee department shall implement the CAP within the prescribed period and inform once action(s) is / are completed. Same shall be physically (if required) verified by concerned auditor or his / her delegate for closure of finding.

A report of SMS audit is submitted to the Accountable Executive mentioning areas of concerns after the conclusion of audit. Status of SMS audits shall be presented to the management during Safety Review Board/MRC meetings.

Internal IOSA based audits are also a means to detect deviation from the required SMS standards and application of control measures, the audit frequency is once in every 2 years, however the interval can change subject to PIA's requirements.

The IOSA audit checklist, which is an international standard SMS checklist, is utilized by PIA to carry out internal audits for identifying lapses or shortcomings in the system. As required, there may be a different checklist introduced for auditing company's safety profile and for further SMS evaluation.
The SMS internal review or audit records shall be maintained as per the SMSM records policy.

11.3. DEFINED SAFETY STANDARDS AND AUDITING OF WET LEASE SERVICE PROVIDERS

The Safety Management System at PIA and IOSA Standards require that our business partners must atleast match PIA's own operational safety standards. Therefore, all maintenance service providers,

Code-Sharing Agreements, Wet-Lease or Dry-Lease Agreements / Contract and Asset Purchasing Control systems shall include a mandatory audit or inspection of potential PIA partners, to ensure adequacy of their Safety and Performance Standards.

Specialized fields such as monitoring of De-Anti Icing Handling Agents, and of refuelling handling agents at foreign stations shall be monitored via PIA's membership to IATA FUEL QUALITY POOL (IFQP) and De-icing / Anti-icing Quality Control Pool (DAQCP). A cross functional team shall however review their performance to safety standards by reviewing the IATA audit reports and operational feedback. This CFT forum shall recommend change of handling agent in case safety performance falls below IATA audit standards and they fail to resolve the audit findings within the given timeframes. However, till the time PIA becomes an active member of IFQP and DAQCP prevailing monitoring process shall continue to be practiced.

Primarily through Audits or other suitable approach the service providers are assessed to be up to the par with the SMS requirements. If not, then required measures are taken to bridge the gap for availing services, this includes the required SMS training aspects as well.

11.4. FLIGHT SAFETY ANALYSIS PROGRAM

PIA's Flight Safety analysis program is to identify and mitigate existing or potential hazards within the system which are related to the flight operations of aircraft.

The program utilizes systematic analysis and data gathering techniques and reports based on these are generated for managers and supervisors with an objective to prevent incidents and accidents. Trend analysis is carried out with the help of SPIs and safety event monitoring, and subsequently corrective - preventive actions are initiated, as required.

The safety information database is used as an important tool for effective safety management functions such as trend monitoring, risk assessment, cost / benefit analysis, occurrence investigations, safety promotion, safety assurance and change management (MoC). It provides a reliable basis for adjusting safety priorities, evaluating effectiveness of risk mitigation measures & initiating safety-related research.

Once hazards are identified and the risk assessed, controls or mitigations will be proposed / listed in accordance to PIA HIRM procedures and the responsible manager / supervisor will examine the options available along with the Corporate Safety team and SAGs. The management shall evaluate the proposals and take decision on the basis of its impact on risk level, cost and time factor. The management shall follow risk-based resource allocation strategy. Approved controls / mitigation strategies will be implemented as appropriate by the concerned Safety Action Group (SAG) to bring the relevant risk index to as low as reasonably practicable. The management concerned must ensure that the SAG team comprises of functional / operational / technical experts of the area who shall be trained and competent to know this process.

The MRC / SRB will conduct periodic reviews of the actions taken by the line managers and its effectiveness.

11.5. SYSTEM DESCRIPTION, GAP ANALYSIS & ORGANIZATIONAL COORDINATION

The departments of PIA are responsible to fully understand the responsibilities and accountability of their functions for safe and efficient conduct of the whole system, which requires an understanding of the usage, performance and limitations of machines / equipment, human components, existing requirements by legal statutory laws, SOPs and environment. Furthermore, departmental or hired services that are to be monitored by these departments shall be managed accordingly.

When carrying out a gap analysis in order to find out the discrepancies within the safety management system, a system analysis in-line with the organizational functions shall be carried out as part of a gap analysis and appropriate measures shall be taken through the process of risk based decision making considering cost benefit analysis to fulfil the requirements. The integrated SMS component of the organization within each department is structured in a manner that the central core remains the 'Corporate Safety' and through which coordination and linkage is achieved to carry out tasks that require SMS integration of different department, this includes activities of Cross Functional Teams (CFT) to have collaboration and final consensus for achieving goals safely.

The departments with multiple functions and complex structures such as the Engineering and Maintenance Department coordinate through their respective SAG for issues pertinent to safety. However, relevant divisional staff may also be part of the CFT to ensure Subject Matter Experts (SMEs) are involved in the activity.

A gap analysis shall be carried out for continuous system shortcomings in;

a. the same or similar domains,
b. in case of a high severity event taking place,
c. in case of system inefficiency (system affecting operational safety) and failure of subsequent system efficiency improvement protocols,
d. for new regulations,
e. system or business requirements or
f. to evaluate the current state of system and for identifying future direction and actions.

A CFT or members of SAG(s) shall carry out a gap analysis in coordination with Corporate Safety or its delegates for verifying correct structure, plan, progress of the gap analysis and associated actions. The records will be maintained by each relevant SAG and a copy is to be forwarded to Corporate Safety (retention time to be the same as of MoC).

Each gap analysis shall have a defined timeline for evaluation period as well as for the subsequent improvement actions. Progress will be monitored against these defined timelines and in case of delays, information will be highlighted to Corporate Safety by the process owners for assistance in terms of technical expertise, raising the issue to higher management or resource allocation request from higher management.

HIRM process shall be followed in case of identified safety hazards during a gap analysis (Refer Chapter 7 for HIRM process).

APPENDIX 'A' – AUDIT NONCONFORMITY REPORT (FINDING)

PIA	AUDIT NONCONFORMITY REPORT (FINDING)			QA/F/03
	Issued by: Corporate QA	Start Date:	Audit Code:	Rev 01-Dec 08

NC Category:		Audit ID:		NCID:		NC Date:		Finding #:		of
Station / Dept:						Auditor:				
Div / Sec/Contr:						Sign:				
Standard:			Clause:			NC Type:				

REQUIREMENT			
NONCONFORMITY			
Acknowledged By: (Auditee)	Due Date for Corrective Action Plan Submission:		Due Date for Corrective Action Implementation:
ROOT CAUSE ANALYSIS			
CORRECTIVE ACTION			
Initiated By:	Verified By: (Auditor) .		Implementation Date:

FOLLOW UP AND CLOSE OUT						**FOLLOW UP AND CLOSE OUT (extension)**					
Approved:	Yes ☐ No ☐	New Due Date:				Approved:	Yes ☐ No ☐				
Evidence reviewed or, if not approved, reasons for disapproval:						Evidence reviewed:					
Appr. by:		Date:				Appr. by:		Date:			

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CHAPTER –12

MANAGEMENT OF CHANGE PROCEDURES

12.1 MANAGEMENT OF CHANGE (MoC) PROGRAM

A proactive hazard identification for safety assurance can be carried out by managing the change (MoC).

A change brought in the system or its components may introduce new hazards or altogether reduce the effectiveness of the existing safety controls in the system. To avoid any uncontrolled hazards and to strengthen the existing controls (if required) it is necessary that a proactive measure shall be taken to avoid surprises.

It is desired by PIA management to not only manage changes and safety stability but also drive the organization towards a level of resilience that enough safety barriers are installed to avoid any serious consequences.

In case of other organizations, suppliers and contractors involved, the MoC execution shall directly or indirectly through connecting PIA representative involve such parties.

a) Responsibility

SAGs are responsible to cater for changes as per safety case, risk analysis, its management and acceptance of the risk level may be decided at SAG or MRC/SRB level. However, the final authority to accept an MoC lies with Head of Safety or his/her authorized representative from Corporate Safety Department, which is based on identified hazards by the SAG(s) and information provided by SAGs including the evaluation of associated risks along with significance of their impacts on operational safety for the change. The final approval of the MoC lies with the departmental head / operational head for all major changes or a delegate can be authorized for approval for minor changes.

Head of Safety on his discretion or his authorized delegate may coordinate with any operational heads (Directors/GMs/CEs/CPs) for potential changes and mitigation of risks associated with future impacts on operations. However, each department is accountable for ensuring that a requirement for MoC is raised and communicated to Corporate Safety. Departments may further distribute the responsibility to the sectional heads for raising a concern or informing the SAGs when change occurs within their particular domains.

MoC requires multi-disciplinary support for a holistic approach and hence cross functional teams must be established inculcating all departments' personnel involved (at least at the initial stage), hence it is the responsibility of each departmental head and SAG to ensure presence of competent staff for the activity.

b) Risk Management

The HIRM process for the identified consequences shall be carried with standard HIRM philosophy, and if the risks are beyond an acceptable level and cannot be mitigated to an acceptable level, then that particular project / operation can be halted or aborted.

c) Items requiring Management of Change

A non-exhaustive list of changes requiring thorough MoC (Management of Change):

I. Technological changes affecting the safety of operations
II. Major Changes/modifications in Systems and Processes
III. Procedural Changes implied by Manufacturer or PIA
IV. Changes in the Nature of Operations
V. Change in infrastructure
VI. Wet lease operations initiation
VII. Major change of new or amended regulatory requirements
VIII. Aircraft Fleet changes
IX. Ground Equipment change
X. New stations operations
XI. New station contracts involving operational matters
XII. New Suppliers pertinent to logistics or equipment
XIII. Major Organizational (Change of Key Accountable Executive, Safety Manager etc)
XIV. Staff (safety critical) Changes
XV. Equipment written off or grounding and halting of processes/ operations no longer needed
XVI. Change in Organization's approved Scope of Work (Maintenance, Operations etc.)

MoC activity may not be carried out for changes that are already managed according to laid down procedures such as routine maintenance, minor administrative updates that do not affect safety, changes that have 'developed procedures' in place to evaluate and manage effects of equipment / component / personnel changes, non-key personnel changes etc. However, in case of any confusion the Department is necessitated to take advise from SAG members and/or Corporate Safety.

12.2 STAGES OF MANAGEMENT OF CHANGE

The Purpose of a standardized procedure for MoC is to define a mechanism and responsibilities for the management of change team to establish goals, objectives, roles, and procedures involved in every process applied throughout the lifecycle of a change. The stages and procedure laid down next will serve as a best-practice guide and can also be used to train new staff who will be involved in Management of change. The Corporate Safety Department provides advise and assistance to responsible departments for the process of Management of Change.

The management of change occurs in five stages;

a) Design
b) Decision
c) Preparation
d) Implementation
e) Review

a) Design

In the beginning as the business proposal or an element of change is in its embryonic phase, an examination and analysis is carried out to assess the need for a "Management of Change" process and once established that an MoC is required, a coordinator is delegated by the departmental head (each

department in case of cross functional change) and information exchange takes place which may require to convene a meeting of relevant divisional or sectional heads. The element of change is advised before the meeting for preparation time to each involved department / division / section, Corporate Safety remaining informed of the process and changes. The Department / section / division having the most shares or stakes in the 'change project' is responsible to raise a request for the MoC and is made in-charge of the MoC process and all other stake holders connect with the mentioned unit's delegate(s) / coordinators for processing of MoC.

b) Decision

A feasibility is carried out for the element of change / project in terms of Cost Benefit Analysis, Risk Assessment and a proactive approach is used to consider potential threats. If within acceptable limits, a decision is made to execute the proceedings / project.

All participating departments / divisions / sections are required to identify hazards and risks associated for risk assessment followed by risk management through assessment of existing controls and application of new controls with respect to the assessed risk.

If required, inspections and / or surveys are carried out for a gap analysis between existing and potential operational requirements and a financial implication of potential risk to operations must also be assessed.

c) Preparation

This stage begins immediately after the decision to implement the change is considered. In this stage the project time-lines, tasks & responsibilities, budget allocation & management, Human resource allocation & management, setting or alteration of any infrastructure, testing / pilot project, preparing feedback channels etc are carried out.

For a successful change management it is necessary that leadership shall be actively engaged, there shall be communication within the hierarchy, required training shall be planned for involved personnel and drills carried out, as may be necessary. A channel of feedback after implementation should be developed and plans to reinforce good performance of PIA personnel through rewards or appreciation can be considered.

d) Implementation:

Depending on the type of change, implementation step may require adjustments to the plan for a thorough fit and even after initial implementation some minor changes may be required for best fit, full implementation then follows.

e) Review:

As with any SMS component implementation, MoC also requires post execution evaluation to assess the desired outcome for steps and results.

Subject to achievement of the desired results, the process may have to be re-evaluated and carried out again in part or as a whole.

For continual improvements of safety performance, ongoing risk management process is based upon defined timelines and shall be continued for prescribed period.

It shall be ensured that the following points are thoroughly covered in MoC process:

I. What is the change?
II. Evaluation of change for acceptability
III. Responsibility delegation
IV. Major components for change
V. Effects of change on the organization
VI. Risk evaluation before and after the change
VII. Evaluation of existing control and new controls (if required)
VIII. Safety control barrier / existing control strength shall also be evaluated for finalizing any need for additional controls
IX.

12.3 MANAGEMENT OF CHANGE PROCESS

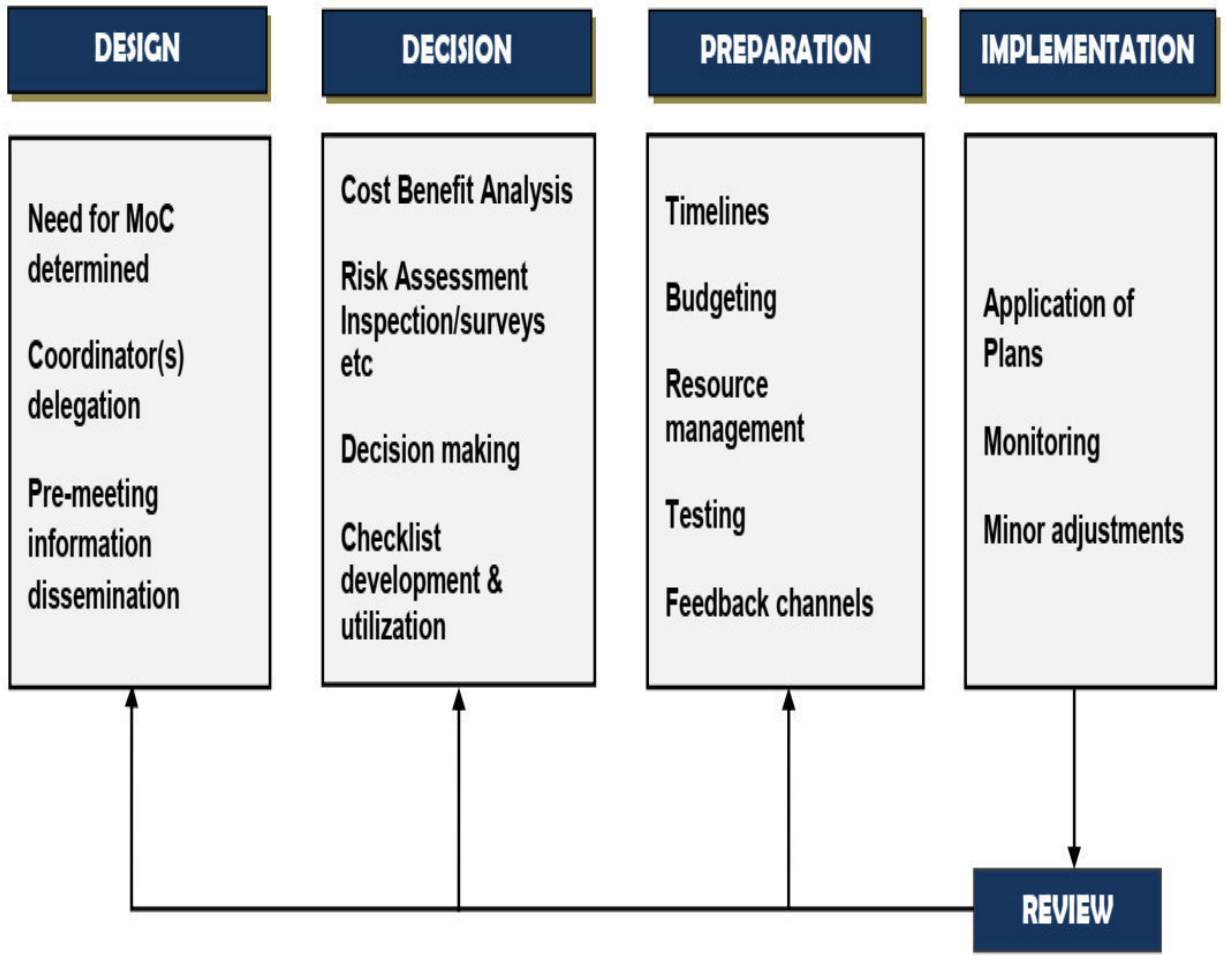


Fig: 12.3

12.4 DOCUMENTATION FOR MoC

All activities towards the adequate management of change process shall be properly documented and recorded by controlled means, in line with organizational approved procedures. The documentation shall be retained with respective SAG and copies to be made available to Corporate Safety, especially of the MoC document Form No. PIA/SMS/MOC/03.

The reference form for MoC is given at the end of the chapter to be utilized for MoC and an MoC register (MoCR) is also available to be utilized and maintained for record keeping.

12.5 MoC EXAMPLE – ACTIVITIES FOR MANAGEMENT OF CHANGE IN PIA

To elaborate on the process of MoC, a hypothetical example of a ground services equipment (GSE) which is an aircraft auxiliary ground power may be utilized;

The demand of ground power unit at a particular station is raised by Technical Ground Services (TGS), E & M and higher management requires a feasibility and options for selection of appropriate equipment;

The need for MoC is determined by TGS SAG in coordination with Passenger handling SAG, the E & M SAG and Corporate Safety delegates by referring to 12.1 of SMSM (Items list requiring MoC) and Flight Operations SAG delegates may also be part of the meeting. There are multiple items of the list that may be applicable to this MoC such as;

- 'Technological changes' that may be applicable if new technology is acquired;
- 'Ground equipment' is what is being sought at this particular station;
- 'New station contract regarding operational matters may be required if services will be hired, subject to future assessments;
- 'Staff changes' may be required.

Once the requirement for MoC is ascertained, coordinators are delegated from Corporate Safety (coordinating with other departments of minor roles such as Finance Department) for support functions and SAGs of TGS, PHS and E & M etc. These are individuals who would manage the particular MoC. Personnel may be added from each of SAGs as standby support for coordinators of the SAGs and would take charge if primary coordinator is not available to perform due to any justifiable reason.

Before setting up a meeting (could be first of numerous, depending on requirement) for MoC, information is disseminated through email by TGS coordinator to other coordinators and these coordinators communicate for further information and understanding.

For sake of discussion, it is found out that there are three available options based on requirements of technical assessment (required parameters of current, voltage, frequency, tripping etc) carried out by DCEs (production and TSE) of E & M and technical assessment of TGS;

1. To purchase a new ground power with new technology.

2. To involve an external service provider (A newly established company) for provision of Ground Power services.
3. To transport an extra existing PIA owned ground power from a redundant base to this new station.

Note: Services provider / supplier(s) will be audited / evaluated for technical aspects and SMS (for E & M, DCE QA will manage the audit) & if an equipment is introduced to system, the inspection will be carried out by TGS as well as E & M (TA to CE QA and DCE TSE (concerned). Any requirements of training will be managed by TGS Manager training for TGS and DCE HRT for E & M.

Cost benefit and HIRM are carried out for above three options;

1. The purchase of new ground power requires funds which are beyond manageable limits for PIA and it further requires training of TGS (maintenance & operations) staff and E & M staff. As untrained staff for new technology is a hazard (manageable high risk), this training will also cause delays for service initiation of the new equipment (manageable medium risk). The technology / product is also new in market and associated in-service hazards are not known, which may be a latent threat (manageable medium risk).

2. The newly established GSE services company requires acceptable financial inputs, however, it is found that the company does not have any SMS within its system (high risk, not manageable in short term) and there is high employee turnover rate as well, which will further present inexperienced staff every now and then (not manageable as it is external party's administrative matter and medium risk) . Furthermore, upon SLA discussions it is also found that the GSE company does not intend to sign any penalty clause and nor bear damage liability (Not manageable for cost benefit analysis as well as it may affect staff diligence towards operational work).

3. The third option of transferring existing equipment from another station to this will not employ much costs, benefiting from its maintenance costs as well due to existing technology. PIA TGS personnel are not available at new location, however existing trained staff for TGS operations and maintenance can be spared from redundant station and transferred (manageable medium risk). There are minor technical anomalies in the existing ground power(s), which can be managed by unscheduled repairs (manageable medium risk). Another source of hazard information can be the utilization of TGS data for the known issues of ground power then managing these on proactive basis (manageable medium risk).

Risk based decision making is carried out by PIA through information evaluated by the MoC and PIA's own ground power is planned to be utilized.

A basic checklist is developed for managing the project of transfer of equipment and personnel etc as a 'Things to do' checklist. This checklist also has 'reminders' for reminding requirement of any new procedures or documentation (admin / operational) for ensuring uninterrupted functioning after deployment.

Timelines as estimated are made part of implementation such as laying out the expected time for transport of equipment, manpower, legal processing etc. And follow up on these timelines is maintained for ensuring sufficient task prioritization is being materialized.

Budget is generally managed by 'Finance Department' but outlining the requirements, managing early intimations and minute raising activity is carried out to avoid delays due insufficient financial support.

All resources including human resource are managed accordingly by relevant management staff.

A testing and feedback in this case could be sending the 'transferring staff' earlier to the station to ensure managing matters and communicate to the management for any requirements or any hazard that may have been missed. Earlier risk assessments and management of the TGS equipment also serves information to this part. Test basis operational runs will be carried out to verify functionality and feedback provided to management.

Final application of plan takes place. Monitoring for required adjustments is carried out followed by adjustments, if any.

The feedback will cause a review to any steps of the executed MoC for any major change and re-implementation.

MANAGEMENT OF CHANGE (MoC)

(MoC Ref. No: & Date:_____) Form No. PIA/SMS/MOC/03

Subject of Change	
Reason(s) for Change	
Type of Change	
Term (timeline)	
Department In-Charge	
Departments affected	
Coordinator(s)	

Change Project

1. **Description:**
2. **Assignment(s):**
3. **Changes to:**
   a. **Personnel/Staff**
   b. **Machine/Equipment**
   c. **Process/Procedure**
   d. **Facilities/ Infrastructure**

Hazards

S.No:	Hazard Name	Description

Risk Assessments Form No. PIA/SMS/MOC/03

Sr. No	Risk Description / Consequences	Existing Control	Are existing controls effective?	Likelihood / Probability	Severity	Risk Index	New Control	Likelihood / Probability	Severity	Residual Risk	Acceptability (Yes / No)	Responsibility And Target Date / Timeline

Final Decision & Comments-

Prepared by: **Reviewed By:** **Reviewed By (Corp Safety)** **Approved By (Departmental Head):**

Management of Change Register (MOCR)

[Ref. S&Q Bulletin No. 01/2017 Dated 10th November 2017]

REGISTER FOR RECOGNIZING MOC (MANAGEMENT OF CHANGE) EVENT

DEPARTMENT: **DIVISION:** **STATION:**

Custodian of MOCR (Designation): email: ext:

This is to be maintained as a living document and modified and updated whenever progress is made. Relevant record of managing the changes based on action approved by competent authority shall also be the responsibility of the custodian of this record.

Sr.	Date of Recognition	Event Description	Proactive/ Reactive MOC	Status (MOC In-process/ Complete)	Ref. File/ MOC Checklist

Maintained by: _____ **Date of Last Update:**_____

Sign: _____ **Sign (Dept. Head):**_____

This is a sample template (editable version can be downloaded from corporate intranet) or same template will be acceptable if developed locally in suitable database application but should have elements when printed for management reporting/submitting to CQA.

CHAPTER– 13

SMS DOCUMENTATION MANAGEMENT PROCEDURES; AND RECORDS MANAGEMENT

13.1 SMS DATA RECORDS

SMS / Safety related information is maintained in PIA primarily with the Corporate Safety department, the same may also be maintained by relevant departments / SAGs.

Following is a non-exhaustive list of SMS related data that needs to be recorded:

a) Accident event
b) Incident event
c) Aerodrome Field Assessments / Risk Assessments
d) Safety / SMS Audit Reports
e) Safety Risk Assessments (Responsibility of SAGs & Copy to Corporate Safety)
f) Safety Bulletins & Safety Circulars
g) FDM Records
h) Safety Reports
i) SPIs
j) Hazard & Risk Logs/Registers
k) SAG Meeting Minutes
l) Management of Change (MoC) Documents
m) Anonymous & Confidential Safety Hazard Reports
n) ASRs (Air Safety Reports)
o) SMS & Safety Training Records information

The mentioned and other data from hazard reporting sources such as pksms@piac.aero or other Corporate Safety department personnel's email, telephone, fax or voice messages are recorded with Corporate Safety in the system using a tracking or identification number. If not anonymous, the reporter is sent an acknowledgement message. The proceedings are followed up by sending information (de-identified, if required) to all concerned for response / action.

13.2 ARCHIVING OF SMS RECORDS

SMS related data is archived mostly with Corporate Safety, however SAGs and other departments are also responsible for archiving a copy of the SMS data relevant to them. The following table depicts the time period for which data must be retained.

The mentioned documents will be archived for the minimum time as depicted below, however the list is non exhaustive and documents / data not defined in the list will be retained for at least 3 months.

Sr#	Record Name	Minimum Retention Period (Year)	Maintained at	Medium
1.	FDM Records Meeting Minutes	3 years	Corporate Safety Building (hard copy) & Internet for Soft copies	Hard Copies. & Soft Copies for FDM Meeting minutes
2.	SMS / Safety Audit Reports	5 years	Corporate Safety Building (hard copy) & Internet for Soft copies	Hard or Soft Copies
3.	Safety Reports (ASR, DBRs etc)	3 years	Corporate Safety Building (hard copy) & Internet for Soft copies	Hard & Soft Copies
4.	Accident, Incident Records	5 years	Corporate Safety Building (hard copy) & Internet for Soft copies	Hard & Soft Copies
5.	Corporate SPIs / Corporate Safety KPIs	3 years	Corporate Safety Building (hard copy) & Internet for Soft copies	Hard & Soft Copies
6.	SMS & Safety Training Records	3 years	PIA Cloud (Internet) & Respective SAG	Soft Copies
7.	Aerodrome Field assessments / Field Risk Assessments	3 years	Corporate Safety Building (hard copy) & Internet for Soft copies	Hard & Soft Copies
8.	Management of Change (MoC) execution record(s)	3 years	Corporate Safety Building	Hard Copies
9.	Safety Bulletins & Safety Circulars	5 years	Internet	Soft Copies / Hard Copies

10.	Hazard & Risk Logs or registers (SMS Dashboard)	3 years	Internet	Soft Copies
11.	Hazard & Risk Logs or registers (Proactive Hazard Log)	3 years	PIA Cloud (Internet)	Soft Copies
12.	SAG Meeting Minutes	3 years	PIA Cloud (Internet)	Soft Copies
13.	PCAA Reporting Forms (MORs, Bird Strike etc)	2 years	Corporate Safety Building	Hard Copies
14.	Inspection data (aircraft ramp inspection forms & logbook etc)	1 year	Corporate Safety Building	Hard Copies
15.	Confidential Reporting (Software based)	3 year (or until resolved, if beyond 3 years)	Internet	Soft Copies
16.	Confidential Reporting (paper based)	3 year (or until resolved, if beyond 3 years)	Corporate Safety Building	Hard Copies
17.	Survey / Research Data	2 years	Corporate Safety Building	Hard Copies
18.	Safety Meetings records	2 years	Corporate Safety Building	Hard Copies
19.	Confidential Reports De-Identification Data	2 years	Corporate Safety Building	Hard Copies
20.	SAG Composition Record	2 years	Corporate Safety Building	Hard Copies
21.	Departmental SPIs	3 Years	PIA Cloud (Internet)	Soft Copies

Table 13.2 – Archiving of SMS Records

N.B: The custodian of all safety related information records is Corporate Safety or SAGs.

13.3 RECORD ACCESSIBILITY

Records shall be traceable for all elements of the SMS and be accessible for routine administration of the SMS as well as for internal and external audits purpose.

Discretion shall be exercised for records provision, e.g. FDM related record may not be made available for individual(s) whom have no direct relation or purpose to it. However, for enhancing communication with employees information may be made available for improvement in safety, which will be through data sharing with an employee subsequent to a written application by the individual.

13.4 RECORD BACKUP

Hard copies will be scanned and records that are not saved in Cloud or backup-up by the IT Department (Doc# :ICT/SBP/02 for IT back-up) will have an electronic backup by having a copy of records saved in a recording device (hard drive etc) and secured at Manager Fire Protection's office at Karachi (KHI). Backup will be taken every month to be stored.

N.B. PIA Cloud service is data storage platform being used for online data storage & exchange, in case of safety documents it is shared data with restricted (relevant) personnel only.

Note: The document management shall be ensured according to latest PIA Corporate Quality Manual.

CHAPTER – 14

EMERGENCY RESPONSE PLAN

14.1. EMERGENCY RESPONSE PLANNING (ERP)

In Airline Industry, Emergency is normally associated with an aircraft accident involving fatalities, injuries, hull loss or a serious incident (high profile accident), in which a substantial damage to the aircraft and / or property occurs. However, PIA's ERP also covers undesired operational irregularities as well as emergencies and abnormal operations associated to aircraft operations, infrastructure and organizational processes.

How well an organization responds to Emergency is, in large part, a function of plan preparation and practice. Nobody can begin to prepare after the phone rings!. Effective performance during the heat and chaos of Emergency is impossible without proper preparation, allocation of adequate resources, and practices. As such, an ERP has to be developed, updated, often discussed, practiced, and kept in total readiness for immediate application.

As such, the intent of any "ERP" will always be to bring about a level of preparedness, which will effectively influence the aftermath associated with managerial, emotional, financial, legal, public, and social aspects that surround an aircraft related or other Emergency and / or undesired state. The commitment of an operator to minimize the human suffering is the driving force on which an "ERP" is based upon.

The "Emergency Response Plan" for an operator begins with the initial moments, and may continue for time to come, depending on the type and nature of the undesired state. Needless to mention that the onus of responsibility and involvement is much greater for an operator as compared to an airport authority or any other entity. A well-conceived "ERP" enhances the ability to focus on resources for right activities, in order to obtain the best possible results. In addition, knowing what to expect, when to expect it, and understanding the Emergency Response Process greatly helps to off-set the confusion, besides reducing the financial impact for the operator.

Along with the transition to an emergency or abnormal operation mode (undesired state), it is also essential that reversion back to normal mode is carried out efficiently, so that minimum disruption is experienced by the other parts of operational / organizational processes. PIA ensures this by delegating authority to identified units / individuals initiating and then normalizing from the emergency / undesired state.

14.2. ERP IN PIA

PIA has put on considerable efforts in the area of Emergency Response Planning (ERP) which on one side gives integrated course of operational actions for effectively coping with an emergency and on the other side ensures that its valued customers and their families shall not have to face trauma, mishandling, neglect and receive due care following an irregularity, abnormal operation or unfortunate accident or air crash.

A dedicated Emergency Response Planning Section has been established and the procedures have been elaborated with minute details for handling the emergencies. During such major emergencies, Emergency Response Centre (ERC) Karachi will be the nerve centre to support the operations at the station concerned. However, during abnormal operations, irregularities and events that do not qualify as

Once category 'A', 'B' or undesired state actions are initiated, the same may be transitioned back to normal operation after the situation is under control. The authority to transition back to normal operations is vested in the delegate / office that initiated it, or in case of category 'A' (Red Level), only Head of Safety or Accountable Executive are authorized to end the state of emergency.

14.4. ERC ALERT LEVELS IN PIA

ERC has three alert levels of activation which are utilized under the command of Head of Safety (Emergency Director);

Level- 1 (Blue) - ERC will be activated and managed by ERP Team.

Level-2 (Yellow) - Reps from relevant departments will arrive at ERC and perform round the clock duties. Coordination will be initiated by ERC for calling the authorized departmental representatives to ERC.

Level-3 (Red) - Senior Management from relevant departments will join and manage through ERC. ERP Team and other relevant departments included in this plan will keep on monitoring the situation / abnormalities according to the Checklists.

14.5. ERC IN CASE OF AN ACCIDENT OF PIA AIRCRAFT (Level-3 / Red)

For aircraft related and other serious incidents and accidents ERC Team, Field Team, Family Assistance & Support Team and Station Teams have been formulated to perform their specific roles responsibly.

A network of Family Assistance & Support Volunteers has been structured and training of the various teams and volunteers is being carried out on regular basis, these trainings include all other mentioned stake holders as well for communication, comprehension and practice runs of coordination procedures that need to be followed in case of an emergency. Besides their family assistance role PIA Volunteers are also being trained in basic rescue, elementary fire fighting and 'first aid to injured' to prepare them in responding to natural disasters, earthquakes, fires and day to day accidents as well.

In case of an aircraft accident / serious incident, the Emergency Response Facilities at Head Office include the soft data storage of teams and volunteers. An organized call back system for contacting the affected families is also being devised.

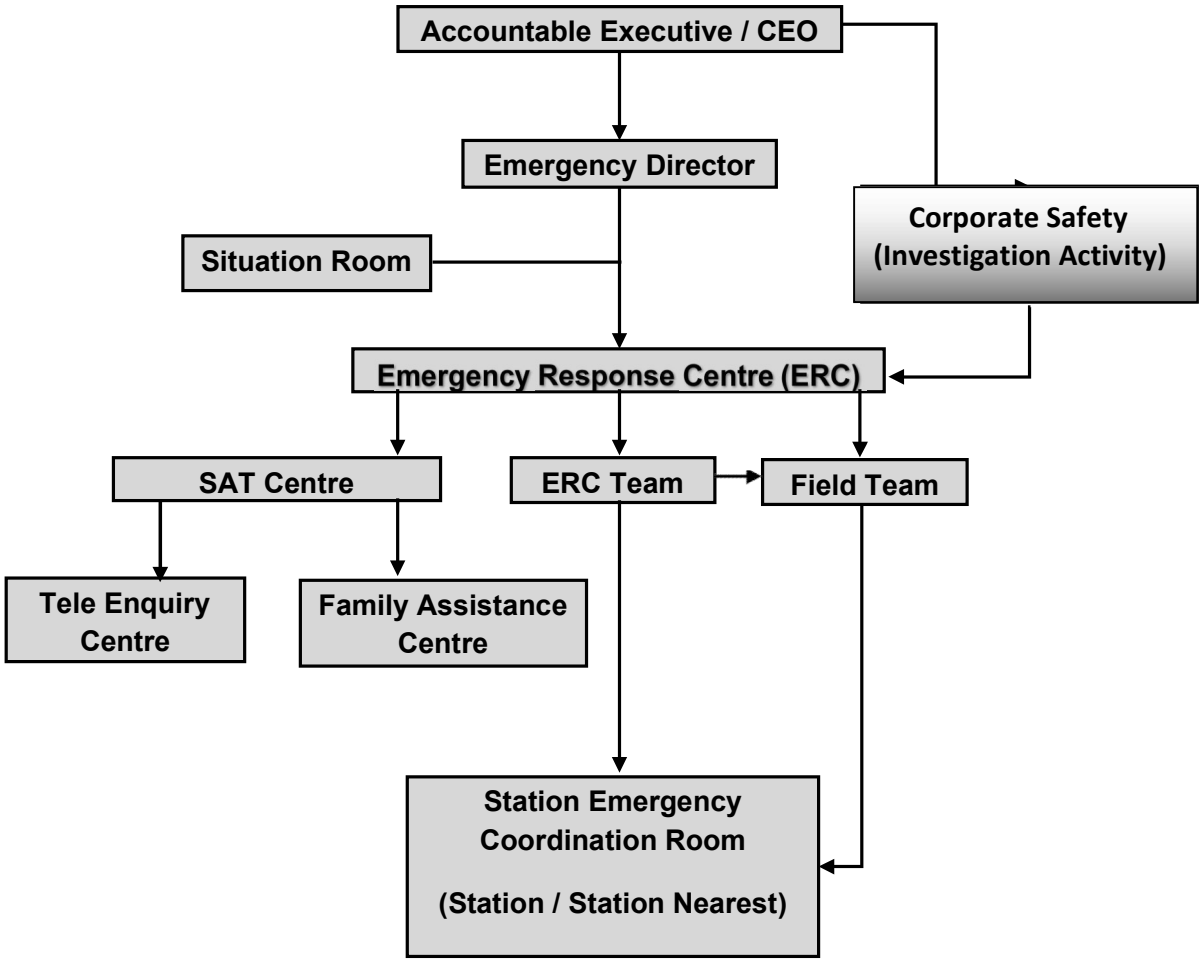
Right after an accident ERP activities start at the station concerned with the immediate notification to Rescue, Fire & Emergency Services, and PIA / GHA Team Members who start handling of victims at lounges, hotels and hospitals by utilizing local resources.

Station where accident has taken place or station nearest also informs Situation Room Karachi who triggers a notification to all Emergency Team Members through PIA Contact Centre. Emergency Response Centre starts functioning within 30 minutes of notification and members of ERC Team comprising of senior executives immediately respond in an organized and coordinated manner. Simultaneously Members of Field Team also report in ERC and get briefing of the situation and start preparing to leave for the site of accident within 3 hours. In the meantime Media Response Team issues the first press release within 1 hour and arrange for CEO's Press Briefing.

14.6. RESPONSIBILITIES OF THE AIRLINE IN CASE OF AIRCRAFT ACCIDENT

Major responsibilities of the airline, in the event of any Major accident / emergency are:

a) Ensuring welfare of passengers and crew
b) Reporting accident to Pakistan Civil Aviation Authority (PCAA)
c) Coordinated release of Information and Evidence to the Authorities
d) Receive the uninjured passengers and crewmembers
e) Receive relatives of victims
f) Provide necessary assistance to family members of victims
g) Assist and inform Next of Kin (NOK) regarding passengers & crew
h) Notification to the insurance underwriters
i) Preservation of evidence as far as possible
j) Technical Support to the accident site
k) Liaison with the investigation authorities
l) Preservation of passengers/ crew and company property, as far as possible
m) Information to the general public
n) Aircraft wreckage removal (after getting clearance from appropriate authority)


Accountable Executive / CEO
Emergency Director
Corporate Safety (Investigation Activity)
Situation Room
Emergency Response Centre (ERC)
SAT Centre
ERC Team
Field Team
Tele Enquiry Centre
Family Assistance Centre
Station Emergency Coordination Room
(Station / Station Nearest)

14.6.a.

14.7. COMPOSITION & MAIN RESPONSIBILITIES OF EMERGENCY RESPONSE TEAMS & KEY ERP POSITIONS

a) Accountable Executive / Chief Executive Officer
b) Head of Safety (Emergency Director)
c) ERC Team
d) Field Team
e) Special / Family Assistance Team
f) Station Team

a) Accountable Executive / Chief Executive Officer (CEO)

i. Provide initial information to major government functionaries and keep them updated, whenever required. The CEO shall himself / herself be in continuous communication with PIA officials to be well informed of the situation.
ii. Ensure that ERC is fully functional and designated personnel are fulfilling their duties.
iii. Visit ERC to monitor ERP planned actions are put to use and formulate a strategy to mitigate the consequences of the incident.
iv. Ensure availability at Head Office or at location nearest to site of aircraft accident / crash if required.
v. Advice all concerned for ensuring the conformity of all actions to established procedures, PCAA regulations as well as IOSA standards.
vi. A press release cleared by CEO will be issued by Emergency Director i.e. Head of Safety.
vii. The first press conference within three hour of a fatal accident will be held by CEO / Emergency Director / Head of Safety. Chief of Flight Operations and CCAO and/or COMO shall also be present during the first press conference.
viii. All subsequent press release issued by GM Public Affairs will require clearance by CEO in consultation with Emergency Director i.e. Head of Safety.
ix. Obtain regular briefings from Emergency Director i.e. Head of Safety on the situation, as well as from other Executives and ensure that decisions taken by Head of Safety are being fully implemented.
x. Ensure that all operational Executives are functioning normally with minimum disruption and are supported by non-operational departments to ensure smooth operations along with handling of emergency response.
xi. Use good offices to facilitate work of ERC and recovery for ensuring prompt actions by effectively coordinating with top government functionaries as may be necessary for recovery of aircraft passengers / crew and / or sending human remains from foreign country to Pakistan, as well as for visas of the GO team, Family Assistance and volunteers (if there is a requirement to send them out of Pakistan).
xii. Ensure that Finance Department makes available sufficient funds for ERC teams and prompt payments to the families of victims or to the injured passenger at domestic and / or international stations, in accordance with IATA, PCAA, ICAO & IOSA requirement, as well as requirement of Montreal & Chicago Conventions as applicable.
xiii. Visit deceased Crew Members' houses and hospitals where crews are being treated.
xiv. Where appropriate, visit deceased passengers houses and hospitals where passengers are being treated.

xv. Attend the Prayers at Head Office.
xvi. Ensure that Condolence Letters to Families & Victims are issued with the signatures of CEO or
   i. Chairman (Specimen at Appendix "A" to Chapter 3 – ERM PIA).

b) Head of Safety – Emergency Director

i. Head of Safety will lead PIA activities related to accident investigation, and coordinate matters on official investigation by Bureau of Aircraft Safety Investigation Pakistan (BASIP), PCAA and with Foreign Civil Aviation / Investigation Agencies.
ii. Proceed to Emergency Response Center (ERC).
iii. Activate PIA Accident Investigation Support Team.
iv. Confirm that all documents pertinent to the accident have been obtained and secured.
v. Inform Director General PCAA, if not already informed.
vi. Confirm that BASIP and relevant Civil Aviation Authorities have been notified as per procedure.
vii. Keep a liaison with PCAA, BASIP and other relevant Civil Aviation Authorities.
viii. Coordinate investigation as per SMS manual.
ix. Liaise with Accountable Executive / CEO about initial findings and immediate remedial action, and on relevant safety and investigation issues / process.
x. Confirm and follow-up the Digital Flight Data Recorder (DFDR), Cockpit Voice Recorder (CVR), Quick Access Recorder (QAR) recovery / removal and further relevant procedures.
xi. As per situation, proceed to Accident Site and lead the PIA Investigation Support Team.
xii. Prepare a preliminary report suggesting immediate remedial measures.

c) ERC Team

Stays at Airline Emergency Response Centre and provides support to Field Team, Station Nearest, Special / Family Assistance Team and to Accident investigation activities. This team exercises the central command for overall coordination of external and internal information, communication, and response at all locations.

d) Field Team:

Proceeds into activity of the accident site or station nearest, to provide support to the station, liaison with agencies, and represent the company at the accident site, Airport Emergency Operation Centre (EOC managed by PCAA) and Family Assistance Centers.

e) Special / Family Assistance Team

Special / Family Assistance Teams deal with the inquiries from public, survivors and their families, develop official passenger manifest and coordinates with the Next of Kin notification or immediate family (Next of Kin) member.

Next of Kin / Relatives of Customer Pax/Crew will call at designated hunting numbers +92.21.99242284, 99043766, 99043833.

f) Station Team

Stays at the stations to coordinate with ERC team at Head Office and to execute specific responsibilities related to uninjured passengers, relatives and other family assistance matters, including transportation, boarding, food and return of personal belongings. Providing full support to Field Team also falls in the purview of Station Team's functions.

Responsibilities of CCO, CHRO, COMO, CCAO, CSO, CFO / DFO can be referred to in the ERM PIA.

14.8. INITIAL NOTIFICATION PROCESS

After classification of event / situation for its category, the following notification actions will be taken by Situation Room for category 'A' and 'B' events;

- Flight Control Manager will ensure that designated DCS staff will hide the flight details / manifest and will share the same with Contact Center (Karachi) and ERP for later use.

- In case of a Category "A" Accident (Major Aircraft Accident / uncertain phase / Hijacking) Flight Control Manager (Situation Room) will immediately call and inform the DCS staff to hide the Flight Manifest in the system. After hiding the Manifest, ERC team will be able to open the specific Flight Manifest in ERC with the support of Marketing & PHS representatives at ERC. The same will forward to departure station for verification process.

- Flight Control Manager will also telephone Duty Communication Officer PIA Exchange on 44299 or 44506 for notifying Key Team Members as per available list.

- Flight Control Manager will also inform PIA Public Affairs Team to ensure that information is controlled and released to public by authorized personnel only.

- Activate relevant checklists (Refer ERP Manual) to ensure that relevant emergency services /agencies are notified of the accident.

- Inform personally in the following order:

  a. Emergency Director / Head of Safety..... 99044484 / 99046016
  b. Chief Flight Operations / DFO.....99043929 / 99046050
  c. COMO.....99044365 / 99045517
  d. GM Security & Vigilance.....99043305 / 99044910
  e. Any other relevant executive / person

Note: Cell phone numbers are updated in ERP Manual.
*Latest numbers are available with PIA directory services
** All other numbers are available in the latest ERM of PIA

Calls from family members of crash involving all ATR Flights and Airbus Domestic Flights will be handled locally by PIA Emergency Call Centre. For the rest of higher capacity aircrafts, Flight

Control Manager will seek clearance from Emergency Director Cell: 0306 2016761 (Alternatively: ERP Personnel 0300-2254669) and will call Kenyon's 24-hour emergency telephone numbers (US: +1(281)872-6074), (UK: +44(0)1344 316650) for activation of Kenyon Emergency Call Centre. If within 15 minutes no one could be contacted, Flight Control Manager will directly send the message to Kenyon.

- Once approved as above, Flight Control Manager will also ask Operations Control Manager to **IMMEDIATELY** send an e-mail to kenyon@kenyoninternational.com with a copy to erc@piac.aero containing the message "A PIAAIRCRAFT (TYPE. . . .) PK HAS MET AN EMERGENCY. PLEASE ACTIVATE KENYON EMERGENCY CENTRE FOR PIASUPPORT" to the level as advised by Emergency Director. Same will also be communicated to PIA Contact Center through means, as documented in the ERP Manual.

- Obtain update of emergency situation. Consider maintaining an open line to emergency location.

- Emergency Response Centre (ERC) will start functioning within 30-60 minutes after notification. Till such time Situation Room will continue coordinating the accident related activities.

- In case of an accident of Category "B", the Flight Control Manager will consult with Emergency Director / Head of Safety and other concerned Executives, to decide the level of activation of ERC.

For further details and latest numbers of relevant individuals refer to PIA ERM (Emergency Response Manual). ERP Manual supersedes all information provided, if in contrast.

14.9. PIA ACCIDENT INVESTIGATION TEAM

The accident investigation responsibility within PIA lies with Head of Safety. The investigation team shall be constituted and dispatched for the accident site; this shall include "accident / Incident Investigators" & Support staff.

All reasonably required equipment for the investigation purpose along with the support equipment / logistics shall be provided by PIA to the team.

The on-site evidence must be protected until BASIP (Aircraft Accident Investigation Board Pakistan) does not take charge of the site.

14.10. WELFARE OF AFFECTED INDIVIDUALS

The FAST (Family Assistance Support Team) will provide the initial and ongoing humanitarian and other support to E&A victims. The FAST is able to be deployed as part of the FIELD Team.

The FAST offers the following services:

- Delivery of status notification to family members on-site
- Accumulation of passengers and passenger's family information

- Ongoing information and support to passengers and their families Immediate deployment to affected airports, designated hotels for surviving passengers, hospitals and family hotel in city / town nearest to the accident site plus survivors' and family members as appropriate to the circumstances of the E&A.

FAST members will be assigned to specific passengers / crew and / or their families once additional information becomes available, and they will continue to assist until such times as all needs within the parameters are met. The deployment areas for the FAST are divided into the following areas:

1. Survivor Reception Centres SRC(A) & (L)
2. Crew Reception Centres CRC(A) & (L)
3. R&M Centres
4. Hospital(s)/Hotels
5. Family Assistance Centre FAC
6. Joint Family Support Operation Centre JFSOC
7. Reunion Area (Airport) and (Off Airport) RA(A) & RA(O)
8. Morgue (Fatalities)

14.11. MEDIA RELATIONS

PIA assumes full responsibility for providing information to public through media in a responsible manner. PIA individuals are not allowed to provide any accident related information without management permission and substantiation of the correct information.

Accountable Executive or his delegate will hold a press conference with the facts for public information.

14.12. PIA & INSURANCE COMPANIES

All PIA aircraft and its occupants (crew and passengers) are ensured as per the PCAA requirements and international standards.

In case of an accident, PIA ensures provision of information to the insurance companies for imbursement of insurance package to the airline and aircraft occupants.

PIA assumes responsibility to provide utmost effort for provision of insurance financial support by the insurance companies to the effected individuals.

14.13. DISABLED AIRCRAFT / EQUIPMENT RECOVERY OR EVACUATION

As per the PCAA laid down procedures, it is PIA's responsibility to ensure that the wreckage or disabled equipment is removed from the occurrence site. However, PIA must not initiate any action unless permitted or directed by the PCCA, PAA and / or BASIP, as applicable.

14.14. EXTERNAL / MUTUAL SUPPORT AGREEMENTS

14.14.1 Different organizations and teams also provide emergency response support at various stations and these shall be the part of Station Emergency Response Plans.

14.14.2 PIA has also entered into following agreements:

a) **Use of Post-Crash Services of Kenyon International Emergency Services, USA:** These services include Advice and assistance in regards with Care Teams, Victim Identification, Property, Mental Health and coordination with appropriate local authorities in different parts of the world particularly in the West. Through this agreement Kenyon will also activate its Emergency Call Centre to meet the PIA Accident.

b) **Mutual Cooperation & Support Agreement with Emirates:** This agreement will facilitate PIA to utilize Emirates Resources at Dubai, Sharjah, Abu Dhabi & Muscat. In return, PIA will render its services at Karachi, Lahore, Islamabad and Peshawar to assist Emirates in case of an aircraft accident to Emirates aircraft.

c) **Mutual Cooperation & Support Agreement with Malaysian Airlines:** This agreement will facilitate PIA to utilize MH Resources in Malaysia. In return, PIA will render its services in Pakistan to assist MH in case of an MH aircraft accident.

14.14. 3 Emergency Services to other airlines / agencies

PIA may render its emergency services to other airlines / agencies. This may be through formal agreements, government directives or management decision on case to case basis.

14.14.4 Code Share, Charter and Wet / Dry Lease Obligations:

PIA will fulfill its responsibilities in handling accidents related to Code Share, Chartered and Wet / Dry Lease Flights and will maintain liaison and keep updated contact lists of relevant stake holders.

Level of Activation in above cases will be determined by PIA Management (ERC) at the hour of need.

14.15. INDEX FOR EMERGENCY RESPONSE ACTIVITIES, RESPONSIBILITIES & REQUIRED ACTION(S)

Following table defines the list of emergency activities, their levels, responsibility for management of each alongwith required actions:

S.No.	Category	Event Type	Responsibility	Actions
1	Category 'A'	**a. Major Aircraft Accident.** **b. Missing Aircraft.** **c. Hijacking.** **d. Onset of Act of Terrorism.**	Area Managers or Supervisors (DCE, Station Managers, Captain of aircraft, Concerned Managers etc) as appropriate.	a. Inform Local Law Enforcement Authorities & Emergency services (Only in foreign countries). b. Inform Situation Room. a. Take necessary reactive actions to manage the situation.
			Situation Room	a. Full Scale Activation of ERC (Red Level).
2	Category 'B'	**a. Any type of emergency condition while Airborne or on Ground in which Assistance or Guidance to Flight Crew becomes necessary.** **b. Any occurrence / incident (other than a major aircraft accident or missing aircraft), that results in fatalities, serious injuries, considerable damage.** **c. Bomb Threat.** **d. Suspected initiation of Act of Terrorism.** **e. Emergency or Accident of Code-share or charter airlines.** **f. Fire or Explosion on ground (including offices etc) or aircraft.** **g. Injuries caused by Disaster or other situation such as inclement weather, electricity, workplace accident.** **h. Public Health Emergencies.** **i. Major ground accident causing substantial damage to company equipment / property.** **j. Building Collapse, Earth Quake or Public Health Emergencies** **k. Cargo – Dangerous Goods Incident**	Area Managers (DCE, Station Managers, Captain of aircraft, Concerned Managers etc).	b. Take necessary reactive actions to manage the situation. c. Inform Situation Room. d. Coordinate with relevant departments /divisions / Authorities in-link with Situation Room.
			Situation Room	a. Activate Emergency services (E.g. Ambulance, fire brigade etc). b. Inform Head of Safety for decision on level of ERC activation. c. Send email information to ERC within 2 hours.
			Head Of Safety & ERC	a. In coordination with other Departmental Heads and if required the Accountable Executive, decide the activation level of ERC. b. Activate ERC at appropriate level.

3	Undesirable state	Enroute Diversion (Unplanned) Due; ***Technical Defects / Weather / ATC / Medical Emergency / Operational Limitation etc.***	Pilot In Command	a. Diversion or route changing shall be executed as far as possible in coordination with Situation Room, directly or through office(s) providing in-flight assistance. b. PIC shall forward information to Situation Room and Chief Pilot Technical as soon as practicable, which shall include; i) Reason of diversion. ii) Point of diversion. iii) Flight No, Aircraft Registration and details iv) Any other info / Comments
			Situation Room	a. Coordinate with PIC for best alternate keeping operational, safety and commercial aspect in view. b. Coordinate at landing aerodrome for accommodating company aircraft and occupants. c. Assist for any possible requirement including technical support.
		Cancellation of Flight	Pilot in Command (PIC), Station Manager (SM) & Flight Operation Officer (FOO)	a. Advise Situation Room with recommendations / suggestions for load protection (payload/passenger management). b. SM to manage accommodation and other requirements of passengers and crew. c. FOO or in absence, the SM shall coordinate with local agencies and inform Situation Room.
			Situation Room	a. Communicate the decision of Cancellation to all relevant offices / stations. b. Manage necessary changes and repercussions.

3	Undesirable state	Operation Beyond MEL Provisions	Situation Room	a. Inform Head of Flight Operations and Head of Engineering and Maintenance (or their designated nominees). b. Manage communication of aircraft performance penalties to crew through Dispatch.
			CoFO, CoMO, CCAO	a. Jointly determine the impact on the safety of flight. b. Jointly decide and CCAO and CoFO to communicate with Airworthiness and Flight Standards Directorates respectively, for clearance. .
			Chief Engineer QA	a. PCAA allowable defects or deficiency proforma to be initiated. b. Submit application to the PCAA along with pertinent data. c. Communicate the approval to Situation Room through for day to day operations. d. Communicate to Operational Planning Cell (OPC).
			Operations Engineers	a. Shall calculate aircraft performance penalties and recommend precautionary measures
		Ramp / Hangar / Operational Facility Electrical Breakdown	Manager / Supervisor of concerned operational or maintenance area	a. Continue work if safe to do so. b. In case of safety of operations under question or margin of error increases, stop work or take necessary measures to continue working safely. c. Information to be communicated to Situation Room
			Situation Room	a. Coordinate with Works Department for Onsite repairs or Back-up power generator options, as available.

3	Undesirable state	Internet / Intranet / PIA Server Issues	Station Manager / Flight Dispatch / Maintenance Control Centre	a. Inform Situation Room of the issues. b. Inform IT Staff on Duty. c. Where possible, try and utilize alternate measures such as PIA Wifi, PIA phone data etc until issue is resolved.
			Situation Room	a. Initiate efforts to restore services through IT.
		Tool Missing (during maintenance activity)	Aircraft Engineer (Certifying Staff)	a. Staff will inform Certifying Staff or if it is known by any source that a tool is missing, Aircraft to be with-held from release. b. Search for Tool will be carried out. c. If tool not found then AE will inform DCE Production through form EM/EQA/GEN/333, immediately. d. Maintenance / Open up carried out during search of tool shall be recorded in ATLB.
			DCE Production	a. Concerned DCE TSE will be informed by DCE Production. b. Hold aircraft for release until tool found. c. Initiate investigation with DCE TSE's consultation. d. Decision to be made ensuring Safety and Airworthiness of aircraft. e. Record DCE TSE's consent for release of aircraft on form EM/EQA/GEN/333
			DCE TSE (concerned)	a. Assist DCE Production for investigation of missing tool. b. Record consent for release of aircraft on form EM/EQA/GEN/333
			Situation Room	a. Upon reception of information, advise all related departments / divisions. b. Once clearly communicated for the missing item/tool to be found, authorize normal operation.

3	Undesirable state	Temperatures above 50 C Or Below -10 C (non emergency work – 8 Hrs shift)	Situation Room	a. Inform respective work areas. b. Initiative of 'Stop Work' authority in coordination with relevant departments (keeping in view type of work, protection level etc) c. Re-inform when temperature falls in acceptable conditions.
			Managers of Unprotected workplaces	a. Initiate 'Stop Work' action. b. Ensure themselves and subordinate staff has taken required protection measures against extreme temperatures. c. Wait until temperature falls in acceptable limits for initiating work again. d. Ensure rests periods are being utilized in Hot / Cold weather.
		Equipment Malfunction during service provision	Supervisor / Area Manager (Crew Chief, A/E, PHS ramp incharge etc)	a. Take precautionary measures to mitigate any safety risk. b. Inform Situation Room through superior authority or themselves (E.g. Captain). c. Continue work if alternate measures are made available.
			Situation Room	a. Coordinate for on-site solutions. b. Manage replacement equipment is necessary. c. Ensure measures are taken to maintain safe and comfortable condition (E.g. A.C Van provision in case of APU tripping).
		Adverse weather / Environmental Risks ***(Stormy Weather, Volcanic Ash, Sandstorms/Dust storms, Adverse Runway conditions etc)***	FOO / Station Manager or Shift incharge / PIA Representative (Foreign Stations)	a. Communicate information to • Situation Room • Engineering Field Service • Ground operational control / Technical Ground Services • If possible, Aircraft in flight that may be affected • Handling agencies b. FOO will ensure weather of all possible alternates is made available for crew information c. 'GO-NO GO' decision before departure, the FOO will in coordination with Captain and DGMCC will make a decision.

3	Undesirable state		Situation Room	a. Inform all aircraft in flight that may be affected by the weather phenomena. b. Inform all aircraft on ground that may be affected by the weather. c. Inform ground relevant station for the weather phenomena. d. Assist flight crew in making decisions. e. Take 'Stop Work' decision for affected areas when weather is severe, until situation is under control. f. Through all departmental representatives, ensure no loose objects are on the ramp or in the open area.
			Flight crew of Aircraft in Flight	a. Take appropriate decision keeping safety of flight, passenger comfort and operational efficiency in view. b. Advise Situation Room in case of diversion.
			MCC	a. In coordination with Situation Room take appropriate decisions in accordance with the situation, that could be 'Stop Work'. b. Ensure tools and equipment is secure and are not left unsecured in the open / ramp.
			Ramp Supervisor / Ramp Incharge	a. Ensure his / her presence at the ramp. b. Secure all loose equipment / Items. c. Ensure all ground vehicle items are secure. d. 'Stop Work' if and when decided and communicated by Situation Room.

3	Undesirable State	Operational irregularities and Unsafe Conditions / Events (Other than Category 'B') such as;		
		Early Departure	Pilot in Command (PIC - Captain) and Station Manager (SM).	a. Regular flights no early than 15 minutes and non scheduled flights 30 minutes before scheduled departure time may be decided by PIC and Station Manager. b. Early departure in excess of 5 minutes shall be communicated to Situation Room.
			Situation Room	a. Manage ATC clearances (enroute, overflight etc). b. Manage parking space at destination or coordinate accordingly. c. Ensure communication to arrival station for ground support on arrival.
		Delay Departure	Pilot in Command (PIC - Captain)	a. PIC can delay flight for 15 minutes due meteorological conditions, any excess than 15 minutes requires immediate notification to Situation Room.
			Station Manager (SM).	a. SM may delay flight for 15 minutes if Flight Operation Officer (FOO) is not based at station. In such case inform Situation Room.
			Situation Room	a. In case of late arrival or late positioning of aircraft, all departments in coordination through Situation Room shall make efforts to reduce delays as much as possible within acceptable safety margins. b. In case of extended delays where safety or other operational aspects require, cancellation of flight may be carried out.

major emergencies, other designated pertinent offices and officials are responsible to take actions, either in direct coordination with ERC team or through direct actions and send a report to ERC (Head of Safety). The procedure varies depending upon the severity of issue.

All PIA employees are responsible to report immediately for abnormal situation(s), operational irregularities, incidents and accidents as these become known to them through any source. The information shall be communicated to Situation Room, which will further decide the course of action and activate required response in coordination with the incharge of affected area/division/department. Situation Room will further log the event or situation and communicate to;

1. ERC Staff (Corporate Safety) if not a serious event through email within 2 Hours time.
2. Directly to Head of Safety in case of immediate decision making is required for declaring emergency.
3. Head of Safety or ERC staff (if Head of Safety is not available) immediately in case of serious event/situation and Situation Room activates highest ERP level.

The urgent information communication shall be carried out through phone call(s) and then in writing (email), and less priority issues may only be advised in writing.

Such as in case of an operational irregularity with regards to aircraft maintenance, undesired state or other event / issue, the helping staff or technicians would inform Aircraft Engineer (concerned) and as the information is passed to DCE / Shift Incharge, appropriate actions will be initiated including information communication to Situation Room for their assistance and actions. In serious cases, a direct route can be initiated by the individual and reporting may be done directly to managerial staff or supervisor, in this case the DCE. However, information shall be passed on to position holders of normal reporting channel as soon as practicable.

The ERP in PIA is coordinated with such other organizations' ERP which it interfaces with during the provision of PIA services.

14.3. SITUATION ROOM ACTIONS AS PART OF ERC

Once information is received by Situation room, the issue/event is qualified as one of the categories to decide on the course of action(s);

1. Category 'A' – Full and Immediate emergency response by PIA (Red Level Activation of ERC) activating ERC team and Head of Safety.
2. Category 'B' – Head of Safety will be informed, who will activate ERC at required level. Written report to be emailed by situation room to ERC within 2 Hrs.
3. Undesired State – Situation room will take necessary actions and email (write) to ERC within 2 Hrs.

Flight Control Manager is finally responsible to take decisions for Situation Room in coordination with representatives of other areas of PIA, who may or may not be part of the Situation Room setup. For category selection and main responsibilities Appendix 15-A shall be referred for a list of non-exhaustive issues and course of action.