

An aerial photograph of a tropical island. The island is long and narrow, with a runway and taxiway running along its length. The water is a vibrant turquoise color, and the sky is a clear blue. The text is overlaid on the top half of the image.

Safety Seminar on State Safety Program Implementation

**- Indian
Perspective**

02nd- 04th August 2023

**ICAO Regional Office,
Bangkok**

**By Maneesh Kumar, JDG,
DGCA - India**

Session-1

Introduction to the Journey

State Safety Programme- ICAO SARPS

Safety Management SARPs for Service Providers			
Annex	Intended Audience	Denomination	Date Applicable
11	Air Traffic Services Providers	Safety Management Programme	Nov, 2001
14	Certified Aerodromes	Safety Management Programme	Nov, 2001
2005 - Harmonization of Safety Management SARPs			
6, 11 and 14	A/C Operators & AMOs	SMS	Jan, 2009
2008 - 2nd Harmonization of Safety Management SARPs			
1	Training Organizations	SMS	Nov, 2010
8	Manufacturers	SMS	Nov, 2013
1, 6, 11, 14		SMS Framework	Nov, 2010
19	All	SMS	Nov, 2013 July, 2016

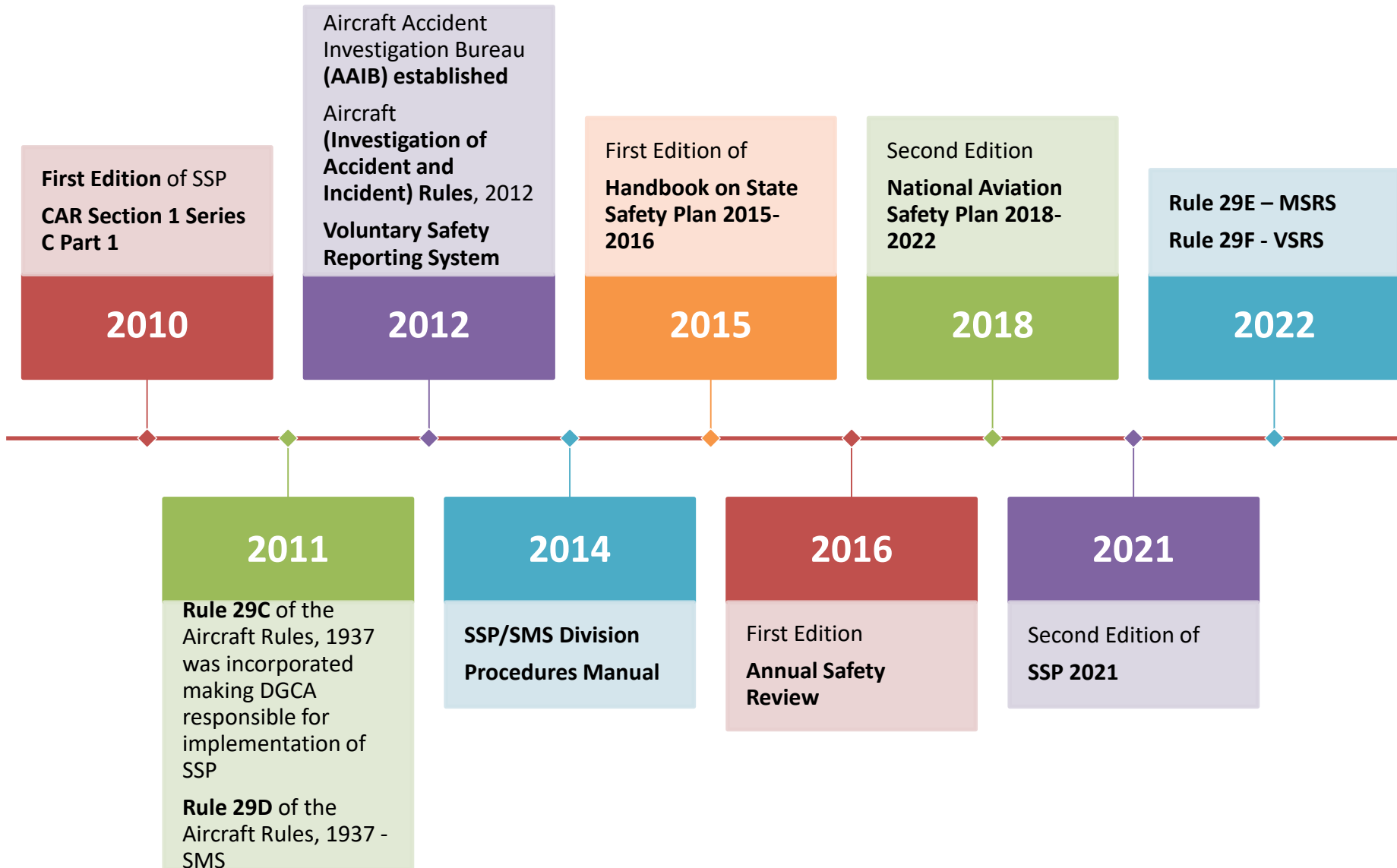
How did We Start?

- ❖ Phase wise approach
- ❖ Training of the Personnel
- ❖ SSP Implementation Team
 - ICAO Gap Analysis Tool
 - Out Come of ICAO USOAP /Self Assessment
 - Gaps in Four Components of SSP identified
 - Safety Reports
- ❖ Phase wise Safety Action Plan spread over a agreed time period with defined time lines for each action item.
- ❖ SSP Steering Committee
- ❖ SSP/SMS Division

State Safety Programme & NASP (ICAO Annex & Docs)

- ❖ ICAO Annex 19 Edition 2 - Safety Management Standards and Recommended Practices
- ❖ ICAO Doc 9859 Edition 4 - Safety Management Manual
- ❖ ICAO Doc 9734 - Safety Oversight Manual
- ❖ ICAO Doc 10004 on Global Aviation Safety Plan
- ❖ ICAO Doc 10161 Global Aviation Safety Roadmap
- ❖ Asia-Pacific Regional Aviation Safety Plan
- ❖ ICAO Doc 10131 on Manual on the Development of Regional and National Aviation Safety Plan

Evolution of SSP - India



SSP- Implementation in DGCA



GOVERNMENT OF INDIA
OFFICE OF DIRECTOR GENERAL OF CIVIL AVIATION

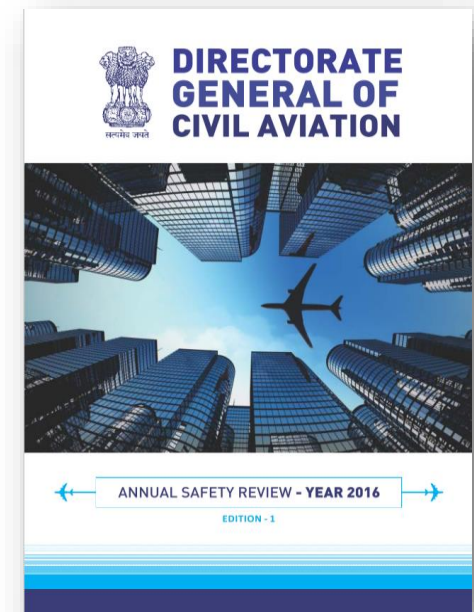
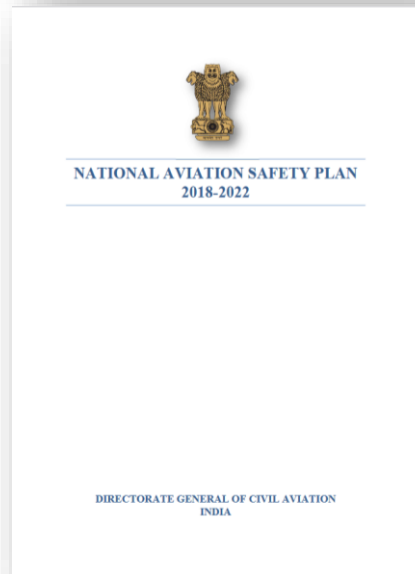
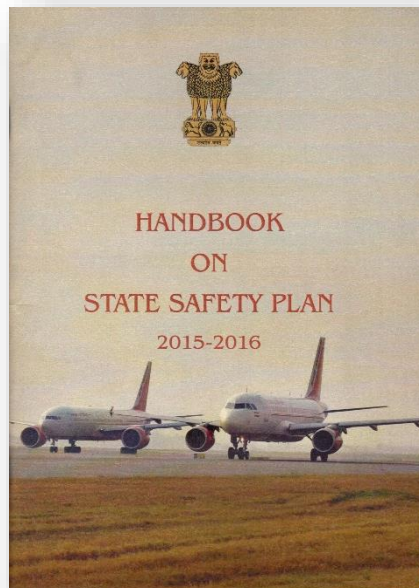
SSP/SMS DIVISION
PROCEDURES MANUAL

August 2014

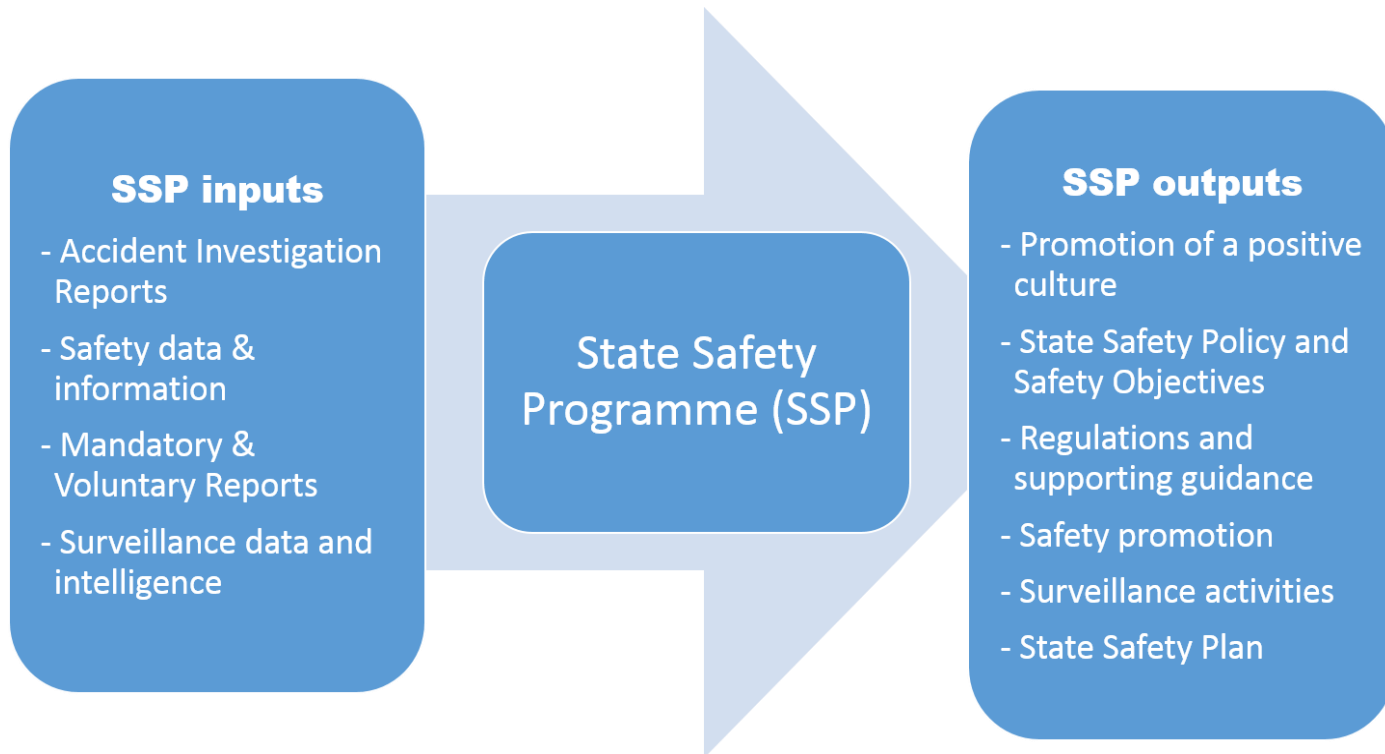
Procedure Manual of the DGCA SSP/SMS Division
Issue 01 Rev 00

- ❖ Role and Responsibility of SSP/SMS Division
- ❖ Role and Responsibility of Concerned Technical Directorates for SSP/SMS implementation and coordination
- ❖ Safety Training Policy
- ❖ Communication Plan

SSP-Risk Based Approach



SSP-Risk Based Approach



SSP-Risk Based Approach

- ❖ Provides a focussed approach in managing identified aggregate Safety Risks
- ❖ Facilitates the identification of emerging risk
- ❖ Continuous increase in the number of un-stabilized approaches wherein the approach has been discontinued and go-around initiated. ([57th DG Conference 3-04-DP](#)).
- ❖ Reduction in number of risk bearing airprox/near MAC
- ❖ Effective control of wildlife strike resulting in damages ([ASSEMBLY – 41st Session, Technical Commission, WP/248](#))

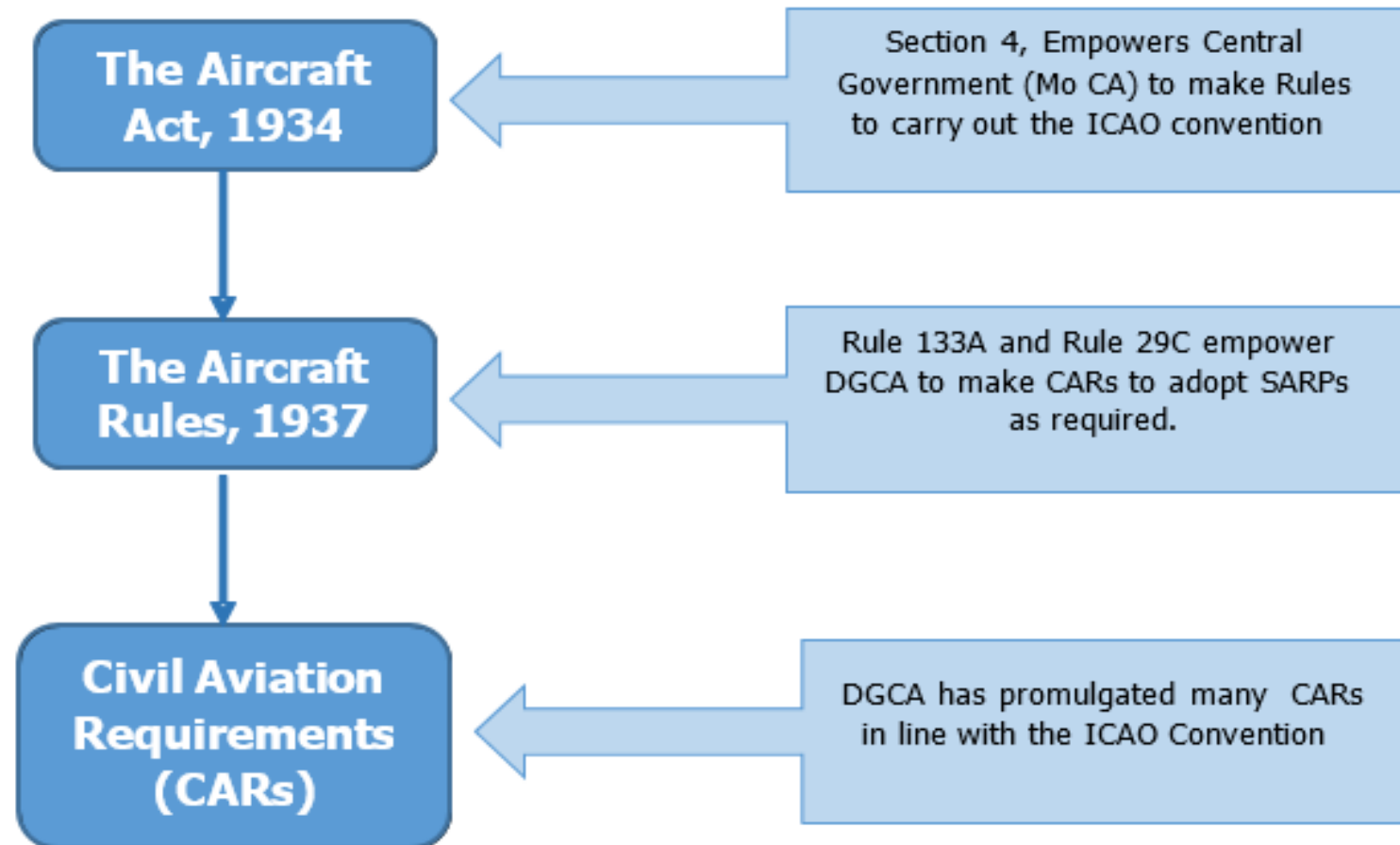
A large, billowing mushroom cloud from a nuclear explosion is shown against a deep blue sky. The cloud is composed of white and grey smoke and debris, rising from a smaller, more compact base. Below the cloud, the horizon of the Earth is visible, showing a thin layer of white clouds and the blue surface of the planet. The text "Any Questions" is overlaid in the center of the image in a bold, white, sans-serif font.

Any Questions

Session-2

State Safety Policy, Objectives and Resources

Regulatory Legislative Framework in India



Safety Reporting

❖ Rule 29E of Aircraft Rules 1937 on Mandatory safety reporting system:-

The Directorate General of Civil Aviation shall establish a mandatory safety reporting system to facilitate collection of safety data and safety information on actual or potential safety deficiencies and specify the procedure for the same.

❖ Rule 29F of Aircraft Rules 1937 on Voluntary Safety Reporting System-

- (1) The Directorate General of Civil Aviation shall establish a voluntary safety reporting system to facilitate collection of safety data and safety information on actual or potential safety deficiencies that may not be captured by the mandatory safety reporting system established under rule 29E.
- (2) The voluntary safety reporting system established under sub-rule (1) shall be **non-punitive and afford protection to safety data captured** by, and safety information derived from, voluntary safety reporting system and related sources and
- (3) The safety data and safety information so collected under sub-rule (1) shall be handled in a manner so as to prevent its **use for purposes other than safety, and shall appropriately be safe guarded and** the confidentiality about the identity of the person making report shall be maintained.

Review of Legislative Framework and Specific Operating Regulations

- ❖ The regulatory framework is monitored continuously in the course of its usual regulatory business.
- ❖ Amendments to ICAO Annexes are monitored on a continuous basis for timely inclusion in the regulations.
- ❖ **Aviation Regulatory Advisory Panel (ARAP)**-Review of current regulations in light of best international practices and globally harmonized standards to keep the regulations current and dynamic.
- ❖ Work closely with the international aviation community to help develop future global and regional regulatory priorities.

Enforcement Policy

- ❖ Establishes a **uniform, transparent and consistent** approach to enforcement.
- ❖ Encourages open communication between service providers and enforcement officers/inspectors.
- ❖ Ensures that **no information derived from “SDCPS”** relating to report classified as confidential, voluntary or equivalent category, **is used as the basis for enforcement action.**
- ❖ Defines the conditions (gross negligence and willful deviations) under which safety deviations are dealt through established enforcement procedures.
- ❖ Allows service providers to deal with and resolve, events involving certain safety deviations internally, within the context of their SMS and to the satisfaction of the DGCA.



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OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION
TECHNICAL CENTRE, OPP SAFDURJUNG AIRPORT, NEW DELHI

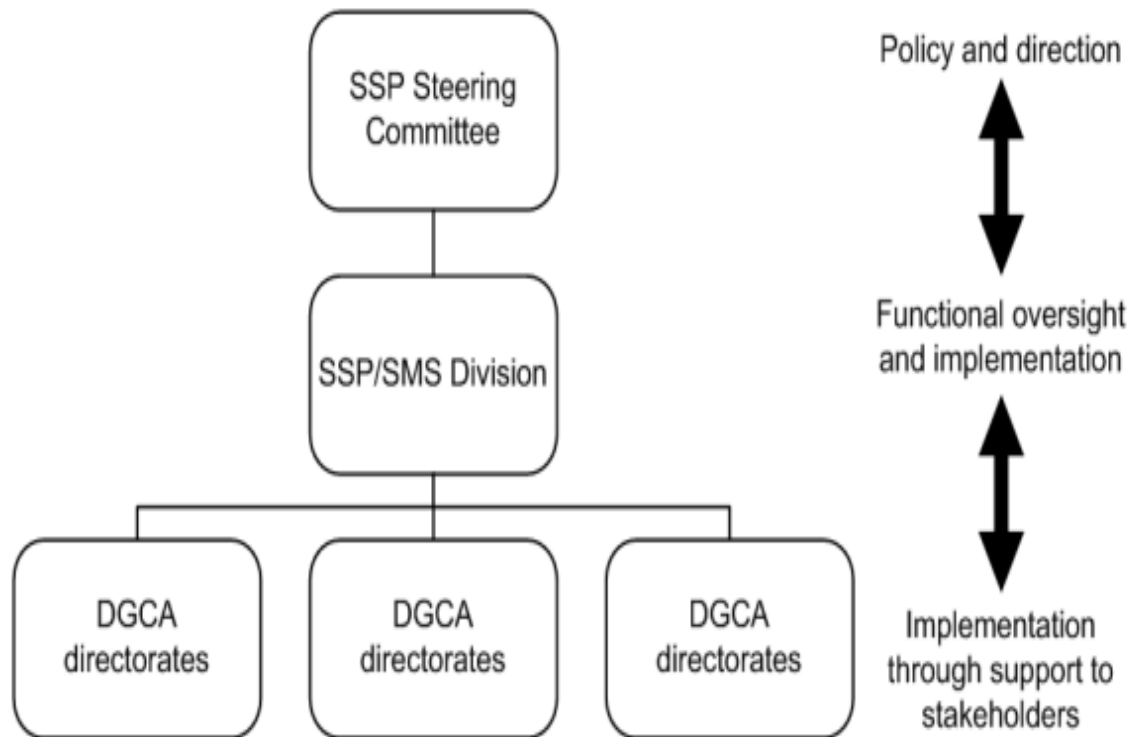
Enforcement Policy and Procedures Manual

Fourth Edition – 2022
(Effective from 7th April 2022)

State System and Functions

- ❖ Responsibilities, Obligations and Functions of following organisation managing Civil Aviation safety in India is clearly established
 - Ministry of Civil Aviation (MoCA)
 - Directorate General of Civil Aviation (DGCA)
 - Airports Authority of India (AAI)
 - Aircraft Accident Investigation Bureau (AAIB)
 - India Metrological Department (IMD)
- ❖ Aircraft Rules (1937) empowers DGCA for coordination, maintenance and implementation of the SSP.

Coordination within Indian Aviation System



Functions of SSP Steering Committee

- ❖ Formulation of SSP and oversee its implementation.
- ❖ Periodic review of **state safety policy and Safety objectives** to ensure they remain appropriate.
- ❖ Strategic safety decisions on national safety risks.
- ❖ Responsibility for promotion of SSP in applicable service providers
- ❖ Responsibility to promote SSP and communicate SSP related issues within the respective organization constituting SSP Steering Committee.
- ❖ Supporting resolution of issues related to SSP.



Functions and Responsibility of SSP/SMS Division

The SSP/SMS Division is under overall Chairmanship of the Director General and for carrying out its functions/responsibilities is headed by Joint Director General in-charge of Air Safety.

- Assist the Steering Committee in the preparation and implementation of SSP
- Coordination, monitoring and review of implementation of SSP
- Coordination, monitoring and review of implementation of SMS
- Any other work relating to SSP/SMS as assigned by Director General and Steering Committee.

Coordination Within Indian Aviation System

- ❖ National Aviation Safety Team (NAST)
 - DGCA and aviation industry
 - Implementation action on Safety Enhancement Initiatives (SEIs)
 - Resolve national safety issues
- ❖ Civil Military Cooperation
 - Flexible use of airspace (FUA)
 - Sharing of Safety Information/Data

India Safety Policy (Excerpt)

Government of India is committed to:

- Promote **positive safety culture** across aviation industry;
- Develop general rulemaking and specific operational policies;
- Ensure that the organizations entrusted with safety responsibilities have **sufficient resources**.
- Conduct both performance-based and compliance-oriented activities;
- Ensure that an Acceptable Level of Safety Performance is established and **safety performance is measured**
- Ensure that operators and service providers establish and maintain the Safety Management System (SMS);
- Support the management of safety through an effective safety reporting and communication system;
- Promulgate an enforcement policy that ensures that **no information derived from any safety data, collection and processing systems, will be used as the basis for enforcement action**.

State Safety Objectives

- ❖ Safety objective- a mix of both process-oriented and outcome oriented.
- ❖ Periodic identification of highest safety risks or the key safety priorities/safety objective for each aviation sector using quantitative data and information.
- ❖ Safety Objectives are linked to State's SPIs and SPTs and form part of the National Aviation Safety Plan.
- ❖ Using a combination of quantitative and qualitative SPIs.

State Safety Resources

❖ Qualified Technical Personnel

- Minimum qualification requirements for the technical personnel performing safety related functions
- Effective training Policy
- Procedure in place to determine the required strength of technical personnel to cater for the regulatory work requirements as per the ICAO guidance.

❖ Technical Guidance, tools and provision of safety critical information

- Technical guidance material is provided in the Departmental Procedure Manuals, Technical Circulars, CAPs covering certification and other procedures and is available on DGCA website.
- The specific tools including checklist, job aids required for technical areas are documented in the respective Procedure Manual.

A large, billowing mushroom cloud from a nuclear explosion is shown against a deep blue sky. The cloud is composed of white and grey smoke and debris, rising from a smaller, more compact base. Below the cloud, the horizon of the Earth is visible, showing a thin layer of white clouds and the blue surface of the planet. The text "Any Questions" is overlaid in the center of the image in a bold, white, sans-serif font.

Any Questions

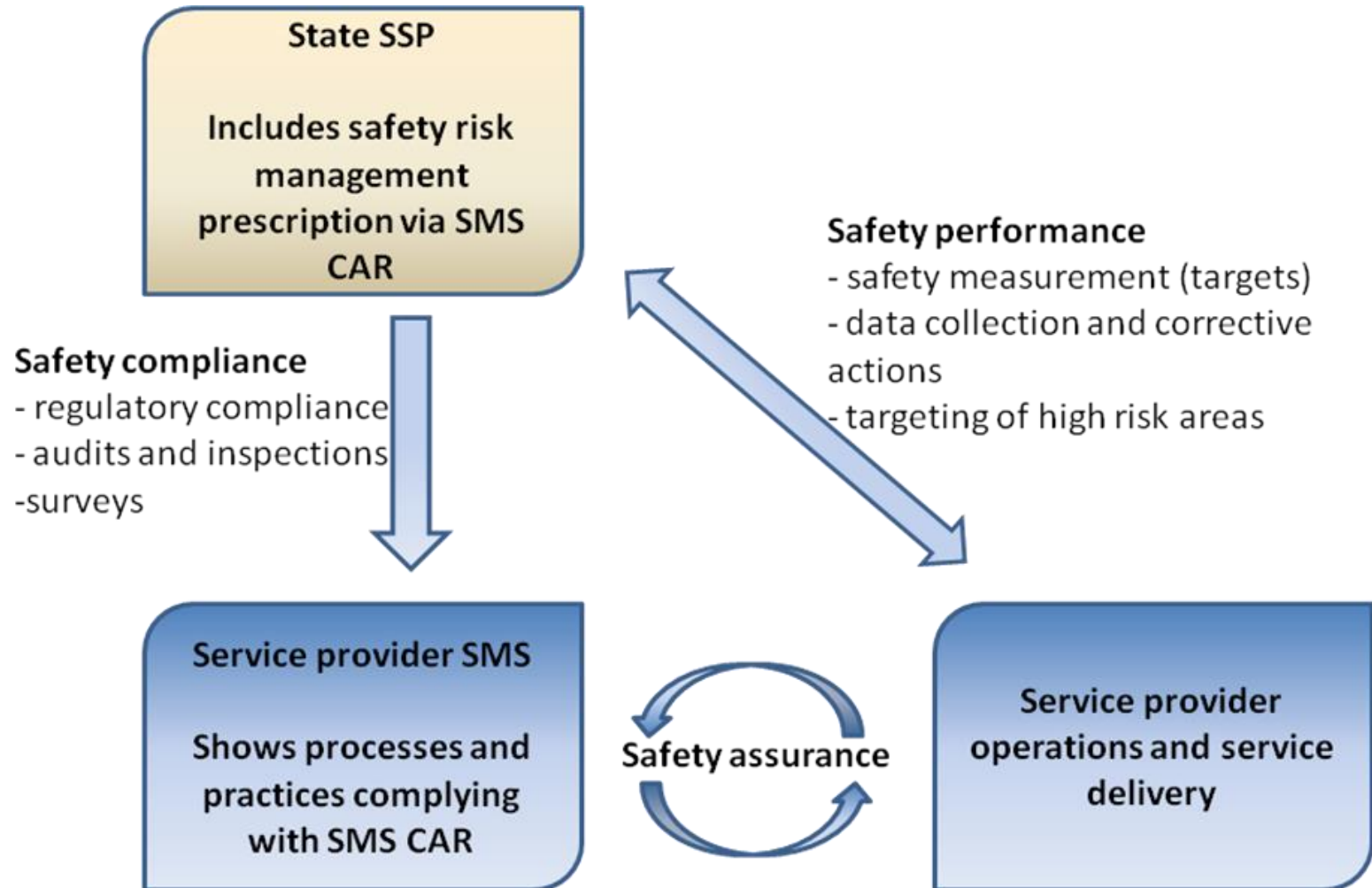
Session-3

State Safety Risk Management

Hazard Identification and Risk Management

- ❖ Rule making, policy of hazard identification, risk mitigation and interface risk management
- ❖ Each applicable service provider responsible for proactive management of safety, with the DGCA providing oversight and regulatory control.
- ❖ Analysis of aggregate safety data drawn from the data bases maintained by DGCA and stakeholders
 - Sector profile risk management
 - Industry profile risk management
 - prioritization of surveillance activities

Relationships Between SSP & SMS



Licensing, certification, authorization and approval obligations

ICAO Annex-1

Pilot Licensing	<ul style="list-style-type: none">• Directorate of Training and Licensing• Medical Section• Flight Standard Directorate (Flight Crew Proficiency checks, Approval of ATO)• Central Examination Organization
Aircraft Maintenance personnel and Flight Engineers Licensing	<ul style="list-style-type: none">• Airworthiness Directorate• Central Examination Organization
Air Traffic Controller Licensing	<ul style="list-style-type: none">• Air Space & Air Navigation Services Standards (ATCO Licensing Division)• Medical Section

Licensing, certification, authorization and approval obligations

- ❖ ICAO Annex 6, certification of Air Operator is carried out. Detailed procedures-relevant CARs and guidance is available in CAPs.
- ❖ ICAO Annex 8, approval of Design organization, Manufacturing organization and Maintenance Repair Organizations including issuance of type certificate is carried out. Detailed procedures -relevant CARs and guidance is available in CAPs.
- ❖ ICAO Annex 14 and DOC 9774, certification of Aerodromes. The licensing and renewal requirements -Part XI of the Aircraft Rules, 1937. Detailed procedures for design and operations are provided in Section 4 of Civil Aviation Requirements.

Safety Management System Obligations

- ❖ Rule 29D of the Aircraft Rules 1937 - Organizations required to establish and maintain SMS.
 - Holder of Scheduled or Non-Scheduled Operators Permit of aeroplanes or helicopters
 - is conducting operations of large or turbojet aeroplanes for general aviation; or
 - Licensed aerodrome operator
 - Organization engaged in the type design of aircraft, engines or propellers
 - Organization engaged in manufacture of aircraft, engines or propellers
 - Approved Maintenance organization
 - Approved training organization
 - Air traffic service provider

Requirements and Guidance on SMS

- ❖ CAR Section 1 Series C Part I on Establishment of a Safety Management System (SMS) includes phase wise approach.
- ❖ SSP Circulars:
 - 01/2012 - Safety Risk Management (SRM) Documentation
 - 02/2017 - SMS Compliance Checklist (Gap Analysis) for Aviation Service Providers
 - 03/2017 - Guidance for SMS Implementation in Air Operators under General Aviation
 - 02/2018 - Guidance Material for preparation of Safety Management System Manual
 - 02/2020 - Safety Data Collection and Processing System (SDCPS)
 - 02/2023 - Criteria for Safety Manager and SMS trainer

Who is responsible for the SMS?

- ❖ **Service providers** are responsible for
 - Establishing,
 - Implementing,
 - Internal monitoring of SMS
- ❖ **States (DGCA)** are responsible, under the SSP, for
 - The acceptance / oversight of organisations' SMS, SPIs & SPTs



Accident and Incident Investigation

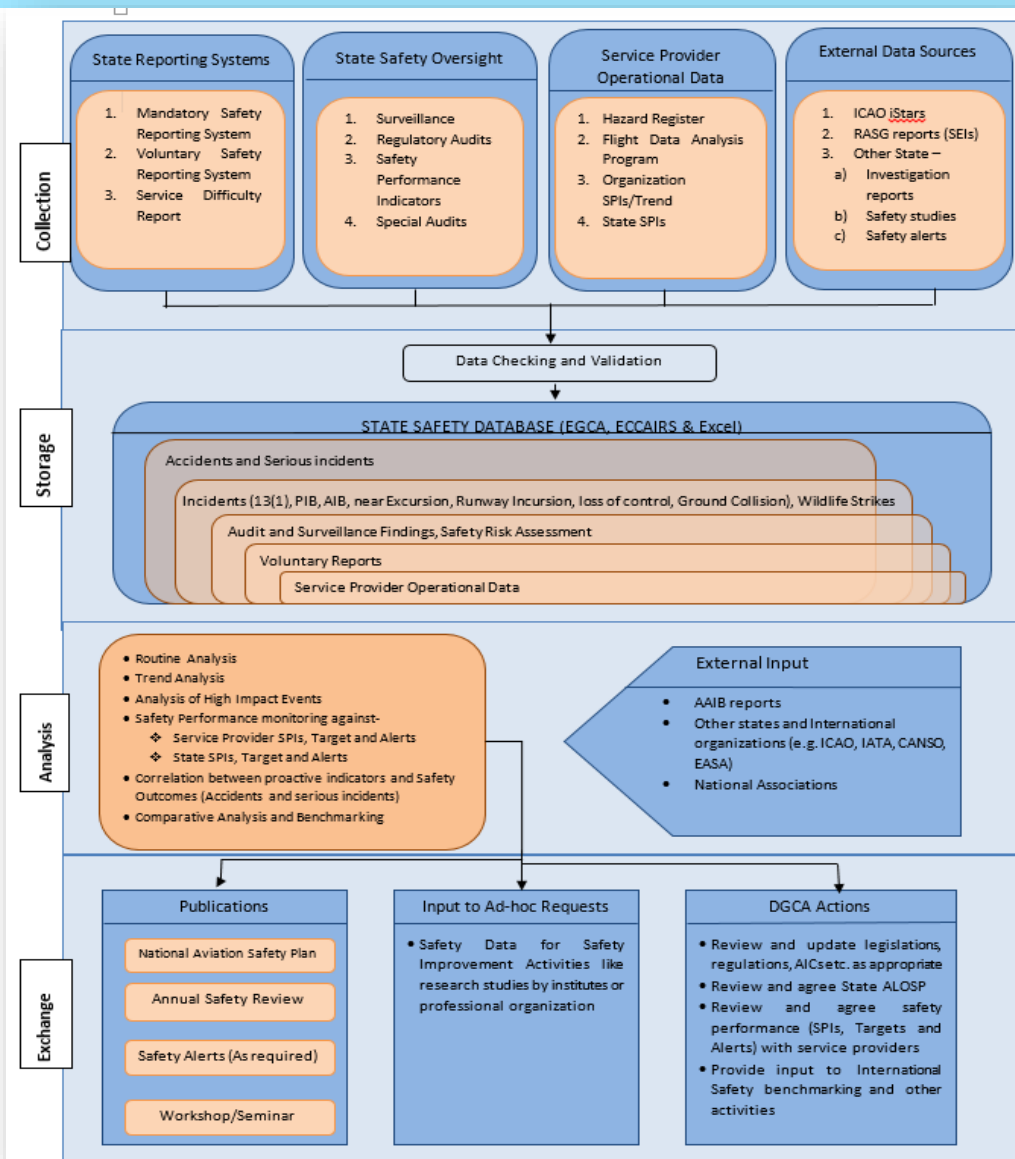
- ❖ ICAO Annex -13 :Aircraft Accident Investigation Bureau (AAIB)
 - Aircraft Accident& Incident Investigation Rules 2017
 - Notifies safety occurrences to ICAO and other applicable states
 - Carries out independent/Participates investigation of accidents and serious incidents of civil aircraft
- ❖ Safety Investigations of Incidents
 - DGCA carries out investigation of Incidents
 - Service provider safety investigations -CAR Section 5 Series C Part I
- ❖ Recommendations and hazards identified in the investigation reports

Hazard Identification and Safety Risk Assessment- (SDCPS)

❖ Safety database to support safety data analysis:

- Accident and Serious Incidents investigation data
- Incident investigation data
- Voluntary reporting data
- Service provider operational data
- Safety risk assessment data
- Data from audit and surveillance findings
- Data from safety studies/ review
- Safety data from other States, Regional Safety Organizations

❖ Collection, Storage, Analysis, Exchange



Rules/Regulations for Collection and Protection of Safety Data

- ❖ Mandatory Safety Reporting System- Rule 29E & CAR Section 5 Series C Part
 - Who should Notify?
 - How to Notify and the time line
 - Details of Reportable Occurrences
 - Procedure for investigation by service provider and time line for competing investigations
- ❖ Voluntary Safety Reporting System- Rule 29F & AIC 16 of 2021
- ❖ Flight Data Analysis Programme-CAR Section 5 Series F Part II

Management of Safety Risk

❖ Resolution of Safety Issues

- Ensure compliance of operating regulations/instructions
- Effective implementation of the Safety Recommendations
- Resolution of the safety issues-audit, surveillance in accordance with the Enforcement policy.
- Effective implementation of safety actions identified through trend analysis of the safety data, reliability analysis, management of change, risk assessments etc

❖ Occurrence Review Board

- Safety Information Sharing with concerned Technical Directorate periodically for appropriate action
- Safety Assessment in event of accident or Serious Incident for immediate corrective action.

❖ Agreement on Service Provider's Safety Performance

Voluntary Safety Reporting System

Mode of submission of Voluntary Report to DGCA:

- Mode 1- eGCA

<https://www.dgca.gov.in/digigov-portal/jsp/dgca/common/login.jsp>

- Mode 2- Email

voluntaryreport-dgca@gov.in

- Mode 3- By post

Voluntary Safety Reporting System

Air Safety Directorate

O/o Directorate General of Civil Aviation

Opp. Safdarjung Airport, Aurbindo Marg, New Delhi-110003

A large, billowing mushroom cloud from a nuclear explosion, set against a blue sky and a view of Earth from space. The cloud is composed of white and grey smoke and debris, rising from a smaller, more compact base. The background shows the curvature of the Earth with blue oceans and white clouds, under a clear blue sky.

Any Questions

Session-4

State Safety Assurance

Surveillance Obligations

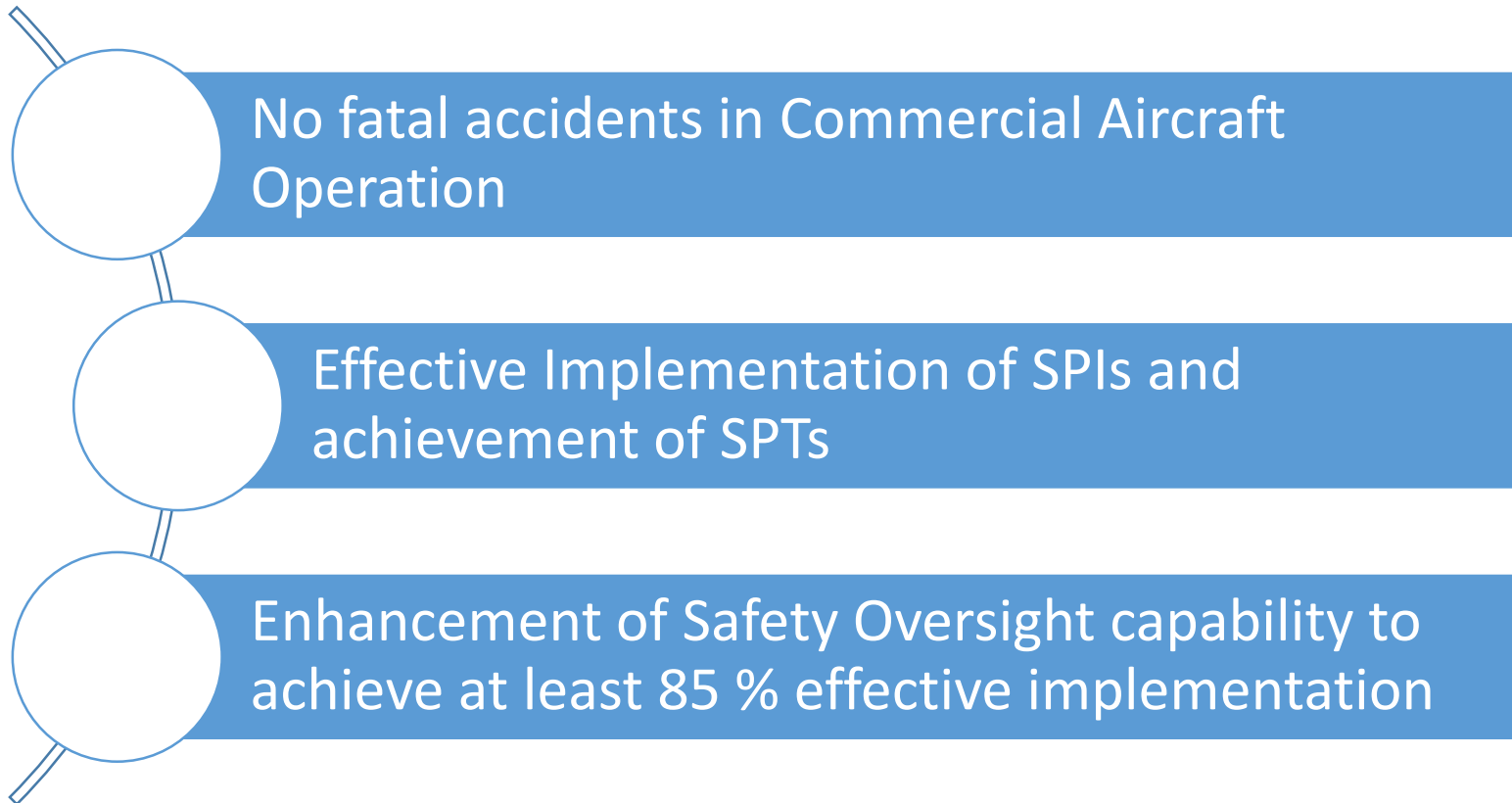
- ❖ Annual Surveillance Programme- The Surveillance Procedure Manual and Regulatory Audit Procedure
 - Planned and unplanned audits and inspections
 - Plans based on perceived area of greater safety concern or need
 - The size, complexity of the service provider and their safety performance factored.

Surveillance Obligations

- ❖ Oversight of service provider's SMS - SSP/SMS Procedure Manual
 - Appropriate integration of regulatory safety risk controls into individual service provider's SMS,
 - Effectiveness of the safety risk controls
 - Appropriate resource allocation
 - Periodic review of each service provider's SPIs and SPTs to assess their performance and effectiveness.
 - SPIs and SPTs are adjusted as required to support the continuous safety improvement

State Safety Performance

Accepted Level of Safety Performance (ALoSP)-India



State Safety Performance

❖ NASP 2018-22

- Out come of activities described in SSP
 - Incorporates the Global HRCs (GASP) and the Regional Safety Plan of (RASG-APAC).
 - Experience- implementation of State Safety Plan 2015-2016
 - Performance evaluation of the Safety priorities.
 - Work undertaken by the stakeholders in implementation and maintenance of their Safety Management System (SMS).
 - Contains Eight Safety Priorities, Objectives, Performance Indicators, yearly Targets and mitigation Plan
- ## ❖ NASP-2023-27-under process



NATIONAL AVIATION SAFETY PLAN
2018-2022

DIRECTORATE GENERAL OF CIVIL AVIATION
INDIA

State Safety Priorities-NHRC

Global HRCs	Safety Priorities- RASG-APAC	Safety Priorities- India
Controlled Flight into Terrain	Controlled Flight into Terrain	Controlled Flight into Terrain
Loss of control in-flight (LOC-I)	Loss of Control in Flight	Loss of Control in Flight
Mid Air collision (MAC)	-----	Airborne Conflict
Runway excursion(RE)	Runway Safety	Runway Excursions and Overruns
Runway incursion (RI)	Effective SMS and SSP	Runway Incursion an Ramp Safety
	Enhancing the Aircraft Accident Investigation	Wildlife and Bird Strikes
	Effective Safety Oversight System	Deficient Maintenance
		Aviation Procedures & Documentation

Safety Performance Measurement Annual Safety Review

- Assessment of the Key safety priorities and their linked safety performance indicators.
- Analysis of the aggregate safety data derived from the DGCA database, and external sources such as stake holders, ICAO iSTARS, official websites of Accident Investigation Authorities of different countries.
- Trend Analysis of safety events using CICTT Taxonomy and the causative factors to identify emerging issues.
- Qualitative assessment using Surveillance and Audit Findings

- [APRAST/15: WP/09](#)

- Web link:

(<https://www.dgca.gov.in/digigov-portal/?page=jsp/dgca/InventoryList/headerblock/ssp/main.html>)



सत्यमेव जयते

DIRECTORATE GENERAL OF CIVIL AVIATION



ANNUAL SAFETY REVIEW

2022

State Safety Performance Measurement

❖ ICAO USOAP-CMA

- continuously update their SAAQ, CCs/EFOD, CAPs and PQ status (self-assessment) along with the relevant evidences.

❖ Internal Audit and Quality Assurance

- Audit aviation safety regulations and DGCA processes in relation to the ICAO's eight Critical Elements of a safety oversight system.
- Internal quality assurance audits to support corporate governance in DGCA.

Management of Change

The process of change management may include assessment of risk arising out of changes but not limited to the following:

- Reorganization of State aviation authorities (including downsizing).
- Changes in the SSP processes, including changes in methodology.
- SRM and safety assurance processes;
- Changes in the regulatory environment, such as changes in existing State safety policies, programmes, and regulations;
- Changes in the operational environment, such as introduction of new technologies, changes in infrastructure, equipment and services;



Any Questions

Session-5

State Safety Promotion

DGCA- India Website

(www.dgca.gov.in)

भारत सरकार
GOVERNMENT OF INDIA

नागर विमानन विभाग
MINISTRY OF CIVIL AVIATION

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[Regulations and Guidance](#)



हमारा लक्ष्य

विनियमन और सक्रिय सुरक्षा निरीक्षण प्रणाली के द्वारा सुरक्षित और कुशल हवाई परिवहन को प्रोत्साहित करना।

Our Vision

Endeavour to promote safe and efficient Air Transportation through regulation and proactive safety oversight system.



Environment

To provide feasible solutions to mitigate emissions from aviation and to reduce the noise due to aircraft movements in the airport vicinity.



SSP

State Safety Programme



Drones

Flying Drones



Know Your Rights

Protecting Passengers and the Public

What's New?

[Regulation](#)

[Guidance](#)

[Announcements](#)

Internal Communication and Dissemination of Safety Information

❖ Safety training program

- Initial, Recurrent
- Role based
- Training course content for regulator and service providers

❖ Dissemination of Safety Information:

- State Safety Policy-Websites of all the SSP members
- National Aviation Safety Plan- DGCA Website and ICAO portal
- Annual Safety Review-DGCA Website,
- National Aviation Safety Team (NAST),
- Circulars- DGCA Website
- Reporting: ORB-MSRS, VSRS- eGCA,
- DGCA Website-Public notices
- Workshops, etc.
- Procedure manual of individual directorate

External Communication and Dissemination of Safety Information

- ❖ Dissemination of safety Information- Stakeholders and service providers:
 - National Aviation Safety Plan
 - Annual Safety Review
 - Circulars containing safety information
 - Guidance material for implementation of SMS
 - Accident/incident investigation reports
 - Communication of occurrence reports
 - DGCA Website-Public notices
 - Workshop and Seminars

External Communication and Dissemination of Safety Information

- ❖ Dissemination of safety Information- Other states
 - ICAO Regional office safety meetings-DG Conference, APAC-RASG, APRAST, SARAST, etc.
 - ICAO-HQ meeting- Assembly meeting etc.
 - Accident/incident investigation reports
 - Mandatory Safety Reports
 - Safety recommendations

External Communication and Dissemination of Safety Information

- ❖ Critical Safety Information dissemination:
 - Aeronautical Information Publication(AIP)
 - Aeronautical Information Circular(AIC)
 - Notice to Airmen (NOTAM) etc.

A large, billowing mushroom cloud from a nuclear explosion is centered in the upper half of the frame. The cloud is white and grey, with a dense base and a large, spreading top. Below the cloud, the text "Any Questions" is written in a bold, white, sans-serif font. The background is a clear blue sky, and at the bottom, a thin layer of clouds is visible over a dark blue horizon.

Any Questions