International Civil Aviation Organization
Regional Aviation Safety Group - Pan America (RASG-PA)

WORKING PAPER

Thirty First Pan America — Regional Aviation Safety Team Meeting (PA-RAST/31) of the Regional Aviation Safety Group — Pan America (RASG-PA)

South Florida, United States, 20 to 22 February 2018

Agenda Item 5:   **Participant Presentations (Topics of Interest to the Meeting)**

GASP- SAFETY PERFORMANCE INDICATORS

(Presented by the Secretariat)

EXECUTIVE SUMMARY	
As part of the work activities expected from the RASGs, each RASG is to look into the Global Aviation Safety Plan (GASP) and particularly on the proposed Safety Performance indicators	
Action:	Action is suggested in Section 3.
Strategic Objectives:	• Safety
References:	• Thirtieth Pan America — Regional Aviation Safety Team Meeting, (PA-RAST/30), Port-of-Spain, Trinidad and Tobago, from 14 to 16 November 2017

1.   Introduction

1.1   The Global Aviation Safety Plan (GASP) sets out a strategy which supports the prioritization and continuous improvement of civil aviation safety. The GASP provides a framework for the development and implementation of regional, sub-regional and national plans. Through this document, ICAO promotes harmonization and coordination of efforts aimed at improving international civil aviation safety.

1.2   The overall purpose of the GASP is to guide the harmonized development of regional and State safety planning, supported by regional safety activities coordinated by the regional aviation safety groups (RASGs). The GASP seeks to assist States and regions in their respective safety policies, planning and implementation by:

a)   establishing the global safety priorities and GASP objectives;
b)   providing a planning framework, timelines and guidance material; and
c)   presenting implementation strategies and a global aviation safety roadmap to address the procedures and methods to achieve the GASP objectives and set specific priorities at both State and regional levels as well as the role of industry partners.

1.3   The GASP includes objectives for States to meet through the implementation of effective safety oversight systems, State safety Programmes (SSPs) and the development of advanced safety oversight systems, including predictive risk management. The GASP also sets out timelines for the global collective achievement of these near-, mid- and long-term objectives.

2.   Discussion

2.1   For the implementation, the GASP includes global aviation safety roadmap, which is an action plan developed to assist the aviation community in achieving the objectives presented in the GASP. It provides a structured, common frame of reference for all relevant stakeholders. The roadmap's goal is to ensure that safety initiatives deliver the intended benefits associated with the GASP objectives through enhanced coordination, thus reducing inconsistencies and duplication of effort. The GASP includes instructions on how to use the roadmap to facilitate its implementation.

2.2   The GASP-SG is the ICAO study group who develops and maintains the GASP, which guides the harmonized development of regional and State safety planning, supported by regional safety activities coordinated by the RASGs. The GASP-SG seeks to assist States and regions in their respective safety policies, planning and implementation by providing expert advice to the ICAO Secretariat. Its membership is composed of experts from civil aviation authorities, airlines, aircraft manufacturers and international organizations.

2.3   Based on the above, the GASP also includes Safety Performance Indicators for reporting and monitoring the success of the implementation. The Appendix D of the GASP provides the SPIs- see **Attachment**.

3.   Suggested Actions

3.1   The Meeting is invited to take note of the GASP review and to review the SPis for its inclusion in the PARAST work programme.

— — — — — — — — — — —

ATTACHMENT
STATE SAFETY PERFORMANCE INDICATORS

1. PERFORMANCE-BASED APPROACH

1.1   Safety performance is a State's or service provider's safety achievement as defined by its safety performance targets and safety performance indicators (SPIs). An SPI is a data-based parameter used for monitoring and assessing safety performance. A performance-based approach that defines safety performance levels should be adopted to support a global improvement in safety. This approach enables States and regions to review the safety performance of their systems and to take action, if needed, to address discrepancies between existing and desired performance levels.

1.2   The first High-level Safety Conference held in 2010 (HLSC 2010) identified a need for a harmonized methodology for the development of SPIs to enable States to develop and establish an acceptable level of safety related to a State safety programme (SSP). The HLSC 2010 also recommended ICAO work with States and regions to create a common methodology for the development of SPIs. As a follow-up to the HLSC 2010, ICAO worked with States and industry to identify harmonized safety metrics. The goal of such metrics is to enable analysis to identify and mitigate safety risks as well as to facilitate the exchange of information. To provide further support, ICAO developed tools to gather, analyse and share operational safety data at the international level. Harmonized SPIs are needed to facilitate the exchange of safety information at the regional and international levels. At the regional level, the regional aviation safety groups (RASGs) are to monitor regional SPIs, coordinate regional initiatives and provide practical assistance to States in their respective regions. The information gathered via SPIs, when aggregated at regional and international levels, supports ICAO and the regions in setting priorities. Future updates of the GASP will provide an enhanced global framework designed to support the progressive safety performance at the different levels (i.e. national, regional, international).

> *Note.— The* Safety Management Manual (SMM) *(Doc 9859) contains guidance material related to the development of States' and service providers' SPIs and the acceptable level of safety performance (ALoSP) concept.*

2. PHASED-APPROACH TO IMPLEMENTATION

2.1   ICAO's safety management provisions emphasize the importance of a performance-based approach to managing safety. The ALoSP concept complements the traditional approach to safety oversight, which is primarily focused on prescriptive regulatory compliance, with a performance-based approach that defines actual safety performance levels within an SSP framework. A fully developed ALoSP monitoring and measurement process needs to identify all the safety-critical sectors and the SPIs that define the level of safety in these sectors. ICAO encourages States to start (or progress) the implementation of a performance-based approach to managing safety. The primary focus is to achieve compliance with ICAO Standards and Recommended Practices (SARPs) and to reduce high-consequence events where such issues are evident. The focus should progress to areas where States are concerned with continuous improvement in safety performance.

2.2   As States and regions have different needs and maturity levels in performance monitoring, ICAO proposes a set of SPIs designed to address these different needs and maturity levels. Tables D-1 and D-2 contain examples of SPIs which States and regions may adopt. These SPIs were shared with the international aviation community during the second High-level Safety Conference held in 2015 (HLSC 2015), through an information paper (IP/01) entitled *Safety data, performance metrics and indicators*. ICAO will further develop and may modify these SPIs, in cooperation with stakeholders, in order to refine their relevance. States are encouraged to further develop their SPIs and share them at the regional and international levels.

Table D-1.   Sample set of State safety performance indicators

#	*Indicators and metrics*	*Type*	*Usage*
1.	**Effective implementation of State safety oversight system** *Metrics:* • USOAP EI Scores overall • USOAP EI Scores by technical area • USOAP EI Scores by critical element	Predictive	Target
2.	**Progress in SSP implementation** *Metrics:* • Percentage of completed gap analysis questions • Percentage of implemented gap analysis questions overall • Percentage of implemented gap analysis questions by element	Predictive	Target
3.	**Progress in SMS implementation** *Metrics:* • Percentage of completed gap analysis questions by operator • Percentage of implemented gap analysis questions overall by operator • Percentage of implemented gap analysis questions by element and by operator	Predictive	Target
4.	**Frequency and severity of accidents and incidents** *Metrics:* • Number and distribution of occurrences by severity level (accident, serious incidents, etc.) and the ICAO Accident/Incident Data Reporting System (ADREP) occurrence category • Number and distribution of fatalities by ADREP occurrence category • Occurrence per number of departures (rate) *Note.— Occurrences should be limited to specific categories of aircraft and operations, such as aircraft above 5 700 kg operating scheduled commercial flights.*	Reactive/ proactive	Target

#	Indicators and metrics	Type	Usage
5.	**Certification of aerodromes** *Metrics:* • Number and percentage of certified international aerodromes overall and by airspace	Predictive	Target
6.	**Significant safety concerns** Metrics: • Number and duration of USOAP CMA significant safety concerns by technical area	Predictive	Target
7.	**Presence of notable hazardous conditions** *Metrics:* • Number, duration and distribution of safety-related NOTAMs by the *Procedures for Air Navigation Services — ICAO Abbreviations and Codes* (PANS-ABC, Doc 8400)*,* Q-code categories	Predictive	Monitor
8.	**Fleet modernization** *Metrics:* • Average age of all registered and operated aircraft and their distribution by operator • Percentage of all registered and operated aircraft above 20 years and their distribution by operator	Predictive	Monitor
9.	**Effectiveness of foreign operator safety assessment programmes** *Metrics:* • Compliance scores by foreign and national operator	Predictive	Monitor
10.	**Industry certification** *Metrics:* • Number and percentage of operators holding industry certificates by type (IOSA, ISAGO, IS-BAH, IS-BAO, etc.)	Predictive	Monitor
11.	**Extent of environmental hazards** *Metrics:* • Average terrain elevation around airports • Percentage of METARs indicating low ceiling or visibility by month and location	Predictive	Be aware

Table D-2.   Sample set of State level of activity indicators

#	Indicators and metrics	Type	Usage
1.	**Fleet size** *Metrics:* • Number and distribution of aircraft models overall • Number and distribution of aircraft models by operator • Number of aircraft registered and operated and their distribution by operator	Level of activity	Monitor
2.	**Traffic volume** *Metrics:* • Number of monthly and annual departures by operator, airport and route • Number of destinations overall and by airport • Number of departures per destination overall and by airport • Number of flights handled by airspace	Level of activity	Be aware