57th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS

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AGENDA ITEM 3:   AVIATION SAFETY

EFFECTIVE IMPLEMENTATION OF STATE SAFETY PROGRAM AND DEVELOPMENT OF NATIONAL AVIATION PLAN AND DEVELOPMENT OF NATIONAL AVIATION SAFETY PLAN

Presented by the Republic of Korea

SUMMARY

This paper introduces the SSP implementation status of the Republic of Korea as a State that fully implements SSP, and emphasizes the importance of the State Safety Program, and Safety Data Collection and Processing Systems when reviewing establishment of a NASP.

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1.   INTRODUCTION

1.1   The State Safety Program (SSP) refers to the regulation established by states and the overall activities carried out accordingly to improve aviation safety under Annex 19. Safety Performance Management (SPM) is a key function of SSP and provides a mean to determine whether SSP works effectively to achieve safety objectives (SPT). SPM is based on Safety Performance Indicator (SPI), Safety Data Collection and Processing System (SDCPS), safety analysis, etc., and it is important to systematically establish, organize, and implement them.

1.2   NASP is a document that provides directions for aviation safety management at a national level, and the member states need to establish NASP that is closely related to ICAO's global aviation safety plan and regional aviation safety plan.

1.3   Therefore, the Republic of Korea proposes to share its experiences in SSP and SPM implementation and discuss what is necessary to effectively establish and manage NASP.

2.   DISCUSSION

2.1   **Legislation and institutions**. Article 58 of the Aviation Safety Act and related ministerial regulatory define SSP, and its main components include primary aviation legislation, aviation organizations, personnel, Safety Risk Management (SRM) process, safety assurance, safety promotion, and collection, management and protection of safety data. In addition, the Republic of Korea is establishing and strategically operating an annual SSP implementation plan for effective SSP operation.

2.2   **Related authorities**. In the Republic of Korea, SSP provides the basis for a cooperative system among agencies, such as the Korea Office of Civil Aviation, the Ministry of National Defense, the Korea Coast Guard, the National Fire Agency, the Korea Meteorological Administration, and the Aviation and Railway Accident Investigation Board, for addressing the following matters :

    - Ministry of National Defense: Air Traffic management for civil aircraft using civil/military
      aerodromes and Aerodrome Operations for civil/military aerodromes.
    - National Fire Agency, Korea Coast Guard: Search and rescue service
    - Korea Meteorological Administration: Aeronautical Meteorological Services
    - Aviation and Railway Accident Investigation Board: Investigation of accidents/incidents, an
      alysis of the cause of accidents and incidents for prevention of accidents.

2.3   **Comprehensive Risk Analysis**. Based on the SDCPS, the Republic of Korea conducts a comprehensive national risk analysis of data collected from accident/incident investigation, mandatory/voluntary safety reports, and oversight activities and so on. The Comprehensive Risk Analysis aims to identify national High-Risk Categories of occurrences (HRC), other aviation safety issues, and risks in the national safety management system, and prepare Safety Enhancement Initiatives (SEIs) to reduce risks.

2.4   **HRC and Safety Issue**. Through the comprehensive risk analysis, the Republic of Korea identified the following 11 categories of operational safety risks. This categorization has taken into account global and regional aviation safety plans.

    - Runway Excursion
    - Runway Incursion
    - Loss of Control

- Controlled Flight into Terrain
- Navigation Error
- System Component Failure
- Ground Collision
- Airspace Safety
- Turbulence
- Aerodrome Safety
- Fire-Non impact

2.5   In the process of establishing SSP implementation plans for 2022, four categories – (1) Runway Safety, (2) System/Component Failure or Malfunction, (3) Turbulence Encounter (TURB), (4) Aerodrome Safety - among 11 HRCs were selected as the key operational risks for 2022. In addition, (1) The recovery of air traffic in the post-COVID-19 era, (2) Reorganization of the national aviation industry, including M&As of airlines and (3) The establishment of a safety system in response to the emergence of new technologies, including UAM, were selected as the new emerging safety issue of 2022.

2.6   **Safety Performance Monitoring**. Based on the 11 High-Risk Categories of Occurrence (HRCs), the ROK has developed 39 lagging indicators and 19 leading indicators to measure operational risks, thereby monitoring safety performance and mitigating HRC-related risks. In addition, there are 5 Indicators in place to reduce SSP management risks.

2.7   **Data Protection**. Aviation safety data is essential for efficient SDCPS-based Safety Management. Data providers require legal protection to offer data voluntarily and willingly. The ROK legally protects data providers based on the Aviation Safety Law, as it states "non-punitive and no-enforcement against data providers." The protection is currently enhanced as a new article has been put in place to punish those who take disadvantageous/punitive action against the person related to FDAP (Flight Data Analysis Program) and Radar Data and Voluntary Safety Reporters.

2.8   **Public Announcement of Investment for Aviation Safety (PAIAS)**. The PAIAS was introduced by the Korean government in 2020 to encourage the Service Providers - aircraft and airport operators - to maintain and boost investment in aviation safety. The PAIAS requires the Service Providers to voluntarily announce their safety expenses (or investment). They also can receive incentives, for example, in slot allocation, based on their performance. The PAIAS is expected to increase voluntary safety activities of the Service Providers and fulfill the people's right to know.

2.9   **Annual SSP Implementation Plan**. Based on the SSP Framework as explained above, the ROK carries out a comprehensive risk analysis to identify the key operational risks and process implementation safety risks for the year. The ROK establishes a safety implementation plan on a yearly basis, which includes implementation strategies and detailed action plans, for risk mitigation and efficient operation of SSP.

2.10   **Considerations for establishing SSP and NASP**. The ROK reviewed the GASP, RASP, and ROK's annual SSP Implementation Plan when established NASP. The ROK's annual SSP Implementation Plan was confirmed very similar to the NASP structures, such as its Purpose, Strategy, and Risk Identification processes. In addition, various sets of safety data used in SDCPS are contributing to identifying National operational safety risks and developing the Safety Enhancement Initiatives (SEIs), which reaffirm the significance of aviation safety data. Therefore, the ROK suggests the member states share their experiences in national aviation safety data analysis by adding a category of data collection and analysis in the NASP template, ultimately supporting the states to efficiently establish NASP.

3.   ACTION BY THE CONFERENCE

3.1   The Conference is invited to:

    a) Note the information contained in this Paper;

    b) Encourage States/Administrations to share their experiences and opinions in implementing their SSPs and developing NASPs; and

    c) Request ICAO to strengthen institutional support, such as the revision of guidance (Doc 10031), which is related to collection, analysis and processing of aviation safety data, considering the importance of utilizing the data in the NASP establishment.

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