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ICAO Asia Pacific Safety Management Seminar 2025 Wrap-Up

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Key Takeaways for Welcome Remarks and Keynote Speeches on Day 1

- The Asia Pacific region is highly diverse, with countries having both the highest and lowest ICAO Universal Safety Oversight Audit Programme (USOAP) Effective Implementation (EI) scores. The robust growth in this region poses unique challenges.
- To enhance safety, the ICAO Regional Aviation Safety Group developed a Regional Aviation Safety Plan which includes over 40 safety enhancement initiatives aimed at achieving global safety targets. Key objectives include raising the region's average EI score to meet the global standard and implementing State Safety Programme (SSP) and Safety Management Systems (SMS), underscoring the seminar's significance. While the region has seen a 3-4% improvement in EI scores with 24 States surpassing the 60% benchmark, continued SSP implementation is encouraged.
- Safety is both a moral obligation and a shared responsibility. Effective collaboration is crucial not only for upholding current standards but also for driving future safety advancements. Along with ICAO Annex 19 amendments, collective efforts are essential to managing increasing traffic volumes and sustaining long-term aviation safety.

Key Takeaways for Session 1: Proposed Amendments to ICAO Annex 19

- **Expanded SMS Applicability:** The amendments extend SMS requirements to Remotely Piloted Aircraft System (RPAS) operators conducting international operations, approved maintenance organizations servicing them, and certified heliports.
- **Strengthened SSP-SMS Integration:** Links between the SSP and SMS are emphasized in the proposed amendments, reinforcing a coordinated approach to managing aviation safety risks at the State-level.
- **Clarification of Key Terms:** The phrase “commensurate with the size and complexity” has been refined to improve understanding and support the implementation of a scalable approach tailored to the size of the operation and/or organization. The term “Acceptable Level of Safety Performance (ALoSP)” has been removed to reduce emphasis on a difficult-to-define objective.
- **Guidance and Safety Intelligence:** The Safety Management Manual (Doc 9859) will be updated to Version 5 to support implementation, and a new Safety Intelligence Manual will provide enhanced guidance on data-driven safety oversight.

Key Takeaways for Session 1: Recent Developments on Safety Management

- **Continuous SSP Improvement:** All States are on a journey to establish and refine their SSPs, offering opportunities to share and learn from one another. For example, the UK was the first to publish an SSP in 2009 and has been consistently enhancing it since.
- **National Aviation Safety Plan (NASP) Implementation:** States should consider the GASP targets when updating their NASPs and monitor their implementation.
- **Structured Framework and Industry Collaboration:** A well-defined framework is essential for a robust SSP. For example, Singapore follows a structured 4-step approach comprising self-evaluation and horizon scanning; consultation and drafting; publication; and monitoring and tracking. Collaboration with stakeholders e.g., industry, unions and the military, is crucial to ensure buy-in, relevance, and smoother implementation.
- **Data-Driven Enhancements:** Accurate data is crucial for effective safety management. As part of its SSP development, Pakistan introduced the Safety Data Collection and Processing System (SDCPS) in 2019. Currently, over 80% of safety data is automated, organized into modules pertaining to CAA functions, and reviewed every bimonthly.

Key Takeaways for Session 2: Enablers of Flexible Culture and Risk-Based Surveillance

- **Technology Enablers:** Developing a safety database improves risk detection and oversight by enabling data-driven decision-making. For example, the Republic of Korea's Safety Risk-Based Surveillance (SRBS) system, K-RION, enhances safety oversight by integrating data collection, analysis, and operational processes across stakeholders. This system streamlines routine workflows and identifies risks, improving both safety and efficiency. Artificial Intelligence (AI) will soon be incorporated to perform advanced data analysis and proactively recommend safety measures.
- **Managing Technology Effectively:** While technology and AI provide significant benefits, continuous testing is crucial to ensure accurate insights. Regularly assessing outcomes and validating input data is essential for maintaining reliability and accuracy.
- **Cultural Enablers**: A flexible culture and informed culture are important for ensuring the continued availability of safety data and information. This is essential for making data-driven decisions in how resources can be more effectively deployed in surveillance programmes while providing assurance that safety is not compromised.

Key Takeaways for Session 3: Safety Data and Information Management

- **Challenges in Managing Safety Data:** Key challenges include ensuring data accuracy, managing large volumes of data, and overcoming resistance to sharing. Externally, concerns over confidentiality breaches and misinterpretation hinder data exchange, while internally, inconsistent formats and integration issues create barriers.
- **Data as an Enabler for Safety:** Safety data is essential for risk mitigation, proactive hazard identification, improving and monitoring safety performance. It also strengthens collaboration among stakeholders, contributing to enhanced safety outcomes.
- **Collaboration and Trust in Data Sharing:** Organizational and legal safeguards are vital to encourage data sharing while maintaining confidentiality. Countries like the Republic of Korea have laws that protect reporters from penalties, fostering reporting. Trust and transparency are key to promoting hazard reporting and strong safety culture.
- **Emerging Trends and Risks:** Cybersecurity and AI are transforming safety data management. Balancing human expertise with machine reliability is critical. Effectively adopting new technologies can improve predictive analysis and risk identification.

Key Takeaways for Session 4: Safety Reporting Systems (Mandatory/Voluntary)– *Pre-Seminar Survey Results*

- **Strong Participation:** The survey received 305 responses, demonstrating a high level of engagement and interest in safety reporting.
- **Limited CEO Access:** Only a small number of respondents indicated that their CEOs have access to safety reports, despite the importance of leadership visibility in fostering a strong safety culture. This could enhance accountability and decision-making.
- **Positive Handling of Self-Disclosures:** It was encouraging to see that self-reported incidents were generally handled in a constructive manner, with disciplinary actions being rare. This reinforces the importance of a just culture, where employees feel safe to report mistakes without fear of unfair punishment.
- **Need for More Resources and Data Sharing:** The survey highlighted a shortage of technical staff to effectively analyze reports. Additionally, the limited external sharing of safety data could be a missed opportunity, as broader data exchange can drive industry-wide safety improvements.

Key Takeaways for Session 4: Safety Reporting Systems (Mandatory/Voluntary)

- **Building an Effective System:** Creating a robust safety reporting system begins with defining organizational goals and designing the system to support them. Ensuring confidentiality through policies, procedures, and cybersecurity fosters open reporting. Reliable backups and competent staff protect data integrity. Key features to consider include metrics to monitor, organizational workflows, and data-sharing capabilities.
- **Digitalisation:** States in Asia Pacific have demonstrated that implementing digital and user-friendly tools for safety reporting can significantly enhance user interaction with the systems. This, in turn, bolsters user confidence and elevates reporting levels.
- **Culture as a Driver for Reporting:** A strong safety culture encourages employees to feel responsible for reporting issues without fear of retaliation. Clear policies and a just culture build trust and transparency, reinforcing a safe and open environment.
- **Staff Engagement:** Regular communication and reporting training are essential. Organizations should establish a fair workplace culture and act on employee feedback. Anonymous surveys help assess SMS effectiveness and sustain engagement.

Key Takeaways for Session 5: Reporting & Just Culture Application

- **Trust as the Foundation:** Building trust between frontline staff, corporate safety, and regulators is essential for cultivating a just culture. Trust takes time to develop, but the benefits are invaluable, as demonstrated by the Dutch Air Navigation Service Provider.
- **Leadership Commitment:** Just culture starts with leadership, fostering an environment that prioritizes learning and continuous improvement. It shifts the focus from punishment to learning, ensuring that investigations lead to meaningful enhancements.
- **Reporting as a Positive Feedback Loop:** Providing investigation feedback fosters trust and reinforces the value of reporting, strengthening a just culture. Clear reporting guidelines improve data sharing and hazard identification. Even reporting incidents without negative outcomes, as seen in the UK example, enhances overall system safety.
- **Just Culture vs. No-Blame Culture:** Unlike a no-blame culture, a just culture balances accountability with learning, differentiating between human error, negligence, and recklessness. Tools such as James Reason's Culpability Tree, the repeatability test, and other modern methods can help interpret human behavior and ensure fair outcomes.

Key Takeaways for Session 6a: Safety Intelligence Development, Learning Culture and Informed Culture – *Best Practices in Data Sharing*

- **Establishing Safety Performance Indicators (SPIs):** To develop effective SPIs, consistent methodologies are essential. Automated data collection processes can enhance operational efficiency by analyzing both quantitative and qualitative data, reducing manual work. SPIs should be dynamic, regularly reviewed to ensure relevance, and based on multiple SPIs rather than a single one to determine risk profiles. SPI dashboards should feature real-time, de-identified data that is accessible to all stakeholders, from management to frontline workers, to foster transparency and action.
- **Data Sharing and Taking Action:** Airports effectively share safety performance data with stakeholders through an established platform. To achieve this, data confidentiality concerns and data integration for a clearer safety picture must be addressed. Another example is the safety assessment carried out by the Monitoring Agency for RVSM implementation in the Asia-Pacific region. It analyzed mid-air collision risks and identified hotspots, prompting States and Service Providers to develop and implement mitigation measures. The results were shared to enhance airspace safety.

Key Takeaways for Session 6b: Safety Intelligence Development, Learning Culture and Informed Culture – *Integrating Intelligence into NASPs, SSPs and SPIs*

- **Learning Culture:** A learning culture drives continuous improvement by applying feedback and lessons from past incidents to enhance safety practices. It fosters trust and open reporting, as seen in Bangladesh and Pakistan, where initiatives such as the TCAS-RA early warning safety system and safety seminars promote proactive safety measures, learning from past experiences, and embracing new data-driven approaches.
- **Informed Culture:** An informed culture ensures transparency and timely access to safety data insights, enabling proactive decision-making. Republic of Korea's approach to managing turbulence risk exemplifies this, where data from airlines and meteorological authorities was integrated to generate insights. This led to actions like refining turbulence prediction models, allowing the regulator to address emerging risks.
- **Overcoming Challenges in Resource-Constrained States:** This involves leveraging virtual training, collaborating with other States to enhance staff competencies through workshops, and utilizing digital tools to implement data-driven decision-making.

Key Takeaways for Session 7: Identify Common Safety Performance Indicators (SPIs) – *Pre-Seminar Survey Results*

- **SMS/SSP Maturity Challenges:** More than half of the surveyed States and industry stakeholders rated their SMS or SSP as less than mature. This indicates a need for further development and refinement of safety frameworks across the region.
- **Legislative and Workforce Gaps:** A significant barrier to SMS and SSP maturity is the absence of adequate legislation and a shortage of trained personnel. Strengthening regulatory frameworks and investing in workforce development are critical steps toward enhancing overall safety management.
- **Establishment of SPIs:** Despite challenges, most respondents have implemented SPIs in their SSP or SMS, indicating progress in performance measurement.
- **Need for Further Exploration:** The additional analysis is required to understand the effectiveness and implementation of SPIs.
- **Enhancing Safety Practices:** The findings emphasize the urgent need to close legislative gaps and improve training programs. Addressing legislative shortcomings and strengthening training programs are crucial for improving regional safety standards.

Key Takeaways for Session 7: Identify Common Safety Performance Indicators (SPIs)

- **Lagging vs. Leading Indicators:** Organizations often struggle to distinguish between leading and lagging indicators. Lagging indicators reflect past performance while leading indicators assess positive inputs to a process. An example is tracking the number of times a nominated person submitted by an operator is rejected by the regulator. A balanced selection of both types of indicators is crucial, as demonstrated by India.
- **Intentional Measurement:** With vast data available, organizations must focus on desired safety outcomes. A good SPI should follow the SAFETY framework: Suitability, Acceptability, Functionality, Effectiveness, Timeliness, and Yielding. Each SPI should define its Topic, Index, Purpose, and Split to ensure clarity and effectiveness.
- **Regulator-Industry Collaboration:** The effectiveness of an SSP and SMS depends on quality industry data. Regulators and airlines should collaborate on SPIs, focusing on outcomes rather than rigid mandates. They must consider SPI complexity (simple vs. complex), avoid rigid thresholds for complex and context-dependent technical issues, and continuously refine policies to eliminate unintended consequences.

Key Takeaways for Session 8a: Safety Culture Workshop
– *Identifying "People" and "Process" Enablers*

- **People Enablers:** Cultural change takes time and should follow a phased approach, beginning with early adopters and gradually influencing laggards. Effective change management engages employees through forums, recognition programs, and initiatives like change ambassadors and safety champions to drive transformation. Since Gen Z workers prefer interactive learning, gamification can make safety more engaging. As societal and corporate norms shape safety culture, continuous promotion and measuring the effectiveness of communications is essential for long-term impact.
- **Process Enablers:** In addition to manuals, procedures, and training, processes should be designed to support individuals in adapting to change. This was demonstrated in the Bangalore Airport example: Workers initially did not follow new procedures, prompting the introduction of strategies such as a non-monetary penalty system and voluntary safety reporting to promote accountability without fostering a punitive environment. In Singapore, a longitudinal safety culture survey, focused discussions, and a safety culture handbook provide valuable insights and structured guidance for improving safety culture. Continuous monitoring and evaluation are crucial to sustain progress.

Key Takeaways for Session 8b: Safety Culture Workshop
– *Just, Reporting, Learning, Flexible and Informed Cultures*

- **Safety Culture Within an Organization:** Trust is the foundation of a strong safety culture, but it can be challenging to build in hierarchical organizations. Safety priorities may get lost as they trickle down to the middle management or frontline staff. Establishing trust requires clear feedback mechanisms that allow employees to voice concerns without fear of repercussions. Encouraging open communication and ensuring that reports lead to meaningful actions reinforce confidence in the system.
- **Safety Culture Within the Industry:** Clear guidelines and open communication are crucial for sustaining a strong safety culture across organizations in the industry. This can be accomplished through surveys, seminars, and a user-friendly reporting system, with timely feedback helping to build trust and encourage continuous reporting.
- **Flexible Culture:** To mitigate risks and respond to unforeseen changes in the industry, Business Continuity Plans (BCPs) and SMS must be flexible and adaptable. Cultivating a flexible culture is essential, but challenges such as unclear communication and traditional work practices that resist change can impede progress. Regular communication and inclusion of diverse perspectives can help overcome these barriers.

Key Takeaways for Session 9: Leader Behaviors and Building Trust for Safety Culture

- **Leading by Example:** Leaders must model safe behaviors, show commitment to safety, and reinforce expectations with clear communication. Employees adopt a safety culture when they see leadership prioritizing safety. Consistent messaging and actions build credibility and foster shared commitment. In diverse organizations, leaders must ensure uniform safety expectations across all teams to avoid fragmented cultures.
- **Trust Through Accountability and Fairness:** Leaders build trust by being accountable, authentic, and transparent. Employees trust leaders who understand their challenges and apply policies fairly. A blame-driven culture discourages reporting while learning from errors fosters trust. Fairness across all groups is crucial to a unified safety culture.
- **Open Communication and Engagement:** A strong safety culture requires open dialogue between leadership and employees. The difference between mistakes and violations should be clarified to avoid fear-based reporting. Leaders must ensure that all employees have a consistent understanding of safety. Investigations should assess management's role in incidents, reinforcing leadership's accountability for safety.

Key Takeaways for Session 10: Tools for Advancing Safety Culture

- **Safety Culture Measurement Tools:** Safety culture can be evaluated through staff surveys, site assessments, voluntary safety reporting, and focus groups or interviews.
- **Safety Improvement Strategies:** To strengthen safety culture, organizations should adopt structured frameworks, engage leadership, and use tools like handbooks and training programs. Encouraging a "speak-up" culture and aligning safety with operational and revenue goals further reinforce a robust safety culture. Cultivating a strong safety culture is a long-term process that requires continuous effort, assessment, and improvement. Near-term actions, such as policies mandating staff safety culture surveys, help align resources and strategies to drive lasting cultural change.
- **Industry Resources and Guidelines:** States and industry can leverage tools and best practices from global safety leaders, e.g., the FAA Safety Culture Survey tool, Flight Safety Foundation research reports, and resources from the Safety Management International Collaboration Group. These materials offer valuable insights, assessment techniques, and practical strategies to enhance safety culture across industries.