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ASSEMBLY — 42ND SESSION

EXECUTIVE COMMITTEE

Agenda Item 18: Capacity Development and Implementation Support – Policy and Activities

AIR TRAFFIC CONTROL CENTERS SUPERVISION TRAINING

(Presented by Dominican Republic)

EXECUTIVE SUMMARY

To ensure effective supervision in Air Traffic Control Centers, it is essential to develop and implement a specialized training program that enables managerial and technical personnel to acquire the knowledge, skills, and attitudes necessary for the efficient performance of their duties. Adequate supervision is key to maintain safe, orderly, and efficient air traffic, in compliance with international standards established by ICAO.

The training of personnel responsible for supervision should cover both theoretical and practical aspects, allowing participants to apply the acquired knowledge in real-world situations of varying complexity. In this regard, the Dominican Republic, through the Academia Superior de Ciencia's Aeronáuticas (ASCA), has developed, in collaboration with ICAO, a standardized training package on the supervision of control centers, becoming a pioneer in offering this specialized training in Spanish.

In a dynamic sector like aviation, continuous training is essential to mitigate human errors and adapt to technological and operational changes. Poor supervision can lead to airspace congestion, delays, increased staff stress, negative environmental impact, and, above all, risks to aviation safety. Therefore, this course serves as a strategic tool to strengthen human factor competencies, ensuring supervisors are prepared for present and future challenges in the sector.

<i>Strategic Goals:</i>	This Information note addresses the following strategic goals: <i>No Country Left Behind, Every Flight is Safe and Secure and Aviation is Environmentally Sustainable.</i>
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<i>Financial implications:</i>	Not Applicable
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<i>References:</i>	M-ITP Air Traffic Control Centers Supervision Doc 4444, PANS-ATM Doc 9426, <i>Air Traffic Services Planning Manual</i> Doc 9971, <i>Manual on Collaborative Air Traffic Flow Management</i> Doc 9966, <i>Manual for the Oversight of Fatigue Management Approaches</i> Doc 9683, <i>Human Factors Training Manual</i>
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¹ English and Spanish versions provided by the Dominican Republic

1. INTRODUCTION

1.1 The growth of air operations worldwide has generated the need for new processes, management systems, and technologies adapted to increasingly complex scenarios. These advancements have contributed to keeping aviation as the safest mode of transport globally, despite the increase in operational complexity.

1.2 In this context, human resources remain a safety critical element. Given the high level of technical specialization required, aeronautical personnel play a fundamental role in preventing incidents and accidents. Statistical studies indicate that three out of four aviation accidents are related to human errors, which has led States to increasingly invest in strengthening personnel competencies.

1.3 Given the high level of technical specialization required, aeronautical personnel play a fundamental role in preventing incidents and accidents. Nevertheless, humans remain the weakest link in aviation systems and raise concerns due to their significant impact on safety management systems.

1.4 The air traffic control service continues to rely primarily on air traffic controllers, personnel who, due to the nature of their duties, require extensive training and experience to make accurate decisions that, in addition to ensuring the safety of aircraft and their occupants at all times, must maintain the constant, orderly, and swift flow of air traffic under their jurisdiction. Aeronautical supervision is indispensable to keep the control system moving; it represents the tactical pillar supporting the various air navigation service providers (ANSPs).

1.5 Air traffic control center supervisors, on the other hand, assume significant technical and leadership responsibilities: from operational coordination, resource planning, personnel management, to decision-making under pressure. In this sense, awareness and preparation of all stakeholders are essential for the success of air traffic control center supervision. To this end, the Academia Superior de Ciencias Aeronáuticas (ASCA), in fulfillment of its mission, has developed, in collaboration with ICAO experts, a training program for supervisors and managers of control centers, namely the ICAO training package Air Traffic Control Centers Supervision.

2. DISCUSSION

2.1 In many cases, managers responsible for control centers lack a clear definition of duties, performance standards, and homogeneous technical training in operational supervision, personnel management, and quality control. As a result, the potential of personnel to perform their tasks safely and efficiently is limited.

2.2 Additionally, in many regions, there is no common policy regulating supervision processes, leading to disparities in applied standards and gaps in technology implementation. The absence of a structured ATC supervision training program exacerbates these problems, limiting the ability to respond to complex situations. It should be noted that air traffic volume is expected to continue growing in the coming decades, requiring ATC centers with highly trained supervision. If States do not invest in supervisor training and predictive monitoring systems, the system could collapse, compromising safety and efficiency.

2.3 A control center with poor supervision operates in an environment characterized by inadequate follow-up of established procedures, the absence of continuous operational performance evaluation, and weak coordination among the different hierarchical and functional levels involved in air traffic management, as well as coordination with counterparts from other air traffic control centers. This poses a significant threat to the operational safety of the aeronautical system. This lack of effective oversight and direction can translate into multiple critical risks, such as:

- a) Gaps in safety due to non-compliance with procedures;
- b) Inefficient coordination leading to delays and airspace congestion;
- c) Lack of standardization hindering interoperability between centers;
- d) Increased workload and stress for ATC personnel; and
- e) Negative impact on the image and reliability of the aeronautical system.

2.4 Effective supervision in air traffic control centers is a fundamental pillar to ensure the safety, efficiency, and operational continuity of the aeronautical system. In an environment where decisions must be made precisely and under constant pressure, having a robust supervision program, such as the one presented here, not only strengthens service quality but also fosters the professional development of personnel. In response to this, solid supervision enables:

- a) Developing leadership and decision-making skills in high-pressure environments;
- b) Establishing mechanisms for monitoring and quality control of daily operations;
- c) Applying international standards for ATC personnel evaluation;
- d) Implementing continuous improvement plans based on operational data analysis;
- e) Implementing continuous improvement plans based on operational data;
- f) Fostering a collaborative and efficient work environment;
- g) Reducing the impact of human errors through monitoring and feedback; and
- h) Aligning talent management with institutional safety and efficiency objectives.

3. CONCLUSION

3.1 Civil aviation authorities must prioritize the development of standardized training programs for air traffic control center supervisors, as a fundamental measure to ensure safety and efficiency in an environment of growing operational demand.

3.2 The success of supervision is linked to continuous and specialized training of supervisory personnel. This training should be based on evidence-based methodologies, case studies, operational leadership, and decision-making in high-pressure environments.

3.3 The Dominican Republic, through ASCA, a center of excellence in the TRAINAIR PLUS program, makes available the Air Traffic Control Centers Supervision training package, developed under the standards of the ICAO Global Aviation Training Section. This initiative represents a concrete contribution to strengthening institutional capacities for effective, safe, and professional supervision in the field of air traffic control.

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