WORKING PAPER

ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 25: Other issues to be considered by the Technical Commission

THE IMPORTANCE OF RETAINING ATSEP IN ICAO PANS-TRAINING DOC 9868

(Presented by Ghana)

EXECUTIVE SUMMARY
This paper underscores the essential role of Air Traffic Safety Electronics Personnel (ATSEP) in maintaining aviation safety and operational efficiency. Given the increasing complexity of air traffic management (ATM) systems and the rising cybersecurity threats, harmonizing ATSEP training under the *Procedures for Air Navigation – Training* (Doc 9868) remains essential. The exclusion of the ATSEP from this document could compromise safety, interoperability, and regulatory compliance across global aviation sectors. To further strengthen ATSEP training and recognition within ICAO's regulatory framework, this paper advocates for the integration of ATSEP training into Annex 10 — *Aeronautical Telecommunications*, to formally acknowledge their role in maintaining air navigation systems within international air navigation system training. Furthermore, this paper highlights the importance of aligning ATSEP training with ICAO's Next Generation of Aviation Professionals (NGAP) initiatives**,** which aim to attract, train, and retain skilled personnel in response to workforce challenges
Action: The Assembly is invited to: a) recognize ATSEP's essential role in ensuring a safe, efficient, and environmentally responsible aviation network by maintaining formalized ATSEP training within ICAO's NGAP initiatives that support long-term operational sustainability. Efficient ATM systems contribute to reduced fuel consumption and minimized environmental impact, reinforcing ICAO's commitment to green aviation; b) retain ATSEP within the PANS-Training to safeguard aviation safety, strengthen cybersecurity resilience, and ensure regulatory alignment. The continued inclusion of ATSEP guarantees consistency in operational standards and risk mitigation strategies across global ATM systems; and c) integrate ATSEP training into Annex 10 to formally recognize their role within air navigation system operations. This inclusion will ensure ATSEP receive specialized training tailored to evolving technologies such as communications, navigation, surveillance, automation, and cybersecurity.
Strategic Goals:	This working paper relates to *Every Flight is Safe and Secure.*
Financial implications:	

References:	Annex 10 — *Aeronautical Telecommunications* Doc 9868, *Procedures for Air Navigation Services – Training* Doc 8071, *Manual on Testing of Radio Navigation Aids*

1. INTRODUCTION

1.1 Background

1.1.1 The *Procedures for Air Navigation Services– Training* (PANS-TRG, Doc 9868) provides guidelines for training aviation personnel. Air traffic safety electronics personnel (ATSEP) are responsible for managing and maintaining air traffic management (ATM) systems, including radar, communications, navigation, and surveillance equipment. Their continued inclusion in Doc 9868 is vital to maintaining safety, training consistency, and regulatory compliance. Given the increasing complexity of ATM operations, harmonized training for ATSEP remains critical to ensuring the seamless functioning of aviation infrastructure.

1.1.2 Although ATSEPs are currently included in PANS-TRG, there is no mandatory requirement to ensure that States follow standardized competency-based training and assessment (CBTA) practices and principles described in the document. Furthermore, there is no requirement in Annex 10 — *Aeronautical Telecommunications*, supported by the *Manual on Testing of Radio Navigation Aids* (Doc 8071), that the work should be performed by appropriately trained personnel.

1.1.3 Additionally, ICAO's NGAP initiatives focus on developing a sustainable aviation workforce. Integrating ATSEP training into ICAO's NGAP initiatives will enhance workforce sustainability, ensuring a steady supply of skilled professionals to support evolving ATM technologies.

2. DISCUSSION

2.1 The essential role of ATSEP in aviation safety

2.1.1 ATSEP ensures the reliability and functionality of critical ATM systems. Proper training enables them to maintain operational efficiency and reduce the risks associated with system failures. Historical aviation incidents demonstrate that well-trained ATSEP contribute significantly to risk mitigation and system integrity, preventing potential accidents caused by technical malfunctions.

2.1.2 Annex 10 requires that components of ATM systems should be maintained. This WP proposes to have the maintenance activities described in Annex 10 performed by ATSEP who are trained and remain current following CBTA principles. Doing so would create a harmonized global approach to ATSEP training practices and methods and would enable States to take full advantage of modern training and assessment practices.

2.2 Cybersecurity and system resilience

2.2.1 Modern air traffic management heavily relies on digital infrastructure, making cybersecurity a fundamental concern. ATSEP plays a critical role in defending ATM systems against cyber threats, ensuring resilience against hacking attempts and technical failures. The exclusion of ATSEP from Doc 9868 would weaken cybersecurity preparedness, leaving ATM systems increasingly

vulnerable to cyberattacks. Harmonized training ensures ATSEP are equipped with the necessary knowledge to proactively secure critical aviation technology and respond to emerging threats.

2.3   **Adapting to an evolving technological landscape**

2.3.1   The rapid advancement of aviation technology necessitates continuous training for ATSEP. Modern ATM systems incorporate automation and cybersecurity measures, requiring personnel to possess updated technical expertise. Doc 9868 provides a structured framework for ongoing education, ensuring ATSEP remains proficient in new technologies. Their exclusion from this document would create a gap in training standards, weakening safety measures and diminishing system adaptability.

2.4   **Harmonized Training to Enhance Global Aviation Efficiency**

2.4.1   Aviation safety depends on internationally harmonized training. Doc 9868 establishes a global benchmark for ATSEP qualifications, ensuring consistency in training programs across different regions. ATSEP training harmonization promotes interoperability and harmonized air traffic management. Without it, discrepancies in ATSEP competencies could lead to operational inefficiencies and increased system downtime. Integration of ATSEP into Annex 10 would provide an additional level of safety and efficiency regarding maintenance activities required by Annex 10.

2.5   **Supporting regulatory compliance and international recognition**

2.5.1   Including ATSEP in Doc 9868 aligns with ICAO's broader regulatory framework, ensuring compliance with international aviation safety standards. Many regulatory bodies rely on ICAO's training documentation for national policy development. The exclusion of ATSEP could create inconsistencies in global safety regulations, weakening international cooperation and mutual recognition of ATSEP qualifications.

2.6   **Economic, operational, and financial sustainability of ATSEP training**

2.6.1   Investing in harmonized ATSEP training under Doc 9868 and inclusion in Annex 10 is both a safety and financial imperative for global aviation operations. Poorly trained ATSEP can lead to unnecessary system failures, increased maintenance costs, and prolonged downtime, negatively impacting air traffic efficiency. Ensuring a structured and internationally recognized training framework optimizes operational costs by implementing preventative measures and reducing the risk of technical failures.

2.6.2   Furthermore, financial sustainability is a key consideration for aviation authorities and ATM service providers. Well-trained ATSEP contributes to cost-efficient operations by proactively addressing technical issues, minimizing emergency maintenance expenses, and ensuring system resilience. Harmonized training enhances return on investment (ROI) by preventing cybersecurity breaches, operational disruptions, and inefficient air traffic management, all of which can impose significant financial burdens on the aviation sector.

2.6.3   Key financial and operational benefits of maintaining ATSEP training in Doc 9868:

a)   reduced maintenance costs: proactive issue identification lowers the need for expensive emergency repairs;

b) optimized operational efficiency: well-trained personnel ensure minimal system downtime, improving flight schedules and air traffic flow; and

c) long-term cost savings: investing in ATSEP training prevents financial losses linked to system failures and cybersecurity threats.

2.6.4 By retaining ATSEP within Doc 9868, ICAO reinforces the economic and operational sustainability of global ATM systems, ensuring safety and efficiency while mitigating avoidable financial risks

2.7 Sustainability and environmental impact

2.7.1 Efficient ATM systems contribute to sustainability by reducing unnecessary delays and optimizing fuel use. ATSEP training ensures systems operate at peak efficiency, minimizing environmental impact. Doc 9868 promotes eco-friendly maintenance practices, supporting ICAO's sustainability initiatives.

2.8 Human factors and operational safety

2.8.1 Human factors training improves ATSEP decision-making under high-pressure situations, reducing errors and enhancing overall safety. Harmonized human factors education ensures global consistency in ATSEP training, mitigating operational discrepancies.

2.9 ICAO's role in global aviation leadership

2.9.1 ICAO plays a crucial role in setting international aviation standards. Maintaining ATSEP in Doc 9868 and integration into Annex 10, reinforces ICAO's commitment to comprehensive ATM safety. Removing ATSEP from this framework risks undermining ICAO's credibility as a global aviation regulator.

2.10 Strengthening ATSEP training through ICAO's NGAP initiatives

2.10.1 ICAO's Next Generation of Aviation Professionals (NGAP) initiative addresses workforce challenges by attracting and training aviation personnel. Integrating ATSEP training within NGAP enhances global competency, ensuring professionals can manage advanced ATM technologies. ATSEP plays a vital role in cybersecurity, automation, and system resilience, making their inclusion essential for maintaining aviation safety and efficiency. Aligning ATSEP qualifications with NGAP reinforces ICAO's commitment to workforce development and international regulatory consistency.

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