# 58ᵗʰ CONFERENCE OF
# DIRECTORS GENERAL OF CIVIL AVIATION
# ASIA AND PACIFIC REGIONS

*Dhaka, Bangladesh*
*15 to 19 October 2023*

AGENDA ITEM 3:     AVIATION SAFETY

# PROPOSAL FOR IMPROVING AIR TRAFFIC CONTROLLER-PILOT COLLABORATION THROUGH SIMULATOR TRAINING

(Presented by Association of Asia Pacific Airlines and Flight Safety Foundation)

### SUMMARY

This paper describes a proposed simulator training programme that aims to improve air traffic controller-pilot collaboration and intends to address concerns raised during the United States National Transportation Safety Board (NTSB) Roundtable on Runway Incursions. The proposal offers an efficient, comprehensive, cost-effective approach to training, that would enhance safety and communications in flight operations.

This paper further describes the potential benefits of a phased implementation plan that could enhance communication, situational awareness, and decision-making in flight operations in the Asia Pacific region. Director Generals of Civil Aviation are requested to urge air navigation service providers and air operators to collaborate in the development and implementation of this programme.

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## 1.    INTRODUCTION

1.1        During recent discussions at the National Transportation Safety Board (NTSB) Roundtable on the State of Runway Incursions, concerns were raised by air traffic controllers regarding their limited exposure to the pilot's perspective, particularly during critical operational scenarios.

1.2        This Paper proposes a practical and effective solution aimed at enhancing the understanding and collaboration between air traffic controllers (ATC) and pilots.

## 2.    DISCUSSION

2.1        **Problem Statement:**  Air traffic controllers (ATCOs) play a vital role in ensuring aviation safety by providing instructions to pilots throughout a flight's trajectory. However, the limited exposure of ATCOs to flight deck operations often hinders their comprehensive understanding of the challenges pilots face, particularly during dynamic and rapidly evolving situations such as last-minute runway changes, late descent clearances, and unexpected altitude changes.

2.2        **Proposal:** To bridge this understanding gap and promote collaborative decision-making, the implementation of an observer simulator training programme for qualified air traffic controllers is proposed. This programme would involve interactive simulator sessions that replicate real-world flight scenarios and challenges performed by pilots, allowing ATCOs to experience flight operations from the pilot's perspective. The training would focus on critical moments of coordination between ATC and pilots, thereby enhancing situational awareness and improving mutual communication.

2.3        **Benefits of the Proposal:**

1.    **Efficiency:** Unlike the traditional method of observer flights, simulator sessions are more time-efficient and do not necessitate special permissions or clearances for flights. This method allows for controlled and focused training without the need for extensive logistical arrangements.

2.    **Comprehensive Exposure:** Simulator exercises can recreate a wide range of scenarios, providing controllers with exposure to observe various challenges and decision-making scenarios. This exposure overcomes the limitations of observer flights, which may only offer insights into specific operational sectors.

3.    **Cost-Effective:** By collaborating with host airlines for simulator usage, controllers can undergo observer training without incurring excessive costs. A co-sharing payment plan would allow both ATC and airlines contribute to the training initiative, resulting in a mutually beneficial arrangement.

4.    **Flexible Training Exercises:** The proposed simulator training programme can be tailored to address specific concerns highlighted by both ATC and pilots. Subsequent sessions can be adjusted based on feedback, ensuring continuous improvement and relevance.

5.    **Time Optimization:** The simulator training would be a half-day event that eliminates time-consuming airport procedures such as check-in, security, and ticketing.

2.4        **Implementation Strategy:** The following phased approach is proposed:

1.    **Beta Phase:** Initiate a trial period to test the effectiveness and feasibility of the observer simulator training programme. Gather feedback from participating ATCOs and pilots to refine the training content and methodology.

2.    **Rollout Phase:** Based on the lessons learned during the beta phase, establish a standardised training curriculum for simulator sessions. Collaborate with host airlines to provide instructors and pilots for demonstration exercises.

3.    **Ongoing Refinement:** Regularly assess the impact of the training on ATC-pilot collaboration and safety outcomes. Adapt the training content based on emerging challenges and feedback from both parties.

2.5        The development and implementation of such a programme would require a high-level buy-in and collaborative approach between ANSPs and airlines on both a national and regional basis.

## 3.    ACTION BY THE CONFERENCE

3.1        The Conference is invited to:

a)    note the benefits that can be derived from air traffic controller-pilot collaboration through the proposed simulator training programme;

b)    express its support for this approach as pragmatic and effective solution that addresses the concerns raised during the NTSB Roundtable on Runway Incursions; and

c)    encourage air navigation service providers and operators to engage in a collaborative effort to develop, test and implement a simulator training programme that aims to improve air traffic controller – pilot communication, situational awareness, and decision-making in flight operations in the Asia Pacific region.

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