International Civil Aviation Organization

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Agenda Item 5: ATM Systems (Modernization, Seamless ATM, CNS, ATFM)

INTRODUCTION TO CHINA CIVIL AVIATION ADMINISTRATION'S WORK ON PREVENTING RUNWAY INCURSION

(Presented by China)

SUMMARY

This paper introduces the work of Civil Aviation Administration of China (CAAC) on preventing runway incursions in recent years, including the development of a regulatory system, the promotion and application of new technologies, specialized training, and safety publicity and education.

1. INTRODUCTION

1.1 Runway incursion (RI) are one of the five major risk factors for aviation accidents defined in the International Civil Aviation Organization (ICAO) *Global Aviation Safety Plan* (GASP) (the other four being controlled flight into terrain, loss of control in flight, mid-air collision, and runway excursion). They are also one of the four major hazards in China civil aviation air traffic control industry, characterized by suddenness, short response times, and severe impacts. To minimize the occurrence of runway incursions at airports and comprehensively enhance their prevention capabilities, Contracting States have systematically implemented runway incursion prevention measures in accordance with regulations and guidelines such as the *ICAO Manual on the Prevention of Runway Incursions* (Doc 9870). However, with the recovery and growth of global flight volumes and the increasingly complex airport operating environment, runway safety remains a critical situation.

1.2 In 2023, the Federal Aviation Administration (FAA) reported 19 runway incursions in the United States, the highest number since 2016. The CAAC recorded 11 Category D and above runway incursions (including one Category A runway incursion, constituting a serious incident), significantly higher than the five in 2022. In early 2024, a runway incursion-related collision between two aircraft occurred at Tokyo Haneda Airport, once again drawing significant attention to runway incursions within the global civil aviation industry.

1.3 In recent years, the Air Traffic Management Bureau of CAAC (CAAC ATMB) has carried out special work on preventing runway incursions, including organizing the compilation of guidance materials and standard operating procedures, carrying out the Runway Safety Education Month, building a runway incursion prevention capability assessment system, promoting the application of new technologies, conducting special training on preventing runway incursions and publishing safety publicity and education posters. In addition, a notice has been issued to all air traffic control tower units to use high-probability thinking to prevent low-probability events, and effectively improve the prevention and handling capabilities of control units and personnel.

2. DISCUSSION

Development of a System of Guidance Materials, Regulations, and Standards for Preventing Runway Incursions

2.1 The CAAC ATMB launched a special runway safety task force in 2008. In line with relevant regulations from ICAO, the FAA, and the European Aviation Safety Agency (EASA), the CAAC ATMB has successively compiled and issued regulatory documents, including the "*China Civil Aviation Air Traffic Control Runway Safety Implementation Plan*," the "*Civil Aviation Air Traffic Control System Runway Incursion Prevention Guidance Manual*," the "Technical Measures and Implementation Routes for Preventing Runway Incursions," the "Civil Aviation Air Traffic Control System Runway Safety Management Regulations and Control Operations Guidelines," the "Civil Aviation Air Traffic Control System Multi-Runway Converging and Diverging Control Guidance Materials," and the "Civil Aviation Air Traffic Control System Runway Incursion Prevention Operational Guidance Materials." These documents clarify relevant operational standards at the regulatory level, providing specific reference and guidance for preventing runway incursions operations.

Organize and Implement a Runway Incursion Prevention Capability Assessment System and Promote the Application of New Technologies

2.2 Following the principle of "comprehensive planning and step-by-step implementation," scientifically formulate runway incursion prevention capability assessment plans for each transport airport to further strengthen airport runway safety risk prevention and control capabilities. To promote the systematic improvement of the civil aviation air traffic control system's technical prevention measures for runway incursion prevention, an implementation plan has been developed to enhance the development of runway incursion prevention tools and comprehensively advance runway incursion prevention technology. New runway incursion prevention technologies based on runway status lights and voice recognition have been first implemented in various locations in East China, Central China, and South China. 46 air traffic control tower units in China now have runway incursion prevention or equivalent technical prevention tools, achieving a coverage rate of 96% in ATC system.

Organize and Implement Specialized Training Courses on Runway Incursion Prevention

2.3 The CAAC ATMB has designed a specialized course on runway incursion prevention. Since 2023, seven "*Specialized Training Courses on Runway Incursion Prevention*" have been held, training 395 tower management personnel and operational supervisors. This has further strengthened the systematic management capabilities of tower management personnel in runway incursion prevention.

Strengthening Safety Publicity and Education on Runway Incursion Prevention

2.4 Raising awareness and conducting safety education are crucial components of runway incursion prevention. The CAAC ATMB produced a total of 54 runway incursion prevention safety publicity and education posters, which will be displayed at control tower units at airports throughout the ATC system, serving as a reminder of runway incursion prevention efforts.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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