



WORKING PAPER

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 2: Enabling the global air navigation system

2.1: Aerodrome operations and capacity

**OPTIMIZING THE AERODROME PLANNING, DESIGN AND MANAGEMENT AND
ENHANCING THE SYSTEM CAPABILITY**

(Presented by the People's Republic of China)

EXECUTIVE SUMMARY

This paper presents the throughput of major airports in China and the measures taken to improve airport system capacity in airport planning, design and management. With the construction and development of China's civil aviation airports, the Civil Aviation Administration of China (CAAC) has different depths of practice in the optimization of design of the runway-taxiway system, the new construction and expansion of terminal buildings, the introduction of rail transit access at the airport, and the airport collaborative decision-making (A-CDM) coordinated operations, and has already accumulated a certain experience in this regard. However, the infrastructure of China's major airports is already saturated. In addition to carrying out a large number of infrastructure renovation and expansion projects to ensure airport operations, improving system capacity is a work CAAC needs to do tirelessly.

Action: The Conference is invited to consider and agree with the recommendations proposed in paragraph 3.

1. INTRODUCTION

1.1 Background

1.1.1 In 2017, there were nine Chinese airports in the top fifty passenger throughput of the world airports, of which Beijing Capital International Airport ranked second with a throughput of 95.78 million passengers. At the same time, there were thirty two Chinese airports with a passenger throughput of over ten million each in the year. These airports completed the throughput of 900 million passengers with fifty two runways, accounting for 81 per cent of China's total passenger throughput, with each runway carried over 18 million passengers in average. The infrastructure of the airport system is also facing the challenge of continued traffic growth.

¹ Chinese version provided by China.

1.2 **The way to achieve**

1.2.1 Taking the core airport as the main working object, combining the development experience of the world's large hub airports and the specific characteristics of China's airports, we started from the three aspects of airport planning, design and overall management, and strived to explore a new path for the high-quality development of large-scale hub airports. Under the premise of airport safety, we made the efficiency and capacity achieved simultaneously.

1.3 **Building a well-developed runway and taxiway system**

1.3.1 The new Beijing Airport and the new Chengdu Airport, both under construction, were based on the conclusion of previous runway configuration research and operational experience, aiming at maximizing the flight area capacity, incorporating flight flow, control operations and other elements, forming a new type "skeleton" of operation for large airports. At the same time, we constantly gave attention to the key factors such as rapid exit taxiways and bypass taxiways, and strived to reduce the runway occupation time, reduce the risk of runway incursion, and achieve the requirements of capacity, efficiency and safety.

1.4 **The terminal area adhering to the "sincere service" concept**

1.4.1 Taking the function priority and passenger convenience as the starting point, combining the current status of the existing facilities of the airport and the needs of the airlines, the central terminal area, the dual terminal area and the multi-terminal building have had different depths of practice and the related planning, design, operation and management had all been made great progress. Choosing a convenient terminal structure for aircraft operation, reducing passenger walking distance, providing more bridge stands in the terminal area, and providing user-friendly process design in the terminal building will be our continued efforts.

1.5 **Effective and efficient airport comprehensive transportation system.**

1.5.1 The completion of the Shanghai Hongqiao Airport Integrated Transportation Hub in 2010 marked the beginning of a new era of development for China's air-rail combined transport system. At the same time, as the regional high-speed railroad and fast highway network is combined, more than thirty airports in China are introducing rail transit access. "Zero transfer and seamless connection" will become synonymous in many airports' rapid connection and distribution systems. This will also be fully reflected in the new Beijing Airport, which will be operational in 2019.

1.6 **In-depth practice of A-CDM**

1.6.1 Capital Airport in Beijing, Hongqiao Airport and Pudong Airport in Shanghai, Baiyun Airport in Guangzhou and other dozens of large airports are all under the airport collaborative decision-making (A-CDM) mechanism, in which airlines, air traffic control and other related units work together to optimize resource utilization and improve the predictability of time nodes, which ensures the smooth flow of information between units, further fully mobilizes the resources, improves the efficiency of resource utilization and the overall operational efficiency of the airport, especially the ability to further improve the ground operation efficiency of the airport and the rapid response and disposal capacity in case of large-scale flight delays.

1.7 **Enormous aviation market potential**

1.7.1 In 2017, air travel per capita in China was 0.4, and in 2035 it will reach more than one time. The aviation market has great potential. At present, the infrastructure of China's major airports is saturated, and tapping potential is not a long-term solution. To ensure the operation of the airport, a large number of airport infrastructure renovation and expansion projects are still needed.

1.8 **Outlook**

1.8.1 In the future, the planning, design and management level of China's airports will continue to draw on the experience of airport development in various countries. From the aspects of planning, design, operation and management, we will actively consider to build ultra-large capacity airports and contribute Chinese talent to the construction and development of airports in the world.

2. **DISCUSSION**

This paper covers the following main themes: a) the concept of airport planning, design and management in China; and b) the specific practices of airport planning, design and management in China.

3. **CONCLUSION**

The Conference is invited to recommend that ICAO strengthen the promotion of measures taken by major global hub airports in planning, designing and managing system capacity enhancements and guide the sound development of large airports around the world.

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