



International Civil Aviation Organization

**The Sixth Meeting of the APANPIRG ATM Sub-Group
(ATM/SG/6)**

Hong Kong, China, 30 July – 03 August 2018

Agenda Item 4: ATM Systems (Modernisation, Seamless ATM, CNS, ATFM)

PEARL RIVER DELTA REGION ATM AND AIRSPACE REFORM

(Presented by China)

SUMMARY

This paper presents the airspace reform pilots in the pearl river delta region in China.

1. INTRODUCTION

1.1 Traffic volume in China has been soaring in the past decade, limited airspace resources has become a key bottleneck in the development of China's civil aviation. To facilitate a more efficient airspace management mechanism, State ATC Commission headed for Chengdu, Guangzhou and Shanghai to carry out relevant research work in June 2015. State ATC Commission is china's highest level military and civil aviation joint committee, and the director of the committee is concurrently the vice premier of the State Council.

1.2 Mr. MA Kai who's the Vice Premier of State Council together with a team went to Guangzhou again in late 2015 for the same reason, and made decision that pilot project for fine airspace management would firstly take place in the Pearl River Delta region.

2. DISCUSSION

2.1 The Pearl River Delta region is one of the busiest, within a radius of less than 100 kilometers there are five large airports (Guangzhou, Shenzhen, Zhuhai, Hong Kong, and Macau), some other GA airports and military airports. Due to historical reasons, runway centerlines of those airports are crisscrossed in both directions, and the approach and departure routes and flight procedures are interwoven, resulting in many contradictive requirements for airspace resources.

2.2 At the beginning of the project, reform principle has been worked out as follows:

- a) Actively explore the refinement reform of the airspace, optimize the airspace resource allocation in the Pearl River Delta region, and fully develop and make effective use of airspace resources.
- b) Integrate ATM system information, including civil-military aviation flight plans, flight information, radar surveillance data, etc., Airspace resources should be allocated uniformly by the airspace management unit.
- c) In terms of static management, civil aviation and military aviation work together to make airspace planning, design and adjustment, and clarify the utilization method and coordination procedure.

d) In terms of dynamic management, tailor airspace use according to the needs from both civil and military side. Materialize a high-level sharing and best use of existing airspace resources, establish an efficient and effective coordination mechanism for airspace use in real time operation.

Goals & Tasks on different phases of project

2.3 **Short-term.** Based on the current airspace structure, tap potential from three aspects: inside military aviation, inside civil aviation, and between civil aviation and military aviation; Implement fine allocation on civil-military aviation airspace resources considering the user demand on altitudes and routes, and explore new ways of airspace management.

2.4 **Mid-term.** By comprehensively and deeply analyzing the airspace resources and their utilization in the Pearl River Delta region, optimize the airspace structure, with a focus on solving some structural contradictions of military training airspace and civil aviation routes, further improve the airspace management efficiency, refine the measures for airspace management, and preliminarily establish an airspace resource evaluation mechanism, so as to provide support for achieving long-term goals.

2.5 **Long-term.** Further improve the airspace resource evaluation and fine operation management mechanism, optimize civil-military flight procedures & methods, and promote the experience regarding fine management of airspace in the Pearl River Delta region. Make systematic planning for the airspace structure, integrate airspace resources.

Major measures and actions being taken

2.6 Strictly implement AMU system. The AMU which comprises both military and civil aviation personnel collects airspace demand, analyzes and balances the actual needs from each side, and issues the airspace and temporary routes approval beforehand.

2.7 Dynamic management and flexible use of airspace. In real time operation, airspace utilization information shall be shared among all stakeholders in a timely manner. When civil flight flow is large, AMU should coordinate the related department to release airspace and routes as far as possible.

2.8 Consistent civil-military aviation allocation standards. Adopt a fixed operation standard for civil flights to avoid military flights, which would make operation more predictable.

2.9 In pre-tactical phase, the AMU collect military and civil flight plans, work out the temporary routes using plan for the next day.

2.10 Establish an airspace management emergency response mechanism. Civil ATM authority established a three-tier warning policy (known as MDRS system) in 2014 when encountering massive delay. The AMU will take actions accordingly when such MDRS warning has been issued. For example, when a RED MDRS warning is active, the AMU should coordinate the military department to stop training and release all the airspace as they can.

2.11 Major military activities shall, wherever possible, avoid terminals of busy civil airports (approach control zones), ascending and descending sections of approach-departure routes and busy routes. When having a large-scale military training plan or drill which might pose a significant impact on civil operation, coordinate with the civil ATM authority in advance, develop airspace allocation plans jointly. On the day of the drill, send liaisons to each other for face-to-face coordination.

2.12 Improve the civil-military aviation long-term synergy mechanism. Guangzhou ATC Coordination Committee should organize seminars for military flight troops, civil ATM authority, airports, airlines to discuss concerned issues on regular basis, joint work seats have been set up in both military and civil departments.

Achievements of the Pilot Reform

2.13 After three years of implementation, according to statistics and performance analysis, such improvements can give rise to the airspace pilot reform:

- a) Stable growth of civil traffic volume.
- b) Increasing on-time performance.
- c) Prominent effect of energy saving and emission reduction.
- d) Gradual deepening of the military-civil synergy mechanism.
- e) Gradual shaping of military and civil aviation integration.

2.14 Similar airspace management refinement projects are also being carried out in Beijing, Shanghai and some other parts of China. This is also a manifestation of China's comprehensive strengthening of military and civil aviation integration and cooperation.

3. ACTION BY THE MEETING

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

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