



WORKING PAPER

ASSEMBLY — 41ST SESSION

ECONOMIC COMMISSION

Agenda Item 37: Aviation Data — Monitoring and Analysis

**THE ASSESSMENT MODEL FOR DEVELOPMENT STATUS OF
CIVIL AVIATION INDUSTRY AND ITS APPLICATION**

(Presented by China)

EXECUTIVE SUMMARY

The No Country Left Behind (NCLB) initiative, launched by ICAO in 2014, assists its Member States in fully implementing ICAO Standards and Recommended Practices (SARPs), for the purpose of ensuring that SARP implementation is better harmonized globally so that all its Member States have access to the significant socio-economic benefits of safe and reliable air transport. However, due to the differences in resource availability, development stage, and distinctive advantages of civil aviation among states, in order to strengthen mutual cooperation among states and promote coordinated development of the civil aviation industry in each state, first of all, it is crucial that a scientific and comprehensive assessment of the development status and stage of civil aviation industry in each state should be made, so as to determine its current position, development condition and existing foundation, to find own advantages and deficiencies, to identify key development areas, and to provide more targeted and feasible suggestions on development, which makes the global civil aviation industry has more extensive cooperation, more sustainable development and more specific tasks. But, it is a rather complex and difficult effort to conduct a quantitative assessment of the aviation development status in a state or a region in a systematic, scientific and comprehensive manner. As of now, the global civil aviation community has made repeated attempts to assess development status of civil aviation industry in different states and each state has designed own special indicators, however, it lacks a set of systematic, all-dimensional and all-process assessment model. In recent years, China has conducted in-depth research and exploration, and proposed a set of nation-based, industry-focused and all-dimensional assessment model for the development of civil aviation industry, which has achieved positive results in its application. In this regard, the assessment model and its application results are recommended to ICAO and its Member States, which are expected to provide theoretical support and application tools and to help them understand the development status of their civil aviation industry in a systematic and comprehensive manner.

Action: The Assembly is invited to approve actions recommended in Section 3.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective – <i>Economic Development of Air Transport.</i>
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¹ Chinese and English versions provided by China

<i>Financial implications:</i>	No additional resources are required.
<i>References:</i>	Annual Reports of the Council Doc 9587, <i>Policy and Guidance Material on the Economic Regulation of International Air Transport</i> Doc 9626, <i>Manual on the Regulation of International Air Transport</i> Doc 9161, <i>Manual on Air Navigation Services Economics</i> Doc 9562, <i>Airport Economics Manual</i> Doc 9082, <i>ICAO's Policies on Charges for Airports and Air Navigation Services</i> Doc 8632, <i>ICAO's Policies on Taxation in the Field of International Air Transport</i> WASA, <i>World Air Services Agreements Database</i> iSTARS, <i>Integrated Safety Trend Analysis and Reporting System</i> Doc 9060, <i>Reference Manual on the ICAO Statistics Programme</i>

1. INTRODUCTION

1.1 To promote the sustainable development of civil aviation industry in each state, it is urgent to establish a set of assessment model that will comprehensively reflect development status of civil aviation industry. The civil aviation industry has made a significant contribution to the global socio-economic development. Every day, nearly 10 million passengers fly to/from countries or regions around the world by more than 100 thousand commercial flights, and every year about half of the 1.4 billion international tourists travel by air. In addition, the civil aviation industry has created 63.5 million jobs worldwide, and contributed about 2.7 trillion US dollars to the world's GDP annually. With continuous improvement of air route network, it is expected that the number of flight and passenger travelling by air will double by 2030, which requires states and regions to continuously improve civil aviation management to make it more institutionalized, standardized and systematic, and to strengthen cooperation in such areas as the safety, security and efficiency of aviation operation and environment protection so as to ensure a safe, comfort and efficient operation for passenger. In this regard, in 2014, the ICAO launched the No Country Left Behind (NCLB) initiative to assist its Member States in fully implementing ICAO Standards and Recommended Practices (SARPs). The NCLB campaign has given particular attention to enhance the support provided by ICAO for its Member States, aiming to ensure that SARP implementation is better harmonized globally so that all its Member States have access to the significant socio-economic benefits of safe and reliable air transport. However, due to the differences in resource availability, development stage, and distinctive advantages of civil aviation among states, in order to strengthen mutual cooperation among states and promote coordinated development of the civil aviation industry in each state, first of all, it is crucial that a scientific and comprehensive assessment of the development status and stage of civil aviation industry in each state should be made, so as to determine its current position, development condition and existing foundation, and to provide more targeted and feasible suggestions on civil aviation development, which makes the global civil aviation industry has more extensive cooperation, more sustainable development and more specific tasks. Therefore, it is a rather complex and difficult effort to conduct a quantitative assessment of the development status in a state or a region in a systematic, scientific and comprehensive manner.

1.2 As of now, the global civil aviation community has made repeated attempts to assess development status of civil aviation industry in different states and each state has designed own special indicators and made efforts to change these indicators into national or industry development goals by legislation and establishment of development plans. For example, the ICAO has developed *the Global Aviation Safety Plan 2020-2022*, which establishes global strategy for supporting priorities and continuously improving aviation safety, and sets out overall objectives, specific goals and key safety enhancement initiatives (SEI), aiming to implement regional and national aviation safety plans at the international, regional and national levels, to continuously reduce death toll and risk of death, and to improve aviation safety. The *FAA Strategic Planning 2019-2022*, promulgated and implemented by the FAA, focuses on four areas, including safety, infrastructure, innovation and responsibility, and identifies its development goals and tasks at this stage. Britain has issued a Green Paper, *the Britain's Aviation Strategy 2050*, which defines the development goals and targets that ensure the sustainable development of Britain's civil aviation industry for the next stage. India has released the *Civil Aviation Development Vision 2040*, which includes development indicators such as passenger traffic, fleet size, revenue, and number of airports. In general, for the global civil aviation industry, it lacks of a set of comprehensive model for assessing the industry development of different states in a systematic and comprehensive manner. In the past two years, by focusing on the topic of a comprehensive assessment of the development status of civil aviation industry, China has conducted in-depth research and exploration, and innovatively proposed a set of state-based, industry-focused and all-dimensional assessment model for the development status of civil aviation industry, and applied the model to analyse and assess basic features

of the relatively developed civil aviation entity around the world, delivering "data portraits" in a clear, intuitive and precise way.

2. DISCUSSION

2.1 **Theoretical basis of the assessment model for development status of civil aviation industry**

2.1.1 The main issues to be solved by the assessment model for development status of civil aviation industry. It is a complex systemic project to build an assessment model applicable to the development status of civil aviation industry in different countries around the world, and there are four main issues to be addressed: First, how to build a scientific assessment model to determine the strengths and weaknesses of a state's civil aviation industry. Secondly, how to set up a quantifiable and comparable assessment indicator system for each assessment dimension in the model. Thirdly, how to ensure the accuracy and comparability of data in cases of different statistical systems and standards in different countries. Fourth, how to make feasible policy suggestions for promoting the sustainable development of civil aviation industry in each state based on the assessment results.

2.1.2 Eight assessment dimensions of the development status of civil aviation industry. Based on the comprehensive analysis of the development law and characteristics of the civil aviation industry in major countries in the world, China's civil aviation has proposed eight dimensions for assessing the development status of civil aviation industry in each state, namely "scope of aviation market", "network-based airlines", "international aviation hubs and domestic airport networks", "air traffic management system", "safety, security and technical support service system", "general aviation system", "capabilities of engaging in the formulation of international civil aviation rules and standards" and "innovation capabilities of promoting the development of international civil aviation industry", and provided systematically explanation of the connotation and internal logics of them. The eight assessment dimensions of development of civil aviation industry are an interrelated, interactive and interdependent whole, and there is a logical relationship among the eight assessment dimensions in order of successive progression and gradual strengthening. Using the structural theory of system analysis, the evolutionary mechanism model for development of civil aviation industry is constructed, which proposes that the eight assessment dimensions of development of civil aviation industry are in a dynamic growth process; using the industrial life cycle theory, the development process of civil aviation industry in each state, based on the maturity of the eight assessment dimensions, is divided into four stages, namely the gestation period, the budding period, the growth period and the maturity period.

2.1.3 Indicator system for assessing the development status of civil aviation industry. Based on the systematic interpretation and analysis of the connotation of the eight assessment dimensions of the development status of the civil aviation industry, China's civil aviation, by using comprehensive assessment theories and methods and following systematic, scientific, operable and comparable principles, has extracted and constructed a quantitative-based, quantitative-and-qualitative-combined assessment indicator system, which has 21 critical elements, 40 observation dimensions and 71 underlying indicators from the relevant indicators commonly used in the global civil aviation industry. The assessment indicator system can accurately measure and assess the maturity of eight assessment dimensions of development of the civil aviation industry in each state.

2.2 **Applicational achievements of the assessment model for development status of civil aviation industry**

2.2.1 China's civil aviation used this model to assess the development status of civil aviation industry in 16 countries, including China, the United States, the United Arab Emirates, the United Kingdom, Germany, South Korea, Russia, Qatar, Japan, Türkiye, France, Canada, India, Singapore, Australia and Brazil, and completed maturity assessment of eight assessment dimensions of the development status of civil aviation industry in each state by assigning values to the underlying indicators. It is the first time in the world that a full dimensional calculation assessment and horizontal comparison of the development status of civil aviation industry in related countries has been realized at the national level. In particular, by using the growth and relative characteristics of the eight assessment dimensions of the development status of the civil aviation industry and the original theoretical model and analytical framework, China's civil aviation published the Assessment Report on the Development Stages of China's Civil Aviation. The report makes a comprehensive judgment on the historical position of the development of China's civil aviation industry, provides an in-depth analysis of the current shortcomings of China's civil aviation industry, and puts forward policy recommendations on the inherent comparative advantages that China's civil aviation needs to consolidate and strengthen, and the potential new competitive advantages that need to be cultivated and expanded. Based on this assessment model, China's civil aviation will regularly publish the report of Data Statistics and Comparative Study of Global Civil Aviation Development for reference by the international civil aviation community.

3. ACTION

3.1 By establishing and using the above model, China has published the Assessment Report on the Development Stages of China's Civil Aviation, which identifies the historical position of China's civil aviation and allows for accurate measurement of the maturity of the above-mentioned eight characteristics, thus providing targeted guidance for related work. It is hoped that ICAO and other countries will take note of this Chinese model for reference.

3.2 It is recommended that ICAO publish policy reports based on relevant models and the data resources at its disposal.