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COMMITTEE B

- Agenda Item 6: Organizational safety issues**
6.2: Implementation of safety management
6.2.1: State safety programmes (SSPs)

EFFECTIVELY PROMOTING THE IMPLEMENTATION OF STATE SAFETY PROGRAMMES

(Presented by People's Republic of China)

EXECUTIVE SUMMARY

This paper presents the latest progress made by China in implementation of SSP and our intends to share China's successful experience for reference by other countries. Civil Aviation Administration of China (CAAC) promulgated *State Safety Programme of China relating to Civil Aviation* on February 15, 2015, which means China has established SSP that is in line with both the requirement of ICAO and the actual circumstances of China aviation system. Over the past three years, CAAC has been steadily advancing the implementation of SSP, and has made progress in policy support, national risk management, safety oversight approaches, and data-driven activities. Through SSP foundation and continuous improvement, CAAC, further standardizes the safety oversight activities, promote SMS implementation of service providers, to ensure safety development.

1. INTRODUCTION

1.1 In 2007, International Civil Aviation Organization (ICAO) proceeded to amend Annexes 1, 6, 8, 11, 13, 14 and 18 of International Civil Aviation Convention, requiring contracting states to establish and implement state safety programmes (SSP) and will audit them in the future. In July 2013, in according to Annex 19 Safety Management, each country is required to make a national safety plan to manage national safety to achieve the acceptable level of safety performance. SSP should be consistent with the size and complexity of its aviation activities.

1.2 In early 2009, Civil Aviation Administration of China (CAAC) as required by ICAO took compilation of *State Safety Programme of China relating to Civil Aviation* as a priority, initiated SSP and the partial implementation of SSP, and added the activities related to SSP to *12th Five-year Safety Production Plan of China relating to Civil Aviation*. From 2010 to 2012, CAAC compiled *State Safety*

¹ English and Chinese versions provided by China

Programme of China relating to Civil Aviation and its implementation roadmap, initiated the pilot work of safety performance management measures and safety performance management in Central and Southern Regional Administration of CAAC, drafted *Rules of Civil Aviation Safety Management (draft)*, compiled SSP training program and courseware, launched the pilot work and audit of safety management system (SMS), sent aviation experts to ICAO safety management expert group meetings, and participated in the revision of Annex 19.

1.3 From 2013 to 2014, CAAC revised *State Safety Programme of China relating to Civil Aviation* and drafted *Rules of Civil Aviation Safety Management (draft)* in accordance with Annex 19 and *Safety Management Manual* (Doc 9859), promoted safety performance management taken by experimental airlines, carried out assessment of some regional administrations' oversight system as a pilot case and launched a research project on the SSP management platform.

1.4 On February 15, 2015, CAAC promulgated *State Safety Programme of China relating to Civil Aviation*.

1.5 Based on the framework in Annex 19 and Doc9859 (3rd Edition), and according to the SSP margin analysis, fully considering the actual circumstance of China's aviation system, *State Safety Programme of China relating to Civil Aviation* comprehensively expounded China's SSP in each element, and made some requirements to be further improved in the future.

1.6 Through SSP foundation, CAAC gradually improves safety oversight system, further standardizes and systematize safety oversight organizations at all levels in order to strengthen industry safety supervision and management and promote the establishment and effectiveness of SMS of service providers.

1.7 Over the past three years, CAAC has been steadily advancing the implementation of SSP, and has made progress in policy support, national risk management, safety oversight approaches, and data-driven activities.

1.8 From May 22 to May 27, 2017, ICAO performed an assessment of the implementation of State Safety Programme (SSP) by China, using the “new safety management (SM)-related protocol questions (PQs)”, published by ICAO in 2014, in the areas of LEG, ORG, AIR (for aspects related to Approved Maintenance Organizations – AMOs) and AIG.

2. DISCUSSION

2.1 Establishment and implementation of *State Safety Programme of China relating to Civil Aviation*. According to Annex 19, CAAC developed SSP margin analysis. After fully considering the actual circumstance of China's aviation system, CAAC compiled *State Safety Programme of China relating to Civil Aviation*, which is promulgated on February 15, 2015. *State Safety Programme of China relating to Civil Aviation* comprehensively elaborates China's SSP status and contents to be improved in each element of the four main frameworks (State Safety Policy and Objectives, State Safety Risk Management, State Safety Assurance, State Safety Promotion). Through SSP foundation, CAAC will further regulate safety oversight activities, promote SMS implementation of service providers, to ensure safety development. CAAC will continuously and periodically review and revise *State Safety Programme of China relating to Civil Aviation* and impel implementation of SSP to make the SSP more practical and effective, in order to improve China aviation safety level.

2.2 Standardizing oversight of aviation safety and SMS implementation. In order to apply ICAO's concept of safety management, promote the effective implementation of SSP and SMS in China, and ensure the integrity and consistency of safety management standards, CAAC promulgated the first comprehensive regulation on safety management *Rules of Civil Aviation Safety Management*, which has been officially effective from March 16, 2018. The Rules refer to the Annexes and documents of ICAO, and summarizes the implementation experiences of China's aviation safety management. On the premise of maintaining the original management mechanism and responsibilities of all oversight organizations, the Rules standardize SMS, safety performance management, safety basic management regime, personnel training, etc., unify the inconsistency of the requirements in different regulations on safety management, and improve the overall efficiency of risk management in the aspect of regulations.

2.3 Full implementation of national aviation risk management. Establishment of SMS requirements mandated by CAAC is provided in CCAR-121R5, CCAR-140, CCAR-83, CCAR-141, AC-145-15, other rules or normative documents. At present, 51 airlines (100%), 231 aerodromes (100%), 227 ATS providers (100%) and 507 maintenance organizations (100%) have established and implemented SMS in accordance with the rules. In addition, CAAC is promoting SMS implementation in organizations responsible for the type design or manufacture of aviation products. We have selected two aircraft design and manufacturers as pilot organizations, launched the pilot program at the end of May 2018, and formulated *SMS Pilot Programme for Aviation Product Design and Manufacture Organizations* and *Guidance on SMS Establishment for Aviation Product Design and Manufacture Organizations*. The work is progressing in an orderly manner.

2.4 Promoting establishment of national safety performance monitor and caveat system. In early 2018, CAAC started to conduct a research on assessment and caveat of national safety performance from different perspectives, such as operational safety risk, safety oversight and management ability, and support to service providers. In 2019, national safety performance indicators shall be selected and an effective metrics system used for data analysis and caveat is going to be established. In 2020, the process and management mechanism of the system shall be defined, to integrate collection, analysis, alerting and dissemination of safety information.

2.5 Mechanism innovation for safety oversight in China. In order to optimize oversight resources and improve the quality and efficiency of safety oversight, a data-driven, risk and performance-based oversight approach shall be formed. CAAC proposed differentiated approaches on oversight of operators of aeroplanes. On May 18th, 2018 *Guidance on Differentiated Safety Oversight of Certified Operators*² and *Implementation Procedures of Differentiated Safety Oversight of Certified Operators* were issued. The two regulations clarify the comprehensive means of airline operational safety evaluation, the classification related to safety oversight and the application of evaluation results. Currently, CAAC is exercising differentiated safety oversight approaches at national level according to the guidance.

2.6 Reinforcement data-driven safety management. CAAC impels foundation of national flight Operation Quality Assurance (FOQA Station) for many years and has achieved staged milestone. 52 airlines QAR data has transmitted and connected to the station, covering all main models of aircrafts in China, accounting for 97% of aeroplanes. The national FOQA Station monitors the key events across China. Currently, CAAC has launched the second phase of the FOQA Station.

2.7 Challenges. At present, in accordance with Annex 19, states are developing regulatory revision, requiring native service providers to establish and effectively implement SMS. For the design and manufacture organizations of aviation products, some states have carried out pilot work in the early

² *Certified Operators*: Carriers operating under the requirements of CCAR 121.

stage, and accumulated experience, but there are no specific guidance materials published by ICAO. Meanwhile, CAAC has completed the pilot work of service provider safety performance management, and issued relevant guidance materials. However, there is still a lack of specific guidance materials in the establishment and monitor of national safety performance indicators of the design and manufacture organizations of aviation products.

3. CONCLUSION

3.1 It is suggested that ICAO further promote discussion on the establishment and monitoring of national safety performance indicators, direct contacting states to comprehensively promote performance-based safety management, and improve the accuracy and effectiveness of oversight.

3.2 With the rapid growth of air traffic volume, CAAC has been exploring and innovating the safety oversight approaches, and is willing to promote communication with civil aviation authorities around the world. It is suggested that the ICAO set relevant topics in the meetings of expert group on safety management and establish communication mechanism for oversight approach innovation among states to improve the pertinence and effectiveness of oversight and allocate the limited oversight resources to high risk areas.

3.3 In order to promote the SMS establishment of aviation product design and manufacture organizations, it is suggested that ICAO could issue specific guidance materials, and provide specific guidance such as hazard samples, hazard identification and risk assessment methods.

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