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# THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

## COMMITTEE B

- Agenda Item 6: Organizational safety issues**
- 6.1: Strategic plan**
- 6.1.1: Vision and overview of the Global Aviation Safety Plan (GASP), 2020-2022 edition**
- 6.1.2: Enabling safety performance monitoring; goals, targets and indicators in the 2020-2022 edition of the GASP**

## ENABLING SAFETY PERFORMANCE MONITORING

(Presented by the People's Republic of China)

### EXECUTIVE SUMMARY

The 2020-2022 edition of the Global Aviation Safety Plan (GASP) (draft) specifies the goal, six specific targets and various indicators for global aviation safety. China has responded actively to International Civil Aviation Organization (ICAO) requirements, and has made great efforts around the goal, targets and indicators to reduce operational safety risks, strengthen the State's safety oversight capacity building, establish state safety programs and monitor safety performance of the industry, leading to continuous progresses in these areas.

Action: The Conference is invited to:

- a) request ICAO to encourage countries in the Asia and Pacific region to pay close attention to and take an active part in the amendment of the 2020-2022 edition of the Global Aviation Safety Plan (GASP), further intensify the work of the State Safety Performance Monitoring Working Group and expand its membership; and
- b) request ICAO to enhance discussions and communications with various Contracting States including China on tools and methods of safety performance management, and develop guiding materials on safety performance monitoring.

<sup>1</sup> Chinese version provided by China.

## 1. INTRODUCTION

1.1 The Global Aviation Safety Plan (GASP) aims to continuously decrease accidents and risks of accidents that lead to fatality by guiding the development of a harmonized safety strategy and implementing regional and national aviation safety programs. By the end of June 2018, China had recorded 62.46 million hours of continuous safe flying in 94 months, and the rolling ten-year rate of major accidents per one million flight hours in aviation transport had reached 0.015.

1.2 In every five years, civil aviation work safety plans are developed in China, which analyse the fundamentals and situation of work safety in civil aviation sector, identify the industry's safety goals for the coming five years, and determine key tasks and safeguard measures for sustainable and safe development of civil aviation in China.

1.3 The Civil Aviation Administration of China (CAAC) publishes a yearly safety report which summarizes the safety work of that year, provides statistics, and makes analysis on causes of all unsafe events of that year, safety indicators and features of safety risks and the current situation. On this basis, CAAC forewarns major safety risks and arranges key safety tasks for the next year.

1.4 The vision of the draft 2020-2022 edition of the GASP is to achieve and maintain the safety goal of zero fatalities in commercial transport by 2030 and beyond. It also describes six targets in support of the goal. China has actively responded to ICAO recommendations and has made great efforts to reduce operational safety risks, strengthen the State's safety oversight capacity building, establish State safety programs and monitor safety performance of the industry.

## 2. DISCUSSION

2.1 The *Thirteenth Five-Year Plan for Civil Aviation Work Safety in China (2016-2020)* was published in September 2016, setting the safety goal and key tasks in the future five years based on analysis of safety status quo and circumstances. In the future five years, CAAC will conduct a range of activities to enhance the law-based governance, strengthen safety assurance capabilities, push forward safe development of general aviation, step up establishment of security systems, tackle the issue of airworthiness in a comprehensive way, give a bigger role to science and technology in safety guarantee, and improve effectiveness of accident investigation and emergency responses.

2.2 Based on the *Thirteenth Five-Year Plan for Civil Aviation Work Safety in China (2016-2020)*, detailed actions have been planned for each major task, and enabling measures have been specified to ensure completion of each major task by strengthening policy and fund supports, improving implementation mechanism and making regular evaluations of the plan.

2.3 Corresponding to the vision and goal of the GASP of ICAO, China has worked immensely in the following three areas: continuous reduction of operational safety risks, enhancement of State's safety oversight capabilities and implementation of effective state safety programs.

### ***Goal 1: Achieve a continuous reduction of operational safety risks***

2.3.1 In order to reduce occurrence of accidents, CAAC regularly analyses safety information and generates safety reports. The reports provide statistics, analyse unsafe events of the year and their reasons and contributing factors, and analyse safety indicators and features of safety risks in aviation transport and general aviation to assist risk management and decision-makings in the industry.

2.3.2 According to the *Civil Aviation Safety Information Statistics and Analysis Report of China (2017)*, the rolling ten-year rate of major accidents per one million flight hours in aviation transport in China was 0.0146, representing a 10.09 per cent year-on-year decrease. The rolling ten-year death toll per 100 million passenger kilometres in aviation transport was 0.0007, declining year-on-year by 11.74 per cent. China's civil aviation sector has maintained a sound safety performance.

2.3.3 In 2013, China began to build a civil aviation flight performance base station and put it into operation in 2017. This station is able to monitor in real time the flight operations quality assurance (FOQA) data of 3231 airplanes of 52 airlines in China, and demonstrate the controlled flight into terrain (CFIT), loss of control in-flight (LOCI) and runway excursions risk tendency of airlines, fleets and the overall industry. Meanwhile, other operational systems of CAAC hold data such as the incident rate per 10,000 flights and per 10,000 flight hours, fuel consumption per hour, number of aeroplanes, number of pilots and airplane failure information of various model airplanes in the whole industry.

### ***Goal 2: Strengthen States' safety oversight capabilities***

2.3.4 China has been dedicated to the State's safety oversight capacity building, and has made continuous progress in key elements of the safety oversight system. *The Civil Aviation Safety Management Regulations* was officially published in March 2018 and has been implemented to facilitate a more effective execution of the State safety program (SSP) and safety management system (SMS) for civil aviation in China, and to ensure integrity and consistency of safety standards. By 30 July 2018, China had maintained 100 safety-related regulations and 469 industry standards in force for civil aviation.

2.3.5 China's civil aviation safety training system contains trainings for inspectors, safety managers and heads in civil aviation businesses and public institutions, and other dedicated safety trainings. In 2017, CAAC organized 23 sessions of training for inspectors with 2 934 participants; By 30 June 2018, 487 sessions of training had been organized for 28 712 safety managers and heads in civil aviation businesses and public institutions, laying an important foundation for safe operation of the industry. Other dedicated safety trainings relate to safety management system, safety capability improvement, safety investigations, safety management technologies and methods, safety risks, emergency management, quality management and aviation medicine, etc. In 2017 alone, seventy-one sessions of dedicated training were held with 2 590 participants.

2.3.6 China has been active in facilitating the building of a global aircraft tracking and monitoring system. In 2015, CAAC set up a steering group on building a civil aviation aircraft tracking and monitoring system of China. In 2017, the implementation roadmap for building the system was officially published. A two-tier work system composed of the operation monitoring centre of CAAC, air traffic control and operation departments and organizations and aviation transport airlines in China was established for aircraft tracking and monitoring. Beidou global satellite navigation system is the core component of the aircraft global tracking system developed by China with its own intellectual property right, and has many important applications in a number of areas of global flight tracking.

2.3.7 China has been propelling application of new technologies. The engineered material arresting system (EMAS) developed by China has been installed in Tengchong airport and Panzhihua airport. Technology standard EMAS (MH/T 5111-2015) has been implemented since 2016. It is the first EMAS standard in the world and fills the vacuum in this area.

2.3.8 China is gradually strengthening regulation of unmanned aircrafts, and is working on linkage between real-name registration and activation of unmanned aircrafts. We developed a data interface between real-time registration and activation of unmanned aircrafts, and successfully completed the pilot operation in 2017. The interface is being introduced to unmanned aircraft manufacturers with the aim to ensure that unmanned aircrafts must be registered with real name before being activated for flying.

### ***Goal 3: Implement effective State safety programmes***

2.3.9 China's civil aviation authority has attached high importance to the strategic initiative of ICAO requiring contracting States to establish and implement SSPs, published *Civil Aviation Safety Program of China* in 2015, and developed multiple regulations requiring airline companies, airports, air traffic control facilities, maintenance organizations and flight training organizations to implement SMS. In 2017, China voluntarily accepted ICAO's SSP evaluation and has been actively following up with changes and progresses of SSP.

2.3.10 Industry safety performance monitoring projects have been established in the civil aviation sector in China. Safety performance management trials have been made in 13 airlines and airports from 2014 to 2016. In 2017 the *Implementation Plan for Civil Aviation Safety Performance Management* and *Guidance Manual on Safety Performance Management in Civil Aviation Production and Operation Organizations* were published. These documents have been introduced and used across the civil aviation industry in order to implement SMS in a more effective way and build a long-term data-driven safety management mechanism with risk management as its core.

2.3.11 In early 2018, CAAC began to build a civil aviation safety performance analysis system in order to evaluate the safety performance of the industry in multiple aspects such as operational risks, safety oversight and management capabilities and supports given to enterprises, and to make forewarnings as appropriate.

***Goal 4: Increase collaboration at the regional level***

2.3.12 China has actively participated in ICAO activities in the Asia and Pacific region, and provided technological supports to other countries. Currently, China has three TRAINAIR PLUS members including the Management Institute of Beijing Capital International Airport, Civil Aviation University of China and Hong Kong International Aviation Academy. China has developed thirteen courses accredited by ICAO and six more are under development. From 2013 to 2018, China has trained 358 foreign students through twenty-five courses accredited by ICAO.

***Goal 5: Expand the use of industry programmes***

2.3.13 China has kept a good relationship with ICAO in the civil aviation sector, seconded 10-15 experts to ICAO every year and taken an active part in various activities and trainings organized by ICAO.

2.3.14 China is also an active participant in the civil aviation industry evaluations recognized by ICAO and the civil aviation production and operation organizations evaluated by ICAO in China are gradually increasing in numbers. Currently, 55 per cent of the aviation transport airlines in China have been audited by IOSA.

***Goal 6: Ensure the appropriate infrastructure is available to support safe operations***

2.3.15 In order to meet needs of the civil aviation reform and the rapid growth of aviation traffic in China, and improve operation management, emergency responses, traffic management and search and rescue capabilities of the air traffic control system in China, an operation monitoring centre has been established to monitor and coordinate air traffic activities across the country, organize efforts to deal with emergent occurrences such as flight accidents and hijackings, coordinate important flight tasks and other special flight tasks such as disaster relief, and command and coordinate the work of search and rescue aircrafts. The Centre is also responsible for flight traffic management across the country, approval of scheduled and unscheduled time, usage of airliner routes and collection of information on daily operation of civil aviation supporting facilities and equipment such as communications and navigation facilities in China.

### **3. CONCLUSION**

3.1 The Conference is invited to agree to the actions proposed in the Executive Summary.