55th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS

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AGENDA ITEM 3:   AVITATION SAFETY

IMPROVEMENT OF SMS IMPLEMENTATION EFFICIENCY BY SMS AUDIT

Presented by People's Republic of China

SUMMARY

According to International Civil Aviation Organization (ICAO) requirement, each contracting State shall provide that its service providers establish Safety Management System (SMS). Civil Aviation Administration of China (CAAC) fulfills its obligations of a contracting state to establish SMS that is in line with the requirement of ICAO and the actual circumstances of China aviation system.

In order to evaluate and improve the actual performance and maturity of SMS, since 2010 CAAC initialized SMS audit activities, formulated SMS audit checklist for certified operators, aerodromes and ATS providers, and developed SMS audit system and tools. CAAC has also carried out SMS audits in more than 40 certified operators and aerodromes. As result of long term practices, our initial target has been achieved.

IMPROVEMENT OF SMS IMPLEMENTATION EFFICIENCY BY SMS AUDIT

1.   INTRODUCTION

1.1   In 2008, International Civil Aviation Organization (ICAO) made amendments to Annexes of Chicago Convention, elaborating the framework elements of SMS to the contracting states. These elements shall be contained in SMS for approved training organizations, certified operators, maintenance organizations, organizations responsible for the type design or manufacture of aircraft, ATS providers, and certified aerodromes.

1.2   According to ICAO requirement, Civil Aviation Administration of China (CAAC) promoted domestic service providers to establish SMS that is in line with the requirement of ICAO and the actual circumstances of China aviation system. Since 2008, CAAC has gradually formulated and issued SMS implementation requirements for certified aerodromes and operators, ATS providers, maintenance organizations and organizations associated with security and dangerous goods transportation. All the above organizations have established SMS in according to relevant rules. Currently, CAAC is developing SMS implementation requirements for aircraft design and/or manufacture organizations and general aviation operators.

1.3   As our service providers implement SMS, we have resolved many problems that occurred in SMS implementation. Moreover, we have developed a set of rather rational methodologies for SMS audit, which can accurately and objectively evaluate the maturity of SMS. As a result, effects of SMS implementation have reached our expected target.

2.   DISCUSSION

2.1   Since 2010, for improvement of SMS implementation efficiency, CAAC started SMS audit activities to assess the maturity of SMS in a rational and objective way. SMS audit aims to evaluate the effectiveness of SMS implementation as well as its compliance with the regulations.

2.2   SMS audits are performed on the base of detailed checklists of SMS, including document review, on-site audit and data analysis. Document review mainly focus on evaluating SMS related document system in prior to on-site audit; on-site audit is used to collect data on implementation and effects of safety management activities by main means of record check, personnel interview, consulting reference and viewing platform system/management tool etc; after on-site audit, auditors analysed the data associated with document review and on-site audit, and complete the report.

2.3   SMS audit checklists are based on ICAO requirements for the SMS. Checklists include 12 sub-checklists, such as safety policy, safety accountabilities, appointment of key safety personnel, coordination of emergency response planning, SMS documents, hazard identification, safety risk assessment and mitigation, safety performance monitoring and measurement, management of change, continuous improvement of the SMS, safety training and education and safety communication. Each sub-checklist is evaluated in seven perspectives, including system and procedure, accountabilities, personnel, tools, implementation, management and effects.

2.4   The final audit report presents the quantitative audit scores and grade rates in each SMS element and each perspective respectively in addition to an overall maturity of auditee's SMS. Moreover, the final report illustrates the existing problems in SMS, analyses the causes, and gives specific suggestions for improvement.

2.5　　　　　In order to evaluate the effects of SMS implementation in a more objective and comprehensive way, in 2014, CAAC refined and improved the SMS audit checklists. According to differential features of each service provider, more specific sub-checklists are added, such as flight quality monitor, SDR, flight areas management, bird strike management, outsourcing management, etc. And the number of sub-checklists has reached 21. Since then, CAAC has continuously modified and improved audit checklists.

2.6　　　　　In 2014, in order to facilitate SMS audit and subsequent data statistics, CAAC developed SMS audit system as a tool. The system is composed of two parts: on-site procedure and back-stage management. The function of on-site procedure includes on-site audit information collection and record, audit progress management. The back-stage management is uses for checklists update, mission arrangement, auditor management and data analyse, etc.

2.7　　　　　Until July 2018, CAAC has carried out SMS audits in over 40 certified operators and aerodromes. Through audit, many problems are found and resolved. Due to assessment on SMS establishment, implementation and maturity in service providers, SMS performance and implementation efficiency improves a lot. After audited, the service providers show obvious improvement in safety input, safety management results and safety performance in the subsequent safety management activities.

2.8　　　　　In 2018, Safety Management International Collaboration Group (SMICG) revised its previous assessment methodology on SMS. CAAC delegates participated in discussion and proposed suggestions for improvement related to the assessment methodology. Subsequently, CAAC is going to participate in Safety Management Expert Panel (SMP) and SMICG meetings of ICAO, and share our practical experiences and audit methodologies on SMS with other states.

3.　　　　**ACTION BY THE CONFERENCE**

3.1　　　　　The Conference is invited to request ICAO, SMICG and other intended States or originations to share measures and experiences in SMS audit, and extensively collect and resolve problems in SMS implementation in company with China, in order to establish and improve SMS assessment methodologies and criteria, and launch a series of mature assess approaches for SMS efficiency.

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