



ASSEMBLY — 41ST SESSION

TECHNICAL COMMISSION

Agenda Item 30: Aviation Safety and Air Navigation Policy

30.3 Relevant Outcomes of the High-level Conference on COVID-19, Safety Stream
(HLCC 2021)

EFFECTIVENESS EVALUATION MECHANISM FOR CIVIL AVIATION SAFETY
MANAGEMENT SYSTEM

(Presented by China)

EXECUTIVE SUMMARY

This paper introduces the development process, design theory and advantages, applicational effect and the vision of the next-step development of the effectiveness evaluation mechanism of civil aviation safety management system (SMS) in China.

Action: The Assembly is invited to:

- a) recommend that ICAO introduce recommended tools and methods to promote SMS effectiveness and continue to iterate them;
- b) recommend that the regional organizations of ICAO conduct in-depth investigation and research on various factors that restrict the effectiveness of SMS under the local cultural background; and
- c) recommend that civil aviation authorities of Member States pay more attention to the actual effectiveness of SMS of service providers and establish an effectiveness evaluation mechanism suitable for their national characteristics to promote the continuous improvement of SMS

<i>Strategic Objectives:</i>	This working paper relates to all Strategic Objectives.
<i>Financial implications:</i>	No additional resources are needed.
<i>References:</i>	Doc 9859, <i>Safety Management Manual</i> SM ICG SMS Evaluation Tool (Second Edition) (April 2019) ² EASA Management System Assessment Tool (September 2017) ³ CAA SMS Evaluation Tool (June 2020) ⁴

¹ English and Chinese versions provided by China.

² <https://skybrary.aero/sites/default/files/bookshelf/32893.pdf>

³ <https://www.easa.europa.eu/downloads/43561/en>

⁴ <caa-sms-evaluation-tool-rev6.docx> (live.com)

1. INTRODUCTION

1.1 Since the International Civil Aviation Organization (ICAO) promoted SMS in 2006, the most difficult point lies in how to give full play to the practical effectiveness of SMS. China, according to the requirements of ICAO on “establishing SMS evaluation method”, has taken the lead in the research and exploration since 2009 by designing and developing the civil aviation SMS examination mechanism and using airlines as pilot examination units to promote the establishment and implementation of SMS.

1.2 As of 2021, the civil aviation SMS examination in China has covered various professional fields including the airlines, airports, ATM, etc., and accumulated rich and practical experience in the examination. On this basis, China has absorbed the ideas and practices of third-party examination and performance management from the Quality Management System of the International Organization for Standardization (ISO), designed a new civil aviation SMS examination mechanism and further optimized the effectiveness evaluation of SMS so as to promote the improvement of actual effectiveness of SMS in various civil aviation service providers with the effective running of this mechanism.

2. DISCUSSION

2.1 Design theory of the Effectiveness Evaluation Mechanism for Civil Aviation SMS

2.1.1 In order to promote the establishment of an effectiveness evaluation mechanism for civil aviation Safety Management System, the Civil Aviation Administration of China (CAAC) promulgated the Measures on Examination of Civil Aviation SMS in 2021, defining the principle, key points and working process for effectiveness evaluation of civil aviation SMS, as well as the quality assurance mechanism for entry and exist of third-party examination organizations and examiners, thus laying a systematic foundation for the standardization and systematization of effectiveness evaluation of civil aviation SMS.

2.1.2 The Measures on Training of Civil Aviation SMS Examiners was promulgated to establish a professional team of examiners for Safety Management System.

2.1.3 The professionalization of personnel and further refinement of an evaluation tool for the effectiveness evaluation of civil aviation SMS have been realized by following the safety management promotion path of “taking responsibility as the guide, system as the starting point and management effectiveness as the goal”, demonstrating the latest theory of “taking effectiveness as the goal, and building on the process examination” of ISO, as well as optimizing the Civil Aviation SMS Effectiveness Evaluation Checklist.

2.1.4 An effectiveness evaluation platform for civil aviation SMS is under construction with a view to realizing the management and sharing of the examination plans, processes and results of SMS and information on examiners in the whole industry, presenting more precise examination results for SMS effectiveness improvement of the evaluated parties and providing data support for the differential and precise supervision by the CAAC.

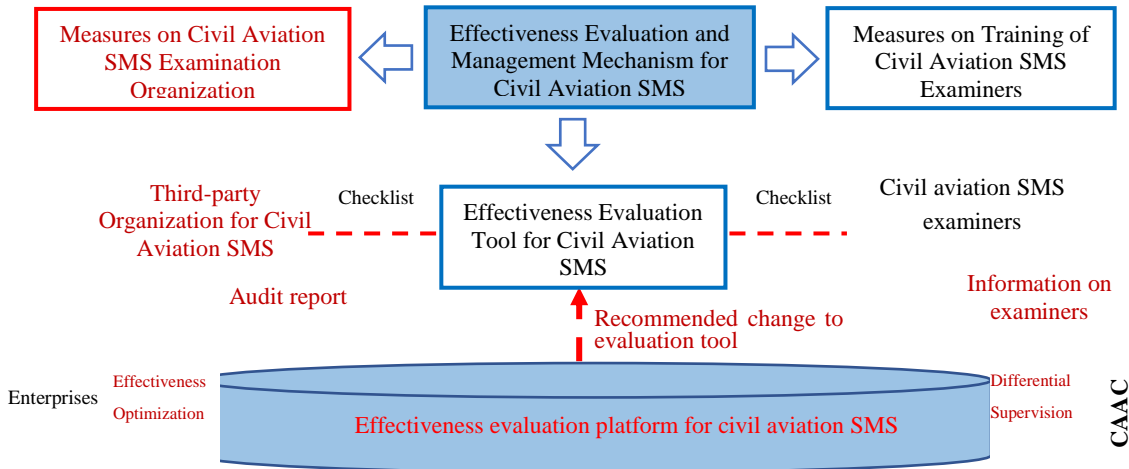


Figure 1. Effectiveness Evaluation and Management Mechanism for Civil Aviation SMS

2.2 Design of the effectiveness evaluation tool for civil aviation SMS

2.2.1 On the basis of civil aviation SMS examination experience for 12 years in China, CAAC has designed the new effectiveness evaluation tool for civil aviation SMS, which on the whole refines the 4 pillars and 12 elements of SMS of ICAO into 24 safety management functions, and provides key targeted effectiveness evaluation points and criteria.

2.2.2 The key points for the effectiveness evaluation of SMS are designed from four dimensions including Present (P), Suitable (S), Operating (O) and Effective (E) to realize the logical association of the same safety management function on the aspects of system suitability, implementation sufficiency, and implementation effect, and examination is used as a way to promote the further exploration of SMS effectiveness improvement by the evaluated parties on the basis of compliance with relevant regulations.

2.2.3 The SMS effectiveness examination criteria aim to quantify and differentiate each key evaluation point, so as to objectively reflect the effectiveness level of each safety management function in SMS.

2.2.4 This evaluation tool can be used to effectively discover any absence, overlapping or omission of safety management functions existing in the evaluated parties, provide beneficial informative support for dealing with the problems of identifying inconsistency between safety management system and the higher-level law and lack of effective connection between different safety management systems so as to improve the safety management and supervision.

3. CONCLUSION

3.1 In order to enhance the implementation effect of the SMS in all Member States around the world and improve the global safety level, it is recommended that ICAO should strengthen the research on the effectiveness evaluation tools for the SMS, and strive to develop the recommended tools and methods to promote the effectiveness improvement of the SMS in the global civil aviation industry by collecting and sharing the best practices of each state and continue to iterate them.

3.2 In view of the great cultural differences between different regions and states, it is recommended that the regional organizations of ICAO conduct in-depth investigation and research on various factors that restrict the effectiveness of SMS under the local cultural background and strengthen

regional exchanges under similar cultural backgrounds so as to better promote the SMS construction among the Member States.

3.3 The implementation of SMS is still an important means to improve the safety level in the civil aviation industry today. The civil aviation authorities of each Member State should pay enough attention to the actual effectiveness of service providers' SMS, establish an effectiveness evaluation mechanism suitable for their own characteristics and continuously enhance the endogenous motivation of service providers to continuously improve SMS.

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