International Civil Aviation Organization
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Asia and Pacific Regions (RASG-APAC/2)
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Agenda Item 3:   Member State / Industry Presentations

DEVELOPMENT OF SAFETY MANAGEMENT SYSTEMS (SMS)
IN CHINA CIVIL AVIATION

(Presented by the People's Republic of China)

SUMMARY

The Civil Aviation Administration of China (CAAC) initiated SMS development in 2005, and has finished SMS supplement certification of all the airlines registered in China. The SMS supplement certification on airport operators and ATC units will be finished by the end of 2013. In 2011, CAAC decided to conduct SMS audits and special safety audits to SMS certificate holders. SMS evaluation guidance and tools have been developed, research and pilot phase completed. The next step is to perfect and spread this plan. The ultimate goal is to get the anticipated results of the industry SMS development through SMS audits.

1.   **INTRODUCTION**

1.1   **SMS IMPLEMENTATION IN CHINA**

1.1.1   The Civil Aviation Administration of China (CAAC) started Safety Management Systems (SMS) development and SMS trial in 2005. Since 2008, CAAC has added regulatory requirements of SMS by issuing *Requirements on Safety Management Systems (SMS) of Air Operators (AC-121/135)* and amending *Operations Certification: Large Airplanes Air Carrier (CCAR-121-R4)*, directing operators on SMS development and the authority on SMS certification by publishing guidance for operator SMS certification. So far almost all operators SMS certification have been finished.

1.1.2   Since 2005, CAAC has required airport authorities to develop SMS and add "SMS requirements of airport operation" as a prerequisite of Airport Operation Certificate application by amending Regulation of Civil Airport Certification (CCAR-139CA-R1) and issuing Regulation of Airport Operation Safety and Management (CCAR-140), and required airports agencies add SMS elements and procedures into Airport Operation Manual (AOM).

1.1.3   CAAC has directed and regulated air traffic control (ATC) facilities developing SMS by issuing Requirements on Safety Management Systems of Air Traffic Service Providers, Guidance on Implementation of Safety Management Systems by Air Traffic Service Providers, and Rules on Safety Management of Air Traffic Control Units (CCAR-83). By now, all 176 ATC facilities have developed SMS, meeting the requirements and most of them have been certificated by CAAC.

1.1.4   China civil aviation maintenance organizations have been developing SMS according to Safety Management Systems of Maintenance Organizations (AC-145-15) issued by CAAC.

2.   DISCUSSION

Purpose

2.1   The purpose of SMS Audit is to move from the inspection based on regulation compliance to the inspection based on safety performance by audit tools and evaluate SMS effect by expected levels more than regulation compliance.

Details

2.2   In 2011, CAAC compiled Guidance on Safety Management Systems（SMS）Audit, established SMS audit procedure, developed SMS Audit tools. The tools, which include a series of indicators, interview protocols and questionnaires for personnel at various levels, can help inspectors evaluating SMS effectiveness.

2.3   SMS includes comprehensive audit and special safety audit. Audit tools evaluate SMS development, operation and effect by a series index. Comprehensive audit tools are designed based on 12 elements and definitions required by ICAO SMS framework, such as   safety policy, organization, emergency management, risk management, voluntary reporting, safety data collection and analysis, safety performance management, internal audit, internal evaluation, system assessment and safety training and communication, etc. On the other hand, from the view of organization safety culture, SMS audit increases contents of safety responsibility, employee safety awareness, working pressure, working environment, among other things, and comprehensively evaluates organizations' safety management capacity.

2.4   Activation of Special Safety Audit depends on analysis of recent safety data. Through safety data analysis and risk evaluation, find organizations with serious safety issues, analyze the organization's action including investigation, analysis, treatment and improvement against recent safety occurrences, determine its faults in safety management, compile tailored checklist, and initiate Special Safety Audit.

Achievements

2.5   To ensure SMS Audit smoothly conducted, CAAC made a survey in six Chinese airlines and inspected SMS operation and implementation effect of airlines with different operation sizes in 2011. Soon after, CAAC set up SMS Audit group, whose members are Inspectors or technique experts. This group did SMS Audit test work in an airline, including system evaluation on the airline SMS implementation effect and providing advice for improvement. The group amended evaluation tools after test work.

Next steps

2.6   In 2012, CAAC will finish SMS certification for airports and ATC units, and will evaluate SMS implementation effect of certificate holders by SMS audit. Besides this, on the base of safety data and risk evaluation, choose airlines or their operational departments with bad safety record in latest period as Safety Audit targets, evaluate whether SMS functioned as expected, find the reason for the failure in risk control, and give advice for improvement.

2.7   Based on the finished audits, CAAC will keep amending audit procedures and evaluation tools. Finally, achieve the goal of China civil aviation industry SMS that meets expected

standards, i.e., meeting requirements of both regulations and performance with regard to safety risk management.

3.   **ACTION BY THE MEETING**

3.1   The meeting is invited to note the information contained in this Paper.

      a) CAAC has complied with SMS regulations, standards and rules to regulate industry SMS development and implementation;

      b) CAAC has conducted compliance certification on industry SMS development;

      c) CAAC has developed procedures and tools to evaluate effectiveness of SMS implementation；

      d) It is suggested to develop international standards for SMS certification and audit.

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