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## ASSEMBLY – 35TH SESSION

### EXECUTIVE COMMITTEE

#### Agenda Item 16: Improvement of safety oversight

#### EXPERIENCE WITH ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME (USOAP) IN THE REPUBLIC OF KOREA

(Presented by Republic of Korea)

#### INFORMATION PAPER

##### SUMMARY

This paper provides an overview of safety related activities taken by the Republic of Korea as a result of its experience with USOAP and of what it is working on at present for the preparations of proposed "Comprehensive System Approach".

#### 1. INTRODUCTION

1.1 Having experienced with ICAO USOAP in 2000, the Republic of Korea gained valuable lessons that external reviews could lead to a more effective safety oversight system. It also had a good opportunity to assess its safety related resources and to identify shortcomings and deficiencies on it. Furthermore, all staff members of Civil Aviation Safety Authority (CASA) as well as Ministry of Construction and Transportation (MOCT) recognized the importance of compliance with international standards and recommended practices (SARPs) as a key element to achieve a sound safety oversight system, after the audit.

1.2 CASA stepped into second round to develop more efficient safety oversight system as well as to make necessary preparations for the proposed Comprehensive Systems Approach. This paper address changes in various fields that were triggered by USOAP and measures being taken for the next audit.

#### 2. CHANGES IN SAFETY OVERSIGHT SYSTEM AFTER USOAP IN 2000

2.1 In accordance with Assembly Resolution A32-11 and the relevant MOU, the USOAP audit for the Republic of Korea was conducted covering the safety-related provisions of three ICAO Annexes: Annex 1, Personnel Licensing; Annex 6, Operation of Aircraft; and Annex 8, Airworthiness of Aircraft in June 2000. The findings made by ICAO Audit Team contained a total of 28 recommendations, including shortcomings and deficiencies in most areas such as lack of basic aviation law and specific operating regulations; lack of adequate civil aviation establishments, resulting in insufficient safety oversight activities; lack of qualified technical personnel; and inadequate certification and supervision of air operators and maintenance organization. Among them, the most significant deficiencies were in specific operating regulations. In addition, the ICAO Audit Team discovered that several differences existed between the Republic of Korea's national requirements and ICAO SARPs with

USOAP, of which ICAO had not been notified as required under the Chicago Convention, and no procedure had been put in place to regularly check on compliance status. CASA took the following corrective actions and it brought significant changes in the Republic of Korea system:

- Development of SARPs compliance matrices and database covering three annexes: Annex 1, Annex 6, and Annex 8
- Significant amendment of basic aviation law and operation regulations to strengthen the safety oversight system
- Establishment of considerable amount of technical guidance materials for technical personnel
- Promulgation of Flight Safety Regulations to ensure systematic compliance and correspondence with the three annexes
- Establishment of independent aviation safety organizations: CASA and Korea Aviation-Accident Investigation Board(KAIB)
- Significant increase in number of aviation safety inspectors: operation inspectors, airworthiness inspectors and flight inspectors(covering all types of aircraft registered in the Republic of Korea )
- Wholly updated technical library
- Enhancement of training programme for technical personnel according to the respective job description
- Introduction of new certification system for air operators complying with ICAO standards and certification of 18 operators
- Development of continuing surveillance programme, tailored for each air operator's characteristic
- Establishment of a nationwide aviation safety information system.

2.2 At the initial audit, 22.21% was identified overall for the lack of effective implementation of SARPs, while 28.67% was for the global percentage of total findings. Follow-up audit in 2002, however, showed favourable results that most findings were closed and the percentage fell to 2.53%, as we had completed the corrective plan.

2.3 The Republic of Korea also took subsequent actions on its own after the USOAP was finished up to reinforce the fundamentals of safety oversight system. This included a survey of the fitness of new safety oversight system, questioning to flight crews, mechanics and the other specialist group, research on foreign cases, consultation with aeronautical institute and public hearing. This project was started up from 2003 and remedial steps are being carried out to be terminated by 2005.

2.4 First of all, it was recognized that the significant shortcomings were at national regulations. In accordance with Article 37 of Chicago Convention, SARPs shall be adopted and reflected in national legislation. However, it is often experienced that there are difficulties in internal legislation with SARPs in time. Most of the specific operating regulations are enacted as ministerial decrees that are essentially in need of legal basis for respective provision at an Act, pursuant to internal rule making methodology. Considering traditional national legal procedures, making internal legislation in a harmonized manner to conform to SARPs, which consists of extensive standards and recommended practices and procedures, was not simple. As the ICAO audit resulted in identifying the lack of implementation of a standard in national regulations, this revelation caused the CASA to review its regulatory requirements as a whole. In relation to this, the privilege of Head of CASA, making and promulgating rules for itself, was expanded, which resulted in many regulations and other regulatory materials after the ICAO audit.

### 3. PRE-AUDIT TASK PLAN IN PREPARATION FOR SYSTEMS APPROACH

3.1 From January 2003, CASA undertook a pre-audit task, focused on Annex 11, 13 and 14 that was supposed to be audited from 2004 in accordance with annex-by-annex basis pursuant to Assembly Resolution A33-8. On the basis of past experience, CASA made SARPs compliance matrices for those annexes in the same method so that new differences could be identified and notified to ICAO. This required another corrective plan including partial amendment of regulations and further changes in safety oversight system such as introduction of airport certification which was a massive project. This task led to the following partial changes:

- Making SARPs compliance matrices and building database covering three annexes: Annex 11, Annex 13, and Annex 14
- Amending the Aviation Act and Aviation Regulations in part
- Certifying 8 international airports with approval of airport operations manuals.
- Establishing new organization, i.e., airport certification project team and inspection team of navigational aids
- Surveying the status of shortcomings and deficiencies at airports to comply with national standards
- Increasing the number of CASA staff and airport safety inspectors, training and designating them
- Reforming airspace system including airway network
- Developing a training programme for airport and ATS staff.

3.2 As it seemed likely that the safety oversight audits would be performed by comprehensive systems approach, CASA considered a plan overall, which covered 16 annexes early in 2004. The new pre-audit task plan was produced on the basis of ICAO guidance manuals: Safety Oversight Manual (Doc 9734) and Safety Oversight Audit Manual (Doc 9735). Also, a project team was established, known as Office of International Program and Policy which would cover all of the CASA's international activities in the area of safety. It is the focal point for ICAO matters in the CASA and is responsible for coordinating the Republic of Korea's implementation of SARPs. Implementing the corrective plan in 2000 and pre-audit task in 2003, it is recognized that accurately identifying differences is the most important thing. The team embarked on a massive project to create compliance matrices with other annexes. The experts in various departments of CASA were required to identify any differences between the Republic of Korea's requirements and the provisions of ICAO Annexes, and to plan remedial measures. For the purpose of self-assessment of the status of the Republic of Korea's implementation of ICAO standards, CASA is willing to conduct its pre-audit task plan thoroughly. The major steps of the project consist of the following measures:

(1) *Difference assessment:*

- Create all annex compliance matrix, identifying differences and notifying current differences with all SARPs to ICAO(including PANS-OPS, regional procedures and technical manuals)
- Build the difference database, continuously monitor and maintain it
- Review and complete ICAO compliance checklist
- Review and complete ICAO pre-questionnaires

(2) *Implement continuous monitoring:*

- Establish a continuous monitoring and resolution committee for ICAO standards.

(3) *Review of ICAO audit tools:*

- Analyze the ICAO audit protocols and pre-questionnaires.

(4) *Organizational review:*

- Review the organizational aspects of all areas of CASA including oversight functions, job description, the number of inspectors, training programme, delegated authority relating to safety oversight.

(5) *Developing regulations and technical manuals:*

- Amend regulations to resolve the deficiencies identified in difference assessment
- Develop and complement procedures for technical staff related to all Annexes.

(6) *Certification review:*

- Review all certification or approval system and procedures for aircraft, air operators, airport operators, airmen, training agents, ATS unit, etc.

(7) *Review national surveillance programme:*

- Review inspector's authority, inspection plan and tools, methodology and qualification management, etc.
- Review the enforcement programme for resolution of safety issues such as violations of regulations

(8) *Hardware review:*

- Review shortcomings and deficiencies on hardware such as airport facilities, ATS system, navigational aids, etc.

(9) *ICAO-COSCAP consultation:*

- Review the result of consultations with ICAO-COSCAP in the areas of aircraft operations, airworthiness, ATS and airport.

CASA will complete the above-mentioned pre-audit task by early 2005 and the plan will be modified as soon as ICAO systems approach based audit tools and procedure are fixed.

#### 4. **CONCLUSION**

4.1 CASA has actively been working to improve safety oversight system since the audit of the Republic of Korea safety oversight system was performed in 2000 under USOAP. And, we support the future safety oversight audit named as comprehensive systems approach, as it is believed that the audit will contribute to aviation safety system in the world.

4.2 The pre-audit task for systems approach is time-consuming and massive work, so it is in need of much cost as well as much of man-power. However, CASA still consider this as a good opportunity to look into and enhance its safety oversight system as proved with the past experience. The Republic of Korea aims at establishment of sound and well organized safety oversight system by efficiently reviewing and implementing ICAO standard in a harmonized manner with a completion of above-mentioned project.

4.3 It is expected that ICAO develop the audit tools and procedures for the system approach based audit in near future. In this regard, it seems desirable to set the audit categories to align with essential elements in the ICAO Safety Oversight Manual(Doc9734) to enhance clarity and usefulness.