International Civil Aviation Organization

First Meeting of the APRAST – Accident Investigation Ad hoc Working Group (APRAST-AIG AWG/1)

(Bangkok, Thailand, 6-8 June 2012)

Agenda Item 8:   Accident and Incident Database

SINGAPORE AVIATION ACCIDENT / INCIDENT REPORTING SYSTEM (SAIRS)
(Presented by Civil Aviation Authority of Singapore)

SUMMARY

At the High Level Safety Conference (HLSC) 2010 and 37th General Assembly meeting, ICAO emphasised the importance for Contracting States to manage and share safety information for the sole purpose of enhancing aviation safety. To achieve this aim, States would need to put in place a robust safety data collection and processing system (SDCPS) that uses common taxonomy to collect, collate and analyse safety data.

This working paper informs the meeting on Singapore's experience in collecting and managing safety data through its mandatory occurrence reporting system called the Singapore Aviation Accident / Incident Reporting System (SAIRS). The SAIRS uses the ECCAIRS (European Coordination Centre for Aviation Incident Reporting System) software and is in compliance with the ICAO ADREP (Accident/Incident Data Report) taxonomy. In addition, this working paper also encourages the meeting to urge Contracting States to develop similar systems to facilitate sharing of safety information for the purpose of enhancing aviation safety regionally.

INTRODUCTION

1.1   One of the key elements of an effective State's safety oversight system is the establishment of a robust safety data collection and processing system (SDCPS) to facilitate collection, collation and analysis of the safety data of its aviation industry. It also allows States to devise targeted and timely intervention actions to address any safety concerns.

1.2   Over time and with trending analysis made possible by data accumulation, the SDCPS should facilitate States to shift from reactive safety programmes to programmes that are proactive and predictive – the key feature of the State Safety Programme (SSP) and the Safety Management System (SMS).

2.   SINGAPORE AVIATION ACCIDENT / INCIDENT REPORTING SYSTEM (SAIRS)

2.1   Previously, mandatory occurrence reports were received in hard copy and safety data were summarised and manually entered into a common database. These data were not coded and did not employ common taxonomy, making analysis laborious and difficult.

2.2   In designing a new system, Singapore had the following considerations in mind:

   a) Means for electronic submission of mandatory occurrence reports;

   b) Format compatibility of safety data in accordance with ICAO ADREP taxonomy to facilitate sharing of safety information with ICAO and other Contracting States; and

   c) Minimum disruption to regulatees (ie. airlines, maintenance organsiations and aerodrome operators) during transition from the old to the new system.

2.3   During the early development of this new system, ECCAIRS (European Coordination Centre for Aviation Incident Reporting System) was introduced to Singapore by the European JRC (Joint Research Centre) with a free copy of the software for in-depth feasibility study.

2.4   The study lasted nine months and concluded that the ICAO ADREP taxonomy compliant system could be adapted and customised to meet Singapore's requirements. In addition, the ECCAIRS add-on software such as Dexter (Data Entry for eXcel Tool for ECCAIRS Repositories) was also available for Singapore to design data entry forms to facilitate online electronic submission of reports by regulatees. Please see Appendix A for a sample of the form. Based on the favourable outcome of the study, the Civil Aviation Authority of Singapore (CAAS) proceeded to develop Singapore's new mandatory occurrence reporting system operating on the ECCAIRS software.

2.5   In December 2009, this new system, named as the Singapore Aviation Accident / Incident Reporting System (SAIRS), was commissioned. To facilitate seamless transition, SAIRS was implemented in phases. Singapore-based full-service carriers were the first regulatees to make use of SAIRS under the first phase, followed by Singapore-based low cost carriers.

2.6   For regulatees who already have their own system to capture its safety data, an in-house interface programme called MecWise was developed to allow the transfer of the required data from regulatee's system to SAIRS in order not to duplicate data entry into SAIRS.

2.7   Over the past few years, Singapore has collected more than 1,000 occurrence reports annually. With the ECCAIRS "query builder" function, criteria of each query can be easily customised and data analysis and trending was made much simpler and effective. In addition, ADREP report writing was also made easy as the ECCAIRS predefined report format is based on ADREP reporting guidelines provided in ICAO Annex 13.

2.8   Other than occurrence trend analysis, SAIRS data are also fed into another system called Safety Oversight Management System (SOMS) where occurrence data are integrated with surveillance audit data to provide a more holistic safety analysis and trending. This integration allows Singapore to identify emerging safety issues so that resources can be deployed to address them more effectively.

3.   CONCLUSION

3.1   Singapore encourages States to develop similar systems with a view to achieving a harmonized approach in managing accident/incident safety information and sharing of this information at the regional level.

3.2   Singapore would be pleased to share its experience on the development and use of SAIRS, particularly the adaptation and customisation of the ECCAIRS to meet its requirements, in a cost-effective manner.

4.   ACTION BY THE MEETING

4.1   The meeting is invited to:

a) note Singapore's experience in the development of the Singapore Aviation Accident And Incident Reporting System (SAIRS) and the customization of ECCAIRS software for SAIRS; and

b) urge Contracting States to develop similar systems to facilitate future sharing of safety information for the purpose of enhancing aviation safety regionally.

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Appendix A

	Singapore Aviation Incident Report (SAIR)	CAAS Civil Aviation Authority of Singapore Airworthiness / Flight Ops Division
AFO Ref No.:		

PART 1 INITIAL NOTIFICATION

Date of Incident (UTC)	Time of Incident (UTC)	Reporting org.

AOC Reference	Pilot Name:	Co-pilot Name:

Flight number	Last departure point	Planned destination

Title

Flight phase	Aircraft registration	Aircraft Manufacturer/model

State reporting	State/area of occurrence	
Singapore		

Narrative (Description of Accident/Incident)

Potential Hazard(s) identified (if any):

Part 1 to be submitted to CAAS:
within 3 hrs from immediate notification (accident), 24hrs (item 1 to 14) and within 3 working day (item 15 to 40)