

**RECORD OF DISCUSSIONS  
OF THE FIRST MEETING OF THE AIR TRAFFIC MANAGEMENT  
AND FLIGHT OPERATIONS COMPONENT OF THE  
ASIA REGIONAL AVIATION SAFETY TEAM (ARAST)  
BANGKOK, THAILAND  
19 - 20 NOVEMBER 2008**

**Present**

1. The First Meeting of the Air Traffic Management and Flight Operations Component of the Asia Regional Aviation Safety Team (ARAST) was attended by representatives from the Civil Aviation Authorities, Air Navigation Service Providers and Airlines of the participating Member Administrations of COSCAP-NA, COSCAP-SEA and COSCAP-SA, relevant International / Regional Experts attached to the Programmes including Programme Coordinators, representative from ICAO, FAA, DGAC France, EASA, Airbus and Boeing. Attending as observers were members from COSCAP Gulf States. There were a total of 87 participants. The list of participants is attached as Annexure I.

**Venue**

2. The Meeting was held from 19 - 20 November 2008 at the Asia Pacific ICAO Regional Office, Bangkok Thailand.

**Welcome Address (Opening Remarks)**

3. Mr. Mohktar Awan, Regional Director from the ICAO Asia and Pacific (APAC) Office, welcomed the participants on behalf of the ICAO. He extended a warm welcome to all the Participants and representatives coming to Bangkok to participate in the First Meeting of the Asia Regional Aviation Safety Team (ARAST). He highlighted the successes achieved by the NARAST, SEARAST and SARAST, and the importance of the ARAST in improving safety under the ICAO GASP. He specifically thanked the Federal Aviation Administration of the US for the work it has done to support aviation safety in general, and aviation safety in the Asia Pacific Region in particular.

CTA COSCAP-SEA briefly reviewed the history of the safety teams, operating independently but in parallel, all benefiting from the support of donor partners. To improve the efficiency of the safety teams the Steering Committees of the COSCAP-NA, COSCAP-SEA and COSCAP-SA programmes approve a joint meeting of the safety teams. Conclusions and recommendations from the joint meeting will be taken to the individual meetings for review, validation and augmentation as necessary. He underscored that the success of the safety teams is founded upon active participation. Safety Team members were encouraged to direct comments and discussion around the venue as necessary. CTA COSCAP-SEA extended a welcome to the COSCAP-GS observers, who are attending to learn from the experience of the combined Asia COSCAPs.

**Proceedings of the Meeting**

4. With the concurrence of the PC COSCAP-SA and CTA COSCAP-NA, the CTA COSCAP-SEA kindly facilitated the meeting, and it progressed in accordance with the Agenda with slight adjustments to the order. A copy of the Agenda (Programme) is placed at Annexure II.

5. The participants at the Meeting introduced themselves. Mr. Eric Ferrandez of EASA, was unable to attend and expressed his regrets to the meeting though CTA COSCAP-SEA.

## **Presentations**

6. A number of presentations were made by various organizations as outlined below and ARAST expressed its gratitude and thanked all the presenters.

### 6.1 Commercial Aviation Safety Team (CAST) Update

CTA COSCAP-SEA provided an overview of the evolution of international safety teams, and the recent developments concerning the ESSI - EASA Safety team. Mr. Kyle Olsen provided a review of the vision, mission and goals of the CAST, in particular the goal to reduce the fatal accident rate in the US and internationally which had been achieved.

In the future the CAST will be analyzing incidents, emerging risk and changing risk in order to proactively identify interventions. The CAST is also looking 10 to 20 years ahead to identify changes that will need to be addressed.

Mr. Olsen also provided a briefing on the Aviation Safety Information Analysis And Sharing (ASIAS) System [ <http://www.asias.faa.gov/> ]. The ASIAS, using operational and incident data from airlines, air traffic management and airport operators, has advanced data management and analytical tools. He provided a graphic example of how terrain, navigation, airspace and operational alerts such as TAWS can be combined to assist to understand the safety situation at a given location. Mr. Olsen explained further that participation in the ASIAS is open worldwide, and that contributors gain the benefit of access to the data tools. Several Asian airlines have already joined. He also emphasized the importance of providing data to ICAO via ECCAIRs.

Mr. Olsen identified the remaining risks under work by CAST in the areas of Cargo, mid-air collision, icing and maintenance, reviewed the status of safety enhancements (SEs) that have been completed, as well as updating other SEs in progress. Although some CAST outputs may be several years away, it is important that the safety teams not lose sight of the work being conducted in these areas. Mr. Olsen kindly provided a new CAST CD – revision 13, containing the latest data, and emphasized that members are free to copy this for further distribution.

CTA COSCAP-SEA emphasized the key strength of the CAST is that the safety enhancements are based on the detailed analysis of a large number of accidents, that the development of work is data-driven, supported by analysis, and expressed his belief that this will provide tremendous value in the future.

ACTION: . Mr. Olsen undertook to provide a briefing on the ASIAS outputs at the next ARAST.

### 6.2 ESSI Update

Regrets were received from Eric Ferrandez, and CTA COSCAP-SEA provided an update on his behalf. The ESSI now has three teams with the initiation of both helicopter and general aviation elements for their safety teams. It is anticipated that there will be a number of technical outputs in 2009 and the Airbus representative stated that the ESSI is progressing with tracking and communicating the progress of safety enhancements.

The ESSI wishes to cooperate and exchange with the COSCAP safety teams, and would welcome COSCAP participation in the ESSI teams in 2009.

CONCLUSION: ESSI invited participation from COSCAPs, one member from each programme. Member administrations are requested to advise their respective CTA of their interest in this regard.

### 6.3 ICAO GASP and relationship to RAST

CTA COSCAP-SEA provided a briefing on the evolution of the GASP including measurement of the GSIs. There are 12 focus areas, 4 related to mainly State Safety oversight, 1 focus area related to the

region and 7 areas focused primarily on the aviation industry. It was noted that many of the measurements are related to ICAO documents or USOAP protocol checklist items. Documents are available at the ICAO FSIX website [www.icao.int/fsix/](http://www.icao.int/fsix/)

There is a need to determine how to implement through the mechanism of the safety team meetings. The Steering Committee for COSCAP-SEA approved the SEARAST to continue to work on the SEs flowing from the GASP/GASR. In support of this the SEARAST terms of reference were amended. Even though there has been industry participation in the past (16 operators participated in this meeting), the revised terms of reference will encourage more participation as well as promoting the development and follow-up of industry-specific actions

Kyle Olsen provided an update on the workshops conducted internationally to identify priorities for implementation. Members of the workshops concluded that the workshops were productive to identify gaps. The use of USOAP and ISOA audit results will help to verify that a real gap exists and to identify areas to be addressed to close any open gaps. Mr. Olsen also pointed out that the workshop process is very weak in establishing a link between the focus areas and risk reduction,

CTA COSCAP-SEA emphasized the importance of establishing measurement of implementation progress and effectiveness, and the identification of new areas for involvement. A new area for the COSCAPs is Accident and Incident investigation.

**ACTION:**

- 1) ARAST to focus on the implementation of GSIs, and seek to increase industry participation.
- 2) COSCAP to complete preliminary analysis of roadmap focus areas and determine the gap for the Asia region for presentation to the next ARAST .
- 3) COSCAP-NA and COSCAP-SA to seek approval from their respective steering committees following the lead of the COSCAP-SEA to amend the terms of reference of their RAST to establish RAST as the Roadmap implementation mechanism.

#### **6.4 Crew Fatigue Risk Management**

The Boeing representative (Captain Bob Johnson) presented. The key messages are that the traditional approaches to managing fatigue risk through the use of prescriptive time-based crew duty times are not effective in managing fatigue risk. The presentation shared information concerning the need for companies to develop fatigue risk management, and the need to implement it as an element of a Safety Management System (SMS). Fatigue Risk Management (FRM) approaches are based on scientific knowledge, whereas the traditional prescriptive regulation approach is not. Integration into the SMS permits the FRM to analyze existing data to assess the effectiveness of the FRM . For example, FOQA data can be used to assess the performance of selected crew cycles.

Examples of scientific studies were provided to demonstrate that crews permitted to rest while en route were more alert during subsequent phases of flight. ICAO is reviewing the final guidance on the development of FRM.

Capt. John Richardson (Hong Kong China) stated that Hong Kong is nearing completion of an 8 year process to develop a new robust approach to establishing flight limitations.

**ACTION:**

- 1) Hong Kong China to share with ARAST membership the results of its study once released.
- 2) COSCAPs to arrange a workshop in FRM, linked to the proposed ICAO provisions on FRM.

#### **6.5 Report on ATC Human Factors and Minimum Sector Altitude (MSAW) training**

CTA COSCAP-SEA provided the background that this was an SE identified for the three COSCAPs.

FAA Glenn Michael presented on CRM – Human Factors in Air Traffic Control. The FAA had originally intended to provide CRM refresher training each three years but has now concluded that this is not frequent enough. FAA course delivery evolved from a three-day course every few years, to an intense one-day course once or twice per year. He also kindly distributed a copy of FAA CRM training material [CRM – 101 DVD] for the use of Administrations.

MSAW: This is an important element of technological improvement directed at eliminating CFIT. It can be considered a last line of defence on ground against a CFIT accident. It has saved several aircraft each year in the US. Human performance remains key to safety enhancement. This includes monitoring and oversight, and use of standard operating procedures. MSAW triggers are lower than EGPWS, and US MSAW systems are updated and recertified each year.

Comments from participants:

- 1) Comment that CRM extends also to relationship between the Cockpit and ATC. Air Crews frequently encounter problems in Los Angeles where ATC make unreasonable demands of air crew.
- 2) Comment that some pilots feel reluctant to deny an ATC request. Pilots must be prepared and comfortable to deny an ATC request due to safety concerns.
- 3) Comment that one country runs integrated CRM training involving flight, cabin and maintenance crews together with ATC.

ACTION:

- 1) COSCAP-SA to research ICAO requirements for MSAW and provide a briefing to the next ARAST.
- 2) Administrations to advise their respective COSCAP regarding their installation and use of MSAW. This relates to both the installation and the procedures for its use.
- 3) COSCAP to explore the methodologies for increasing teamwork between ATM and flight crews.

## 6.6 Update on Maintenance ARAST (M-ARAST)

CTA COSCAP-SEA briefed on the 1<sup>st</sup> M-ARAST meeting to consider safety enhancements in the maintenance area that could support the reduction of accidents. COSCAPs are to provide more supporting information in this area at the second M-ARAST to be held in the second quarter of 2009.

A suggestion from participants that the M-ARAST should be combined with the ARAST was followed by a discussion regarding the relativity of material to each discipline.

ACTION:

- 1) ARAST members to brief their M ARAST counterparts on the process that has been established for the development of safety enhancements by the safety team, and how these are then used by individual States to improve safety.
- 2) COSCAP to examine the feasibility of conducting combined or concurrent meetings of the Maintenance and Flight Operations / Air Traffic Management RASTs.

## 6.7 Runway Safety update

6.7.1 CTA COSCAP-SEA reviewed the fact that the RASTs have been working to enhance runway safety, and have issued several advisory circulars related to this area. RASTs have previously sought and the FAA kindly undertook to provide a seminar on runway safety. The FAA has confirmed that it will provide a runway safety seminar in the first half of 2009.

6.7.2 Glenn Michael presented on the Flight Safety Foundation Runway Safety Initiative (RSI), which has identified that that runway excursions are more frequent than runway incursions. There is an increasing focus by the Flight Safety Foundation in this area, and the team includes the FAA and the CAST. The approach is comprehensive, involving controllers, airports and air operators.

6.7.3 Mr. Xiong Jie, Deputy Director of Safety Oversight Division of CAAC, presented on the CAAC's new runway safety programme. The volume of traffic in China has increased 18% per year for 30 years, and runway incursions have increased dramatically in the past 6 years. The CAAC addresses runway safety in three areas: incursions, excursions and confusions. Excursions have decreased significantly over 30 years, but remain a concern. Confusion occurs frequently, and the CAAC is looking at Nav Aids and safety measures in place during construction. The programme is developed with specific responsibilities in three areas: National, Regional and Local. A key element is data and evaluation, which also includes data collected by individual air operators.

Recommendations:

- 1) Share runway event information between States to support learning.
- 2) Encourage States to share best practices.
- 3) ICAO to improve the SARPs (example of US enhanced taxiway centreline approaching runway hold lines is a good idea but not part of SARPs and it is therefore not widely understood.)

ACTION:

- 1) FAA has confirmed to ICAO that they will provide runway safety programme in 2009 (tentative dates established in early 2009).
- 2) FAA (Glenn Michael) to brief the next ARAST on the work of the Flight Safety Foundation to reduce runway excursions.
- 3) CAAC to provide a copy of the runway safety programme to COSCAP for distribution.

6.8 Amended Advisory Circular for Constant Descent Final Approach (CDFA)

CTA COSCAP-SEA reviewed the AC on CFDA, and referred to a draft revision to the AC. The original AC was issued due to the fact that the accident rate for non-precision approaches is five times higher than for precision approaches. The revision is intended to reflect improvements that have occurred since the original was issued and the ICAO developments related to the introduction of PBN.

ACTION:

- 1) Administrations to review the draft revision to the AC, and provide comments to COSCAP by January 15, 2009.
- 2) COSCAP to issue a revised AC in consideration of comments received.
- 3) Administrations to review the revised AC and consider reissuance of the State ACs as necessary.

6.9 SE 121 – Cargo Loading Training and Standard operating Procedures

The FAA CAST identified a high rate of accidents with cargo operations, although the ARAST has not yet considered whether or not this safety enhancement has the same applicability in the Asia Pacific region.

6.9.1 Capt. Yeong Ro Kim, Korean Airlines Operations Department presented on cargo loading, loading training and standard operating procedures. The emphasis was on safety, with the use of computer-based tools intended to minimize the risk of human error.

6.9.2 Mr. Aldous CHUNG, Quality Assurance Manager – Cargo, Cathay Pacific Cargo presented on best practices in cargo safety. These include training in advance of operational duties, and double-check at critical control points. Safety performance goals are established and measured. Adherence to Cargo Services Manual is required, with scale calibration and verification of pallet load weight before loading on the aircraft.

6.9.3 Mr. Kyle Olsen informed the meeting that the FAA is anticipating the completion of output 4 in several months, with Outputs 1 & 2 completed. Output 3 is underway, due for completion April 2009, for incorporation by operators by April 2010.

A Member Administration CAA stated that despite the efforts by air operators to ensure safety and compliance, inspections identify many discrepancies in load sheets and loading errors, often arising from outsourcing. This includes also pallet build-up, labelling and the handling of dangerous goods.

CONCLUSION: ARAST to await further information from the FAA.

#### 6.10 ECCAIRS & CAST/ICAO Common Taxonomy

CTA COSCAP-SEA provided background on the ECCAIRS discussions at the safety teams, leading to training being provided by the BEA and JRC in September 2008 in Bangkok, with further training in South Asia in 2009. CTA COSCAP-NA provided a brief overview of the ECCAIRS system, illustrating how it can be used by both States and operators to record and exchange safety data. Because ECCAIRS is used by ICAO a State can meet its Annex 13 reporting requirements by exporting information directly from ECCAIRS into an electronic file that can be sent to ICAO, avoiding the necessity of manually completing report forms and reports.

#### INFORMATION ONLY

#### 6.11 Review common COSCAP Steering Committee recommendations

Steering Committee recommendations were to be reviewed with the respective COSCAPs during their individual day 3 meeting.

#### 6.12 Ground Vehicle Operator Licensing and Airside operations – Airports Authority Hong Kong

Mr. Wing T. Yeung, Airfield Manager, Hong Kong International Airport presented on the practices used by the Hong Kong Airport Authority to manage vehicles and drivers on the airport. This is a comprehensive system involving the licensing of vehicles, equipment and drivers, safety inspections and training requirements, as well as safety oversight of vehicles and drivers. Airport Authority officers have authority to enforce Hong Kong laws, and airport driving offences will attract the same driver demerit points as an offence on a public road. Advanced Surface Guidance and Control System is being implemented, and by end of 2009 all vehicles on the airside will have locators that will permit air traffic controllers to have real-time display of vehicle position on the airport.

#### INFORMATION

#### 6.13 SE-30 Mode Awareness and Energy State Management Aspects of Flight Deck Automation

Kyle Olsen presented an overview on Mode Awareness and Energy State Management (SE30), an issue that has been involved in a number of accidents. He introduced the final report of a CAST working group that studied this issue. Mr. Olsen questioned whether or not there is a need to prepare an Advisory Circular from the report in order to address SE30. Discussion of the participants confirmed that mode awareness is addressed in training material prepared by both Airbus and Boeing. One member suggested that an AC would be an advisable approach to facilitate understanding of the comprehensive report. The full report is contained on the ARAST CD.

ACTION: COSCAP to prepare an AC on Awareness and Energy State Management Aspects of Flight Deck Automation for review at the next ARAST.

#### 6.14 Additional Agenda Items

6.14.1 Ms. Jang Yeo-jin, Assistant Director, Flight Standards Dept., KCASA presented the Republic of Korea's implementation of Performance Based Navigation – PBN Roadmap Development. This

provided an overview of the actions, with implementation to be completed by 2016. As part of the implementation of PBN procedures, safety assessments consistent with SMS principles will be required.

CTA COSCAP-SEA referred to the ICAO website as an excellent source of information on PBN. [<http://www2.icao.int/en/pbn/Pages/default.aspx>]

With regard to training to implement PBN, discussion indicated that Administration with little demand will find it difficult to maintain the expertise of personnel if they are working in isolation. CTA COSCAP-SEA briefed the ARAST on ICAO proposals to create a PBN office in the Asia-Pacific region that would provide support in this area. Members were reminded that other training services are available at the Civil Aviation Academy of Singapore.

**ACTION:**

- 1) CAAC (Capt. Jiang Rui) to kindly provide copies of PBN guidance material to COSCAP
- 2) COSCAP to pursue development of guidance material related to operational approval of PBN implementation.

#### 6.15 Regional Aviation Safety Issues

Regional Safety Issues were reviewed and implementation status was updated in the individual NARAST, SEARAST and SARAST meetings.

#### 7.0 Review of Implementation of Steering Committee Decisions

7.1 CTA COSCAP-SEA reviewed the need to track and report to the Steering Committees regarding implementation of RAST recommendations that are subsequently approved by the Steering Committees.

7.2 Steering Committee Decisions were reviewed in the individual SEARAST, SARAST and NARAST meetings and are recorded in the records of those meetings.

#### 8.0 Close of the Meeting

Members supported the combined format the 1<sup>st</sup> ARAST meeting, expressing their belief that it afforded discussion and sharing of safety information that would otherwise not have benefitted all Members. They confirmed their desire to continue this combined forum for future meetings.

#### 9.0 Date and Venue of the 2<sup>nd</sup> ARAST meeting

The 2<sup>nd</sup> ARAST meeting was set for approximately mid-June 2009 at the ICAO Regional Office for the convenience of Member Administrations.