



International Civil Aviation Organization

**Fifteenth Meeting of the APANPIRG ATM/AIS/SAR Sub-Group
(ATM/AIS/SAR/SG/15)**

Bangkok, Thailand, 25 – 29 July 2005

**Agenda Item 3: Review and progress the tasks assigned to the ATM/AIS/SAR/SG by
APANPIRG**

**REVIEW OF SEMINARS IN THE ATM/SAR FIELDS CONDUCTED BY THE ICAO ASIA
AND PACIFIC OFFICE – 2004/2005**

(Presented by the Secretariat)

SUMMARY

This working paper presents information for review by ATM/AIS/SAR/SG/15 of seminars in the ATM and SAR fields conducted by the ICAO Asia and Pacific Office during 200/2005.

1. INTRODUCTION

1.1 Since the ATM/AIS/SAR/SG/14 meeting held on 28 June-2 July 2005, the ICAO Asia/Pacific Regional Office conducted the following seminars:

- a) 15-19 November 2004 – Air Traffic Management Safety Management Seminar, Beijing, Peoples Republic of China;
- b) 14-17 December 2004 – Civil/Military Seminar, Asia/Pacific Office, Bangkok, Thailand;
- c) 7-11 March 2005 – Search and Rescue Seminar, Chennai, India;
- d) 21-22 March 2005 – Sixth Asia/Pacific RVSM Seminar, Incheon, Republic of Korea; and
- e) 18-20 April 2005 – ADS/CPDLC Seminar, Asia/Pacific Office, Bangkok, Thailand.
- f) 8-10 June 2005 – RASMAG ATS Safety Management Seminar

2. REVIEW OF ICAO SEMINARS

ATM Safety Management Seminar

2.1 The ICAO ATM Safety Management Seminar hosted by the General Administration of Civil Aviation of China (CAAC) was held at the Air Traffic Management Bureau (ATMB) Headquarters Building in Beijing, China from 15 to 19 November 2004. The Seminar was attended by 80 participants from 12 States, 3 international organizations and 1 ATM consultant company.

2.2 The purpose of the seminar was to provide participants with up to date information on the outcomes of the 35th Session of the Assembly of ICAO and the ICAO Eleventh Air Navigation Conference on aviation safety matters and developments in ATM safety management to assist States in establishing ATS safety management programmes in accordance with Annex 11. The Seminar focused on practical aspects of establishing and operating ATS safety management systems in respect to the safety of airspaces and aerodromes, and addressed the problem of runway incursions and airport safety. Information was also provided on initiatives being taken by civil aviation safety authorities and airline operators worldwide to improve overall safety, and problems associated with operation of new large aircraft from a pilot's perspective

2.3 The following presentations were made during the conduct of the seminar:

- Mr. William Voss, Director Air Navigation Bureau, ICAO Headquarters: *Review of Outcomes of the ICAO 35th Assembly with a Focus on Safety, A General Review of ICAO Safety Initiatives with a Focus on the Unified Strategy, and Update of the ICAO Universal Safety Audit Programme - Systems Approach;*
- Mr. Vince Galotti, Chief ATM, ICAO Headquarters: *Fostering the Implementation of the Recommendations of the Eleventh Air Navigation Conference, Transition to a Global ATM System with a Focus on the Global ATM Operational Concept, and A Global Approach to Systems Safety and a Review of the ICAO Runway Safety Programme;*
- Mr. David Moores, Regional Officer ATM, ICAO Asia/Pacific Office: *ICAO Regional Airspace Planning, Implementation and Safety Arrangements;* and
- Capt. Len Cormier, Chief Technical Adviser, COSCAP-North Asia: *COSCAP Safety Initiatives;*
- Mr. Lui Yajun, ATMB, CAAC: *ATM Developments in China;*
- Mr. George Chao, Civil Aviation Department, Hong Kong, China: *Implementation of Aerodrome SMS in Hong Kong;*
- Mr. David Cheung, Civil Aviation Department, Hong Kong, China: *ATM Safety Management System in Hong Kong;*
- Mr. Des Joyce, Airservices Australia: *ATS Safety Management Systems - The Airservices Australia Way and Change Management - A Case Study in ADS-B;*
- Ms. Roberta Leftwich, Federal Aviation Administration (FAA), United States of America: *Establishing ATM Safety Management Programmes, North American Experience of ATM Safety Management Systems - FAA Safety Risk Management, and U.S. National Airspace System - Runway Safety;*
- Mr. Burt Ruitenbergh, International Federation of Air Traffic Controllers' Associations (IFATCA): *Basic Human Factors Concepts and Runway Safety - the ATC View;*
- Capt. Brian Greeves, International Federation of Airline Pilots' Associations (IFALPA): *Runway Safety - A Pilot's View, and The Challenges of New Large Aircraft;*

- Mr. David Mawdsley, International Air Transport Association (IATA): *The IATA Perspective on Safety Management*;
- Mr. Michael Thorson, Integra Consult: *Establishment of ATM Safety Management Programmes*, and *Introduction to Safety Management and the ICAO Manual on Safety Management for ATS*; and
- Mr. Jacob Yttesen, Integra Consult: *Runway Incursion Risk Prevention - A-SMGCS Copenhagen Airport*.

Civil/Military Seminar

2.4 The ICAO Civil/Military Co-ordination Seminar was held at the Asia and Pacific Regional Office from 14 to 17 December 2004. The seminar was attended by 63 experts from 13 States and 3 International Organizations.

2.5 The Regional Office had arranged the seminar pursuant to the requirements of APANPIRG13 Conclusion 13/34. The purpose of the seminar was to forge closer understanding and cooperation between Civil and Military authorities in the Asia and Pacific Region to enhance safety, security and efficiency of international civil aviation.

2.6 The Seminar focused on fostering greater understanding of civil and military operational requirements and the need for close coordination and cooperation to assure the continued safety, efficiency and growth in international civil aviation. Invitation letters have been sent to all contracting States in Asia and Pacific, International Organizations concerned and ATS providers and airspace users.

2.7 The Seminar noted the importance of ICAO documentation relating to the provision of Civil/Military coordination. In particular, the seminar noted Recommendation 1/2 of the 11th Air Navigation Conference and Resolution 35/14, Appendix P, of the 35th Assembly of ICAO.

2.8 The following presentations were made during the conduct of the seminar:

- Mr. Andrew Tiede, Regional Officer ATM, ICAO Asia/Pacific Office: *ICAO Provisions on Civil/Military Coordination*;
- Colonel William Schaake, Chief Air Battle Management Division, Pacific Air Forces, United States Air Force (USAF): *Headquarters Pacific Air Force View on Civil/Military Cooperation*;
- Dr. Paisit Herabat, Executive Officer, System Engineering AEROTHAI, Thailand: *Civil/Military Coordination in Thailand*;
- Mr. David Moores, Regional Officer ATM: *ICAO Asia/Pacific Regional ATM Initiatives & ATM Operational Concept – Future Directions*;
- Mr. Srikrishan, Executive Director ATM, Airports Authority of India: *Civil/Military Coordination – The Indian Context*;
- Mr. Allan Storm, USAF Flight Standards Agency, Civil/Military Aviation Issues, United States: *Military ‘Due Regard’ Operations, Civil/Military Coordination for the National Airspace of the United States, Upgrade to 406 MHz Emergency Locator Beacons (ELTs & PLBs) & Civil/Military Co-ordination in Air Traffic Management*;

- Major M.G.R. Maran, Republic of Singapore Air Force: *Civil/Military Operations in Singapore*;
- Mr. Ken Sayler, Command Airspace Manager, Pacific Air Forces, USAF: *Japan Civil/Military Coord. Gatekeeper, Consequences & Pacific Military Altitude Reservation Function (PACMARF) Military Airspace Reservations (ALTRV)*;
- Mr. Yoshinori Suzuki, Japan Civil Aviation Bureau: *ATM Centre Operation*;
- Mr. Art Gumtau, USAF Contractor (AFCAP-CENTAF), Kabul, Afghanistan: *Civil Aviation Developments in Afghanistan*;
- Captain Greg Wolfsheimer, IFALPA: *Airline Efficiency of Flight Operations – Pilot Perspectives*;
- Mr. John Wagstaff, IFATCA: *Controllers’ Perspectives on Military Operations*; and
- Major Kevin Westley, Department of Defence Policy Board on Federal Aviation, Pentagon, United States: *Civil Military Airspace Conference Mechanisms (CMAC) & Regional Airspace Initiative Program Overview*.

2.9 The seminar acknowledged the significant role played by the military in regard to humanitarian missions all over the world, noting the substantial access required by the military to civil airspace in order to perform these missions. The seminar noted that effectual cooperation and coordination was essential and again endorsed the principle of the equitable sharing of both convenience and inconvenience by civil and military users

2.10 The seminar reviewed the *Asia/Pacific Regional Civil/Military Cooperation Guidelines* as described in the ASIA/PAC FASID (Doc 9673, 2001), but did not identify any need to amend the existing provisions. However, the seminar urged States to undertake a thorough review of current arrangements in the light of ICAO provisions and the deliberations of the seminar and to incorporate the FASID guidelines in all current and future airspace planning.

Search and Rescue Seminar

2.11 The ICAO SAR Seminar was held in conjunction with the Bay of Bengal SAREX at the Trident Hilton in Chennai, India from 7 to 11 March 2005. The event was hosted by the Airports Authority of India. The SAR seminar was attended by 141 participants from 12 States and 1 SAR satellite service provider (COSPAS-SARSAT, United Kingdom).

2.12 The inauguration ceremony was performed by the following officials: Mr. K. Ramalingam, Chairman, Airports Authority of India, Vice Admiral A.K. Singh, Director-General of the Coast Guard and Chairman of the National SAR Board, Mr. David Moores, Regional Officer ATM, ICAO Asia/Pacific Office, Bangkok, Thailand, and Mr. Brian Day, Technical Officer, ATM, Air Navigation Bureau, ICAO Headquarters, Montreal, Canada. The sessions were moderated by the following officers: Mr. Asha Ram, Executive Director (Aviation Safety), AAI, Mr. A. Bhaskaranarayana, Director, Satcom Programme, ISRO, Captain Dilip Kharkar, Chief Flight Operations Inspector, Director General of Civil Aviation, India, Cmde. U.N. Chitnavis, Commander, Coast Guard (East), and Group Captain H.C. Srivastava, Director Operations (ATS), Indian Air Force.

2.13 The SAR seminar focused on the development of SAR cooperation and coordination and addressed ICAO requirements for States to provide SAR services and agreements in accordance

with Annex 12, and considered lessons learnt from the tsunami disaster. The SAREX was designed to provide participants with the opportunity to experience practical application of SAR services carried out by Indian specialists in search and rescue.

2.14 The following presentations were made during the conduct of the seminar:

- Mr. Brian Day, ICAO Headquarters: *Who We Are and What We Do – An Overview, Obligations and Benefits of State SAR Systems, Human Factors in the Organization of SAR Services, and Options for funding a SAR system*;
- Mr. David Moores, ICAO Asia/Pacific Office: *Regional SAR Activities and Contingency Planning, and ICAO's Role in Disaster Preparedness, Planning and Response*;
- Comd. Kulpreet Yadav, Indian Coast Guard: *Role & Organization of National SAR Board of India and International Cooperation in M-SAR, Search and Rescue System – Indian Context*;
- Mr. N.U.B. Rao, General Manager (Aero), AAI: *Search and Rescue System – Indian Context*;
- Mr. S.K. Dogra, Director of Fire and Rescue Services, Tamil Nadu: *Disaster Management Post-Tsunami – Local Agencies Perspective*;
- Ms. Cheryl Bertoia, Principal Operations Officer, Cospas-Sarsat Secretariat : *COSPAS-SARSAT Overview and Future Technologies, and MEOSAR, Beacons and Ship Security Alerting*;
- Lt. Cdr. R. S Sunil, Indian Navy: *Maritime SAR in Indian SAR Region ,and Case Study-Search and Recovery of Sea King Helicopter*;
- Mr. P. Soma, Group Director, MOHA, ISTRAC, ISRO: *India: Indian Mission Control Centre (IMCC) for SAR – Facilities, Performance and Contribution*;
- Mr. S. Satnarayana, Head, RFAFD, VSSC, ISRO, India: *Low Cost Beacon*;
- Cdr. Sunil Srivasatav, Indian Navy: *Post-Tsunami Relief Operations*;
- Dep Comrr Pankavt Verma, Indian Coast Guard: *Tsunami Emergency Response (Mega Disaster and SAR operations – Post Tsunami*;
- Mr. Zulkifli, ATS Manager, Medan, Indonesia; Major Murali P.V. Bhaskaran, Staff Officer SAR, Royal Malaysian Air Force (RMAF); Malaysia; Mr. N. De Silva, Air Navigation Services Inspector, CAA, Sri Lanka; and Mr. Vichai Prateeprecha, Deputy Director General, Department of Civil Aviation, Thailand: *Tsunami Emergency Responses*.

2.15 The SAREX was composed of a Land Exercise and Sea Exercise. The Land Exercise involved a large contingent of personnel from local emergency and rescue services according to AAI's emergency procedures. The Sea SAR Exercise involved ships and helicopters of the Indian Coast Guard and Navy as well as merchant ships, and provided participants with the opportunity to experience the wide range of SAR capability of the Airports Authority of India, Indian Coast Guard and Indian Navy.

2.16 The seminar, in its review of the information provided and discussions held, made the following recommendations:

- 1) The seminar was of the view that the establishment of RCCs should be made on the basis of need and risk. This strategy allows for, on the one hand, regionalized SAR service provision in areas of light traffic density and few resources, and, on the other hand, dedicated facilities in States with high traffic density of sufficient justification to warrant RCC staff appropriately trained and specializing in SAR;
- 2) Rapid and accurate collation and dissemination of SAR information is essential to ensure timely and appropriate SAR response to operational units. This could be most effectively achieved by using up to date and automated technology which can be supported by an appropriate specialized infrastructure and States should take full advantage of such systems in equipping their RCCs.
- 3) The seminar highlighted the importance of including in the seminar all organizations involved in providing emergency services for search and rescue, therefore, annual exercises should be held involving all parties concerned.
- 4) The seminar recognized the importance of clearly specifying the duties and responsibilities of all participating organizations in a search and rescue operation. Therefore, procedures should be provided that specify coordination requirements including reporting, lines of responsibility and standardized formats for documentation. This work can be best facilitated by the establishment of an appropriately representative Search and Rescue Coordinating Committee in the development of a National SAR Plan.
- 5) SAR agreements with neighbouring States should take into harmonized account both maritime and aeronautical requirements giving due balance to matters of sovereignty and expeditious mutual access by foreign SAR aircraft.
- 6) The seminar recognized that an aircraft crash involving a large commercial jet into a densely populated area could result in a major disaster of wide ramifications and appropriately specialized parallel disaster management units need to coordinate with civil aviation SAR agencies in the development and execution of broadly based plans.
- 7) In light of the earthquake and tsunami disaster on 26 December 2004 and lack of public awareness of the large-scale risk to life and property posed by this natural phenomena, the seminar considered that there needs to be a public awareness programmes targeting all sections of the community regarding earthquake and tsunami etc, and precautions and actions to be taken to minimize the loss of life and property.
- 8) The seminar, in considering the response by the international community to the tsunami emergency relief, recognized that there had been an urgent and rushed response that significantly increased air traffic in a short period of time to air lift aid to the disaster areas. In some notable cases, the airport capacity, resources and infrastructure were inadequate. This could significantly impede the delivery of humanitarian relief supplies. Therefore,

the Seminar requested that ICAO consider undertaking a study with the States concerned to examine the air operations that took place and provide appropriate guidelines on handling major disaster situations.

- 9) States should review the ICAO SAR capability table compiled by APANPIRG and update the Asia and Pacific Regional Office accordingly.
- 10) The seminar acknowledged the highly successful large-scale land and sea search and rescue exercises that were held involving multi-disciplinary emergency response units, and urged ICAO to organize annual regional SAR seminars and SAREX's similar to the one held in Chennai.
- 11) The seminar urged the States to hasten completion of SAR Letters of Agreement and to provide a copy to the Regional Office.
- 12) The seminar recognized the vital operational and economic contribution made to effective SAR service provision by the Cospas-Sarsat system and recommended that States participate as a matter of priority.
- 13) The seminar, noting the promising developments and the desirability of producing a low cost SAR emergency beacon for a much wider user community which would greatly benefit personal safety, encouraged the continued development and manufacture of this product.

Sixth Asia/Pacific RVSM Seminar

2.17 The Sixth Asia/Pacific RVSM Seminar (RVSM Seminar/6) was held on 21-22 March 2005 at Incheon, Republic of Korea in conjunction with the RVSM/TF/25 meeting held on 23-25 March 2005. The primary purpose of the RVSM/TF/25 meeting was to finalize the operational RVSM plan for the Incheon, Tokyo and Naha FIRs in preparation for the Go/No-Go meeting scheduled on 4-8 July 2005 and scheduled for implementation on AIRAC date 29 September 2005.

2.18 The seminar was attended by 121 participants from 9 States and 2 international organizations. The seminar programme covered the main topics in the ICAO guidance material on RVSM implementation and operation as set out in the ICAO Doc 9574, and a wide range of subjects related to RVSM. The following presentations were made during the conduct of the seminar:

- Mr. David Moores, Regional Officer ATM, ICAO Asia/Pacific Office, Bangkok, Thailand: *ATM and Regional Safety Considerations*;
- Mr. Sydney Maniam, Head (Air Traffic Services) Civil Aviation Authority of Singapore: *ATS Procedures and ATC Training*;
- Mr. Nopadol Sangngurn Executive Expert, AEROTHAI, Thailand: *Regional Monitoring Agency (RMA) Duties and Responsibilities*;
- Dr. Paisit Herabat, Executive Officer, System Engineering, AEROTHAI, Thailand: *Safety Monitoring Goals for RVSM Implementation and Safety Assessment Requirements*;
- Mr. Soon Boon Hai, Assistant Director Safety Operations & Infrastructure Asia/Pacific, IATA, Singapore: *Benefits of RVSM in Bay of Bengal an South China Sea*;

- Mr. Robert Miller, Manager, Airspace Program, CSSI Inc, United States: *Aircraft and Operator Approval Process, Aircraft and Operator Approval Documentation, Pacific Approvals Registry and Monitoring Agency (PARMO) and Minimum Monitoring Requirements*;
- Mr. Allan Storm, Department of Defense Liaison Officer, United States: *State Aircraft Issues and Coordination with Military Agencies*;
- Capt. Aric Oh, Dep. Chief Pilot (Technical) Flight Operations Technical Singapore Airlines, Singapore: *Commercial Aircraft Operations and Airline Training Issues*;
- Mr. Koji Kato Senior ATCO Tokyo ACC, JCAB, Japan: *Operation of RVSM in Japan*;
- Mr. Takashi Imuta, Airspace Safety Monitoring Section, Japan: *JCAB RVSM Safety Assessment*;
- Mr. Kim Jeong Min Assistant Director ATS Planning Division, KCASA, Republic of Korea: *RVSM Implementation in Korea*

2.19 The seminar highlighted the need for States to undertake due diligence in regard to the safety management requirements established by ICAO for RVSM, including ensuring that aircraft operations and air traffic management conformed to high safety standards, with ongoing operations subject to a comprehensive safety monitoring programme.

ADS/CPDLC Seminar

2.20 The ICAO ADS/CPDLC Seminar was held on 18 and 20 April 2005 at the ICAO Asia/Pacific Office, Bangkok, Thailand in conjunction with the combined meetings of the FIT-BOB/5, FIT-SEA/2 and ATFM/TF/1. The seminar was attended by 42 participants from 14 States, 2 International organizations and 1 data link service provider.

2.21 The ADS/CPDLC seminar was arranged to coincide with the FIT-BOB/5 and FIT-SEA/2 meetings in response to discussions at the FIT-BOB/4 meeting in September 200. FIT-BOB/4 in considering comments made by Boeing CRA concerning the complex technical nature of ADS/CPDLC, and operational problems so far identified by the ADS/CPDLC trial in the Bay of Bengal, considered that an ADS/CPDLC seminar would be an effective way to educate ATS providers and operators in the region about ADS/CPDLC operations. The seminar was designed to provide information from experienced operators and pilots, ATS providers and controllers, network system providers and technical background to the work undertaken by the CRA.

2.22 The following presentations were made during the conduct of the seminar:

- Mr. Andrew Tiede, Regional Officer ATM, ICAO Asia/Pacific Office: *ADS/CPDLC Operating Procedures & Documentation – FANS Operations Manual (FOM), and ICAO Provisions in relation to data link services & ICAO Document References for ADS/CPDLC*;
- Dr. Paul Hooper, Air Transport Regional Officer, ICAO Asia/Pacific Office: *Finance Arrangements – Mechanisms to facilitate collaborative funding of the CRA*;

- Mr. Craig Roberts, Airservices Australia: *What is ADS-C, What is CPDLC, What is Data Link, ADS/CPDLC Operations in the Australian Environment; and Roles and Functions of the FANS Interoperability Implementation Team (FIT), including Problem Reports and System Performance Analysis;*
- Capt. Toby Gursansky, IFALPA: *IFALPA – Pilot Perspectives of ADS/CPDLC, Including Cockpit Practices and Procedures;*
- Mr. David Fung, SITA: *Data Network System Provision and Architecture;*
- Mr. Hiroshi Matsuda, ATCA Japan: *Recommended Process for Successful Deployment of ADS/CPDLC System;*
- Mr. Takashi Matsumoto, NEC, Japan: *Requirements for ATC Systems with ADS/CPDLC – Tokyo ODP System Including Lessons Learnt During the Course of Development and Operation;*
- Mr. Hiroshi Inoguchi, JCAB, Japan: *ADS/CPDLC Operation in the Tokyo FIR; and Launch and Capabilities of the Japanese Multi Function Transport Satellite (MTSAT);*
- Mr. Yoshiro Nakatsuji, JCAB CRA: *The Structure, Roles and Activities of the FIT CRA of Japan;*
- Ms. Hiromi Suzuki, CRA Japan: *Problem Reports and System Performance of Oceanic Datalink Operation, CRA Japan;*
- Mr. M. Sarangapani, Airports Authority of India: *Status of Bay of Bengal ADS/CPDLC Operational Trial;* and
- Mr. Kevin Chamness, FAA En Route & Oceanic Services, ATO, FAA, United States: *Use of Integrated ADS/CPDLC Capabilities in the FAA's ATOP System.*

RASMAG ATS Safety Management Seminar

2.23 Details of the RASMAG ATS Safety Management have been included in Working Paper 20 “Report of the Activities of the Regional Airspace Safety Monitoring Advisory Group (RASMAG)” to the ATM/AIS/SAR/SG/15 meeting

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the seminar activities carried out by the Regional Office and consider matters arising.
