



**Cooperative Development of Operational Safety and Continuing Airworthiness  
Under ICAO Technical Co-operation Programme**

**COSCAP-South Asia**

**Eighth Meeting  
South Asia Regional Aviation Safety Team  
(SARAST)**

**Flight Operations & Air Traffic Management Components**

**19-20 November 2007  
Bangkok Thailand**



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## LETTER OF INVITATION BY REGIONAL PROGRAMME COORDINATOR

COSCAP/29/SARAST-8/01

18 September, 2007

Dear Sir / Madam,

### **8TH SARAST MEETING, 19-20 NOVEMBER 2007 IN BANGKOK**

I wish to extend a cordial invitation to your administration to attend the 8<sup>th</sup> Meeting of the South Asia Regional Aviation Safety Team (SARAST), (Flight Operations and Air Traffic Management Component) which will be held on 19<sup>th</sup>-20<sup>th</sup> November 2007 at ICAO Regional Office, Bangkok, Thailand.

The meeting is expected to review in detail the status of progress made in the local implementation of the Safety Enhancement (SE) Recommendations which have been made by the SARAST and endorsed by the Steering Committee at its previous meetings. It will also examine the strategies / modalities that would be required to give effect to any fresh directions or assignments given to the SARAST by the Steering Committee Meeting at its last meeting. The objective of the meeting in the main is to develop a coherent approach for the achievement of the expected goals as earliest as possible having identified the existing deficiencies/drawbacks and additional tools needed. It will also help identify new areas of concerns for enhancement of safety and make suitable recommendations to the Steering Committee for fresh directions.

The 8th SARAST Meeting will be focusing mainly on the safety initiatives relating to Air Traffic Management and Flight Operations and therefore you are kindly requested to compose the team of participants from your administration who are specialized in either functional areas to attend this meeting.

Attached for your review and comment is a draft Agenda for the subject meeting. If there is any other item which is not included in the draft Agenda but considered to be critical to aviation safety, you may without any hesitation whatsoever, please submit such for the consideration of the SARAST and necessary action. Detailed work programme of the Meeting together with other pertinent documentation will be forwarded to you shortly.

Also attached for your review and update is the Implementation Status Report of SARAST Recommendations. The fresh Conclusions of the Steering Committee on SARAST issue would be communicated to you as and when such would be available.

You are kindly requested to furnish to this office early with an update concerning the status of implementation of SE in your State. Enclosed please find a Tracking System developed by this office for this purpose and I wish to inform you that it would be published in the COSCAP-SA official website soon.

The Focal Points and the addressees are kindly requested to encourage participation by the nominated Team Members, both from the respective Civil Aviation Administrations, Air Traffic Management Service Providers, Airlines, and other relevant organizations. Continuity of the already nominated Team Members and their regular participation at the SARAST meeting is of paramount importance to



review the progress, ensure thorough discussions and timely action on implementation of the recommendations which will be key to the success of the meeting.

Also, you may kindly pass this information to the respective Air Operators and ATM service providers functioning under your jurisdiction and provide us with details of their participation at the meeting, as early as possible, as this office does not intend sending separate invitation to them.

Please find attached Registration Form, Information Bulletin and a list of recommended hotels in Bangkok and other pertinent information applicable to this meeting. In the event you need additional information relating to the previous meetings of the SARAST and its conclusions, please visit the official website of COSCAP-South Asia at [www.coscapsa.org](http://www.coscapsa.org)

Yours sincerely,

Chandrasena Nimalsiri,  
Regional Programme Coordinator,  
COSCAP-SA



## LIST OF INVITEES FROM COSCAP-SA STATES

**Note :** Invitations to all concerned officials of COSCAP-SA States that include officials from the Civil Aviation Administrations, Operators, Service Providers etc have been made through the Chairmen, Director Generals, Executive Directors and Directors of the Civil Aviation Administrations of States with copies to Designated Focal Points and SARAST Coordinators as listed below:

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## TENTATIVE AGENDA

Sl. No.	Agenda
1	Welcome and Opening Remarks
2	Adoption of Agenda
3	Self Introduction of Participants
4	Address by the Programme Coordinator
5	Presentations
6	Review of the Implementation of COSCAP-SA Steering Committee Conclusions Concerning SARAST (Status Report)
7	South Asia Regional Aviation Safety Initiatives – States’ Views
8	Any Other
9	Venue & Date for the 1st ARAST/9 <sup>th</sup> SARAST Meeting
10	Adoption of Conclusions and Recommendations
11	Vote of Thanks
12	Closing of the Meeting



## PROGRAMME (DAY-1)

<b>Monday 19 November 2007</b>	
<b>Time</b>	<b>Programme</b>
0800 – 0830	Registration
0830 – 0840	Welcome and Opening Remarks
0840 – 0845	Adoption of the Agenda
0845 – 0900	Self-introduction of Participants
0900 – 0930	Address by Mr Chandrasena Nimalsiri, the Regional Programme Coordinator
0930 – 1000	Global Aviation Safety Plan – Capt Fareed Ali Shah (Presentation)
1000 – 1045	Safety Management System – Capt Fareed Ali Shah (Presentation)
1045 – 1115	Tea Break
1115 – 1200	Wrong Runway Departures/Runway Confusion – Glenn W Michael (Presentation)
1200 – 1300	Lunch
1300 – 1400	Update of FAA CAST – Kyle Olsen (Presentation)
1400 – 1500	Engine Stalls and Surges: History, Recognition & the Recovery Process by Captain Robert Johnson (Presentation)
1500 – 1530	Tea Break
1530 – 1600	"Challenges and Opportunities for COSCAP Regional Safety Teams." - Mr. Henry D. Reed & GUYOT Gerard (Presentation)

## PROGRAMME (DAY-2)

<b>Tuesday 20 November 2007</b>	
<b>Time</b>	<b>Event/Activity</b>
0830 – 0930	Webex Presentation on ECCAIRS by Jarmo Korhonen, AIG Section , ICAO, Montreal
0930 - 1030	Review of the Implementation of COSCAP-SA Steering Committee Conclusions Concerning SARAST (Status Report) – Capt Salahuddin M Rahmatullah
1030 – 1100	Tea Break
1100 – 1200	Review of the Implementation of COSCAP-SA Steering Committee Conclusions Concerning SARAST (Status Report) – Capt Salahuddin M Rahmatullah
1200 – 1300	Lunch
1300 – 1400	Review of the Implementation of COSCAP-SA Steering Committee Conclusions Concerning SARAST (Status Report) – Capt Salahuddin M Rahmatullah
1400 - 1430	South Asia Regional Aviation Safety Issues – States' Views
1430 – 1500	Tea Break
1500 - 1515	Review of Conclusions/Venue & Date for 1 <sup>st</sup> ARAST/9 <sup>th</sup> SARAST/Adoption – Capt Salahuddin M Rahmatullah
1515 – 1530	Vote of Thanks and Closing of the Meeting- Mr Chandrasena Nimalsiri, the Regional Programme Coordinator



# COSCAP – South Asia



## LIST OF REGISTERED PARTICIPANTS

Sl. No.	Name & Position	Org / State	E-Mail
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**17<sup>th</sup> Steering Committee Meeting on SARAST**  
**6-8 November 2007**  
**Bangkok**

The 17<sup>th</sup> Steering Committee Meeting (SCM) of the Cooperative Development of Operational Safety and Continuing Airworthiness Programme, South Asia (COSCAP-SA), was held in Bangkok, Thailand during 6-8 November, 2007.

- 1.1 The Steering Committee was provided with a presentation on SARAST (DP-03) by the Programme Coordinator as mentioned hereunder in which the following points were highlighted :
  - 1.1.1 Background of SARAST
  - 1.1.2 Objective of SARAST
  - 1.1.3 SARAST Working Modalities
  - 1.1.4 Scope of Work
  - 1.1.5 Points to consider (“Action Completed”/Means of compliance/Amendment of SARAST Terms of Reference/Taking account of CEs of IUSOAP/Identifying or Referencing of SE/AP etc as SASI (South Asian Safety Initiative)
  - 1.1.6 SARAST Tracking System on Implementation of SASIs by the Programme Management as well as the States.
  - 1.1.7 The Status of Implementation on the 7<sup>th</sup> SARAST Recommendations by the States.
  - 1.1.8 The Status of Assistance provided by COSCAP-SA,
  - 1.1.9 Sub-Meetings on SARAST are to be conducted in each State during TA Missions by COSCAP-SA REs participated by officials from Regulators and Stake-holders (Operators), and
  - 1.1.10 The Assistance obtained by all external Agencies
- 1.2 The SCM approved the Conclusions & Recommendations of the 7<sup>th</sup> SARAST meeting.
- 1.3 The DP-3 is as follows :



## 17<sup>th</sup> Steering Committee Meeting

06<sup>th</sup> – 08<sup>th</sup> November 2007

Bangkok, Thailand

### **SARAST SAFETY ENHANCEMENTS – STATUS OF IMPLEMENTATION AND RECOMMENDATIONS OF THE 7TH SARAST MEETING**

#### **EXECUTIVE SUMMARY**

The ICAO Global Aviation Safety Plan (GASP), which was endorsed by the 33rd Session of the ICAO Assembly in 2001, stressed the need for a reduction in the rate of fatal accidents in air transport operations.

GASP endorses the concept of concentrating the safety-related activities of ICAO on those safety initiatives - planned or currently underway - which offer the best safety dividends in terms of reducing the accident rate. Additionally, GASP encourages States to foster regional and sub-regional safety groups for the purpose of furthering the global safety effort. At its 9th Meeting, the Steering Committee approved the formation of the South Asia Regional Aviation Safety Team (SARAST) and specified its Terms of Reference.

The activities of the SARAST were assigned “High Priority” Status. The 1st Meeting of the SARAST was held on the 26-27 June 2002 and recommendations for over fifty (50) Safety Enhancements were made, based on safety interventions already developed by CAST and JSSI for presentation to the 10<sup>th</sup> SC Meeting for approval. The SARAST has been taking follow up steps for the effective implementation of these Safety Enhancements whilst reviewing the current developments and reporting back to the subsequent Steering Committee meetings regularly for fresh directions.

The SARAST is at present taking focusing on Flight Operations and Air Traffic Services aspect in flight safety and is served by Coordinators appointed by each civil aviation administration of Member States and members from the industry.

It is assisted by experts who are made available by the donor agencies. SARAST is considered the main technical arm of the Steering Committee Meeting to advise the SCM on flight safety related matters. This paper outlines the status of implementation of the recommendations of Safety Enhancements made by the SARAST.



## 1. INTRODUCTION

**1.1 Background :** The ICAO Global Aviation Safety Plan (GASP), which was endorsed by the 33rd Session of the ICAO Assembly in 2001, stressed the need for a reduction in the rate of fatal accidents in air transport operations. GASP endorses the concept of concentrating the safety-related activities of ICAO on those safety initiatives - planned or currently underway - which offer the best safety dividends in terms of reducing the accident rate. GASP encourages States to foster regional and sub-regional safety groups for the purpose of furthering the global safety effort. Two major safety initiatives have been established which are in keeping with the broad objectives of GASP. The United States, as part of the FAA's Safer Skies agenda, established the Commercial Aviation Safety Team (CAST) in June 1998. Similarly, in 1998 the States represented by the JAA formed the Joint Strategic Safety Initiative (JSSI), (ESSI – after formation of EASA). Both initiatives drew upon a broad base of experts from government agencies, airlines, manufacturers, aviation associations, labour unions, and other safety-related organizations. The focus of their efforts resulted from a rigorous analysis of accidents, which occurred over the preceding ten-year period for which significant data was available. Major causes of accidents were identified and categorized, and priorities were assigned to pursue remedial actions.

Top accident categories being examined by these groups included, Controlled flight into terrain, Approach and landing, Loss of Control, Uncontained engine failures, Runway incursions and Weather etc.

JSSI and CAST work in close co-operation to analyze significant worldwide accidents/incidents, develop recommendations for improvement actions, and commit/monitor implementation completion. In addition, some members from each group actively participate in the other group on a regular basis.

Consistent with Immediate Objectives of the Project Document, the COSCAP-SA Steering Committee has formally constituted the South Asia Regional Aviation Safety Team (SARAST) to play an active role in the global effort to reduce accidents.

**1.2 Objective of SARAST:** The objective of the SARAST is to recommend accident prevention interventions to the Steering Committee. The recommendations, once approved by the Steering Committee, are to be implemented through the coordinated efforts of the regulatory authorities, service providers, airlines and aircraft manufacturers. For this purpose, the Team Members will serve as the focal points for introducing the interventions within their respective States/Administrations and for coordinating their government's efforts with industry.

To accomplish the objectives, the team is expected to review, for application within the South Asia area, existing safety interventions which have already been developed through the efforts of well-established, multinational safety initiatives, review regional accidents/significant incident trends and other areas of local concern to determine unique issues (such as aging aircraft, air rage incidents, etc.) which may warrant locally-developed interventions.

The focus and priority for Team are to introduce, support, and develop actions, which have the potential to effectively and economically reduce the regional accident rate.



- 1.3 SARAST Working Modalities:** At its 9th Meeting, the Steering Committee approved the formation of the South Asia Regional Aviation Safety Team (SARAST) and specified its Terms of Reference. The activities of the SARAST were assigned “High Priority” Status. As per the Terms of Reference approved by the Steering Committee, the COSCAP-SA CTA is to serve as the Team Leader. The membership of the SARAST for each participating regulatory authority may include one flight operations and one airworthiness representative and/or representative from other functional areas. Appropriate industry groups are also be invited to attend. The Steering Committee is required to monitor activities of SARAST and promote the implementation of those interventions that are deemed appropriate for the South Asia region.
- 1.4 Scope of Work:** The 1st Meeting of the Flight Operations Component of the SARAST was held 26-27 June 2002 in which fifty (50) Recommendations were made. These Recommendations were formally reviewed and accepted for implementation by the Steering Committee at its 10<sup>th</sup> Meeting in September, 2002.

The 2nd Meeting of the Flight Operations Component of the SARAST was held 4-6 June 2003 and its Recommendations were submitted to the Steering Committee at the 12<sup>th</sup> Meeting. The Steering Committee, while recognizing certain communication difficulties in the past, agreed to continue implementation of the Recommendations/ Conclusions of SARAST. The Steering Committee Members agreed to provide all the support possible to their respective team members.

The 3rd Meeting of the Flight Operations Component of the SARAST was held during 19-20 April 2004 and its Recommendations were approved by the Steering Committee at its 13<sup>th</sup> Meeting. Further the Steering Committee agreed to broad base the scope of work of the SARAST by appointing ATM team member(s) from the regulatory body and/or the service providers. The Recommendations / Conclusions developed by the 4th SARAST Meeting were reviewed and approved by the Steering Committee at its 14<sup>th</sup> Meeting.

The 5th SARAST meeting was held at Kathmandu, Nepal during 6 - 7 September 2005 and its Recommendations/Conclusions were approved by the 15<sup>th</sup> SCM whilst directing the programme to provide a tracking system for the of implementation of Safety Enhancements by each Member State for review at the next SCM. The Steering Committee also agreed to recommend that, in order to further support the implementation of SARAST / SCM proposals, National Aviation Safety Teams (NASTs) be created in each Member State by mid-April 2006 and that the first NAST meeting should take place before the next SARAST Meeting.

The 6th SARAST meeting was held at Bangkok during 18 – 19 May, 2006 and its Recommendations/Conclusions were reviewed and approved by the 16<sup>th</sup> Steering Committee meeting.

The 7th SARAST meeting was held on 11-12 January 2007 in Bangkok and its Recommendations/Conclusions are presented in the Attachment -1 to this paper for the consideration of the Steering Committee Meeting. The SARAST has developed twenty nine (29) new Safety Enhancements in the Flight Operations area, six (06) in Air Traffic Management area and two (02) regional Safety Enhancement under the category of miscellaneous.

- 1.5 Points to consider:** In the perusal of status of implementation of Safety Enhancements by the States in their respective territories, it is observed that there is wider disparity in regard to the effectiveness of implementation due to lack of common understanding amongst States as to



how a particular requirement should be implemented effectively and consistently monitored for it to be called “Action Closed” or “Action Completed”.

Since the SARAST Safety Enhancements are for accident prevention, they should be consistently applied and effectively enforced to ensure the desired objectives. Therefore it is necessary that means of compliance are also clearly specified to achieve harmonized environment of implementation within the States.

In this backdrop, COSCAP-South Asia proposes for the consideration of the Steering Committee meeting that SARAST Terms of Reference be amended to require that when a SE is initiated, the means of compliance of the requirement should be developed for observance by both Programme Management and individual States.

The means of compliance should take into account the eight (08) Critical Elements (CE), advocated by ICAO for an effective Safety Oversight System.

In order to facilitate clear identification and easy referencing, these SEs recommended by SARAST and approved by the Steering Committee, it is suggested that each of the SE be assigned a specific number with prefix ‘SASI’ which stands for ‘**South Asia Safety Issue**’

According to the SARAST Tracking System developed by the Programme Management, the Status of Implementation of a particular SE by the Programme Management is recorded under four segments as follows;

- “A” – Guidance Material Provided
- “B” - Required Training / Recurrent Training for CAA technical Staff Provided
- “C” – States’ compliance was verified by examination of State/Operator documents
- “D” – Other means of assistance for compliance provided

The Status of implementation of a particular SE by the State is recorded under four segments as follows

- “1” – Legislation / Regulations updated to give effect to the requirement
- “2” - Directions / Circulars issued to the industry for compliance
- “3” - Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement
- “4” - Other means of compliance – to be specified /remarks

The SARAST Tracking System which has been developed according to the aforesaid mechanism is presented in a CD to States. It will also be published in the COSCAP South Asia official website at [www.coscapsa.org](http://www.coscapsa.org)



**1.6 Recommendations of the 7th SARAST Meeting :** Recommendations and Conclusions made by the SARAST at its 7th Meeting held in Bangkok in January 2007 is attached to this paper for the information of the Steering Committee meeting

1.7 Given below is a specimen in regard to the Tracking System on Status developed by the Programme Management and States  
Eg.

Ref:	Title of the Safety Enhancement	Requirement in Brief	Status of implementation										
			COSCAP South Asia				Member State						
			A	B	C	D	Bangladesh		Bhutan				
								1					
								2					

## 2. RECOMMENDED ACTIONS BY THE STEERING COMMITTEE

- A - To consider the SARAST Tracking System developed by the COSCAP-South Asia Programme and give appropriate directions;
- B- To review the Recommendations and Conclusions made at the 7th SARAST meeting held in January 2007 in Bangkok and grant necessary directions to pursue the matters as recommended.
- C- To re-examine the States' nominees for SARAST with a view to ensuring the appointment of appropriately qualified and sufficiently experienced staff to attend SARAST meeting, on continuing basis;
- D- To designate the Head of Flight Safety to be the SARAST Coordinator to attend all SARAST meeting consistently and to be responsible for the effective implementation of SARAST Recommendations/Conclusions which are approved by the Steering Committee. This Head of Flight Safety also is to be part of, or head, the National Aviation Safety Team and its efforts to translate SARAST requirements in the State concerned.
- E- To ensure regular participation of nominated SARAST Team members in all SARAST meeting without discontinuity.



## APPROVAL BY THE STEERING COMMITTEE ON SARAST ISSUES

### **SCM-17-03 (DP-17SCM-03): SARAST Implementation Status**

The Steering Committee took note of the Discussion Paper, approved the implementation of the **SARAST Tracking System** as described in the Discussion Paper and:

- A. Reviewed the Recommendations and Conclusions that were made at the 7<sup>th</sup> SARAST meeting held in January 2007 in Bangkok and **authorized** the Programme Management to take appropriate action for their **implementation**;
- B. Requested each Member States to review their nominees attending the SARAST meetings with a view to ensuring the nomination of appropriately qualified and sufficiently experienced staff to take part at such meeting consistently without discontinuity;
- C. Requested each Member State to Designate the **Head of Flight Safety or equivalent officer** to be the SARAST Coordinator to attend all future SARAST meeting consistently and to make him/her responsible to Steering Committee Member for the effective local implementation of SARAST Recommendations/Conclusions which are approved by the Steering Committee; and
- D. Requested each Member State to include the officer referred to at paragraph (c) above in the National Aviation Safety Team in order to facilitate effective implementations of the SARAST recommendations.
- E. Requested each Member State to conduct regular **Sub-SARAST Meetings in their respective States with the participation of all local stake-holders involved and COSCAP-SA Regional Experts participating at the main SARAST meeting to facilitate effective implementation of the local Safety Enhancements requirements.**

### **SCM-17-10 (DP-17SCM-10): Broad basing SARAST Activities and formation of ARAST**

The SCM decided that henceforth there should be a combined RAST meeting comprising SEARAST, NARAST and SARAST for the usual period of days and an additional day could be allocated for issues pertaining to important safety issues related to each COSCAP.

### **SCM-17-13 (DP-17SCM-13): Highlights of Action items of 44<sup>th</sup> DGCA Conference**

The SCM decided that implementation of the relevant items (Action items 44/2, 44/3, 44/4, 44/5, 44/6, 44/7, 44/11) of the 44<sup>th</sup> DGCA Conference Asia/Pacific are to be processed through COSCAP-SA.



## CONCLUSIONS AND RECOMMENDATIONS OF SEVENTH MEETING SOUTH ASIA REGIONAL AVIATION SAFETY TEAM (SARAST)

Bangkok, 11-12 January 2007

### PRESENTATIONS

The following presentations were made by various organizations / States. The Team expressed its gratitude and thanked all the presenters.

- |  |                            |
|--|----------------------------|
| • European Safety Strategy Initiatives | EASA                       |
| • Runway Incursion                     | ATM Paris Airport          |
| • Runway Incursion                     | FAA                        |
| • National Aviation Safety Teams       | Maldives, Nepal, Sri Lanka |
| • USOAP Update                         | COSCAP-NA                  |
| • PBN Concepts                         | ICAO                       |
| • PBN Manual                           | ICAO                       |
| • CAST Update and Status               | FAA                        |

### CONCLUSIONS AND RECOMMENDATIONS :

#### **1. SE-1 CFIT / AP 1.01 - Terrain Avoidance Warning System (TAWS)**

- 1.1 PC COSCAP-SA to contact Honeywell and seek their guidance on the possibility of modification to software to reduce the instances of false warnings for VFR aircraft operating in Nepal at low level.

#### **2. SE - 2 CFIT/ AP 1.06 - Standard Operating Procedures (SOP)**

ACTION COMPLETED.

#### **3. SE-3 CFIT/ AP 1.03 - PRECISION-LIKE APPROACH IMPLEMENTATION (“21<sup>st</sup> Century Instrument Approaches”)(Vertical Angles – PAI 1-7, 11)**

- 3.1 ICAO Performance Based Navigation (PBN) Manager to coordinate PBN implementation with SARAST and APANPIRG to ensure there is no duplication of effort and that implementation is fully compliant with ICAO Global Plan (GPI-5) and uses the guidance provided in the ICAO PBN Manual (DOC9613 revised).
- 3.2 Efforts related to assisting Member States with the implementation of PBN to be in conformance with the APANPIRG/17 strategies related to PBN (See APANPIRG/17 Report, App C & D, Agenda item 2.2). SARAST focus to be on safety aspects such as elimination of the dive and drive technique in non- precision approaches through implementation of APV approaches (RNP and RNP AR approach), as well as implementation of RNAV departures and arrivals, in accordance with the PBN concept.





- 3.3 Regional Office Representatives highlighted that their focus is related to en-route aspects of PBN Implementation that require regional coordination, as opposed to approach and terminal operations.
  - 3.4 ICAO is requested to prepare a Discussion Paper for presentation at APANPIRG Working Groups to assist coordination efforts related to PBN Implementation.
  - 3.5 ICAO is requested to develop a PBN Implementation Checklist and Project Implementation Plan Template that will enable Member States to follow a step-by-step process to assess requirements and implement PBN. Additionally this will provide ICAO a management tool to monitor the progress of implementation in the States and measure performance of the ICAO PBN programme.
  - 3.6 Member States to identify the need to implement RNAV in terminal airspace and to develop APV approaches to all runway ends. A State PBN Project Implementation Plan to be developed using the tools provided by ICAO (see SE-3.5).
  - 3.7 COSCAP-SA to provide support to Member States in the development and implementation of their PBN Project Implementation Plan.
  - 3.8 Member States are strongly urged to participate in the PBN Workshops, tentatively scheduled for 3-7 September 2007 in India or 10-14 September 2007 in Bangkok, Thailand; and extend an invitation to appropriate air operator and service provider staff. An ICAO State Letter of invitation will be circulated in due time.
  - 3.9 COSCAP-SA to provide PBN Pans-Ops procedure design training programme where required. DGAC France to be requested to provide this training to the COSCAP-SA programme.
  - 3.10 COSCAP-SA to conduct a survey on the capabilities of Member States to develop PBN flight procedures (approaches, arrivals and departures).
  - 3.11 ICAO is requested to provide information on flight procedure design software that may be available for APV approach development.
4. **SE-10 CFIT / AP 1.08 - AIRLINE PROACTIVE SAFETY PROGRAMS (FOQA & ASAP)**
- 4.1 States are requested to provide information to COSCAP-SA on the development status of FDA programmes in their State by 26 February, 2007.
5. **SE-11 CFIT/ AP 1.05 - IMPLEMENTATION PLAN FOR TRAINING – CRM**
- ACTION COMPLETED.
6. **SE-12/AP 1.04 CFIT – Training CFIT Prevention**
- 6.1 COSCAP-SA to request Flight Safety Foundation to provide ALAR Workshop in Bangladesh.
7. **SE-14/AP 2.05 ALAR- Policies for ALAR (Safety Culture- CEOs and DOS More Visible)**
- ACTION COMPLETED.



8. **SE-15/ AP2.05 ALAR- Policies for ALAR (Safety Culture – Safety Information in Manuals)**  
ACTION COMPLETED.
9. **SE -16 / AP 2.05 ALAR – Policies for ALAR (Safety Culture – AFM Database for Inspectors)**  
ACTION COMPLETED.
10. **SE-23 / AP 2.01 - Approach and Landing Accident Reduction (Flight Crew Training)**  
ACTION COMPLETED.
11. **SE-26 / AP 3.03 - Loss of Control (SOPs)**  
ACTION COMPLETED.
12. **SE-27 / AP 3.01 Loss of Control (Risk Assessments and Management)**
  - 12.1 Member States to provide feedback to COSCAP-SA concerning the ‘Role of Analytical Tools in Airline Flight Safety Management Systems’; ‘Guide to Methods and Tools for Airline Flight Safety Analysis’; and ‘Survey on Analytical Processes and Requirements’ published under the GAIN programme by 15 March 2007 (Note: The GAIN documents provided by FAA were sent to all States through e mail. An electronic copy of the GAIN documents has also been included in the 7<sup>th</sup> SARAST Meeting CD provided to all participants).
13. **SE-28 / AP 3.05 - Loss of Control - Policies and Procedures (Process to Inform Personnel / Flight crew)**  
ACTION COMPLETED.
14. **SE- 29 / AP 3.05 - Loss of Control – Policies and Procedures (Process to Enhance Pilot Proficiency)**  
ACTION COMPLETED.
15. **SE-30 / AP 3.02 - Loss of Control Training (Human Factors and Automation)**
  - 15.1 Additional information is awaited from CAST / FAA. SE-30 is to be discussed by SARAST when additional information is available from CAST.
16. **SE-31 /AP 3.01 - Loss of Control Training - Advance Maneuver (Implement Ground and Flight Training)**  
ACTION COMPLETED.
17. **SE-60 Runway Incursion – Pilot Training**
  - 17.1 States are requested to review the material provided on a CD to all participants at the 7<sup>th</sup> SARAST Meeting and utilize the material with the pilot training programme – confirmation to be provided to COSCAP-SA by 30 April 2007.



**18. SE-78: Cabin Injury Reduction During Turbulence**

18.1 States to provide feedback to COSCAP-SA by 28<sup>th</sup> February 2007 on the implementation of the Advisory Circular 018 on 'Preventing Injuries Caused by Turbulence'.

**19. SE-101 Aircraft Design –Advanced Circuit Protection**

19.1 Not applicable for review by SARAST.

**20. SE-120: Map Shift Detection/Prevention, GPS Installation and TAWS Enhancements**

20.1 COSCAP-SA to develop an Advisory Circular (AC) to highlight the difficulties related to reduced capabilities of TAWS equipment where position accuracy is not adequate. The AC to encourage the modification of TAWS equipment to include GPS input or the development of SOPs to deal with Map shifts. In addition emphasis to be provided to ensure that data bases are maintained current.

20.2 FAA is requested to provide background information on Map Shift Detection / Prevention that COSCAP-SA could utilize to develop the Advisory Circular noted in 18.1. Target date 31 March 2007

**21. SE-121 Cargo – Cargo Loading Training and SOPs**

21.1 To be adopted for implementation by SARAST but awaiting additional information from FAA/ CAST.

**22. SE-125 Dangerous Goods Processing**

22.1 To be adopted for implementation by SARAST but awaiting additional information from FAA/ CAST.

22.2 COSCAP-SA to gather additional information related to the ICAO Dangerous Goods Processing.

**23. SE-127 Cargo – Fire Containment**

23.1 Output 4 of the CAST DIP to be adopted for review by SARAST but awaiting additional information from FAA/ CAST.

**24. SE-129 Regulation and Policy – Compliance, Enforcement and Restricted Operations**

24.1 COSCAP-SA to review the COSCAP-SA Generic Enforcement Manual and determine what amendments may be required to address the issues outlined in the Detailed Implementation Plan. The review is to also consider the ICAO SMS enforcement considerations.

**25. SE-130 Cargo - Regulation and Policy - Oversight**

25.1 To be adopted for implementation by SARAST; and COSCAP-SA to gather additional information related to the subject matter and advise the next SARAST meeting.



**26. SE-131 Cargo – Safety Culture**

26.1 To be adopted for implementation by SARAST; and COSCAP-SA to gather additional information related to the subject matter and advise the next SARAST meeting.

**27. SE-133 Icing - Turboprop Aircraft Ice Detection Systems**

27.1 To be adopted for review by SARAST but awaiting additional information from FAA CAST

**28. SE-134 Icing - Aircraft Design - Avionics**

28.1 Not applicable for review by SARAST.

**29. SE-136 Icing – Training – Engine Surge Recovery**

29.1 States to advise air operators to include Engine Failure Recognition and Response training material in their training programmes.

## **NEW SAFETY ENHANCEMENTS**

**30. SE-163 Midair – See-and-Avoid**

30.1 To be adopted for implementation by SARAST but awaiting additional information from FAA/ CAST.

**31. SE-164 Midair – ACAS Installation**

31.1 States to ensure compliance with ICAO requirements on the carriage of ACAS equipment on board the aircraft.

**32. SE-165 Midair – ACAS Policies and Procedures**

32 Based on the ICAO ACAS material (Pans-Ops, Pans-ATM, ACAS Manual etc.), COSCAP-SA to develop an Advisory Circular that highlights the ICAO requirements for compliance with ACAS RAs; training related to compliance with RAs; and the need for the use of Flight Training Devices.

## **ATM ISSUES**

**33. SE 9 / AP 1.07- CFIT – “Minimum Safe Altitude Warning”(MSAW)**

33.1 ACTION COMPLETED.

33.2 CAA Sri Lankan kindly offered to provide training to Maldives ATC when requested.

**34. SE-13 / AP - ATC CFIT Training – CFIT Prevention**

34.1 ACTION COMPLETED subject to confirmation from Bangladesh.



**35. SE-46, 47 Runway Incursions – Air Traffic Control Training**

35.1 ACTION COMPLETED subject to receipt of NATPRO material from FAA.

**36. SE-49, 50, 51, 52 Runway Incursion Standard Operating Procedures – Runway Incursion Prevention**

36.1 States to review the ICAO Runway Incursion Prevention Manual and develop a runway safety programme.

**37. SE-55, 59 Runway Incursion – SOPs for Controllers Situational Awareness**

37.1 States that have yet to do so to take action on implementation by March 30 2007. (Note: Review the thirteen CDs distributed to all States after the 5<sup>th</sup> SARAST meeting and provide comments to COSCAP-SA).

**38. SE-159 Midair – Airspace Design**

38.1 The Pakistani ATM Representative to SARAST to examine this matter in the context of South Asia and ICAO requirements to determine its applicability. Draft recommendations to be forwarded to COSCAP-SA by 30 July, 2007 for consideration by the 8<sup>th</sup> SARAST Meeting.

**39. SE-162 Midair – Advanced Navigation**

39.1 The Maldivian ATM Representative to SARAST to examine this matter in the context of South Asia and ICAO requirements to determine its applicability. Draft recommendations to be forwarded to COSCAP-SA by 30 July, 2007 for consideration by the 8<sup>th</sup> SARAST Meeting.

## **AEM ISSUES**

**40. SE-169 Policy & Procedures – Work Cards / Shift Change /Responsibilities / Manuals**

40.1 Subject to FAA completion of the review related to this SE, the three RASTs to discuss the feasibility of convening a special Maintenance RAST which could be held concurrent with a Maintenance Safety Seminar.

40.2 Member States to provide feedback to COSCAP-SA on the subjects that they wish to have included for presentation in the Maintenance Safety Seminar.

**41. SE-170 Aircraft Design – OEM Continuous Monitoring of Service History**

41.1 Not applicable for review by SARAST.

**42. SE-172 Gap Analysis of Existing Airplane Maintenance Process & Follow on Action Plan**

42.1 Not applicable for review by SARAST

**43. SE-175 Policy & Procedures – Flight Critical Configurations Changes Made During Maintenance**



- 43.1 Subject to FAA completion of the review related to this SE, the three RASTs to discuss the feasibility of convening a special Maintenance RAST which could be held concurrent with a Maintenance Safety Seminar.

## REGIONAL ISSUES

### 44. Regional Safety Issues

- 44.1 States to provide COSCAP-SA with minutes from their NAST meetings on a regular basis.

### 45. Date and Venue of next SARAST meeting

- 45.1 Programme Coordinator to determine the date for the Eight SARAST Meeting after due coordination with COSCAP-NA and COSCAP-SEA.
- 45.2 Bangkok is suggested as the venue for the SARAST meeting in consideration of the travel required by the external participants.

XXXXXXXXXX



## SOUTH ASIA SAFETY ISSUES (SASIs)

<b>SASI NDEX OPS</b>	<b>SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI] OPERATIONS (OPS)</b>
SASI/OPS/001	<b>Terrain Avoidance Warning System (TAWS)</b> [SE-1 CFIT / AP 1.01]
SASI/OPS/002	<b>Standard Operating Procedures (SOP)</b> [SE-2 CFIT/ AP 1.06]
SASI/OPS/003	<b>Precision-Like Approach Implementation</b> (“21 <sup>st</sup> Century Instrument Approaches”) (Vertical Angles – PAI 1-7, 11) [SE-3 CFIT/ AP 1.03]
SASI/OPS/004	<b>Airline Proactive Safety Programs (FOQA &amp; ASAP)</b> [SE-10 CFIT / AP 1.08]
SASI/OPS/005	<b>Implementation Plan For Training – CRM</b> [SE-11 CFIT/ AP 1.05]
SASI/OPS/006	<b>Training CFIT Prevention</b> [SE-12/AP 1.04 CFIT]
SASI/OPS/007	<b>Policies for ALAR (Safety Culture- CEOs &amp; DOS More Visible)</b> [SE-14/AP 2.05 ALAR]
SASI/OPS/008	<b>Policies for ALAR (Safety Culture – Safety Information in Manuals)</b> [SE-15/ AP2.05 ALAR]
SASI/OPS/009	<b>Policies for ALAR (Safety Culture – AFM Database for Inspectors)</b> [SE -16 / AP 2.05 ALAR]
SASI/OPS/010	<b>Approach &amp; Landing Accident Reduction (Flight Crew Training)</b> [SE-23/AP 2.01]
SASI/OPS/011	<b>Loss of Control (SOPs)</b> [SE-26 / AP 3.03]
SASI/OPS/012	<b>Loss of Control (Risk Assessments and Management)</b> [SE-27 / AP 3.01]
SASI/OPS/013	<b>Loss of Control - Policies and Procedures (Process to Inform Personnel / Flight crew)</b> [SE-28 / AP 3.05]
SASI/OPS/014	<b>Loss of Control – Policies and Procedures (Process to Enhance Pilot Proficiency)</b> [SE- 29 / AP 3.05]
SASI/OPS/015	<b>Loss of Control Training (Human Factors and Automation)</b> [SE-30 / AP 3.02]
SASI/OPS/016	<b>Loss of Control Training - Advance Maneuver (Implement Ground and Flight Training)</b> [SE-31 /AP 3.01]
SASI/OPS/017	<b>Runway Incursion – Pilot Training</b> [SE-60]
SASI/OPS/018	<b>Cabin Injury Reduction During Turbulence</b> [SE-78]
SASI/OPS/019	<b>Map Shift Detection/Prevention, GPS Installation &amp; TAWS Enhancements</b> [SE-120]
SASI/OPS/020	<b>Cargo – Cargo Loading Training and SOPs</b> [SE-121]
SASI/OPS/021	<b>Dangerous Goods Processing</b> [SE-125]
SASI/OPS/022	<b>Cargo – Fire Containment</b> [SE-127]
SASI/OPS/023	<b>Regulation and Policy – Compliance, Enforcement and Restricted Operations</b> [SE-129]
SASI/OPS/024	<b>Cargo - Regulation and Policy - Oversight</b> [SE-130]
SASI/OPS/025	<b>Cargo – Safety Culture</b> [SE-131]
SASI/OPS/026	<b>Icing - Turboprop Aircraft Ice Detection Systems</b> [SE-133]
SASI/OPS/027	<b>Icing – Training – Engine Surge Recovery</b> [SE-136]
SASI/OPS/028	<b>Midair – See-and-Avoid</b> [SE-163]
SASI/OPS/029	<b>Midair – ACAS Installation</b> [SE-164]
SASI/OPS/030	<b>Midair – ACAS Policies and Procedures</b> [SE-165]



# COSCAP – South Asia



SASI NDEX ATM	SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI] AIR TRAFFIC MANAGEMENT (ATM)
SASI/ATM/001	<b>CFIT – “Minimum Safe Altitude Warning”(MSAW)</b> [SE 9 / AP 1.07]
SASI/ATM/002	<b>ATC CFIT Training – CFIT Prevention</b> [SE-13 / AP]
SASI/ATM/003	<b>Runway Incursions – Air Traffic Control Training - Training Programme, Course curriculum &amp; situational Awareness</b> [SE-46]
SASI/ATM/004	<b>Runway Incursions – Air Traffic Control Training – CRM Training</b> [SE-47]
SASI/ATM/005	<b>Runway Incursion Standard Operating Procedures – Runway Incursion Prevention</b> [SE-49]
SASI/ATM/006	<b>Runway Incursion Prevention – Ground Operation – Ground General Aviation</b> [SE-50]
SASI/ATM/007	<b>Runway Incursion Prevention – Ground Operation – Best Practices - Towing, vehicle Movement</b> [SE-51]
SASI/ATM/008	<b>Runway Incursion Prevention – Ground Operation – Best Practices - Vertical Movement of Aircraft</b> [SE-52]
SASI/ATM/009	<b>Runway Incursion – SOPs for Controllers Situational Awareness</b> [SE-55]
SASI/ATM/010	<b>Runway Incursion – Controllers Shared Responsibility</b> [SE-59]
SASI/ATM/011	<b>Midair – Airspace Design</b> [SE-159]
SASI/ATM/012	<b>Midair – Advanced Navigation</b> [SE-162]

SASI NDEX AEM	SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI] AIRCRAFT ENGINEERING & MAINTENANCE (AEM)
SASI/AEM/001	<b>Policy &amp; Procedures – Work Cards / Shift Change / Responsibilities / Manuals</b> [SE-169]
SASI/AEM/002	<b>Aircraft Design – OEM Continuous Monitoring of Service History</b> [SE-170]
SASI/AEM/003	<b>Gap Analysis of Existing Airplane Maintenance Process &amp; Follow on Action Plan</b> [SE-172]
SASI/AEM/004	<b>Policy &amp; Procedures – Flight Critical Configurations Changes Made During Maintenance</b> [SE-175]
SASI/AEM/005	<b>Aircraft Design –Advanced Circuit Protection</b> [SE-101]
SASI/AEM/006	<b>Icing - Aircraft Design - Avionics</b> [SE-134]

SASI NDEX GEN	SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI] GENERAL
SASI/GEN/001	<b>Minutes of NASTs</b> - To be provided to COSCAP-SA
SASI/GEN/002	<b>COSCAP-SA Generated Audit Checklist (Revised)</b> – To be customized and References to be Updated by Regulators and Operators
SASI/GEN/003	<b>Sub-Meetings on SARAST</b> – To be Conducted in States During TA Missions by COSCAP-SA Officials Participated by Officials from Regulators and Operators.







# **COSCAP – South Asia**





## STATUS OF IMPLEMENTATION ON CONCLUSIONS/RECOMMENDATIONS OF 7<sup>th</sup> SARAST MEETING

### OPERATIONS ISSUES

#### 1. SASI/OPS/OOI : Terrain Avoidance Warning System (TAWS) [SE-1 CFIT / AP 1.01]

- 1.2 PC COSCAP-SA to contact Honeywell and seek their guidance on the possibility of modification to software to reduce the instances of false warnings for VFR aircraft operating in Nepal at low level.

#### **Feedback :**

In progress

Honeywell have been contacted, so far no response. The case is being pursued. Further action would be taken once feedback is received from Honeywell.

#### 2. SASI/OPS/OO2 : Standard Operating Procedures (SOP) [SE - 2 CFIT/ AP 1.06]

ACTION COMPLETED.

#### 3. SASI/OPS/OO3 : PRECISION-LIKE APPROACH IMPLEMENTATION (“21<sup>st</sup> Century Instrument Approaches”)(Vertical Angles – PAI 1-7, 11) [SE-3 CFIT/ AP 1.03]

- 3.1 ICAO Performance Based Navigation (PBN) Manager to coordinate PBN implementation with SARAST and APANPIRG to ensure there is no duplication of effort and that implementation is fully compliant with ICAO Global Plan (GPI-5) and uses the guidance provided in the ICAO PBN Manual (DOC9613 revised).

#### **Feedback :**

APANPIRG/18 Conclusion 18/52, provided for establishment of a Regional Performance Based Navigation Task Force (PBN/TF). This TF will provide the appropriate framework for ensuring coordination of efforts at the regional level with those at the sub-Regional and State level.

- 3.2 Efforts related to assisting States with the implementation of PBN to be in conformance with the APANPIRG/17 strategies related to PBN (See APANPIRG/17 Report, App C & D, Agenda item 2.2). SARAST focus to be on safety aspects such as elimination of the dive and drive technique in non- precision approaches through implementation of APV approaches (RNP and RNP AR approach), as well as implementation of RNAV departures and arrivals, in accordance with the PBN concept.

- 3.3 Regional Office Representatives highlighted that their focus is related to en-route aspects of PBN Implementation that require regional coordination, as opposed to approach and terminal operations.



3.4 ICAO is requested to prepare a Discussion Paper for presentation at APANPIRG Working Groups to assist coordination efforts related to PBN Implementation.

**Feedback:**

The ICAO Secretariat prepared papers on PBN for the APANPIRG ATM/AIS/SAR/SG/17 and the CNS/MET/SG/13 meeting. Out of those meetings a consolidated working paper on PBN was prepared by the Secretariat for consideration by the APANPIRG/18 meeting. The meeting reached the following conclusions:

- Conclusion 18/52 – Establishment of a Regional Performance Based Navigation Task Force (PBN/TF)
- Conclusion 18/53 – Development of State PBN Implementation Plans
- Conclusion 18/54 – Globally Harmonized SARPS and Guidance Material for PBN
- Conclusion 18/55 – Designation of Contact Person for PBN Implementation

The first meeting of the PBN TF will be 9-11 January 2008 at the ICAO Regional Office in Bangkok. The first job of the PBN TF will be to develop a Regional PBN Implementation Plan for APANPIRG/19. It is anticipated that the Regional Plan will focus, at least initially, primarily on en-route and terminal applications. One of the A36 resolution PBN goals is to implement APV Baro-VNAV approaches to all instrument runway ends by 2016. This is an important step in reduction of CFIT, therefore sub-Regional groups and the States should begin now with implementation of these approaches based on either the RNP APCH or RNP AR APCH navigation specification. State PBN implementation plans should be harmonized with the regional plan and should set priorities based on stakeholder input into the airspace concept, for development of approaches, as well as terminal and en-route applications.

3.5 ICAO is requested to develop a PBN Implementation Checklist and Project Implementation Plan Template that will enable Member States to follow a step-by-step process to assess requirements and implement PBN. Additionally this will provide ICAO a management tool to monitor the progress of implementation in the States and measure performance of the ICAO PBN programme.

**Feedback:**

The ICAO PBN Programme has developed a PBN implementation plan (PBN roadmap) template to provide the States guidance on what should be included in the State PBN Implementation Plan called for in Assembly Resolution A36-xx. An implementation checklist based on the PBN Manual, for use by the States. Additionally, as part of the checklist, the States are asked to fill out and return to ICAO a “PBN Approach and Terminal Implementation Status” Excel worksheet, to provide ICAO a means to track the current status of implementation in the terminal and approach areas. This worksheet should be completed as soon as possible to provide an initial status, then updated with ICAO as additional procedures are developed. These documents, along with examples of other States’ PBN implementation plans or roadmaps can be found at the “Documentation” link on [www.icao.int/pbn](http://www.icao.int/pbn).

3.6 Member States to identify the need to implement RNAV in terminal airspace and to develop APV approaches to all runway ends. A State PBN Project Implementation Plan to be developed using the tools provided by ICAO (see SE-3.5).



- 3.7 COSCAP-SA to provide support to Member States in the development and implementation of their PBN Project Implementation Plan.

**Feedback:**

COSCAP-SA received the following information and associated documents from ICAO in Mid September 2007. The information and documents so received were sent to all States on 21 September 2007 (reminder was sent on 06 October 2007) with a request to kindly take necessary action and provide feedback to COSCAP-SA :

- a. PBN APPROACH & TERMINAL IMPLEMENTATION STATUS
- b. PBN IMPLEMENTATION PLAN TEMPLATE, and
- c. PBN IMPLEMENTATION CHECKLIST

Further support from COSCAP will continue with corresponding support from ICAO.

- 3.8 Member States are strongly urged to participate in the PBN Workshops, tentatively scheduled for 3-7 September 2007 in India or 10-14 September 2007 in Bangkok, Thailand; and extend an invitation to appropriate air operator and service provider staff. An ICAO State Letter of invitation will be circulated in due time.

**Feedback:**

The Introduction to PBN Seminars was conducted in September 2007, with 120 participants at Bangkok and 120 participants in New Delhi, many at both seminars were from COSCAP-SA States. Air operators and service providers are also included in those numbers.

- 3.9 COSCAP-SA to provide PBN Pans-Ops procedure design training programme where required. DGAC France to be requested to provide this training to the COSCAP-SA programme.

**Feedback:**

A PBN Pans-Ops procedure design training course is tentatively set for the COACAP-SA States. This course will be held 3-13 June 2008 in Sri Lanka. Attendance is limited to 15 and the allocation of these training slots will be determined by the COSCAP-SA based on requirements as provided by the States as well as ability of the State to provide qualified candidates. Attendance at the course carries with it a commitment by the State to immediately begin developing and implementing APV/Baro-VNAV approaches and to proceed with implementing PBN in the terminal and en-route areas based on the State PBN implementation plan

- 3.10 COSCAP-SA to conduct a survey on the capabilities of Member States to develop PBN flight procedures (approaches, arrivals and departures).

**Feedback:**

In progress

- a. COSCAP-SA, having consulted the ICAO experts, reviewed the PBN Manual & the State Letter as well as the PANS OPS V-II, Part-1, Section-2, Chapter-4.7, developed a questionnaire for the States' responses in order to carryout such survey which was sent to States on 20 Sept 2007. Feedbacks have been received from a



number of States and COSCAP-SA has been waiting for further feedback from the remaining States.

**Further Feedback :**

**Latest information revealed that other than Pakistan no other State has any Flight Procedure Designer. However, the FPDs of Pakistan have also limited qualification as regard to the level of qualification required for the purpose.**

**Feedback from Pakistan :**

The Pakistan CAA has the capability of designing conventional, as well as, RNAV/GNSS procedures through a 02 Procedure Designers qualified from ENAC, Toulouse (France). RNAV approach from RWY 07 L JIAP Karachi has been developed and is under operational trail. However, the designers possess limited knowledge of AVP design criteria and do not have support of any Procedure Designing Software. By overcoming these limitations, PCAA would be able to establish the PBN Procedures for all of its airports before the date set by ICAO. The COSCAP-SA officials may visit Pakistan anytime to conduct the required survey.

3.11 ICAO is requested to provide information on flight procedure design software that may be available for APV approach development.

**Feedback:**

ICAO has provided COSCAP-SA a list of flight procedure design software providers as mentioned below. The list was sent to all the States on 20 September 2007. This list can also be found on the ICAO PBN web site, [www.icao.int/pbn](http://www.icao.int/pbn), under “Documentation.”

<b>PROVIDER</b>	<b>SOFTWARE</b>	<b>CONTACT</b>
AeroinSys (CGX)	GéoTITAN	chiesa@aeroinsys.com
Cadology	PD Tool Kit	dawson.bunn@cadology.com
ENAC	GéoTITAN	Corinne.bousquet@enac.fr
IDS	FPDAM	r.carmone@ids-spa.it
Infolution	PANS-OPS software	pprovost@infolution.ca
Strategic Airspace	PANS-OPS Designer	cathy.pakpoy@strategicairspace.com
WX Systems	WX Systems	nils@wx-systems.ch

**4 SASI/OPS/OO4 : AIRLINE PROACTIVE SAFETY PROGRAMS (FOQA & ASAP) [SE-10 CFIT / AP 1.08]**

4.1 States are requested to provide information to COSCAP-SA on the development status of FDA programmes in their State by 26 February, 2007.



## **Bangladesh :**

Ref. Rule 123 (1) (C) and (2) of CAR 1984, Bangladesh.  
Mandated through ANO (OPS) H-1.  
FDA guidance Manual has been distributed to all operators.  
Action pending with Biman.

## **Bhutan :**

COSCAP's AC related to FDA programme has been duly customized by DCA Bhutan and circulated to Druk Air and they fully established and FDA programme and its running smoothly. To that effect inspections on regular interval have been carried out and found satisfactory. Established by Airbus Industrie.

## **India :**

Total monitoring is in place for all Scheduled Operators by Flight Safety Department of the Operator. Our regulatory body, Air Safety Representative is a member of the monitoring group. Sample/ Random monitoring of General Aviation and Private Operators is in place.

## **Maldives :**

All operators advised on FDA Programme; no aircraft of the weight category in Maldivian Register up to date (June 2007)

## **Nepal :**

- a. Requirements on FOQA are in Nepalese Flight Operations Requirements Chapter 2 which was already mentioned in the Implementation Status forwarded on 18 Oct 2006.
- b. This requirement is applicable to Nepal Airlines and Cosmic Air and they had already established the facility. They are under process for the analysis of FDA. CAA Nepal seeking help from COSCAP-SA for the monitoring of Operator's FDA program.

## **Pakistan :**

Pakistan has made the required Legislation. All the Operators have been educated on the subject and are in the process of establishing their FDA Programme. It is likely that all the Operators will have their FDA Programme established by 31 October 2007.

## **Sri Lanka :**

As per the Annex 6 ,Part 1, operators in Sri Lanka with MTOW in excess of 27 000 kg have established and maintained FDA Programme as part of its Accident Prevention and Flight Safety Programme. CAASL has issued an ASN on that on 19.05.2005. (ASN No. 073).

Recently certified operator, Mihin Lanka doesn't have a FDA Programme.

## **5 SASI/OPS/OO5 : IMPLEMENTATION PLAN FOR TRAINING – CRM [SE-11 CFIT/ AP 1.05]**

ACTION COMPLETED.



## 6. SASI/OPS/OO6 : Training CFIT Prevention [SE-12/AP 1.04 CFIT]

6.1 COSCAP-SA to request Flight Safety Foundation to provide ALAR Workshop in Bangladesh.

### **Feedback by COSCAP-SA :**

The date for the ALAR Workshop has been finalized on 05 December 2007 in Dhaka at the auditorium of Bangladesh Airlines Training Centre, Kurmitola, Dhaka, Bangladesh. Mr Jim Burin with his team from Flight Safety Foundation will conduct the workshop.

All States have been duly invited by COSCAP-SA on 18 October 2007 to attend the workshop.

## 7. SASI/OPS/OO7 : ALAR- Policies for ALAR (Safety Culture- CEOs and DOS More Visible) [SE-14/AP 2.05]

ACTION COMPLETED.

## 8. SASI/OPS/OO8 : ALAR- Policies for ALAR (Safety Culture–Safety Information in Manuals) [SE-15/AP2.05]

ACTION COMPLETED.

## 9. SASI/OPS/OO9 : ALAR – Policies for ALAR (Safety Culture – AFM Database for Inspectors) [SE -16 / AP 2.05]

ACTION COMPLETED.

## 10. SASI/OPS/O10 : Approach and Landing Accident Reduction (Flight Crew Training) [SE-23 / AP 2.01]

ACTION COMPLETED.

## 11. SASI/OPS/O11 : Loss of Control (SOPs) [SE-26 / AP 3.03]

ACTION COMPLETED.

## 12. SASI/OPS/O12: Loss of Control (Risk Assessments and Management) [SE-27 / AP 3.01]

12.1 Member States to provide feedback to COSCAP-SA concerning the ‘Role of Analytical Tools in Airline Flight Safety Management Systems’; ‘Guide to Methods and Tools for Airline Flight Safety Analysis’; and ‘Survey on Analytical Processes and Requirements’ published under the GAIN programme by 15 March 2007 (Note: The GAIN documents provided by FAA were sent to all States through e mail. An electronic copy of the GAIN documents has also been included in the 7<sup>th</sup> SARAST Meeting CD provided to all participants).

### **Bangladesh :**

The GAIN CD received from COSCAP has been distributed to all major operators of Bangladesh. Operators have been advised to take necessary action on the instructions contained in the documents.





## **Bhutan :**

GAIN materials now received through Regional Flt Ops Expert COSCAP and the material will now be copied to the airline and will advise COSCAP as soon as we get the feedback from the operator.

## **India :**

The contents of the GAIN CD have been received from RFOE and very soon, we will distribute to the concerned departments of the operators.

## **Maldives :**

All operators provided with GAIN CD. SMS Regulations are in place (Part 21 of CAR). Implementation in phases and will be completed by 31 December 2008 for all AOC holders.

## **Nepal :**

Most of the operators had already established Flight Safety Department and submitted Flight Safety and Accident Prevention Manual. In addition, forwarded a copy of Operator's Flight Safety Handbook (Issued on 1 June 2000- GAIN-ICAO) to all the concerned operators.

## **Pakistan :**

Pakistan obtained the GAIN FS Hand Book CD from RFOE, COSCAP-SA during his visit to Pakistan and has issued a copy each to all the Operators and all Operators have confirmed having taken required actions and amendments.

## **Sri Lanka :**

CAASL has sent all the details of the above matters included in to CDs to all operators for implementation.

13. **SASI/OPS/O13 : Loss of Control - Policies and Procedures (Process to Inform Personnel / Flight crew) [SE-28 / AP 3.05]**

ACTION COMPLETED.

14. **SASI/OPS/O14 : Loss of Control – Policies and Procedures (Process to Enhance Pilot Proficiency) [E- 29 / AP 3.05]**

ACTION COMPLETED.

15. **SASI/OPS/O15 : Loss of Control Training (Human Factors and Automation) [E-30 / AP 3.02]**

15.1 Additional information is awaited from CAST / FAA. SE-30 is to be discussed by SARAST when additional information is available from CAST.



## Feedback :

Awaiting

16 **SASI/OPS/O16 : Loss of Control Training - Advance Maneuver (Implement Ground and Flight Training [E-31 /AP 3.01]**

ACTION COMPLETED.

17. **SASI/OPS/O17 : Runway Incursion – Pilot Training [SE-60]**

17.1 States are requested to review the material provided on a CD to all participants at the 7<sup>th</sup> SARAST Meeting and utilize the material with the pilot training programme – confirmation to be provided to COSCAP-SA by 30 April 2007.

### **Bangladesh :**

- a. Only one operator (Biman Bangladesh Airlines) has been provide with CDs and instructed to review the CD material with the pilot training programme for best utilization to the operator.
- b. Advisory Circular COSCAP-SA AC-017, GROUND VEHICLE OPERATIONS AT AERODROMES duly customized by CAAB and is in the process of distribution to all concerned.
- c. Action on the rest of the operators is in progress.

[COSCAP-SA AC 015 & 016 adopted/adapted and distributed to all operators.

All operators have been advised to develop appropriate crew training procedure to prevent runway incursion with emphasis on CRM and prioritization in a multi-tasking environment].

### **Bhutan :**

COSCAP is kindly requested to send the CD as we couldn't attend the 7<sup>th</sup> SARAST Meeting. Will take necessary action on receipt of the CD.

### **India :**

CD is sought. Will be distributed for pilots through the operators

### **Maldives :**

All operators advised through MAST meetings to utilize the information in training.

### **Nepal :**

Forwarded a copy of CD (Runway Incursion-Pilot Training) to all the concerned operators.

### **Pakistan :**

The ATM member who attended the 7<sup>th</sup> SARAST meeting unfortunately misplaced the concerned CD and is not available in Karachi. COSCAP-SA is kindly requested to provide the CD to Pakistan at the earliest for our action at CAA Pakistan.



## **Sri Lanka**

Sri Lanka REVIEW ON SOPS TO BE DEVELOPED WHEN COMPLEX TAXIWAYS AVAILABLE. Pilot training OPS Issue.

CAASL has sent all the information included in to CDs to all operators for implementation.

## **18. SASI/OPS/O18 : Cabin Injury Reduction During Turbulence [E-78]**

18.1 States to provide feedback to COSCAP-SA by 28<sup>th</sup> February 2007 on the implementation of the Advisory Circular 018 on 'Preventing Injuries Caused by Turbulence'.

### **Bangladesh :**

COSCAP-SA AC 018 has been adopted/adapted and distributed to all operators for appropriate action.

### **Bhutan :**

A/c has been customized and circulated and inspection carried out and their relevant manuals do comply with the circular.

### **India :**

Received AC-018 from RFOE and same to be distributed

### **Maldives :**

Advisory Circular 018 distributed to all operators and advised to incorporate in the crew training.

### **Nepal :**

CAAN had already forwarded AC-018 Preventing Injuries Caused by Turbulence to all the operators on 8 December 2006. So far there is no comment from the operator side so far.

### **Pakistan :**

Pakistan has straightway circulated the Advisory Circular 018 on the subject of preventing injuries caused by turbulence. All the operators were asked to include the relevant portion to their aircrew training programme and in their Operations Manuals. We have received confirmation from all the Operators having complied with the AC 018.

## **Sri Lanka**

CAASL has already been practicing the contents in the AC 018. All Operators have included the necessary information/ guidance in their SEP Manuals.

## **19. SASI/OPS/O19 : Map Shift Detection/Prevention, GPS Installation and TAWS Enhancements [E-120]**



- 19.1 COSCAP-SA to develop an Advisory Circular (AC) to highlight the difficulties related to reduced capabilities of TAWS equipment where position accuracy is not adequate. The AC to encourage the modification of TAWS equipment to include GPS input or the development of SOPs to deal with Map shifts. In addition emphasis to be provided to ensure that data bases are maintained current.
- 19.2 FAA is requested to provide background information on Map Shift Detection / Prevention that COSCAP-SA could utilize to develop the Advisory Circular noted in 18.1. Target date 31 March 2007

**Feedback :**

In progress : ICAO Regional Office and CTA NARAST are working on the issue in collaboration with FAA. Waiting for feedback.

**20. SASI/OPS/O20 : Cargo – Cargo Loading Training and SOPs [SE-121]**

- 20.1 To be adopted for implementation by SARAST but awaiting additional information from FAA/ CAST.

**Feedback :**

FAA/CAST has been contacted and feedback will be given during the 8<sup>th</sup> SARAST meeting.

**21. SASI/OPS/O21 : Dangerous Goods Processing [SE-125]**

- 21.1 To be adopted for implementation by SARAST but awaiting additional information from FAA/ CAST.
- 21.2 COSCAP-SA to gather additional information related to the ICAO Dangerous Goods Processing.

**Feedback :**

FAA/CAST has been contacted and feedback will be given soon. Awaiting feedback

**22. SASI/OPS/O22 : Cargo – Fire Containment [SE-127]**

- 22.1 Output 4 of the CAST DIP to be adopted for review by SARAST but awaiting additional information from FAA/ CAST.

**Feedback :**

FAA/CAST has been contacted and feedback will be given during the 8<sup>th</sup> SARAST meeting.

**23. SASI/OPS/O23 : Regulation and Policy – Compliance, Enforcement and Restricted Operations [SE-129]**



23.1 COSCAP-SA to review the COSCAP-SA Generic Enforcement Manual and determine what amendments may be required to address the issues outlined in the Detailed Implementation Plan. The review is to also consider the ICAO SMS enforcement considerations.

**Feedback :**

Discussion on the issue is necessary from States' point of view. NARAST and SEARAST are to be consulted. Action pending.

**24. SASI/OPS/O24 : Regulation and Policy - Oversight [SE-130 Cargo]**

24.1 To be adopted for implementation by SARAST; and COSCAP-SA to gather additional information related to the subject matter and advise the next SARAST meeting.

**Feedback :**

Korean airlines will provide a presentation to us at NARAST. SA may be benefited... decision remains pending .....

**25. SASI/OPS/O25 : Cargo – Safety Culture [SE-131]**

25.1 To be adopted for implementation by SARAST; and COSCAP-SA to gather additional information related to the subject matter and advise the next SARAST meeting.

**Feedback :**

FAA views on this is being sought. NARAST is in touch with Dr Rooney for further information on Dangerous Goods and SARAST would obtain information accordingly. Co-ordination is underway.

**26. SASI/OPS/O26 : Icing - Turboprop Aircraft Ice Detection Systems [SE-133]**

26.1 To be adopted for review by SARAST but awaiting additional information from FAA CAST

**Feedback :**

FAA/CAST has been contacted and feedback will be given during the 8<sup>th</sup> SARAST meeting.

**27. SASI/OPS/O27 : Icing – Training – Engine Surge Recovery [SE-136]**

27.1 States to advise air operators to include Engine Failure Recognition and Response training material in their training programmes.

**Bangladesh :**

Icing-Training-Engine Surge recovery has been mandated, ref. CAAB/101/4-4/FSR/441 dated: 21-8-07. Training for all pilots engaged in air transport operations.



## **Bhutan :**

Bhutan has advised its operators and the operators fully compliant. That has been verified through the relevant documents and records of the operator.

## **India :**

All operators already have the above incorporated in their initial training/ recurrency training

## **Maldives :**

All operators advised through MAST meetings.

## **Nepal :**

CAAN forwarded a circular to the entire operator on 23 May 2007.

## **Pakistan :**

Pakistan has checked with all their Air Operators and has found that they have included Engine Failure Recognition and response training materials in their training programmes.

## **Sri Lanka**

All operators are practicing these procedures presently as per their Flight Crew Training Manuals.

## **28. SASI/OPS/O28 : Midair – See-and-Avoid [SE-163]**

281 To be adopted for implementation by SARAST but awaiting additional information from FAA/ CAST.

## **Feedback :**

FAA/CAST has been contacted and feedback received. SE-163 has been withdrawn from CAST.

## **29. ACAS Installation [SE-164 Midair]**

29.1 States to ensure compliance with ICAO requirements on the carriage of ACAS equipment on board the aircraft.

## **Bangladesh :**

All Bangladesh registered aircraft of Air Transport Category are Equipped with ACAS.

## **Bhutan :**

All the aircrafts are equipped with ACAS (TCAS II)



## **India :**

India is already compliant with ACAS requirements

## **Maldives :**

Regulations are in place (MAR C-09; 4<sup>th</sup> July 2004). All applicable aircraft fitted and inspected.

## **Nepal :**

Requirements on FOQA are in Nepalese Flight Operations Requirements Chapter 2.

## **Pakistan :**

Pakistan has incorporated the ICAO ACAS requirements into its Regulations and all the Operators are in compliance with the ICAO as well as the National Regulations on this subject

## **Sri Lanka**

The above requirements in Annex 6 Part 1, Chapter 6, CAASL has incorporated the requirement as ASN 053 on 05<sup>th</sup> January 2007. As now all aircraft has been equipped with TCAS/ACAS.

### **30. SASI/OPS/O30 : ACAS Policies and Procedures [SE-165 Midair]**

30.1 Based on the ICAO ACAS material (Pans-Ops, Pans-ATM, ACAS Manual etc.), COSCAP-SA to develop an Advisory Circular that highlights the ICAO requirements for compliance with ACAS RAs; training related to compliance with RAs; and the need for the use of Flight Training Devices.

#### **Feedback :**

COSCAP-SA has developed the Advisory Circular (AC-19) and has circulated to all States for customization and circulation to all operators and other concerned for fulfillment of the ICAO requirements for compliance with ACAS RAs; training related to compliance with RAs; and the need for the use of Flight Training Devices.

### **ATM ISSUES**

#### **1. SASI/ATM/O01 : CFIT – “Minimum Safe Altitude Warning”(MSAW) [SE 9 / AP 1.07]**

1.1 ACTION COMPLETED.

33.2 CAA Sri Lankan kindly offered to provide training to Maldives ATC when requested.

#### **Feedback :**



COSCAP-SA has reminded in writing both CAD Maldives and CAA Sri Lanka on 19 September 2007 to do the needful and waiting for further feedback. So far, no response received.

2. **SASI/ATM/O02 : ATC CFIT Training – CFIT Prevention [SE-13 / AP]**

2.1 ACTION COMPLETED subject to confirmation from Bangladesh.

**Bangladesh :**

ATSI guiding ATCOs on how to issue Safety alert/warning has already been issued ref. CAAB/A-A/ ATS/1601/ 230/1138 date 30-04-2007.

3. **SASI/ATM/003 : Runway Incursions – Air Traffic Control Training - Training Programme, Course curriculum & situational Awareness [SE-46]**

3.1 ACTION COMPLETED subject to receipt of NATPRO material from FAA

**Feedback :**

FAA was contacted on 24 September 2007 and feedback is expected during the 8<sup>th</sup> SARAST

4. **SASI/ATM/004 : Runway Incursions – Air Traffic Control Training – CRM Training [SE-47]**

4.1 ACTION COMPLETED subject to receipt of NATPRO material from FAA

**Feedback :**

FAA was contacted on 24 September 2007 and feedback is expected during the 8<sup>th</sup> SARAST

5. **SASI/ATM/005 : Runway Incursion Standard Operating Procedures – Runway Incursion Prevention [SE-49]**

**Feedback :**

Please refer to SASI/ATM/005-008 below :

6. **SASI/ATM/006 : Runway Incursion Prevention – Ground Operation – Ground General Aviation [SE-50]**

**Feedback :**

Please refer to SASI/ATM/005-008 below :

7. **SASI/ATM/007 : Runway Incursion Prevention – Ground Operation – Best Practices - Towing, vehicle Movement [SE-51]**





**Feedback :**

Please refer to SASI/ATM/005-008 below :

**8. SASI/ATM/008 : Runway Incursion Prevention – Ground Operation – Best Practices - Vertical Movement of Aircraft [SE-52]**

**Feedback :**

Please refer to SASI/ATM/005-008 below :

**SASI/ATM/005-008 : Runway Incursion Standard Operating Procedures – Runway Incursion Prevention [SE-49, 50, 51, 52]**

States to review the ICAO Runway Incursion Prevention Manual and develop a runway safety programme.

**Bangladesh :**

- a) COSCAP-SA ACs 015, 016 adopted/adapted and distributed to all operators.
- b) COSCAP-SA ACs 017 has been adopted/adapted. Implementation action pending with the Directorate of ATS/AERO.
- c) 10 CDs have been provided to Major operators.

**Bhutan :**

Paro Airport has only one runway and its being doubled up as the taxiway. SOPS under development by ATC section to avoid unwanted runway incursions.

**India :**

Instructions on Runway Incursion have been issued. Guidance for Runway Safety programme is being developed and in the final stage.

**Maldives :**

A Runway Incursion Data Base had been established for all airports in Maldives. Hazards are being identified and SOPs will be completed by end of the year (2007).

**Nepal :**

Awaiting feedback

**Pakistan :**

Procedure for prevention from runway incursion already exists and given in Manual of Air Traffic services Chapter # 5 Para 8.3 and 8.4 / Air Traffic instruction Chapter # 5 Para 5.9 strict procedures are also established to control the access and operation on air side. Furthermore, the layouts of airfields in Pakistan are such that no runway crossing is involved by



any operator except in case of runway blocked by any aircraft. That too for removal of aircraft only the existing procedures will be re-evaluated as and when required. The documents provided by COSCAP-SA have already been circulated to ATC units for further guidance of ATC controller.

## **Sri Lanka**

Sri Lanka reviewed. ATC instruction issued, to hold aircraft at holding point. Call for runway entry complex taxi ways, not existing for further development. Training plan into courses being prepared, as per ICAO manual. **Continued**

## **9. SASI/ATM/009 : Runway Incursion – SOPs for Controllers Situational Awareness [SE-55]**

### **Feedback :**

Please refer to SASI/ATM/009-010 below :

## **10. SASI/ATM/010 : Runway Incursion – Controllers Shared Responsibility [SE-59]**

### **Feedback :**

Please refer to SASI/ATM/009-010 below :

### **SASI/ATM/009-010 : Runway Incursion [SE-55,59]**

States that have yet to do so to take action on implementation by March 30 2007. (Note: Review the thirteen CDs distributed to all States after the 5<sup>th</sup> SARAST meeting and provide comments to COSCAP-SA).

### **Bangladesh :**

- a) Action on enhancing Situational Awareness in the control tower is under action with the Directorate of ATS/AERO.
- b) 13 CDs related to training issues is under study to develop training program for ATS personnel.

### **Bhutan :**

SOPS under development by ATS section.

### **India :**

Instruction for Runway Incursions has been issued. Guidance for Runway Safety programme is being developed and in the final stage. ICAO's Runway Safety Toolkit in CD Format has been distributed to ATM Service Provider.



## **Maldives :**

The CDs seem to have been misplaced and ATS requests a copy, if possible, for review. CAD requires a catalogue of the CDs as CAD has a number of CDs on the subject.

## **Nepal :**

Awaiting feedback

## **Pakistan :**

Procedure for prevention from runway incursion already exist and given in Manual of Air Traffic services Chapter # 5 Para 8.3 and 8.4 / Air Traffic instruction Chapter # 5 Para 5.9 strict procedures are also established to control the access and operation on air side. Furthermore, the layouts of airfields in Pakistan are such that no runway crossing is involved by any operator except in case of runway blocked by any aircraft. That too for removal of aircraft only the existing procedures will be re-evaluated as and when required. The documents provided by COSCAP-SA have already been circulated to ATC units for further guidance of ATC controller.

## **Sri Lanka**

Sri Lanka Reviewed 13 Cds. **ALL FAA Material.** Given To AASL AS GUIDANCE MATERIAL **CONTINUED- MATTER ATM OR OPS?**

### **11. SASI/ATM/011 : Midair – Airspace Design [SE-159]**

11.1 The Pakistani ATM Representative to SARAST to examine this matter in the context of South Asia and ICAO requirements to determine its applicability. Draft recommendations to be forwarded to COSCAP-SA by 30 July, 2007 for consideration by the 8<sup>th</sup> SARAST Meeting.

## **Pakistan :**

A working paper has been prepared and is attached along with this progress report.

### **12. SASI/ATM/012 : Midair – Advanced Navigation [SE-162]**

12.1 The Maldivian ATM Representative to SARAST to examine this matter in the context of South Asia and ICAO requirements to determine its applicability. Draft recommendations to be forwarded to COSCAP-SA by 30 July, 2007 for consideration by the 8<sup>th</sup> SARAST Meeting.

## **Feedback :**

COSCAP-SA issued letter to Maldives on 19 September 2007 and is waiting feedback; however feedback received that SE-162 has been withdrawn from CAST and sent to General Aviation Safety Group (JSC) for their action.



## AEM ISSUES (FOR REVIEW WHEN REQUIRED)

### 1. SASI/AEM/001 : Policy & Procedures – Work Cards / Shift Change / Responsibilities /Manuals [SE-169]

- 1.1 Subject to FAA completion of the review related to this SE, the three RASTs to discuss the feasibility of convening a special Maintenance RAST which could be held concurrent with a Maintenance Safety Seminar.

#### **Feedback :**

A Maintenance Seminar is being planned tentatively in the month of February 2008 in the ICAO Regional Office, Bangkok. Confirmation from FAA is expected to be announced during the 8<sup>th</sup> SARAST meeting.

- 1.2 Member States to provide feedback to COSCAP-SA on the subjects that they may wish to have included for presentation in the Maintenance Safety Seminar.

#### **Feedback :**

States will be informed by COSCAP-SA as and when the schedule of the Seminar will be finalized.

### 2. SASI/AEM/002 : Aircraft Design – OEM Continuous Monitoring of Service History [SE-170]

- 2.1 Not applicable for review during this forum.

### 3. SASI/AEM/003 : Gap Analysis of Existing Airplane Maintenance Process & Follow on Action Plan [SE-172]

- 3.1 Not applicable for review during this forum

### 4. SASI/AEM/004 : Policy & Procedures – Flight Critical Configurations Changes Made During Maintenance [SE-175]

- 4.1 Subject to FAA completion of the review related to this SE, the three RASTs to discuss the feasibility of convening a special Maintenance RAST which could be held concurrent with a Maintenance Safety Seminar.

#### **Feedback :**

States will be informed by COSCAP-SA as and when the schedule of the Seminar will be finalized



5. **SASI/AEM/005 : Advanced Circuit Protection [SE-101]**

5.1 Not applicable for review during this forum

6. **SASI/AEM/006 : Aircraft Design – Avionics [SE-134]**

6.1 Not applicable for review during this forum

***GENERAL FEEDBACK ON THE SASIs (SASI/AEM/001-004) ABOVE :***

All these maintenance related SEs (169, 170, 172 and 175) are already being addressed in some maintenance document or other e.g.

SE169 and 175 are covered in Maintenance Human Factors and;  
SE170 and 172 are addressed at the MRB level and also it is the responsibility of typical Aircraft Evaluation Group of the State of Manufacturer.

However these could be further emphasized at the proposed seminar (please refer to SASI/AEM/001 feedback) where these can be addressed. Additional comments/ views by COSCAP-SA are as follows:

**SASI/AEM/001 : Policy & Procedures – Work Cards / Shift Change / Responsibilities / Manuals [SE169]**

To reduce the number of fatal accidents related to improper/incomplete maintenance, the airlines/ operators/ CAAs must ensure that:

1. work cards, if available, are used at the start of each task, with written and oral status reports at every shift change;
2. procedures are written to include clear responsibility and authority for work assignments;
3. relevant manuals (operations & maintenance) are complete, accurate, available and appropriately used.

**SASI/AEM/002 : Aircraft Design – OEM Continuous Monitoring of Service History [SE170]**

To reduce the number of fatal accidents due to improper maintenance and to ensure that systems continue to function as designed, OEMs should monitor service history to verify that design and procedural assumptions relating to the physical ability of maintenance personnel to perform and verify satisfactory completion of scheduled maintenance tasks are acceptable. Operators should develop processes to ensure adherence to OEM-recommended maintenance procedures, or a substantiated alternative, and to report maintenance tasks performance difficulties to OEMs.

**SASI/AEM/003 : Gap Analysis of Existing Airplane Maintenance Process & Follow on Action Plan [SE172]**

The purpose of this project is to identify and correct the gaps within and between the maintenance processes that could otherwise inhibit the intended design level of safety from being sustained throughout the airplane life.



The scope of this review may cover all aspects of maintenance from simple individual component to more complex systems, up to and including those systems covered by Certification Maintenance Requirement (CMR).

## SASI/AEM/004 : Policy & Procedures – Flight Critical Configurations Changes Made During Maintenance [SE175]

To prevent loss of pitot static system flight data, airlines/maintenance organizations should provide visible tags/flags whenever the pitot static system (pitot tubes and static ports) are covered during maintenance or servicing (e.g. washing). In addition, preflight walk-around procedures should include specific verification/ duplicate check to ensure that pitot static ports are uncovered.

### GENERAL ISSUES

#### 1. SASI/GEN/001 : Minutes of NASTs

1.1 States to provide COSCAP-SA with minutes from their NAST meetings on a regular basis.

##### **Bangladesh :**

Bangladesh has sent the Conclusions and Recommendations of its First Meeting on National Aviation Safety Team (NAST) conducted on 01 October 2007.

##### **Bhutan :**

Still as discussion level and will advise COSCAP on taking appropriate action

##### **India :**

DGCA India has yet to form NAST. Upon formation, COSCAP will be advised of the members of NAST.

##### **Maldives :**

CAD Maldives has provided the minutes of 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> meetings of MAST (COSCAP-SA included in the distribution list of the minutes of MAST meetings.)

##### **Nepal :**

a. NAST in Nepal was established on 29 Jan 2004. Again restructured and fully implemented on 20 Feb 2006.

b. Minutes of the NAST meeting:

1. Briefly discussed on SARAST Safety Implementation Plan and Advisory Circular with the airline operators.

2. Airline operators to response the action taken on SIP.



3. Discussed on system development on Kathmandu Ramp Area.  
Date: 9 May 2006
4. Committee was formed for the review on Incident of DO228 on 23 Oct 2005 at Lukla Airport. Date: 29 May 2006
5. Capt Ravi Kansakar delivered presentation on SARAST and NAST to all the participants.
6. A committee was formed for the evaluation and manual preparation of Helicopter High Altitude Performance, Helicopter High Altitude Training, SOP/CRM for Helicopter Operations.

A committee was formed for the amendment and preparation of SOP for the STOL field operation and generic CRM.

## **Pakistan :**

Pakistan has formed a NAST. Pakistan made its presentation on NAST to SARAST forum about the formation. Pakistan is expected to hold its 2<sup>nd</sup> NAST meeting in the month of October 2007.

## **Sri Lanka**

Sri Lanka. Only One formative Meeting held. No Minutes yet. Will provide.

Sri lanka ATTE training being prepared AASL ATM SARAST member doing this date yet to be notified.

## **2 SASI/GEN/002 : COSCAP-SA Generated Audit Checklist (Revised)**

- 2.1 States are requested to customize the COSCAP-SA generated Audit Checklist (Revised) and prepare the document for Operational Audits on the Operators by inserting the 'Reference Numbers' (wherever applicable) against each question. Reference Numbers are also to be inserted by each Operator in the same way.

## **3. SASI/GEN/003 : Sub-Meetings on SARAST**

- 3.1 At least two Sub-Meetings in one year on SARAST are to be conducted in each State during TA Missions by COSCAP-SA Official (OPS & ATM). The Meetings are to be participated by the respective Officials from Regulators and Operators.

## **4. SASI/GEN/004 : Date and Venue of next SARAST meeting**

- 4.1 Programme Coordinator to determine the date for the Eight SARAST Meeting after due coordination with COSCAP-NA and COSCAP-SEA.



- 4.2 Bangkok suggested as the venue for the SARAST meeting in consideration of the travel required by the external participants.

**Feedback :**

Date of Meeting : 19-20 November 2007

Venue : ICAO Regional Office, Bangkok

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## IMPLEMENTATION WORKSHEET SOUTH ASIA SAFETY ISSUES (SASIs)

SASI NDEX <b>OPS</b>	SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI] <b>OPERATIONS (OPS)</b>
SASI/OPS/001	<p><b>Terrain Avoidance Warning System (TAWS) [SE-1 CFIT / AP 1.01]</b></p> <p><i>Statement of Work: Controlled flight into terrain (CFIT)-accidents, where a properly functioning aircraft under the control of a fully qualified and certificated crew is flown into terrain with no apparent awareness on the part of crew, could be substantially reduced or eliminated with the installation of TAWS equipment. Manufacturers of turbine aircraft and air carriers operating turbine aircraft should install TAWS equipment on the air carrier fleet and establish procedures for its use.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• Issued AB and AC 001 on TAWS in December, 2002.</li> <li>• Issued IB 001 on STC in March, 2003.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/002	<p><b>Standard Operating Procedures (SOP) [SE-2 CFIT/ AP 1.06]</b></p> <p><i>Statement of Work: All operators should have standard operating procedures / training and manual. This manual should address all projected normal situations crews / company personnel will encounter. This manual will address: use of checklists, what each person’s responsibilities are, use of available equipment, and expected procedures to be used during preflight, taxi, take-off, climb, cruise, descent, approach, missed approach, landing, taxi and parking. Use of line crews to develop new procedures increase acceptance and understanding of these procedures. Standard operating procedures for any new equipment will be developed, published, and trained before any new equipment is used / installed. Operators will train proficiency in their SOP’s and crews will use published company SOP’s.</i></p>



## **COSCAP-SA INITIATIVES :**

- AB 002 and AC 002 on SOPs issued in December 2002.
- Revised AB 002A and AC 002A issued in November 2003.
- AC 006 on Stabilized Approach issued in July 2004.
- SARAST Recommendations Issued

## **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation / Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

**SASI/OPS/003**

**Precision-Like Approach Implementation** (“21<sup>st</sup> Century Instrument Approaches”) (Vertical Angles – PAI 1-7, 11) [SE-3 CFIT/ AP 1.03]

***Statement of Work:** The purpose of this plan is to identify the means by which all flight crews can fly an appropriate stabilized vertical path to the runway end, for all instrument approach procedures, thereby reducing the possibility of a controlled flight into terrain accident. The Plan will direct or encourage the aviation community to:*

*Identify criteria for the development of appropriate stabilized continuous descent approach procedures to the runway end for all instrument approaches and air carrier aircraft types,*

*Address any changes necessary to ensure adequate training and certification of flight crews,*

*Address any changes necessary for certification and authorization of aircraft and procedures,*

*Take advantage of existing aircraft capabilities to improve approach and landing safety to the maximum extent practical, and*

*Transition to use of new and evolving aircraft capabilities that can further improve approach and landing safety at the earliest practical time.*

## **COSCAP-SA INITIATIVES :**

- AB 002 and AC 002 on SOPs issued in December 2002.
- Revised AB 002A and AC 002A issued in November 2003.



- AC 006 on Stabilized Approach issued in July 2004.
- SARAST Recommendations Issued

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

**SASI/OPS/004****Airline Proactive Safety Programs (FOQA & ASAP) [SE-10 CFIT / AP 1.08]**

***Statement of Work:** Develop and implement a mutually agreed upon methodology to use de-identified Flight Operations and Quality Assurance (FOQA), and Aviation Safety Action Partnership (ASAP) information for the purpose of proactively identifying safety related issues and corrective actions. Key to the development and implementation of this project is to ensure that legislative, regulatory and contractual actions are taken which prevent misuse of information. Included in this development and implementation of proactive safety programs are the development of analytical tools which will enable the identification of system safety deficiencies and corrective actions.*

**COSCAP-SA INITIATIVES :**

- AB and AC 009 on FDA programme issued in July 2004.
- AC 010 on Flight Safety Documents System issued in July 2004.
- COSCAP-SA issued a generic manual on ‘FDA Programme’ in January 2006.
- SARAST Recommendations Issued

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**



<p><b>SASI/OPS/005</b></p>	<p><b>Implementation Plan For Training – CRM [SE-11 CFIT/ AP 1.05]</b></p> <p><i><u>Statement of Work:</u> CRM training, standard operating procedures (SOPs), situational awareness, and CFI prevention are closely linked. This project will reduce CFIT accidents by promoting comprehensive SOPs as a key element of every air carrier's CRM training program. Under a related project, a template for comprehensive SOPs is being developed, including SOPs.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• AB and AC 003 on CRM issued in December 2002.</li> <li>• Revised AB and AC 003A issued in October 2003.</li> <li>• AC 004 on Flight Deck / Cabin Crew Communication issued in December 2002.</li> <li>• AC 005 on LOFT and SPOT issued in December 2002.</li> <li>• AC 007 on Dispatcher /FOO Resource Management Training issued in February 2004.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. <b>Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation /Regulations)</b></li> <li>2. <b>Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)</b></li> <li>3. <b>Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators' documents / checklists &amp; references of regulatory inspections)</b></li> <li>4. <b>Other means of Compliance – (Specify detail wherever applicable)</b></li> </ol>
<p><b>SASI/OPS/006</b></p>	<p><b>Training CFIT Prevention [SE-12/AP 1.04 CFIT]</b></p> <p><i><u>Statement of Work:</u> Controlled Flight Into Terrain (CFIT) - accidents are the leading cause of commercial aviation equipment loss and fatalities, worldwide. CFIT accidents could be substantially reduced if all air carriers and training centers developed CFIT prevention training and procedures to be added to their approved training curriculums stressing position awareness and escape maneuvers in the event of a terrain warning indication.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• AC 013 on ALAR and CFIT Prevention training issued in December 2004. Example CFIT training programme issued.</li> <li>• ALAR CDs provided to States in sufficient quantity.</li> <li>• ALAR workshops conducted to some States.</li> </ul>



- COSCAP-SA arranged for FSF to conduct an ALAR Workshop in India in January 2006 and in Bangladesh in December 2007.
- SARAST Recommendations Issued

### **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

**SASI/OPS/007**

**Policies for ALAR (Safety Culture- CEOs & DOS More Visible) [SE-14/AP 2.05 ALAR]**

***Statement of Work:** The purpose of this project is to develop a strategy to promote a safety culture at each air carrier specifically targeting approach and landing accident reduction (ALAR). Ensure that essential safety information generated by an airplane manufacturer and by the regulatory authority is included in company operating manuals and in training programs for pilots and other appropriate employee groups. Teams within each air carrier would jointly develop manuals and training programs striving for the highest safety goals. The teams would further ensure that the content of those manuals would be rigorously followed in training programs and in day-to-day operations. It is recognized that rulemaking may be necessary to clarify existing requirements specifying the content and use of company operating manuals.*

### **COSCAP-SA INITIATIVES :**

- AC 008 on Safety Department issued in March 2004.
- Draft sample letter and related safety material also provided to States.
- IB 002A issued in May 2005.
- Revised IB 002B on Access to information on Aircraft Manufacturer’s website issued in April 2006.
- Information Bulletin issued.
- SARAST Recommendations Issued

### **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**



	<p>3. Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators' documents / checklists &amp; references of regulatory inspections)</i></p> <p>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></p>
<p>SASI/OPS/008</p>	<p><b>Policies for ALAR (Safety Culture – Safety Information in Manuals) [SE-15/ AP2.05 ALAR]</b></p> <p><i>Statement of Work: The purpose of this project is to develop a strategy to promote a safety culture at each air carrier specifically targeting approach and landing accident reduction (ALAR). Ensure that essential safety information generated by an airplane manufacturer and by the regulatory authority is included in company operating manuals and in training programs for pilots and other appropriate employee groups. Teams within each air carrier would jointly develop manuals and training programs striving for the highest safety goals. The teams would further ensure that the content of those manuals would be rigorously followed in training programs and in day-to-day operations. It is recognized that rulemaking may be necessary to clarify existing requirements specifying the content and use of company operating manuals.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• AC 008 on Safety Department issued in March 2004.</li> <li>• Draft sample letter and related safety material also provided to States.</li> <li>• IB 002A issued in May 2005.</li> <li>• Revised IB 002B on Access to information on Aircraft Manufacturer's website issued in April 2006.</li> <li>• Information Bulletin issued.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM <i>(Insert Name of State)</i> :</b></p> <p>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></p> <p>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></p> <p>3. Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators' documents / checklists &amp; references of regulatory inspections)</i></p> <p>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></p>
<p>SASI/OPS/009</p>	<p><b>Policies for ALAR (Safety Culture – AFM Database for Inspectors) [SE -16 / AP 2.05 ALAR]</b></p>



***Statement of Work:*** *The purpose of this project is to develop a strategy to promote a safety culture at each air carrier specifically targeting approach and landing accident reduction (ALAR). Ensure that essential safety information generated by an airplane manufacturer and by the regulatory authority is included in company operating manuals and in training programs for pilots and other appropriate employee groups. Teams within each air carrier would jointly develop manuals and training programs striving for the highest safety goals. The teams would further ensure that the content of those manuals would be rigorously followed in training programs and in day-to-day operations. It is recognized that rulemaking may be necessary to clarify existing requirements specifying the content and use of company operating manuals.*

**COSCAP-SA INITIATIVES :**

- AC 008 on Safety Department issued in March 2004.
- Draft sample letter and related safety material also provided to States.
- IB 002A issued in May 2005.
- Revised IB 002B on Access to information on Aircraft Manufacturer’s website issued in April 2006.
- Information Bulletin issued.
- SARAST Recommendations Issued

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation /Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents/ checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/OPS/010

**Approach & Landing Accident Reduction (Flight Crew Training) [SE-23/ AP 2.01]**

***Statement of Work:*** *Ensure that air operators implement syllabi that train and evaluate aircrews on stabilized approaches, unusual attitudes, and upset recoveries. Specific topics related to stabilized approaches should include: crew resource management, go around criteria, approaches with system malfunctions, non-normal conditions, emphasis on basic airmanship, approach briefings, approach and missed approach procedures.*

**COSCAP-SA INITIATIVES :**

- AB 013 on ALAR and CFIT Prevention Training issued in December 2004.
- SARAST Recommendations Issued



	<p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/011	<p><b>Loss of Control (SOPs) [SE-26 / AP 3.03]</b></p> <p><i><b>Statement of Work:</b> The purpose of this project is to ensure that all airline operators publish and enforce clear, concise, and accurate flight crew standard operating procedures (SOP). These procedures should include expected procedures during pre/post flight and all phases of flight i.e.: checklists, simulator training, PF/PNF duties, transfer of control, automation operation, rushed and/or unstabilized approaches, rejected landings and missed approaches, in-flight pilot icing reporting, and flight crew coordination. Operator instructors and check airman should ensure these SOP’s are trained and enforced in their aircrew proficiency and standardization programs.</i></p> <p><b>Safety Enhancement:</b></p> <p><i>The establishment, maintenance, and appropriate use of flight crew SOP’s in accordance with AC (Standard Operating Procedures for Flight Deck Crewmembers) will improve aviation safety.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• AC 002A reviewed. It covers all SOP subjects, including those that were not followed during loss of control accidents.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>5. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>6. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>7. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> </ol>





## 8. Other means of Compliance – (Specify detail wherever applicable)

SASI/OPS/012

**Loss of Control (Risk Assessments and Management) [SE-27 / AP 3.01]**

***Statement of Work:** The purpose of this project is to identify or develop and implement methods for operators, regulators, and manufacturers to prioritize safety related decisions. The project will improve methods of risk assessment for operational issues related to service bulletins, aircraft accident/incident analysis, flight critical safety information, and recurring intermittent failures related to dispatch.*

**Safety Enhancement:**

*Aviation safety will be improved through the use of risk assessment/management methods.*

**COSCAP-SA INITIATIVES :**

- The product that resulted from CAST SE-27 was a risk assessment manual published under the GAIN programme. A copy of the "Guide to Methods & Tools for Airline Flight Safety Analysis" ; the "Role of Analytical Tools in Airline Flight Safety Management Systems"; and "Survey of Analytical Processes and Requirements for Airline Flight Safety Management" provided by FAA were sent to all States through e mail.
- The THREE Documents were supposed to be reviewed in the 7th SARAST meeting.
- CAST / FAA have advised that work was still in progress and it is expected that action on SE 27 will be delayed.
- SARAST Recommendations Issued

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/Circulars)**
3. **Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators' documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/OPS/013

**Loss of Control - Policies and Procedures (Process to Inform Personnel / Flight crew) [SE-28 / AP 3.05]**

***Statement of Work:** The purpose of this project is to ensure that essential safety information and operational procedures generated by airplane manufacturers are included in companies' operating manuals, training programs for pilots and other appropriate employee groups, in*



*daily operations. Operators should also develop a means to improve the performance of those flight-crew members that meet the minimum criteria, but have shown a limited proficiency.*

### Safety Enhancement

*Aviation safety will be advanced by improving flight-crew and other operator employees' performance through timely identification and dissemination of essential safety information and procedures.*

#### **COSCAP-SA INITIATIVES :**

- AC 008 on Safety Department reviewed – no further action required.
- AC 010 on Flight Safety Documents System issued in July 2004 adequately addresses the aspects of timely dissemination of safety information.
- AB and AC 009 on FDA Programme issued in July 2004.
- AC on FDA addresses relevant issues highlighted by SE-29.
- SARAST Recommendations Issued

#### **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators' documents/ checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/OPS/014

**Loss of Control – Policies and Procedures (Process to Enhance Pilot Proficiency)**  
[SE- 29 / AP 3.05]

***Statement of Work:** The purpose of this project is to ensure that essential safety information and operational procedures generated by airplane manufacturers are included in companies' operating manuals, training programs for pilots and other appropriate employee groups, in daily operations. Operators should also develop a means to improve the performance of those flight-crew members that meet the minimum criteria, but have shown a limited proficiency.*

### Safety Enhancement:

*Aviation safety will be improved by ensuring carriers have a process to enhance pilot proficiency*

#### **COSCAP-SA INITIATIVES :**

- AC 008 on Safety Department reviewed – no further action required.
- AC 010 on Flight Safety Documents System issued in July 2004 adequately



	<p>addresses the aspects of timely dissemination of safety information.</p> <ul style="list-style-type: none"> <li>• AB and AC 009 on FDA Programme issued in July 2004.</li> <li>• AC on FDA addresses relevant issues highlighted by SE-29.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators' documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/015	<p><b>Loss of Control Training (Human Factors and Automation) [SE-30 / AP 3.02]</b></p> <p><i>Statement of Work: In order to reduce loss of control accidents, air operator training departments need to incorporate training that emphasizes flight crewmembers' situation awareness, crew coordination during multitasking, and the use of automation in conjunction with CRM. Flight crews should be trained to use the appropriate levels of automation. Emphasis should be placed on the knowledge of functional operation, capabilities and limitations of automation to ensure pilot control of the aircraft.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <p>No action yet.</p> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators' documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/016	<b>Loss of Control Training - Advance Maneuver (Implement Ground and Flight</b>



## Training [SE-31 / AP 3.01]

**Statement of Work:** *Advanced Maneuvers Training (AMT) refers to training to prevent and recover from hazardous flight conditions outside of the normal flight envelope such as, in flight upsets, stalls, ground proximity and wind shear escape maneuvers, and inappropriate energy state management conditions.*

*The purpose of this project is to collect and provide advanced maneuver training material and to encourage air operators to use these materials to implement advanced maneuver ground training and flight training using appropriate flight training equipment. Emphasis should be given to stall onset recognition and recovery, unusual attitudes, upset recoveries, effects of icing, energy awareness and management, and causal factors that can lead to loss of control.*

### **Safety Enhancement:**

*Pilots will be better trained to avoid and recover from excursions from normal flight and loss of control.*

### **COSCAP-SA INITIATIVES :**

- States had been provided with the Airplane Upset Recovery CD Revision 1 (August 2004).
- SARAST Recommendations Issued

### **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation / Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions / Circulars)**
3. **Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators' documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/OPS/017

## Runway Incursion – Pilot Training [SE-60]

### **Statement of Work:**

- *Develop policies, procedures, and implementation guidelines for Pilot Training programs to prevent runway incursions. The outcome of this work will be:*
- *Training and/or standardization programs emphasizing situational awareness, standard operating procedures, and pre-flight planning*
- *Emphasis on Cockpit Resource Management (CRM) and command leadership training skills to address the dynamic operating environment faced by pilots*
- *Guidance for prioritization in a multi-tasking environment to emphasize situational awareness, ground operations, and use of all resources.*



**Safety Enhancement:**

*Substantially reduce or eliminate the risk of Runway Incursions (RI) by the incorporation of RI training into flight crew qualification, approved training, and other pilot training programs. This training will increase the pilot's ability to recognize and avoid situations leading to runway incursions.*

**COSCAP-SA INITIATIVES :**

- AC 017 on Ground Vehicle Operations on Aerodromes issued in December 2006.
- SARAST Recommendations Issued

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators' documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/OPS/018

**Cabin Injury Reduction During Turbulence [SE-78]**

***Statement of Work:** Reduce turbulence injuries to cabin crew and passengers through improved situational awareness, turbulence encounter management procedures (before, during and after encounter), and enhanced communication methodologies standardized across all air carriers.*

**COSCAP-SA INITIATIVES :**

- AC 018 on Preventing Injuries Caused by Turbulence issued on 01 November 2006
- SARAST Recommendations Issued

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators' compliance is verified at the certification and continued**



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	<p>surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></p> <p>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></p>
<p>SASI/OPS/019</p>	<p><b>Map Shift Detection/Prevention, GPS Installation &amp; TAWS Enhancements [SE-120]</b></p> <p><i>Statement of Work: Controlled Flight Into Terrain (CFIT) - accidents, where a properly functioning aircraft under the control of a fully qualified and certificated crew is flown into terrain with no apparent awareness on the part of crew, could be substantially reduced or eliminated with the installation of GPS equipment and procedures for operating into areas with limited navigation aids. GPS is critical to achieving the full potential of SE-1 (TAWS) in a limited ground navigation aid environment. This SE ensures that the maximal risk reduction for SE-6, SE-7 and SE-8 is achieved. Incorporation of ADS-B requires GPS equipped airplanes and may offset total cost. Additionally, revisions to TAWS terrain databases, alerting algorithms, and optional features should be incorporated into the TAWS equipment to ensure the accuracy and timeliness of the TAWS warnings and displays.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• FAA is requested to provide background information on Map Shift Detection / Prevention that COSCAP-SA could utilize to develop the Advisory Circular . Target date 31 March 2007</li> <li>• <b><u>ACTION PENDING FURTHER INPUT FROM CAST</u></b></li> </ul> <p><b>FEEDBACK FROM <i>(Insert Name of State)</i> :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation /Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
<p>SASI/OPS/020</p>	<p><b>Cargo – Cargo Loading Training and SOPs [SE-121]</b></p> <p><i>Statement of Work: The purpose of this enhancement is to reduce cargo-related accidents and incidents by publishing and enforcing clear, concise and accurate standard operating procedures, and training the rationale behind those procedures; ensuring company training programs are approved and monitored; and ensuring adequacy of contractor training.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p>



- Feedback from FAA/CAST received in October 2007, under review for adoption.

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

**SASI/OPS/021****Dangerous Goods Processing [SE-125]**

Statement of Work: *To reduce the occurrence of Dangerous Goods-related accidents and incidents and to prevent undeclared Dangerous Goods from entering the shipping system, a multi-tier system should be developed and implemented by regulators, manufacturers (of packaging material) and shipping companies (air and ground) to identify and safely process undeclared hazardous material. This system should include: (1) education, (2) identification, (3) inspection, and (4) regulation and oversight.*

Education: *Shipping companies should ensure their education program teaches their employees and customers how to recognize hazardous material and the consequences of shipping undeclared hazardous material.*

Identification: *Shipping companies should develop a system to explicitly query customers as to the nature of the material being shipped and should develop and implement packaging that is easier to inspect after sealing.*

Inspection: *Shipping companies should develop and implement a program to search packages.*

Regulation and Oversight: *Regulators and shipping companies should coordinate industry-wide implementation of electronic tracking of hazardous materials.*

*Regulators should increase oversight inspections to detect and prosecute shippers and customers who fail to identify hazardous material.*

**COSCAP-SA INITIATIVES :**

- This will be considered by ICAO DG Panel , awaiting feedback.

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**



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	<ol style="list-style-type: none"> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents/ checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/022	<p><b>Cargo – Fire Containment [SE-127]</b></p> <p><u><i>Statement of Work:</i></u> <i>To reduce the occurrence of accidents and incidents from cargo fires, improved cargo containers should be developed to contain (or suppress) fires originating in shipped cargo. Standards for fire containment / should be developed, and containers standardized. New containers should be implemented whenever containers are replaced. Consideration should be given to using improved containers for as much cargo as is feasible.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• [Output 4 of the CAST DIP to be adopted for review by SARAST but awaiting additional information from FAA/ CAST.]</li> <li>• Awaiting feedback</li> </ul> <p><b>FEEDBACK FROM <i>(Insert Name of State)</i> :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation/ Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents/ checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/023	<p><b>Regulation and Policy – Compliance, Enforcement and Restricted Operations [SE-129]</b></p> <p><u><i>Statement of Work:</i></u> <i>To reduce the occurrence of accidents and incidents, regulators should improve their legal processes for compliance, enforcement and operational restrictions by allowing faster imposition of restrictions on operations to address significant safety concerns and promoting disclosure of safety concerns by enhancing legal protections for airline/operator employees, contractors, and their employees.</i></p>





	<p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• In progress (Discussion required)</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation/Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/024	<p><b>Cargo - Regulation and Policy - Oversight [SE-130]</b></p> <p><i>Statement of Work: To provide adequate oversight, regulators should develop/enhance and implement a system that ensures appropriate inspector coverage for all airlines, sub-contracting, and leasing operations and assign highly-experienced inspectors (appropriate for the operation) to operators that require the most comprehensive oversight.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• Korean airlines will provide a presentation to us at NARAST. SA will benefit out of that.</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation/Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/025	Cargo – Safety Culture [SE-131]



***Statement of Work:*** *The purpose of this enhancement is to reduce cargo-related accidents and incidents by encouraging a culture that enhances operational safety. A safety culture can be enhanced by a safety management system that includes: (1) development of an accident/incident cost analysis tool, (2) a self-audit process, (3) risk management programs, (4) revised standards for the Director of Safety (DOS), (5) development of incident reporting and quality assurance.*

**COSCAP-SA INITIATIVES :**

- Feedback from FAA/CAST received in October 2007, under review for adoption.

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/OPS/026

**Icing - Turboprop Aircraft Ice Detection Systems [SE-133]**

***Statement of Work:*** *To prevent fatal accidents caused by in-flight icing encounters, for all turboprop aircraft with non-evaporative ice protection systems and non-powered flight controls used in Part 121 operations, manufacturers should: (1) For new type designs, adapt and implement systems that automatically detect ice, measure the rate of ice accretion, and provide annunciation to the flightcrew, and (2) For current production aircraft and existing type designs, if feasible install systems that automatically detect ice, measure the rate of ice accretion and provide annunciation to the flightcrew.*

**COSCAP-SA INITIATIVES :**

- Feedback from FAA/CAST received in October 2007, under review for adoption.

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**



	<p>3. Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators' documents / checklists &amp; references of regulatory inspections)</i></p> <p>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></p>
SASI/OPS/027	<p><b>Icing – Training – Engine Surge Recovery [SE-136]</b></p> <p><i>Statement of Work: To prevent fatal accidents resulting from an engine surge caused by ice ingestion, airlines should provide adequate training for flight crews to ensure appropriate responses to this event. This training should include engine out identification, engine surge recovery procedures, and associated aircraft recovery in all the varying combinations. Key to this training is that it be accomplished prior to the pilot being assigned to the line or introduced to new equipment.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators' documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/028	<p><b>Midair – See-and-Avoid [SE-163]</b></p> <p><i>Statement of Work: The purpose of this enhancement is to prevent midair collisions by improving see-and-avoid capability.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• <b>Not applicable as the SE has been withdrawn from CAST in October 2007</b></li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> </ol>



	<ol style="list-style-type: none"> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents/ checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/029	<p>Midair – ACAS Installation [SE-164]</p> <p><u><i>Statement of Work:</i></u> <i>The purpose of this enhancement is to encourage worldwide installation of ACAS in all aircraft of 33,000 pounds or greater max takeoff weight.</i></p> <p><u><i>Note: ICAO Annex 6 requirement</i></u>  <i>6.18.2 From 1 January 2005, all turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg. or authorized to carry more than 19 passengers shall be equipped with an airborne collision avoidance system (ACAS II).</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <p><u>ICAO Annex 6 requirement</u></p> <ul style="list-style-type: none"> <li>• 6.18.2 From 1 January 2005, all turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg. or authorized to carry more than 19 passengers shall be equipped with an airborne collision avoidance system (ACAS II).</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM <i>(Insert Name of State)</i> :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation /Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents/ checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/OPS/030	<p>Midair – ACAS Policies and Procedures [SE-165]</p> <p><u><i>Statement of Work:</i></u> <i>The purpose of this enhancement is to prevent midair collisions by: requiring flightcrews to follow ACAS Resolution Advisories (RA’s) even in the presence of</i></p>



contravening ATC instructions; establishing procedures for ACAS range setting; and requiring that ACAS-capable simulators and flight-training devices are used for training ACAS responses and maneuvers.

Background:

One of the vagaries of the CAST accident database is that it does not contain transport category to transport category midair collisions such as the ones the team analyzed. Therefore, several highly-effective SE's did not score well against the CAST accident database. However, the mid-air sub-team strongly believed that the US airspace environment has a component of midair risk. Additionally, increasing airspace complexity, changes to the traffic mix, and growing traffic count may represent an area of heightened future risk. Therefore, this SE is recommended for incorporation into the CAST Safety Plan.

Annex 6, 2.1.31 Operations Manuals requires - "Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS)."

Annex 2 3.2.2, Right-of-way - The aircraft that has the right-of-way shall maintain its heading and speed, but nothing in these rules shall relieve the pilot-in-command of an aircraft from the responsibility of taking such action, including collision avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.

Note 1.— Operating procedures for use of ACAS are contained in PANS-OPS (Doc 8168), Volume I, Part VIII, Chapter 3.

Note 2.— Carriage requirements for ACAS equipment are addressed in Annex 6, Part I, Chapter 6.

PANS-ATM – provides instructions to ATC staff that responses to RA from ACAS take priority over all other instructions

PANS-OPS – includes instructions on the use of ACAS equipment as well as training guidelines for pilots (Attachment A to Part VIII)

ACAS Manual (Doc 9863) – provides details on ACAS technical and operational requirements.

## **COSCAP-SA INITIATIVES :**

- AC 019 developed and circulated to States in October 2007
- SARAST Recommendations Issued

## **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation /Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/ Circulars)**
3. **Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators' documents/ checklists & references of regulatory inspections)**



## 4. Other means of Compliance – (Specify detail wherever applicable)

<b>SASI NDEX</b> <b>ATM</b>	<b>SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI]</b> <b>AIR TRAFFIC MANAGEMENT (ATM)</b>
<b>SASI/ATM/001</b>	<p><b>CFIT – “Minimum Safe Altitude Warning”(MSAW) [SE 9 / AP 1.07]</b></p> <p><i><b>Statement of Work:</b> In an attempt to preclude CFIT Accidents, design an Implementation Plan to ensure that Ground-Based Radars, their features (Surveillance, MSAW, etc) are adequate and provide altitude protection in all Phases of Flight in and around as many Controlled Airports as practicable, especially Identified High Risk / Special Airports. Also ensure that Controller Training and guidance in the use of MSAW is adequate, current and uniformly conducted.</i></p> <p><i><b>Safety Enhancement:</b></i></p> <p><i>To improve aviation safety by:</i></p> <ol style="list-style-type: none"> <li><i>1. Ensuring that ground-based radars and their features provide the necessary levels of terrain avoidance protection to aircraft operations.</i></li> <li><i>2. Ensuring that Air Traffic Controller MSAW training is adequate and appropriate to operate and use MSAW systems.</i></li> </ol> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• MSAW Course conducted in Sri Lanka by FAA in February 2006.</li> <li>• Participants – 14 from three States.</li> <li>• COSCAP-SA has reminded in writing both CAD Maldives and CAA Sri Lanka on 19 September 2007 to do the needful and waiting for further feedback. So far, no response received.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li><b>1. Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation / Regulations)</b></li> <li><b>2. Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions / Circulars)</b></li> <li><b>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists</b></li> </ol>



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	<p>which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></p> <p>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></p>
SASI/ATM/002	<p><b>ATC CFIT Training – CFIT Prevention [SE-13 / AP]</b></p> <p><u>Statement of Work:</u> <i>Procedures should be in place and ATC staff properly trained to enable controllers to provide timely Safety Alerts, Minimum Safe Altitude Alerts, and Assisting Flight Crews with Situation Awareness.</i></p> <p><u>Safety Enhancement:</u></p> <p><i>To improve aviation safety by developing and/or reinforcing current safety alert procedures and good Air Traffic operating practices.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• AB 014 on Issuance of Safety Alert / Warning issued in December 2005.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/ATM/003	<p><b>Runway Incursions – Air Traffic Control Training - Training Programme, Course curriculum &amp; situational Awareness [SE-46]</b></p> <p><u>Statement of Work:</u> <i>The purpose of this project is to ensure thorough training of basic air traffic control skills, resource management skills, situational awareness, and teamwork, through the use of high-fidelity tower simulators, memory aids, On the Job Training (OJT), and Computer Based Instruction</i></p>



(CBI).

### Safety Enhancement (SE-46):

*Statement of Work: Aviation safety will be improved by controllers' exposure to updated training programs and course curriculums designed to improve the level of knowledge, skill and higher proficiency that supports and enhances system efficiency, increasing safety by fostering a higher level of situational awareness.*

### **COSCAP-SA INITIATIVES :**

- ATTE course was conducted in Sri Lanka by FAA in February 2006.
- Participants - 14 from 3 States.
- Memory Enhancement training material (NATPRO) awaited from FAA.
- FAA provided a CD on Memory Retention to all participants at the 6th SARAST meeting.

### **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation / Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions / Circulars)**
3. **Operators' compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators' documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/ATM/004

### **Runway Incursions – Air Traffic Control Training – CRM Training [SE-47]**

*Statement of Work: The purpose of this project is to ensure thorough training of basic air traffic control skills, resource management skills, situational awareness, and teamwork, through the use of high-fidelity tower simulators, memory aids, On the Job Training (OJT), and Computer Based Instruction (CBI).*

### Safety Enhancement (SE-47):

*Statement of Work: Aviation safety will be improved by increased teamwork in the tower cab environment. All tower controllers will receive a course similar to CRM for pilots: Air Traffic Teamwork Enhancement (ATTE).*

### **COSCAP-SA INITIATIVES :**





- NATPRO (National Air Traffic Controller Professionalism) has been a subject for discussion for over two years now. NATPRO is being used in the United States as a controller memory enhancement tool. It is a course taken on a computer after having received the initial training by an instructor. It is expected that FAA will release NATPRO to the COSCAPS for their use. Glen Michael is perusing and hopefully, COSCAP will get it soon.
- SE-47 deals with ATC CRM and in January of 2006, the FAA, with ICAO assistance, provided a three day ATTE (Air Traffic Teamwork Enhancement) course in two locations in the far east. This was a "train the trainer" course designed to train instructors then to train controllers in their respective countries.

### **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation / Regulations)**
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4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/ATM/005

### **Runway Incursion Standard Operating Procedures – Runway Incursion Prevention [SE-49]**

**Statement of Work:** *Many runway incursions and other surface incidents can be linked to a lack of standardized pilot procedures to ensure safe ground operations. Although most airlines have detailed procedures for airborne operations, relatively few airlines have standard procedures for operating in the increasingly complex surface environment. The purpose of this project is to reduce the risk of runway incursions and surface incidents by recommending that all operators establish, document, train to, and follow standard operating procedures (SOPs) for ground operations. These operators should train to proficiency on their SOPs and ensure their use. Recommendations for “best practices” for ground vehicle operations in the aircraft movement area should also be developed and incorporated into training programs. The implementation of Standard Operating Procedures for surface operations is one of the most powerful near-term interventions in mitigating the risk of runway incursions.*

**Statement of Work:** *Template for SOPs for ground operations for use by all operators in generating SOPs.*



## **COSCAP-SA INITIATIVES :**

- AC 015 on Flight Crew Procedures During Taxi Operations issued in December 2005.
- AC 016 on Single Pilot Procedures During Taxi Operations issued in December 2005.
- FAA provided a set of ten CDs which to assist States in addressing Runway Incursion issues. CDs sent to States.
- SARAST Recommendations Issued

## **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation / Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions / Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/ATM/006

## **Runway Incursion Prevention – Ground Operation – Ground General Aviation [SE-50]**

**Statement of Work:** *Many runway incursions and other surface incidents can be linked to a lack of standardized pilot procedures to ensure safe ground operations. Although most airlines have detailed procedures for airborne operations, relatively few airlines have standard procedures for operating in the increasingly complex surface environment. The purpose of this project is to reduce the risk of runway incursions and surface incidents by recommending that all operators establish, document, train to, and follow standard operating procedures (SOPs) for ground operations. These operators should train to proficiency on their SOPs and ensure their use. Recommendations for “best practices” for ground vehicle operations in the aircraft movement area should also be developed and incorporated into training programs. The implementation of Standard Operating Procedures for surface operations is one of the most powerful near-term interventions in mitigating the risk of runway incursions.*

**Statement of Work:** *The establishment and dissemination of recommended practices for general aviation (GA) ground operations will help to reduce the risk of runway incursions.*

## **COSCAP-SA INITIATIVES :**

- AC 015 on Flight Crew Procedures During Taxi Operations issued in December 2005.



- AC 016 on Single Pilot Procedures During Taxi Operations issued in December 2005.
- FAA provided a set of ten CDs which to assist States in addressing Runway Incursion issues. CDs sent to States.
- SARAST Recommendations Issued

### **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/Circulars)**
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4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/ATM/007

### **Runway Incursion Prevention – Ground Operation – Best Practices - Towing, vehicle Movement [SE-51]**

***Statement of Work:** Many runway incursions and other surface incidents can be linked to a lack of standardized pilot procedures to ensure safe ground operations. Although most airlines have detailed procedures for airborne operations, relatively few airlines have standard procedures for operating in the increasingly complex surface environment. The purpose of this project is to reduce the risk of runway incursions and surface incidents by recommending that all operators establish, document, train to, and follow standard operating procedures (SOPs) for ground operations. These operators should train to proficiency on their SOPs and ensure their use. Recommendations for “best practices” for ground vehicle operations in the aircraft movement area should also be developed and incorporated into training programs. The implementation of Standard Operating Procedures for surface operations is one of the most powerful near-term interventions in mitigating the risk of runway incursions.*

***Statement of Work:** The development and use of recommended “best practices”, for ground operations for use by mechanics and others who tow or otherwise move aircraft within the airport movement area, will improve aviation safety by reducing the frequency and severity of runway incursions.*

*Development of recommended best practices for vehicle operations in the aircraft movement area and use of these best practices in driver training will help prevent runway incursions/surface incidents.*

### **COSCAP-SA INITIATIVES :**



- AC 015 on Flight Crew Procedures During Taxi Operations issued in December 2005.
- AC 016 on Single Pilot Procedures During Taxi Operations issued in December 2005.
- FAA provided a set of ten CDs which to assist States in addressing Runway Incursion issues. CDs sent to States.
- SARAST Recommendations Issued

**FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation/Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions/Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents/checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/ATM/008

**Runway Incursion Prevention – Ground Operation – Best Practices - Vertical Movement of Aircraft [SE-52]**

Statement of Work: Many runway incursions and other surface incidents can be linked to a lack of standardized pilot procedures to ensure safe ground operations. Although most airlines have detailed procedures for airborne operations, relatively few airlines have standard procedures for operating in the increasingly complex surface environment. The purpose of this project is to reduce the risk of runway incursions and surface incidents by recommending that all operators establish, document, train to, and follow standard operating procedures (SOPs) for ground operations. These operators should train to proficiency on their SOPs and ensure their use. Recommendations for “best practices” for ground vehicle operations in the aircraft movement area should also be developed and incorporated into training programs. The implementation of Standard Operating Procedures for surface operations is one of the most powerful near-term interventions in mitigating the risk of runway incursions.

Statement of Work: The development and use of recommended “best practices”, for ground operations for use by mechanics and others who tow or otherwise move aircraft within the airport movement area, will improve aviation safety by reducing the frequency and severity of runway incursions.

*Development of recommended best practices for vehicle operations in the aircraft movement area and use of these best practices in driver training will help prevent runway incursions/surface incidents.*



## **COSCAP-SA INITIATIVES :**

- AC 015 on Flight Crew Procedures During Taxi Operations issued in December 2005.
- AC 016 on Single Pilot Procedures During Taxi Operations issued in December 2005.
- FAA provided a set of ten CDs which to assist States in addressing Runway Incursion issues. CDs sent to States.
- SARAST Recommendations Issued

## **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to Legislation / Regulations)**
2. **Directions/Circulars issued to the Industry for compliance – (Insert details with reference to Directions / Circulars)**
3. **Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – (Insert details with reference to Operators’ documents / checklists & references of regulatory inspections)**
4. **Other means of Compliance – (Specify detail wherever applicable)**

SASI/ATM/009

**Runway Incursion – SOPs for Controllers Situational Awareness [SE-55]**

*Statement of Work:* *To review and develop national Air Traffic Control Procedures that will require tower controllers to maintain a high level of situational awareness*

*Statement of Work:* *Runway incursions will be substantially reduced and aviation safety improved through the use of nationally standardized procedures that focus on situational awareness in the control tower.*

## **COSCAP-SA INITIATIVES :**

- GM 001 on Enhancing Situational Awareness in the Control Tower issued in December 2006.
- FAA provided a set of 13 CDs on ATM related issues –same provided to all States.
- SARAST Recommendations Issued

## **FEEDBACK FROM (Insert Name of State) :**

1. **Legislation/Regulations updated to give effect to the requirement - (Insert details with reference to**



	<p><i>Legislation / Regulations)</i></p> <ol style="list-style-type: none"> <li>2. <b>Directions/Circulars issued to the Industry for compliance –</b> <i>(Insert details with reference to Directions / Circulars)</i></li> <li>3. <b>Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement –</b> <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. <b>Other means of Compliance –</b> <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/ATM/010	<p><b>Runway Incursion – Controllers Shared Responsibility [SE-59]</b></p> <p><u><i>Statement of Work:</i></u> <i>To review and develop national Air Traffic Control Procedures that will require tower controllers to maintain a high level of situational awareness</i></p> <p><u><i>Statement of Work:</i></u> <i>Aviation safety will be improved by creating a shared responsibility to ensure clear understanding of specific control instructions through the use of mandatory read-backs of any clearance to enter a specific runway, hold short of a specific runway, or “taxi into position and hold” instructions. It is currently the sole responsibility of the controller to seek and receive acknowledgement for these instructions.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• GM 001 on Enhancing Situational Awareness in the Control Tower issued in December 2006.</li> <li>• FAA provided a set of 13 CDs on ATM related issues –same provided to all States.</li> <li>• SARAST Recommendations Issued</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. <b>Legislation/Regulations updated to give effect to the requirement -</b> <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. <b>Directions/Circulars issued to the Industry for compliance –</b> <i>(Insert details with reference to Directions / Circulars)</i></li> <li>3. <b>Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement –</b> <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. <b>Other means of Compliance –</b> <i>(Specify detail wherever</i></li> </ol>



	<i>applicable)</i>
SASI/ATM/011	<p>Midair – Airspace Design [SE-159]</p> <p><i>Statement of Work:</i> The purpose of this enhancement is to prevent midair collisions by: designing B/C/D airspace to be more easily identifiable; improving the usability of VFR charts; and ensuring adequate and timely coordination of airspace design changes with all airspace users.</p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• Pursued the matter and obtained a hard copy. Requested for an electronic copy.</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/ATM/012	<p>Midair – Advanced Navigation [SE-162]</p> <p><i>Statement of Work:</i> The purpose of this enhancement is to prevent midair collisions by facilitating aircraft separation for users of advanced navigation systems not receiving ATC separation services.</p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• <b>CAST :</b></li> <li>• <b>This SE has been removed from CAST in October 2007.</b></li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> </ol>



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	<ol style="list-style-type: none"> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li>   <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li>   <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
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SASI NDEX <b>AEM</b>	SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI] <b>AIRCRAFT ENGINEERING &amp; MAINTENANCE (AEM)</b>
SASI/AEM/001	<p>Policy &amp; Procedures – Work Cards / Shift Change / Responsibilities / Manuals [SE-169]</p> <p><i>Statement of Work:</i> To reduce the number of fatal accidents related to improper or incomplete maintenance, airlines, operators and regulators should ensure that: (1) work cards, if available, are used at the start of each task, with written and oral status reports at every shift change; (2) procedures are written to include clear responsibility and authority for work assignments; and (3) necessary manuals (operational &amp; maintenance) are complete, accurate, available and appropriately used. (225, 883, 884, 885 &amp; 886)</p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li>   <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li>   <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li>   <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/AEM/002	Aircraft Design – OEM Continuous Monitoring of Service History [SE-170]





**Statement of Work:** *To reduce the number of fatal accidents due to improper maintenance, and to ensure that systems continue to function as designed, OEMs should monitor service history to verify that design and procedural assumptions relating to the physical ability of maintenance personnel to perform and verify satisfactory completion of regularly scheduled maintenance tasks are acceptable. Operators should develop processes to ensure adherence to OEM-recommended maintenance procedures, or a substantiated alternative, and to report maintenance tasks performance difficulties to OEMs.*

**COSCAP-SA INITIATIVES :**

- N/A

**FEEDBACK FROM (Insert Name of State) :**

1. Legislation/Regulations updated to give effect to the requirement - *(Insert details with reference to Legislation / Regulations)*
2. Directions/Circulars issued to the Industry for compliance – *(Insert details with reference to Directions/ Circulars)*
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4. Other means of Compliance – *(Specify detail wherever applicable)*

SASI/AEM/003

**Gap Analysis of Existing Airplane Maintenance Process & Follow on Action Plan [SE-172]**

**Statement of Work:** *The purpose of this project is to identify and correct gaps within and between the maintenance processes that could otherwise inhibit the intended design level of safety from being sustained throughout the airplane life. The scope of this review will cover all aspects of maintenance from simple single component to more complex systems, up to and including those systems covered by Certification Maintenance Requirement (CMR).*

**COSCAP-SA INITIATIVES :**

- N/A

**FEEDBACK FROM (Insert Name of State) :**

1. Legislation/Regulations updated to give effect to the requirement - *(Insert details with reference to Legislation / Regulations)*
2. Directions/Circulars issued to the Industry for compliance – *(Insert details with reference to Directions/ Circulars)*
3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – *(Insert details with reference to Operators’*



	<p><i>documents / checklists &amp; references of regulatory inspections)</i></p> <p>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></p>
<p>SASI/AEM/004</p>	<p><b>Policy &amp; Procedures – Flight Critical Configurations Changes Made During Maintenance [SE-175]</b></p> <p><i><u>Statement of Work:</u> To prevent loss of pitot static system flight data, airlines / maintenance should provide visible tagging any time the pitot static system (pitot tubes and static ports) are covered during maintenance or servicing (e.g. washing). In addition, preflight walk-around procedures should include specific verification that pitot static ports are uncovered.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li> <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
<p>SASI/AEM/005</p>	<p><b>Aircraft Design –Advanced Circuit Protection [SE-101]</b></p> <p><i><u>Statement of Work:</u> Develop and install advanced circuit protection technology for use in com airplanes where appropriate in new type designs, current production, and retrofit. This work i research for product development, development of industry standards, qualification, a maintenance practices and certification. This work may require in-service evaluation of devel hardware and should include research and development of tools to isolate the location arc sou an arc fault breaker has tripped.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> </ol>



# COSCAP – South Asia



	<ol style="list-style-type: none"> <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li>   <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents/ checklists &amp; references of regulatory inspections)</i></li>   <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/AEM/006	<p><b>Icing - Aircraft Design - Avionics [SE-134]</b></p> <p><u><i>Statement of Work:</i></u> <i>To prevent fatal accidents and incidents by improving situational awareness during low visibility operations and flight in icing conditions, if feasible, avionic equipment manufacturers and aircraft manufacturers should develop and install smart pitch guidance systems on all aircraft not presently so equipped to prevent over rotation in conjunction with a low energy state or aerodynamic degradation due to the presence of ice on critical flight surfaces. The smart pitch avionics system should provide to the flight crew appropriate flight guidance information, the current aircraft energy state, and performance margins with respect to stall speed and maximum angle of attack for all icing conditions for which an aircraft has been certified.</i></p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>1. Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation/ Regulations)</i></li>   <li>2. Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions/ Circulars)</i></li>   <li>3. Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents/ checklists &amp; references of regulatory inspections)</i></li>   <li>4. Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>

SASI NDEX <b>GEN</b>	SOUTH ASIA SAFETY ISSUES - [SE/AP/RSI] <b>GENERAL (GEN)</b>
SASI/GEN/001	Minutes of NASTs - To be provided to COSCAP-SA <b>COSCAP-SA INITIATIVES :</b>



	<ul style="list-style-type: none"> <li>Initiated in 5<sup>th</sup> SARAST as decided by Steering Committee</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li> <li>Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/GEN/002	<p><b>COSCAP-SA Generated Audit Checklist (Revised)</b> – To be customized and References to be Updated by Regulators and Operators</p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>The Revised Audit Checklist was provided to States in June 2007</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p> <ol style="list-style-type: none"> <li>Legislation/Regulations updated to give effect to the requirement - <i>(Insert details with reference to Legislation / Regulations)</i></li> <li>Directions/Circulars issued to the Industry for compliance – <i>(Insert details with reference to Directions / Circulars)</i></li> <li>Operators’ compliance is verified at the certification and continued surveillance by applying appropriate checklists which is updated to include the requirement – <i>(Insert details with reference to Operators’ documents / checklists &amp; references of regulatory inspections)</i></li> <li>Other means of Compliance – <i>(Specify detail wherever applicable)</i></li> </ol>
SASI/GEN/003	<p><b>Sub-Meetings on SARAST</b> – To be Conducted in States During TA Missions by COSCAP-SA Officials Participated by Officials from Regulators and Operators.</p> <p><b>COSCAP-SA INITIATIVES :</b></p> <ul style="list-style-type: none"> <li>Mandated through 17<sup>th</sup> Steering Committee Meeting of COSCAO-SA</li> </ul> <p><b>FEEDBACK FROM (Insert Name of State) :</b></p>



## COSCAP – South Asia



1. **Legislation/Regulations updated to give effect to the requirement -**  
*(Insert details with reference to Legislation/Regulations)*
2. **Directions/Circulars issued to the Industry for compliance –**  
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*(Insert details with reference to Operators' documents/checklists & references of regulatory inspections)*
4. **Other means of Compliance –**  
*(Specify detail wherever applicable)*



## ADVISORY BULLETINS AND ADVISORY CIRCULARS COSCAP-SA

<b>AB/AC</b>	<b>No.</b>	<b>Issue Date</b>	<b>Subject</b>
AB	001	10 Dec 2002	Terrain Awareness Warning System (TAWS) – Information to States
AC	001	10 Dec 2002	Terrain Awareness Warning System – Guidance for Operators on Training Programmes
IB	001	15 Mar 2003	Information on Access to Information on Supplemental Type Certificates
AB	002	10 Dec 2002	Standard Operating Procedures – Information to States – <b>Superseded by AB 002A</b>
AB	002A	06 Oct 2003	Standard Operating Procedures – Information to States
AC	002	10 Dec 2002	Standard Operating Procedures - <b>Superseded by AC 002A</b>
AC	002A	06 Oct 2003	Standard Operating Procedures for Flight-deck Crew Members
AB	003	10 Dec 2002	Crew Resource Management Training – Information to States <b>Superseded by AB 003A</b>
AB	003A	08 Oct 2003	Crew Resource Management Training
AC	003	10 Dec 2002	Crew Resource Management Training – <b>Superseded by AC 003A</b>
AC	003A	08 Oct 2003	Crew Resource Management Training
AC	004	10 Dec 2002	Communication and Coordination Between Flight-deck Crew Members and Cabin Crew
AC	005	10 Dec 2002	Line Operational Simulations – LOFT and SPOT
AB	006	05 Jul 2004	Standard Operating Procedures for Flight-deck Crew Members (Stabilized Approach)
AC	007	26 Feb 2004	Dispatcher / Flight Operations Officer Resource Management Training
AC	008	01 Mar 2004	Development of Safety Department
AB	009	05 Jul 2004	Flight Data Analysis Programme
AC	009	05 Jul 2004	Flight Data Analysis Programme
AC	010	05 Jul 2004	Flight Safety Documentation System
AC	011	18 Oct 2004	Information to Operators on RNAV(GNSS) Non-Precision Approach Procedures Based on GPS
AC	012	10 Nov 2004	Guidance for Operators for Conducting Constant Descent Final Approach (CDFA) for Non-Precision Approaches
AB	013	15 Dec 2004	ALAR and CFIT Prevention Training
IB	002	10 May 2005	Access to Information on Airplane Manufacturer's Website - <b>Superseded by IB 002A</b>



## COSCAP – South Asia



IB	002A	30 May 2005	Access to Information on Aircraft manufacturer's Website
GM	001	26 Dec 2005	Enhancing Situational Awareness in the Control Tower
AB	014	26 Dec 2005	Issuance of Safety Alert / Warning
AC	015	26 Dec 2005	Flight Crew Procedures During Taxi Operations
AC	016	26 Dec 2005	Single-Pilot Procedures During Taxi Operations
AC	017	02 Jan 2006	Ground Vehicle Operations at Aerodromes
AC	018	01 Nov 2006	Preventing Injuries caused by Turbulence
AC (Draft)	019	31 Oct 2007	Reduced Effectiveness of TAWS/EGPWS Equipment
AC (Draft)	020	31 Oct 2007	Operational Procedures and Training Requirements of Airborne Collision Avoidance System (ACAS) Equipment
			AB - Advisory Bulletin
			AC - Advisory Circular
			IB - Information Bulletin
			GM - Guidance Material



# **COSCAP – South Asia**







## CAST SAFETY ENHANCEMENTS FINALIZED

### **SUMMARY OF CAST SAFETY ENHANCEMENTS FOR REVIEW BY SARAST**

The following is a summary of the new Safety Enhancements that are under review by the FAA/CAST. SARAST will review these Safety Enhancements and determine their applicability in the South Asia Sub Region. If applicable, then these safety enhancements will be placed in the Implementation plan for further review and action as appropriate.

## **CARGO**

### **Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 121 Cargo – Cargo Loading Training and SOPs**

#### **Statement of Work:**

The purpose of this enhancement is to reduce cargo-related accidents and incidents by publishing and enforcing clear, concise and accurate standard operating procedures, and training the rationale behind those procedures; ensuring company training programs are approved and monitored; and ensuring adequacy of contractor training.

#### **Safety Enhancement:**

Safety Enhancement 121 Cargo – Cargo Loading Training and SOPs

Reduce cargo-related accidents and incidents by publishing and enforcing clear, concise and accurate standard operating procedures, and training the rationale behind those procedures; ensuring company training programs are approved and monitored; and ensuring adequacy of contractor training.



## **Output 1:**

Airline/operators conduct/improve the surveillance of contractor cargo-loading training.

### **Actions:**

Airline/Operators ensure audit/surveillance (e.g., Internal Evaluation Program, AC120-59A) of cargo loading programs is being conducted with emphasis on contracted work. Improve audit/surveillance programs as necessary.

## **Output 2:**

Develop best practices for cargo loading that include at least: loading, securing and distribution of cargo; loading checklists; assignment of crewmember responsibility for inspecting and signing off on the cargo load.

### **Actions:**

ATA in coordination with above groups survey and develop recommended best practices.

## **Output 3:**

Regulators develop guidance material, based on best practices from Output 2, for cargo loading and training programs and ensure that company cargo loading and training programs (including contractors) are approved/accepted and monitored.

### **Actions:**

AFS-300, using products developed from Output 2, publish/sponsor appropriate guidance material including guidance related to approving/accepting and monitoring training.

## **Output 4:**

Airlines/operators should incorporate these best practices into their standard operating procedures, and train those procedures, including emphasis of the rationale behind those procedures.

### **Actions:**

Airline/Operators develop and obtain approval/acceptance of SOPs that adopt best practices. Airline/Operators train SOPs including emphasis of the rationale behind those procedures.

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## CARGO

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 125R1 Hazardous Materials – HazMat Processing

#### **Statement of Work:**

To reduce the occurrence of hazmat-related accidents and incidents and to prevent undeclared hazardous materials from entering the shipping system, a multi-tier system should be developed and implemented by regulators, manufacturers (of packaging material) and shipping companies (air and ground) to identify and safely process undeclared hazardous material. This system should include: (1) education, (2) identification, (3) inspection, and (4) regulation and oversight.

#### **Safety Enhancement:**

Safety Enhancement 125 Cargo – Hazardous Materials – HazMat Processing

#### **Output 1:**

Develop best practices for a comprehensive system including education, identification and inspection to prevent shipping undeclared hazardous materials.

#### **Actions:**

ATA coordinate an interagency group to survey, develop and publish best practices for a comprehensive system including education, identification and inspection to prevent shipping undeclared hazardous materials

#### **Output 2:**

Shipping companies incorporate best practices from Output 1.

#### **Actions:**

ATA coordinate with COSTHA and shipping companies to incorporate best practices from Output 1 for a comprehensive system including education, identification and inspection to prevent shipping undeclared hazardous materials.

#### **Output 3:**

Coordinate the industry implementation of electronic tracking of declared hazardous materials.

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#### **Actions:**

ASH work with the Pipeline and Hazardous Materials Safety Administration (PHMSA) to charter an industry/government working group involving representatives from the above agencies.

Determine baseline industry standards for electronic tracking of hazardous materials.

Develop a plan to implement industry standards for electronic tracking of hazardous materials.

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**Output 4:**

FAA coordinates the development of procedures to improve regulatory oversight to detect and prosecute shippers and customers who fail to identify hazardous material.

**Actions:**

Improve regulatory oversight to detect and prosecute shippers and customers who fail to identify hazardous material.

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## CARGO

### Joint Safety Implementation Team as Modified by the JIMDAT Implementation Plan for Safety Enhancement 127 Cargo – Fire Containment

**Statement of Work: SE-127**

To reduce the occurrence of accidents and incidents from cargo fires, improved cargo containers should be developed to contain (or suppress) fires originating in shipped cargo. Standards for fire containment/suppression should be developed, and containers standardized. New containers should be implemented whenever containers are replaced. Consideration should be given to using improved containers for as much cargo as is feasible.

**Safety Enhancement:****Safety Enhancement 127 Cargo – Fire Suppression**

To reduce the occurrence of accidents and incidents from cargo fires, improved cargo containers should be developed to contain (or suppress) fires originating in shipped cargo. Standards for fire containment/suppression should be developed, and containers standardized. New containers should be implemented whenever containers are replaced. Consideration should be given to using improved containers for as much cargo as is feasible.

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## **Output 1:**

Survey and report capabilities of available fire suppression and containment systems for container fires.

### **Actions:**

FAA Technical Center conduct a survey of available fire suppression systems for container and cargo compartment fires.

Determine whether existing technology is sufficient or if there is a need for further development.

---

## **Output 2:**

FAA AIR task Aviation Rulemaking and Advisory Committee (ARAC) team to develop and/or revise standards for fire suppression or containment systems for container fires. Terms of Reference for such an ARAC team should consider types of fires to be addressed, suppression/containment time, and other items of this nature. Consideration should be given to developing standards that address containers that could be used in current class C and D cargo compartments.

### **Actions:**

FAA AIR develop and/or revise standards for fire suppression and/or containment systems for container and cargo compartment fires.

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## **Output 3:**

Container manufacturers will develop standardized containers in accordance with the standards developed in Output 2. Consideration should be given to developing containers that could be used in current class C and D cargo compartments.

### **Actions:**

CAST to encourage and coordinate with container manufacturers to develop and produce containers meeting the standards developed under Output 2.

## **Output 4:**

Shippers to incorporate the new containers developed under Output 3 whenever containers are replaced. Consideration should be given to using the new containers for as much cargo as is feasible, including in class C and D cargo compartments.

### **Actions:**

CAST to encourage cargo airlines to use the containers designed to the standards developed under Output 2.

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## CARGO

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 129R1 Regulation and Policy – Compliance, Enforcement and Restricted Operations

#### **Statement of Work:**

To reduce the occurrence of accidents and incidents, regulators should improve their legal processes for compliance, enforcement and operational restrictions by allowing faster imposition of restrictions on operations to address significant safety concerns and promoting disclosure of safety concerns by enhancing legal protections for airline/operator employees, contractors, and their employees.

#### **Safety Enhancement:**

Safety Enhancement 129 Regulation and Policy – Compliance, Enforcement and Restricted Operations

#### **Output 1:**

Enhance the regulatory legal processes for compliance and enforcement to allow for more timely imposition of restrictions on operations when necessary to ensure continued operational safety.

#### **Actions:**

Enhance the regulatory legal processes for compliance and enforcement to allow for more timely imposition of restrictions on operations when necessary to ensure continued operational safety.

#### **Output 2:**

Promote disclosure of safety concerns by enhancing legal protections for airline/operator employees, contractors and their employees who report safety violations.

#### **Actions:**

Enhance protections for airline/operator employees, including contractors and their employees (including the use of immunity and anonymity).

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## CARGO

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 130 Cargo - Regulation and Policy - Oversight

#### **Statement of Work:**

To provide adequate oversight, regulators should develop/enhance and implement a system that ensures appropriate inspector coverage for all airlines, sub-contracting, and leasing operations and assign highly-experienced inspectors (appropriate for the operation) to operators that require the most comprehensive oversight.

#### **Safety Enhancement:**

Safety Enhancement 130 Cargo- Regulation and Policy - Oversight

To provide adequate oversight, regulators should develop/enhance and implement a system that ensures appropriate inspector coverage for all airlines, sub-contracting, and leasing operations and assign highly-experienced inspectors (appropriate for the operation) to operators that require the most comprehensive oversight.

#### **Output 1:**

Regulators review and revise as necessary the existing inspection system to ensure appropriate oversight for all airlines, with particular emphasis on sub-contracting and leasing operations.

#### **Actions:**

Although ATOS/SEP Systems presently exist and address many of these issues, FAA AFS-200/300 should review the existing system to ensure appropriate oversight for all airlines, with particular emphasis on sub-contracting and leasing operations.

#### **Output 2:**

Regulators develop a protocol that assigns highly-experienced inspectors (appropriate for the operation) to operators that require the most comprehensive oversight (i.e., have the highest risk). The current system applies the most experienced inspectors to the largest airlines, rather than against the highest assessed risk.

#### **Actions:**

FAA AFS develop a protocol that assigns highly experienced inspectors (appropriate for the operation) to operators that require the most comprehensive oversight.

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## CARGO

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 131R1 Cargo – Safety Culture

#### **Statement of Work:**

The purpose of this enhancement is to reduce cargo-related accidents and incidents by encouraging a culture that enhances operational safety. A safety culture can be enhanced by a safety management system that includes: (1) development of an accident/incident cost analysis tool, (2) a self-audit process, (3) risk management programs, (4) revised standards for the Director of Safety (DOS), (5) development of incident reporting and quality assurance.

#### **Safety Enhancement:**

Safety Enhancement 131 Cargo – Safety Culture

#### **Output 1:**

To educate company leaders about the high economic costs of accidents and incidents a cost analysis tool should be developed. (For example, CAST Business Model)

#### **Actions:**

ATA safety/training committee provide airline/operators with a cost analysis tool to determine the economic and psychological costs of accidents and incidents.

#### **Output 2:**

To further enhance safety, a self-audit process should be implemented.

#### **Actions:**

Airline/Operators implement a self-audit process.

#### **Output 3:**

An operational risk management program should be implemented. (completed under SE 27)

#### **Actions:**

No Action required. Under CAST SE 27, all airline/operators agreed to implement an operational risk management program.

#### **Output 4:**





FAA and Industry should develop enhanced standards, requirements and qualifications for a Director of Safety (DOS). Requirements for the Director of Safety Position were established by 14 CFR 119.65. (CAST SE 14)

**Actions:**

FAA AFS-200/300 in conjunction with industry will develop enhanced standards, requirements and qualifications for the Director of Safety (DOS) and publish guidance material as necessary. ATA, RAA, & NACA will encourage operators to use the enhanced standards when selecting a new DOS.

**Output 5:**

Airline/operators should implement a safety reporting system and develop a quality assurance program.

**Actions:**

Airline/operators should develop and implement a safety reporting system and quality assurance program appropriate for their operations.

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**ICING**

**Joint Safety Implementation Team as Modified by JIMDAT  
Implementation Plan for Safety Enhancement 133R1  
Icing - Turboprop Aircraft Ice Detection Systems**

**Statement of Work:**

To prevent fatal accidents caused by in-flight icing encounters, for all turboprop aircraft with non-evaporative ice protection systems and non-powered flight controls used in Part 121 operations, manufacturers should: (1) For new type designs, adapt and implement systems that automatically detect ice, measure the rate of ice accretion, and provide annunciation to the flight crew, and (2) For **current** Turboprop production aircraft and **existing** type designs, conduct a study to determine the feasibility of installing systems that automatically detect ice, measure the rate of ice accretion, and provide annunciation to the flight crew.

**Safety Enhancement (SE 133):**

Adapt and implement systems that automatically detect ice, measure the rate of ice accretion, and provide annunciation to the flight crew, on turboprop aircraft that have non-evaporative ice protection systems and non-powered flight controls on all aircraft operated in commercial passenger and cargo revenue service.

**Outputs:**



## Output 1

- For **new Turboprop type** designs, adapt and implement systems that automatically detect ice, measure the rate of ice accretion, and provide annunciation to the flightcrew.

### Actions:

1. AIA encourages manufacturers to adapt existing probe technology to provide “rate” measurement capability for turboprop aircraft
2. FAA review AC 25.1419-1A “ Certification of transport category airplanes for flight in icing conditions “ and if necessary develop additional guidance for design and certification of these systems (particularly “rate” capability)
3. Airframe manufacturers select and install probe technology that can detect ice, measure icing accretion rate and provide crew annunciation
4. Manufactures develop operating procedures for use of the ice detection system above
5. Operators train flight crews on use of this system

## Output 2

For **current** Turboprop production aircraft and **existing** type designs, conduct a study to determine the feasibility of installing systems that automatically detect ice, measure the rate of ice accretion, and provide annunciation to the flight crew.

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### Actions:

1. Conduct feasibility study to determine if it is appropriate to install ice detection systems for each type of turboprop aircraft.
2. Refer the completed study to the CAST for follow on action as outlined in the CAST Process.

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## ICING

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 134R1 Icing - Aircraft Design - Avionics

#### **Statement of Work:**

To prevent fatal accidents and incidents by improving situational awareness during low visibility operations and flight in icing conditions, avionic equipment manufacturers and aircraft manufacturers should develop and install smart pitch guidance systems on new type designs to prevent over rotation in conjunction with a low energy state or aerodynamic degradation due to the presence of ice on critical flight surfaces. The smart pitch avionics system should provide to the flight crew appropriate flight guidance information, the current aircraft energy state, and performance margins with respect to stall speed and maximum angle of attack for all icing conditions for which an aircraft has been certified.

#### **Safety Enhancement (SE 134):**

Install smart pitch guidance systems on all new type designs to prevent over rotation in conjunction with a low energy state or aerodynamic degradation due to the presence of ice on critical flight surfaces

#### **Outputs:**

##### Output 1

- For new type designs, develop and install smart pitch guidance systems.

#### **Actions:**

1. CAST requests that the AIA communicate with manufacturers, encouraging them to incorporate upgraded pitch guidance software into their new airplane type designs.
  2. Manufacturers respond by indicating their intentions regarding incorporating upgraded pitch guidance software into their new airplane type designs.
  3. Airframe manufacturers develop pitch guidance requirements that provide flight guidance information, the current aircraft energy state, and performance margins with respect to stall speed and maximum angle of attack, appropriate to aircraft type for all icing conditions for which the aircraft has been certified.
  4. Avionic manufacturers incorporate the new pitch guidance algorithms into the flight guidance computer.
  5. Avionic and airframe manufacturers certify the new pitch guidance system.
-



## ICING

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 136 Icing – Training – Engine Surge Recovery

#### **Statement of Work:**

To prevent fatal accidents resulting from an engine surge caused by ice ingestion, airlines should provide adequate training for flight crews to ensure appropriate responses to this event. This training should include engine out identification, engine surge recovery procedures, and associated aircraft recovery in all the varying combinations. Key to this training is that it be accomplished prior to the pilot being assigned to the line or introduced to new equipment.

#### **Outputs:**

##### Output 1

- Operators should include the Engine Failure Recognition and Response (EFRR) training materials in training programs. (Note: EFRR training materials specifically address engine surges)

#### **Actions:**

1. Make EFRR training materials available to all Part 121 operators.
2. Operators incorporate EFRR training materials in airline training programs

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## Maintenance

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan For Safety Enhancement 101R1 Aircraft Design –Advanced Circuit Protection

#### **Statement of Work: (SE-101)**

Develop and install advanced circuit protection technology for use in commercial airplanes where appropriate in new type designs, current production, and retrofit. This work includes research for product development, development of industry standards, qualification, airplane maintenance practices and certification. This work may require in-service evaluation of development hardware and should include research and development of tools to isolate the location arc source once an arc fault breaker has tripped.



## Output 1:

FAA-AIR, airframe manufacturers and circuit breaker manufacturers should continue to support general development and qualification activities of advanced circuit protection technology for use on commercial airplanes. This support includes but is not limited to development of arc fault circuit breaker technology and technology to determine the location of the fault source on commercial airplanes for maintenance.

## Actions:

FAA, airframe manufacturers, Society of Automotive Engineers (SAE), operators and circuit breaker manufacturers will develop advance circuit protection. Airframe manufacturers, test equipment manufacturers and the FAA Tech Center will continue research into the development of circuit protection and fault isolation technology.

## Output 2:

FAA and airframe manufacturers to work with circuit breaker manufacturers to develop and certify the technology for installation into new type designs where appropriate and feasible.

Actions: (to clarify the action needed to accomplish the output in a timely manner)

1. AIA issues letter to manufactures to encourage them to incorporate advanced circuit protection. (6 months from CAST approval)
2. Airframe manufacturers agree to incorporate advanced circuit protection technologies in new type designs as appropriate and feasible. (6 months)
3. AIR, airframe manufacturers and breaker manufacturers would complete the development and certification of advanced circuit protection on new type designs. (continuing)

## Output 3:

FAA and airframe manufacturers to work with circuit breaker manufacturers to develop and certify the technology for installation into **current production** commercial airplanes where appropriate and feasible.

## Actions:

AIR airframe manufacturers and breaker manufacturers would complete the development process and certification of advanced circuit protection on current production airplanes.

## Output 4:

FAA and airframe manufacturers to work with circuit breaker manufacturers to develop/certify the technology for **retrofit** where appropriate and feasible.

## Actions:

AIR airframe manufacturers and breaker manufacturers would complete the development process and certification of advanced circuit protection where appropriate and feasible on in-service airplanes.

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## Maintenance

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan For Safety Enhancement -169R1 Policy & Procedures – Work Cards / Shift Change / Responsibilities / Manuals

#### **Statement of Work:** (SE-169R1)

To reduce the number of fatal accidents related to improper or incomplete maintenance, airlines, operators and regulators should ensure that: (1) work cards, if available, are used at the start of each task, with written and oral status reports at every shift change; (2) procedures are written to include clear responsibility and authority for work assignments; and (3) necessary manuals (operational & maintenance) are complete, accurate, available and appropriately used. (225, 883, 884, 885 & 886)

#### **Safety Enhancement:**

Ensure that work cards or other written instructions are used at the start of each task, and written and oral status reports are provided at every shift change. Procedures should be written to include clear responsibility and authority for work assignments, and necessary manuals (operational & maintenance) are complete, accurate, available, and appropriately used.

#### **Output 1:**

FAA to publish guidance materials on acceptable procedures and policies, or enhance AC120-16D. Materials should address procedural enhancements that incorporate clear responsibility and authority and manual enhancements that ensure they are complete and accurate. Materials should also address policies and training that support the appropriate use of work cards, shift change status reports, operations and maintenance manuals.

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#### **Actions:**

FAA (AFS-300) convene task force to review all applicable information, determine scope of changes and involved personnel, decide best vehicle(s) for guidance materials (new AC or enhancing AC120-16D), write the guidance, and obtain appropriate approvals. FAA (AFS-300) will also issue a handbook Bulletin to Principal Inspectors to alert the PI's that this new guidance exists and to direct them to provide the guidance to their operators.

#### **Output 2:**

Operators to audit their compliance with guidance materials and implement changes where needed, including both procedural content and procedural use. Successful implementation of procedural enhancements may additionally require changes to associated company policies and philosophy, and a sound organizational commitment to safety culture (see SE 17).



## **Actions:**

1. Operators should review the guidance material in an appropriate and timely manner to establish their level of alignment with the material.
  2. Each operator's Director of Safety, in conjunction with its Director of Maintenance, should ensure that the guidance is properly reviewed and that appropriate changes are made to the company's maintenance procedures.
  3. Each operator will prepare an alignment report.
- 

## **Maintenance**

### **Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan For Safety Enhancement - 170 Aircraft Design – OEM Continuous Monitoring of Service History**

#### **Statement of Work:** (SE-170)

To reduce the number of fatal accidents due to improper maintenance, and to ensure that systems continue to function as designed, OEMs should monitor service history to verify that design and procedural assumptions relating to the physical ability of maintenance personnel to perform and verify satisfactory completion of regularly scheduled maintenance tasks are acceptable. Operators should develop processes to ensure adherence to OEM-recommended maintenance procedures, or a substantiated alternative, and to report maintenance tasks performance difficulties to OEMs.

#### **Safety Enhancement:**

To ensure that systems continue to function as designed, OEMs should monitor service history to verify that design and procedural assumptions relating to the physical ability of maintenance personnel to perform and verify satisfactory completion of regularly scheduled maintenance tasks are acceptable. Operators should develop processes to ensure adherence to OEM-recommended maintenance procedures, or a substantiated alternative, and to report maintenance tasks performance difficulties to OEMs.

#### **Actions:**

1. FAA (AFS-300) to convene task force to review all applicable information and appropriate methodologies to accomplish Output 1.
2. Publish best practices in guidance material.



## **Output 2:**

OEMs and operators to develop process to follow the intent of the guidance material.

## **Actions:**

Operators and OEMs review the guidance material and develop processes to ensure the acquisition and reporting of maintainability information.

## **Output 3:**

Operators include adherence to the process for reporting maintainability difficulties to the OEM within the internal audit process of their Safety Management System (or equivalent).

## **Actions:**

Operators shall implement processes to confirm their adherence to approved maintenance procedures and report maintainability difficulties to the OEM.

## **Output 4:**

Principal Inspectors will validate their air carriers' alignment with guidance materials.

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## **Actions:**

Principal Maintenance Inspectors will review, within their normal work program, their operators' completion of Outputs 2 and 3.

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## **Maintenance**

### **Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan For Safety Enhancement 172R1 Gap Analysis of Existing Airplane Maintenance Process & Follow on Action Plan**

## **Statement of Work:** (SE-172R1)

The purpose of this project is to identify and correct gaps within and between the maintenance processes that could otherwise inhibit the intended design level of safety from being sustained throughout the airplane life.

## **Safety Enhancement:**





This project is to identify and correct gaps within and between the maintenance processes relating to MSG analyses, including the feeders to the analyses [Part 25.1309 analysis, System Safety Analysis (SSA), associated Maintenance Significant Items (MSI), and Structural Significant Items (SSI)], and the Maintenance Review Board Report (MRBR) output from these analyses, that may otherwise preclude the design level system reliability from being maintained throughout the life cycle of the airplane. The scope of this project should ensure that these processes properly account for complex systems and critical (hazardous, catastrophic, warning system, emergency equipment) failure modes. The project's outputs should ensure (as a minimum) that an airlines FAA approved maintenance program retains the appropriate maintenance task classification (e.g. safety/hidden safety) and maintenance intervals, for maintenance tasks that limit the exposure to these failure modes, to that intended by the OEM or certified by the FAA.

## **Output 1:**

Perform Gap Analysis; report findings.

## **Actions:**

1. FAA (AFS-300) to convene a task force that will perform a gap analysis between the certified level of design system reliability and maintaining this reliability with current maintenance and oversight practices and processes. This review should include, but not be limited to, the processes and relationships of the planned KSI process, the MRB/MSG3 process (including intervals and classification), airline maintenance programs, OEM AMM, CMR, and PMI, AEG, ACO, OEM oversight. The scope of this review will cover all transport category aircraft regardless whether the aircraft has an MRB report. This analysis should include maintenance from simple single component to more complex systems, up to and including those systems covered by Certification Maintenance Requirement (CMR).
2. Report findings.

## **Output 2:**

The team from Output 1 to develop recommended changes to CAST to close the identified gaps. The recommendations should be in the form of Detailed Implementation Plans (DIPs).

## **Actions:**

- Develop solutions and recommendations for presentation and approval by CAST. Status of team activities should be presented at each CAST meeting.
- Recommendations/solutions to resolve identified gaps will be presented to CAST. Status reports will be provided at regular CAST meetings.

## **Output 3:**

CAST approves the DIPs (as appropriate), establishes Safety Enhancements for the approved DIPs,

**Actions:** No mention

## **Output 4 :**

Organizations identified in the DIPs carry out implementation of each of the approved Safety Enhancements.



## Maintenance

### Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan For Safety Enhancement 175 Policy & Procedures – Flight Critical Configurations Changes Made During Maintenance

#### **Statement of Work:** (SE-175)

To prevent loss of pitot static system flight data, airlines/maintenance should provide visible tagging any time the pitot static system (pitot tubes and static ports) are covered during maintenance or servicing (e.g. washing). In addition, preflight walk-around procedures should include specific verification that pitot static ports are uncovered.

#### **Safety Enhancement:**

To prevent maintenance errors that compromise safe flight, airlines/maintenance should provide visible tagging any time the pitot static system (pitot tubes and static ports) are covered during maintenance or servicing (e.g., washing). In addition, preflight walk-around procedures should include specific verification that pitot static ports are uncovered.

Recommended for plan based on mitigation benefit to JSAT Maintenance accidents.

---

#### **Output 1:**

OEMs and airlines should review, and amend, procedures as appropriate to ensure that multiple levels of alerting, including visible tagging, are used anytime the pitot static system is covered.

#### **Actions:**

OEMs/Operators should ensure that maintenance procedures (e.g., washing, polishing that involve covering/uncovering of pitot static ports include multiple levels of protection to ensure timely removal of covering. Such levels should include visible tagging, or similar readily-visible alerting, a work card, and logbook entry.

Each operator's Director of Safety, in conjunction with its Director of Maintenance, should ensure that the appropriate procedures are covered in maintenance information, including work cards.

Operators include adherence to the process within the internal audit process of their Safety Management System (or equivalent).

AIA to communicate contents of this Output to Embraer and Bombardier.

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#### **Output 2:**

OEMs and operators ensure that pre-flight walk-around procedures ensure that pitot/static ports are uncovered.

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## **Actions:**

1. OEMs/Operators should ensure that pre-flight walk-around procedures ensure that pitot/static ports are uncovered.
2. Each operator's Director of Safety, in conjunction with its Director of Operations, should ensure that the appropriate procedures are covered in Flight Operations Manual.
3. Operators include adherence to the process within the internal audit process of their Safety Management System (or equivalent).
4. AIA to communicate contents of this Output to Embraer and Bombardier.

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## **MIDAIR**

### **Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 159R1 Midair – Airspace Design**

## **Statement of Work:**

The purpose of this enhancement is to prevent midair collisions by: designing B/C/D airspace to be more easily identifiable; improving the usability of VFR charts; and ensuring adequate and timely coordination of airspace design changes with all airspace users.

## **Safety Enhancement:**

Safety Enhancement 159 Midair – Airspace Design

The purpose of this enhancement is to prevent midair collisions by: designing B/C/D airspace to be more easily identifiable; improving the usability of VFR charts; and ensuring adequate and timely coordination of airspace design changes with all airspace users.



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## **Output 1:**

To improve the usability of VFR charts, regulators should simplify (eliminate insets, multiple angles, clutter) and standardize (shapes and altitudes) the design of class B/C/D airspace, review published VFR routes to ensure they are easily-identifiable, and enhance the recognizability and correlation of ground reference points related to airspace boundaries.

## **Actions:**

Air Traffic coordinate with AVN-500 and Aircraft Owners and Pilots Association to review existing charts, identify corrective actions and publish improved charts in accordance with the standard chart issuance schedule.

## **Output 2:**

Regulators develop and implement a process to ensure adequate and timely coordination of airspace design changes with all airspace users.

## **Actions:**

1. Air Traffic coordinate with all 3 regions' airspace branch managers.
  2. Develop process to ensure adequate and timely coordination and notification of airspace design changes with all airspace users.
  3. Implement process.
- 

## **MIDAIR**

### **Joint Safety Implementation Team as Modified by JIMDAT Implementation Plan for Safety Enhancement 165R2 Midair – TCAS Policies and Procedures**

## **Statement of Work:**

The purpose of this enhancement is to prevent midair collisions by: re-enforce or strengthen guidance for flight crews to follow TCAS Resolution Advisories (RA's) even in the presence of contravening ATC instructions; establishing procedures for TCAS range setting; and recommending TCAS-capable simulators and flight-training devices be used for training TCAS responses and maneuvers.

## **Safety Enhancement:**

Safety Enhancement 165 Midair – TCAS Policies and Procedures

The purpose of this enhancement is to prevent midair collisions by: re-enforcing or strengthening guidance for flight crews to follow TCAS Resolution Advisories (RA's) even in the presence of



contravening ATC instructions; establishing procedures for TCAS range setting; and recommending TCAS-capable simulators and flight-training devices be used for training TCAS responses and maneuvers.

Recommended for plan based on mitigation benefit to JSAT Midair accidents.

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## **Output 1:**

Regulators re-enforce or strengthen guidance for flight crew compliance with TCAS RA's, even in the presence of contravening ATC instructions (guidance may include the language on pilot-in-command final decision authority as in AC 120-55B).

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## **Actions:**

Complete the required process to revise appropriate guidance material with full consideration of ICAO Annex 2 Chapter 3.

Revise FAA Order 7110.65 to reflect the revised guidance.

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## **Output 2:**

Airline/operators establish standard operating procedures and standardized training (ground school and simulator training) on pilot response to TCAS RA's, including following the RA promptly and accurately even in the presence of contravening ATC instructions (reference AC 120-55B).

## **Actions:**

Airlines/operators establish standard operating procedures and standardized training (ground school and simulator training) on pilot response to TCAS RA's, including following the RA promptly and accurately even in the presence of contravening ATC instructions (reference AC 120-55B). Simulator training should include a scenario(s) that involves contravening ATC instructions.

## **Output 3:**

Airline/operators establish procedures for TCAS range setting appropriate to the traffic situation (e.g., use maximum range in low-traffic situations). (Highlight/emphasize AC 120-55B, para. 11.d.3. "Good Operating Practices".)

Airline/operators establish procedures for TCAS range setting appropriate to the traffic situation (e.g., use maximum range in low-traffic situations). (Highlight/emphasize AC 120-55B, para. 11.d.3. "Good Operating Practices")

## **Output 4:**

Regulators recommend that TCAS-capable simulators or flight-training devices are used for training TCAS responses and maneuvers.

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## **Actions:**

1. Develop guidance material to recommend use TCAS capable simulators or flight training device to train TCAS responses and maneuvers
2. Revise AC 120-55B to remove the option of using CBI to train TCAS responses and maneuvers.

## **Output 5 :**

Conduct a study of TCAS –RA events involving contravening ATC instructions and determine the need for further safety action including consideration of regulatory and guidance solutions and recommend appropriate Safety Enhancements to CAST

## **Actions:**

1. Conduct study
2. Develop Safety Enhancements as appropriate
3. Report results to CAST and GA JSC

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