



**INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)**

**REGIONAL AVIATION SAFETY GROUP – PAN AMERICA  
(RASG-PA)**

**EIGHTH PAN AMERICA –  
REGIONAL AVIATION SAFETY TEAM MEETING**

**PA-RAST/8**

**SUMMARY OF DISCUSSIONS**

**MONTEGO BAY, JAMAICA, 12 TO 13 MARCH 2012**

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.



**List of Contents**

<b>Contents</b>	<b>Page</b>
<b>Index</b> .....	<b>i-1</b>
<b>Historical</b> .....	<b>ii-1</b>
<b>ii.1</b> Place and Date of the Meeting.....	<b>ii-1</b>
<b>ii.2</b> Opening Ceremony.....	<b>ii-1</b>
<b>ii.3</b> Officers of the Meeting .....	<b>ii-1</b>
<b>ii.4</b> Working Languages .....	<b>ii-1</b>
<b>ii.5</b> Agenda .....	<b>ii-1</b>
<b>ii.6</b> Attendance.....	<b>ii-2</b>
<b>List of Participants</b> .....	<b>iii-1</b>
<b>Agenda Item 1</b> .....	<b>1-1</b>
<b><i>Opening of the Meeting</i></b>	
1.1 <i>Introductions</i>	
1.2 <i>Administrative Notes</i>	
1.3 <i>Election of Rapporteur</i>	
1.4 <i>Approval of the Agenda</i>	
<b>Agenda Item 2</b> .....	<b>2-1</b>
<b><i>DIP Update (Champion PowerPoint presentation on DIP Status)</i></b>	
2.1 <i>Runway Excursions (RE)</i>	
• <i>ACI-LAC</i>	
• <i>ALTA</i>	
• <i>Mexico</i>	
2.2 <i>Controlled Flight Into Terrain (CFIT)</i>	
• <i>IATA</i>	
• <i>IFALPA/IFATCA</i>	
2.3 <i>Loss Of Control-Inflight (LOC-I)</i>	
• <i>ALTA</i>	
• <i>IFALPA</i>	
• <i>PA-RAST</i>	
2.4 <i>Reflecting Safety Enhancement Initiatives in the RASG-PA Annual Safety Report</i>	
2.5 <i>Recommendations to the ESC</i>	

---

Contents	Page
<b>Agenda Item 3</b> .....	3-1
<b>ASIAS</b>	
3.1 <i>Overview</i>	
3.2 <i>Protection of Information – Confidentiality/MoU</i>	
3.3 <i>Data Analysis</i>	
3.4 <i>Recommendation to the ESC</i>	
<b>Agenda Item 4</b> .....	4-1
<b>Other business</b>	
4.1 <i>Brazil trend collection project</i>	
4.2 <i>2012 PA-RAST Work Programme</i>	

---

## HISTORICAL

### ii.1 Place and Date of the Meeting

The Eighth Pan America – Regional Aviation Safety Team (PA-RAST/8) Meeting was held at the Montego Bay Convention Centre in Jamaica from 12 to 13 March 2012.

### ii.2 Opening Ceremony

Mr. Eduardo Chacin, Regional Officer, Flight Safety Officer from the ICAO NACC Regional Office, greeted the participants and opened the meeting, highlighting the relevance of the RASG-PA activities to enhance safety in the Pan American Region.

### ii.3 Officers of the Meeting

Mr. Gabriel Acosta, Manager Safety, Operations & Infrastructure, Latin America & Caribbean of the International Air Transport Association (IATA) was elected as the Rapporteur; Mr. Eduardo Chacin served as the PA-RAST Secretary, assisted by Mr. Adolfo Zavala, Regional Officer, Air Traffic Management, both from the of the ICAO NACC Regional Office.

### ii.4 Working Languages

The working language of the meeting was English.

### ii.5 Agenda

#### Agenda Item 1: Opening of the Meeting

- 1.1 Introduction
- 1.2 Administrative Notes
- 1.3 Election of Rapporteur
- 1.4 Approval of the Agenda

#### Agenda Item 2: DIP Update (Champion PowerPoint presentation on DIP Status)

- 2.1 Runway Excursions (RE)
  - ACI-LAC
  - ALTA
  - Mexico
- 2.2 Controlled Flight Into Terrain (CFIT)
  - IATA
  - IFALPA/IFATCA
- 2.3 Loss of Control In-flight (LOC-I)
  - ALTA
  - IFALPA
  - PA-RAST

- 2.4 Reflecting Safety Enhancement Initiatives in the RASG-PA Annual Safety Report
- 2.5 Recommendations to the ESC

**Agenda Item 3: ASIAS**

- 3.1 Overview
- 3.2 Protection of Information – Confidentiality/MoU
- 3.3 Data Analysis
- 3.4 Recommendations to the ESC

**Agenda Item 4: Other business**

- 4.1 Brazil Trend Collection Project
- 4 4
- 4.2 2012 PA-RAST Work Programme

**ii.6 Attendance**

The Meeting was attended by 13 members of the Pan America – Regional Aviation Safety Team.

**LIST OF PARTICIPANTS**

**BRAZIL**

Carlos Eduardo Magalhaes da Silveira Pellegrino

**CHILE**

Félix Martínez Baeza

**JAMAICA**

Egbert Field

**UNITED STATES**

Glenn W. Michael

**AIRBUS**

Rudy Canto Jr.

**ALTA**

ALEX DE GUNTEN

**BOEING**

William B. Etzold

**CASSOS**

Gregory Fox

**FLIGHT SAFETY FOUNDATION**

Rodolfo Quevedo

**IATA**

Gabriel Acosta

**IFALPA**

Germán Díaz-Barriga

**ICAO SECRETARIAT**

Eduardo Chacin  
Adolfo Zavala



**CONTACT INFORMATION**

<b>Name / Position</b>	<b>Administration / Organization</b>	<b>Telephone / E-mail</b>	
<b>BRAZIL</b>			
<b>Carlos Eduardo Magalhaes da Silveira Pellegrino</b> Director	National Civil Aviation Agency	Tel. + 55 21 350 15124 E-mail carlos.pellegrino@anac.gov.br	
<b>CHILE</b>			
<b>Félix Martínez Baeza</b> Jefe del Subdepartamento Transporte Público	Dirección General de Aeronáutica Civil	Tel. + 562 4363 172 E-mail fmartinezb@dgac.cl	
<b>JAMAICA</b>			
<b>Egbert Field</b>	Jamaica Civil Aviation Authority	Tel. + 876 909 5338	
<b>UNITED STATES</b>			
<b>Glenn W. Michael</b> Manager, International Operations	Federal Aviation Administration	Tel. + 202 510 8009 E-mail glenn.w.michael@faa.gov	
<b>AIRBUS</b>			
<b>Rudy Canto Jr.</b> Director Flight Operations Technical Safety and Technical Affairs	Airbus Americas	Tel. + 202 331 2237 E-mail rudy.canto@airbus.com	
<b>ALTA</b>			
<b>Alex de Gunten</b> Executive Director	ALTA – Latin American and Caribbean Air Transport Association	Tel. + 1786 388 0222 E-mail adegunten@alta.aero	
<b>BOEING</b>			
<b>William B. Etzold</b> Manager Aviation System Safety	Boeing	Tel. + 425-237-5592 E-mail william.B.Etzold@boeing.com	
<b>CASSOS</b>			
<b>Gregory Fox</b> Coordinator	Caribbean Aviation Safety and Security Oversight System	Tel. + 876 817 9548 / 929 0951 E-mail gfox@cwjamaica.com; adminofficer@rasos.org	
<b>FLIGHT SAFETY FOUNDATION</b>			
<b>Rodolfo Quevedo</b> Deputy Director	Technical Programs	Tel. +1 703-739-6700 x 111 Mobile +1 201-921-3983 E-mail quevedo@flightsafety.org	

PA-RAST/8  
List of Participants – Contact Information

iv – 2

Name / Position	Administration / Organization	Telephone / E-mail
<b>IATA</b>		
<b>Gabriel Acosta</b> SO & I Manager for LATAM	IATA	Tel. + 305 607 3180 E-mail acostag@iata.org
<b>IFALPA</b>		
<b>Germán Díaz Barriga</b> Executive Vice President CAR/SAM Region	IFALPA	Tel. + 5255 5091 5954 E-mail atecnicos@aspa.org.mx
<b>ICAO</b>		
<b>Eduardo Chacin</b> Regional Officer, Flight Safety	North American, Central American and Caribbean Regional Office (NACC)	Tel. + 52 55 5250 3211 E-mail echacin@icao.int
<b>Adolfo Zavala</b> Regional Officer, Air Traffic Management	North American, Central American and Caribbean Regional Office (NACC)	Tel.: + 52 55 5250 3211 E-mail: azavala@icao.int

**Agenda Item 1:           Opening of the Meeting**

**1.1           Introduction**

*See Historical section of this report.*

**1.2           Administrative Notes**

*See Historical section of this report.*

**1.3           Election of Rapporteur**

*See Historical section of this report.*

**1.4           Approval of the Agenda**

1.4.1           Mr. Gabriel Acosta, IATA representative and elected Rapporteur, presented the draft agenda and asked for approval by the Meeting. The agenda was approved and is included in the historical section of this report.

---

**Agenda Item 2:           DIP Update (Champion PowerPoint presentation on DIP Status)**

**2.1                   Runway Excursions (RE)**

2.1.1               ACI-LAC

2.1.1.1            The Meeting was informed by the Secretary that ACI-LAC was not able to participate due to previous commitments. The Secretary updated the Meeting regarding “*DIP RE/08: Guidance in maintaining runway in accordance with Annex 14; ACI-LAC had informed that work is on-going for the creation of a best practices guide for runway maintenance.*”

2.1.2               ALTA

2.1.2.1            The IATA representative, on behalf of ALTA, informed that “*DIP RE/04: Promote pilot adherence to Standard Operating Procedures (SOPs) for approach procedures including go-around decision making process; Output 1: Distribute RERR Toolkit and establish no fault go-around policies and unstabilized approaches SOP's*” was completed. ALTA will update DIP RE/04 accordingly.

2.1.2.2            The FSF representative informed that they are conducting a survey on the lack of adherence by flight crews to go-around policy and will share the results of the survey with RASG-PA.

2.1.2.3            The IATA representative, on behalf of ALTA, informed the Meeting that “*DIP RE/09: Specific Training for pilots and air traffic controllers to avoid unstabilized approaches; Output 2: Survey operators on unstabilized approaches mitigations*” was completed.

2.1.2.4            The IATA representative commented about the progress of the ALTA-IATA Trend Sharing Programme data information in the Region. This Program is a joint effort to analyze, track and improve safety risks in the region while creating and implementing cohesive safety standards. Strategies will include identifying opportunities for improvement, promoting the exchange of best practices and providing the ability to compare performance with the rest of the industry. Methodologies will range from information analysis, the creation of regional standards and targets, monthly reporting systems and techniques to ensure data accuracy and completeness.

2.1.3               Mexico

2.1.3.1            The Secretary, on behalf of Mexico, briefed the Meeting about “*DIP RE/11: Develop guidance material and training programs to create action plans for runway safety teams; Output 5: Review and update of the Runway Safety Teams (RSTs) implementation.*” The Meeting was informed on the implementation progress of the RST as a pilot programme at the Mexico City International Airport (MMMX) with the support of AICM, stakeholders and ICAO NACC Regional Office.

**2.2                   Controlled Flight Into Terrain (CFIT)**

2.2.1               IATA

2.2.1.1            Regarding “*DIP CFIT/02: Specific ALAR/CFIT Training for Pilots; Output 1: Survey operators on CFIT training, and Output 2: Incorporate CFIT training in programs,*” the IATA representative informed the Meeting that both activities were completed.

2.2.2 IFALPA/IFATCA

2.2.2.1 The IFALPA representative informed the Meeting about “*DIP CFIT/04 CRM/Situational Awareness for pilots and air traffic controllers*” and stated that they are coordinating with other entities to develop a video for pilots and air traffic controllers regarding CRM. Airbus, ALTA, and CASSOS supported this initiative. However, the Meeting acknowledged the limited resources to develop this training material.

**2.3 Loss of Control In-flight (LOC-I)**

2.3.1 ALTA

2.3.1.1 The IATA representative, on behalf of ALTA, informed that the work related to “*DIP LOC-I/07 LOC Training – Advanced manoeuvres; Output 3: Include training in initial and recurrent ground and simulators*” is in progress.

2.3.2 IFALPA

2.3.2.1 The IFALPA representative informed the Meeting that the work related to “*DIP LOC-I/09 Pilot monitoring policies and procedure for the operator and training program for crews; Output 3: Training material provided to all operators, and Output 4: Training provided to pilots*” is in progress.

2.3.2.2 The Meeting acknowledged that the Pilot Monitoring Toolkit has been successfully presented at the RASG-PA Aviation Safety Workshops delivered in Mexico and Venezuela, and it will continue to be part of the of the topics covered by the workshops in 2012.

2.3.3 PA-RAST

2.3.3.1 The Secretary, on behalf of Mexico, briefed the Meeting about “*DIP LOC-I/06 Training – Human factors and automation*”; *Output 1: Review and evaluate the advisory circular created by the COSCAP’s in Asia* is completed. Outputs 2 to 4 are pending.

**2.4 Reflecting Safety Enhancement Initiatives in the RASG-PA Annual Safety Report**

2.4.1 The Meeting considered that it would not be appropriate to reflect a more in-depth level of detail of RASG-PA activities in the RASG-PA Annual Safety Report but that the areas and projects be highlighted instead.

**2.5 Summary of Executive Steering Committee (ESC) Recommended Actions**

2.5.1 The Meeting considered the difficulty in accessing the Detailed Implementation Plans (DIPs) by PA-RAST members; therefore, it was decided necessary to reformat them to become a more user-friendly and accessible tool. The current version of the DIPs in both English and Spanish is included in the **Appendix** to this part of the report.

2.5.2 The Meeting considered that to in order to adequately follow-up on DIP progress it would be convenient to establish monthly teleconferences.

#	DIP	Description	Champ	Output	Deadline	Status	Comments
1	RE/04	Promote pilot adherence to Standard Operating Procedures (SOPs) for approach procedures including go-around	ALTA	1) Distribute RERR Toolkit and establish "no fault go-around policies & Uns. App SOP's"	18/01/11	Completed	
				2) Operators to include material in training programs	18/01/11	In process	
2	RE/09	Specific Training for pilots and air traffic controllers to avoid unstabilized approaches	ALTA	1) Survey operators on Uns. App. Mitigations	20/02/11	Completed	Reviewing the information from FAA to prepare script for video (control tower)
				2) Develop a strategy to deliver safety seminars on this subject in the region	20/02/11	In process	
3	CFIT/02	Specific ALAR/CFIT RAST-PA/CFIT/02 Training for Pilots	IATA	1) Survey operators on CFIT training	20/02/11	Completed	
				2) Incorporate CFIT training in programs	20/12/11	Completed	
4	CFIT/04	CRM/Situational Awareness for pilots and air traffic controllers	IFALPA & IFATCA	1) CRM/situational awareness training programs for all flight crew	20/02/12	In process	Reviewing the information from FAA to prepare script for video (control tower) IFATCA has not participated lately
				2) CRM/situational awareness training programs for all air traffic controllers	20/08/12	In process	
5	LOC-I/6	LOC Training – Human factors and automatation	PA-RAST	1) Review and evaluate the advisory circular created by the COSCAP's in Asia	20/02/11	Completed	The RASG-PA Safety Recommendation (RSR) was issued to encourage States and Industry to adopt practices to mitigate Mode Awareness and Energy State Management risks. Pending translation into Spanish by the SRVSOP to be distributed by the RASG-PA Secretariat to the Region.
				2) Distribute to States	20/03/11	In process	
				3) States to send a State Advisory Circular on mode awareness and energy state management.	20/09/11		
				4) Operators to provide guidance to pilots	20/09/12		
6	LOC-I/7	LOC Training – Advanced maneuvers	ALTA	1) Listing of training materials available	18/01/11	Completed	
				2) Advanced Maneuvers Training provided to all operators.	18/04/11	Completed	
				3) Include training in initial and recurrent ground and simulators	18/08/13	In process	Pending feedback from Airbus
7	LOC-I/9	Pilot monitoring policies and procedure for the operator and training program for crews	IFALPA	1) Listing of training materials	20/02/11	Completed	
				2) Raise awareness of availability and need	20/03/11	Completed	
				3) Training material provided to all operators	20/03/11	In process	it is available in the WEB and being offered through Safety Seminars
				4) Training provided to pilots	20/09/12	In process	through Safety Seminars
8	RE/8	Guidance in maintaining runway in accordance with Annex 14	ACI-LAC	1) Create a guide that collects best practices for runway maintenance	18/4/12	Completed	Guide already reviewed by ACI-LAC's safety committee members, pending review from ICAO
				2) Promote and encourage its use		In process	
				3) Airports implement guide on maintenance program		In process	
9	RE/11	Develop guidance material and training programs to create action plans for runway safety teams	Mexico	1) Gather and publish related material in RASG-PA's website		Completed	The following link to the ICAO Runway Safety website was included in the RASG-PA website <a href="http://www2.icao.int/en/RunwaySafety/Pages/Toolkits.aspx">http://www2.icao.int/en/RunwaySafety/Pages/Toolkits.aspx</a>
				2) Electronic checklist development		In process	
				3) Establishment of a regional Runway Safety Database	25/02/12		
				4) Develop a roll out plan	25/08/12		
				5) Review and Update of the Runway Safety Teams			

# ESC Approved Detailed Implementation Plans (DIPs)

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/RE/04	Promote pilot adherence to Standard Operating Procedures (SOPs) for approach procedures including go-around decision making process.		9	High	Easy	P1	1	Short
<b>Safety Enhancement Action (expanded):</b>	Promoting pilot adherence to Standard Operating Procedures (SOPs) which would include stabilized approach criteria and go/no go take-off decision making procedures is key to preventing and reducing the risk of runway excursions. Reviewing existing operational policies, procedures and programs is also part of an overall strategy in mitigating runway excursion risk.							
<b>Statement of Work:</b>	Runway Excursion has been identified as the highest safety risk area in Pan America. In order to proactively reduce this risk, RASG-PA chartered the Regional Aviation Safety Team (RAST) to review runway excursion information and develop mitigation strategies to reduce this risk.							
<b>Champion Organization:</b>	ALTA							
<b>Human Resource:</b>	ICAO (NACC, SAM, HQ), IATA, ALTA, ACSA, FSF, CANSO, aircraft manufacturers, ALPA, IFALPA, IFATCA, CAA's, and other stakeholders.							
<b>Financial Resource:</b>	10000							
<b>Relation Current Aviation Community Initiative:</b>	IATA Runway Excursion Risk Reduction toolkit/FSF: ALAR toolkit (version June 2010) Colegio de Pilotos Aviadores de México: Aeronautical Decision Management Training							
<b>Performance Goal Indicators:</b>	<p>Goal 1: target audience(s): Latin America and Caribbean, will value the information provided</p> <p>(1) Objective: educate the target audience(s)</p> <p>(2) Indicator: to reach 80% of the airlines pilots in the Region</p> <p>(3) Indicator: to reach 80% of other stakeholders as determined by the research.</p> <p>Goal 2: increase the awareness on runway excursions</p> <p>(1) Objective: reduce the number of events</p> <p>(2) Indicator: reduction of 80% of the events in the region</p>							
<b>Key Milestones:</b>	<ul style="list-style-type: none"> <li>• Authorization by IATA to upload copyright material from RERR Toolkit in RASG-PA website: pending</li> <li>• Release of State letters from RASG-PA Secretariat recommending establishment of SOPs: SCA+02</li> <li>• RAST – PA Report from metrics regarding RE/04: Upon completion of Output 2 +03</li> </ul>							
<b>Potential Blockers:</b>	<p>a)Strategic Challenges</p> <p>i)Incorporate new audience in addition to airline's pilots</p> <p>ii)Distribution of training material to airlines</p> <p>iii)Distribution of training material to non-airline pilots</p> <p>iv)Establish and maintain communication with the Pan American pilots and other stakeholders</p> <p>v)Operators to include recommendations into their Manual of Operations</p> <p>vi)Operators to include recommendations into their training programmes</p> <p>vii)Get feedback</p> <p>viii)Metrics to determine penetration of this programme</p>							
<b>DIP Notes:</b>	<p>1. Research to determine the target audience(s) Determine the specific groups of pilots to be reached in order to achieve our objective Determine other stakeholders that would benefit.</p> <p>2. Communication and distribution options: Letter from RASG-PA Secretary to recommend that all operators establish SOP's that include stabilized approach criteria for pilots and a no fault go-around policy for unstable approaches, mentioning the FSF/IATA Runway Excursion Risk Reduction Tool Kit. Letter from RASG-PA Secretary to States recommending that all operators establish SOP's that include stabilized approach criteria for pilots and a no fault go-around policy for unstable approaches, mentioning the FSF/IATA Runway Excursion Risk Reduction Tool Kit.</p> <p>3. Press releases from ALTA, IATA, IFALPA. 4. RASG-PA website news release, uploading of training material and E-mails to target audience</p>							

*Keep in mind that there is no contradiction with the pressure for pilots in the subsequent flight analysis.*

**RAST-PA/RE/04 Output 1**

**Description:** Distribution

**Resources:**

**Resource Notes:** Cost of the material and distribution to the operators.

**Time Line:** SCA+ 5 months

**Actions:** 1. RAST/RE recommends that all operators establish SOP's that include stabilized approach criteria for pilots and a no fault go-around policy for unstable approaches. 2. In coordination with FSF and IATA, RAST/RE should develop an awareness campaign to promote the adherence to SOP's for approach procedures including the go-around decision making process. The campaign will distribute the FSF/IATA Runway Excursion Risk Reduction Tool Kit, the Colegio de Pilotos Aviadores de Mexico Aeronautical Decision Management training, and any other available material. 3. Time to train trainers

**Target Completion Date:** 12

---

**RAST-PA/RE/04 Output 2**

**Description:** Training

**Resources:**

**Resource Notes:** Variable costs depending on the operator.

**Time Line:** SCA+ 15 months

**Actions:** Operators to include material in training programs.

**Target Completion Date:**

---

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/RE/08	Guidance in maintaining runway in accordance with Annex 14 (put this point next to 6)	Annex 14, Doc 9137 ICAO	1	High	Easy	P1	3	Short

**Safety Enhancement Action (expanded):** To reduce runway condition/maintenance related accidents and incidents at airports by following a runway maintenance guide in accordance with ICAO Annex 14.

**Statement of Work:** Establish a team who will compile and develop, if necessary, runway maintenance guidance for airports in the Panamerican region.

**Champion Organization:** ACI-LAC

**Human Resource:** CAAs, ICAO, ACI, IATA, ALACPA, Airport Operators, Maintenance staff and providers.

**Financial Resource:** To be determined, in-kind support to develop the guidance material.

**Relation Current Aviation Community Initiative:** ACI Airside Safety Handbook  
Annex 14  
ICAO Doc 9137 Airport Services Manual Par 2 – Pavement Surface Conditions  
ICAO Doc 9157 Part 4 Visual Aids  
Runway excursion risk reduction toolkit

**Performance Goal Indicators:** Goal 1: Create a guide that collects best practices for runway maintenance.  
Indicator: Online availability of the guide.

Goal 2: Promote and encourage the use of the guide.  
Indicator: RASG-PA promotion of the guide.

Goal 3: airports implement their maintenance plans according to this guide.  
Indicator: A measurable amount of airports that incorporate the use of the guide into their action plans.

Goal 4: Reduce the occurrence of runway condition related incidents and accidents.  
Indicator: A measurable and continued reduction in runway condition related incidents and accidents.

**Key Milestones:**

DIPESC X	Approval
Output 1 The guide	ESC X Date + 6
Output 2 Promote	Output 1 + 12
Output 3 Implementation of the guide	Output 1 + 18

**Potential Blockers:**

- Lack of resources to establish the plans correctly
- Differences between CAAs and airport operators
- Weaknesses in regulatory oversight
- Airport operators may not recognize safety enhancement benefits of implementing the plan according to the guidelines
- Data sharing

**DIP Notes:** RASG-PA, Annual Safety Report Team (ASRT), will review collected data on a yearly basis. This data will be reflected in the annual RASG-PA Safety Report

### **RAST-PA/RE/08 Output 1**

**Description:** Create a guide that collects best practices for runway maintenance.

**Resources:**

**Resource Notes:** ACI

**Time Line:** 6 months

**Actions:** Establish a team who will compile and develop, if necessary, runway maintenance guidance for airports in the Pan American region. The team should be composed of at least; an ICAO Annex 14 expert, a representative from aerodromes and Aerodrome cognizant CAA representative. Once available the guidance should be translated into Spanish.

**Target Completion Date:**

---

### **RAST-PA/RE/08 Output 2**

**Description:** Promote and encourage the use of the guide.

**Resources:**

**Resource Notes:** RASG-PA

**Time Line:** 12 months

**Actions:** Produce information material that may be disseminated at events throughout the Region. Call on RASG-PA Members to disseminate the information.

**Target Completion Date:**

---

### **RAST-PA/RE/08 Output 3**

**Description:** Airports implement their maintenance plans according to the runway maintenance guide.

**Resources:**

**Resource Notes:** ACI, RST's

**Time Line:** 18 months

**Actions:** Use a data-driven approach to identify aerodromes that could benefit from improved runway maintenance. Encourage RST at Airports to use the runway maintenance guide and track outcomes through their action plans. Track aerodrome action plans to determine the number of aerodromes that are using the guide.

**Target Completion Date:**

---

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/RE/09	Specific Training for pilots and air traffic controllers to avoid unstabilized approaches		9	High	Easy	P1	2	Short

<b>Safety Enhancement Action (expanded):</b>	Develop safety seminars for pilot and air traffic controllers to mitigate the causes of unstable approaches in Pan America.
<b>Statement of Work:</b>	Runway Excursion has been identified as one of the highest safety risk area in Pan America. In order to proactively reduce this risk, RAST in collaboration with ALTA will develop safety seminars for pilots and controllers that will provide specific training and tools to mitigate the causes of unstable approaches and related actions as required.
<b>Champion Organization:</b>	ALTA
<b>Human Resource:</b>	IATA, ATA, ATAC, ACSA, ICAO, aircraft manufacturers, IFALPA, IFATCA, flight data analysis companies (Sagem, ADI, Airfase, etc.), organizations, CANSO, local pilot and air traffic controller associations, flight academies, training centers and other stakeholders.
<b>Financial Resource:</b>	Costs would be shared by the operators, manufacturers, pilot associations and governments.
<b>Relation Current Aviation Community Initiative:</b>	- Runway Safety Action Teams (RSAT); local equivalent collaborative teams in Pan America.
<b>Performance Goal Indicators:</b>	Goal: reduce occurrence of runway excursion accidents. Indicator: a measurable reduction of runway excursion incidents and accidents.
<b>Key Milestones:</b>	The following milestones are based on the date of SCA approval (months): - Survey & Reports SCA + 6 - Seminars Output 1 + 24
<b>Potential Blockers:</b>	- Insufficient funds to conduct seminars - Inadequate implementation of recommendations from outputs - Participation from industry - Human resources, specialists, facilitators - Language barriers - Obtaining copyright approval for available training material - Political barriers - Data sharing restrictions - Time availability
<b>DIP Notes:</b>	Impact on Aviation Safety in the Region: This project would have a positive impact on aviation by avoiding accidents and incidents related to runway excursion.

### **RAST-PA/RE/09 Output 1**

<b>Description:</b>	ALTA will conduct a survey within its operators regarding the actions taken to mitigate unstable approaches.
<b>Resources:</b>	
<b>Resource Notes:</b>	ALTA members
<b>Time Line:</b>	SCA + 6 months
<b>Actions:</b>	The information obtained will be presented and be used to prepare the content for the safety seminars. The goal will be to identify needs and share best practices to improve training methods.
<b>Target Completion Date:</b>	

### **RAST-PA/RE/09 Output 2**

**Description:** Develop a strategy to deliver safety seminars for pilots and controllers in Pan America that targets recognition and avoidance of unstable approaches.

**Resources:**

**Resource Notes:** Stakeholders as listed above

**Time Line:** Output 1 + 24 months

**Actions:** Develop a strategy and timeline to deliver safety seminars for pilots and controllers.

At a minimum the following topics should be covered:

- Stabilized Approaches
- Go Around Gates and Missed Approach Criteria
- Approach Procedures and Briefings
- Non Normal Aircraft Conditions
- Transfer of Aircraft Control
- CRM/TRM and human factors
- Weather conditions and information dissemination including tail wind landings

During the safety seminars participant will be asked to provide additional mitigation measures that will be compiled and used as the basis of future safety enhancements for runway excursions.

**Target Completion Date:**

---

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/RE/11	Develop guidance material and training programs to create action plans for runway safety teams.	Annex 14, ICAO Doc. 9137, IATA, FAA, IFALPA Airport Liaison Program	9	High	Easy	P1	1	Short

<b>Safety Enhancement Action (expanded):</b>	To reduce runway related accidents and incidents at airports by identifying airport specific hazards and developing mitigations.												
<b>Statement of Work:</b>	Establish the framework to create Runway Safety Teams (RST) which will evaluate airports for hazards and implement the appropriate mitigations. Facilitate the sharing of data, training material, mitigations, and workshops.												
<b>Champion Organization:</b>	Mexico												
<b>Human Resource:</b>	CAAs, ICAO, Airport Operators, Air Operators, Air Traffic Management/Communication Navigation Surveillance providers, Fixed Base Operators, Pilots.												
<b>Financial Resource:</b>	Database creation, workshops, RASG-PA resources for material compilation.												
<b>Relation Current Aviation Community Initiative:</b>	ICAO Global and Regional Runway Safety Initiative, Flight Safety Foundation Runway Safety Initiative, Commercial Aviation Safety Team Safety Enhancement												
<b>Performance Goal Indicators:</b>	<p>Material currently available:</p> <ul style="list-style-type: none"> <li>- ICAO (<a href="http://www2.icao.int/en/RunwaySafety/Pages/Toolkits.aspx">http://www2.icao.int/en/RunwaySafety/Pages/Toolkits.aspx</a>)</li> <li>- Flight Safety Foundation (<a href="http://flightsafety.org/current-safety-initiatives/runway-safety-initiative-rsi">http://flightsafety.org/current-safety-initiatives/runway-safety-initiative-rsi</a>)</li> <li>- Federal Aviation Administration (<a href="http://www.faa.gov/airports/runway_safety/resources/lrsat/">http://www.faa.gov/airports/runway_safety/resources/lrsat/</a>)</li> <li>- EUROCONTROL (<a href="http://www.eurocontrol.int/runwaysafety/public/standard_page/keyActions.html">http://www.eurocontrol.int/runwaysafety/public/standard_page/keyActions.html</a>)</li> <li>- IFALPA (<a href="http://ifalpa.org/ifalpa-training/alr/alr.html">http://ifalpa.org/ifalpa-training/alr/alr.html</a>)</li> </ul> <p>Goal 1: Establish a runway safety team (RST) at the busiest airport of each contracting State in the Pan American region in terms of operations per year. Indicator: Twelve teams established per year.</p> <p>Goal 2: Establish a RST at all international airports of each contracting State in the Pan American region. Indicator: Twelve teams established per year.</p> <p>Goal 3: Reduce the occurrence of runway related incidents and accidents. Indicator: A measurable reduction in runway related incidents and accidents.</p>												
<b>Key Milestones:</b>	<table border="0"> <tr> <td>DIP</td> <td>ESC X Approval</td> </tr> <tr> <td>Output 1 Gather &amp; Publish information</td> <td>ESC 10 Date + 3</td> </tr> <tr> <td>Output 2 Checklist</td> <td>Output 1 + 6</td> </tr> <tr> <td>Output 3 Database</td> <td>Output 1 + 6</td> </tr> <tr> <td>Output 4 Roll out plan</td> <td>Output 3 + 6</td> </tr> <tr> <td>Output 5 Review and update</td> <td>Output 4 + 6</td> </tr> </table>	DIP	ESC X Approval	Output 1 Gather & Publish information	ESC 10 Date + 3	Output 2 Checklist	Output 1 + 6	Output 3 Database	Output 1 + 6	Output 4 Roll out plan	Output 3 + 6	Output 5 Review and update	Output 4 + 6
DIP	ESC X Approval												
Output 1 Gather & Publish information	ESC 10 Date + 3												
Output 2 Checklist	Output 1 + 6												
Output 3 Database	Output 1 + 6												
Output 4 Roll out plan	Output 3 + 6												
Output 5 Review and update	Output 4 + 6												
<b>Potential Blockers:</b>	<ul style="list-style-type: none"> <li>- Lack of resources to establish RSTs</li> <li>- Differences between CAAs and airport operators</li> <li>- Airport operators may not recognize safety enhancement benefits</li> <li>- Data sharing</li> <li>- Lack of resources to implement mitigations</li> </ul>												
<b>DIP Notes:</b>	<p>RASG-PA, Annual Safety Report Team (ASRT), will review collected data on a yearly basis. This data will be reflected in the annual RASG-PA Safety Report.</p> <p><i>Multidisciplinary runway safety teams are envisaged to work with airport operators to identify areas of opportunity and available resources to enhance runway safety for specific aerodromes.</i></p>												

**RAST-PA/RE/11 Output 1**

<b>Description:</b>	Gather and publish in the RASG-PA website available material that may be used to mitigate hazards related to runway safety.
<b>Resources:</b>	
<b>Resource Notes:</b>	ICAO
<b>Time Line:</b>	6 months
<b>Actions:</b>	Publish or make links available to websites such as FSF, CAST, FAA, EURCONTROL and IFALPA which RST may use to proposed mitigation actions for identified hazards related to runway safety.
<b>Target Completion Date:</b>	

---

**RAST-PA/RE/11 Output 2**

<b>Description:</b>	Electronic checklist development
<b>Resources:</b>	
<b>Resource Notes:</b>	ICAO, IFATCA, IATA & ACI
<b>Time Line:</b>	6 months
<b>Actions:</b>	Develop an electronic checklist based on best practices and threat and error management that RST may use to identify hazards and propose mitigation actions. The checklists should address the following areas: <ul style="list-style-type: none"> <li>- ATM/CNS</li> <li>- Air operators</li> <li>- Airport</li> <li>- Before releasing final versions of the checklists, field test in a pilot project</li> <li>- Translate Checklists into Spanish</li> </ul>
<b>Target Completion Date:</b>	

---

**RAST-PA/RE/11 Output 3**

<b>Description:</b>	Establishment of a regional Runway Safety Database
<b>Resources:</b>	
<b>Resource Notes:</b>	ICAO
<b>Time Line:</b>	6 months
<b>Actions:</b>	Create a Regional database that will house the data from the checklists (Output 2) with at least the following considerations: <ul style="list-style-type: none"> <li>- Option to de-identify the source of the information</li> <li>- Where possible responses should be selectable (rather than free text)</li> <li>- Contain appropriate level(s) of data entry</li> <li>- Consider the legal aspects of data sharing</li> <li>- Capture the resulting mitigation actions and their end result</li> <li>- Before releasing final versions of the checklists/database interface, field test in a pilot project</li> <li>- Spanish version</li> </ul>
<b>Target Completion Date:</b>	

---

**RAST-PA/RE/11 Output 4**

**Description:** Develop a roll out plan

**Resources:**

**Resource Notes:** RAST-PA / FSTT-PA

**Time Line:** 6 months

**Actions:** Organize workshops in Pan America to disseminate the information and train on:

- Establishment of RST
- The use of the DB
- The use of the checklist
- Finding Material related to runway safety.

**Target Completion Date:**

---

### **RAST-PA/RE/11 Output 5**

**Description:** Review and Update of the Runway Safety Teams

**Resources:**

**Resource Notes:** RAST-PA

**Time Line:** 6 months

**Actions:** Develop a process to review on a two times a year basis the number of RSTs established and ensure that all relevant runway safety material is maintained updated.

**Target Completion Date:**

---

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/CFIT/02	Specific ALAR/CFIT Training for Pilots	SE-12, ALAR Toolkit, FSF CFIT Training	9	Medium	Moderate	P5	1	Short

**Safety Enhancement Action (expanded):** Promote specific ALAR/CFIT prevention training and procedures to be included in operators approved training curriculums, emphasizing pilot situational awareness and escape procedures for flight crews to use in the event of a terrain warning indication.

**Statement of Work:** Controlled Flight Into Terrain (CFIT) has been identified as one of the top three data driven risk areas in Pan-America. CFIT is a significant cause of commercial aviation equipment loss and fatalities, worldwide. CFIT accidents could be substantially reduced if all operators and training centers in Pan America developed CFIT prevention procedures and add them to their approved initial and recurrent training curriculums.

**Champion Organization:** IATA

**Human Resource:** CAA's, ICAO, IATA, ATA, ALTA and industry partners.

**Financial Resource:**

**Relation Current Aviation Community Initiative:**

- RASG-PA has identified CFIT as the number two flight safety risk area in Pan America.
- Flight Safety Foundation (FSF) has recently updated (April 2010) the ALAR Toolkit that includes CFIT Education and Training.

**Performance Goal Indicators:**

Goal 1: A reduction of 80% in ten years of CFIT accidents involving operators in Pan America.  
Indicator: Operator CFIT accident rate in Pan America is continuously reduced toward the goal.

Goal 2: CFIT training and guidance material will be provided to all operators and training centers not conducting CFIT training.  
Indicator: All operators and training centers are conducting CFIT training.

Goal 3: Post CFIT Education and Training Guidance Material on the RASG-PA Website. Indicator: CFIT training material posted on the RASG-PA Website prior to completion of Output 1.

**Key Milestones:**

- CAA's conduct a review of all operators CFIT training programs SCA + 6 months
- CFIT Education and Training Guidance Material Available on the Web. SCA + 2 months
- Operators and training centers will incorporate CFIT training into their training programs. SCA + 12 months

**Potential Blockers:**

- Availability of CAA resources.
- Operators may not recognize the safety enhancement benefits

**DIP Notes:**

### **RAST-PA/CFIT/02 Output 1**

**Description:** CAA's conduct a review of all operators to ascertain which operators have CFIT prevention training and procedures in their approved training programs.

**Resources:**

**Resource Notes:** CAA (Flight Safety Oversight Department)  
Estimate of 2 to 4 CAA man-hours per airline to complete operator review  
CAA Inspector review checklist

**Time Line:** SCA+ 6 months

**Actions:** Through the flight safety oversight departments, CAA's will direct inspectors to conduct a review of their operator and identify which operators provide CFIT prevention training and procedures within their approved training programs.

**Target Completion Date:**

### **RAST-PA/CFIT/02 Output 2**

**Description:** If an operator does not have CFIT training, he will be encouraged to incorporate CFIT training into the airline training program.

**Resources:**

**Resource Notes:** Operators, CAA's and ICAO  
Variable cost depending on the operator and the number of pilots

**Time Line:** SCA+ 16 months

**Actions:** Operators will incorporate CFIT prevention training and procedures into their training programs.

**Target Completion Date:**

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/CFIT/04	CRM/Situational Awareness for pilots and air traffic controllers (To include review of actual events when possible)	SE -11, SE-46, SE-47	12	Medium	Moderate	P5	2	Medium

**Safety Enhancement Action (expanded):** Include specific CRM/situational awareness training and procedures to all pilots and air traffic controller training curriculums, emphasizing pilot and controller situational awareness with respect to CFIT.

**Statement of Work:** Crew Resource Management/Controller Resource Management (CRM) training, situational awareness and CFIT prevention are closely linked. This project will reduce CFIT accidents by promoting comprehensive pilot and air traffic controller CRM training programs.

**Champion Organization:** IFALPA/IFATCA

**Human Resource:** CAA's, ICAO, ANSP's, IFALPA, IFATCA, IATA and industry partners.

**Financial Resource:**

**Relation Current Aviation Community Initiative:**

- RASG-PA website (<http://www.mexico.icao.int/RASGPA.html#TrainingRefs>)
- FSF virtual library (<http://flightsafety.org/>)
- ALAR Briefing Note – Crew Resource Management ([http://flightsafety.org/files/alar\\_bn2-2-crm.pdf](http://flightsafety.org/files/alar_bn2-2-crm.pdf))
- Airbus ([http://www.airbus.com/en/corporate/ethics/safety\\_lib/](http://www.airbus.com/en/corporate/ethics/safety_lib/))
- Boeing operators ([www.myboeing.com](http://www.myboeing.com))

**Performance Goal Indicators:** Goal 1: A substantial reduction of CFIT accidents involving air transport operators in Pan America.

Indicator: Operator CFIT accident rate in Pan America decreases by 80%.

Goal 2: CRM/situational awareness training and guidance material provided to all air transport operators and Air Traffic Personnel.

Indicator: Increase in number of operators and Air Traffic Personnel that are conducting CRM/situational awareness training.

Goal 3: Post the CRM/situational awareness guidance material on the RASG-PA Website.

Indicator: CRM/situational awareness guidance material posted on the RASG-PA Website by the time of SCA +2 months.

**Key Milestones:**

- CRM/situational awareness training and guidance material available on the Web. SCA +2 months
- Operators will incorporate CFIT training into their training program. SCA +18 months
- ANSP will incorporate CFIT training into their training program. SCA+ 24 months

**Potential Blockers:**

- Availability of CAA/ANSP/State resources.
- Operators, States and ANSP may not recognize the safety benefits

**DIP Notes:** All communications to States should be conducted through the RASG-PA Secretariat. Guidance on coordinating with ICAO and identifying which operators and ANSPs are providing CFIT prevention training and procedures within their approved training programs may be useful to States.

*ATC training in this area has already been developed*

**RAST-PA/CFIT/04 Output 1**

<b>Description:</b>	Incorporate and/or update CRM/situational awareness training programs for all flight crew members of air transport operators emphasizing aircraft position with relation to terrain and reviewing past occurrences.
<b>Resources:</b>	
<b>Resource Notes:</b>	Air transport operators (training departments), Variable cost depending on the operation
<b>Time Line:</b>	SCA+ 18 months
<b>Actions:</b>	Reduce the CFIT accident rate by incorporating CFIT prevention in CRM training programs. Situational awareness will be emphasized as an integral part of the CRM training required of flight crewmembers of all air transport operators.
<b>Target Completion Date:</b>	

---

**RAST-PA/CFIT/04 Output 2**

<b>Description:</b>	Incorporate CRM/situational awareness training programs for all air traffic controllers of air navigation service providers (ANSP) emphasizing aircraft position with relation to minimum allowable altitudes.
<b>Resources:</b>	
<b>Resource Notes:</b>	ANSP's (training departments), CRM/situational awareness guidance material posted on the RASG-PA Website Variable cost depending on the ANSP
<b>Time Line:</b>	SCA+ 24 months
<b>Actions:</b>	Reduce the CFIT accident rate by incorporating CFIT prevention in CRM training programs. Situational awareness will be emphasized as an integral part of the CRM training required of air traffic controllers of all ANSPs.
<b>Target Completion Date:</b>	

---

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/LOC-I/06	LOC Training – Human factors and automation	SE 30	9	High	Moderate	P2	3	Short
<b>Safety Enhancement Action (expanded):</b>	To improve the overall performance of flight crews to recognize and prevent loss of control accidents, through effective use of automation.							
<b>Statement of Work:</b>	To reduce loss of control accidents, operators will be encouraged to adopt consensus policies and procedures relating to mode awareness and energy state management aspects of flight deck automation, as appropriate to their respective operations.							
<b>Champion Organization:</b>	RASG-PA (RAST-PA)							
<b>Human Resource:</b>	IATA, Pilot Associations; Safety, Flight Operations and Training managers; ICAO, CAA's, aircraft manufacturers, training centers.							
<b>Financial Resource:</b>	The total estimated cost would be X person-years.							
<b>Relation Current Aviation Community Initiative:</b>	<p>The following are some of the activities related to this project:</p> <ul style="list-style-type: none"> <li>•Incident data has shown that flight deck automation is a core issue that needs to be addressed. To enhance safety, a CAST working group, including aircraft manufactures, pilot associations, etc. developed a tactical approach and distributed policies and procedures relating to mode awareness and energy state management. The COSCAP's in Asia used this material to develop a generic advisory circular.</li> <li>•CAST Flight Deck Automation Working Group has been formed to recommend and prioritize actions to address, for current and projected operational use, the safety and efficiency of modern flight deck systems for flight path management (including energy state management).</li> <li>•The Human Factors and Pilot Training Group of the ALPA, Air Safety Structure has identified its position regarding CRM and Human Factors with respect to the use of automation.</li> <li>•SAE G10, Aerospace Behavioral Engineering Technology (ABET) Committee, deals with the philosophies, principles and criteria by which designers, engineers, pilots and behavioral scientists structure systems to achieve maximum human workload compatibility for automation efficiency. The committee has several subcommittees with on-going work into human factors and automation</li> </ul>							
<b>Performance Goal Indicators:</b>	<p>Goal 1: Mitigate the effects of mode confusion and energy state management as contributing factors in loss of control accidents. Indicator: A measurable reduction of loss of control incidents and accidents related to automation.</p> <p>Goal 2: Mode awareness and energy state management aspects of flight deck automation advisory circular is readily available. Indicator: Each ICAO contracting State in the region has issued an advisory circular and distributed it to each operator's in the State. Completion of Output 3.</p> <p>Goal 3: All operators incorporate mode awareness and energy state management aspects of flight deck automation guidance in their approved training programs. Indicator: Mode awareness and energy state management aspects of flight deck automation guidance is provided to all transport airplane pilots Completion of Output 4.</p>							
<b>Key Milestones:</b>	<p>The following milestones are based on the date of Steering Committee Approval (SCA) (months):</p> <ul style="list-style-type: none"> <li>•Review Asian advisory circular IATA SCA+6</li> <li>•Issue generic advisory circular ICAO Output 1 +1</li> <li>•Issuance of advisory circular by States in the Region. CAAs Output 2 +6</li> <li>•Operators develop guidance based on the AC and train pilots. Operators Output 3 + 18</li> <li>•Track Implementation RASG-PA SCA +12 and yearly</li> </ul>							
<b>Potential Blockers:</b>	<ul style="list-style-type: none"> <li>•Operator might not embrace advisory circular material,</li> <li>•Operators might not accept the potential cost of this training,</li> <li>•Operators may not recognize the safety enhancement benefits,</li> <li>•States may opt not to adopt and issue the advisory circular.</li> </ul>							
<b>DIP Notes:</b>								

*To reduce loss of control accidents, air carriers will be encouraged to adopt consensus policies and procedures relating to mode awareness and energy state management, as appropriate to their respective operations.*

### **RAST-PA/LOC-I/06 Output 1**

<b>Description:</b>	Review and evaluate the advisory circular created by the ICAO COSCAP's in Asia <ul style="list-style-type: none"> <li>•ALTA / IFALPA / IATA team to review and evaluate the advisory circular created by the ICAO COSCAP's in Asia related to mode awareness and energy state management of flight deck automation.</li> <li>•Based on this review create a generic advisory circular for the Region</li> </ul>
<b>Resources:</b>	
<b>Resource Notes:</b>	ALTA, IFALPA, IATA, Pilot Associations, Flight Operations, Safety and Training managers, and Aircraft Manufacturers. The estimated cost of a one day meeting of the appropriate persons.
<b>Time Line:</b>	SCA + 6 months
<b>Actions:</b>	ALTA / IFALPA / IATA will convene a team to analyze the advisory circular, to verify policies and procedures related to mode awareness and energy state management are appropriate for the Region. The team will develop a generic mode awareness and energy state management aspects of flight deck automation advisory circular for Pan America.
<b>Target Completion Date:</b>	

---

### **RAST-PA/LOC-I/06 Output 2**

<b>Description:</b>	•ICAO will distribute a copy of the developed generic advisory circular to each State in the Region.
<b>Resources:</b>	
<b>Resource Notes:</b>	ICAO
<b>Time Line:</b>	Completion of Output 1 + 1 months
<b>Actions:</b>	ICAO Regional Offices will prepare a cover letter and disseminate the generic advisory circular to each member State in the Region.
<b>Target Completion Date:</b>	

---

### **RAST-PA/LOC-I/06 Output 3**

<b>Description:</b>	•Each State in the region will use the generic advisory circular as a template to prepare a State advisory circular on mode awareness and energy state management aspects of flight deck automation.
<b>Resources:</b>	
<b>Resource Notes:</b>	State regulatory authorities
<b>Time Line:</b>	Completion of output 2 + 9 months
<b>Actions:</b>	States in the Region to issue their own advisory circular on mode awareness and energy state management aspects of flight deck automation.
<b>Target Completion Date:</b>	

---

### **RAST-PA/LOC-I/06 Output 4**

<b>Description:</b>	Mode awareness and energy state management aspects of flight deck automation guidance is provided by operators to all of their pilots.
<b>Resources:</b>	
<b>Resource Notes:</b>	Operator's flight operations, standards and training departments.
<b>Time Line:</b>	Completion of Output 3 + 18 months
<b>Actions:</b>	Each operator should carefully developed procedures and guidelines that support the proper use of mode awareness and energy state management aspects of flight deck automation in their training programs. Each transport airplane pilot should be trained to the flight deck automation procedures and guidelines developed by their organization.
<b>Target Completion Date:</b>	

---

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/LOC-I/07	LOC Training – Advanced maneuvers	SE 31	9	High	Moderate	P2	1	Short
<b>Safety Enhancement Action (expanded):</b>	Promote LOC Training – Advanced maneuvers Pilots will be better trained to avoid and recover from excursions from normal flight and loss of control.							
<b>Statement of Work:</b>	Advanced Maneuvers Training (AMT) focuses on training to prevent and recover from hazardous flight conditions outside of the normal flight envelope, such as, inflight upsets, stalls, ground proximity and wind shear escape maneuvers, and inappropriate energy state management conditions. There has been a recent increase in accidents where loss of control was a contributing factor.							
	The purpose of this project is to collect and provide advanced maneuver training material and to encourage 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							
<b>Champion Organization:</b>	ALTA							
<b>Human Resource:</b>	Airline Associations, Pilot Associations; Safety, Flight Operations, and Training managers, aircraft manufacturers, ICAO, flight simulation device manufacturers, training centers, existing training aids, and new materials developed by manufacturers.							
<b>Financial Resource:</b>	The total cost associated with this project would be determined by the number of crew personnel that need to be trained and the amount of training time required. This initiative is considered essential for flight safety, there would be no cost associated with the devel							
<b>Relation Current Aviation Community Initiative:</b>	<ul style="list-style-type: none"> <li>•Voluntary training currently being done – both ground and flight</li> <li>•Wind shear training required since 1988</li> <li>•Airplane Upset Recovery Training Aid</li> <li>•Commercial training products becoming available</li> </ul>							
<b>Performance Goal Indicators:</b>	<p>Goal 1: Develop and make available AMT material for operators approved training programs Indicator: Availability of the AMT material within 8 months of SCA.</p> <p>Goal 2: All operators incorporate AMT in their approved training programs. Indicator: Operators incorporate AMT material within 36 months of SCA.</p> <p>Goal 3: Reduce occurrence of LOC accidents. Indicator: A measurable reduction of loss of control incidents and accidents related to excursion from normal flight.</p>							
<b>Key Milestones:</b>	<p>The following milestones are based on the date of Steering Committee Approval (SCA) (months):</p> <ul style="list-style-type: none"> <li>•Distribute currently available Training Aids ALTA SCA +8</li> <li>•Track adoption of AMT ALTA SCA +8</li> <li>•Track Implementation SCA+8 and on a yearly basis</li> </ul>							
<b>Potential Blockers:</b>	<ul style="list-style-type: none"> <li>•Some special interests might discredit AMT simulator training</li> <li>•Operators might ignore AMT materials</li> <li>•Operators might not accept the potential cost of this training</li> <li>•Operators may not recognize the safety enhancement benefits</li> </ul>							
<b>DIP Notes:</b>	<p><i>Advanced Maneuvers Training (AMT) refers to training to prevent and recover from hazardous flight conditions outside of the normal flight envelope. Examples include in-flight upsets, stalls, ground proximity and wind shear escape maneuvers, and inappropriate energy state management conditions. This safety enhancement collects and provides advanced maneuver training material and encourages operators to use these materials to implement advanced maneuver ground 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.</i></p>							

**RAST-PA/LOC-I/07 Output 1**

**Description:** Listing of training materials available from regulators, industry, operators, academia and other resources.

**Resources:**

**Resource Notes:** RAST-PA Secretariat (NACC office) will produce a comprehensive list, with input from all RAST-PA members. All aircraft manufacturers should provide a list of available training materials and aids. FAA Airplane Upset Recovery Training Aid: is available on its public web site.

**Time Line:** SCA+ 5 months

**Actions:** RAST-PA should distribute the Airplane Upset Recovery Training Aid to all appropriate regional stakeholders.

**Target Completion Date:**

---

**RAST-PA/LOC-I/07 Output 2**

**Description:** Advanced Maneuvers Training provided to all operators.

**Resources:** 10000

**Resource Notes:** Estimated distribution costs in USD.  
ALTA, IATA

**Time Line:** Output 1 Complete + 3 months

**Actions:** ALTA should provide the training materials to each operator in the region. IATA should support ALTA's initiative. ALTA should report the level of commitment by the operator's flight operations and training departments.

**Target Completion Date:**

---

**RAST-PA/LOC-I/07 Output 3**

**Description:** Advanced Maneuvers Training provided by all operators. The expectation is that this training will be accomplished during initial training and as part of the recurrent training program, via ground and simulator instruction within the certified flight envelope, with emphasis on recognition, prevention and recovery techniques.

**Resources:**

**Resource Notes:** Costs may vary from operator to operator and would need to consider;  
1) Revising the training program for AMT.  
2) Assessing the simulator time allotted on the initial and recurrent syllabuses to accommodate AMT.  
3) It is estimated that AMT training would require 30 minutes or less of simulator time.

**Time Line:** Output 2 Complete + 28 months

**Actions:** ALTA and IATA should promote a high level of commitment to advanced maneuvers training (AMT) by operator flight operations and training departments. Advanced maneuvers training will be conducted emphasizing energy state management and early recognition and recovery from flight outside the certified aircraft-operating envelope. Flight conditions outside of the certified flight envelope include inflight upsets, stalls, ground proximity and wind shear escape maneuvers, and inappropriate energy state management conditions. The training will be accomplished via ground and simulator instruction within the certified flight envelope, with emphasis on recognition, prevention and recovery techniques. The simulator instruction will be within the limitation of the training device being utilized.

**Target Completion Date:**

---

Rast No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-PA/LOC-I/09	LOC Training – Pilot monitoring policies and procedure for the operator and training program for crews.		9	High	Easy	P1	2	Short
<b>Safety Enhancement Action (expanded):</b>	Promote Pilot Monitoring Techniques and Training. Monitoring performance can be significantly improved by training these skills							
<b>Statement of Work:</b>	The purpose of this project is to collect and provide pilot monitoring training material and to encourage operators to use these materials to implement pilot monitoring training and flight procedures.							
	<p>Inadequate flight crew monitoring has been cited by a number of sources as a problem for aviation safety. A collaborative research effort by NASA-Ames, 21 worldwide airlines and the University of Texas Human Factors Research Program, which observed more than 2,000 airline flights, noted that roughly 62 percent of unintentional errors went undetected by flight crews. In addition, the Flight Safety Foundation, ALAR working group, has established that poor monitoring has been a factor in 63 percent of approach and landing accidents. ICAO has also determined that 50 percent of CFIT accidents had pilot monitoring as a common factor.</p> <p>The term 'Pilot Monitoring' (PM) should be used as an alternative to 'Pilot Not Flying' (PNF) since it reflects clearly the most important function of a PNF.</p> <p>Conventionally, when two pilots fly a fixed-wing airplane the aircraft commander occupies the left hand seat, and the co-pilot or first officer occupies the right hand seat. Before the commencement of each flight leg, the aircraft commander decides which pilot will take direct responsibility for flying the aircraft and they become 'Pilot Flying' (PF) for that leg. The other pilot is then 'Pilot Not Flying' (PNF) and carries out supporting duties such as communications and check-list reading. Currently some operators use alternative terms for PF and PNF.</p> <p>Several major airlines have recently revised their procedures to maximize the monitoring of aircraft trajectory, automation and systems. They have tried to minimize or eliminate concurrent procedures that conflict with crew monitoring.</p>							
<b>Champion Organization:</b>	IFALPA							
<b>Human Resource:</b>	Pilot Associations, IATA, ALTA, ICAO, Flight Operations, and Training managers, training centers, existing training aids.							
	The total cost associated with this project would be determined by the number of flight crews that need to be trained and the amount of time required. This initiative is considered essential for flight safety.							
	Estimated 2 meetings of RAST representatives to implement Output 1.							
<b>Financial Resource:</b>								
<b>Relation Current Aviation Community Initiative:</b>	<ul style="list-style-type: none"> <li>•Aligns with major findings by ICAO, FSF, NTSB.</li> <li>•Aligns with components of CRM</li> </ul>							
<b>Performance Goal Indicators:</b>	<p>Goal 1:Reduce occurrence of LOC accidents. Indicator: A measurable reduction of loss of control incidents and accidents related to deviations from normal flight.</p> <p>Goal 2: Pilot Monitoring Training material is readily available. Indicator: Availability of the Pilot Monitoring Training material in each operator’s organization within 2 months of Output 3.</p> <p>Goal 3: All operators incorporate Pilot Monitoring Training in their approved training programs. Indicator: Pilot Monitoring Training is provided to all transport airplane pilots. Within 18 months of Output 4.</p>							
<b>Key Milestones:</b>	<p>The following milestones are based on the date of Steering Committee Approval (SCA) (months):</p> <ul style="list-style-type: none"> <li>•Distribute currently available Training Aids ALTA SCA+5</li> <li>•Track adoption of Pilot Monitoring Training ALTA SCA+12</li> </ul>							
<b>Potential Blockers:</b>	<ul style="list-style-type: none"> <li>•Operators might not accept the potential cost of this training</li> </ul>							

- Operators may not recognize the safety enhancement benefits

**DIP Notes:**

*Pilot Monitoring policies and procedure for the operator and training program for crews.*

**RAST-PA/LOC-I/09 Output 1**

**Description:** •Listing of training materials available from industry, operators, and other resources.

**Resources:**

**Resource Notes:** RASG-PA Secretariat (NACC office) will produce a comprehensive list.

**Time Line:** SCA + 5 months

**Actions:** RASG-PA should distribute the Pilot Monitoring Training Aid to all appropriate regional stakeholders (IATA, ALTA, CAA, etc.).

**Target Completion Date:**

---

**RAST-PA/LOC-I/09 Output 2**

**Description:** •Raise awareness of availability and need of Pilot Monitoring Training.

**Resources:**

**Resource Notes:** IFALPA, Local Pilot Associations

**Time Line:** Completion of Output 1 + 1 months

**Actions:** IFALPA, ALTA and local pilot associations should market and promote ongoing activities that develop a higher level of commitment to Pilot Monitoring Training by operator's flight operations, standards and training departments.

**Target Completion Date:**

---

**RAST-PA/LOC-I/09 Output 3**

**Description:** •Pilot Monitoring Training material provided to all operators.

**Resources:**

**Resource Notes:** ALTA, IATA, CAA's

**Time Line:** Completion of Output 1 + 2 months

**Actions:** ALTA should provide the training materials to each operator in the region. IATA should support ALTA's initiative. ALTA should report to RASG-PA the level of commitment by the operator's flight operations and training departments.

**Target Completion Date:**

---

**RAST-PA/LOC-I/09 Output 4**

<b>Description:</b>	•Pilot Monitoring Training provided by operators to all of their pilots.
<b>Resources:</b>	
<b>Resource Notes:</b>	Operator’s flight operations, standards and training departments, pilot associations.
<b>Time Line:</b>	Completion of Output 3 + 18 months
<b>Actions:</b>	Each operator should carefully developed procedures and guidelines that support pilot monitoring in their training programs. Each transport airplane pilot should be trained to the Pilot Monitoring procedures and guidelines developed by their organization.
<b>Target Completion Date:</b>	

---

---

**Agenda Item 3: ASIAS**

**3.1 Overview**

3.1.1 Mr. Glenn Michael, FAA/CAST Representative, provided the Meeting with a presentation on the Aviation Safety Information Analysis and Sharing (ASIAS) system.

3.1.2 ASIAS was developed by the United States Federal Aviation Administration (FAA) to promote the open exchange of safety information in order to continuously improve aviation safety. The system enables users to perform integrated queries across multiple databases, search an extensive warehouse of safety data, and display pertinent elements in an array of useful formats. This is possible using the associated *Tableau* software. This programme is required to view the CAST Metrics file.

3.1.3 The presentation included aggregate, de-identified data for North American operators to selected airports in the CAR/SAM Regions.

**3.2 Protection of Information – Confidentiality/MoU**

3.2.1 The Meeting acknowledged the need to protect the safety information provided by ASIAS and the scope of the Memorandum of Understanding (MoU) signed by ASIAS and RASG-PA.

3.2.2 The Meeting committed to properly handle the safety information provided by ASIAS, considering that any breach will cancel the interchange of information.

**3.3 Data Analysis**

3.3.1 The Meeting discussed and agreed that one of the objectives of reviewing the safety information provided by ASIAS is to assess the effectiveness of the RASG-PA Safety Enhancement Initiatives (SEI) in combination with the information provided by the RASG-PA Annual Safety Report.

3.3.2 The Meeting also agreed that this safety information would provide an opportunity for the PA-RAST to transition from traditional reactive information to a proactive information environment in line with the principles established by the Safety Management System (SMS) and State Safety Programme (SSP) promoted by ICAO. This will allow defining data-driven risk mitigation strategies to enhance aviation safety throughout the Pan American Region.

3.3.3 The Meeting agreed that considering that unstabilized approaches are a key contributing factor to runway excursions (RE), the PA-RAST should focus on reviewing data related to unstabilized approaches at selected airports in the CAR/SAM regions.

**3.4 Recommendation to the ESC**

3.4.1 The Meeting, considering the legal constraints regarding the safety data available in the ASIAS system, recommended to the ESC that the review, analysis, and comparison of the ASIAS data with other sources of safety information from Latin American carriers remain within the PA-RAST and that the terms of reference for PA-RAST be modified to include ASIAS initiatives.

**Agenda Item 4:           Other business**

**4.1                   Brazil Trend Collection Project**

4.1.1                The Brazil representative briefed the Meeting about the Brazilian Aviation Safety Team (BAST). He also mentioned the participation of the major national carriers in the Brazil Trend Collection Project, which differs slightly from ASIAS, but will also collect, analyze, and share safety information.

**4.2                   2012 PA-RAST Work Programme**

4.2.1                The Meeting reviewed the work programme for 2012 and agreed that the PA-RAST/9 Meeting be held in Bogota, Colombia, on 18 June 2012.