FINAL VERSION

INTERNATIONAL CIVIL AVIATION ORGANIZATION

REGIONAL AVIATION SAFETY GROUP – PAN AMERICA

(RASG-PA)

FIRST MEETING OF THE REGIONAL AVIATION SAFETY TEAM

(RAST/ 01)

SUMMARY OF DISCUSSION

Mexico, Mexico City
15 to 16 February 2010

February 2009

1. HISTORICAL

1.1 The First Meeting of the Regional Aviation Safety Team (RAST/01) was held at the ICAO NACC Office, Mexico City, Mexico, 15-16 February, 2010. Mr. Gerardo Hueto, Industry Safety Strategy Group (ISSG) Representative was elected to serve as Rapporteur for the meeting. Mr. Miguel Marin, ICAO Headquarters, acted as Secretary. The meeting was conducted in English.

1.2 The Meeting was attended by 19 participants from States, international organizations, airlines, airports and manufacturers. An attendance list is provided in **Appendix A**.

1.3 Mrs. Loretta Martin, ICAO NACC Regional Director, and RASG-PA Secretary, welcomed the attendees and thanked them for their support of the RAST. She explained that the RAST was established via the following RASG-PA/02 Meeting Decision:

> *"RASG-PA/02/4: That the RASG-PA establishes a working group (Regional Aviation Safety Team – RAST) to analyze safety risks using the Global Aviation Safety Roadmap process; recommend mitigation measures to address identified risks; prioritize the mitigation measures; and recommend the establishment of projects to RASG-PA for further action".*

1.4 The top three data driven risk areas identified by RASG-PA for the Pan American Regions are: Runway Excursions (RE), Controlled Flight into Terrain (CFIT) and Loss of Control In-Flight (LOC-I).

2. Agenda Items

2.1 Agenda Item 1: Review and Approval of the Draft Meeting Agenda

2.1.1 The Meeting reviewed the draft agenda and adopted it as follows:

Agenda Item 1:	Review and Approval of the Draft Meeting Agenda.
Agenda Item 2:	RASG-PA Overview.
Agenda Item 3:	Review RAST Terms of Reference (TORs).
Agenda Item 4:	Analysis of Controlled Flight into Terrain (CFIT) - #2 Identified Risk Area.
Agenda Item 5:	Analysis of Loss of Control – In Flight (LOC-I) - #3 Identified Risk Area.
Agenda Item 6:	Analysis of Runway Excursions (RE) - #1 Identified Risk Area.
Agenda Item 7:	Other Business.

2.2 Agenda Item 2: RASG-PA Overview

2.2.1 The Rapporteur provided a brief introduction on the Regional Aviation Safety Group – Pan America (RASG-PA), for the benefit of those RAST members who had not been previously involved in RASG-PA activities. He highlighted that RASG-PA is the focal point to ensure harmonization and coordination of safety efforts aimed at reducing aviation risks in the North American, Central American, Caribbean (NAM/CAR), and South American (SAM) Regions, and to promote the implementation of resulting safety initiatives by all stakeholders including ICAO, States, International Organizations and the industry.

2.2.2 The RAST Secretary advised the participants that all RASG-PA documentation, reports, training and other useful safety related material may be found on the group's website: http://www.mexico.icao.int/RASGPA.html

2.3 Agenda Item 3: Review of RAST Terms of Reference (TORs)

2.3.1 The Meeting reviewed the Terms of Reference, and agreed to submit the following to the Executive Steering Committee (ESC) for approval:

a) Purpose of the Regional Aviation Safety Team:

- Analyze data driven safety risk areas identified by RASG-PA using the Global Aviation Safety Roadmap (GASR) process.

- Recognize possible mitigation measures and provide recommended actions categorized by:

  I. GSI (Global Safety Initiative) Number;
  II. RAST Number in the form of RAST-PA/(risk areas)/# (i.e. RAST-PA/CFIT/1);
  III. Safety Impact (High, Medium or Low);
  IV. Changeability (Difficult, Moderate and Easy) taking into consideration political will, commitment / consensus, resource requirements, availability for implementation, potential blockers – what conditions exist that could prevent implementation;
  V. Impact-Changeability (IC) Indicator (P1, P2, P3, etc.);
  VI. Priority;
  VII. Champion;
  VIII. Notes.

- Recommend establishment of achievable projects based on prioritized mitigation measures with well defined deliverables (including metrics to assess the effectiveness of the proposed mitigation actions) and clear time-frames established to the RASG-PA Executive Steering Committee for further action.

b) Membership:

- ICAO contracting States and Territories of the NACC and SAM Regions;
- International and Regional Organizations;
- Aircraft manufacturers;
- Other representative organizations, or any entity directly involved in aviation safety may be invited to join the work group as a full member or observer as decided by ICAO RASG-PA Secretariat.

c) Roles and Responsibilities:

- ICAO HQ – Support;
- ICAO NACC and SAM Regional Officers – Support;
- Workgroup Members – Provide technical expertise and collaborate in the development of material as requested by RAST.

2.4 Agenda Items 4, 5 and 6: Identified Risk Areas

2.4.1 Prior to initiating the analysis of the identified top three data driven risk areas, the Rapporteur delivered a brief presentation on the methodology to be followed based on the Global Aviation Safety Roadmap (GASR) for performing a gap analysis. When determining the safety impact and changeability level (IC) for each recommended safety enhancement action, the Meeting was asked to use the chart in **Appendix B.**

2.4.2 The Meeting reviewed the table that was used by the RASG-PA/02 Meeting for presenting the recommended safety enhancement actions and decided to amend it, in order to be aligned with the Terms of Reference of the RAST, and to include the following columns:

a) *Global Safety Initiatives (GSI) of the ICAO Global Aviation Safety Plan:* to facilitate the planning process of the action;
b) *Reference:* to point out the availability of documentation available including, the *Commercial Aviation Safety Team Safety Enhancements (CAST-SE) reference:* and
c) *Notes:* to explain any detail pertinent to the action.

2.4.3 When determining the content for the time frame column, the meeting elected to define short term as up to 2 years, medium term as 2 to 4 years and long term as more than 4 years with respect to the time required to implement the safety enhancement action strategy from the time it is approved.

2.4.4 The Meeting divided into three ad hoc working groups to address the three data driven risk areas identified by RASG-PA and provide results to the meeting as a whole. The amended template was used by the ad hoc groups. The outcome of each ad hoc group is contained in **Appendices C, D** and **E**.

2.4.5 Ad hoc group #1 was tasked with the analysis of CFIT, which is the number two Identified Risk Area in Pan America. It was coordinated by Mr. Glenn Michael from the FAA/CAST. This is Agenda Item 4.

2.4.6 The CFIT ad hoc group first evaluated the previous safety enhancement actions that were listed in the RASG-PA/02 report and discussed at length the merit of them. Taking into consideration the aviation culture in the Pan-American region, the group modified some of the existing safety enhancement actions and developed several others to be considered by the meeting as a whole. A total of nine safety enhancement actions for CFIT were developed by this group. The list was then ranked using the Global Aviation Safety Roadmap (GASR) methodology and given a time-frame for implementation. The safety enhancement actions were also referenced to the current global safety initiatives identified by the group. Lastly, the group prioritized each one of the safety enhancement actions according to which one should be accomplished first. The final prioritization was accomplished by RAST as a whole.

2.4.7 The results from this ad hoc group are contained in **Appendix D.**

2.4.8 Ad hoc group #2 was tasked with the analysis of Loss of Control In-Flight (LOC-I), which is the number three 3 Identified Risk Area in Pan America. It was coordinated by Mr. Gerardo Hueto from ISSG. This is Agenda Item 5.

2.4.9 The LOC-I ad hoc group began the process of identifying possible safety enhancement actions that could have a high impact in Pan America. The group opted to begin by using information contained in the Commercial Aviation Safety Team Safety Enhancements (CAST-SE) as a starting point. Nine safety enhancement actions were identified, three of which had not been considered by CAST. These fell into two general areas: Policy and Procedures, and Training. The group identified that for some of the proposed safety enhancement actions, more preparatory work would be required since guidance material for LOC-I is not abundant. Finally, the group prioritized the safety enhancement actions for the consideration of RAST, pointing out the two areas where significant progress could be attained in the short term.

2.4.10 The results from this ad hoc group are contained in **Appendix E.**

2.4.11 Ad hoc group #3 was tasked with the analysis of Runway Excursions (RE), which is the number one identified Risk Area in Pan America. It was coordinated by Ms. Cindy Granda from ALTA. This is Agenda Item 6.

2.4.12 The RE ad hoc group was tasked with refining and prioritizing the analysis of Runway Excursions (RE) that was started during the workshop at the last RASG-PA/02 Meeting. The group discussed the results from the workshop as described in Appendix A - Agenda Item 6 of the RASG-PA/02 Report. In reviewing the results, the group was able to clarify, define and adjust the scope of the safety enhancement actions, as well as incorporate the standardized categorization criteria as amended by the RAST. The group also prioritized and identified champions for the safety enhancement actions. The group was also able to identify two additional safety enhancement actions regarding training.

2.4.13 The results from this ad hoc group are contained in **Appendix C**.

2.4.14 The Meeting reconvened into plenary to review the results from the ad hoc groups. The Meeting agreed to identify two safety enhancement actions from each group that would have a high impact in each risk area in the short term. The Runway Excursions (RE) ad hoc group considered three safety enhancement actions since their second choice had two interrelated actions. These safety enhancement actions would then be submitted to the Executive Steering Committee (ESC) for approval to begin the implementation process. With the approval of the ESC, the RAST will move forward to develop detailed implementation action plans, which will be available prior to the First Aviation Safety Summit in Brazil, scheduled for April 2010. However, at least one face to face meeting will be required prior to the Summit.

2.4.15 The Meeting agreed to forward the following safety enhancement actions (seven total) to the ESC from the RASG-PA identified data-driven risk areas:

a) Runway Excursions (RE):

1. RAST-PA/RE/4: Promote pilot adherence to Standard Operating Procedures (SOPs) for approach procedures including the go-around decision making process

2. RAST-PA/RE/9: Promote specific training for pilots and air traffic controllers to avoid unstable approaches

3. RAST-PA/RE/10: Promote specific training for aerodrome personnel regarding maintenance and operations of the runway

b) Controlled Flight into Terrain (CFIT):

1. RAST-PA/CFIT/02: Promote specific Approach and Landing Accident Reduction (ALAR/CFIT) training for pilots

2. RAST-PA/CFIT/04: Promote Crew Resource Management (CRM) / Situational Awareness training for pilots and air traffic controllers

c) Loss of Control In-Flight (LOC-I):

1. RAST-PA/LOC-I/7: Promote LOC training – Advanced maneuvers

2. RAST-PA/LOC-I/9: Promote LOC training – Pilot monitoring policies and procedures for the operator and training program for flight crews

2.5 Other Business

2.5.1 The First RASG-PA/ALTA Pan American Aviation Safety Summit: ALTA reviewed the draft agenda for the first RASG-PA/ALTA Pan America Aviation Safety Summit, and briefed the RAST that the first day and a half of the Summit will be conference style to allow for speakers and panels to address the safety issues in the Pan American regions. The remainder of the seminar will be focused on training, which addresses the top safety risk areas for the regions. The Meeting was invited to provide suggestions and comments regarding the Summit agenda. ALTA also solicited for additional sponsors to help defray the cost of the Summit. ALTA encouraged RAST members to register as soon as possible pointing out that it can be done online. The website for the Aviation Safety Summit is: www.alta.aero/safety/2010/home.php or follow the link from the RASG-PA website: http://www.mexico.icao.int/RASGPA.html

2.5.2 Future RAST Meetings: The Meeting agreed it was important to continue to develop detailed implementation plans for the safety enhancement actions that were identified during this event. In addition, the Meeting felt it would be a major opportunity to promote the implementation plans during the forthcoming Aviation Safety Summit in Brazil. In order to complete this task, the Meeting agreed to have a follow up meeting during the first week of April 2010, in Miami, USA. The location would take advantage of a RASG-PA GSI/12 work group meeting being held the same week in Miami. This work group consists of some of the same members of the RAST, which would reduce the need to travel for a few of the RAST members.

3. Summary of Executive Steering Committee (ESC) Recommended Actions

3.1 The ESC is invited to note the progress of the RAST as detailed in the summary of discussions and,

a) approve the Terms of Reference, noting that the Meeting considered that the most efficient method for RAST to complete its tasks would be to report directly to the ESC;
b) note the recommended safety enhancements actions for each of the data driven risk areas identified by RASG-PA;
c) approve the top seven safety enhancement actions identified in section 2.4.15 of this document, to the next level (detailed implementation plans);
d) note the follow up meeting of RAST during the first week of April 2010 in Miami, USA.

LIST OF PARTICIPANTS

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PROCEDURE FOR DETERMINING THE CHANGEABILITY

Steps:

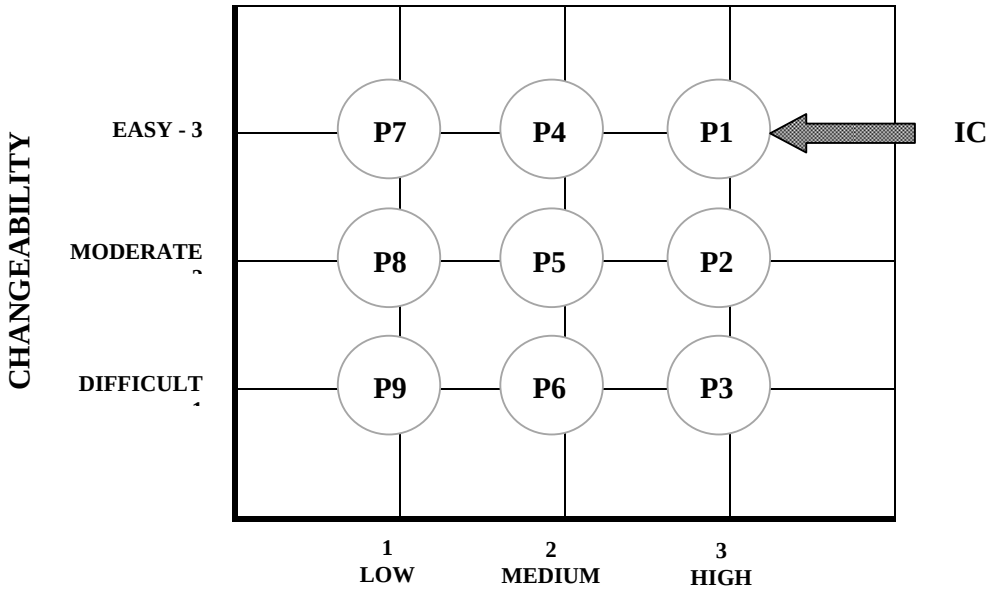
- Using the group knowledge, determine the difficulty in implementing each recommended safety action

- Rate each action according to the following scale:
  1. Difficult to implement
  2. Moderate effort required to implement
  3. Little or no effort required to implement

- When rating each item, consider the following:
  - Political will/commitment/consensus
  - Resource requirements/availability for implementation
  - Potential blockers – what conditions exist that could prevent implementation

IMPACT-CHANGEABILITY (IC) LEVEL CHART

Global Aviation Safety Roadmap – Step 6



APPENDIX C

RUNWAY EXCURSIONS (RE)

RAST Number	Safety Enhancement Action	GSI	Reference	Safety Impact	Changeability	Indicator	Priority	Champion	Time Frame	Notes
RAST-PA/RE/04	Promote the adherence of pilots to Standard Operating Procedures (SOPs) for approach procedures including the go-around decision making process	9	Boeing: Landing on Slippery Runways; FSF: Runway Excursion Tool Kit; Airbus: Tools for landing distance determination;FAA Advisory Circular - AC 121-195-1A Landing on Wet Runways; FAA AC 120-71A SOPs for pilots (Appendix 2, Stabilized Approaches)	High	Easy	P1	1	ALTA	Short	Keep in mind that there is no contradiction with the pressure for pilots in the subsequent flight analysis.
RAST-PA/RE/09	Promote specific Training for pilots and air traffic controllers to avoid unstabilized approaches	9	FSF: ALAR Tool Kit; Honeywell Stabilized Approach Monitor for pilots	High	Easy	P1	2	ACSA	Short	Pressure to controllers and pilots (efficiency, zero tolerance for unstabilized approahces). Training focused on risk management
RAST-PA/RE/10	Promote specific training for aerodrome personnel regarding maintenance and operations of the runway	9	Annex 14, Doc 9137 ICAO	High	Easy	P1	2	ASA	Short	ASA will provide training information
RAST-PA/RE/08	Guidance in maintaining runway in accordance with Annex 14	1	Annex 14, Doc 9137 ICAO	High	Easy	P1	3	ACI-LAC	Short	
RAST-PA/RE/05	Timely notification about runway conditions by AIS and ATS	1		High	Easy	P1	4	IFATCA	Short	Lack of harmonized process of measuring and informing to get a real assessment. Adhere only to the ICAO form of identificatioin (ICAO standard phraseology). Real reports from ATC, not only based on the report of the previous aircraft.
RAST-PA/RE/07	Implement risk management measures taking into consideration the ones contained in ALAR	7	Doc 9859 ICAO; FSF ALAR took kit	High	Easy	P1	5	IFALPA	Short	
RAST-PA/RE/01	Stabilized approaches (PBN Implementation)	12	ICAO PBN Manual Doc 9613	High	Difficult	P3	6	ANSP	Long	Focus on vertical guidance

RAST Number	Safety Enhancement Action	GSI	Reference	Safety Impact	Changeability	Indicator	Priority	Champion	Time Frame	Notes
RAST-PA/RE/02	Implementation RESA - Runway End Safety Area (Where possible)	12	FAA AC 150 5300-13 Airport Design; AC 150 5340-30C	High	Difficult	P3	7	CAAs	Long	Asessment of physical space and other technical features for deployment. Be aware of audits to come (Investment vs. Profitability). This will not prevent runway excursions but reduce the fatalities
RAST-PA/RE/06	Improve runway conditions in accordance with Annex 14	1	Annex 14 ICAO	High	Difficult	P3	8	CAAs	Long	Get from ICAO the USOAP results on the AGA area of the audited States, so the discrepancies can be shown, and they will be helpful for improving runway conditions in a faster way.
RAST-PA/RE/03	Implement EMAS - Engineering Material Arresting System (Where possible)	12	FAA AC 150 5220-20A EMAS	High	Difficult	P3	9	CAAs	Long	Inclusion of EMAS in ICAO-Annex 14. This will not prevent runway excursions but reduce the fatalities.

APPENDIX D

CONTROLLED FLIGHT INTO TERRAIN (CFIT)

RAST Number	Safety Enhacement Action	GSI	Reference	Safety Impact	Changeability	Indicator	Priority	Champion	Time Frame	Notes
RAST-PA/CFIT/02	Promote specific ALAR/CFIT Training for Pilots	9	CAST SE-12, ALAR Toolkit, FSF CFIT Training	Medium	Moderate	P5	1	AIRLINES	Short	
RAST-PA/CFIT/04	Promote CRM/Situational Awareness for pilots and air traffic controllers	12	CAST SE -11, SE-46, SE-47	Medium	Moderate	P5	2	CANSO State (Airlines/ANSP)	Medium	ATC training in this area has already been developed. To include review of actual events when possible.
RAST-PA/CFIT/01	TAWS - Terrain Awareness and Warning System Implementation (software load to 218 or greater plus GPS)	12	CAST SE-1, CAST SE-120	High	Difficult	P3	3	ICAO	Long	TAWS is ICAO Standard
RAST-PA/CFIT/03	Fatigue Risk Management Training	9	Transport Canada, ICAO	Medium	Moderate	P5	4	IFALPA	Short	ICAO Standard being developed
RAST-PA/CFIT/05	Marketing CFIT Prevention	10		Medium	Easy	P4	5	RASG-PA (States/Airlines)	Short	Visual training aids have high fidelity
RAST-PA/CFIT/06	Review SOPs - Standard Operating Procedures for Flight Crews (specific to CFIT procedures)	1	CAST SE-2; Boeing CFIT Training for Pilots; FSF ALAR Tool Kit	Low	Easy	P7	6	Airline (Manufacturer)	Short	
RAST-PA/CFIT/07	Minimum Safe Altitude Warning System (MSAW)	12	CAST SE-9	Medium	Difficult	P6	7	ANSP (States)	Long	Would provide extra layer of safety that would exist outside the cockpit
RAST-PA/CFIT/08	FOQ/FOM and ASAP Programs	12	CAST SE-10	High	Difficult	P3	8	Airline	Long	This can be accomplished by individual airlines without state approval
RAST-PA/CFIT/09	ACARS System for ATIS dissemination	12		Low	Difficult	P9	9	Airline (ANSP)	Long	Enable pilots to obtain ATIS information at much longer range than VHF

APPENDIX E

LOSS OF CONTROL IN-FLIGHT (LOC-I)

RAST Number	Safety Enhancement Action	GSI	Reference	Safety Impact	Changeability	Indicator	Priority	Champion	Time Frame	Notes
RAST-PA/LOC-I/7	Promote LOC Training – Advanced maneuvers	9	CAST SE 31	High	Moderate	P2	1	ALTA (RASG-PA, Manufacturers))	Short	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. Additionally, research should be conducted to determine how existing flight simulation devices may be used effectively in AMT. ALTA will distribute recommended materials and information to its members.
RAST-PA/LOC-I/9	Promote LOC Training – Pilot monitoring policies and procedure for the operator and training program for crews	9	CAST SE 26	High	Easy	P1	2	IFALPA	Short	Pilot Monitoring policies and procedure for the operator and training program for crews.
RAST-PA/LOC-I/6	LOC Training – Human factors and automation	9	SE 30	High*	Moderate*	P2	3	ALTA (RASG-PA)	Short	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. ALTA will distribute recommended materials and information to its members.
RAST-PA/LOC-I/2	Policies and procedures to prevent LOC - Prioritization of safety information	7	CAST SE 27	Medium	Easy	P4	4	RASG-PA	Short	OPERATORS This safety enhancement identifies or develops and implements methods for operators, regulators, and manufacturers to prioritize safety-related decisions (SMS related). 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. STATES Verify that Policies and Procedures are in place and actively followed

RAST Number	Safety Enhancement Action	GSI	Reference	Safety Impact	Changeability	Indicator	Priority	Champion	Time Frame	Notes
RAST-PA/LOC-I/3	Policies and Procedure to prevent LOC - Dissemination of safety Information	7	CAST SE 28	High	Easy	P1	5	ALTA	Short	OPERATORS This safety enhancement ensures that essential safety information and operational procedures generated by airplane manufacturers are included in operating manuals and training programs for pilots and other appropriate employee groups. STATES Verify that Policies and Procedures are in place and actively followed.ALTA will distribute recommended materials and information to its members.
RAST-PA/LOC-I/5	Policies and Procedure to prevent LOC - Modifications to manufacturers recommendations	1		High	Easy	P1	6	ICAO	Medium	States shall ensure that any amendments or additions to Policies and Procedure will be coordinated with the Manufacturer and or the CAA who issued the type certificate.
RAST-PA/LOC-I/4	Policies and Procedure to prevent LOC -Flight crew proficiency	11	CAST SE 29	High*	Difficult*	P3	7	ALTA (IATA)	Medium	This safety enhancement is to ensure that air carriers have a process to enhance pilot proficiency. ALTA will distribute recommended materials and information to its members.
RAST-PA/LOC-I/1	Policies and procedures to prevent LOC - Enforce clear, concise, and accurate flight crew SOPs	9	CAST SE 26	Medium	Easy	P4	8	ALTA (ICAO)	Medium	OPERATORS This safety enhancement ensures that all airline operators publish and enforce clear, concise, and accurate flight crew SOPs. These SOPs should include expected procedures during pre/post flight and all phases of flight; i.e., checklists, simulator training, PF/PM 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 airmen should ensure these SOPs are trained and enforced in their aircrew proficiency and standardization programs. STATES Verify that Policies and Procedures are in place and actively followed.ALTA will distribute recommended materials and information to its members.
RAST-PA/LOC-I/8	LOC Training – Special purpose training to prepare for the unexpected which lead to LOC-I.	1	Boeing: Airplane Upset Training; Airbus: Abnormal Aircraft Operation	High	Difficult	P3	9	CAST / ICAO	Long	Special purpose training to prepare for the unexpected which lead to LOC-I.
* For some carriers this may not apply										