



**INTERNATIONAL CIVIL AVIATION ORGANIZATION
NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE**

**SECOND MEETING OF THE
REGIONAL AVIATION SAFETY TEAM**

(RAST/2)

SUMMARY OF DISCUSSIONS

MIAMI, FL, UNITED STATES 08-09 APRIL 2010

Prepared by the Secretariat
April 2010

1. HISTORICAL

1.1 The Second Meeting of the Regional Aviation Safety Team (RAST/02) was held at the ALTA Offices in Miami FL, USA, 08-09 April, 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 The Meeting agreed to have a briefing of the outcome of the HLSC. Capt Miguel Marin summarized the presentation that the Director of the ANB, Nancy Graham made at the HLS for everybody's benefit highlighting the strategy to prioritize global safety efforts and to develop appropriate solutions, with priority given to States having high levels of implementation deficiencies combined with high traffic volume.

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: Detailed Implementation Plan Methodology.
- Agenda Item 3: Runway Excursions (RE) – implementation plan.
- Agenda Item 4: Flight into Terrain (CFIT) - implementation plan.
- Agenda Item 5: Loss of Control – In Flight (LOC-I) - implementation plan.
- Agenda Item 6: Other Business.

2.2 Agenda Items 2: Detailed Implementation Plan Methodology.

2.4.1 The Meeting reviewed several CAST Safety Enhancement Detailed Implementation (DIPs) Plan examples and agreed that the one to be used should be kept as short and concise as possible. All DIPs used the agreed format.

2.5 Agenda Items 3, 4 and 5:

2.5.1 The Meeting divided into three ad-hoc working groups to develop DIPs based on the Safety Enhancement Actions identified at the RAST/01 meeting in Mexico City, the Rapporteur requested Mr. Rene Sanchez from COCESNA/ACSA to lead the RE group, Mr. Glenn Michael from the FAA/CAST to lead the CFIT group and Gerardo Hueto from ISSG lead the LOC-I group. The outcome of each ad-hoc group is contained in **Appendices B, C and D**.

2.5.2 The RE ad-hoc group prepared DIPs plans for the following Runway Excursion Safety Enhancement Actions as identified in the RAST-PA/1 meeting in Mexico City:

- a) RAST-PA/RE/4: Promote the adherence of pilots to Standard Operating Procedures (SOPs) for approach procedures including go-around decision making process;
- b) RAST-PA/RE/9: Specific training for pilots and air traffic controllers to avoid unstabilized approaches; and
- c) RAST-PA/RE/10: Specific training for aerodrome personnel regarding maintenance and operations of the runway.

2.5.2.1 The RE ad-hoc group submitted to the consideration of the RAST one DIP that contained outcomes for the three RE Safety Enhancement Areas, the results from this ad-hoc group are contained in Appendix B.

2.5.3 The CFIT ad-hoc group prepared DIPs for the following Controlled Flight into Terrain Safety Enhancement Actions as identified in the RAST-PA/1 meeting in Mexico City:

- a) RAST-PA/CFIT/02: Specific Approach and Landing Accident Reduction (ALAR/CFIT) training for pilots; and
- b) RAST-PA/CFIT/04: Crew Resource Management (CRM)/Situational Awareness for pilots and air traffic controllers.

2.5.3.1 The CFIT ad-hoc group submitted to the consideration of the RAST two DIP with respective outcomes, the results from this ad-hoc group are contained in Appendix C.

2.5.4 The LOC-I ad-hoc group prepared DIPs for the following Loss of Control - Inflight Safety Enhancement Actions as identified in the RAST-PA/1 meeting in Mexico City:

- a) RAST-PA/LOC-I/7: LOC training – Advanced maneuvers,
- b) RAST-PA/LOC-I/9: LOC training – Pilot monitoring policies and procedures for the operator and training program for flight crews; and
- c) *RAST-PA/LOC-I/6: LOC Training – Human factors and automation.*

2.5.4.1 The LOC-I ad-hoc group submitted to the consideration of the RAST three DIPs with respective outcomes noting that time allowed the group to include an additional DIP for the LOC Training – Human factors and automation (RAST-PA/LOC-I/6) Safety Enhancement Action, with one caveat; the RAST-PA/LOC-I/9 Safety enhancement action DIP could not be concluded with the available expertise. The meeting agreed to try and conclude this DIP via telecom and/or web conference and include it on the report as long as it could be accomplished prior to the dissemination of the final summary of discussion. The results from this ad-hoc group are contained in Appendix D.

2.5.5 The Meeting reconvened into plenary reviewed the DPIs prepared by each ad-hoc group, amended some and agreed to submit them to the Executive Steering Committee at their next meeting in Sao Paulo Brazil for further action.

2.6 Other Business

2.6.1 During the ISSG meeting at Montreal on April 6 2010 the members discussed two proposals added to the agenda due to issues brought up during the RAST-PA/1 meeting.

2.6.1.1 The first item deals with the relationship between Safety Enhancements recommended for the 3 identified areas of risk, and GASR Focus areas (or GASP GSIs). The ISSG agreed that it's valuable to 'map' the proposed SEs to GASR Focus Areas, taking into account which FA of the GASR is more related to the selected SE. It is the opinion of the ISSG that keeping a list of SEs by GASR focus area will help in the future by identifying actions taken when the remaining GASR FAs are treated.

2.6.1.2 The second item pertains to the revised "Impact/Changeability" process explained in detail in the RAST-PA/1 meeting notes. The ISSG agreed to the proposed changes and to use this format in the future.

2.6.2 The RAST meeting discussed on the way forward now that the detailed implementation plans are ready. The economic implications will need to be addressed by the Executive Steering Committee.

2.6.3 The RAST-PA/02 concluded 8 DIPs from the 28 Safety Enhancement Areas Identified in RAST-PA/01. The Meeting considered that additional meetings will be required to conclude the rest. The time frame to conclude the task should be determined by the ESC based on priority and available economic resources. In addition Meeting recognized that the RAST-PA would further benefit if all the Stakeholders who committed resources during RASG-PA/2 participated more actively.

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

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

- a) note the detailed implementation plans in appendices B, C and D, as tasked by RASG-PA,
- b) consider the economic impact of the detailed implementation plans when approving them;
- c) determine the future activities of RAST-PA considering the further work that needs to be accomplished and resource requirements.

RAST/2
Appendix A to the Report

In attendance:

Augusto Herrera -	ALTA
Alex de Gunten -	ALTA
Jorge Vargas -	COCESNA/ACSA
Eduardo Chacin -	NACC ICAO
Adolfo Zavala -	NACC ICAO
Jim Fee -	FAA
Kyle Olsen -	FAA
Glenn Michael -	FAA
Gerard Guyot -	Airbus
Mike Preis -	Airbus
Rene Sanchez -	COCESNA/ACSA
Rolando Ramirez -	COCESNA/ACSA
Baroardo Pagoada Figueroa -	COCESNA/ACSA
Miguel Marin -	ICAO Headquarters
Gerardo Hueto -	BOEING

RAST-PA

Runway Excursion

Implementation Plan for RAST-PA/RE

Statement of Work

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.

Implementation of these actions would reduce the risk of runway excursions.

Safety Enhancement: (RAST-PA/RE)

Training of pilots, air traffic controllers, and aerodrome personnel should reduce the risk of runway excursions and their associated threats.

Champion Organization:

Asociación Latino Americana y del Caribe de Transporte Aéreo (ALTA)

Resource Requirements:

ICAO (NACC, SAM, HQ), IATA, ALTA, ACSA, FSF, ACI (NA, LAC), CANSO, ATAC, aircraft manufacturers, ALPA, IFALPA, IFATCA, CAA's, and other stakeholders.

The total cost estimate for the project is \$210,000, which could be shared by the operators, manufacturers, associations, organizations, aviation training centers, and CAA's.

Target Completion Date: SCA + 24 Months.

Output 1 (RAST-PA/RE/4):

- Promote pilot adherence to Standard operating Procedures (SOPs) for approach, emphasizing the go-around decision making process.

Output Champion: ALTA

Resources:

IATA, ATA, ATAC, manufacturers, IFALPA, local pilot associations, flight academies, training centers and other stakeholders.

Initial cost estimate would be \$10,000, which would be shared by the operators, manufacturers, pilot associations and governments.

Timeline: SCA + 12 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, and any other available material.

Output 2 (RAST-PA/RE/09):

- Promote specific training for pilot and air traffic controllers to avoid unstable approaches.

Output Champion: ALTA

Resources:

IATA, ATA, ATAC, ACSA, aircraft manufacturers, IFALPA, IFATCA, flight data analysis companies (Sagem, ADI, Airface), organizations, CANSO, local pilot and air traffic controller associations, flight academies, training centers and other stakeholders.

Initial cost estimate would be \$100,000, which would be shared by the operators, manufacturers, pilot associations and governments.

Timeline: SCA + 24 Months

Actions:

1. RAST/RE should develop safety seminars for pilots and controllers together, which will provide training and tool to avoid unstable approaches.
 - 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
2. After the safety seminars are complete, a report will be written based on the experiences of the participants documenting the mitigations for avoiding unstable approaches in Pan America. The mitigations will be submitted to RASG-PA.

Output 3 (RAST-PA/RE/10):

- Aerodrome personnel have initial and recurrent training on the maintenance and operations of the runway to avoid runway excursions.

Output Champion: ASA

Resources:

ICAO, ACI LAC, ACI NA, IATA, ATA, ATAC, ACSA, IFALPA, IFATCA, organizations, and other stakeholders.

Initial cost estimate would be \$100,000, which would be shared by the operators, manufacturers, pilot associations and governments.

Timeline: SCA + 24 Months

Actions:

1. Incorporate specific training for aerodrome personnel on maintenance and operations of the runway to avoid runway excursions. (i.e., ACI airport personnel training courses.)
2. Organize runway safety seminars in Pan America for aerodrome personnel.
3. After each safety seminar is complete, a report will be written by the facilitator based on the experiences of the participants documenting the mitigations for avoiding runway excursions. The mitigations will be submitted to RASG-PA.

Relationship to Current Aviation Community Initiatives:

- In coordination with RAST/RE, ACSA will conduct safety seminars on June 21, 2010 in Guatemala; June 23, 2010 in Honduras; June 28, 2010 in El Salvador; June 30, 2010 in Nicaragua; July 5, 2010 in Belize; July 9, 2010 in Costa Rica.
- In coordination with ALTA, RAST/RE will conduct safety seminars in South America and the Caribbean.
- Runway Safety Action Teams (RSAT); local equivalent collaborative teams in Pan America.

Performance Goals & Indicators for Outcomes/outputs:

- Goal: Reduce occurrence of runway excursion accidents.
- Indicator: A measurable reduction of runway excursion incidents and accidents.

Key Products and Milestones:

The following milestones are based on the date of SCA approval (months):

- Survey SCA + 6
- Reports SCA + 9
- Seminars SCA + 12

Potential Blockers:

- Insufficient funds to conduct seminars
- Inadequate implementation of recommendations from outputs
- Lack of participation from industry
- Lack of human resources, specialists, facilitators
- Language barriers
- Copyrights of training materials
- Political barriers
- Data sharing restrictions
- Time availability

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
Controlled Flight Into Terrain**

**Implementation Plan
For
Training - CFIT Prevention
RAST-PA/CFIT/02**

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 centres in Pan America developed CFIT prevention training and procedures and add them to their approved initial and recurrent training curriculums.

Safety Enhancement: (RAST-PA/CFIT/02)

Promote specific ALAR/CFIT prevention training and procedures to all operators approved training curriculums, emphasizing pilot situational awareness and escape procedures for flight crews to use in the event of a terrain warning indication.

Champion Organization:

IATA

Resource Requirements:

CAA's, IATA, ATA, ALTA and industry partners.

Output 1:

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

Resources:

CAA (Flight Safety Oversight Department)

Timeline:

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.

Output 2:

If an operator does not have CFIT training, he will be encouraged to incorporate CFIT training into his training programs.

Resources:

Operators, CAA's and ICAO

Timeline:

Completion of Output 1 + 2 months.

Actions:

Operators will incorporate CFIT prevention training and procedures into their training programs. After incorporating the CFIT training program.

Relationship to Current Aviation Community Initiatives:

- 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 Goals & Indicators for Outcomes/Outputs:

- Goal: A substantial reduction of CFIT accidents involving operators in Pan America.
 - Indicator: Operator CFIT accident rate in Pan America is continuously reduced toward the goal of an 80% reduction.
 - Goal: CFIT training and guidance material provided to all operators and training centres not conducting CFIT training.
 - Indicator: All operators and training centres are conducting CFIT training.
 - Goal: 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 Products and Milestones:

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

Potential Blockers:

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

**RAST-PA
Controlled Flight Into Terrain**

**Implementation Plan
for
RAST-PA/CFIT/04**

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.

Safety Enhancement (RAST-PA/CFIT/04):

Provide 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.

Champion Organization:

IFALPA/IFATCA

Resource Requirements:

CAA's, ANSP's, IFALPA, IFATCA, IATA and industry partners.

Output 1:

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.

Resources:

Air transport operators (training departments),

Timeline:

SCA +18 months.

Actions:

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.

Output 2:

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.

Resources:

ANSP's (training departments),
CRM/situational awareness guidance material posted on the RASG-PA Website

Timeline:

SCA +24 months.

Actions:

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.

Relationship to Current Aviation Community Initiatives:

- RASG-PA website (www.)
- FSF virtual library (www.)
- Airbus (www.)
- Boeing (www.)

Performance Goals & Indicators for Outcomes/Outputs:

- Goal: A substantial reduction of CFIT accidents involving air transport operators in Pan America.
Indicator: Operator CFIT accident rate in Pan America drops by 80%.
- Goal: CRM/situational awareness training and guidance material provided to all air transport operators and ANSPs.
Indicator: Increase in number of operators and ANSPs that are conducting CRM/situational awareness training.
- Goal: 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 Products and 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 resources.
 - Operators and ANSP may not recognize the safety benefits
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**RAST-PA
Loss of Control**

**Implementation Plan for
Human Factors and Automation
[RAST-PA/LOC-I/6]**

Statement of Work

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

Background

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.

Safety Enhancement: To improve the overall performance of flight crews to recognize and prevent loss of control accidents, through effective use of automation.

Champion Organization:

IATA or ICAO??

Resource Requirements:

IATA, Pilot Associations; Safety, Flight Operations and Training managers, ICAO, CAA's aircraft manufacturers, training centers.

The total estimated cost would be X person-years.

Target Completion Date: SCA + 18 Months.

Output 1:

ALTA / IFALPA team to review and evaluate the advisory circular created by the ICAO COSCAP's in Asia related to mode awareness and energy state management.

The Asian advisory circular is a compilation of industry automation policies and procedures developed from the CAST working group.

Based on this review create a generic advisory circular for the Region.

Resources: IATA, Pilot Associations, Flight Operations and Training managers, and Aircraft Manufacturers. The estimated cost would be 1/4 person-years.

Timeline: SCA + 6 Months.

Actions:

ALTA / IFALPA 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 advisory circular for Pan America using the Asian advisory circular. A copy of the Asian advisory circular will be provided by the RAST-PA

Output 2:

Once the generic advisory circular has been developed by the team formed by Output 1, ICAO will distribute a copy to each State in the Region.

Resources: ICAO.

Timeline: 1 month after completion of Output 1.

Actions:

ICAO Regional Offices will prepare a cover letter and send the generic advisory circular to each member State in the Region.

Output 3:

Each State in the Region to review the generic advisory circular and prepare a State advisory circular on mode awareness and energy state management.

Timeline: 6 months after completion of Output 2

Actions:

States in the Region to issue their own advisory circular on mode awareness and energy state management.

Resources: State regulatory authorities

Relationship of Project Outcome to Current Aviation Community Initiatives:

The following are some of the activities related to this project:

- 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).

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- The Human Factors and Pilot Training Group of the ALPA, Air Safety Structure has already produced its positions regarding CRM and Human Factors with respect to the use of automation.
 - 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.

Performance Goals & Indicators for Outcome/Outputs:

- Goal: 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.

Key Products and Milestones:

The following milestones are based on the date of Steering Committee Approval (SCA) (months):

- Review Asian advisory circular IATA SCA+6
- Issue generic advisory circular ICAO SCA+1 from Output 1
- Issuance of advisory circular by States in the Region States SCA+6 from Output 2
- Track Implementation RAST-PA SCA+12 and yearly

Potential Blockers:

- Some special interests might discredit mode awareness and energy state management training
 - Operators might ignore advisory circular materials
 - Operators might not accept the potential cost of this training
 - Operators may not recognize the safety enhancement benefits
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**RAST-PA
Loss of Control Prevention**

**Implementation Plan
For Advanced Maneuvers Training
[RAST-PA/LOC-I/7]**

Statement of Work

Advanced Maneuvers Training (AMT) refers to training to prevent and recover from hazardous flight conditions outside of the normal flight envelope, such as, 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.

Safety Enhancement Action:

Promote LOC Training – Advanced maneuvers
Pilots will be better trained to avoid and recover from excursions from normal flight and loss of control.

Champion Organizations:

ALTA

Resource Requirements:

Airline Associations, Pilot Associations; Safety, Flight Operations, and Training managers, aircraft manufacturers, flight simulation device manufacturers, training centers, existing training aids, and new materials developed by manufacturers.

The total cost associated with this project would be determined by the amount of crews that need to be instructed and the amount of time required.

This initiative is considered essential for flight safety, there would be no cost associated with the development of materials, since existing training tools are available.

Target Completion Date: RASG-PA Steering Committee Approval (SCA) + 36 Months.

Output 1:

- Listing of training materials available from regulators, industry, operators, academia and other resources.

Resources:

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.

Timeline: SCA + 2 Months

Actions:

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

Output 2:

- Advanced Maneuvers Training provided to all operators.

Resources:

ALTA, IATA

Timeline: 6 months after completion of Output 1.

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.

Output 3:

- Advanced Maneuvers Training provided by all operators. The expectation is that this training will be accomplished via ground and simulator instruction within the certified flight envelope, with emphasis on recognition, prevention and recovery techniques.

Potential Blockers:

- Some special interests might discredit AMT simulator training
- Operators might ignore AMT materials
- Operators might not accept the potential cost of this training
- Operators may not recognize the safety enhancement benefits

**RAST-PA
Loss of Control Prevention**

**Implementation Plan For Pilot monitoring
Policies and Procedures for the operators.
[RAST-PA/LOC-I/9]**

Statement of Work

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.

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.

Background

Conventionally, when two pilots fly a fixed-wing airplane the aircraft commander (who must be a Captain) occupies the left hand seat and the co-pilot or first officer occupies the right hand seat. Before the commencement of each flight sector, the aircraft commander decides which pilot will take direct responsibility for flying the aircraft and they become 'Pilot Flying' (PF) for that sector. The other pilot is then 'Pilot Not Flying' (PNF) and carries out supporting duties such as communications and check-list reading. Some operators use alternative terms for PF and PNF, for example 'Pilot Monitoring' instead of PNF.

The term 'Pilot Monitoring' (PM) is finding some favor as an alternative to PNF since it reflects clearly the most important function of a PNF.

A collaborative research effort by NASA-Ames, 21 worldwide airlines and the University of Texas Human Factors Research Program that 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.

Safety Enhancement Action:

Promote Pilot Monitoring Training and Techniques. Pilots will be better trained to detect and manage threats and errors.

Champion Organization:

IFALPA

Resource Requirements:

Pilot Associations, IATA, ALTA, 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.

RAST/2
Appendix D3 to the Report

D3-2

Estimated 2 meetings of RAST representatives to implement this initiative would cost a total of approximately \$10,000

Target Completion Date: SCA + 36 Months.

Output 1:

- Listing of training materials available from industry, operators, and other resources.

Resources:

RASG-PA Secretariat (NACC office) will produce a comprehensive list, with input from IFALPA.

Timeline: SCA + X Months

Actions:

RASG-PA should distribute the Pilot Monitoring Training Aid to all appropriate regional stakeholders.

Output 2:

- Pilot Monitoring Training provided to all operators.

Resources:

ALTA, IATA, CAA's

Timeline: X months after completion of Output 1.

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.

Output 3:

- Pilot Monitoring Training provided by all operators.

Resources:

Operator's flight operations, standards and training departments, pilot associations.

Timeline: X months after completion of Output 2.

Actions:

ALTA and IATA should promote a high level of commitment to Pilot Monitoring Training by operator's flight operations, standards and training departments.

Carefully developed procedures and guidelines can make a significant contribution to enhancing flight-crew monitoring. 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.

Output 4:

- Raise awareness of availability and need of Pilot Monitoring Training.

Resources:

IFALPA, Local Pilot Associations

Timeline: On-going activity

Actions:

IFALPA and local pilot associations should market and promote activities that develop a higher level of commitment to Pilot Monitoring Training by constituents.

Relationship to Current Aviation Community Initiatives:

- Aligns with major findings by ICAO, FSF, NTSB.
- Aligns with components of CRM

Performance Goals & Indicators for Outcomes/Outputs:

- Goal: Reduce occurrence of LOC accidents.
 - Indicator: A measurable reduction of loss of control incidents and accidents related to deviations from normal flight.
- Goal: Make available Pilot Monitoring Training material.
 - Indicator: Availability of the Pilot Monitoring Training material within X months of SCA.
- Goal: All operators incorporate Pilot Monitoring Training in their approved training programs
 - Indicator: Operators incorporate Pilot Monitoring Training material within X months of SCA.

Key Products and Milestones:

The following milestones are based on the date of Steering Committee Approval (SCA) (months):

- Distribute currently available Training Aids ALTA SCA+X
- Track adoption of Pilot Monitoring Training ALTA SCA+X
- Monitor and Track Implementation RAST-PA SCA+X

Potential Blockers:

- Operators might ignore Pilot Monitoring Training materials
- Operators might not accept the potential cost of this training
- Operators may not recognize the safety enhancement benefits