International Civil Aviation Organization
Second Meeting of the Asia Pacific Regional Aviation Safety Team (APRAST/2)
(Bangkok, Thailand, 21 – 24 August 2012)

Loss of Control (LOC)

Sub-Group Report
August 23, 2012

SUMMARY

While ICAO Annex 6 requires training on all types of emergency and abnormal situations, it does not specifically mention loss of control or upset recovery training. PANS Training (Doc 9868) mandates upset recovery training as an MPL training requirement. Aircraft jet manufacturers recommend upset training and an Airplane Upset Recovery Training Aid has been developed to provide guidance in this regard.

This report summarises the actions and recommendations of the LOC sub-group at APAST/2.

1. INTRODUCTION

1.1 Loss of control in-flight category is responsible for the highest percentage of fatalities – approximately 30% of the total even though less than 5% of all accidents were classified as being related to loss of control.

2. DISCUSSION

2.1 APRAST/1 created a sub-group to examine safety enhancement initiatives (SEIs) to reduce the risk of a loss of control accident.

2.2 The APRAST/1 LOC sub-group considered the six LOC SEIs related to specific safety enhancements identified by the Commercial Aviation Safety Team (CAST), as well as implementation actions undertaken by the Asian COSCAPs and other ICAO aviation safety groups.

2.3 In seeking to identify a priority list of SEs, the APRAST/1 LOC sub-group identified seven additional SEIs (including variations of existing SEIs) and established a preliminary priority list based on an IMPACT / CHANGEABILITY index.

2.4 APRAST/2 LOC sub-group reviewed its previous work and revised the SEIs to reduce redundancy and eliminate duplication. Champions were identified for the priority SEIs. See Attachment I for revised list of proposed SEIs, including the analysis of IMPACT / CHANGEABILITY and identified Champions.

3. APRAST/2 LOC SUB-GROUP ACTIONS AND RECOMMENDATIONS

3.1 LOC 1 -- Use of SOPS (Standard Operating Procedures)

Purpose: The establishment, maintenance and appropriate use of flight crew SOP's to reduce the risk of LOC events.

Statement of Work: The purpose of this project is to ensure that all airline operators publish, maintain and enforce clear, concise, and accurate flight crew standard operating procedures (SOP) to reduce the risk of LOC events. These procedures 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 flightcrew coordination. Operator instructors and check airman should ensure these SOP's are trained and enforced in their aircrew proficiency and standardization programs.

Champion: Civil Aviation Authority of Singapore
Status: Detailed implementation plan developed.
Recommendation: Forward to RASG-AP for review and approval

3.2 LOC 2 -- Hazard Identification and Risk Management

Purpose: Implementation of safety management practices (hazard identification and risk management) into operational processes & decision making.

Statement of Work: Incorporation of hazard analysis, risk assessment and risk management practices into airline and regulatory operational processes and decision making. The project will develop guidance materials to support safety management practices, including the use of FDA, reporting systems, etc. as elements of hazard analysis to identify the precursors to loss of control events.

Champion: Association of Asia Pacific Airlines
Status: Detailed implementation plan developed.
Recommendation:

1. Review in conjunction with RE 8 to determine whether or not the two SEIs might be combined.
2. Forward LOC 2 or a combined SEI to RASG-AP for review and approval.

3.3 LOC 3 -- Safety Information (Flight Safety Documents System)

Purpose: ICAO SARPs in Annex 6, Operations of Aircraft, Part I. The lack of essential safety information and operational procedures generated by airplane manufacturers must be included in companies' operating manuals, training programs for pilots and other appropriate personnel documentation. COSCAP AC on Flight Safety Document System issued under Initiative CFIT 7 would serve to address this aspect.

Conclusion: Flight Safety Documents System, in general, apply broadly to all safety areas, not only loss of control. Included as part of a flight safety documents system are standard operating procedures (SOPs). Reference LOC 1.

Recommendation: Note in APRAST record as closed. No further action required on LOC 3

3.4 LOC 4 -- Flight Crew Proficiency

Purpose: The appropriate use of trend information from Safety Management Systems (SMS) in the training and qualification processes to mitigate risk that could lead to a LOC event. (LOSA, non-punitive reporting systems, FDA, etc).

Statement of Work: The purpose of this project is to ensure that all airline operators collect, analyse and utilize aggregate and trend information from FDM, line operational observations, lessons learned and non-punitive reporting programs for continuous training program enhancements to reduce the risk of LOC events. Additionally, this project will promote that the airline training programs utilize Airframe Manufacturer standard operating procedures as the basis of their flight crew training.

Champion: Department of Civil Aviation of Malaysia
Status: Detailed implementation plan developed.
Recommendation: Forward to RASG-AP for review and approval

3.5 LOC 5 -- Human Factors and Automation

Purpose: Increase flight crew Inflight Awareness of aircraft Mode, configuration, attitude and Energy State Management (Human Factors and Automation)

Statement of Work: Operators will be encouraged to implement policies and procedures relating to mode awareness and energy state management aspects of flight deck automation, as appropriate for the operation. Guidance material will be identified and shared with regulators and operators.

Champion: Nepal Airlines
Status: Detailed implementation plan developed.
Recommendation: Forward to RASG-AP for review and approval

3.6 LOC 6 -- Loss of Control Training

Purpose: Establish and implement flight crew training to improve knowledge, understanding and ability to prevent, recognize and recover from flight conditions outside of the normal flight envelope.

Statement of Work: The project will identify information and practices for adoption by regulators and air operators to lead to the establishment and implementation of flight crew training to improve knowledge, understanding and ability to prevent, recognize and recover from flight conditions outside of the normal flight envelope. Advanced Manoeuvres Training (AMT) focuses on training to prevent and recover from hazardous flight conditions outside of the normal flight envelope, such as, in-flight upsets, stalls, ground proximity and wind shear escape manoeuvres, and inappropriate energy state management conditions.

Champion: Not identified
Status: Draft detailed implementation plan developed.
Recommendation:
LOC 6 remain with the LOC sub-group for further work

3.7 LOC 13 -- Loss of Control: Information Sharing

Purpose: Improve the sharing of flight safety information.

Statement of Work: The sharing of flight safety information – Regulator to Regulator, Operator to Operator with support of industry Associations – will support safety improvement initiatives. This would include information derived from mandatory and other reporting systems, as well more sophisticated systems (e.g., ASAIS), and sharing would likely increase with experience and mutual confidence.

Comment: Although information sharing is important to support safety initiatives, this applies broadly to all safety areas, not only loss of control.

Recommendation: The Safety Data Sharing proposed SEI is to be placed on the APRAST list of emerging issues.

4. ACTION BY THE MEETING

4.1 The meeting is invited to:

a) Note the work of the LOC sub-group.

b) Confirm or revise the general priorities for LOC SEIs

c) Take appropriate action after consideration of the recommendations.

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Attachment I

Loss of Control
Safety Enhancement Initiative Analysis
APRAST August 2012

Number	Action	Impact	Changeability	IC #	Priority	Champion	Notes
LOC 1	Use of SOPS	High	Moderate	P2	1	CAA Singapore	DIP developed
LOC 2	Hazard Identification and Risk Management	High	moderate	P2	1	AAPA	DIP developed
LOC 3	Safety Information – Flight Safety Documents System						Appropriate elements addressed under LOC 1. No other action proposed
LOC 4	Flight Crew Proficiency – use of information from SMS in the training and qualification	Medium	moderate	P5	1	DCA Malaysia	DIP developed
LOC 5	Human Factors and Automation	Low	Easy	P7	1	Nepal Airline	DIP developed
LOC 6	Loss of Control training	High	Moderate	P2	2	Not identified	Draft DIP developed
LOC 7	Implementation of safety management practices into operational processes & decision making	High	Moderate	P2			LOC 2 revised to reflect this proposed SEI
LOC 8	Loss of control training (AMT: recognition & prevention)	High	Moderate	P2			Combined with LOC 6
LOC 9	Loss of control training (AMT: Recognition & recovery)	Medium	Difficult	P6			Combined with LOC 6
LOC 10	Mode Awareness / Energy management (Knowledge, Recognition & Awareness)	medium	moderate	P5			Combined with LOC 5
LOC 11	Mode Awareness / Energy management (Human factors: Communications of mode & energy state)	high	moderate	P2			Combined with LOC 5
LOC 12	Mode Awareness / Energy management (Design)	High	Difficult	P3			Combined with LOC 5
LOC 13	Information Sharing	High	Difficult	P3			Referred back to plenary