



**Thirty First Regional Aviation Safety Group — Pan America Executive Steering Committee Meeting
(RASG-PA ESC/31)**

Buenos Aires, Argentina, 8 to 9 November 2018

Agenda Item 3: Items/Briefings of Interest to the RASG-PA ESC

RASG-PA UPSET PREVENTION AND RECOVERY TRAINING (UPRT) WORKSHOP

(Presented by the secretariat)

EXECUTIVE SUMMARY	
This working paper presents to the RASG-PA ESC/31, a summary of the Upset prevention and recovery training (UPRT) Workshop, held in Sao Paulo, Brazil, from 05 to 06 June 2018, to qualify operations inspectors of CAR/SAM Region States, so that they can start UPRT implementation in their respective States.	
Action:	Take note of this WP and foster the UPRT implementation in the CAR/SAM States at earliest possible
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety
<i>References:</i>	<ul style="list-style-type: none">• Annex 1 – Personnel licensing• Annex 6 Part I – Operation of aircraft – International Commercial Air Transport - Aeroplanes

1. Introduction

1.1 Between 2006 and 2010, aeroplane accidents resulting from a loss of control in flight (LOC-I) event were the leading cause of fatalities in commercial aviation. Recognizing the need to identify and effectively implement mitigating strategies, the prevention of aeroplane upsets quickly became an ICAO priority.

1.2 Following extensive studies of the LOC-I phenomena, in collaboration with Civil Aviation Authorities (CAAs), aviation accident investigative bodies, LOC-I focus groups, industry associations, original equipment manufacturers (OEMs), and subject matter experts from around the world, it became readily apparent that deficiencies in current training practices were contributing factors in most aeroplane upset-related accidents.

1.3 Consequently, ICAO introduced improvements to existing Standards and Recommended Practices (SARPs) through Amendment 172 to Annex 1 and Amendment 38 to Annex 6 Part I. The UPRT standards and recommended practices were adopted by the ICAO Council on **3 March 2014**.

1.4 Through Amendment 3 to the PANS-TRG, guidance material also was introduced to support aeroplane upset prevention and recovery training (UPRT) requirements.

1.5 On the other hand, RASG-PA in 2010 identified as one of the three main data-driven risk areas, the Loss of Control In-Flight/LOC-I. Since then, several safety enhancement initiatives have been developed. Out of 5 developed DIPs by RASG-PA, 4 are active now; one of them DIP LOC-I: 196 was oriented to conduct effective UPRT in realistic scenarios, and using qualified flight simulator training devices checklists. The checklists were completed and distribute to operators.

2. Current ICAO UPRT's standards and recommended practices, procedures and guidance material

2.1 UPRT is not optional. It is a requirement for the Multi-crew pilot licence (MPL) as well as for those pilots receiving type rating training or commercial air transport operator-specific initial and recurrent training. It is also recommended for pilots undergoing training towards the issuance of Commercial pilot licence (CPL).

2.2 Through Amendment 172 to Annex 1 and Amendment 38 to Annex 6 Part I, provisions were included in: Annex 1, Paragraph 2.1.5 - Requirements for the issue of class and type ratings [2.1.5.2 d)]; Paragraph 2.4 – Commercial pilot licence and Paragraph 2.5 – Multi-crew pilot licence appropriate to the aeroplane category, and Annex 6, Part I, Paragraph 9.3 – Flight crew member training programmes.

2.3 Amendment 172 to Annex 1 introduced UPRT provisions for:

- ✓ Multi-crew type rating on flight simulation training devices (FSTD); and
- ✓ Multi-crew pilot licence (MPL) on aeroplanes

2.4 Amendment 172 to Annex 1 also introduced a UPRT recommended practice for:

- ✓ Commercial pilot licence (CPL) on aeroplanes

2.5 Amendment 38 to Annex 6 Part I included provisions for flight crew training – Commercial air transport training programmes: Initial and recurrent.

2.6 Amendment 3 to the Procedures for Air Navigation Services – Training (PANS-TRG) added a new Chapter 7 to PANS-TRG, which contains high-level procedures for UPRT, with on-aeroplane and FSTD training guidance, as well as for instructor qualifications.

2.7 While the industry moves towards introducing improvements to FSTD models and instructor operating station (IOS) design, Approved Training Organizations (ATOs) shall conduct all FSTD training in an FSTD qualified to an appropriate level in accordance with the Civil Aviation Authority rules (Doc 9625 – Manual of criteria for the qualification of flight simulation training devices refers) and

approved for each intended training task. Detailed guidance on the technical requirements and on the instructor operating station functions and tools for UPRT can be found in Doc 9625, Volume I.

3. UPRT Implementation

3.1 Even though the UPRT standards and recommended practices were adopted by the ICAO Council on **3 March 2014**, these standards have not been implemented yet posing a serious risk to the air transport operation as it was defined during the period 2006 - 2010.

3.2 During the RASG-PA/ESC30 meeting, the Secretariat informed on the proposal to carry out an Upset Prevention and Recovery Training (UPRT) Workshop in Sao Paulo, Brazil, from 5 to 6 June 2018, to qualify aircraft operations inspectors of the CAR/SAM Region States, so that they can start the UPRT implementation in their respective State.

3.3 To foster the UPRT implementation, a two (2) day UPRT workshop was held in Sao Paulo, Brazil, from 05 to 06 June 2018, with the participation of CAE Canada, the Federal Aviation Administration (FAA) of United States, and the ICAO Offices for the SAM and NACC Regions. The purpose of this workshop was to qualify operation inspectors of CAR/SAM States on UPRT approval of air operators and approved training organization (ATOs), as well as of flight simulators and aeroplanes dedicated to provide this type of training. The event was held using available RASG-PA funds.

3.3 The workshop was held as planned and counted with the participation of 11 operations inspectors from 8 CAR/SAM States: Bolivia, Brazil, Chile, Paraguay, Peru, Trinidad & Tobago, Uruguay and Venezuela. The training was divided in two main parts, one day of theoretical training and one day of simulator training. The list of participants is attached as **Appendix A** and the agenda is attached as **Appendix B** to this working paper.

3.3 The qualified operation inspectors will enable States to initiate the implementation of Standards and Recommended Practices adopted by ICAO Council on 4 March 2014, corresponding to Annex 1 – Personnel Licensing, and to Annex 6 Part I – International Commercial Air Transport — Aeroplanes.

3.4 In this sense, the implementation of referred Standards and Recommended Practices, supported by orientation texts, has the purpose to reduce accidents by loss of control in flight (LOC-I). The safety benefit of UPRT is that pilots are trained to avoid and, if necessary, recover from upsets with a resulting decrease in the number of LOC-I related fatalities.

3.5 On the other hand, the SAM Region is proposing to its States, the creation of a working group to support the UPRT implementation in accordance to the following steps:

- ✓ The publication of LAR 60, which includes UPRT requirements. This LAR is in the final phase of its revision and soon will be published, so that SAM States can harmonize or adopt the LAR 60 requirements into their national regulations;
- ✓ Allowing the SAM States FSTD services providers time for appropriate FSTD changes;
- ✓ The promulgation of guidance material / job aids based on ICAO Doc 10011, PANS-TRG- Doc 9868, and UPRT documents published by others States and agencies;

- ✓ Training for the SAM inspectors on how to conduct UPRT approvals such as approvals for: Air operator training programmes; Approved Training Organizations (ATOs) training programmes; and FSTD approvals, etc.; and
- ✓ Training for our technical personnel on how to conduct FSTD qualifications and recognition and acceptance of FSTD qualifications made by others States.

3.6 Special recognition for the support provided to this training is given to the Federal Aviation Administration (FAA) of the United States of America and to CAE Inc., from Canada for providing instruction time and their knowhow to deliver this training. RASG-PA covered travel expenses of FAA instructors and simulator cost only. **Appendix C** indicates the breakdown of expenses covered by RASG-PA funds.

4. Action required

4.1 To avoid fatalities in the future due to loss of control in flight (LOC-I) accidents, it is strongly recommended to foster the UPRT implementation in the CAR/SAM States at earliest possible.

APPENDIX A

RASG-PA aeroplane upset prevention and recovery training (UPRT) workshop for CAR/SAM Regions
(Sao Paulo, Brazil, 5 to 6 June 2018)
PARTICIPANTS LIST

State	First Name	Last Name	Institution	Responsibility	Email	Telephone No.
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State	First Name	Last Name	Institution	Responsibility	Email	Telephone No.
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APPENDIX B**AGENDA**

**Upset Prevention and Recovery Training - UPRT
Sao Paulo, Brazil, June 5-6, 2018**

<u>June 5:</u>	Hour
I. Introduction	09:00
A. The problem	
B. Course preview	
II. Background,	09:30
A. Review of loss-of-control accidents & incidents	
B. Impetus behind new requirements	
Break	10:30
Resume section II	10:45
III. Worldwide rules and guidance	11:15
A. ICAO	
B. EASA	
C. FAA	
i. Rules	
ii. Guidance – Advisory circulars	
D. Other activities (Australia, Japan, etc.)	
Lunch.....	12:15
IV. Academic Upset Training	13:15
A. Basic principles	
B. Stalls	
C. Upsets without stalls	
D. Loss of reliable airspeed	
E. Key illusions	
F. Surprise and startle	
G. Instructor requirements	
Break	15:15
Resume section IV.....	15:30
UPRT implementation from an Approved Training Organization perspective.....	17:15
Adjourn	17:30

June 6:

I.	A320 Simulator session #1 (3 trainees)	10:00
II.	A320 Simulator session #2 (3 trainees)	12:30
	Lunch.....	13:30
III.	A320 Simulator session #3 (3 trainees)	15:30
IV.	A320 Simulator session #4 (3 trainees)	17:30
	Adjourn	19:30

- END -

APPENDIX C

UPRT WORKSHOP COSTS

Simulators cost

- ✓ Nine (9) hours of simulators: USD 450 per hour
- ✓ Bank charges USD 78.00
- ✓ Total cost USD 4,128.00

Cost for two instructors (FAA)

Air tickets, transportation, lodging allowances and administrative overhead charge for two (2) instructors: USD 8,469.00

Total cost

USD 4,128 (simulators) + 8,469 (instructors) = **USD 12,597.00**

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