

ICATEE Deliverables

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ICATEE is developing several deliverables to enhance upset prevention and recovery training. This document explains a proposed strategy of bringing all these pieces into a comprehensive set of documents that will be used by industry.

ICAO Deliverables

ICATEE has been requested by ICAO to produce a Circular on Recommended Best Practices for Upset Prevention and Recovery Training. A Circular under ICAO terms is a document that is issued only once, and acts as guidance material. It gets distributed to ICAO member states, and these in turn review it, adopt it as they see fit, and, most importantly, provide feedback through ICAO.

Secondly, ICAO recommends the majority of our Circular, including modifications resulting from member-state feedback, go into a new Manual. As a working title, we will call this the ICATEE Manual of Upset Prevention and Recovery Training (IM)

Additional to this is that we will modify pertinent text in the current ICAO 9625 Manual of Criteria for the Qualification and Testing of Flight Simulation Training Devices. The modifications that ICATEE will make to this document pertain to flight simulation devices alone. All other items will be covered in the Manual.

Manuals contain guidance to implement ICAO Annexes and PANS. ICAO's top-level documents are their Annexes. All ICAO Annexes are described in the following:

http://www.icao.int/icaonet/anx/info/annexes_booklet_en.pdf

ICAO recommends that two of their Annexes (Annex 1 and Annex 6) refer to the ICATEE-developed manuals (MCU and 9625). In fact, there already exists text within these Annexes that states that upset recovery training shall be performed. We would therefore only need to modify small pieces of text in Annex 1, referring to our Manuals. In Annex 6, there may be ground to introduce a Standard for upset prevention and recovery (based on the MPL Standard) and for fixed-wing type rating (which may be limited to jet or turboprop type ratings). That will need careful word smithing and is further years down the line, once ICATEE delivers the Circular. There could be additional notes for MPL and other licences. ICAO will assist in defining these processes.

Internal Deliverables

Several activities have taken place within the ICATEE working group during the past several months. These activities have led to the production of well-founded and properly documented sections. While many of these have been solely intended as internal documents that enhance the process of defining reasonable training solutions, they contain much intrinsic information on recommended best practices for that training.

Training Matrix

The training matrix, developed through a long series of telecoms and meetings through the ICATEE Training Stream, is the starting point and foundation of ICATEE's work. It defines the three levels of mitigation:

- awareness
- recognition & avoidance
- recovery

The training matrix also covers the operational hazards, the training criteria, acceptable training media, the required frequency of training, and the application to various training approaches (like MPL versus the conventional PPL, ATP, CPL, etc).

All requirements are derived from the ICATEE Training Matrix, and it is imperative that users of the documents are aware of the way in which the matrix is applied, its assumptions, the limitations among others.

Research & Technology

Secondly, the Research and Technology Stream has started creating their Research & Technology Report, comprising an overview of the technical challenges and solutions. These include:

- enhancements to simulation models to support UPRT needs
- recommendations for effective introduction of surprise and startle in simulator-based training
- utilization of scenarios to enhance UPRT and provide education
- improved feedback through the simulator IOS

Note that the first of these can lead directly to inclusion within ICAO 9625, however the other items are not covered in existing guidance or regulatory material, and will be introduced through the ICATEE Circular and Manual (IM). All items must be thoroughly studied and vetted by the stakeholders.

Manuals

ICATEE has agreed internally to produce three manuals:

- Pilot manual
- Instructor manual
- Regulator manual

These documents will provide the basic training issues that need to be trained and known by flight crews.

The manuals will refer to the Airplane Upset Recovery Training Aid (AURTA) and act as extractions of this powerful reference handbook. The purpose of creating three separate and concise manuals is to enhance the training value of the AURTA and to identify the special skill sets that must be known to pilots, instructors and to regulators, with the goal of standardizing this training.

ICAO 9625 Update to include UPRT Requirements

The current edition of ICAO 9625 is also undergoing revision, enacted through the International Committee for FSTD Qualification (ICFQ). ICFQ has agreed that this amendment will be completed in the first quarter of 2012, requiring also ICATEE inputs to be ready at that time.

ICATEE is requested to provide a modified version of 9625, including applicable changes to the training matrix and to the technical requirements.

The overall ICATEE deliverables are shown in Figure 1. The ICAO-related deliverables are shown in Figure 1.



Figure 1 - ICATEE Deliverables

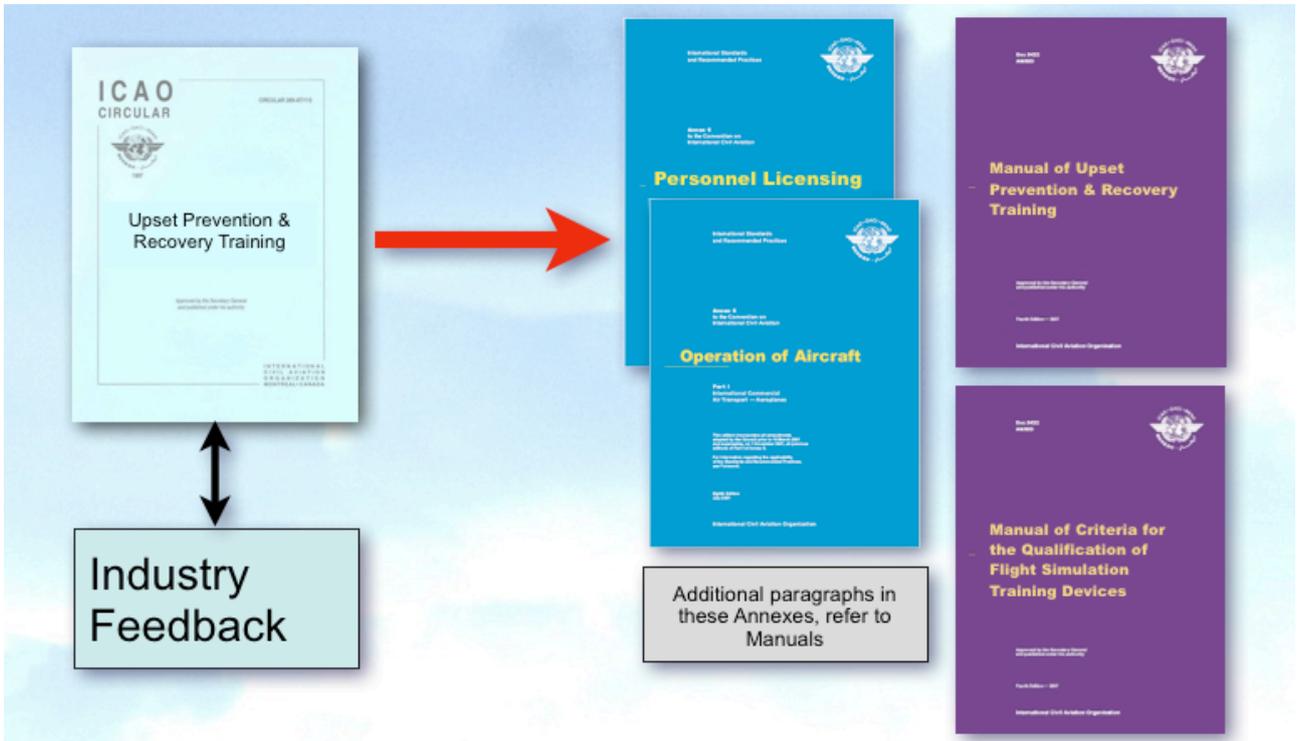


Figure 2 - ICAO Deliverables from ICATEE inputs

ICAO Circular

ICAO has suggested that the Circular coming from the ICATEE work be a properly edited collation of our main deliverables, suited for feedback from industry. The circular would consist of the main findings of:

1. The Graduated Approach of ICATEE
2. Training Matrix
3. Research & Technology Report
4. Summary of changes made to ICAO Manual 9625
5. Pilot, Instructor and Regulator Training Manual
6. Results summary from important issues, including:
 - a) FSTD capabilities and limitations
 - b) use of aircraft in UPRT
 - c) cost-benefit analysis
 - d) envelope-protected aircraft
 - e) dealing with automation
 - f) CRM

The purpose of a circular is to receive feedback and questions from industry and to incorporate this information into a Manual in due course. Whereas a highly-detailed analysis of each of the above points could be performed, keep in mind that the Circular and Manual have the following global intentions:

1. To make the training community aware of ways of reducing loss-of-control incidents through proper use of existing training infrastructure
2. To recommend best practices for training pilots, instructors and regulators
3. To provide the rationale for alternative training media, such as actual aircraft, through a reasonably thorough cost-benefit analysis
4. To address best practices for dealing with automation in concert with OEM training specifications