IATA Training and Qualification Initiative (ITQI) – A Total System Approach to Training

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Safety & Flight Operations

ITQI - Objectives

- ITQI was launched in 2007 with the objectives to:

1. Modernize pilot and maintenance mechanics training
2. Regulatory harmonization and market permeability to meet the future needs of the aviation industry and allow for a flexible, qualified workforce
3. Identify means to improve industry attractiveness to younger generations

ITQI - Total System Approach

- From the selection criteria to training and assessment:
  - Selection Criteria (Pilot Aptitude Testing)
  - Multi-Crew Pilot License (MPL)
  - Evidence-Based Training (EBT)
  - Instructor Qualification (IQ)
  - Flight Simulation Training Devices (FSTD)
- Engineering & Maintenance (competency-based training and qualification requirements)

IATA Training and Qualification Initiatives

Achievements

Engineering & Maintenance

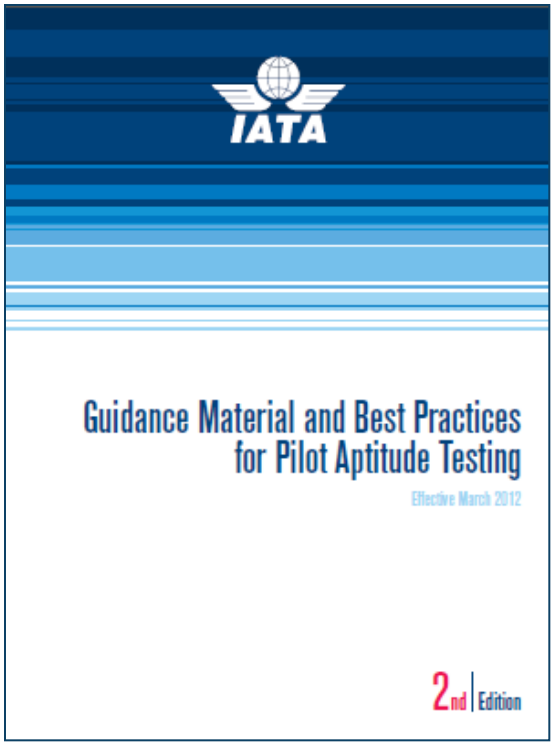
- Chapter 4 – Competency-based training and assessment for aircraft maintenance personnel – published in ICAO PANS-TRG Doc 9868
  - Applicability date - 25 August 2011

- IATA *"**Guidance Material and Best Practices for the Implementation of Competency-Based Training in Maintenance**"* published in **November 2011**
  - A CBT program assures harmonized task performance standards, upholding and potentially improving safety standards in aircraft maintenance. It simplifies employment of personnel from other regions.

Pilot Aptitude Testing (PAT)

- To support aviation managers understand, construct and implement a structured pilot selection process
  - IATA *Guidance Material and Best Practices for Pilot Aptitude Testing* (PAT Manual), first published in 2010

- 2nd Edition of the PAT manual – available for free download www.iata.org/itqi



MPL - Multi-Crew Pilot License

- Transition from task-based training to competency-based training
- Focus on commercial airline specific training needs
- Maximise skill development which is relevant to airline operations
- Develop Crew Resource Management (CRM) and Threat and Error Management (TEM) skills

8 Core Competencies for Flight Crew

- ICAO, IATA and IFALPA agreed on a set of 8 core competencies for flight crew
  - covering all phases of a pilot's career, encompassing selection, ab-initio training, assessment for skills test, recurrency training and evaluation
    - Communication
    - Aircraft Flight Path Management - Manual Control
    - Aircraft Flight Path Management – Automation
    - Leadership and Teamwork
    - Problem Solving and Decision Making
    - Application of Procedures
    - Work Load Managment
    - Situational Awareness

Applying the 8 Core Competencies "The Total Systems Approach"

- The selection process of future airline pilots
- The continuous assessment during MPL
- The performance assessment in Evidence Based Training and Checking (EBT)
- The selection and qualification of instructors and examiners

Typical MPL Course Outline

Training Phases	Airplane / FSTD	Training Hours	Duration
Ground School			26 weeks
Core Flying Phase	C172S/Type 1 FSTD*	70+16+30	14 + 4 weeks
Basic Phase	Type 4 FSTD*	120	8 + 4 weeks
Intermediate Phase	Type 7 FSTD*	32	4 + 4 weeks
Advance Phase	Type 7 FSTD*	44	4 + 4 weeks

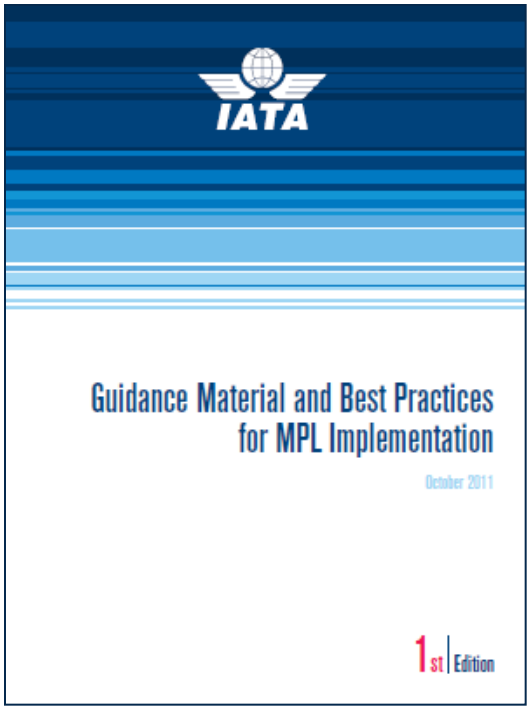
The leaders

- Lufthansa
- Air Berlin
- Swiss
- City Airline/Skyways (Sweden)
- Sterling
- Flybe (UK)
- China Eastern Airlines/Xiamen Airlines
- Air Asia (Malaysia)
- Tiger Airways (Singapore)

MPL - Implementation

- **To support MPL implementation**
  - IATA developed *Guidance Material and Best Practices for MPL Implementation,* 1st edition published October 2011

- Available for free download on our website: www.iata.org/itqi



MPL Summary

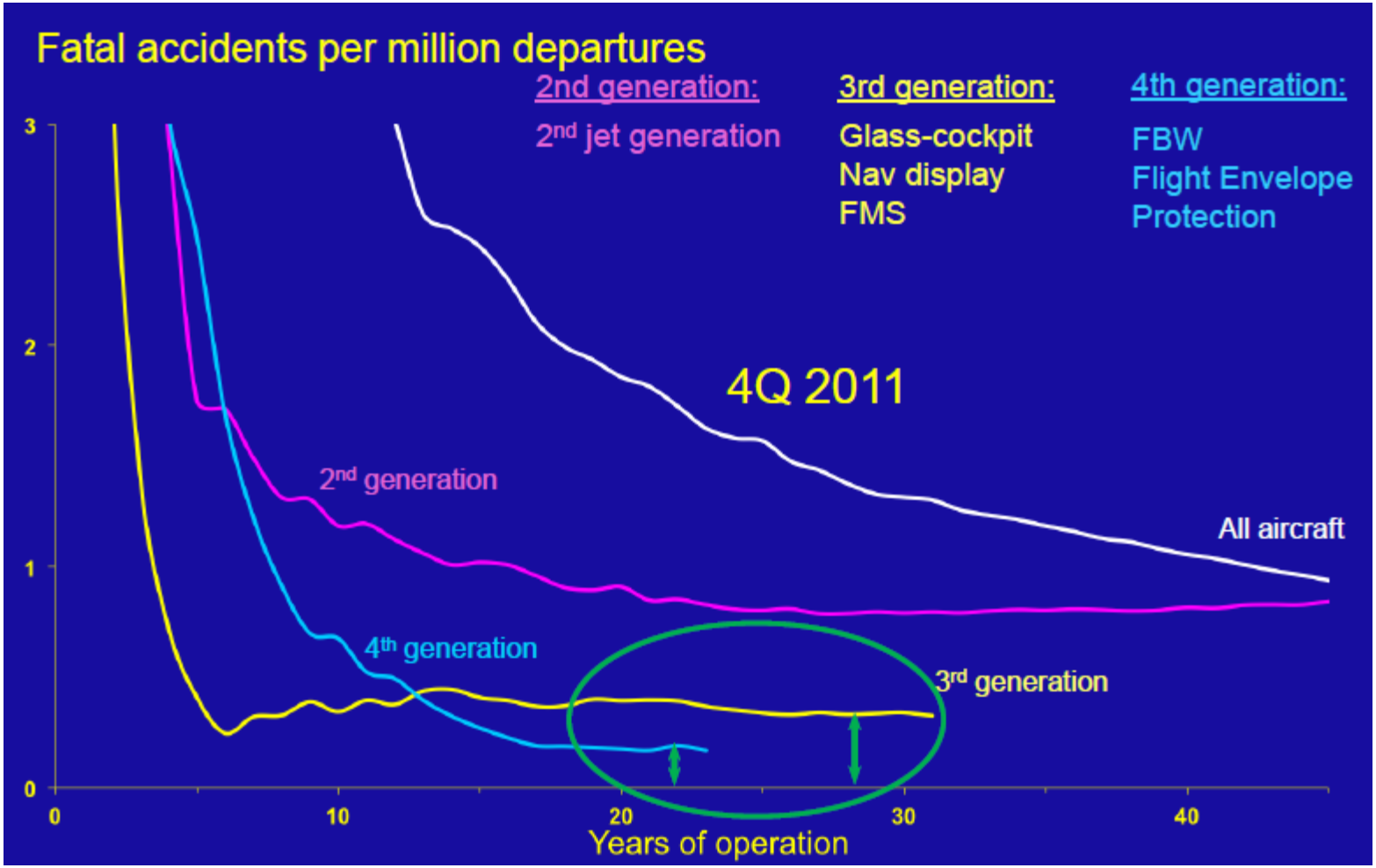
- Multi-crew environment from the start of training
- Development of Core Competencies rather than task drills
- Application of the TEM principle
- Continuous assessment against a pre-defined norm
- Objective data to drive ongoing student and course improvement
- Instructors are key and need a special preparation

Evidence-Based Training (EBT)

- What: identify, develop and evaluate the core competencies to operate safely, effectively and efficiently in a commercial air transport environment.
- How: address the most relevant threats according to evidence collected in accidents, incidents, flight operations and training.
- Why: prepare the pilot for the unforeseen event

Why Evidence-Based Training?

- By regulation, flight crew training and checking is based on events that are improbable in modern aircraft
- Current training programs are saturated with items that may not mitigate real risks or enhance safety in modern air transport operations
- Progress in the design and reliability of modern aircraft, a rapidly changing operational environment and the realization that not enough has been done to address the human factors issue, has prompted a strategic industry review of pilot training


Fatal accidents per million departures
2nd generation:
2nd jet generation
3rd generation:
Glass-cockpit
Nav display
FMS
4th generation:
FBW
Flight Envelope
Protection
4Q 2011
2nd generation
All aircraft
4th generation
3rd generation
3
2
1
0
0
10
20
30
40
Years of operation

Benefits of EBT

- EBT aligns the training content with the actual competencies necessary to handle threats
- Based on actual incidents, accidents and safety data
- Focus on improvement of the 8 core competencies
- EBT modules consist of an evaluation phase, maneuvers training and a scenario-based training phase. Scenarios are the means to evaluate and develop competencies.

Proof of Concept Phase

Adoption of EBT principles

Phase 1 (Recurrent)

- Emirates (Feb 2011) – GCAA
- Dragonair (April 2011) – HK CAD
- Cathay Pacific (Dec 2011) - HK CAD
- Air France (2012) – DGAC
- Qantas (Mar 2012) – CASA
- Qatar Airways – QCAA
- Air Transat – Transport Canada

Phase 2 (Type Rating)

- British Airways – UK CAA

Amendment proposal to ICAO PANS-TRG Doc 9868 - EBT

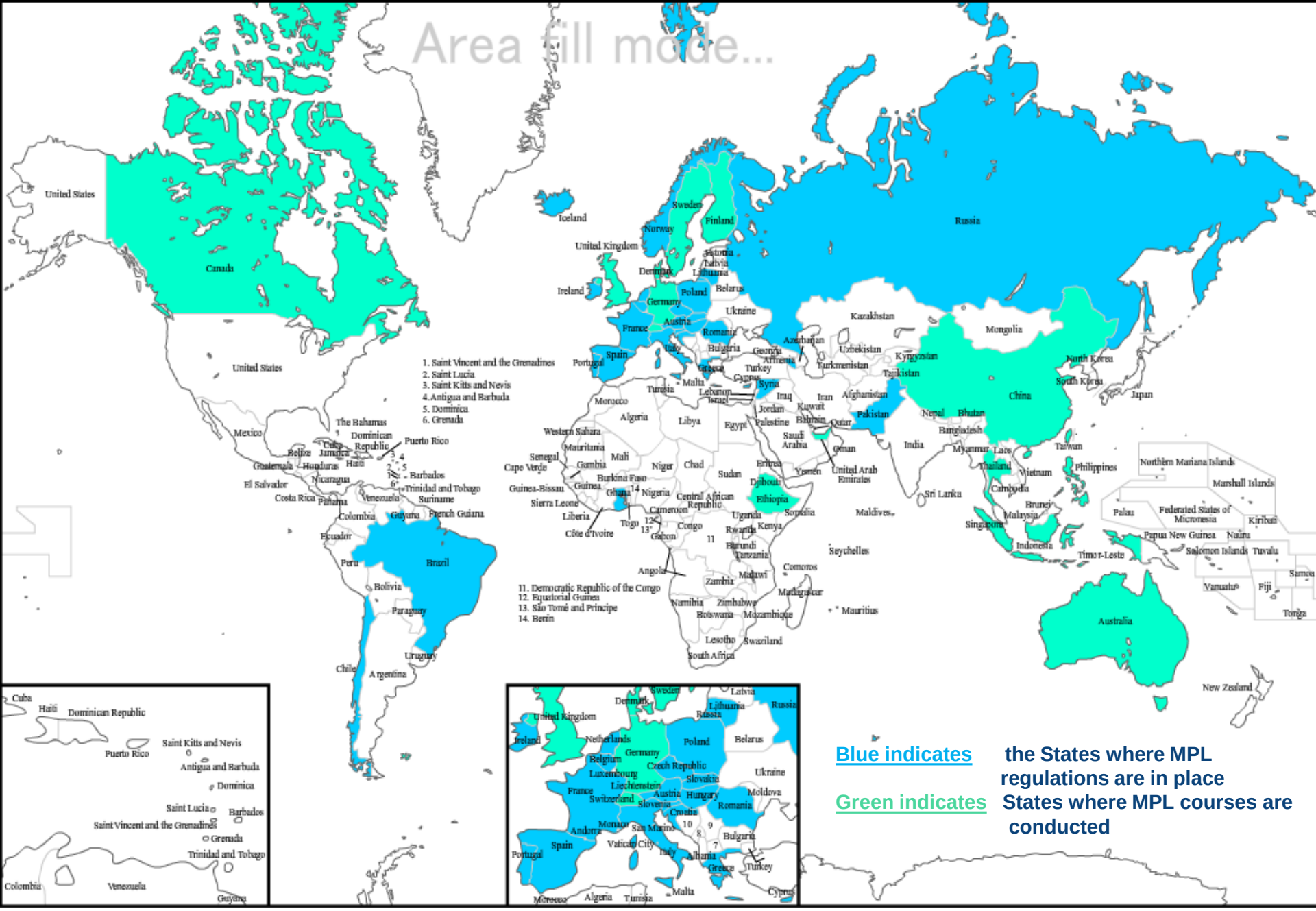
- June 23, 2011, the Air Navigation Commission (ANC) accepted the amendment proposal to PANS-TRG to introduce a new Chapter 5 which contains procedures supporting the implementation of the concept of EBT
  - The amendment proposals also expand the qualifications of **instructors**

ITQI Phase I - Completed

- Submitted to ICAO for revision and acceptance by Air Navigation Commission (ANC)
  - EBT implementation manual for regulators (ICAO)
  - EBT implementation manual for operators (co-branded IATA, ICAO, IFALPA)
  - EBT Global data report to support the evidence
- ICAO ANC revision and adaptation of both manuals October 4th, 2012

ITQI Phase I - Completed

- MPL Gaining Traction – IATA Supporting Implementation
  - 50 States have MPL regulations in place
  - 15 States actually run MPL Courses
  - 20 ATO/Operator MPL cooperation
  - June 2012 students enrolled: 1,800
    graduates: 600
- **2nd edition** of *Guidance Material and Best Practices for MPL Implementation*, available January 2013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Papua New Guinea
Nauru
Indonesia
Timor-Leste
Solomon Islands
Tuvalu
Samoa
Vanuatu
Fiji
Tonga
Australia
New Zealand
Sri Lanka
Maldives
Seychelles
Mauritius
Comoros
Madagascar
Tunisia
Morocco
Algeria
Libya
Egypt
Palestine
Bahrain
Qatar
Saudi Arabia
Oman
United Arab Emirates
Yemen
Western Sahara
Mauritania
Senegal
Cape Verde
Gambia
Mali
Niger
Chad
Sudan
Eritrea
Djibouti
Ethiopia
Somalia
Guinea-Bissau
Guinea
Burkina Faso
Ghana
Nigeria
Sierra Leone
Liberia
Côte d'Ivoire
Togo
Cameroon
Central African Republic
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Malawi
Namibia
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Mozambique
Lesotho
Swaziland
South Africa
Mexico
The Bahamas
Dominican Republic
Puerto Rico
Cuba
Belize
Jamaica
Haiti
Guatemala
Honduras
Nicaragua
El Salvador
Costa Rica
Panama
Barbados
Trinidad and Tobago
Venezuela
Suriname
Colombia
Guyana
French Guiana
Ecuador
Peru
Brazil
Bolivia
Paraguay
Chile
Argentina
Uruguay
1. Saint Vincent and the Grenadines
2. Saint Lucia
3. Saint Kitts and Nevis
4. Antigua and Barbuda
5. Dominica
6. Grenada
11. Democratic Republic of the Congo
12. Equatorial Guinea
13. São Tomé and Principe
14. Benin
Cuba
Haiti
Dominican Republic
Puerto Rico
Saint Kitts and Nevis
Antigua and Barbuda
Dominica
Saint Lucia
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Saint Vincent and the Grenadines
Grenada
Trinidad and Tobago
Colombia
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United Kingdom
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Luxembourg
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Slovakia
Liechtenstein
France
Austria
Hungary
Moldova
Switzerland
Slovenia
Romania
Croatia
Monaco
San Marino
Andorra
Bulgaria
Spain
Vatican City
Italy
Albania
Portugal
Greece
Turkey
Morocco
Algeria
Tunisia
Malta
Cyprus
Blue indicates the States where MPL regulations are in place
Green indicates States where MPL courses are conducted

Flight Simulator Training Devices (FSTD)

- In 2009 IATA published the updated 7th edition of the FSTD Design and Performance Data Requirements manual
  - details the airplane data requirements for the design and construction of Flight Simulation Training Devices (FSTD)

Upgrading FSTD Data Standards

- IATA FSTD Data Standard is "a living document"
- Next update to include:
  - design and validation data for the "representation" of a **fully developed stall**
  - improved **icing modeling**
  - detailed simulated **malfunction scenarios (EBT)**

Mutual Recognition for FSTD Qualifications

- Adoption of the ICAO Doc 9625, *Manual of Criteria for the Qualification of Flight Simulation Training Devices*, 3rd Edition, remains one condition for worldwide mutual recognition of FSTD qualifications

Mutual Recognition of FSTD Qualification

- Operators of Flight Simulation Training Devices (FSTDs) still face multiple regulatory authority evaluations every year from the various National Aviation Authorities (NAAs) of the users of their training devices

- US $ 32 Million - is the estimated direct annual excess cost to the aviation training Industry through the lack of mutual recognition of FSTD qualifications

Mutual Recognition - How can it be achieved?

- Need an internationally harmonized technical qualification basis embedded in National Aviation Authority FSTD rules based on ICAO Doc 9625 ed.3 as an evaluation standard, and
- internationally agreed implementation procedures to ensure trust among NAA's that the evaluation standard is consistently applied by each one.

IATA Training and Qualification Initiatives

Moving Forward

Implementing MPL and EBT

- MPL and EBT implementation manuals available to the airlines and regulators
- Creation of MPL and EBT Go-Teams to support IATA member airlines implementation-action-plan
- Development of gap-analysis upon request (pre and post implementation visits) by go-teams

Implementing MPL and EBT (2)

- Create a sustainable data source to feed the EBT training project with continuous data-streams for future development of training scenarios
- Build on ITQI achievements under the working streams of the International Pilot Training Consortium (IPTC), in cooperation with ICAO, IFALPA and RAeS
- Lead the development of guidance material for upset prevention and upset recovery (LOCART)

Thank you!

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to represent, lead and serve the airline industry