Air France
“FORMER UTILE” - ATQP implementation
Opportunities and challenges

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AF 777 CPT
Training Data Analysis

DGAC - Symposium-December 2014
The generic problem…

Hull Loss rate – June 2009

- Hull Loss per million departures
- 1st generation: Early jet
- 2nd generation: 2nd jet generation
- 3rd generation: Glass-cockpit
  Nav display
  FMS
- 4th generation: FBW
  Flight Envelope
  Protection

Includes western built jets
Excludes training, flight test, war, terrorism

Years Of Operation

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The benefits of ATQP

Trainees:
- "I felt it was more of a training partnership"
- "For the first time in years I think this will help me on the line, relevant training, the instructor was outstanding"

Trainers:
- "The ability to fix issues rather than just check"
- "The ability to get to the root cause"
- "Less checking - More training"
- "Covers individual needs"
- "Training proficiency will improve"

"The pilots and trainers all like it"
- "Training proficiency and safety will be improved"
- "We’re saving money!"
Lessons learnt about ATQP

- Talk to the regulator at an early stage
- Keep the programme design simple and objective
- If it needs a buy-sell it’s people to run it it’s too complicated
- Get the training considered early as they will be selling it on the day
- Think about any system changes you’ll need, e.g. training the new validity periods

TALK TO THE REGULATOR FROM THE BEGINNING
AND KEEP IT SIMPLE !!!
Components of an ATQP

1. Task Analysis including Knowledge, Skills and Attitude
2. Training need Analysis
3. Competencies, method of assessment and Line Oriented Evaluation
4. Program for each fleet and instructors
5. Data monitoring/analysis program
6. Process if proficiency standards are not maintained
Training needs Analysis

An objective methodology to turn the TA into a training and checking syllabus.

Just need to determine what will be trained and what will be assessed, and how often.
What do we have to evaluate - Situations

Threats, errors and UAS are every day normal events and crews need to know how to manage them in order to assure aircraft safety.

We can evaluate how our crew manage situations
Mastering a finite number of key competencies will allow a pilot to manage an unlimited number of potentially dangerous situations.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Competencies</th>
<th>Remarks</th>
<th>General view</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Leadership and Work Team Building</td>
<td>X</td>
<td>Good participation</td>
<td>Cruise X</td>
</tr>
<tr>
<td>• Situation Awareness</td>
<td>X</td>
<td>Always optimum</td>
<td>X</td>
</tr>
<tr>
<td>• Work Load Management</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Decision Making</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>• Communication</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>• Manual Aircraft Control</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Automation Aircraft Control</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Application of procedures</td>
<td>X</td>
<td>Good monitoring of tracks (PF and PM)</td>
<td></td>
</tr>
<tr>
<td>• Knowledge</td>
<td>X</td>
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</table>

**Competency:** A combination of skills, knowledge and attitudes required to perform a task to a prescribed standard

**Phases of flight**
- Preparation of flight
- Pre-flight
- Start up
- Taxi out
- Take-off
- Climb
- Cruise
- Descent
- Approach
- Landing
- Taxi in
- Apron and post flight
- Go around
Where do we found our Competencies

<table>
<thead>
<tr>
<th>Manual aircraft control</th>
<th>Trajectory conception</th>
<th>Automation aircraft control</th>
<th>Application of procedures</th>
<th>Communication</th>
<th>Knowledge</th>
</tr>
</thead>
</table>

**Decision Making**
- Leadership and Team building
- Workload Management
- Situation Awareness

**Knowledge**
- Procedures
- Systems
- Performances
- Environment

**Conduct of the mission**
- Cabin Crew Management
- Public Address Announcements

**Conduct of the flight**
- Personal preparation
- Fuel management
- Flight monitoring
- X Good management of threats
- Cooperation

**Where do we found our Competencies**

<table>
<thead>
<tr>
<th>NA</th>
<th>A</th>
<th>S</th>
<th>S+</th>
<th>PROFESSION SKILLS</th>
<th>KNOWLEDGE</th>
<th>NON TECHNICAL SKILLS</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Precise and anticipate</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TEM optimum</td>
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AF Level of requirement – Grading system

### LEVELS OF REQUIREMENTS

<table>
<thead>
<tr>
<th>UNACCEPTABLE</th>
<th>ACCEPTABLE</th>
<th>STANDARD</th>
<th>STANDARD +</th>
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</thead>
<tbody>
<tr>
<td>Flight Safety is engaged</td>
<td>Flight Safety is ensured</td>
<td>Safety margins are maintained</td>
<td>Safety margins are enhanced by good practices</td>
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</tbody>
</table>

#### SITUATION

- Major UAS
- Ignored or abused threat
- Ignored or abused error
- Intentional error
- Minor UAS
- Threat anticipated or recognized and mitigated
- Error detected and corrected
- TEM outstanding performance

#### COMPETENCIES

- One UNACCEPTABLE
- Too many ACCEPTABLE
- One or more significant ACCEPTABLE
- Occasional ACCEPTABLE or STANDARD + are not significant
- Performance observed always STANDARD or STANDARD +

#### Adjournment

- Adjournment, treatment before return to flight
- Must take into consideration recommendations to improve the performance
- Performance expected and to be maintained
- Performance can serve as an example

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you need to train and standardize the instructors using these techniques
Implementing a new training system - Trainees

you need to inform the Line Pilots about this new system

Training AF pilots on AF main risks areas

Adapt training program to individual needs

Still 4 Full Flight SIM sessions every year

Pilots Symposium

* Alternative Training and Qualification Programme

<table>
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<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td>A320</td>
<td>transition</td>
<td>ATQP</td>
<td>transition</td>
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AIRFRANCE
How to measure Pilots proficiency?

From the operational standards using the Flight Data Monitoring and the SMS.
From the ASR - feedbacks – interviews – surveys of trainers and trainees.

From the training standards using the existing training records.

From the way events are managed.
From the way competencies are used to manage events.
We were able to develop:
Specifics indicators to follow and improve our system.
How to measure Pilots proficiency? - Indicators

CPT Competencies trend

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<tr>
<td>2013.71</td>
<td>33.6</td>
<td>20.1</td>
<td>14.9</td>
<td>3.8</td>
<td>11.9</td>
<td>4.5</td>
<td>6.1</td>
<td>15.3</td>
<td></td>
</tr>
<tr>
<td>2013.73</td>
<td>39.1</td>
<td>21.4</td>
<td>16.5</td>
<td>4.1</td>
<td>13.4</td>
<td>5.3</td>
<td>6.4</td>
<td>12.8</td>
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</tbody>
</table>

Adverse Events Monitoring (SMS/FDM)
Pilots proficiency - Opportunities – Manage Weak Performance

Distribution of pilots on competencies on 2013

Répartition des pilotes par couleur (Nb)

- Standard
- Standard +
- Standard ++

Unacceptable

Recurrent Weak performance + one Deep
One shoot Deep Weak performance
Recurrent Weak performance

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LOE Design

Several scenarios
Evidence Based Training
More focus on normal operations
Working as a crew

AF topics
• LOE scenarios of 4 events created by the trainer on the day from a multi-choice menu.

Preflight / Start Up / Taxi out : Event 1
Take Off / SID / Climb : Event 2
Cruse : Event 3
Descent / Holding
STAR, Approach / Landing : Event 4
Taxi in / Shut down/ Secure

ATQP ideas used by other operators:
• LOE combined with LPC.
• LOE event defined by SMS/FDM trends.
• Pilots divided into three « tiers » based on training performance.

To build the LOE
Indicators – F/O contribution in A320 LOE management

Signal

Exercices avec le + d’« Acceptable »

<table>
<thead>
<tr>
<th>Exercice</th>
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<tbody>
<tr>
<td>ENG STALL en fin de montée</td>
<td>0.31</td>
</tr>
<tr>
<td>FCU 1 + 2 FAULT</td>
<td>0.26</td>
</tr>
<tr>
<td>SEC 1 FAULT (SEC 3 en tolérance au)</td>
<td>0.22</td>
</tr>
<tr>
<td>Erroneous RADIO ALT height indicatio</td>
<td>0.18</td>
</tr>
</tbody>
</table>
LOQE

- A Goal
  - To target an area of the operation under-represented in the data

- A Process
  - Structured
  - Focused
  - Standardized

- Management
  - How initiated? Who controls?
  - Training

Utilisation du radar :
Les échelles et le tilt sont-ils correctement utilisés?
A320 : Non 23%
ATQP Management System - Training Plan Definition

- LOSA, Safety data, audit
- REX, ASR, external oversight

- EASA – DGAC feedbacks

- Flight Safety

- Grading sheets

- Proficiency level

- Analysis

- Authority

- Analysis

- Analysis

- Mechanic’s feedbacks

- Procedurals changes

- Support Office

- Analysis

- Instructors And Trainees Feedbacks

- Quality system

- Analysis

Training Needs

Training Plan
ATQP Management System – Deficiency management

- Training Plan
- Indicators Analysis
- Proficiency level: grading sheets
- Trainees difficulties
- Trainees and Instructors feed-backs

ATQP management Training group (every 6 months)

Training Plan
Program schedule
Instructors Standardization
Logistic
Training Supports

Back loop
Thank you !!!

“Not bad, you’ve passed your check now let’s talk about that landing!”