Turning Experience into Expertise

Finding the Evidence of Professional Competencies
Turning Experience into Expertise
What should and can we do to improve the Expertise Trajectory?

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How do we make Training effectiveness measurable?
Competency-Based Training and Assessment

- Define the Training Methodology
- Design and Develop the Training Program
- Trainer/Instructor Qualifications and Competencies
- Training and Assessment Records
- Evaluation of the Training Program Effectiveness
Building Blocks (Methodology)
A Professional Pilot – An Expert (Methodology)

- Preflight through Engine Start
- DISPATCH AND FLIGHT PLANNING
- COCKPIT PREFLIGHT
- EXTERIOR/INTERIOR INSPECTION
- PUSHBACK/TOWING AND ENGINE START
- Taxi
- PERFORM TAXI OPERATIONS
- Takeoff
- PERFORM TAKEOFF OPERATIONS
- Departure through Climb
- PERFORM DEPARTURE AND CLimb OPERATIONS
- Cruise
- PERFORM CRUISE OPERATIONS
- Descent and Arrival
- DIVERT THROUGH ARRIVAL
- PERFORM DESCENT AND ARRIVAL OPERATIONS
- Approach and Landing
- PERFORM HOLDING OPERATIONS
- Taxi through Parking
- PERFORM VISUAL APPROACH OPERATIONS
- PERFORM PRECISION APPROACH OPERATIONS
- PERFORM NON-PRECISION APPROACH OPERATIONS
- PERFORM ABNORMAL CONFIGURATION APPROACH OPERATIONS
- PERFORM GO-AROUND/MISSED APPROACH OPERATIONS
- LANDING
- PERFORM LANDING OPERATIONS
- POSTFLIGHT
A Professional Pilot – An Expert
(Methodology)

- Flight Path Management, automatic
- Flight Path Management, manual control
- Application of Knowledge
- Communication
- Leadership & Teamwork
- Workload Management
- Problem Solving and Decision Making
- Application of Procedures and Compliance with Regulations
- Situation Awareness and Management of Information
What DATA can tell you! (Example: Passing Grade 80%)

Observable Successful Task Accomplishment

Underlaying Foundational Competencies

Executes QRH – Electric System

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Grade</th>
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<tr>
<td>Flight Path Management, automatic</td>
<td>100%</td>
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<tr>
<td>Flight Path Management, manual control</td>
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<tr>
<td>Application of Knowledge</td>
<td>98%</td>
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<tr>
<td>Communication</td>
<td>75%</td>
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<td>Leadership &amp; Teamwork</td>
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<td>Application of Procedures and Compliance with Regulations</td>
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<tr>
<td>Situation Awareness and Management of Information</td>
<td>77%</td>
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<tr>
<td>Total</td>
<td>88%</td>
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</table>
Finding the Evidence (Training Assessment)

- **Validity**: Satisfies Objectives
- **Reliability**: Consistent
Instructor Competencies

Communicate

Motivates and Engages

Promotes Skill & Knowledge transfer

Provides Feedback

Creates Learning Experiences

Presents

DATA Collection
Key-Elements of effective Data Collection & Analysis

**Validity**
- Identify issues and define the Hypothesis
- Data collection Methodology (do not boil the ocean)

**Reliability**
- Educate the Data Collector (Instructors)
- Collect data

- Analyze and interpret data
- Act on result
What should and can we do to improve the Expertise Trajectory?

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How do we make Training effectiveness measurable?

Tasks and Competencies
Instructor Competency
Meaningful Data Collection
Measuring Success (Long-term Data Analysis)