Training the Professional Airline Pilot; Today and Tomorrow

Captain Chuck Hogeman, ALPA Human Factors and Training Group Chairman
What Should We Expect From Our Airline Pilot?

- Safe
- Proficient
- Professional
Speakers:

- Captain Frank Cheeseman, UAL
  - ALPA Director of Pilot Training.
- Captain Paul Nelson, CMR
  - ALPA HFWG Vice-chairman; Air Traffic Services ADS-B project leader.
- Captain Bryan Burks, ALA
  - ALPA Training Council Vice-chairman.
- Captain Chris Malo, XJT
  - XJT Master Executive Council, Vice-chairman.
Capt. Frank Cheeseman

ALPA Director of Pilot Training
Airlines: Profit Based Enterprises

“The Training Sweet Spot”
Effective Training Programs

Training Steering Committee

ASAP, FOQA, LOSA, AQP/Training Data
Training Delivery Systems
Thinking Outside the Box: A Human Advantage

Captain Paul Nelson, MSc
Questions From Outside the Box

- Without changing our patterns of thought, we will not be able to solve the problems we created with our current patterns of thought.
  
  Albert Einstein

- What are we missing because of the questions we don’t know to ask?
A View of the Industry

- Accidents resulted in passenger injury and death
  - Partly attributed to lack of proper training, skills and inconsistent quality control
- Calls for professionalism, standardization and government regulations
Optimize the Industry

- “Technological" fixes did not solve the problems
- Economic incentives existed to override safety devices
- Management had little understanding of the workings and limits of operation
Models of the Industry

- Fixes were unsuccessful because:

  1. Engineers did not fully understand what went on in the system
  2. Miscalculation of the working environment, and the quality of operators and maintainers
  3. Technology outpaced the understanding of it
The Industry Was?

- The Transportation Industry of the 1800s
- The “new” technology was the Steam Engine
- The Hazard was exploding boilers
Why Does History Repeat Itself?

- We ask the same questions
- We assume the system remains known
- We think inside the box
- We miss emergent properties of the System
CHANGE our Tombstone Mentality

- Let’s think outside our comfort zone
- Look for how the system has changed
  - And how it may likely change
- Think, imagine and ask the unexpected
The Next Generation of Pilots

Cultural Context:

- Grown up with Computers
  - Have a comfort with, and trust in technology
  - Reduced suspicion of technology

- Participants in Virtual Reality activities
  - Video and computer games
  - Massively Multiplayer Online Game (MMOG)
    - Biggest to date has over 12 million players
Contextual Change

- Simulator experience prior to pilot training
- MS Flight Simulator
  - Available to anyone
  - High fidelity
  - Even used in serious Aviation research
The “Box”

- Greater use during pilot training
- Aircraft Simulators progress in real-world emulation
- The gap between the Sim and the real world is perceptively blurred and will become more so
Strength as a Training Tool

- Greater fidelity of emulation equals:
  - Greater power in cognitive training and transfer

- Practice to develop survival reaction skills
  - i.e. you don’t kill yourself trying to develop skillful emergency actions

- Controlled environment, Reset when things go wrong
Unintended Consequences

- Less sense of perceptive difference when in the real airplane

- Research indicates VR Simulation can reduce the fear response to death hazards

- NO RESET in the Airplane!
  - It’s REAL ground and you can end up REAL dead
Do we really want our pilots’ first death wakeup call to occur during revenue flight?

Anecdotal evidence suggests this possibility.

Cultural context and research support this as a possibility.
Tactical Change

- Reevaluate how this tool is used
- How do we re-enforce the reality of real world death from within the Simulator VR world?
- Progress here will save lives in the future
- Dare to THINK OUTSIDE THE BOX


Enhanced Pilot Upset Prevention and Recovery Training

Captain Bryan Burks
ALPA Training Council Vice Chair
Upset Recovery Training project lead
ICATEE Training Group Co-Chair
Alaska Airlines
Loss of Control In-Flight (LOC-I)

Fatalities by CAST/ICAO Common Taxonomy Team (CICTT)
Aviation Occurrence Categories

- External fatalities [Total 253]
- Onboard fatalities [Total 4717]

Note: Principal categories as assigned by CAST.

2009 Statistical Summary, July 2009
Boeing-CAST Data LOC-I as % of Fatalities

From 2006-2008 LOC-I Trend:
29% increase by category to overall fatalities

Chance of LOC-I death versus these categories:

- Runway Excursion (TO&LDG)  X  3.4
- Non-engine systems failure  X  4.4
- Runway Incursion (V,A,P)    X  9.6
- Fire                        X  1,861
- Engine Failure              X  788
Industry Efforts to Reduce LOC-I

FAA Stall Working Group: Short Term, non-regulatory
  SAFO changing “minimum loss of altitude” emphasis

Airbus/Boeing change to Stall Procedures
  Reduce AOA

ICATEE : Long Term Deliverables and Graduated Strategy
ICATEE Mission Statement

International Committee for Aviation Training in Extended Envelopes

Upset Prevention and Recovery

MISSION: To deliver a complete and comprehensive long-term strategy to eliminate or reduce the rate of Loss of Control In-Flight accidents and incidents through enhanced Upset Prevention and Recovery Training (UPRT)
Training Needs Analysis: What is the Current Deficit in Training, and what can the Current Training Infrastructure Support

- Lack of Aerodynamic Academics (Knowledge)
- Limitations to Use of Full Flight Simulators (FFS)
- Unrealistic Training Methodology (CRM)
- Deficit in Upset Recovery Skills: The Case for “On-Aircraft” Training
The Graduated Strategy

Maximize Use of Current and Effective Infrastructure:

ICATEE/FAA Survey
Indicates that less than 40% of current training providers utilize this tool
The Graduated Strategy

Emphasis on Aerodynamic Academics

Appropriate Use of FFS (avoid negative training)

Enhanced Instructor Training and Standardization

Improved Training Methodology (LOFT versus MBT)

Return to “On-Aircraft” Training

Mandated UPRT via appropriate license, certificate and rating level
ALPA’s Positions on Flight Simulation

- Training in highest fidelity motion simulators
- Maximize the use of LOFT in simulator training using line qualified crew complement
- Full-Flight simulators, Level D, used for evaluation
- Video recording of CRM/TEM training during simulator training
- Highest fidelity motion simulators for training pilots in unusual attitudes and Upset Recovery Training (Policy pending)
ALPA’s Positions (cont.)

- **MPL Training:**
  - Careful analysis of training device selection for appropriate tasks
  - Full-motion simulation training in aircraft type maximized throughout basic, intermediate, and advanced training

- **IWG:**
  - All Pilot Training Tasks analyzed and device feature and fidelity levels assigned according to supporting the task (what is the training objective)
Thank You!
Mentoring is Critical
What you can’t learn in the simulator and how to pass it on.

Captain Christopher Malo
Vice Chairman
ExpressJet Airlines
Mentoring is Critical

- “We make a living by what we get; we make a life by what we give.”
  Sir Winston Churchill

- “Mentoring is a brain to pick, an ear to listen, and a push in the right direction.”
  The Honorable John C. Crosby
Mentoring is Critical

  - Mentor – *A wise and trusted guide and advisor*
  - Tradition – *A specific practice of long standing*
  - Heritage – *Practices handed down from the past by tradition*

- Ways that best practices and behaviors, needed for a way of life/profession, are passed along.

- Describe part of the professional development of an airline pilot.
Mentoring is Critical

- Pilot vs. *Airline Pilot*
  - Pilot
    - Flying Skills (perfunctory skills)
  - Airline Pilot
    - Flying Skills (perfunctory skills)
    - Crew Resource Management Skills (Crew Environment)
    - Command Leadership Skills (PIC)
    - ALPA Code of Ethics
    - Safety/Security, Regulatory Compliance, Passenger Comfort and Schedule
Mentoring is Critical

- Formal vs. Informal
  - Both needed and of equal importance
  - Formal Mentoring Program
    - Originally proposed in HR 5900; made Public Law No: 111-216 on Aug. 1, 2010.
    - Establish flight crewmember mentoring programs under which the air carrier will pair highly experienced flight crewmembers who will serve as mentor pilots and be paired with newly employed flight crewmembers.
    - Monumental legislation that will provide for the advancement and proliferation of mentorship through the airline piloting profession.
Mentoring is Critical

- Mentor Committee (XJT MEC Example)
  - Pairs senior captains with new first officers
  - Pairs senior captains (mostly check airmen) with newly upgraded captains
  - Mentoring subjects / topics varied based on pilot and seat
  - In select cases, captains sent back to the right seat via a training review board for issues during upgrade have been assigned mentors, even though they are veteran first officers
  - Mentoring can be key – they can fly, but often lack the skill sets covered in mentoring
  - Same mentoring that new captains receive
Mentoring is Critical

- **Mentor**
  - Sounding board for concerns and questions. Provides advice and guidance with questions a pilot may not be comfortable asking a company official.

- **Pilot Mentor Manual**
  - Living document. Provides guidance in areas / with issues not covered by company and/or FAA documents.
  - Can be both “good to know” information and information for the professional development of pilots new to the airline.
Mentoring is Critical

XJT ALPA Committees – Description and E-mail Contacts

<table>
<thead>
<tr>
<th>Committee Name</th>
<th>E-mail Address</th>
<th>Committee Description/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeromedical</td>
<td>XJT <a href="mailto:Aeromedical@alpa.org">Aeromedical@alpa.org</a></td>
<td>Assists pilots with maintaining or regaining FAA medical certification and/or completing FML</td>
</tr>
<tr>
<td>Communications</td>
<td>XJT <a href="mailto:Comm@alpa.org">Comm@alpa.org</a></td>
<td>Coordinates development and production of XJT ALPA publications and communications</td>
</tr>
<tr>
<td>Contract Enforcement/Compliance</td>
<td>XJT <a href="mailto:Compliance@alpa.org">Compliance@alpa.org</a></td>
<td>Assists pilots with questions regarding the contract and grievances filed</td>
</tr>
<tr>
<td>Aircraft Disposition Program (CDP)</td>
<td>XJT <a href="mailto:CDP@alpa.org">CDP@alpa.org</a></td>
<td>First response is assist pilots during/after any critical incident, professional or personal</td>
</tr>
</tbody>
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E-mail these committees with your questions

Hotel Guide

Hotel Selection Process

The hotel selection process falls into two categories: new hotel/new market, or hotel change and re-bid. In both cases, we begin the process by asking Hotel Committee chairman from

Professionalism

As professional airline pilots, please remember our professionalism does not end at the completion of the duty day, but extends to our overnights as well. Part of the Hotel Committee’s job is resolving pilot complaints regarding hotels/overnights and ensuring that the needs of our crewmembers are met. Regrettably, another aspect of our job is responding to complaints from hotel staff and managers concerning inappropriate or unprofessional behavior on the part of ExpressJet crewmembers. Remember, you represent not only yourself, but the entire pilot group and Company while on an overnight. Good hotels can, and do, cancel contracts

safety, amenities, and area attractions. We also attempt to negotiate additional amenities
Mentoring is Critical

- Informal Mentoring
  - Byproduct of pilot culture at a carrier that has been carried on for years or can begin through the influence of a formal mentoring program.
  - Often a nudge in the right direction is better received and given more credence when coming from a peer vs. someone perceived as being in a position of authority.
Mentoring is Critical

– Advice, counsel and teaching are best done at the time of the event or soon after.
  • Due to the job, for this to occur these tasks often fall to fellow crew members to serve as mentors, rather than to supervisors.

– Nonverbal or unintended informal mentoring
  • Good and bad
  • Learned behaviors
  • Norms learned as a result of inexperience and respect for experience
Mentoring is Critical

- **HR 5900/Public Law No: 111-216 and Mentoring**

  “(A) Establish flight crewmember mentoring programs under which the air carrier will pair highly experienced flight crewmembers who will serve as mentor pilots and be paired with newly employed flight crewmembers. Mentor pilots should be provided, at a minimum, specific instruction on techniques for instilling and reinforcing the highest standards of technical performance, airmanship, and professionalism in newly employed flight crewmembers.”