Magnitude of the Shortages

• Airlines will need 25,000 new aircraft in the next 20 years in addition to the 17,000 existing commercial aircraft (AET&M, 2008)

• Studies show that we will need 480,000 new aviation technicians by 2026. (Boeing Training and Flight Services)

• Average age of aircraft maintenance engineer/technician/engineer in Europe is 40, and in the US, its 53 years of age. (Aviation Week, 2008)

• In 2017 the aviation personnel shortage in Canada will be equal to the 2008 Canadian aviation workforce. (NGAP Roundtable, 2009)

• Currently 1400+ 787 and A350XWB on order
Current Challenges

• New aircraft require new skills and knowledge
• Lack of harmonization in global regulations
• Global initiatives to update regulation/guidelines
• Any solution must involve an integrated solution involving industry members. (OEMs, Operators and the Regulators)
The New Aircraft technology challenge:

- New Skills Mix
- New Training methodologies
- Regulatory requirements for new technology
- New Assessment techniques using Simulation
- Create embedded solutions
Challenge: New Skills Mix

- New Skills Mix
  - Avionics / Airframe combination
  - System integration has blurred the line to define each discipline
Challenge: New Training Methodology

• New high fidelity synthetic training devices are required.
• Training time on the real airplane is becoming more difficult and more expensive.
• No one is going to take apart an operational aircraft in the name of training.
• Need to have regulatory acknowledgement that the airplane is not the best device on which to conduct a greater amount of training.
• The shift in emphasis is away from systems knowledge and much more toward system operation, integration and troubleshooting.

• Synthetic Based Training (SBT) exams hold great promise as regulations allow
Challenge: Regulatory requirements

- Harmonized globally for new technology
  - New fundamentals must be taught and tested
  - Establish the basis for follow-on training
  - Acceptance that simulation devices are becoming a necessity.
    - Simulating modern system troubleshooting in aircraft
    - Acceptance that portions of OJT may be on a desktop simulator
- Update knowledge and practical assessment criteria to include modern technologies
- Balance next generation and mature technologies in regulatory oversight
Embedded solutions: existing fleets

- Do more maintenance with less personnel
- Operate and maintain mixed (old and new) fleets
  - Existing fleets of “non computer, non-glass, non-high-bypass fan” aircraft are still flying in commercial aviation
- Aging aircraft issues
Embedded solutions: previous learning

- “Recognition of Previous Learning (RPL)”
- Acknowledge similar training to meet certification standards
- Recognition for experience/competency
- Most regulators have some form of this for military technicians
- Offshore technicians may get credit toward certification
- Entry criteria for technicians from other technology trades
Next Steps: Fundamental Questions

- What will we need from our future employees?
- What do they want from us?
- How can regulatory bodies help this situation in a global environment?
- Should there be separate specialized training or included as part of the basic license?
- Do we need to re-examine the privileges for each license?
- How will we regulate training and qualifications for the wide range of aircraft ages and technologies?
- How do we incorporate the new technologies with mature technologies in the license training?
Next Steps: Specialty Training

• Advanced Composite repair
• Fiber Optic Training
• Aviation IT/Database Infrastructure
Next steps: Suggested Actions

- Future Maintenance License
- Highly integrated training programs
- New assessment techniques using simulation
- Collaborative involvement in program development (OEM, Customer, Regulatory Agencies)
- Fleet maintenance and integrated training programs across all generations of aircraft
Global Initiatives

- ITQI – IATA Training and Qualification Initiative
- ICAO – NGAP – Next Generation of Aviation Professionals
- ATA 104 Update
- EASA NPA 2009/01 (21.039) – Operational Suitability Data
Thank You!

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