Enabling the Training of Next-Generation Aviation Professionals

ICAO NGAP

Captain Gary Morrison
CAE Regulatory Affairs
Head of Global MPL & Ab-Initio Initiatives
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CAE: world leader in providing...
- Modeling and simulation technologies
- Integrated training solutions
CAE - A Few Facts

- Founded in Canada in 1947
- Global Reach, for solutions in all segments of aviation:
- 8,000 employees worldwide
- 23 countries, 100 sites
- Operating 32 training centers, using over 160 simulators
- CAE Global Academy: world's largest network of ab-initio flight schools
- Has produced over 1,000 civil and military full-flight simulators and training devices
- Over 80,000 civil and military pilots and maintenance technicians trained annually

CAE Civil Aviation Training & Services: The broadest global reach
- Training solutions innovator for aircraft OEMs
- Alliances with major airlines
CAE in Latin America – Civil

- First contract in 1978
- 70 employees
- #1 in the market for installed FFS
  - 20 FFS sold in 7 countries
- Training centres in Brazil and Chile
- Upcoming centres in Peru and Mexico
- Long-term agreements with airlines representing 60% of market
- Expanding into helicopter and business jet training

CAE Global Academy Global Footprint

- Alliance of 11 top flight schools with strategic global locations
- Committed to and delivering the highest safety and quality standards
- Innovative and efficient training methods & global best practice
- Direct line-of-sight to a job for graduates through strong industry relationships
- Delivering optimized ab-Initio ATPL, CPL and MPL programs
- Pilot’s entry to unique CAE line of services – from cadet cradle to captain
ICAO NGAP – Looking Beyond

- ICAO, regulators, academia, OEMs, airlines, and training industry to be commended for the NGAP initiative
- As aviation growth continues, the pool of pilots, maintenance technicians, cabin crew, and other qualified professionals will continue to be a challenge
- An infusion of new personnel

We must pave the path for the training of next-generation aviation professionals

Training the Digital Generation Professionals

- Next generation of aviation professionals is computer literate at a much younger age
- They expect modern and high-fidelity training tools, available anytime
- Intelligent adoption of new training technology… to help pilots become more competent

And their biggest roadblock!

How will they afford this training?
CAE's Goal for Training NGAP
1. Competent aviation professionals
2. Better training, at reasonable cost
3. Global standards: quality, efficiency, mobility
4. A safety culture

CAE MPL Program for Air Asia
• First Class—All phases successfully completed
  • Beyond expectations for all stakeholders
  • Base Training & Initial Operating Experience completed in Malaysia. All 12 line flying A320 First Officers
• Second class of 12 just completing Core & Basic

CAE’s MPL Program: successful and on-time
CAE’s MPL experience – A Few Observations

- Designing our CAE MPL program from a blank sheet using Instructional Systems Design (ISD) has proven to be successful
- Instructor qualifications and enhanced training are key
- Integrated CRM, TEM and leadership training throughout all phases works well
- Effective use of appropriate training devices at every phase is critical
- Approved Training Organization (ATO) requirements with an effective QMS & SMS are important for success
- Proficiency in Aviation English Language (AEL) to minimum entry level is critical to learning and MPL program success
- Integration of AEL training throughout the first three phases has proven successful

We’ve come a very long way...
Complete Suite for all Segments of Aviation

Tailored to Your Training Requirements

<table>
<thead>
<tr>
<th>Ab-Initio Tradtional Licensing</th>
<th>Ab-Initio MPL</th>
<th>Professional Pilot Initial &amp; Recurrent</th>
<th>Pilot Provisioning</th>
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</thead>
<tbody>
<tr>
<td>CAE Simplicity</td>
<td>CAE 3000 Series</td>
<td>CAE 6000</td>
<td>CAE 7000</td>
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- Flight Training Devices
- Night Training Devices
- Full-Flight Simulators

In both Civil & Military Including Maintenance Technician Training

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CAE is Co-operating & Participating with...

- **ICAO**
  - NGAP initiatives
  - ICAO Doc 9625 - Airplanes and Helicopters
  - Multi-crew Pilots License (MPL)
  - Competency-based training
  - Evidence-based training
  - Harmonized Instructor Training Standards
  - Upset Prevention & recovery Training
  - SRVSOP for LARS

- **National Aviation Authorities** - throughout the world via participation in task forces, consultations, rule making committees, etc.

- **International Associations**: IATA, FSF, RAeS, etc.
**Global Harmonization**

- Not just for Flight Simulation Training Devices
- Principles of harmonization also apply to training standards and licensing for pilots, technicians and other aviation professionals

Global Harmonization will bring benefits to our industry.
LACAC Harmonization

CAE salutes the efforts by the LACAC in its efforts to harmonize the regulations of the States of the Latin American Civil Aviation Commission and other States of North America, Central America, South America and The Caribbean.

And ICAO’s NGAP **Trainair Plus** effort to spread word of the advances in training and technology throughout the world.

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**Closing the Loop Between Training and Operations**

- **Aircraft Flight Data**
- **Safety Center**
  - FOQA Statistics
  - Safety Reports
- **Simulator FOQA (SOQA)**
  - Use same analysis tools to confirm training impact
  - Automated pilot assessment
- **Advantages**
  - Link training to operational safety & efficiency
  - Targeted training content
- **Curriculum / Pilot Brief**
- **Debrief**
- **Full-Flight Simulator**

Use of operational data
- FOQA and Safety reports
In Conclusion

- Simulator technology continues to make significant progress
  - To make the overall immersive simulator experience truer-to-life...and cost effective.

Conclusion, (cont.)

- We need and can go further to bring next generation of pilots safely on line
  - By leveraging Flight Data Monitoring (FDM) technologies for evidence-based training
  - By providing the instructor better insight into the crew’s performance
  - Through automated evaluation and closed-loop adaptive training

- Continued development and use of new training methodologies: Competency-Based Training, MPL, EBT, etc.
In Conclusion, (cont.)

By smart use of technology and new training methodologies…

We have an opportunity for more effective, efficient and safe training!

Colegas de la aviación, muchas gracias

CAE
one step ahead