The Path to Effective Training

Part 1 – The Economics of Mentoring

Tim Poudrier & Robert Ginzel

Presented by Tim Poudrier
The cost of poor inspection
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Effective training and mentoring is the best way to eliminate poor inspection.
The Economics of Mentoring

- Mentoring is a means of providing help, guidance, and support to other persons who are often younger or less experienced. A mentor is a volunteer role model, or leader who is committed and consistent in his or her helping relationship with the other party who is usually a student or co-worker.
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Challenge 01 - Instruments

• Inspection instruments are more complex, more accurate, and more widely available
• One early NDT technique was to hit a train wheel with a hammer
  • If the sound was clear, the wheel was good
  • If the sound was “off”, the wheel was not good
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Challenge 01 - Instruments

• Industrial RT equipment was huge, hard to move, and dangerous
  • Generating required energies was difficult
• Modern use of radioisotopes makes today`s equipment compact, and use by routinely trained personnel from a portable lab or darkroom is common
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Challenge 01 - Instruments

• Early UT equipment was too large for a single person to move, and cost several times a technician’s salary

• Modern handheld flaw detectors are lightweight, portable, and much less expensive.
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Challenge 01 - Instruments

• Advanced equipment needs trained technicians
• Technicians have to be able to perform inspection, understand electronics and computer programs, along with engineering and design of inspection equipment.
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Challenge 02 – Tools (i) Modeling tools

- Beam Modeling
  - More complex
  - More accurate
  - More difficult
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Challenge 02 – Tools (ii) Inspection tools

Old way – one probe at a time, three different angles, more than one hour.

New way – one pass with many angles at once in about one minute.
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Challenge 02 – Tools (ii) Inspection tools

Corrosion survey – with encoded and recorded Ultrasonic corrosion mapping, and with Digital Radiography imaging techniques
Digital recording of data – Allows for better auditing, sharing, repeatability, and control.

Radiographic film can be stored and shared, but not easily, and film breaks down over time.

Reporting tools store data, and can be linked to procedures, maintenance schedules, and parts control.
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Challenge 02 – Tools (ii) Reporting tools

Digital recording of data – Encoded and recorded UT information stores data from each millimeter of inspection.

Data entered once is used in many applications.

Digital recording of data – Processed information is stored with raw “A Scan” data.

Reports are no longer passive, but actively engage programs to make overall inspection better.
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Complex programs require training and practice in order to realize good results.

A doctor or a mechanic who has tools to use but lacks the training to use them – has no tools!

Today’s NDT Technician NEEDS proper training and mentoring to make the best use of the tools available.
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Experience – Observation and participation
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Experience – From direct supervision...
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... to audited activities
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... to certification and independent activity.

- Limited Scope
  - Follow Instruction
  - Supervisor nearby
  - Review Activities
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Certification – Continued growth and improvement

- Expanded Scope
  - Write Instruction
  - Supervisory
  - Audit activities
  - Prepare inspection
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- Mentoring is part of every step
  - From Green Trainee to Industry Expert
- Encourage growth and pride
  - Old guard will leave
  - No new people is too expensive
  - Poor inspection is too expensive
- Adopt a plan
- Start now