

Survey of NDI Training

FAA Academy AMA-250

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Overview

- **NDI – Nondestructive Inspection and Evaluation (22518)**
- **Accidents**
- **FAA Guidance/Advisory Circular**
- **Systematic NDI Evaluation Process**
- **Common misconceptions and tribal knowledge**
- **Effective Surveillance**



Nondestructive Inspection and Evaluation Course (22518)

- **Common NDI/NDT/NDE Methods**
- **Certification of Personnel / Organization**
- **NDI Related Accidents**
- **Role of the Aviation Safety Inspector (FAA)**
- **Systematic NDI Evaluation Process**



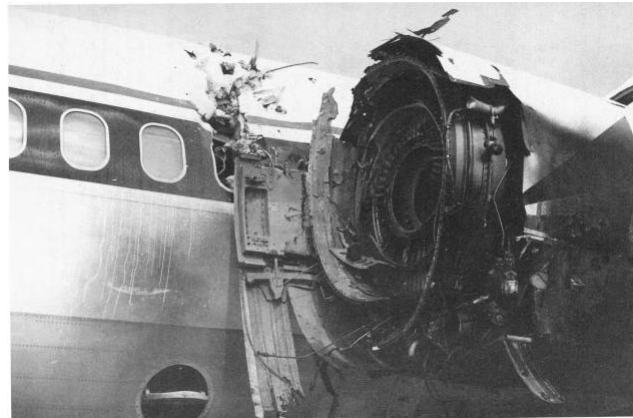
Accidents with NDI Implications



United 232



Aloha 243



Delta 1288



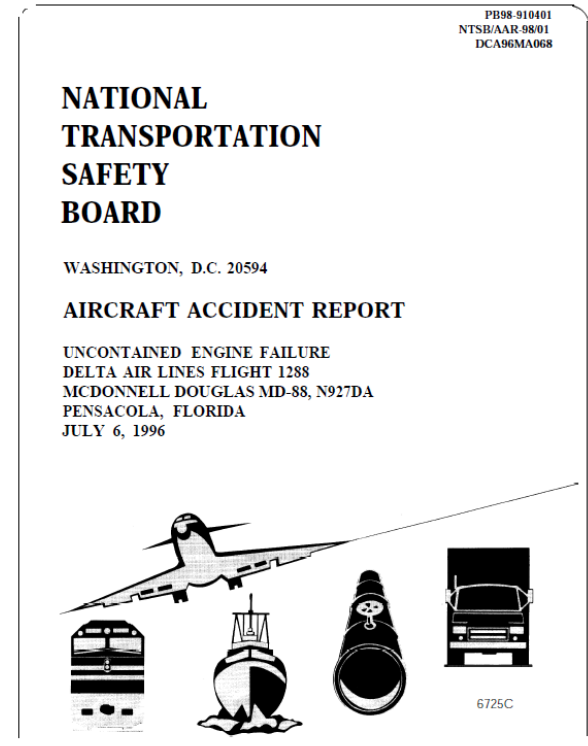
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NDI Related Accidents

Delta 1288 - Pensacola, FL

- “...the probable cause...was the fracture of the left engine’s front compressor fan hub, which resulted from the failure of Delta Air Lines’ fluorescent penetrant inspection process to detect a detectable fatigue crack initiating from an area of altered microstructure that was created during the drilling process...and that went undetected at the time of manufacture.”

– NTSB-AAR98/01



ASI Job Functions

- **Aviation Safety Inspector/SME/Auditor**
- **ASI's do NOT perform actual NDI.**
- **Certification-Design Assessment**
- **Surveillance- Performance Assessment**



FAA Publications

- **Regulations 14 CFR Part**
 - 121.375, 145.163 Training and qualified personnel
 - 121.367 Competent personnel and adequate facilities
- **FAA Guidance**
 - 8900.1 Vol.6, Chap.11, Sec. 27
 - Inspect a Nondestructive Program/Facility
- **Advisory Circular**
 - 65-31B Training, Qualification and Certification of NDI Personnel
 - AC 25-29 Development of a Nondestructive Inspection Program/Organization
 - AC 43.13B Chapter 5



FAA Publications

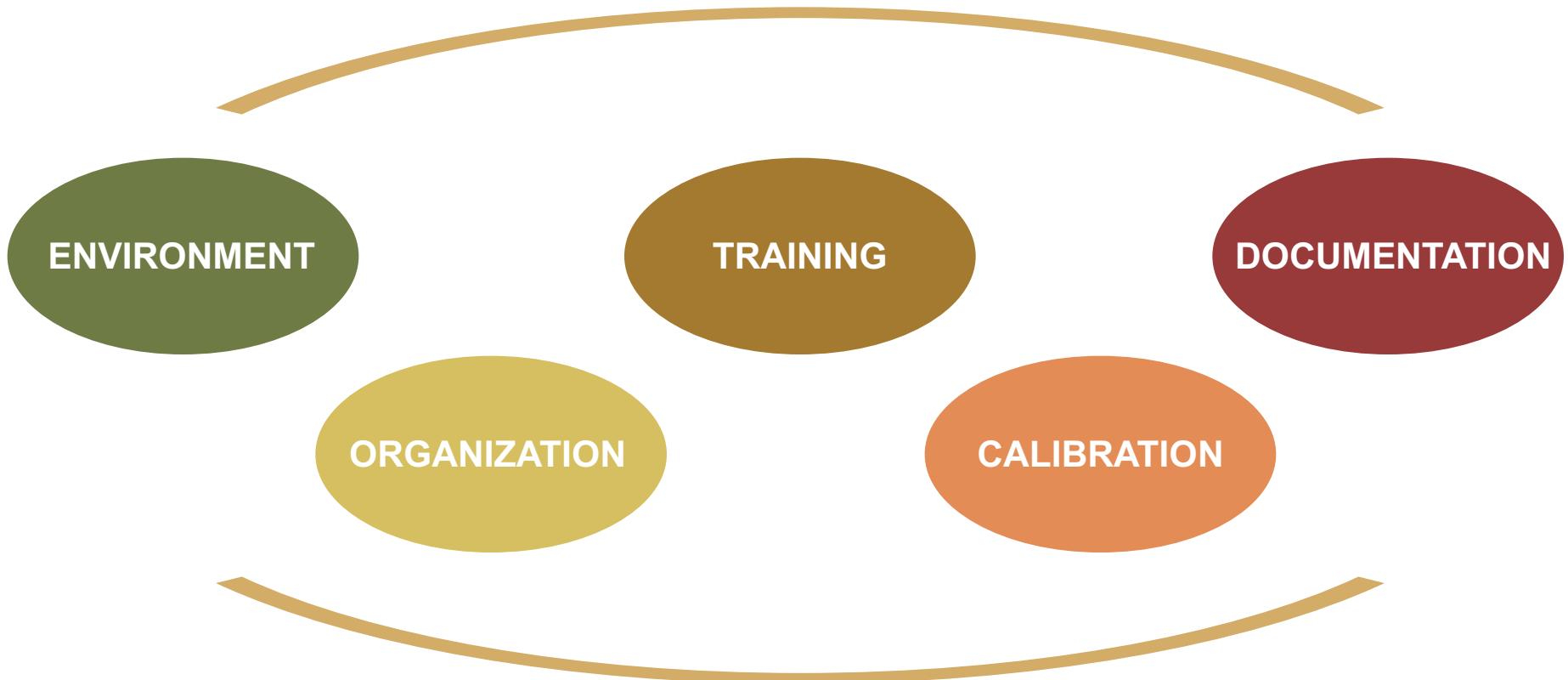
Online NDI Job Aid?

- A tool designed to help the ASI apply the systematic NDI evaluation process when evaluating an NDI facility
- Provides a set of questions from which the ASI may utilize in preparing to evaluate an NDI facility



Systematic NDI Evaluation Process

SAFETY



REGULATORY GUIDANCE



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Systematic NDI Evaluation Process

Documentation

- **Manuals**
- **Personnel**
- **Procedures**
- **Data**
- **Record keeping**



DOCUMENTATION



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Systematic NDI Evaluation Process

Organization

- **Management perspective of NDI**
- **Structure**
- **Resources**



ORGANIZATION



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Systematic NDI Evaluation Process

Environment

- **Safety**
- **Housekeeping**
- **Storage**
- **Consumable management**



ENVIRONMENT



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Systematic NDI Evaluation Process

Calibration

- **Process by which an item is checked against a standard**



CALIBRATION



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Systematic NDI Evaluation Process

Training

- **Methods**
- **Standards**
- **Training Plan**



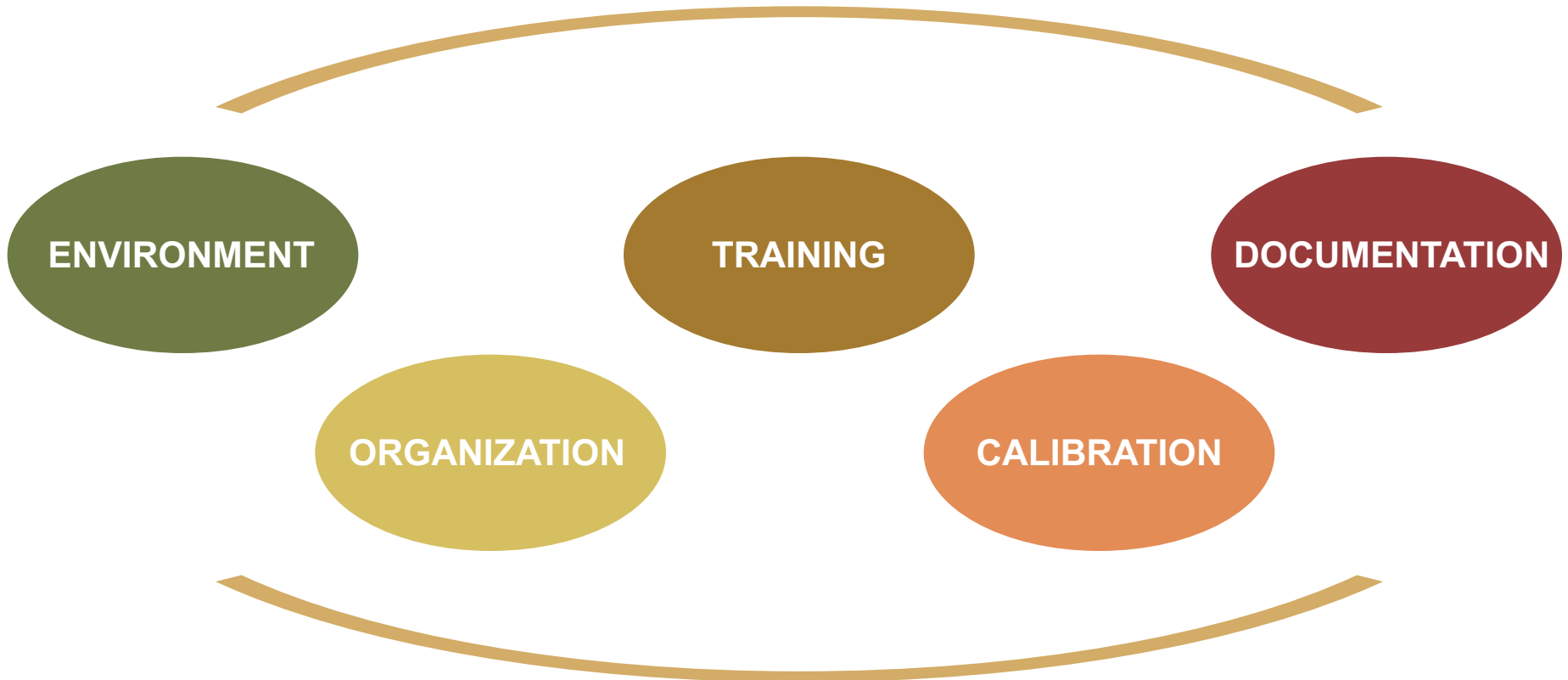
TRAINING



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Systematic NDI Evaluation Process

SAFETY



REGULATORY GUIDANCE



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Survey of Nondestructive Inspection Training

- **Common misconceptions and tribal knowledge**
 - A&P can perform FPI if shown in vo-tech school?
 - CFR Part 147 - Appendix B
 - This appendix lists items required in general curriculum subjects for an A&P school
 - Need for System performance checks
 - Repair Station (Part 145) has Company level II perform inspection on a part 121 Air Carrier
 - Difference between Relevant/Non-/relevant Indication



Effective Surveillance

- **Systematic Approach**
- **Scoped for the operation**
- **Policies vs. Procedures**
- **Controls to mitigate unacceptable risk**
- **Process Measurement – ID issues and corrective action**
- **Interfaces**



THANKS!

