



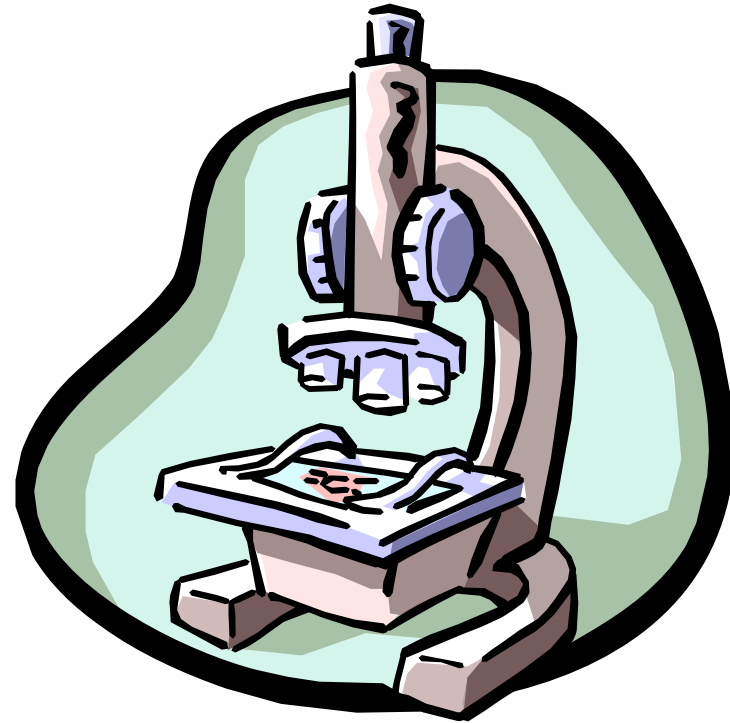
NDT in Civil Aviation, A Canadian Perspective

Presented by Bill Miller, NDT Engineer, Transport Canada
at the 2007 ATA NDT Forum, Orlando, 27 August 2007



Outline

- A Bit of History
- Success Stories
- Future Challenges





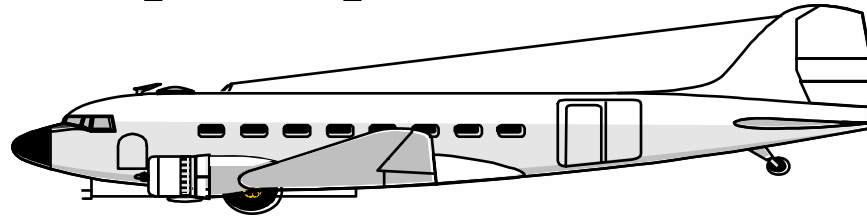
A Bit of History

- Transport Canada NDT Initiative
- My Role in Transport Canada, Continuing Airworthiness
- New Canadian Aviation Regulations for NDT
- FAA/TC Aging Aircraft Collaboration on NDT Issues
- AASR, WFD rules and Manufacturers' responsibilities



Transport Canada NDT Initiative

- Pickle Lake, Ontario Douglas DC-3 Wing Separation Apr 87 (predated Aloha Apr 88)

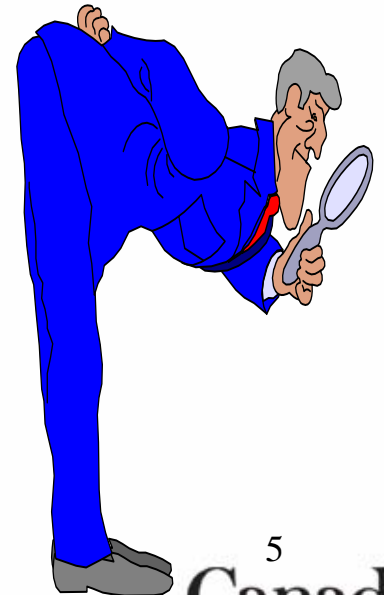


- Study on NDT in Canadian Civil Aviation Jan 88 recommended
 - Certification of NDT inspectors to a recognized NDT standard
 - NDT work to be done within Approved Maintenance Organizations
 - Transport Canada hire some NDT expertise



My Role as NDT NRS

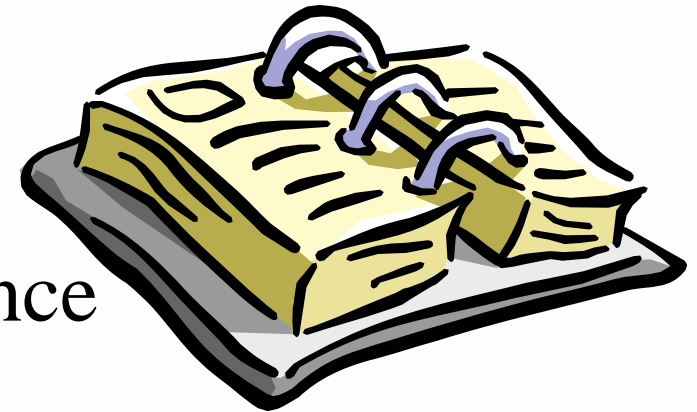
- Review of Airworthiness Directives (domestic and foreign) which require NDT inspections
- Review of DT analysis which include NDT methods/procedures and POD estimates
- Support NDT Rulemaking activities
- Work with Foreign authorities on harmonization of NDT issues
- Represent TC on national and international NDT committees





New Canadian Aviation Regulations for NDT

- Mandates the certification of personnel performing NDT to recognized standards (CGSB 48.9712, MIL-STD-410 and ATA 105)
- NDT work to be done within Approved Maintenance Organizations (AMOs)





FAA/TC Collaboration on NDT Issues

- TC invited to participate as member of the Aging Aircraft NDT Working Group (AANWG)
- Joint funding of D-Sight research program with FAA/TC/NRC
- Collaboration with FAA NDT NRS's (Al and Rusty) on a number of AD's requiring NDT





Aging Aircraft Rules - Design Approval Holder (DAH) Responsibilities

- AASR Final Rule 2 Feb 05 – requirement for DAH to provide damage tolerant (DT) data for repairs and alterations
- WFD – establishes initial operational limits (IOL) which will require analysis and possible additional maintenance actions (NDT?) to preclude WFD if the limit is to be exceeded
- ACOs required to approve DAH data – who will be approving the NDT procedures



Success Stories

- NDT ATA Forums – best interface for operator/manufacturer/vendor/regulator NDT issues
- Sandia Validation Centre (AANC) has made a significant contribution to promotion of NDT technology





Success Stories – cont'd

- NDE Resource for Certification Engineers – website with guidance for ACOs on NDT requirements – CASR ISU
- Transport Canada regulatory requirements for certified NDT inspectors performing in-service NDT inspections





Future Challenges

- Use of visible dye ‘red dye’ for in-service inspections
- POD data for support of DT analysis and resulting NDT inspections
- Quality of NDT procedures in SBs and corresponding Airworthiness Directives (ADs)





Future Challenges – cont'd

- FAA/TC harmonization of regulations for certification of NDT inspectors.
- New Materials, Inspection and Joining Technologies:
 - Composites
 - Structural Health Monitoring
 - Thermography/Shearography Certification (NAS 410/EN 4179)?
 - Friction Stir Welding – replacing rivets in metal joints.





Final Thought

Support the ATA NDT Forum





Questions?



Thank you for your attention.