

OKLAHOMA CITY AIR LOGISTICS CENTER

TEAM TINKER



Improving Depot NDI Capability

Mr. Jeff Catron

76th MXW, Technical Director

Integrity - Service - Excellence



Background



- **Leadership commitment to understand and mitigate risk of critical depot processes**
- **NDI selected as a “Critical Process”**
 - **Significant ability to impact the reliability and safety of our products**
- **Applied operational risk management to NDI process**
 - **Technical Data (T.O.s, SOW, Work cards) identified as area of high risk**



Technical Data



- **Maintenance discipline is founded upon an assumption that we provide maintenance personnel accurate written guidance (AFI 21-101)**
 - **Maintainers are held accountable for following guidance**
- **Reliability - To have confidence based on experience**
 - **If our inspection processes are inconsistent, it is difficult to develop confidence**



Actions



- **Developed plan to validate tech data**
 - **Prioritized efforts**
 - **B-52 (system age, fatigue observations)**
 - **Commodities (procedures unspecified)**
- **Validation accomplished in conjunction with production when possible**
- **NDI subject matter expert responsible for validation**
- **All sources of guidance reviewed (T.O.s, WCDs, SOW, etc)**



Status



- **ASIP manual surface eddy current**
 - 26 inspections, 16 of which contained significant errors in guidance
 - Greater than 85% of procedures referenced the wrong equipment
- **Examples of errors**
 - 1 instance of conflict between work specification and T.O. (Result, one hatch not being inspected)
 - 6 instances where a portion of the inspection areas could not be viewed
 - 2 instances where the T.O. did not require adequate disassembly prior to inspection



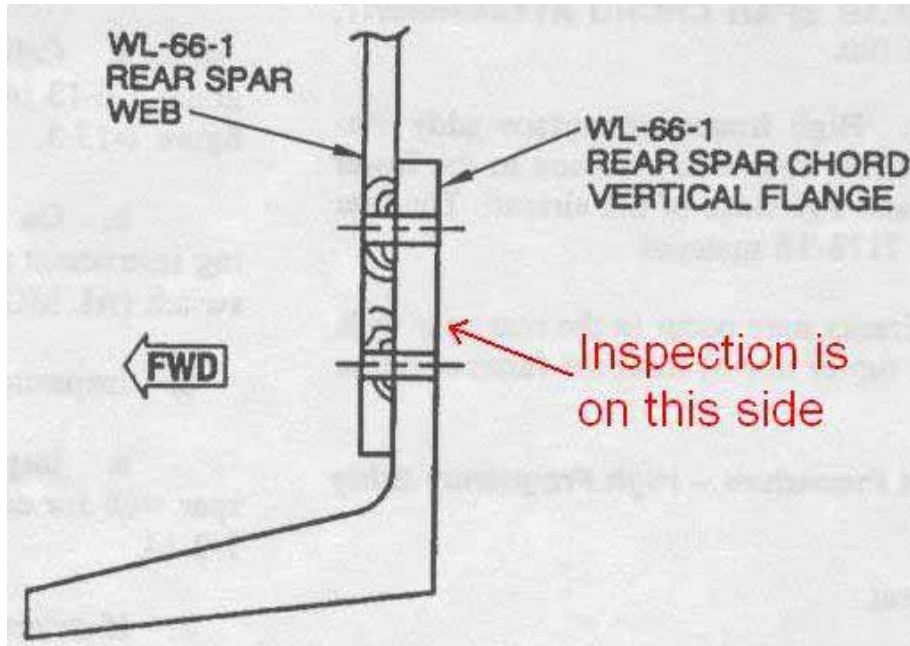
Status



- **Commodities (Pumps, Actuators, CSDs, e.t.c.)**
 - **Most commodity technical orders only call out the requirement to inspect, and don't specify a process**
 - **Example – MPI IAW MIL-STD-1949**
 - **Reviewed procedures for 834 parts**
 - **207 with adequate NDI procedures**
 - **627 identified as inadequate**
 - **65 NDI procedures developed to address concerns**



Lower Rear Spar Chord at Rear Spar Web Attachment, WS 780 – WS 790



Incorrect Figure



Airbrake Assembly



- **Crown Skin at Fuel and Forward Access Doors.**
 - T.O. procedure calls for inspection around both the Aft Fuel and Forward Access doors
 - 173 card and work spec specify inspecting around Aft Fuel door only





- **Stiffener S-2 Lower Flange at Lower Wing Skin Attachment**
 - Inspection areas on these procedures appear to overlap by 20”
 - Procedure lacks requirement to remove fuel pump assemblies
 - Access to inspection area is not possible with fuel pump assemblies in place
 - Guidance may intend for the lower wing skin to be inspected in this area— not the stiffener flange as written



Fuel Pump Assembly



Inspection Area



Recommendation



- **Defining a process is the first step to improving the process**
 - **Need NDI SME to review all new and revised guidance – T.O.s, WCDs, work cards, e.t.c.**
 - **Insure QA inspections (PEs and cores) are focused on need to follow guidance**
 - **Get your NDI inspectors engaged in helping to find and document problems (100 eyes are better then 2)**
 - **Don't assume your current technical data is accurate**



TEAM TINKER



U.S. AIR FORCE