**1. REPORT DATE**
05 FEB 2009

**2. REPORT TYPE**

**3. DATES COVERED**
00-00-2009 to 00-00-2009

**4. TITLE AND SUBTITLE**
Engineering Support / Corrosion Prevention & Control Evaluation

**5a. CONTRACT NUMBER**

**5b. GRANT NUMBER**

**5c. PROGRAM ELEMENT NUMBER**

**5d. PROJECT NUMBER**

**5e. TASK NUMBER**

**5f. WORK UNIT NUMBER**

**6. AUTHOR(S)**

**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**
U.S. Army Research, Development and Engineering Command, Aviation and Missile Research, Development and Engineering Center, 600 Chennault Circle, Redstone Arsenal, AL, 35898

**8. PERFORMING ORGANIZATION REPORT NUMBER**

**9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)**

**10. SPONSOR/MONITOR’S ACRONYM(S)**

**11. SPONSOR/MONITOR’S REPORT NUMBER(S)**

**12. DISTRIBUTION/AVAILABILITY STATEMENT**
Approved for public release; distribution unlimited

**13. SUPPLEMENTARY NOTES**
2009 U.S. Army Corrosion Summit, 3-5 Feb, Clearwater Beach, FL

**14. ABSTRACT**

**15. SUBJECT TERMS**

**16. SECURITY CLASSIFICATION OF:**

<table>
<thead>
<tr>
<th>a. REPORT</th>
<th>b. ABSTRACT</th>
<th>c. THIS PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>unclassified</td>
<td>unclassified</td>
<td>unclassified</td>
</tr>
</tbody>
</table>

**17. LIMITATION OF ABSTRACT**
Same as Report (SAR)

**18. NUMBER OF PAGES**
18

**19a. NAME OF RESPONSIBLE PERSON**

*Standard Form 298 (Rev. 8-98)*
Proscribed by ANSI Std Z39-18
Our Services

• Aircraft Corrosion
  • Corrosion Prevention & Control Evaluation
  • 3D Mapping
  • Pressure Washing

• Engineering Support
  • Maintenance Engineering Calls
  • Maintenance Engineering Order
  • Corrosion Prevention Techniques
  • ACE/Corrosion website
Aircraft Corrosion

AH-64 A/D

CH-47 D/F

UH-60 A/L/M

OH-58 D
• CPCE is performed concurrently with the Airframe Condition Evaluation (ACE)

• The evaluation collects environmental, operational, and maintenance data

• These variables enable Maintenance Engineering Division (MED) to develop corrosion prevention measures for Army-wide implementation
• Trained ACE evaluators examine aircraft using Technical Bulletins developed for each platform

• Evaluators document defects of indicators for each aircraft with location positioning F.S., W.L., B.L.

• Discrepancy Data gathered in field, compiled in ACE Database, and evaluated by the MED
3-D Mapping

• Quick visual reference of defects identified during evaluations
• Provides historical data for long-term trend analysis
• User defined queries allow for detailed analysis
Corrosion 2004-2008
Corrosion 2004-2008
Corrosion 2004-2008
Corrosion 2004-2008
Corrosion can be prevented by:

1. Education: Corrosion training
2. Performing required maintenance inspections to identify corrosion
3. Performing good maintenance practices: use TMs, protect working surfaces, wash and clean on schedule
4. Using QPL approved cleaners and Corrosion Preventive Compounds (CPC)
1. Use of Foam Cleaning methods
2. Maximum of **175 PSI** w/ fixed, flat, wide-angle nozzles (> 30 Degrees), 12 inches from surface
3. Rinse at an angle between 15 and 30 degrees
4. High pressure causes:
   - Removes and damages paints and sealants
   - Forces water into seals
   - Structural damage to joints/honeycomb/thin structures.
   - Water intrusion into electronic components
• MEC: Are initiated by depot or field maintenance personnel requesting AMRDEC engineering support

• Typical requests are for deviations, special repairs, and to resolve DMWR inadequacies

• Engineering dispositions include clarifications, one time deviations, or short term deviations for depot programs (< 30 days)
MEO: These engineering documents are issued to enact permanent changes to AMCOM Depot Maintenance Work Requirements (DMWRs) or Technical Manuals (TMs)

CH-47 Floor Former
• **Past and Present Initiatives**
  - RockHard Coating
  - Av-Dec seals
  - Cor-Ban CPCs
  - Dual-Tape Connector Wrap

• **Future Initiatives**
  - Army-wide use of Tagnite for Mg components
  - Envelop Protective Covers
  - Laser cladding
  - Pre-manufacturing technologies
    - Advanced metals
    - Advanced composites
    - Advanced adhesives
    - Ect....
Conclusion

• CPCE enables early detection of emerging structural and corrosion issues

• ACE/CPCE data collection defines the impact of corrosion and aircraft stresses

• Analysis of ACE/CPCE data provides solutions that will continue to reduce the cost of maintenance and promote readiness
Welcome to the Aviation Engineering Directorate (AED)- Maintenance Engineering Division (MED) ACE/Corrosion Website

The site provides you ACE & Corrosion Prevention resources and a place for your comments & questions. Contact us @
DSN 861-4041
(361) 961-4041
or E-mail at: corrosion@amrdec.army.mil

Questions?