| 1. REPORT DATE | AUG 2011 |
| 2. REPORT TYPE |
| 3. DATES COVERED | 00-00-2011 to 00-00-2011 |
| 4. TITLE AND SUBTITLE | AFCPCO Corrosion Program |
| 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) | Air Force Corrosion Prevention & Control Office (AFCPCO), AFRL/RXSSR, 325 Richard Ray Blvd, Bldg 165, Robins AFB, GA, 31098 |
| 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 | Presented at the 2011 Air Force Corrosion Conference held 16-18 Aug 2011 at Robins AFB, GA. |
| 14. ABSTRACT |
| 15. SUBJECT TERMS |
| 16. SECURITY CLASSIFICATION OF: | a. REPORT unclassified |
| | b. ABSTRACT unclassified |
| | c. THIS PAGE unclassified |
| 17. LIMITATION OF ABSTRACT | Same as Report (SAR) |
| 18. NUMBER OF PAGES | 13 |
| 19a. NAME OF RESPONSIBLE PERSON |

Standard Form 298 (Rev. 8-98)  
Prescribed by ANSI Std Z39-18
Overview

• AFCPCO Overview
• Air Force Cost of Corrosion
• Corrosion Surveys
• Accomplishments and Initiatives
• Conclusion
Office Personnel

• AFCPCO
  - Vacant
  - Carl Perazzola, DR-III
  - CMSgt Terry Gabbert
  - Dave Ellicks, DR-II
  - Vacant
  - SMSgt Scott Pagenkopf
  - Capt Mary Gutierrez
  - Capt Cindy Littleton-Hetzer
  - Lt Nick Herr
  - Lt Kevin Cheng
  - Vacant
  - Office Chief
  - Acting Office Chief
  - Superintendent AF Corrosion Program Office
  - Sr. Materials Engineer
  - AF Corrosion Program Manager
  - Aerospace Engineer
  - Chemical Engineer
  - Materials Scientist
  - Systems/Mechanical Engineer
  - Management Assistant

• Engineering and Technical Support Contractors (S&K Technologies)
  - Owen Jett (CMSgt Ret)
  - Wes Barfield
  - Mac McKenna (CMSgt Ret)
  - Mark Foley (SMSgt Ret)
  - Dan Mars (CMSgt Ret)
  - Ruth Jett
  - Beverly Dillard
  - Program Manager
  - Senior Materials Engineer
  - Senior Maintenance Analyst
  - Senior Maintenance Analyst
  - Logician
  - Senior Maintenance/Data Analyst
  - Administrative Assistant

• Liaison contractors
  - Jerry Powell (SMSgt Ret)
  - Larry Cornwell (Cmdr Ret, USCG)
  - Air National Guard Liaison
  - C-130/C-5 Corrosion Program Manager Ctr. Spt.

USAF's Corrosion Conscience & Corporate Knowledge
AF Cost of Corrosion

- Corrosion Costs are growing and impact all systems
- Includes Aircraft, Vehicles, Equipment, Munitions, Space Systems
- Costs Includes
  - Touch Labor
  - Mx Material Costs
- Doesn’t include
  - Aircraft Availability Impacts
  - MILCON & Infrastructure Mx
  - Training

Corrosion Costs = 32% of Depot Costs
Aircraft Corrosion = $1 M/AC

Cost of Corrosion
Avg Fleet Age
Fleet Size

Then Year $\$ (M)

<table>
<thead>
<tr>
<th>Study Year</th>
<th>Cost of Corrosion</th>
<th>Avg Fleet Age</th>
<th>Fleet Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>$718</td>
<td>15 yrs</td>
<td>3.9% of O&amp;M</td>
</tr>
<tr>
<td>1997</td>
<td>$795</td>
<td>16 yrs</td>
<td>2.86% O&amp;M</td>
</tr>
<tr>
<td>2001</td>
<td>$1,139</td>
<td>21 yrs</td>
<td>~3000 fewer airframes than '90</td>
</tr>
<tr>
<td>2004</td>
<td>$1,497</td>
<td>25 yrs</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>$5.4B/yr</td>
<td>24 yrs</td>
<td></td>
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</table>

$5.4B/yr = 13% of O&M Budget

$5.4 Billion
• Latest CoC study funded by OSD, released in June 2009
  – Total AF Cost of Corrosion for a/c & missiles (FY 2007): $5.43B
  – $3.93B difference bw last AF-funded study and OSD-funded study

• Cost of Corrosion under-reported in first 4 studies
  – AF-funded studies did not include:
    • Commercial depot costs ($1.33B)
    • Indirect labor costs ($1.62B)
    • Growth of labor rates ($0.65B)
    • Top 3 areas account for $3.44B or 88% of the $3.93B difference.

• Corrosion/fatigue are main issues for a/c retirement

1 July 2010
## “Top 20”

<table>
<thead>
<tr>
<th>Rank</th>
<th>MDS</th>
<th>Mx Cost ($M)</th>
<th>Corr Cost ($M)</th>
<th>% Mx Costs</th>
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<tr>
<td>1</td>
<td>F-16C</td>
<td>$1,761</td>
<td>$489</td>
<td>28%</td>
</tr>
<tr>
<td>2</td>
<td>KC-135R</td>
<td>$1,302</td>
<td>$451</td>
<td>35%</td>
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<td>3</td>
<td>A-10A</td>
<td>$851</td>
<td>$276</td>
<td>32%</td>
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<tr>
<td>4</td>
<td>C-130H</td>
<td>$623</td>
<td>$274</td>
<td>44%</td>
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<tr>
<td>5</td>
<td>B-1B</td>
<td>$845</td>
<td>$251</td>
<td>30%</td>
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<tr>
<td>6</td>
<td>B-52H</td>
<td>$698</td>
<td>$240</td>
<td>34%</td>
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<tr>
<td>7</td>
<td>F-15C</td>
<td>$742</td>
<td>$240</td>
<td>32%</td>
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<tr>
<td>8</td>
<td>F-15E</td>
<td>$597</td>
<td>$204</td>
<td>34%</td>
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<tr>
<td>9</td>
<td>C-5A</td>
<td>$576</td>
<td>$204</td>
<td>35%</td>
</tr>
<tr>
<td>10</td>
<td>C-5C</td>
<td>$330</td>
<td>$147</td>
<td>44%</td>
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<tr>
<td>11</td>
<td>C-130E</td>
<td>$368</td>
<td>$139</td>
<td>38%</td>
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<tr>
<td>12</td>
<td>C-17A</td>
<td>$472</td>
<td>$138</td>
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<tr>
<td>13</td>
<td>C-5B</td>
<td>$217</td>
<td>$81</td>
<td>37%</td>
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<tr>
<td>14</td>
<td>C-130J</td>
<td>$186</td>
<td>$80</td>
<td>43%</td>
</tr>
<tr>
<td>15</td>
<td>F-16D</td>
<td>$309</td>
<td>$77</td>
<td>25%</td>
</tr>
<tr>
<td>16</td>
<td>LGM-30G</td>
<td>$327</td>
<td>$72</td>
<td>22%</td>
</tr>
<tr>
<td>17</td>
<td>HH-60G</td>
<td>$190</td>
<td>$64</td>
<td>34%</td>
</tr>
<tr>
<td>18</td>
<td>B-2A</td>
<td>$204</td>
<td>$63</td>
<td>31%</td>
</tr>
<tr>
<td>19</td>
<td>MC-130H</td>
<td>$149</td>
<td>$58</td>
<td>39%</td>
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<td>20</td>
<td>T-38C</td>
<td>$139</td>
<td>$55</td>
<td>40%</td>
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</table>
AF Cost of Corrosion

MX and Corrosion Cost Comparison ($M)

Corrosion Cost per Aircraft:
- C-130 = $1,080K
- F-15 = $800K
- C-5 = $4,000K
- C-17 = $840K
- MC-130H = $2,900K
AFCPCO Core Functions

- Borescope
- Latrine
- BEAR/ UAV
- MAJCOM Surveys
- Technology Transition
- Av-Dec
- CPCs
- Wyle
- MAJCOM Surveys
- Support Contracts
- Tech Support
- DH
- MEC
- BEAR/ UAV
- SWA
- CPCs
- SKT
- SPO
- SWA
- CPCs
- BEAR/ UAV
- CPABs
- WCM
- Degreaser
- CPCs
- Cleaners
- T.O.s
- U&TW
- SWA
- Sealants
- AF Corr Conf
- Field
- CPABs
- U&TW
- SWA
- Paints
- Depot
- T.O.s
- U&TW
- SWA
- Depaint*
- SWA
- Depaint*
- AF Corr Conf
- U&TW
- SWA
- Depaint*
- AF Corr Conf
- Field
- SWA
- Depaint*
- AF Corr Conf
- Field
- SWA
- Depaint*
- AF Corr Conf
- Field

*Specs managed by AFCPCO
Corrosion Surveys

- **MAJCOM surveys: assess overall health of programs**
  - Evaluation using TO guidance and command instruction

- **2009-2010 Surveys**
  - United States Air Forces in Europe (USAFE) Corrosion Survey
  - Pacific Air Forces (PACAF) Corrosion Survey
  - Latrine Corrosion Survey

- **2011 Surveys**
  - Air Force Reserve Command
  - Air Force Space Command
  - Basic Expeditionary Airfield Resource (BEAR)
Accomplishments and Initiatives

• **Non-Chromium Efforts**
  – Joint test on non-chrome substitutes
  – On Aircraft test protocols with SPOs

• **Borescope Technology**
  – for FIELD USE on minor corrosion repair/mitigation tools

• **Support Equipment**
  – Scoring system/Maintenance program
  – Wash Programs/procedures
  – CPC usage
Accomplishments and Initiatives

• Corrosion Sensors
  – First Generation Environmental Exposure Sensors
  – Corrosion hotspots in hidden areas
  – Second Generation

• Dehumidification
  – Green Shelters
  – Mobile units

• Basic Expeditionary Airfield Resource (BEAR)
  – Lack of emphasis
  – Survey (Aug/Sept)
Conclusions

• AFI 20-114 status (released 7 June 2011)
  – Replaces AFI 21-105
  – MAJCOMs need to keep and update Supplements

• New Cost and Impact of Corrosion
  – LMI Impact of corrosion damage/maintenance on aircraft availability

• Corrosion Surveys

• Accomplishments and Initiatives
Questions?

- AFCPCO
- “AFRL/RXSSR All Personnel” in the Global
- AFRL.MLSOLR.Allpersonnel@robins.af.mil
- 468-3284
- http://afcpo.com/
- AF Portal, Search for RXSSR