Impact of Corrosion on Ground Vehicles:
Program Review, Issues and Solutions

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**ABSTRACT**

2010 U.S. Army Corrosion Summit, Huntsville, AL, 9-11 Feb

**SUBJECT TERMS**

Report: unclassified

Abstract: unclassified

This Page: unclassified

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

**NUMBER OF PAGES**
15

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Standard Form 298 (Rev. 8-98)
Prepared by ANSI Std Z39-18
Influence future design & acquisition
- Design with corrosion in mind
- Adoption of new technology
- Programmatic reviews

Improve current production, repair, upgrades
- Identify product and process improvements
- Materials & coatings improvements

Protect fielded fleet
- Coatings & inhibitors
- Controlled environments
- Vehicle assessments

**Bottom Line:** - Keep readiness rates up - Keep costs down
Today's Discussion
Fielded Fleet

TACOM/TARDEC CPAC

Current Program

Issues and Solutions

Protect Fielded Assets

Future Plans

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The Environment

Army Equipment Headed for Iraq
• **Corrosion prevention training for design engineers**
  Corrosion resistant materials
  New Design considerations
  Improved finishing techniques

• **New paint and application techniques**
  Water based CARC and Primer
  Cartridge application technologies

• **Controlled humidity protection**
  Humidity controlled buildings
  Humidity controlled systems for individual units
  Protective covers/bags

• **CPAC Field Teams**
  Corrosion Service Teams (CST) - worldwide
  Repair initial stages of corrosion
  Application of corrosion preventive compounds
  Identify Environmentally friendly Corrosion prevention compounds

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CPAC Locations

Legend

- Full-Time Presence
- Part-Time Presence

Fixed and Mobile System Sites

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Program Accomplishments

CPC application
- Ft. Polk; Ft. Hood; Schofield Barracks; Okinawa, Japan; Camp Carroll, South Korea; Ft. Bragg, Ft. Stewart, Charleston Seaport, and special deployment locations (Ft. Lewis, Kentucky Bluegrass Station)
- Treated 64,773 pieces of equipment since FY 2007

Surface Preparation and Repairs
- 6,442 pieces of equipment since FY 07
- Surface preparation, prime, and paint at all CPAC locations.

Developed Mobile Corrosion System
Field Issues

Chassis frames rust through

Trailer floors cannot support load

Suspensions/brakes lose performance capabilities

Insufficient or non-existent wash facilities.

Frozen/rusted wheel lug nuts

Battery maintenance. Terminal corrosion.
Impact on Ground Vehicles

Not Mission Ready
Accidents
Reduced Readiness Rates
Negates CARC Paint Performance
Solution – Fielded Equipment

Controlled Humidity Building
100,000 Sq Ft capacity approximately 250 MRAPs

Controlled Humidity Motor Pool System
• One system capacity approximately 20 Strykers

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Solution – Fielded Equipment

Storage Bagging systems
• Shrink wrap
• Sealed bags
• 5 sided bag
• Different storage duration times
• One time use or re-usable
Solution – Fielded Equipment

THE CORROSION SERVICE TEAM

Step 1: Clean/Wash Equipment

Step 2: Surface Preparation /Paint

Step 3: Preservation

Step 4: Inspection/Assessment

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Data Collection & Reports

Web based system

- Records of every piece of equipment processed
  - Accessible by the soldiers
  - Updated nightly

Sample chart from the database.

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Continue to expand our presence at Army locations
   Team with AMCOM for Patriot Missile Systems – Korea/Japan
   Support emerging FORSCOM requirements

Support Rapid Deployment of Equipment

Provide support to the Army National Guard

Provide support to the Army Reserves

Implement corrosion mitigation projects

Improve corrosion data collection and analysis

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Summary

Corrosion:
- A known, verifiable performance and readiness degrader
- Results in billions of dollars of maintenance and repair annually

CPAC Program:
- Is a Non-Intrusive process affecting day to day operations
- An established program blending safety and environmental protection
- Provides training in prevention techniques
- Performs repair and treatment on site

Program Requirements:

Greater Army-wide Acceptance
Focus on Total Life Cycle Costs
Growing Culture Shift

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