

# ***DoD Corrosion Prevention and Control***

## ***Panel Discussion***

***Corrosion: Quantifying the Impact on  
DoD and What's Being Done About It***  
DoD Maintenance Symposium & Exposition

**24 October 2006, Reno, Nevada**

**Dr. Lewis Slotter**

**Office of the Deputy Under Secretary of Defense  
for Science & Technology**



# Severe Marine Corrosion Environments



# Ground Equipment Headed for Iraq





# C-141 Depot Maintenance: Corrosion Remediation





***Corrosion Under Antenna Cover***



# Response & Strategy : Integrated Product Team & Focused Corrosion Forums

## Component Principals:

**Army:** Hilton Mills, HQ, Army Materiel Command

**Navy:** Airan Perez, Office of Naval Research

**Air Force:** Major Robert Reed, Air Force Corrosion Office

**Marine Corps:** Hank Porterfield, MARCORPS SYSCOM

**Tri-Service Facilities:** Vince Hock, Army CERL – thru Nov

Tom Tehada, NAVFAC – from Nov

**{Current Chair, Tri-Service Facilities Working Group}**



# Integrated Product Team Structure

- Corrosion Prevention and Control IPT (CPCIPT)
  - Provide strategic review and advice
  - Develop and recommend policy guidance
- Working IPTs (WIPTs)
  - Policy and requirements
  - Impact, metrics and sustainment
  - Training and Doctrine
  - Communication and outreach
  - Specifications and standards
  - Facilities
  - Science and Technology



# Corrosion Prevention Control (CPC) Highlights

- Corrosion Policy part of Systems Engineering
- Defense Federal Acquisition Regulations Supplement (DFARS) – corrosion planning required in all acquisition plans {PGI 207.105(b)(13)(ii)}
- **CPC Planning Guidebook Spiral 3 – December 2006**
- **CPC Program Management Guide – Spiral 2 Published**
- **Cost of Corrosion Baseline Study**
- Corrosion Continuous Learning Module – January 2007
- Corrosion Prevention DoD Instruction in coordination
- Expanded Tri-Service Corrosion Conference
  - Next Conference December 2007, Denver, Colorado
- Strategic Plan continuously updated
- Specifications and Standards Process Phase III in development and supplier product screening now on-line
- **Focused Corrosion Projects completed or underway.**



# CPC Planning Guidebook

## Changes featured in Spiral 2

- **More comprehensive coverage of requirements and processes**
- **Improved process flow illustrations**
- **Unique system and facility processes delineated**
- **Specific aerospace applications included**

**Spiral 3: Dec 06**

Download from

[www.dodcorrosionexchange.org](http://www.dodcorrosionexchange.org)



CORROSION PREVENTION AND CONTROL  
PLANNING GUIDEBOOK

(Spiral No. 1 – DECEMBER 2003)

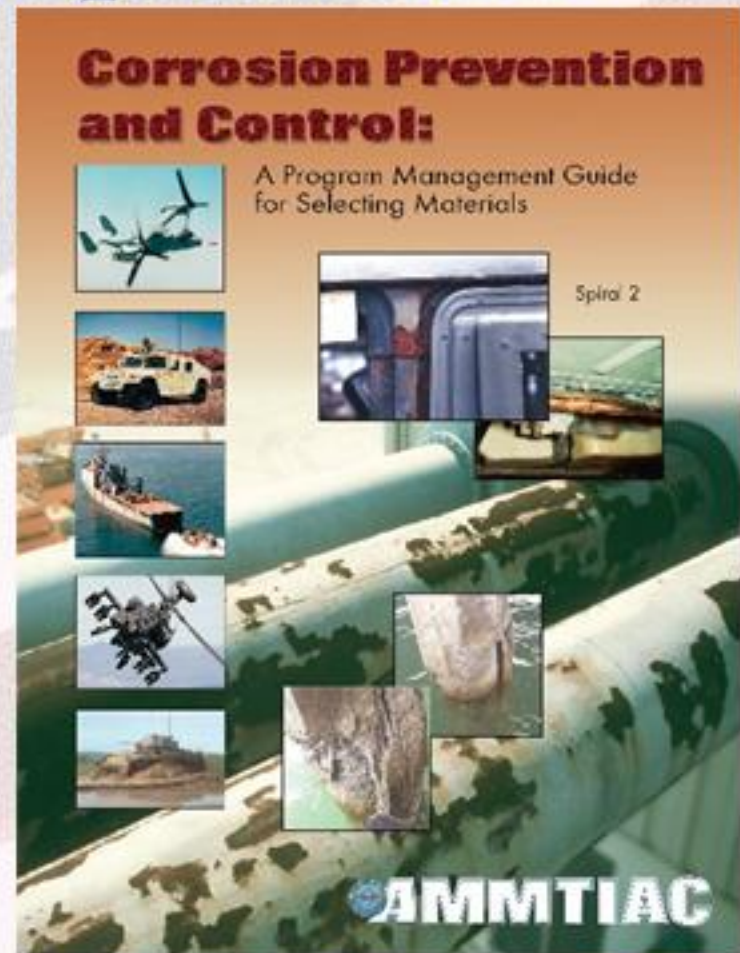
Issued by: PDUSD (AT&L)  
Director, Corrosion Policy and Oversight



# CPC: Program Management Guide for Selecting Materials

## Changes featured in Spiral 2

- **More comprehensive coverage of materials selection**
- **Much more information on materials corrosion performance**
- **Stronger tutorials**
- **More lessons learned**



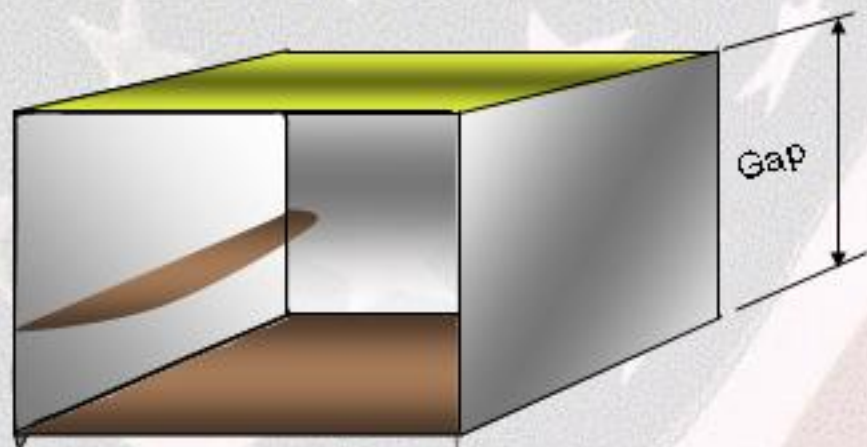
# Why Estimate DoD's Cost of Corrosion?

- Current estimate is \$10B - \$20B – too vague
- Need baseline to quantify improvement or degradation
- Need to identify areas that can best use scarce resources
- Congress, GAO and the DoD Corrosion Executive want to know

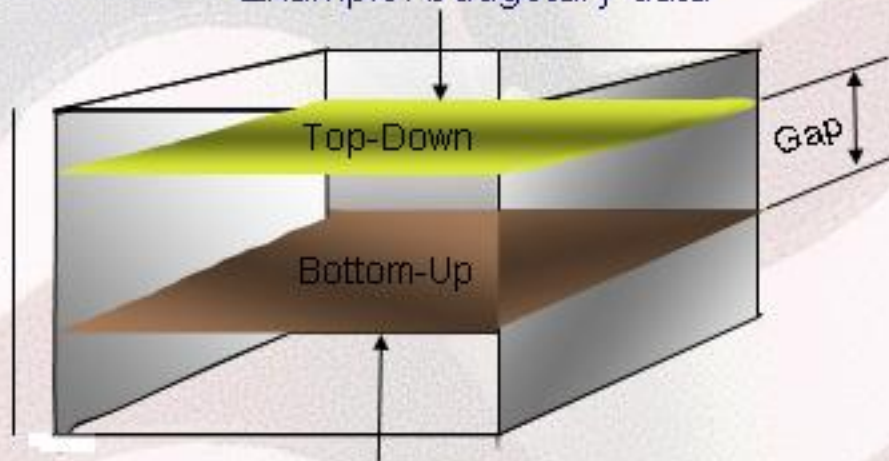


# Costing Methodology

- Corrosion costs not discretely identified in DoD logistics or financial systems
- Using Top-down and Bottom-up Approach



Top-down lowers the ceiling of the "house"  
Example: budgetary data

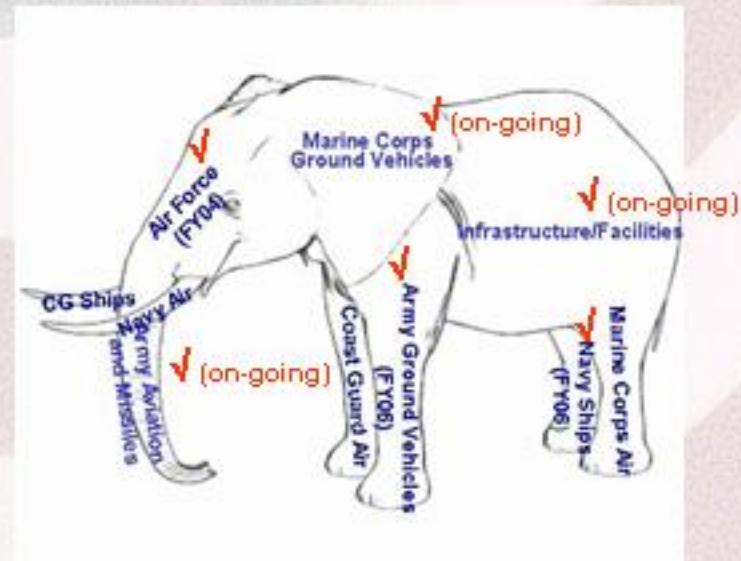


Bottom-up raises the floor of the "house"  
Example: work order data



# Summary

- Army and Navy initial phases have been met favorably and have provided valuable lessons.  
(Army ground vehicles and Navy ships)
  - Produced “actionable items”
  - Results being used for resource decisions
- GAO accepts study methodology
- Schedule accelerated, and this year's effort includes some categories of weapon systems as well as infrastructure
- The corrosion cost of the DoD elephant is being identified!



# Project Selection Data

- **Services provided prioritized projects**
  - FY05: 66 Projects Submitted – 26 Projects Selected
  - FY06: 78 Projects Submitted – 29 Projects Selected
  - FY07: 70 Projects Submitted – 22 Projects Selected
  - ROI based on Office Management & Budget guidelines
- **Funding**
  - FY05: \$17.5M for projects - \$9.5M for CPC activities
  - FY06: \$11.7M for projects - \$3.4M for CPC activities
  - FY07: \$7.6M for projects - \$5.8M for CPC activities
- **Service Cost Sharing**
  - FY05: \$19.1 million
  - FY06: \$9.4 million
  - FY07: \$6.6 million



# FY05-FY06 Projects Highlights

- **Red Hill @ (Pearl harbor): Pipeline integrity inspection**
  - 252 million gallons of various fuels stored in 20 underground tanks fueling Pacific fleet
  - Over 3 mile pipe line fully inspected/recorded after 60+ years
  - Discovered: metal wedge inside tank, several thin walls due to corrosion and leak area. Overall condition: Good
- **Supervisory Control Acquisition Data Automation (SCADA) @ Robins AFB**
  - Remote monitoring system: Automate data tracking and archival of cathodic protection system
  - Wireless, real-time readings/trends, remote adjustment of rectifier current
- **Wireless Corrosion Sensor for Surface Ships tanks**
  - Eliminates numerous opening/gas freeing tanks
  - Addresses an area of NAVSEA's top corrosion issue as identified in CoC studies





# Maintenance Issues Update

- Determining, understanding, & tracking corrosion cost
  - Total aggregate cost
  - Should cost
  - Preventable cost

} **Much progress since last year!**
- Bringing best practices & real-world experience to training and materials, processes, and design selection – **Definite progress, e.g., PM Guide to Materials Selection**
- Provide understanding & awareness of corrosion impact on
  - Readiness
  - Logistics burden

} **Tough to quantify; advice needed**
- Identification of
  - Research needed
  - High impact actions
  - Non-materiel solutions

} **On-going**



# Summary

- Corrosion is everyone's problem and all can contribute to prevention or control!
  - Policy
  - Acquisition
  - Maintenance/Logistics
  - Technology
  - Personnel training & awareness
- We are making progress in the fight against corrosion!
- Let's continue to engage/interact.

