



# How do we impact corrosion?

US Army Corrosion Summit  
Feb. 3, 2009  
Tony Keane  
Executive Director  
NACE International

# Report Documentation Page

Form Approved  
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE <b>03 FEB 2009</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2009 to 00-00-2009</b>	
4. TITLE AND SUBTITLE <b>How do we impact corrosion?</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>NACE International,1440 South Creek Drive,Houston,TX,77084-4906</b>				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 <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>2009 U.S. Army Corrosion Summit, 3-5 Feb, Clearwater Beach, FL</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>18</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

# Overview

- Impact of Corrosion on the US Army
  - Dollars
  - Readiness
- Savings Due to Corrosion Control
- Training as the key to addressing corrosion
- NACE International Strategic Partner with DoD

# Impact of Corrosion - \$\$

- 2002 Cost of Corrosion found a \$20 billion cost for the DoD
- The GAO stated the cost is about \$10 – 20 billion
- Subsequent studies have found that the cost for the Army is (LMI Study):
  - Ground Vehicles \$2.0 Billion per year
  - Army Aviation and Missiles \$1.6 Billion per year
  - Army Facilities \$0.45 Billion per year
  - Total \$4.05 Billion per year



# Impact of Corrosion - Readiness

- Corrosion has a direct impact on readiness



# Impact of Corrosion - Readiness



**NACE**  
INTERNATIONAL

*Leaders in Corrosion Control Technology*

# Savings Due to Corrosion Control

- Across all sectors, it was estimated that:
  - 33% of total cost of corrosion can be saved
  - It costs 10% of savings to implement better practices
  - 30% net savings is possible
- DoD might save \$6B annually

# Best Practice Maintenance

- In order to improve we need:
  - An understanding of the extent of the corrosion problem
  - A link between the corrosion problems in the field and the maintenance efforts at all levels
- “Best Practice Maintenance” Program
  - Top Down driven with a commitment by highest levels
  - Include highest industry standard corrosion preventive methods and practices
  - Include continued process improvements

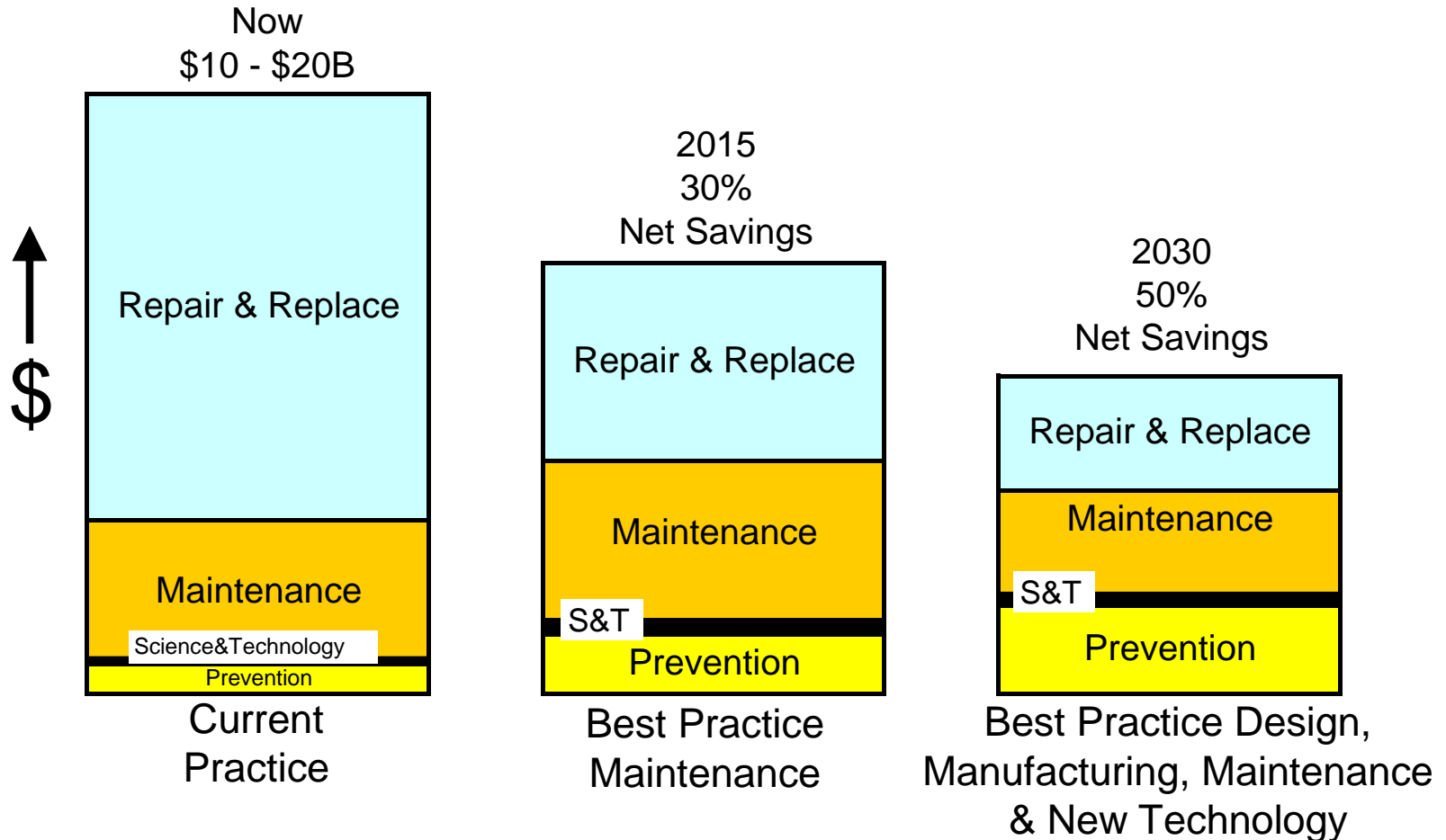




# Best Practice Maintenance

- DoD cost of corrosion savings can be realized by systematic optimization
- Most effective program is implemented across all Services and all systems (weapon and facilities)
- Key part of corrosion prevention and mitigation program is awareness and trained personnel

# Possible Long-Term Savings



# DoD Challenge

- Aging of military systems poses unique challenge
  - Often no immediate promise of replacement
  - A need to develop corrosion maintenance and control programs that can carry systems well into the 21st century
  - Inter-service cooperation is required
  - Optimum approach must be developed that involves inspection, monitoring, and maintenance

# DoD Challenge

- Design and acquisition of new systems
  - Use, at a minimum, current industry consensus design practices
  - Use specifications based on industry standards and upgrade where necessary to meet DoD-specific requirements and life expectancies
  - Educate the design and acquisitions professionals about the impact of corrosion
  - Train the corrosion workforce

# Strategic Partnership

- With these challenges and opportunities the DoD Office of Corrosion Policy & Oversight (CPO) established a strategic partnership with NACE International
- This is a vital relationship and one of the key aspects of the partnership is to develop and provide education and training
- Also NACE International has been asked to begin an assessment of the corrosion training currently provided by the services

# Current Training Opportunities

- DoD and NACE International developed a corrosion 101 (CLM 038) to provide training to the acquisition workforce (on-line at DAU)
- DoD is funding training through NACE International – contact Cliff Johnson ([cliff.johnson@nace.org](mailto:cliff.johnson@nace.org) for additional information)
- DoD has developed a number of podcast and videos to address corrosion
- DoD is developing video games to address corrosion

# NACE International

 To protect people, assets, and the environment from the effects of corrosion

---

 Founded in 1943

 20,000+ Members in 100 Countries

 300+ Corporate Members

 400+ Publications

 350 Technical Committees

 200+ Standards and reports

 250+ Education courses offered

 Nearly 12,000 people hold a NACE certification

# NACE International

- Training covers a number of areas:
  - Coatings & Coatings Inspection
  - Cathodic Protection
  - Materials Selection
  - Design
- NACE International has developed three courses for the military
  - Corrosion 101
  - CP 3 Marine
  - Water and Waste Water Corrosion





# DoD Training Review

- Recently NACE International has begun a review of the current training available to military personnel
- We have been asked to determine the level of training needed for the workforce and the sufficiency of the training available
- What are your thoughts?
- Please contact Helena Seelinger at [helena.seelinger@nace.org](mailto:helena.seelinger@nace.org)

# Training

- It is important that we raise the awareness about the problem of corrosion with program managers, acquisition personnel, and leadership
- We must ensure those who are doing the work need to be trained and qualified for the job
- This will reduce the impact of corrosion to the

# Questions?