



United States Government Accountability Office  
Washington, DC 20548

June 1, 2009

Congressional Committees

***Subject: Defense Management: Observations on DOD's Fiscal Year 2010  
Budget Request for Corrosion Prevention and Control***

This report formally transmits the attached briefing in response to section 2228(e) of title 10 of the United States Code (see enclosure I). The statute requires the Comptroller General to provide an analysis of the Department of Defense's budget submission for corrosion prevention and control, as well as an analysis of the corrosion report accompanying defense budget materials, and provide the results to the congressional defense committees within 60 days after submission of the Department of Defense budget. On May 26, 2009, we provided the briefing to staff of your committees to satisfy the mandate and 60-day reporting requirement.

We are sending copies of this report to the appropriate congressional committees. We are also sending copies to the Secretary of Defense; the Deputy Secretary of Defense; the Under Secretary of Defense (Comptroller); the Under Secretary of Defense (Acquisition, Technology, and Logistics); the Secretaries of the Army, Navy, and Air Force; and the Commandant of the Marine Corps. This report will also be available at no charge on our Web site at <http://www.gao.gov>. Should you or your staffs have any questions concerning this report, please contact me at (202) 512-8365 or [solisw@gao.gov](mailto:solisw@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were Tom Gosling, Assistant Director; Janine Prybyla; Matt Spiers; and Allen Westheimer.

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Director, Defense Capabilities and Management

## Report Documentation Page

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# Enclosure: Briefing on Fiscal Year 2010 Corrosion Budget

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## **Observations on DOD's Fiscal Year 2010 Budget Request for Corrosion Prevention and Control**

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**Briefing for Congressional Defense Committees  
May 26, 2009**

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## Background

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- Corrosion can have a deleterious effect on military equipment and infrastructure in terms of cost, readiness, and safety. The Department of Defense (DOD), through its cost of corrosion studies, estimates that corrosion costs the military services nearly \$12 billion a year (not including Air Force aviation and missiles).
  - To target funding toward corrosion prevention and control (CPC), DOD established a separate funding CPC program element for Research, Development, Test & Evaluation funds and a separate corrosion line item within an existing program element for Operation & Maintenance funds in fiscal year 2006.
  - The CPC program element and line item are managed by the Corrosion Policy and Oversight office within the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)).
  - DOD's CPC funding goes towards projects proposed by the services and toward other activities aimed at reducing corrosion costs. The services contribute additional funding for the projects.
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## Background (cont.)

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- Section 2228 of title 10, United States Code, requires the Secretary of Defense, for each fiscal year beginning with 2009, to submit with defense budget materials a report that includes
  - Funding requirements for DOD's long-term corrosion prevention and control strategy;
  - The return on investment (ROI) achieved by implementing this strategy;
  - Funds requested compared to funding requirements; and
  - An explanation if requirements are not fully funded.
- GAO is required to provide an analysis of DOD's budget submission for corrosion prevention and control and the related corrosion funding report.
- The President's fiscal year 2010 budget for DOD, along with budget materials, was submitted on May 7, 2009.

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## Engagement Objectives

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In response to the mandate, GAO

1. Identified DOD's process for developing its CPC budget submission;
2. Determined the extent to which DOD's fiscal year 2010 budget request for CPC met total estimated requirements; and
3. Calculated the potential cost avoidance for DOD's estimated funded and unfunded CPC requirements.

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## Scope and Methodology

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- **Scope**—DOD’s fiscal year 2010 budget submission and related budget materials, including estimated requirements, for the CPC program element and line item managed by the corrosion office. Requests for military service CPC funds were not included in our scope because of a lack of visibility over these funds within DOD’s budget.
  - **Methodology**—Obtained and analyzed DOD budget and requirements data, as well as DOD’s corrosion strategy and other pertinent documents. Calculated the potential cost avoidance based on DOD’s projected ROI and its fiscal year 2010 budget submission. Interviewed officials at the DOD corrosion office, as well as service corrosion officials and Joint Staff officials.
  - **Limitations**—DOD did not submit the required corrosion funding report with the defense budget materials. Therefore, we reviewed a draft of this report. In addition, we did not independently validate DOD’s CPC estimated requirements or projected ROI used to develop the CPC budget submission and draft corrosion funding report.
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## Scope and Methodology (cont.)

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We conducted this audit from February 2009 through May 2009 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Summary

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- The DOD corrosion office develops its CPC budget by considering historical data on service corrosion project proposals as well as guidance from USD(AT&L).
  - In its draft corrosion funding report, the corrosion office's total estimated CPC requirements for fiscal year 2010 are \$27.7 million. The fiscal year 2010 budget submission requests \$13.1 million for CPC, including \$9.5 million for projects and \$3.6 million for activities. Therefore, estimated unfunded requirements are about \$14.6 million.
  - Based on the fiscal year 2010 budget and the projected ROI, DOD's potential cost avoidance for its funded requirements is \$484 million. By not funding all of its estimated requirements, DOD is missing an opportunity for additional cost avoidance totaling \$506 million.
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## Objective 1: Process for Developing CPC Budget

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- In developing its fiscal year 2010 CPC budget and the information for the related corrosion report, the DOD corrosion office followed a process similar to that used to develop the fiscal year 2009 budget.
  - According to DOD officials, in 2008 the corrosion office asked the military services for preliminary estimates of the total number of projects that would need funding in fiscal year 2010, along with the cost of these projects.
  - The corrosion office assumed, based on historical trends, that it would eventually accept about 60 percent of the total number of projects submitted by the services. By multiplying the total cost of projects submitted in the services' preliminary estimates by 60 percent, corrosion officials determined the total estimated requirements for CPC projects.
  - Total estimated project requirements for fiscal year 2010 were \$21.5 million. This total does not include other non-project-related corrosion activities funded by the corrosion office. The corrosion office's estimated requirements for these activities amounted to \$6.2 million.
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## Objective 1: Process for Developing CPC Budget (cont.)

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- The DOD corrosion office submitted a budget request of \$24.4 million to USD(AT&L). This amount represented an additional \$10.3 million over the fiscal year 2009 amount to address unfunded requirements. According to corrosion officials, USD(AT&L) denied the increase because an offset within AT&L could not be identified.
- According to DOD's draft corrosion funding report, global commitments, constrained budgets, and competing requirements preclude full funding of CPC requirements.
- Comptroller officials previously told us that while program offices may consider ROI benefits in developing budget submissions, requirements for systems and services, rather than ROI, drive funding levels in DOD's annual budget request.
- Although the services submitted their preliminary estimates in 2008, they will submit their actual project proposals in the summer of 2009. The corrosion office goes through a project selection process to make final selections of projects it will fund from the CPC program element and line item.

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## Objective 1: Process for Developing CPC Budget (cont.)

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- DOD's current methodology for estimating CPC funding requirements may result in an inaccurate estimate of unfunded requirements.
  - o The services' preliminary cost estimates can differ significantly from the total costs in their subsequent project proposals. For fiscal year 2009—the first year this process was implemented—the preliminary estimates totaled \$47.6 million compared with \$20.3 million for the actual project proposals. It is unclear why this difference occurred.
  - o If the estimated requirements significantly differ from actual project proposals, DOD may not be in a position to accurately report unfunded requirements in its annual budget reports to Congress. For example, DOD estimated unfunded requirements of \$17.8 million for fiscal year 2009, but it subsequently determined that it had \$3.9 million in actual unfunded requirements following the project selection process.

## Objective 1: Process for Developing CPC Budget (cont.)

### CPC Project Funding (Fiscal Years 2005 through 2010)

Dollars in thousands

| Fiscal year (FY)                           | Cost of all submitted projects | Cost of projects accepted (DOD requirements) | Amount budgeted for projects | Unfunded project requirements <sup>a</sup> |
|--|--------------------------------|--|------------------------------|--|
| FY 2005 actual                             | \$56,581                       | \$29,559                                     | \$17,955                     | \$11,604                                   |
| FY 2006 actual                             | 37,079                         | 21,733                                       | 10,710                       | 11,023                                     |
| FY 2007 actual                             | 36,197                         | 20,590                                       | 8,136                        | 12,454                                     |
| FY 2008 actual                             | 25,114                         | 12,128                                       | 9,238                        | 2,890                                      |
| FY 2009 Preliminary estimates <sup>b</sup> | 47,563                         | 28,538                                       | 10,749                       | 17,789                                     |
| FY 2009 Actual                             | 20,266                         | 13,698                                       | 9,803                        | 3,895                                      |
| FY 2010 Preliminary estimates <sup>b</sup> | 35,831                         | 21,499                                       | 9,543                        | 11,956                                     |

Source: GAO analysis of DOD data.

<sup>a</sup>Unfunded requirements are projects that are accepted but not funded and represent the difference between the "DOD requirements" column and the "Amount budgeted for projects" column.

<sup>b</sup>The preliminary estimates for fiscal years 2009 and 2010 were developed for DOD's reports to Congress, pursuant to 10 USC § 2228(e). Fiscal year 2009 was the first year that the corrosion office estimated CPC requirements.

## Objective 2: DOD's Fiscal Year 2010 Budget Request for CPC

In its draft corrosion funding report, DOD estimated total CPC requirements of \$27.7 million for fiscal year 2010. DOD's fiscal year 2010 budget request includes \$13.1 million for CPC, which leaves estimated unfunded corrosion requirements of \$14.6 million. These amounts exclude funding that the services contribute.

### CPC Funding (Fiscal Years 2006 through 2010)

Dollars in thousands

| Appropriations account                      | FY06<br>(actual) | FY07<br>(actual) | FY08<br>(actual) | FY09<br>(estimate) | FY10<br>(requested) |
|---|------------------|------------------|------------------|--------------------|---------------------|
| Operation & Maintenance                     | \$8,136          | \$7,346          | \$7,869          | \$8,962            | \$8,239             |
| Research, Development,<br>Test & Evaluation | 7,402            | 7,124            | 18,253           | 22,279             | 4,887               |
| <b>Total</b>                                | <b>\$15,538</b>  | <b>\$14,470</b>  | <b>\$26,122</b>  | <b>\$31,241</b>    | <b>\$13,126</b>     |

Source: GAO analysis of DOD data.

Note: Congress appropriated additional CPC funding above the amounts requested in fiscal years 2008 and 2009.

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## Objective 2: DOD's Fiscal Year 2010 Budget Request for CPC (cont.)

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- Of the \$13.1 million requested for fiscal year 2010, about \$9.5 million is expected to fund corrosion projects, and \$3.6 million is expected to fund corrosion activities.
  - While projects for fiscal year 2010 will not be accepted until summer 2009, examples of potential projects include
    - o Air Force temporary corrosion barrier coatings;
    - o Army corrosion resistant coatings for air conditioning coils;
    - o Navy coating deterioration analysis and forecasting system; and
    - o Marine Corps abrasion, chip, and wear resistant coatings for wheeled/tracked weapon systems.
  - Activities may include such things as cost studies, training, and development and operation of the corrosion Web site. In the past, the corrosion office has funded the majority of its corrosion-related activities, but for fiscal year 2010 there is a \$2.6 million estimated shortfall due to an increased effort by the corrosion office to provide training opportunities.
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## Objective 2: DOD's Fiscal Year 2010 Budget Request for CPC (cont.)

In addition to CPC funding provided by the corrosion office, the military services provided an average of \$9.318 million in funds for corrosion projects per year for fiscal years 2006 through 2009. According to corrosion officials, these service contributions do not reduce the estimated unfunded requirements for DOD's CPC. Service contributions for fiscal year 2010 will be determined as part of DOD's project selection process.

### Military Service Contributions for CPC Projects (Fiscal Years 2006 through 2009)

Dollars in thousands

| Service      | FY06            | FY07           | FY08           | FY09            | 4-year average |
|--------------|-----------------|----------------|----------------|-----------------|----------------|
| Army         | \$6,030         | \$4,983        | \$5,262        | \$4,985         | \$5,315        |
| Navy         | 2,807           | 2,301          | 3,219          | 5,128           | 3,364          |
| Air Force    | 1,640           | 468            | 275            | 173             | 639            |
| <b>Total</b> | <b>\$10,477</b> | <b>\$7,752</b> | <b>\$8,756</b> | <b>\$10,286</b> | <b>\$9,318</b> |

Source: GAO analysis of DOD data.

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## Objective 3: CPC Requirements and ROI

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- As part of the project selection process, the corrosion office requires that an ROI cost-benefit analysis be submitted with project plans.
  - ROIs vary by individual project and may span many years.
  - ROI is calculated as the ratio of the present value of benefits to the present value of costs. Corrosion office guidance directs the use of a 7 percent annual discount rate in calculating the present value of benefits and costs. According to corrosion officials, this is a conservative estimate to avoid overstating the ROI.
  - According to corrosion officials, beginning in September 2009 they plan to review service ROI status reports for corrosion projects funded in fiscal year 2005, the first year CPC funds were provided. According to corrosion office guidance, the services should track ROI for several years after project completion to validate the assumptions and costs used to estimate the pre-implementation projected ROI.
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## Objective 3: CPC Requirements and ROI (cont.)

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- Based on historical averages, the corrosion office projects an ROI of 50-1 for fiscal year 2010 projects and 2-1 for activities. Based on the projected ROI, if all estimated fiscal year 2010 requirements were funded, the total cost avoidance would be approximately \$990 million.
- The fiscal year 2010 budget request, if approved, would result in a potential cost avoidance of approximately \$484 million.
- Based on historical averages, the corrosion office projects an ROI of about 42-1 for projects that were accepted but not funded from fiscal years 2005 through 2009. Given the corrosion office's fiscal year 2010 estimated unfunded requirements of \$14.6 million, the potential cost avoidance for these requirements (projects and activities) would be \$506 million.

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## Views of Agency Officials

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To obtain agency views, we discussed a draft of the briefing with officials from the Corrosion Policy and Oversight Office, the military services, and the Joint Staff.

They concurred with the facts presented and provided some clarifying comments that we have incorporated.

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