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Top Stories

Meet the Director of the DoD Corrosion Policy and Oversight Office

Daniel J. Dunmire

Under Secretary of Defense John Young appointed Daniel J. Dunmire as Director of the Pentagon-based Corrosion Policy and Oversight Office on June 13, 2008. Cynthia Greenwood, *CorrDefense* editor at large, interviewed the new director about the challenge of tackling corrosion throughout DoD, the impact of the new DoD Instruction, the mission and direction of the Office, and how it collaborates with the military services and industry.

CorrDefense: **Why is corrosion so hard to tackle throughout the Services and myriad divisions of the Department of Defense?**

Daniel J. Dunmire: The Department did not start to look at corrosion in an overarching and integrated approach until 2003. We found that it was possible to divide the DoD's acquisition and sustainment communities into two separate interests when it comes to the question of corrosion prevention. One sector is concerned with the acquisition of the latest and greatest weapon systems and equipment, which the world's best engineering minds have to offer. This group is concerned with keeping our military at the forefront of technological innovation, but remains less encumbered by any strictures related to costs, life cycle, or long-term preservation.

The other sector concerns itself with preserving the weapon systems currently used by our war fighters through corrosion prevention and the long-term sustainment of our equipment. Historically, these two interests have competed with one another for existing funds. So until this overarching and integrated corrosion prevention process started, it was difficult for these two interests to put the same degree of emphasis and priority on corrosion prevention and control. But incrementally we have been making progress.

CorrDefense: **Earlier this year, Congress changed the 2002 law in Title 10 of the U.S. Code, Section 2228, which mandates that the DoD implement a host of initiatives in the corrosion strategic plan. Why did they do this?**

- Mr. Dunmire: Simply put, to enhance the Department's efforts to combat corrosion. The original version of Title 10 U.S.C. Section 2228 of the 2003 National Defense Authorization Act, required the Secretary of Defense to designate an official or organization to be responsible for the prevention and mitigation of corrosion of military equipment and infrastructure. It also required the Defense Department to develop and implement a long-term strategy for corrosion prevention and control. This long-term strategy was originally published in November 2004, and the most recent update is accessible at www.corrdefense.org. The strategic plan is updated at least annually so that it remains current and relevant. The most recent version of the law replaces the "official or organization" with the DoD Corrosion Policy and Oversight Directorate, designates the director as a direct report to the Under Secretary, and besides other things, mandates many of the items in the DoD Corrosion Prevention and Mitigation Strategic Plan.

CorrDefense: **Please tell us about the significance of the new DoD Instruction 5000.67—*Prevention and Mitigation of Corrosion on DoD Military Equipment and Infrastructure*—which was signed earlier this year by Under Secretary of Defense John Young.**

- Mr. Dunmire: This new DoD Instruction, which we often refer to as DODI 67, sets forth a clear policy for preventing corrosion on military equipment and infrastructure. The policy establishes procedures and responsibilities concerning corrosion for all of our Services. It is unprecedented because it assigns specific responsibilities to the Army, Navy, Air Force, and Marine Corps in order to guarantee that they will manage corrosion programs on all military equipment and infrastructure across the life cycle. It also requires that each of the military services designate a Corrosion Executive who will be responsible for developing and recommending policy and guidance on preventing corrosion throughout their departments.

  The new DoD Instruction 5000.67 is important because it ensures that corrosion programs and techniques to preserve our aging aircraft, Navy ships, and Army weapon systems shall be put in place from the moment DoD acquires them. For the first time ever, the costs and labor required to maintain our military planes and ships must be systematically considered in the Department's acquisition process, not as an afterthought. However, although having this instruction is important, ensuring that the Services are in compliance is even more important.

CorrDefense: **We understand that the new DoD Instruction is currently being revised. What is the extent of that revision?**

- Mr. Dunmire: Indeed, we are revising and updating the DoD Instruction 5000.67. One week after Under Secretary Young signed the DODI, Congress passed the National Defense Authorization Act, which, in turn, impacted the DODI. So the DODI was actually in compliance with the law it is subsumed under for about a week. We are required to make sure that all changes to the law are truthfully reflected in the new draft of 5000.67. The law has been revised again by the FY 2009 National Defense Authorization Act, so all changes that have occurred this calendar year will now be reflected in the revised DODI 67.

CorrDefense: **What is the significance of your new job status, in which you fill the position of Director of Corrosion Policy and Oversight and report directly to the Under Secretary of Defense for Acquisition, Technology, and Logistics?**

- Mr. Dunmire: Now that the Corrosion Policy and Oversight Office is an independent office, we have more responsibility. This is good, obviously. The stature of the office has grown because the Corrosion Office has certain responsibilities that are reported directly to the Under Secretary. And slowly but surely, people within DoD are understanding the corrosion prevention responsibilities as they impact logistics, equipment, infrastructure, and research. I am invited to more meetings now. The Office of Corrosion Policy and Oversight is more visible because we participate in more DoD meetings.

CorrDefense: **Now that you have been named Director of the DoD Office of Corrosion Policy and Oversight, what is your current mission for the office? How has that mission changed since this initiative got underway in 2003?**

- Mr. Dunmire: Essentially our mission consists of a widespread effort by U.S. military and industry to reduce the effects of corrosion on the safety and readiness of the American warfighter. It also involves lowering the financial burden of corrosion on the American taxpayer.

  Under the authority, direction, and guidance of the Under Secretary and within the boundaries created by the previously mentioned DoD Instruction 5000.67, we are now putting together programs necessary to meet the above goals. We are also being audited regularly by the GAO (Government Accountability Office), which is why we have to be simultaneously creative and aggressive. Our current mission is to try initiatives that are both sound and analytically feasible, while remaining flexible and creative. Our activities throughout the Services must withstand scrutiny and exhibit sound methodology, without being arbitrary and capricious. Under the new division structure, and since I have become Director of this new Office, we are looking at the challenge of military corrosion from a different perspective. We are looking at it through a different lens, trying to achieve as much improvement and needed change as possible with limited resources by partnering appropriately with NACE

International, the Corrosion Society; working with academia, the National Academies, and universities; the Allies; and other departments of the Executive Branch.

CorrDefense: **Why is there so much emphasis at the moment on nonmaterial solutions to corrosion? Please clarify what these "nonmaterial solutions" consist of.**

- Mr. Dunmire: Nonmaterial solutions are those that affect DoD's acquisition culture related to corrosion—the culture's effectiveness, efficiency, and its impact on industry. These solutions include education, policy, guide books for experts and administrators at all levels, handbooks, our cost of corrosion baseline studies, an availability initiative, and the DoD instruction. All of the resources that impact how corrosion is managed make up the nonmaterial solutions. Material solutions, on the other hand, include research and development and implementation of the actual means of preventing or mitigating corrosion on equipment or infrastructure, such as the use of cathodic protection, coatings, and corrosion-resistant alloys, etc.

  Nonmaterial solutions, from an operational standpoint, will have the greatest impact on our mission to prevent corrosion and reduce corrosion mitigation costs, because these solutions influence management and its ability to bring about far-reaching, long-term effects. When management undertakes to build a corrosion prevention and control plan, it greatly affects the face of our weapon systems decades from now.

  The University of Akron is establishing a bachelor's degree in corrosion engineering, which raises the level of support for the mission of corrosion engineers for decades to come. When we are able to graduate students with a B.S. in corrosion engineering, we are committing to putting knowledgeable people in government and industry who hopefully will be able to advise decision-makers knowledgeably on corrosion trade-off decisions. Such experts can truly make a difference in the life of our military equipment and infrastructure.

CorrDefense: **What universities are benefiting from recent Congressional funding awarded to DoD and how is the money being used?**

- Mr. Dunmire: I am trying to force a marriage between the traditionally separate arenas of government practice and university research. For two years in a row, we have received funding from Congress to support lab research at five universities that will support our corrosion prevention requirements in the field. In 2007 Congress awarded us $5.5 million for five universities involved in this educational effort. This is not grant money, strictly speaking. From this budget, we offered the University of Akron $500,000 to help develop the degree in corrosion engineering. The rest of the funds have been apportioned to Ohio State, the University of Virginia, the University of Southern Mississippi, and the University of Hawaii.

  In releasing these funds, DoD's goal is to ensure that students and faculty understand our field requirements, research the pressing problems of military corrosion prevention, and collaborate with DoD and each other to solve these problems. Recently we received additional Congressional funding for this effort. We plan to offer more details about the latest efforts in the spring edition of CorrDefense e-magazine.

CorrDefense: **Please tell us a little about the push/pull system that the DoD engages in with various American universities.**

- Mr. Dunmire: Each year we have provided funding, matched by the Services, to transition and implement technology to mitigate and control corrosion. This is known as a technology "push." In addition, recent project applications tell us that research and technology are needed in many areas to fulfill the Services' needs. Thus, with the support of Congress, we began a university collaboration focused on advancing the technologies needed to address general areas of concern. These areas include a better understanding of coatings and coatings failure, corrosion test methods that actually reflect field experience, and an understanding of corrosion growth rates, among others. This is known as a technology "pull," focused on solving significant and pervasive problems identified from Service project submissions.

  The universities I mentioned previously, which have a history of involvement with military corrosion, have complementary but slightly overlapping expertise conducive to collaboration. Military/university collaboration provides internal peer review and affords experts the ability to consult internally as questions arise. Such a

process breaks down many traditional barriers and provides synergy. Because both undergraduate and graduate students are involved, the collaboration further addresses our goal of creating a workforce uniquely trained and knowledgeable about corrosion.

CorrDefense: **Using the expertise of the Corrosion Prevention and Control (CPC) Integrated Product Team (IPT), the Defense Department has issued several cost of corrosion baseline studies that are widely respected by the military services. Please talk about a recent effort to guide the Services in assessing and exploiting the data from these studies.**

- Mr. Dunmire: DODI 67 charges the Department with carrying out the cost of corrosion baseline studies in recurring phases, every two to three years. These recurring assessments are designed to benefit all of the Services and Defense agencies. Moreover, the DODI directs each Service to review the results of these studies and use them to influence their corrosion mitigation efforts.

CorrDefense: **Please tell us about the Corrosion Bowl. How does that work and what or whom does it benefit?**

- Mr. Dunmire: At the DoD Corrosion Conference planned for 2011, students and professors will have to collaborate on a corrosion paper/project and compete with others, so that their respective university can enter a juried competition and have a chance to win one of the Corrosion Bowl awards. The Corrosion Bowl consists of modeled poster board sessions that DoD has sponsored at our DoD Corrosion Conference (formerly known as the Tri-Service Corrosion Conference). To keep everything lively and entertaining, I plan to serve as the Corrosion Bowl Commissioner along with appropriate and qualified science and engineering advisors.

CorrDefense: **How are things progressing with the many training videos and podcasts currently being produced by the DoD Corrosion Policy and Oversight Office?**

- Mr. Dunmire: In 2007, our experts in the CPC IPT began producing a suite of Internet broadcast tools and video games to teach the acquisition community about the science and prevention of corrosion. The general public can also benefit from some of these tools. They can be found at www.corrdefense.org in the left portion of the home page. Both the public and DoD personnel can learn more about the DoD Corrosion Program by watching our Webcast on the Defense Acquisition University Web site (www.dau.mil). Members of the CPC IPT are also developing two other videos, to be released as podcasts over the coming year. One video will focus on the science of corrosion using techniques such as time-lapse photography; it will offer lessons in the science of corrosion to high school and college students. Titled *Corrosion: A Pervasive Menace*, the video will be narrated by Levar Burton, the actor and director renowned for his portrayal of Kunta Kinte in the 1977 TV miniseries *Roots*. Currently in production, the podcast will be posted on the CorrDefense Web site by the end of 2009. Our training experts are also making headway on a simulation video game featuring an overview of the science and practice of corrosion to users. The simulation is slated for release in the summer of 2009.

CorrDefense: **What is the current status of the University of Akron initiative to establish a bachelor's degree in corrosion engineering?**

- Mr. Dunmire: The University of Akron and several industry partners are putting non-credit and degree programs in place in corrosion-related fields. One goal of this long-range, multi-faceted effort is the creation of an associate's degree and bachelor's degree in corrosion engineering. This partnership is unprecedented and involves DoD strategic partners like NACE International and the NACE Foundation, as well as industry partners like RPM, Corrpro, Carboline, Nothern Technologies International, and others. These new degree programs will afford the current generation of would-be corrosion practitioners an opportunity that others in the field have sought for decades.

CorrDefense: **What is the value of the DoD's relationship to strategic partners like NACE International, SSPC (The Society for Protective Coatings), and universities?**

- Mr. Dunmire: From the advent of DoD's corrosion prevention initiative in 2003, we have endeavored to use a variety of communication channels to receive and convey the nature, impact, approaches, and results of corrosion

from and to every organization within DoD and industry communities. To carry out this important strategy we closely work with and leverage the expertise of professional societies such as NACE International and SSPC, and universities committed to corrosion-related training such as The Ohio State University, University of Virginia, The University of Akron, Southern Mississippi University, the University of Hawaii, and many more as well. I mention these in particular, since they are involved in the push/pull technology initiative and involved in supporting Akron's bachelor of science degree in corrosion engineering.