

Developmental Test and Evaluation Is Back

Edward R. Greer

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With the Weapon Systems Acquisition Reform Act of 2009 (Public Law 111-23, Title 10, U.S.C., Section 139d), Congress directed the Department of Defense (DoD) to place long-overdue and renewed emphasis on Developmental Test and Evaluation (DT&E). The Government Accountability Office (GAO) has published many findings with their Defense Acquisition Major Weapon System Program assessments of 2006, 2008, and 2010 pointing to issues that could have been mitigated with more and/or better DT&E. The Office of the Secretary of Defense (OSD) recently took a major step in this direction and has established the Office of the Director for Developmental Test and Evaluation (DDT&E). DDT&E is the focal point for all policy, practice, procedures, and workforce issues relating to DT&E within the DoD. I am honored to serve as the new Director, DT&E and principal advisor to the Secretary of Defense and Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]) on DT&E.

In short, my role is to inform the Secretary of Defense and the USD(AT&L) on DT&E progress and results for Major Defense Acquisition Programs (MDAPs) and special interest programs. My office also focuses on the adequacy of organizations, capabilities, and workforce of the DoD Components to perform DT&E across the life cycle of these programs. Additionally, I annually report on this mission to Congress. In support of this overarching mission, I have three main focus areas:

- Execution of DT&E Title 10 directed responsibilities,
- Enhancing the capacity to rapidly and efficiently respond to battlefield needs, and
- Improving the practice of test and evaluation.

My first focus area is the execution of my Title 10 directed responsibilities. These include development and refinement of DT&E policy and guidance; DT&E involvement in program requirements, formulation,



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planning, and contracting; monitoring and reviewing progress of DT&E in MDAPs and special interest programs; and assessing the adequacy of the DoD technical test workforce, capabilities, and facilities.

DoD acquisition reform in the early 1990's included restructuring some OSD functions which ultimately deemphasized the Government role in DT&E by transferring some of the responsibility to contractors. In some cases, this left the developmental testing to the same contractor that was developing the system. My organization brings renewed high

level emphasis on DT&E, and I will make sure that is reflected in refinements, updates, and additions to applicable policy and guidance. I realize that contractors will still conduct significant DT&E, but the Government (i.e., Program Management Organizations (PMOs), Responsible Test Organizations (RTOs), professional testers and evaluators) must be very much "in the business," engaged, involved, and "driving the train" throughout the entire development and acquisition life cycle. This involvement includes the earliest stages of the life cycle such as contributing to the Analyses of Alternatives (AoAs) during program development, ensuring that requirements are realistic and testable, and testing and assessing technology readiness. Renewed Government oversight of DT&E is absolutely essential to insure that the Government's requirements, as the customer, are being met, and that any issues or problems with this are being identified as early as possible. Such issues or problems can then be corrected in a timely, efficient, and cost effective manner instead of waiting to be discovered too late during the traditional customer testing, Initial Operational Test and Evaluation (IOT&E). In their 2008 assessment of defense acquisition, the GAO cited unrealistic and changing requirements and technology immaturity as two major reasons for program cost and schedule overruns and program failures. Early involvement of professional testers and evaluators can help mitigate both. My organization, along with the Director of Operational Test and Evaluation (DOT&E), will approve Test and Evaluation Strate-

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gies (TES) and Test and Evaluation Master Plans (TEMPs) for MDAPS and other programs on the OSD T&E Oversight List. It is through these key documents that I will ensure that planned DT&E meets all of the above criteria for good and efficient T&E that supports knowledge based development and acquisition.

As part of my Title 10 directed responsibilities, I play a key role as advisor to the Defense Acquisition Executive at key technical program reviews and milestone decision reviews such as Defense Acquisition Boards (DABs) and the Defense Acquisition Executive Summary (DAES). In this role, I provide an independent assessment of program technical progress and risks. Therefore, data access is a major initiative for my organization. We must be able to obtain “unfiltered” technical test data from test organizations and services in order to complete our assessments. I am already working to update DoD acquisition policy to ensure the overarching access to developmental test data. My Title 10 responsibility calls for fair and unbiased reporting to the Secretary of Defense, AT&L, and Congress. It is not my intent to create an adversarial relationship with the services or test organizations. To the contrary, I want to help programs in any way possible to be legitimately successful in terms of all three major criteria; performance, cost, and schedule. I and the professionals in my organization are more than “watchdogs”; we are team players who must assess and report independently.

It is also my responsibility to ensure that the test capabilities of the military development and acquisition community are adequate and efficient to accomplish the required testing. I will work with the RTOs and test centers to ensure that all members supporting this vital capability understand their roles and requirements. Our organizations in the Major Ranges and Test Facility Base (MRTFB) must become true centers of excellence for the testing of military systems. The era of “rent-a-range” must come to an end. I will say more about this later when I discuss my initiatives to improve the professional practice of test and evaluation.

My second focus area is enhancing the capacity to rapidly and efficiently respond to battlefield needs. I realize that rapid fielding requires different, but not necessarily less, developmental testing. Testing of rapidly acquired weapons systems requires unique technical test methodologies and capabilities. I will continue to expand and enhance the capability to support rapid system prototyping, testing, and response to the ever evolving technical test needs of the Combatant Commands. As part of my Title 10 responsibilities described above, I will place special emphasis on establishing good working relationships, integrated planning, and data flow among all involved organizations. The goal is the most efficient and

effective developmental test and evaluation possible to get the best and right equipment in the hands of our warfighters in the shortest possible time.

My third focus area is improving the practice of test and evaluation. Institutionalizing integrated testing is a priority for my office. By integrated testing, I do not simply mean combining DT&E and OT&E. Integrated testing is a continuum of testing that seamlessly delivers information required to efficiently execute programs and manage risk during every stage of the acquisition and development of a system. I will work with all of the test and evaluation stakeholders within each program to ensure that we design adequate tests which produce sufficient data to support our assessments. I believe that bringing integration, discipline, and standardized methodology to developmental testing and evaluation across the services will greatly improve system of systems testing. As most modern military systems function in a joint operational environment, a system of systems approach is essential to properly assess achievement of KPPs and readiness to enter IOT&E. Testing is often resource and time intensive, so any efficiencies to be gained in this area will result in high payoffs.

One of my top initiatives to improve the practice of T&E is the rejuvenation and development of the Government technical T&E workforce. Test and evaluation is a technical discipline that requires unique knowledge, breadth and depth of experience across the workforce. In addition to the usual scientific and engineering principles, these professionals must know design of experiments, statistics, test design principles, test limitations, instrumentation characteristics, legal and environmental considerations. These professionals also need to understand the elements of systems engineering, both the integral role that T&E plays in systems engineering and the discipline that a systems engineering approach can bring to a T&E program. Through apprenticeship and mentoring programs, the workforce must gain extensive field experience to know what can, cannot, should, and should not be expected during testing. Most importantly, these individuals must bring an inquisitive attitude to a developmental program. By questioning, I don’t mean obstructionist. T&E professionals need to be the voice of reason and ensure that programs are planned and executed with realistic expectations and well understood risks. This attitude is one of the most important contributions the T&E professional can contribute to ensure successful development programs. A major emphasis will be to significantly influence the planning and execution of the NDAA Section 852 Defense Acquisition Workforce Development Fund (DAWDF) such that stronger focus is placed on recruiting and hiring,

training and developing, and retention within the test and evaluation disciplines. Dr. Ashton Carter, Under Secretary of Defense for Acquisition, Technology and Logistics, has stated that “no changes to the acquisition system itself can substitute for good people performing the acquisition function.” I subscribe to his statement fully, and for my part, replace “acquisition function” with “test and evaluation functions.” I also believe that development of our professional T&E workforce begins long before recruiting and hiring. Our future workforce is the future scientists and engineers in high school who must have opportunities and quality programs to develop interest, excitement, appreciation, and early skills in these vital areas. I, therefore, fully support and will actively participate in programs that advance Science, Technology, Engineering, and Mathematics (STEM) education. As for college science and engineering curricula, test and evaluation are areas that deserve and must have greater emphasis through specific courses, areas of concentration, and even degrees. I will seek every opportunity to try to make these happen as well. Within DoD and USD(AT&L), I plan to work with the Defense Acquisition University to develop better, more up to date, and more comprehensive courses and acquisition certifications in the T&E area.

I also take this opportunity to charge the International Test and Evaluation Association (ITEA), as the professional organization for testers and evaluators, to join with me in my third focus area. ITEA’s mission should be improving the practice of test and evaluation through all means. These should include education; sharing of information; developing and expanding a community of practitioners; developing and documenting practices and procedures; developing standards; increased public awareness, understanding, and appreciation; and working towards professional certification. I believe that, in the past, ITEA has put much more emphasis on T&E capabilities and facilities, and has not emphasized enough the practice of T&E and its improvement. I believe that ITEA should be developing descriptions and standards for testing and evaluation as specific professional technical disciplines. ITEA should be working with our colleges and universities on developing curricula, certification, and even degrees in testing and evaluation. Finally, I believe that ITEA should work toward a formal professional certification for testers and evaluators similar to that for professional engineers. I will work with ITEA in all of the above areas.

I thank ITEA for this opportunity to introduce myself and my organization, and to share some of my early thoughts with the T&E community through this editorial. I am honored to have been chosen to lead the

DoD developmental test and evaluation mission area. I fully understand and accept my very important responsibility to the U.S. taxpayer to ensure that our acquisition funds are spent properly with the most complete technical knowledge to support the best decisions. I also fully accept my significant responsibility to all U.S. warfighters, who ultimately employ the weapons systems and equipment that our acquisition community delivers. □

EDWARD GREER was sworn in as the Director of Developmental Test and Evaluation (DDT&E) on March 15, 2010. He serves as the principal advisor on Developmental Test and Evaluation (DT&E) to the Director of Defense Research and Engineering and the Under Secretary of Defense for Acquisition, Technology and Logistics. Mr. Greer is responsible for developing and revising DT&E policy in support of the acquisition of major Department of Defense (DoD) weapon systems. Other significant duties include reviewing and improving the organization and capabilities of the military departments with respect to DT&E and providing advocacy, oversight, and guidance to elements of the acquisition workforce responsible for DT&E.

Prior to this political appointment, and since 2002, Mr. Greer served as the Deputy Assistant Commander for Test and Evaluation (AIR 5.0A), Naval Air Systems Command, and Executive Director, Naval Air Warfare Center Aircraft Division (NAWCAD), Patuxent River, Maryland. As the senior civilian for naval aviation T&E, Mr. Greer was responsible for planning, executing, analyzing, and reporting of all naval aviation T&E, spanning a workforce of 6,600 and an operating budget of almost \$1 billion. As executive director, NAWCAD, his responsibilities included ensuring that NAWCAD technical, business, and financial objectives were met across a workforce of 14,400 and a total operating budget of over \$4 billion.

Mr. Greer joined the senior executive service (SES) in 1998 as director of the Atlantic Ranges and Facilities, NAWCAD, responsible for all facets relating to the development, maintenance, and operation of the range and test facility components of the U.S. Navy’s principal air combat systems test activity.

From 1995 to 1998, Mr. Greer served as principal deputy program manager of Airborne Strategic Command, Control, Communications; Program Executive Office for Air, Anti-submarine Warfare, Assault & Special Mission Programs. Mr. Greer was responsible for all aspects of acquisition including systems engineering, logistics, training systems, and T&E. From 1993 to 1995, Mr. Greer took an assignment in the Pentagon as a staff specialist in the Office of Under Secretary of Defense for Acquisition and Technology, Test, Systems Engineering and Evaluation; Test Facilities and

Resources. Prior to 1993, Mr. Greer served in various leadership and engineering positions within the Naval Air Systems Command.

Mr. Greer was the Navy's representative on the 2007 Defense Science Board Task Force on Developmental Test and Evaluation. Mr. Greer is a past president of the Southern

Maryland Chapter of ITEA. He earned his bachelor of science degree in electrical engineering from the University of Maryland, College Park, and received a master's of science degree in management from the Florida Institute of Technology. Mr. Greer is also a graduate of the Defense Systems Management College Program Management Course.

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Michael D. Griffin, prior to joining UAHuntsville, was the Administrator of NASA from 2005-09. His experience includes being Space Department Head at the Johns Hopkins University Applied Physics Laboratory. He has held numerous executive positions within industry, including President and Chief Operating Officer of In-Q-Tel, Chief Executive Officer of Magellan Systems, General Manager of Orbital Sciences Corporation's Space Systems Group, and Executive Vice President and Chief Technical Officer at Orbital Sciences Corporation.

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