

What Happened to DT&E?

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The office now responsible for overseeing *developmental* test and evaluation (DT&E) was created four decades ago to oversee *all* test and evaluation (T&E) in the Department of Defense (DoD). In the January-February 2014 issue of *Defense AT&L* magazine, I described David Packard's response to the Blue Ribbon Defense Panel in shaping the original office in the Office of the Secretary of Defense (OSD) responsible for T&E oversight. In this article, I describe the DoD's efforts over the past 40 years to shape T&E oversight organizations to help improve acquisition outcomes. Ultimately, this article is intended to provoke a rethinking of how we, as testers and as members of the acquisition community, can better help programs provide enhanced capabilities to our warfighters in an effective and timely manner. If that is not our top priority, then I think we may be in the wrong business.

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The key to improving acquisition outcomes is to properly set the conditions to begin production. Said another way, improving outcomes is not about increasing the pass rate for initial operational test and evaluation (IOT&E) or the number of programs that get to full-rate production (FRP), because those numbers can be very high yet require significant post-production costs to repair or add capability we wanted but didn't get at initial operational capability. Today we are not correcting that trend and it has led to the frequent criticism that DoD follows a "build it now, Band-Aid it later" approach to acquisition. When we properly set the conditions for entry into production, we have achieved high confidence that we have identified and resolved the major risk areas and failure modes, and will deliver the needed warfighting capability, not just meet contract specs. DT&E is the means by which programs determine when they have properly set the conditions for entry into production, and it typically comprises more than 80 percent of the T&E activity in a program life cycle. However, more than 80 percent of our T&E resources in OSD are allocated to oversight of operational test and evaluation (OT&E).

Most in the defense T&E community know that the DT&E office in OSD all but disappeared in the not-too-distant past, and that plays strongly into why OSD test resources are so out of balance. So what happened to DT&E over the past 40 years? From the Blue Ribbon Defense Panel to today, the DoD and Congress have focused on OT&E. It is not unreasonable to conclude that with all attention on OT&E, the entire acquisition system would respond accordingly and shift focus and resources for testing to the right, to "passing IOT&E" and getting to FRP. Forty years of T&E hindsight suggests that is a fundamentally flawed strategy. As the Under

Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]) shapes the role of the office of the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD[DT&E]), history may be a valuable tool, so that in the spirit of George Santayana, the DoD won't be "condemned to repeat it."

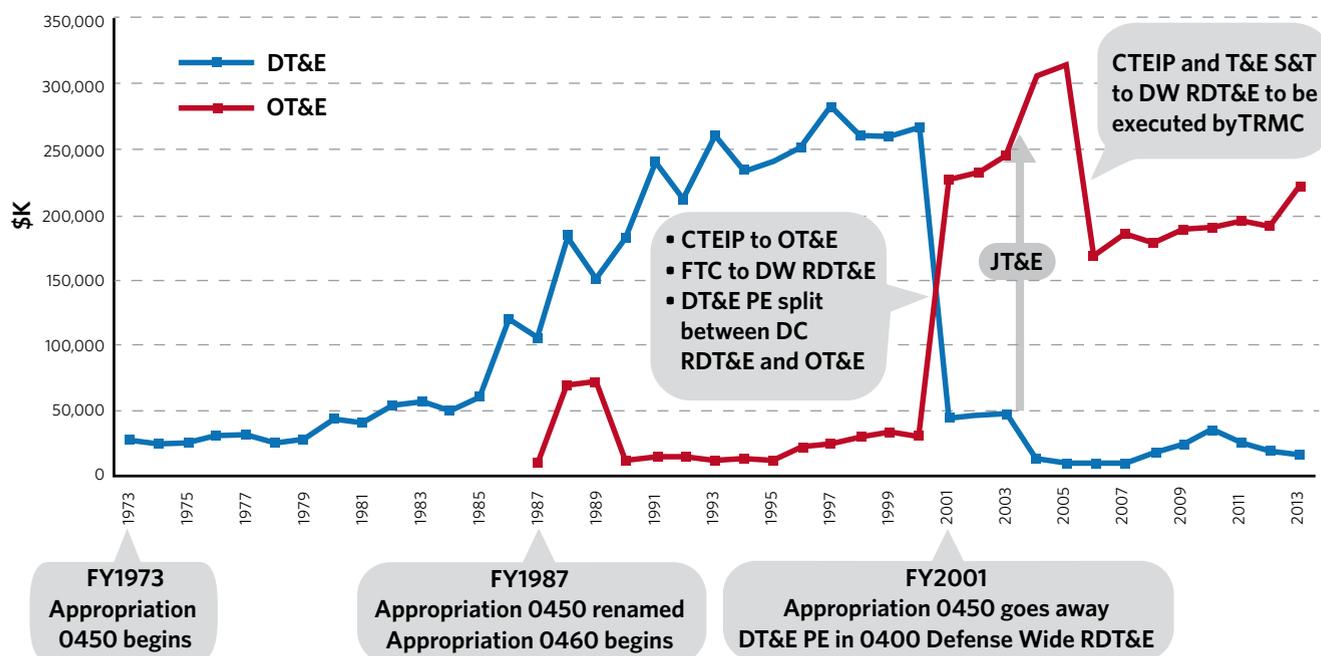
Testing is a means to obtain information to inform acquisition decisions—build or buy decisions—Milestone (MS) decisions. We need to think about how to improve DT&E to support acquisition decisions better. I provided some thoughts on how to improve and strengthen DT&E in the "Shift Left" article in the September–October 2013 issue of *Defense AT&L* magazine. For most programs, a robust DT&E strategy is essential to informing the MS C decision to enter low-rate initial production (LRIP). If we don't get it right in DT&E, design problems we didn't find and fix before beginning LRIP can become the warfighter's problems. By shifting left to improve DT&E, programs will be better able to find and fix deficiencies before beginning production, and that will lead to improved acquisition outcomes.

Follow the Money

It is often said in the Pentagon and in other areas of government that if you want to see how things get done, "follow the money." The history of the DT&E office is clearly visible in the funding line.

The DASD(DT&E) office traces its roots back to the office of the Deputy Director for Test and Evaluation (DD(T&E)) created by David Packard, although its title and location within the acquisition chain have changed many times since then.

Figure 1. Funds for OSD DT&E and OT&E



In fact, all of today's OSD test organizations have roots in the original DD(T&E) office, including the Test Resource Management Center (TRMC), the Foreign Comparative Testing (FCT) Office, and even the office of the Director, Operational Test and Evaluation (DOT&E) and its subordinate offices for live-fire and joint T&E (LFT&E, JT&E). Throughout those early years, the DD(T&E) was responsible for more than 80 percent of the OSD test resources. However, a major realignment in June 1999 transferred the majority of resources to the DOT&E and virtually eliminated the DT&E office as an effective OSD staff entity. Another 10 years would pass, and the Weapon Systems Acquisition Reform Act (WSARA), Public Law (PL) 111-23, resurrected the DT&E office.

Figure 1 depicts the dollars appropriated for the DT&E and OT&E offices from fiscal year (FY)1973 to the present. These are unadjusted, "then-year" dollars, precisely as given in the defense appropriation acts. Appropriation 0450 for the Director, Defense Test and Evaluation began in FY1973. The DOT&E position was created in 1983, but the first director was not appointed until 1985. Thus, funds were not appropriated for the DOT&E until FY1987. When the DOT&E appropriation 0460 began, appropriation 0450 was retitled for the Director, Developmental Test and Evaluation. The major shift in OSD funding corresponds to the June 1999 decision to transfer T&E functions to DOT&E, with the funds moving in the FY2001 appropriation law. Appropriation 0450 for the Director of Developmental Test and Evaluation went away completely; its programs were distributed between 0460 OT&E and 0400 Defense Wide Research, Development, Rest and Evaluation (DW RDT&E). Since there no longer is a specific appropriation for DT&E in the defense appropriation laws, the dollar amounts shown for DT&E from FY2001 to the present are as reported in the "R-1" budget exhibits (see <http://comptroller.defense.gov>). In FY2001, funds for the Central Test and Evaluation Investment Program (CTEIP) moved from DT&E to OT&E, and funds for FCT moved from DT&E into DW RDT&E.

Strangely, the DT&E program element (PE) was split between DW RDT&E and OT&E; in other words, both the DT&E office and the DOT&E were expending funds assigned to the same DT&E PE. The DT&E PE continued to be shared until FY2007, when the portion of funds allocated to DOT&E was renumbered and renamed "operational test activities and analyses." The DOT&E also managed the T&E Science and Technology (S&T) PE when it began in FY2002. The JT&E program was transferred to the DOT&E in December 2002 (the money moved in FY2004), and in FY2006 the CTEIP and T&E S&T dollars moved out of OT&E to DW RDT&E to be executed by the newly created TRMC.

On face value, Figure 1 supports the assertion that more than 80 percent of OSD test resources support OT&E oversight. However, a significant part of the OT&E appropriation includes funds for the LFT&E program and "OT activities and analyses," which now includes the JT&E program. If these are not considered, what remains are the funds for the

Table 1. FY2012 Funding for OSD DT&E and DOT&E

Program Element	\$ Millions
DT&E	
0605804D8Z Development Test and Evaluation	15.8
OT&E	
0605118OTE Operational Test and Evaluation	60.4
0605131OTE Live Fire Test and Evaluation	12.1
0605814OTE Operational Test Activities and Analyses	118.7
Total OT&E	191.2

program oversight function. The imbalance remains large. For example, as shown in Table 1, the FY2012 budget (the most recent budget unperturbed by sequestration) included \$15.8 million for DT&E program oversight and \$60.4 million for OT&E; hence, only 20 percent of the total \$76.2 million funds DT&E program oversight.

How this resource imbalance came about is an interesting story.

A Brief History of DT&E

The Original DD(T&E)

Deputy Secretary of Defense David Packard created the office of the DD(T&E) in response to recommendations of the Blue Ribbon Defense Panel (BRDP) in July 1970 (see <http://www.dtic.mil/dtic/tr/fulltext/u2/a013261.pdf> for the BRDP report). The BRDP was essentially concerned about operational test and independence. As described in the January-February 2014 issue of *Defense AT&L* magazine, Packard tackled the BRDP concerns head on. Packard issued three memoranda in the first eight months of 1971 that made sweeping changes to the role of T&E, including directing the Services to restructure their OT&E organizations to be "separate and distinct from the developing command" and establishing the DD(T&E) within the Office of the Director of Defense Research and Engineering (ODDR&E) with "across-the-board responsibilities for OSD in test and evaluation matters." The ODDR&E was responsible for major acquisitions at that time, thus it preceded both the Assistant Secretary of Defense for Research and Engineering that we know today, as well as the USD(AT&L). However, operational test and independence would come to dominate the T&E landscape.

OT&E and Independence

Many in DoD had observed that since the Director of Defense Research and Engineering was the department's chief acquisition official, assignment of the DD(T&E) under this official posed a conflict of interest, and violated the BRDP admonition that when responsibilities for evaluation are subordinated to the developer, "the requisite objectivity is

seriously jeopardized." October 1977 saw a minor power struggle over where responsibilities for OT&E should be assigned to satisfy the BRDP concerns, and it resulted in responsibilities for OT&E being reassigned to the ASD(Program Analysis and Evaluation). How to divide the people and dollars proved to be an intractable problem, so in a memo dated Nov. 17, 1978, "Operational Test and Evaluation," Deputy Secretary Charles W. Duncan, Jr. transferred responsibility for OT&E back to the USD(R&E), writing, "The Director, Defense Test and Evaluation is the cognizant executive for all Test and Evaluation matters."

The issue wasn't settled though, and Congress made the next move. In May 1982, Arkansas Sen. David Pryor introduced legislation to create a director of OT&E. It was not well received in the Pentagon. The debate about OT&E and independence consumed over a year, and on Sept. 24, 1983,

also stipulated that the DD(T&E) would be redesignated as Director of Developmental Test and Evaluation.

The Pentagon Wars

In the early 1980s, testing defense systems became the center of attention in a very public way in the form of the well-known "Pentagon Wars" (although the book did not come out until 1993, and the movie in 1998). Live-fire T&E was the central issue, and in November 1986, the DT&E director created a new office to oversee live-fire testing, but Congress moved LFT&E oversight to the DOT&E in October 1994 (PL 103-355 §3012).

On Nov. 1, 1994, the title of the DT&E office changed to Director, Test, Systems Engineering and Evaluation (DTSE&E). However, the pivotal reshaping of DT&E (and DOT&E) took place in June 1999, prompted by a pair of "streamlining

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in PL 98-94, Congress established the position DOT&E, presidentially appointed, Senate confirmed, independent of the acquisition authority and reporting directly to the Secretary of Defense.

The DoD acted quickly to create the DOT&E office, although it would be 20 months before the DOT&E job would be filled. On Nov. 28, 1983, DASD (Administration), David O. "Doc" Cooke, working with Richard DeLauer, USD(R&E), wrote a memorandum to the Secretary of Defense, titled "Establishment of the Director of Operational Test and Evaluation—ACTION MEMORANDUM." Cooke and DeLauer had carefully thought through the functions to be performed by the DD(T&E) and the DOT&E, and described them this way:

We propose to adopt a definition of OT&E which clearly distinguishes it from all other test and evaluation activities in the development and acquisition cycle. We recommend that OT&E apply to field tests conducted with production articles which are fully representative of the intended operational configuration of new weapons. All tests before that time, whether laboratory or field, would be considered DT&E and part of the weapon development process.

Cooke noted that this definition was consistent with congressional guidance for ensuring the adequacy of OT&E before proceeding "beyond low-rate initial production." The memo

memos" to the Secretary and Deputy Secretary from Jacques S. Gansler, USD(Acquisition & Technology), and Philip E. Coyle, DOT&E, in May 1999. In the "Plan to Streamline Test and Evaluation—INFORMATION MEMORANDUM," Gansler and Coyle wrote:

As you know, the Under Secretary of Defense for Acquisition and Technology (USD[A&T]) has advocated for many years that serious testing with a view toward operations should be started early in the life of a program. Early testing against operational requirements will provide earlier indications of military usefulness. It is also much less expensive to correct flaws in system design, both hardware and software, when caught early. ... Consistent with this, the USD(A&T) has decided to disestablish the office of the Director, Test, Systems Engineering and Evaluation (D,TSE&E) within USD(A&T), with the recommendation to strengthen the role of the Director, Operational Test and Evaluation (DOT&E).

Other changes included transferring oversight of the major range and test facility base to DOT&E, and realigning what remained of DT&E oversight and the JT&E program under the USD(A&T) Director for Strategic and Tactical Systems (S&TS). On June 7, 1999, 28 years to the day after Packard appointed the first DD(T&E), Secretary of Defense William Cohen approved the transfer, and Gansler went on to disestablish DTSE&E, and moved DT&E under S&TS.

Gansler and Coyle's approach is especially noteworthy for two reasons: first for identifying the need to improve testing—the authors used the phrase “serious testing”—early in the life cycle and second for concluding that the means to improve early testing was to strengthen the OSD office that oversees OT&E. The opportunity to shift focus toward “serious” developmental testing slipped through their grasp, and it ushered in a decade of declining interest in OSD DT&E oversight in particular, and program DT&E in general.

The erosion of DT&E responsibilities continued, and on Dec. 9, 2002, the USD(AT&L) transferred the JT&E program to the DOT&E. What remained of the DT&E organization moved again, this time placed under the director, Systems and Software Engineering. Finally, on May 22, 2009, the WSARA, PL 111-23 Section 102, reversed the decline and re-established the DT&E office. Now in the post-WSARA era, we have an opportunity to change course, to shift focus to DT&E and readiness for production; we must not let it slip through our grasp.

Conclusion

To the question posed in the title of this article—“What Happened to DT&E?”—I submit that the circumstances that decades ago prompted creation of the Operational Test Agencies and DOT&E caused us to take our eyes off the target. The breadth of DT&E was understood by Cooke and DeLauer when they proposed that “OT&E apply to field tests conducted

with production articles which are fully representative of the intended operational configuration of new weapons. All tests before that time, whether laboratory or field, would be considered DT&E and part of the weapon development process.” However, instead of building and resourcing an organization to oversee the magnitude of developmental testing that statement describes, the department put its priorities on OT&E. In the post-WSARA era, each major defense acquisition program is to have a chief developmental tester and a government organization serve as lead DT&E organization. The chief developmental tester and lead DT&E organization must assume responsibility for planning and conducting robust DT&E in a mission context—or using words from the past, “serious testing with a view toward operations early in the life of a program”—to identify risks, correct deficiencies, and set the conditions for entry into production. Developmental test and evaluation is the key to improving acquisition outcomes.

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