

# TSARC—The Test Schedule and Review Committee

## Army Synchronization of Resources to Operational Testing

LT. COL. PETER G. LAKY, USA • PHILLIP H. RILEY

Learning the true status of systems and proving that systems work is ultimately the purpose of testing. To this end, the Army Test and Evaluation Command (ATEC) conducts testing starting with developmental testing and culminating with operational testing, which places systems into the hands of soldiers in a realistic operational environment and gathers information to prove to leaders that the systems are operationally effective, suitable, and survivable.

The outcome of effective testing is scientifically rigorous information provided to senior leaders to support acquisition decision making. Since the Army no longer assigns enlisted soldiers to developmental test centers nor does it maintain units specifically for operational testing of new equipment, ATEC must compete with readiness requirements and increased operational commitments to obtain the operational resources required to support testing. The test support mission is large, but recent experience shows that most systems fail to come to test on time, which significantly challenges the Army mechanisms that synchronize and program operational resources to test support.

### The Magnitude of the Mission

The impact of operational testing becomes clearer when one considers the scope of Army operational resources committed to testing. Figure 1 (p. 68) summarizes a portion of the tactical re-

sources allocated to tests conducted in fiscal 2001. It lists a tactical element of a given size and the number of test days for which that type of unit was documented as being planned for testing support. This does not reflect actual changes made to the use of, and schedules for units supporting the actual execution of the test. Such changes are frequent, often reducing the actual time the units spend in test support. Figure 1 also represents an approximation of the unit-level resources committed for all testing conducted in fiscal 2001 (for example, it does not reflect individual soldier requirements), but clearly, the Army commits a significant portion of tactical resources to test support.

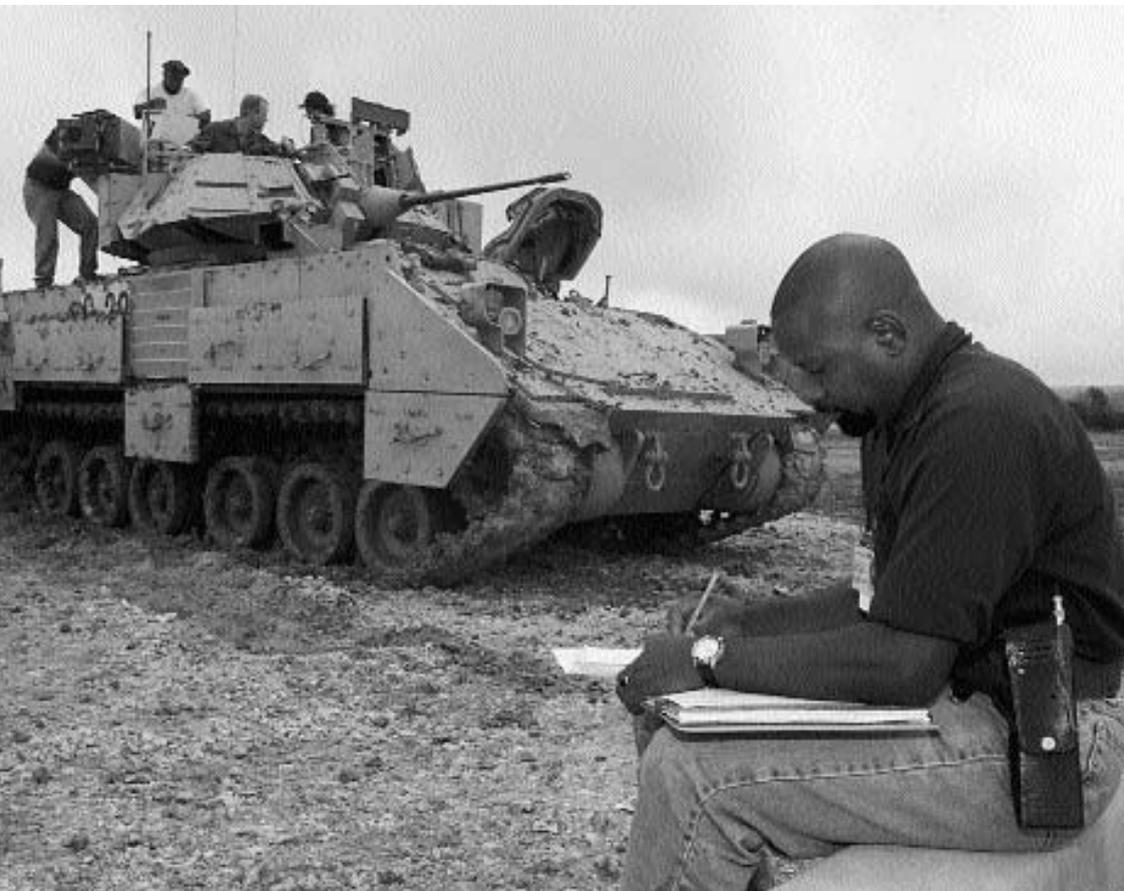
If approximately half of these tests experienced test slips and schedule delays, then the disruption to unit planning and training will have been passed on to a roughly equal proportion of the support commitment shown. Division Capstone



Soldier in tactical movement during the Light Thermal Weapons Sight Independent Operational Test at Schofield Barracks, November–December 2001. Photo by Tad Browning

Exercise data have been extracted in the second data column (Figure 1) to more accurately portray the assets committed to testing in support of acquisition milestones in fiscal 2001. Clearly, the Army

Seated in the foreground is a USAOTC data collector on the job, as technicians work with instrumentation atop an M2 Bradley during the Battlefield Combat Identification System Independent Operational Test (BCIS IOT) at Fort Hood in September 2001. Photo by Dennis McElveen



context of the considerable resources in soldiers, equipment, land, ranges, money, and other resources being requested for each of these operational tests, this is a very significant finding and cannot be ignored when reviewing the Army processes for synchronizing operational resources.

### TSARC and the Five-Year Test Program

The Headquarters Department of the Army (HQDA) TSARC process established in Army Regulation (AR) 15-38 and incorporated in AR 73-1, January 2002, can efficiently resource operational testing while minimizing disruption of unit operational readiness and mission execution. HQDA, Office of the Deputy Chief of Staff, G-3, approves and ATEC publishes the Five-Year Test Program (FYTP), which tasks operational test support missions to units and agencies. The FYTP is the primary product of the TSARC. In AR 73-1, HQDA

establishes and defines the FYTP:

The Five-Year Test Program (FYTP) is a compendium of OPTs approved by HQDA DCSOPS for the Chief of Staff, Army (see chap 9). USATEC publishes and disseminates the FYTP. It includes all OTPs for tests scheduled for the next 5 years. The OTPs contained in the FYTP must be continuously updated in TSARC working group sessions as data become available. The OTPs for Ts [tests] that require user troops must be included in the FYTP. When the FYTP is approved, the OTPs for the first 2 years (current and budget) become Army-level taskers. The remaining 3 years of the FYTP are for out-year planning purposes. The FYTP is updated twice per year in conjunction with the GO [General Officer] TSARC.

Therefore, the process (shown on p. 69) leading to approval of OTPs for inclusion in the FYTP is of great importance

would benefit from improved predictability to unit schedules and reduced Operations Tempo by improving the accuracy of operational test schedules.

### Majority of Operational Tests Slip Schedule

A recent analysis of Outline Test Plans (OTPs) for 308 operational test events encompassing TSARC (The Test Schedule and Review Committee) cycles from spring 1997 to fall 2001, and also covering executed and planned future tests from October 1997 to September 2007, amplifies the difficult task presented to the TSARC to resource Army operational testing.

Of the 308 events planned since spring 1997:

- OTPs for 73 of the events were withdrawn completely from consideration before test execution.

- Of the remaining 235 events, 111 are pending tests not yet completed, but 76 of these 111 tests or 68 percent have already had test date changes.

- A total of 124 events were executed.

Of the 124 completed test events:

- OTPs for 68 of the 124 or 55 percent of the events changed test dates.
- Only 56 tests were executed as originally scheduled.
- Nine of the events were conducted with slips of less than one month.
- A total of 59 of the events were executed after a slip of a month or more.

Overall, including future and completed tests, 61 percent of the tests slipped (Figure 2, p. 70). When considered in the

to the acquisition community, ATEC, and the operational force providers.

### Systemic Challenges to Operational Test Resourcing

Three major systemic challenges are inherent to the TSARC process.

#### Systemic Challenge No. 1

The first major systemic challenge to the TSARC is disparate planning time frames for the resources at issue. The current TSARC process does not anticipate major operational test support requirements in detail much beyond 18 months from resource requirement date. Army agencies estimate future funding needs in a Program Objective Memorandum (POM) process that examines closely the current year of execution, the budget year, and four years beyond (the "POM" years).

The U.S. Army Forces Command (FORSCOM), at each semiannual Forces Command World-Wide Training Conference, reviews a Five-Year Training Calendar that resolves the activities of FORSCOM elements to battalion level for five years. Much of the calendar for these units is understandably committed to operational missions, including rotations into operational missions, exercises that certify the units as prepared for these missions, Combat Training Center (CTC) rotations, and other substantial training missions such as warfighter exercises.

The calendar also includes Joint exercises and other substantial events, including major operational test support requirements. The bottom line is that Army Agencies and Major Commands (MACOMs) have a pretty good estimate of funding and operational activities and requirements at least five years into the future.

The TSARC plans an FYTP, but only the current and budget year OTPs are considered for tasking. OTPs for tests in the "POM" years are for "planning purposes only," and experience shows that these rarely rise to the level of interest to be included in MACOM FYTPs. This contributes to a lack of detail available in OTPs for test events and associated op-

erational resource requirements three years or more into the future.

The outcome of this mismatch in planning horizons for funding, troop resources, and operational tests is that MACOM operational and training plans, such as FORSCOM's plan, are two to three years matured by the time most operational tests are closely reviewed by the TSARC membership for supportability.

#### Systemic Challenge No. 2

The second systemic challenge to the TSARC mission accomplishment is the review process by various agencies of test plans and supported system acquisition programs. The TSARC process assumes in most cases that the test events planned in the Test and Evaluation Mas-

ter Plan (TEMP) are appropriate. All tests receive strategic guidance for test and evaluation through reviews at either ATEC headquarters or the tester's and evaluator's headquarters.

Although the Director, Operational Test and Evaluation (DOT&E) no longer approves ATEC's system Test and Evaluation "campaign plan," the System Evaluation Plan (SEP), TEMPs, and Event Design Plans, or EDPs (operational test event plans), are submitted for approval to DOT&E for all major Army systems and other non-major systems designated for DOT&E oversight. This frequently leads to recommended test changes from the HQDA or OSD levels relatively late in test event planning, and well inside the 180-day tasking window directed by HQDA for tasking MACOMs.

FIGURE 1. Portion of FORSCOM Unit Days Committed by TSARC to Operational Test Support Missions in Fiscal 2001

Type of Element	Unit Days Incl DCX*	Unit Days not Incl DCX
<b>Providing Operational Test Support</b>		
Air Defense Artillery Battalion	144	0
AH-64 Troop/Company	213	0
Artillery Unit, Counter Battery Radar	50	50
Artillery Unit, Counter Mortar Radar	50	50
Maneuver Brigade	71	0
Maneuver Bde Tactical Operations Center	998	122
Chemical/Biological Platoon	498	498
Battalion/Battalion Task Force/ Mechanized Heavy Battalion Task Force	489	134
Cavalry Squadron Battle Staff	92	19
Cavalry Troop Planning Cell (Air)	38	38
Combat Aviation Battalion	71	0
Corps Main Command Post	73	0
Corps Signal Brigade	134	61
Division Aviation Brigade	71	0
Division Command Post/Division Tactical Operations Center	288	0
Division Artillery Tactical Operations Center	73	0
Explosive Ordnance Detachment Team	38	38
Field Artillery Battalion	142	0
Light Infantry Company	59	59
Medical/Medical-Evacuation Support Team	42	42
Military Intelligence Unit, Ground Surveillance Radar	162	162
Opposing Forces Track Vehicle Crew	842	842
Tactical Unmanned Aerial Vehicle Section/Platoon	31	31

\*DCX = Division Capstone Exercise

# PROCESS LEADING TO APPROVAL OF OUTLINE TEST PLANS FOR INCLUSION IN THE ARMY FIVE-YEAR TEST PROGRAM

To produce a viable Five-Year Test Program (FYTP), Headquarters Department of the Army (HQDA) specified the following tasks for the Test Schedule and Review Committee (TSARC):

- Review and recommend coordinated OTPs for inclusion in the FYTP. Ensure satisfaction of requirements to ensure timely notification of personnel or equipment support requirements.
- Review and recommend Test and Evaluation (T&E) priorities.
- Review and coordinate resources for OT&E, and for troop/resource support of Developmental Testing (DT) beyond ATEC's or the material developer's resources.
- Resolve conflicts between test requirements and other missions.
- Review testing schedules to minimize the test support impacts on providing units.
- Review funding for Operational Test and Evaluation (OT&E).
- Review and recommend approval of the FYTP and associated test priorities.

The tasks specified above are not trivial. The TSARC often faces tough issues concerning resources critical to both priority operational test and operational mission requirements. The TSARC membership provides the necessary input to the process to allow HQDA to review the competing requirements and recommendations from the acquisition community, the test community, and the operational resource providers to make the best decisions. The Commanding General, Army Test and Evaluation Command (CG, ATEC) chairs the TSARC and provides an executive secretary. The TSARC membership\* is General Officer (GO) or equivalent representatives from the following organizations:

- Assistant Secretary of the Army (Acquisition, Logistics, and Technology)
- Assistant Secretary of the Army (Financial Management and Comptroller)
- HQDA, Office of the Deputy Chief of Staff, Operations and Plans
- HQDA, Officer of the Deputy Chief of Staff for Programs
- HQDA, Office of the Deputy of Information Systems for Command, Control, Communications, and Computers

- HQDA, Office of the Deputy Chief of Staff for Personnel
- HQDA, Office of the Deputy Chief of Staff for Logistics
- HQDA, Office of the Deputy Chief of Staff for Intelligence
- U.S. Army Forces Command
- U.S. Army Pacific
- U.S. Army Europe
- U.S. Army Special Operations Command
- U.S. Army Training and Doctrine Command
- U.S. Army National Guard
- Office of the Chief of Army Reserve

The TSARC is supported by a formal working group that meets four times a year. This working group is the critical body of action officers that sustains continuous staffing of resource requests and which resolves the vast majority of test resource issues. CG, ATEC, provides the TSARC working group chairperson, and each Army element represented on the TSARC appoints a working representative (colonel, lieutenant colonel, or equivalent DA civilian) and alternate. The TSARC working group meets in August and February to:

- review new OTPs for resource support; and
- review OTPs that have been revised since the previous FYTP.

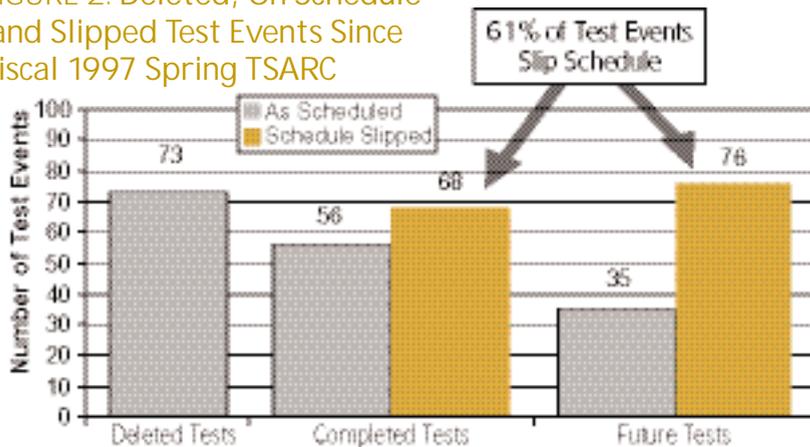
In October and April the TSARC working group conducts a "mid-cycle" meeting to:

- review the OTPs to ensure their adequacy;
- verify the test need and satisfaction of resource notification requirements;
- identify any issues requiring GO TSARC resolution; and
- review proposed test priorities.

In December and June the "GO" TSARC meets for resolution of remaining issues and to recommend those OTPs and associated test priorities for inclusion in the next HQDA FYTP.

\* The chairperson may request other Army agencies and Army commands to attend when tests fall within their functional area of responsibility or involve their resources.

FIGURE 2. Deleted, On Schedule and Slipped Test Events Since Fiscal 1997 Spring TSARC



### Systemic Challenge No. 3

The third systemic challenge to the TSARC is the very nature of acquisition programs that makes it difficult for planners to predict discrete test events requiring operational test (OT) resources in the “out” years to match the other resource estimation processes. The TSARC process must assume the program manager’s plan and schedule are realistic.

The Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA/ALT) is the TSARC member charged with providing a “reality check” on program manager readiness to proceed to a specific OT event. The next level of resolution available to the TSARC members is the input from the individual system PMs through the system test and evaluation (T&E) Integrated Product Teams (IPTs), which prepare the system TEMP. The TSARC must assume that the test schedule established in the TEMP is realistic, although TSARC members have noted cases where a system has been unable to meet projected test dates for several years.

As PMs assess their system readiness for operational test, they can increase the chances of preserving test resources by providing early notice that a system will not be ready. Documented experience is that slip notice is usually within a few months and sometimes even a few days prior to the scheduled test date. Changes on such a short notice significantly impact unit schedules. A slipped test for a system that is being delayed but not cancelled usually generates a new request

for the operational test resources at a later date.

Some of the most challenging situations for the TSARC are when test delays are announced at or beyond Operational Test Readiness Review (OTRR) 2 (test date minus 60 days) and the test slip is of a “short” duration (less than 180 days). This situation may require extensive and rapid effort to reschedule and resynchronize extensive test resources, including soldiers, equipment, land, ranges, simulation facilities, airspace, instrumentation, and contracted test support.

The bottom line is that any slip may force the resubmission of the OTP out of the normal TSARC cycle, due to the Chief of Staff of the Army 180-day MACOM tasking window policy for the potential loss of test resources.

### A Road Ahead

A road ahead is to improve Army forecasting of operational test resource needs, to reduce the TSARC resource prioritization conflicts, and to reduce the impact on units of operational test slips. There are several potential solutions.

- First, the TSARC process could use analysis of historical T&E resource requirements to “POM” T&E operational resources on a time scale to match other Army planning windows. If 10 years of data indicate that FORSCOM has been asked to provide an average of 300 chemical platoon days per fiscal year of support to test new chemical/biological systems, then

the TSARC should communicate a “warning order” to allow the appropriate MACOMs to project that need into the “out years”—realistically two to four years from resource date.

- Second, program managers should provide the TSARC and the operational testers the earliest possible warning that a scheduled operational test event may slip due to system readiness. This will serve to decrease the impact of test slips and cancellations on units, thereby increasing unit predictability and improving the chances that force providers will be able to accommodate a test slip.

Program managers must realize that in the current operational OPTEMPO environment, test slips will usually trigger at least a 6- to 12-month delay to request soldiers for the new test resource date. This reality should also be considered when planning program baselines and the time allowed for transition from developmental testing (test-fix-test with significant flexibility in the event schedule) to operational testing, requiring less flexible operational resources.

- Finally, the TSARC may consider assigning major force providers such as FORSCOM, U.S. Army Europe, or U.S. Army Pacific to test “windows” two to four years out, with a certain level of anticipated support—for example, a brigade with headquarters and associated slice elements—to accommodate testing of systems and “system of systems.” The TSARC would then adjust the actual test design and requirements working with the T&E IPT(s) for the systems requiring support as the detailed requirements resolve.

These measures will improve the TSARC’s ability to resource operational tests that continue to prove with scientific rigor that our Army systems work.

**Editor’s Note:** The authors welcome questions or comments on this article. Contact Laky at [LakyPeter@otc.army.mil](mailto:LakyPeter@otc.army.mil). Contact Riley at [RileyPhillip@otc.army.mil](mailto:RileyPhillip@otc.army.mil).