

**Advance Questions for Charles E. McQueary**  
**Nominee for Director of Operational Test and Evaluation, Department of Defense**

**Defense Reforms**

**The Goldwater-Nichols Department of Defense Reorganization Act of 1986 and the Special Operations reforms have strengthened the warfighting readiness of our Armed Forces. They have enhanced civilian control and clearly delineated the operational chain of command and the responsibilities and authorities of the combatant commanders, and the role of the Chairman of the Joint Chiefs of Staff. They have also clarified the responsibility of the Military Departments to recruit, organize, train, equip, and maintain forces for assignment to the combatant commanders.**

**Do you see the need for modifications of any Goldwater-Nichols Act provisions?**

*I see no need for modifications to any Goldwater-Nichols Act provision as I understand them.*

**If so, what areas do you believe might be appropriate to address in these modifications?**

N/A

**Duties**

**What is your understanding of the duties and functions of the Director of Operational Test and Evaluation?**

*I understand that, if confirmed, my duties as Director, Operational Test and Evaluation will be to serve as the principal advisor to the Secretary of Defense and Under Secretary of Defense for Acquisition, Technology, and Logistics as to the conduct of test and evaluation within the Department and in formulating and implementing operational test and evaluation policy. I would also be required to provide to Congress an Annual Report summarizing operational test and evaluation activities, to include comments and recommendations on operational test and evaluation resources and facilities, levels of funding made available for operational test and evaluation activities. I would provide Beyond Low Rate Initial Production reports and respond to specific requests from the Congress for information relating to operational test and evaluation in the Department of Defense. If confirmed, my duties will include responsibility for prescribing policies and procedures for the conduct of operational test and evaluation, providing guidance to and consultation with the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology and Logistics, and for monitoring and reviewing all operational and live fire test and evaluation within the Department. I would also be responsible for coordinating joint operational testing, review of and recommendations to the Secretary of Defense on all budgetary and financial matters relating to operational and live fire test and evaluation, including test facilities.*

**What background and experience do you possess that you believe qualifies you to perform these duties?**

*Throughout my private industry career which began in 1966 and spanned thirty-six years, I have led various technical activities which involved research, development, test and manufacture of systems to support the Department of Defense and other government agencies. Specifically, I spent two years on Kwajalein (1971-1973) as head of Missile Operations on the Safeguard ABM Program. Subsequently, I led a group which installed, operated and provided training for an undersea surveillance system at an overseas location. This system successfully passed a COMOPTEVFOR evaluation. I have led groups who designed, developed and manufactured towed sonars for submarines, fiber optic undersea surveillance systems, fiber optic communication systems, and signal processing hardware and software.*

*In the final ten years of my career, I had full profit and loss responsibility for those systems designed and developed by my organization.*

**Do you believe that there are actions you need to take to enhance your ability to perform the duties of the Director of Operational Test and Evaluation?**

*If confirmed, there are several steps I intend to take, to include becoming familiar with the various programs that DOT&E oversees, getting involved with the Military Departments' Operational Test Agencies, getting out to observe operational testing, and communicating routinely with Congress. I see the upcoming development of the Director's Annual Report as an opportunity to take many of these steps.*

**Assuming you are confirmed, what duties and functions do you expect that the Secretary of Defense will assign to you?**

*If confirmed, I would expect that Secretary Rumsfeld would look to the Director to carry out duties as assigned by statute and regulation; in particular, advise and propose policies on all test and evaluation activities, and funding/management of operational test facilities, test ranges, and other related issues.*

**Major Challenges**

**In your view, what are the major challenges that will confront the Director of Operational Test and Evaluation?**

*While I am still learning about the challenges that I will face if confirmed, I have formed some initial opinions. The Long War on Terrorism (LWOT) is making resources for adequate OT&E difficult to come by. Soldiers, sailors, airmen, and marines are in general either deployed into theater or training to return to theater. The Army and Marines are particularly affected.*

*The workload on the DoD T&E community has been steadily increasing without an increase in manning. The Operational Test Agencies are struggling in general, and DOT&E is also feeling the pinch. Increased demands stem from: complexity of systems, systems of systems testing, increased emphasis on information assurance and interoperability, involvement in rapid acquisition to support the LWOT, ACTD evaluations, Joint and multi-service testing, new types of weapons systems (e.g., directed energy weapons), etc.*

*Operational realism incorporated during DT and the open sharing of DT data during development is essential to understanding system performance and progress and readiness for OT&E.*

**If confirmed, what plans do you have for addressing these challenges?**

*My initial thoughts that I would follow-up on if confirmed are:*

*To forge a stronger bond between the test and training communities so that exercises or events can be phased to support both testing and training objectives.*

*To actively engage in the DoD Planning, Programming, and Budget Execution process to ensure organizations with designated responsibilities have the resources, including the manning with which to carry out those responsibilities.*

*To work with the Defense Acquisition Executive and the Service Secretaries to promote transparency and sharing of performance data early during development so OT&E is not perceived as threatening to a program.*

**What do you consider to be the most serious problems in the performance of the functions of the Director of Operational Test and Evaluation?**

*My initial thoughts are:*

*DOT&E and the OTAs are dependent upon the process for generating and validating requirements that are affordable and that will lead to “. . . quality products that satisfy user needs with measurable improvements in mission capability and operational support. . .” Getting the requirements right and reasonable with a well thought out rationale is essential for successful development and to demonstrate performance through adequate OT&E.*

*Developing acquisition strategies that include adequate OT&E to support procurement decisions, and, in today’s environment, before decisions to deploy systems into combat is essential to ensure warfighters receive weapons that are operationally effective, suitable, survivable, and lethal.*

**If confirmed, what management actions and time lines would you establish to address these problems?**

*If confirmed, I plan to meet with the JROC Chairman the Military Department Secretaries, and the DAE to address these issues within 30 days of taking office. I believe it is imperative that DOT&E participate in the top down leadership structure of the Department. Providing advice to*

*the requirements generation process as well as the development of acquisition strategies is part of that leadership.*

**Relationships**

**If confirmed, how will you work with the following:**

- A.                   **The Secretary of Defense**
- B.                   **The Deputy Secretary of Defense**
- C.                   **The Under Secretary of Defense for Acquisition, Technology  
and Logistics**
- D.                   **The Under Secretary of Defense for Personnel and Readiness**
- E.                   **The Director of Defense Research and Engineering**
- F.                   **The Assistant Secretary of Defense for Networks and  
Information Integration**
- G.                   **The Inspector General of the Department of Defense**
- H.                   **The General Counsel of the Department of Defense**
- I.                   **The Service and Agency officials responsible for major  
acquisition programs**
- J.                   **The Directors of the Services' Test and Evaluation  
organizations**
- K.                   **The Joint Requirements Oversight Council**
- L.                   **The Director of the Defense Test Resource Management  
Center**

*The relationship of the Director with many of these offices is described or defined in regulation or policy documents. If confirmed, I intend to develop a rapport with these officials to ensure the interests of the public and the Department are served and the Congress remains informed.*

**Independence and Objectivity**

**Congress established the position of Defense Director of Operational Test and Evaluation as an independent and objective evaluator of the performance of major systems. Report language accompanying the National Defense Authorization Act for Fiscal Year 1984 (P. L. 98-94), which was codified as section 139 of title 10, U. S. Code, states that “the Director [is] to be independent of other DOD officials below the Secretary of Defense” and “not circumscribed in any way by other officials in carrying out his duties.” In describing the Director’s duties, the report also noted an expectation that the Director "safeguard the integrity of operational**

testing and evaluation in general and with respect to specific major defense acquisition programs.”

**Can you assure the Committee that, if confirmed, you will be independent and objective in your evaluations, and that you will provide your candid assessment of Major Defense Acquisition Programs to the Congress?**

*Yes. I strongly believe independence to be crucial to objective testing and reporting. If confirmed, I intend to be independent and to provide candid assessments of all oversight programs to the Congress.*

**In your view, does the Director of Operational Test and Evaluation have the necessary authorities under sections 139 and 2399 of Title 10, United States Code, and applicable Departmental regulations to carry out the duties prescribed?**

*Yes, I believe the statutory authority presently ascribed to the position of DOT&E is sufficient to allow me to carry out the duties as Director, if confirmed.*

**Section 2399 of Title 10, U. S. Code, establishes certain requirements regarding the impartiality of contractor testing personnel and contracted for advisory and assistance services utilized with regard to the test and evaluation of a system.**

**What is your view of these requirements?**

*I believe the key point is that we must test systems in the realistic environment in which they will be employed with the same maintenance and logistics structure that will support that system once fielded. If contractors are specifically intended to be part of that support structure, their participation in test is appropriate. Otherwise, their participation is not appropriate. In my view, Section 2399 allows the flexibility to properly structure the operational testing, and properly provides for impartial contracted advisory and assistance services.*

**How will you maintain independence from the often conflicting goals of the acquisition community and the mandates for necessary operational testing?**

*From DoDD 5000.1, “The purpose of the acquisition system is to acquire quality products that satisfy user needs with measurable improvements to mission capability and operational support, in a timely manner, and at a reasonable price.” I support this purpose. Improvement in mission capability cannot be measured without testing in relevant operational context. Independence is essential to ensure objective T&E reporting. The DOT&E authorities and responsibilities for OT&E and LFT&E, set out in title 10 USC, establish that independence. I have reviewed DOT&E reports and found them to be fair and balanced. In the case of the Missile Defense Agency, in which*

*DOT&E provides advice on DT, I also found the reporting to be unbiased and credible. If confirmed, I intend to maintain the credibility DOT&E has established over the years.*

### **Test and Evaluation Funding**

**In the fiscal year 2007 budget request, the Air Force reduced Test and Evaluation (T&E) activities by nearly \$400 million over the future years defense program, relative to projected budgets for this activity presented to Congress with the fiscal year 2006 budget request. Operating and investment budgets for Major Range and Test Facility Bases have been historically underfunded.**

**Do you believe that the Department's T & E function is adequately funded?**

*I am aware of a DSB finding that the T&E process is not adequately funded and notes that the age of the facilities and capabilities averages over 35 years, with some over 50 years old. Service T&E resources investment proportionately reflects the overall Service budgets. If confirmed, I will look closely at this issue as I believe that as the complexity of systems under test continues to grow, so must the investment in new T&E capability.*

**What are your views about the importance of accurately projecting future test facility instrumentation requirements and budgeting for these needs?**

*In my view accurately projecting future T&E resources needs within a program's Test & Evaluation Master Plan at program inception is absolutely critical. The discipline required to accurately define these resources goes a long way to ensuring a program is deemed executable at inception. Such projection also supports and justifies Service planning and budgeting for those T&E assets that must be modified or developed to meet a program's needs years into the future. Reviewing and assessing Program T&E resources plans is a critical part of assessing the adequacy of testing.*

**How do you plan to evaluate and improve the operational testing workforce in DOD especially in light of the growing numbers of new technologies embedded in weapon systems and the desire to speed the acquisition and deployment of systems to the battlefield?**

*In response to section 234 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003, the Department reported to Congress on the "Capabilities of the Test and Evaluation Workforce of the Department of Defense." The report provided an overview of on-going efforts to improve personnel management and concluded that a strategic plan would be developed to address future manpower.*

*In May 2006, the Department published the initial version of the AT&L Human Capital Strategic Plan. This plan addresses recruiting, governing, measuring performance, and*

*improving the knowledge of all acquisition workforce members, including test and evaluation personnel.*

*If confirmed, I will examine this effort and follow-up on the Department's plans.*

### **Operational and Developmental Testing**

**The General Accountability Office (GAO) recently reported that the Department's acquisition system incentivizes delayed operational testing “because that will keep ‘bad news’ at bay.” According to GAO, program managers have an incentive to suppress bad news and continually produce optimistic estimates, because doing otherwise could result in a loss of support and funding and further damage their programs.**

#### **Do you agree with the GAO finding?**

*I am not thoroughly familiar with that report but generally understand the argument. Acquisition programs compete each year for continued funding and support. Within the services, program managers and resource sponsors vie with others to gain or retain programmed funds. The process repeats itself many times as the Defense budget is submitted, reviewed, and approved.*

*At any point in this process, performance deficiencies identified in testing are perceived as weakness. The established planning, programming and budget system tends to reward perceived “good news” and punish “bad news” by reducing funding, sometimes to the point of forcing programs to restructure.*

*I believe the incentives in the acquisition system could be changed to value early realistic testing. Such testing strengthens weapon systems by revealing design flaws and allowing time to correct them during system development. In my view, incentives could be provided to foster the discovery of such design flaws early in development. When system developers realistically test their design, subjecting it to the stresses expected in combat conditions, they have the opportunity to improve that design. The most successful weapon system development programs are those that discover and acknowledge deficiencies early and commit resources to correct them.*

#### **What are your views on the appropriate point in concept development of a new acquisition program for incorporation of T&E planning and integration of testing requirements?**

*During concept refinement (Pre-Milestone A = Concept Refinement Phase) the major effort should be to develop a strategy to evaluate system performance and mission accomplishment.*

*During technology development (Pre-Milestone B = Technology Development with Program Initiation at Milestone B) the test-related efforts might include analysis, modeling, simulation, component, subsystem, and breadboard testing. During this phase, detailed T&E activities should be planned, resourced, and documented in a Test & Evaluation Master Plan (TEMP). The ultimate objective of these activities should be an*

*Initial Operational Test and Evaluation in a realistic combat environment and full-up system-level Live Fire testing prior to full-rate production and deployment.*

**What steps, if any, do you believe the Department should take to ensure that testing takes place early enough in the program cycle to identify and fix problems before it becomes prohibitively time-consuming and expensive to do so?**

*I would strongly support the practice of conducting rigorous operationally oriented developmental test & robust operational assessment prior to entering low-rate initial production. If confirmed, I will continue to emphasize the early involvement of operational testers and work to ensure that no weapon system is delivered to the warfighter until it has been subjected to the stresses of modern combat and objectively evaluated*

**Acquisition programs continue to complete developmental testing satisfactorily, but perform poorly on operational testing suggesting that developmental testing lacks sufficient rigor or realism to adequately characterize the technical performance of a system under test.**

**What are your views on the current relationship between developmental and operational testing?**

*Developmental and operational testing complement each other. The current DoD relationship is appropriate. Developmental testing should be the program manager's tool to understand system performance, discover design flaws, and determine readiness to enter initial operational test and evaluation. There is evidence that developmental testing must be more rigorous and realistic, and that deficiencies discovered in developmental testing should be corrected prior to operational testing.*

*Operational testing should determine that a unit equipped with the system can accomplish its mission and determine if the system is operationally effective, suitable, survivable, and lethal for combat use.*

**When is it appropriate for developmental and operational testing to be combined?**

*The focus of developmental evaluation is engineering and system technical performance. The focus of operational evaluation should remain on the ability of a unit equipped with the system to successfully accomplish combat missions. Often a single test event might be designed to provide needed information to system engineers and to operational evaluators. It is appropriate to combine developmental and operational testing when the objectives of both evaluations can be met. This may provide shared data at a reduced cost.*

*I do not believe it is appropriate to combine developmental and operational testing solely to recover program schedule. I strongly believe in the value of event-based acquisition program management and test execution.*

*The final step in development should be the field test of end-to-end missions by an operational unit equipped with the system under realistic combat conditions.*

### **Defense Acquisition Performance Assessment**

**The Defense Acquisition Performance Assessment (DAPA) report recommended that laws governing operational testing be modified to add a new “operationally acceptable” test evaluation category and provide fiscal and time constraints for operational testing.**

#### **What is your view of these recommendations?**

*My initial review of the Defense Acquisition Performance Assessment highlights some very good points, but I do not believe that the provisions governing operational testing in title 10 need to be changed to incorporate a new category of “operationally acceptable.” To me, this new reporting category sounds like a watered down standard that would be difficult to define and enforce. “Operationally acceptable” implies something less than operationally effective and suitable for combat.*

**The DAPA report notes that “[b]etween Fiscal Years 2002 and 2005, the Test and Evaluation workforce grew by over 40 percent while the program management workforce declined by 5 percent, production engineering declined by 12 percent, and financial managers declined by 20 percent.”**

#### **Do you agree with these DAPA findings on the T&E workforce?**

*No, I understand that the DAPA’s findings on the T&E workforce were based upon flawed or incorrect personnel accounting. Those findings seem to confuse the T&E acquisition career field within AT&L, which increased by 40%, and the T&E workforce (mostly outside AT&L) that actually decreased by 10%. If confirmed, I intend to look into this issue more closely.*

### **Adaptation of T&E to Evolving Acquisition Strategies**

**A natural tension exists between major program objectives to reduce cost and schedule and the T&E objective to demonstrate performance to specifications and requirements. This Committee has received testimony by senior Defense Department leadership indicating the need to streamline the acquisition process to reduce the fielding times and cost for new weapons systems and capabilities.**

**If confirmed, how would you propose to achieve an appropriate balance between the desire to reduce acquisition cycle times and the need to perform adequate testing?**

*The time to conduct operational testing is only a small percentage of the overall acquisition cycle time. Delays in entering operational testing usually are much longer than the time frame of the operational test itself. Because the operational tests supporting full production occur near the end of the acquisition cycle, there is greater pressure to rush such tests. I feel that the early involvement of operational testers can contribute to reducing cycle time by identifying issues early in the development cycle when the problems can be solved with less impact on the program.*

**In your view, would a review of T&E processes be useful in light of evolving acquisition approaches?**

*I understand that DOT&E and USD(AT&L) recently commissioned and received a study by the National Research Council, titled "Testing of Defense Systems in an Evolutionary Environment." I am in the process of reviewing the principal findings of that study.*

**What requirements and criteria would you propose to ensure an effective test program is established for an evolutionary acquisition program?**

*Evolutionary acquisition requires a time-phased requirements process with a distinct set of requirements for each development spiral. The important point is that each spiral should remain "event-based," as opposed to "schedule driven." Each spiral can then be operationally tested and evaluated against appropriate requirements.*

**Recent equipment problems have brought to light potential testing deficiencies resulting from programs fielded that fall below the thresholds established for oversight by the Director of Operational Test and Evaluation. In many cases, such as with body armor, helmets, vehicle armor kits, and ammunition, the materiel involved is crucial to the everyday mission effectiveness and survivability of our military forces.**

**If confirmed, how would you ensure acquisition and fielding of such critical equipment is effective, safe, and suitable for our military to take into combat?**

*It is a challenge for DOT&E to become involved in these programs for several reasons. The smaller programs do not meet the statutory thresholds that require formal program oversight by DOT&E. The Service Acquisition Executive manages and executes these acquisition programs and, in most cases, DOT&E does not even know the programs exist. DOT&E becomes aware of issues with these systems, such as with ground vehicle armor, body armor, helmets, and ammunition, when problems surface internally in the*

*Department or through the media. Since there is no statutory requirement for DOT&E oversight of these programs, the Services are reluctant for DOT&E to become involved. In all these cases, DOT&E leadership has successfully engaged with Services to conduct a comprehensive review of the issues, and as required, conduct adequate analyses and/or testing to address the problems. This presents a challenge to DOT&E because the staff size is limited to that required for oversight of the Major Defense Acquisition Programs (MDAP) only. Time the DOT&E staff spends to resolve these critical issues with the non-MDAP programs, detracts from statutory oversight of the major programs.*

*If confirmed, I will work with the Services to continue to address problems with the smaller programs, as they arise. I will try to influence Department to adopt policy that gives DOT&E formal insight to any acquisition program that impacts a Soldier, Sailor, Airmen, or Marine's personal effectiveness, safety, and survivability.*

**What are your views on the testing of systems under spiral development?**

*Systems under spiral development should include as much operational realism as possible in a robust DT program. Such systems should also use operational assessments to support decisions to continue low rate production. Appropriate LFT&E and end-to-end mission context OT&E should be completed before a spiral, block, increment, etc. is deployed and placed in harm's way.*

**Do you believe that follow-on operational testing should be required for each program spiral?**

*Each program spiral that is to be deployed and placed in harm's way should be required to complete appropriate LFT&E and OT&E. In many cases that may be through a follow-on test, as you suggest.*

**Combination of Testing with Training Exercises**

**Some hold the view that the most representative operational testing would be to allow operational forces to conduct training exercises with the system under evaluation.**

**In your view, should testing be combined with scheduled training exercises for efficiency and effectiveness?**

*I understand that the Department has combined testing and training events since the 1960s. I favor combined test and training events in a Joint environment when they provide increased test realism, more realistic friendly and threat forces, and a broader operational context, but still allow for the necessary collection of data. Large scale exercises often present an economical way to create such conditions.*

**What are the barriers, if any, to doing so?**

*On the other hand, I recognize there may be differing objectives between testing and training. Testing requires the ability to control events and collect data, which may interfere with commanders' training objectives. These potential barriers require close cooperation between the tester and trainer in order to be successful. This is challenging in today's environment as commanders prepare for ongoing contingency operations.*

### **Suitability Performance**

**A study of acquisition programs from 1985-1990 and 1996-2000 showed that the percentage of systems meeting reliability requirements decreased from 41 percent to 20 percent. This trend may be evidence that the Department, in attempting to field systems more rapidly, is focusing on effectiveness and treating suitability - to include reliability, availability, maintainability, and logistics - as less important. Late last year, the Department developed a guide to address this concern and to promulgate metrics for reliability, availability, and maintainability of systems.**

**What are your views about the appropriate balance between the need for rapid fielding of effective systems and reliability, availability and maintainability of such systems?**

*My firm belief is that we cannot compromise the mission capability of the force and poor reliability, availability, and maintainability (RAM) does just that. As a practical matter, there does not necessarily have to be a trade-off between mission effectiveness and suitability (RAM) if both are designed for early in program development. If confirmed, I will ensure that DOT&E continues to look for that dual emphasis early in program development.*

### **"System of Systems" Testing**

**Many programs are now developing what is called a "system of systems" approach.**

**What inherent challenges exist for operational testing with regard to DOD programs that are a part of an overall "system of systems"?**

*I believe there are significant challenges in conducting adequate operational test & evaluation of a "system-of-systems" or programs that are a part of an overall "system-of-systems." Some of the inherent challenges are: size of the unit, size of the threat, size of the test and test area; complexity of the test and test instrumentation; differing Service and Joint solutions; interdependence; interoperability between systems and Services; integration of complex systems; schedule synchronization; cost of test; and availability of operational units and opposing forces for test.*

**How should a “system of systems” be tested to assess the effectiveness of the whole?**

*I believe the “system-of-systems” should be tested end-to-end as a complete unit, ideally in conjunction with first unit equipping and training activities.*

**Complex system integration and related software development have emerged as the primary risks to major defense program development.**

**If confirmed, how would you propose to assess the effectiveness of and, if necessary, improve the force’s methodology for verification and validation of these extremely large, intensive computer programs which are so critical to the performance of today’s weapon systems?**

*The testing and assessment of complex software programs should be based on the same principles that we use for any weapon system – realistic, rigorous, and robust testing focused on the missions and tasks the software supports; used by the soldiers, sailors, airmen, marines, and DoD civilians as they will operate with it in the field or in their daily work environment. To do so, the Department must have the right tools available to create the complex, joint environment in which they often operate. If confirmed, I would urge Congress and the Department to support the development of a test environment as outlined in the Testing in the Joint Environment Roadmap developed under Tom Christie’s watch.*

*In addition, if confirmed I would work closely with the Services and Joint Forces Command to develop the means to combine testing with training events. Major training events bring large numbers of forces and organizations together in a way that can rarely be duplicated for a single operational test event - creating that complex, stressful environment needed by these programs.*

*Our growing reliance on complex software and information technologies for net-centric warfare creates a natural vulnerability to cyber-threats. If confirmed, I will transition the success DOT&E has had in assessing the information assurance posture for the Combatant Commanders to operational testing of systems during acquisition.*

*Finally, if confirmed, I would stress the need for intense systems engineering and developmental testing prior to moving into operational testing. The Department has many hard lessons learned (and relearned) – if the time isn’t taken up-front to engineer the software and it isn’t exercised in an operationally realistic architecture in a lab environment, then there is a high probability it will not work in the field. Testing of these complex systems must be event driven – and not schedule driven.*

### **T & E Facilities and Instrumentation**

**Concern over long-term support for and viability of the Department's test ranges and facilities led to creation of the Defense Test Resource Management Center in 2002 and a requirement for direct research, development, and T &E support of facilities.**

**In your view, how are these changes working to address funding and sustainability concerns at the department's test ranges and bases?**

*I understand the Department revised its financial regulations in Fiscal Year 2005 as they pertain to the test infrastructure. This resulted in a realignment of funding to support the Major Range and Test Facility Base in an amount of approximately \$600 Million per year. The effects of such a significant redistribution in Department funding will take time to assess. If confirmed, I will continue to work with the DTRMC to ensure that the Department's investment strategy for test and evaluation is adequate to meet future needs.*

**Is the Department developing adequate test targets, particularly aerial targets, and ranges to represent emerging threats and environments?**

*A 2005 Defense Science Board Study said that threat realistic aerial targets, in sufficient quantities, are critical to assessing the effectiveness of weapons and sensor systems. The Defense Test Resources Management Center reinforced this position by establishing Full-scale Aerial targets and Supersonic Sea-skimming Missile targets as two of their four Critical Interest Items within the Strategic Plan for Defense Test Resources. These targets, and their control systems, have historically had difficulty competing in Service budget deliberations. If confirmed, I will closely monitor the approach that the Services take to these critical interest items during the certification of Service test and evaluation budgets.*

**How can training and testing ranges be used more jointly and efficiently?**

*Consistent with the Secretary identifying the implementation of joint test, training, and experimentation as one of his key priorities for Fiscal Year 2008, I know that DOT&E has an established liaison with Joint Forces Command to more efficiently integrate joint testing and training. I recognize this is an important issue and, if confirmed, will pursue steps to efficiently integrate testing and training.*

**Advanced Concept Technology Demonstrations**

**Advanced Concept Technology Demonstrations (ACTD), to include, the new Joint Concept Technology Demonstrations, are one mechanism by which the Department rapidly transitions promising technology into the hands of the operational forces.**

**How do you view the role of operational test and evaluation in the execution of ACTDs, especially for those demonstrations where the system is to be fielded operationally upon completion of the ACTD?**

*I believe that it is a leadership responsibility to ensure that all systems deployed for combat work. If confirmed, I will work with the Services and their OTAs to ensure that ACTD systems being considered for deployment receive some type of operational assessment prior to their employment so that Commanders completely understand those systems' capabilities and limitations.*

### **Live Fire Testing**

**The live fire testing program is a statutory requirement to assess the vulnerability and survivability of platforms, while also assessing the lethality of weapons against the required target sets.**

**Do you believe that the Department's current live fire testing program is accomplishing its purpose?**

*Yes. The Abrams Tank, the Bradley Fighting Vehicle, the M109 Howitzer Family, the F18E/F fighter aircraft, the Apache and Blackhawk helicopters, and more recently the STRYKER family of vehicles, are all outstanding examples where the Live Fire program directly affected the system design and improved both system and crew survivability.*

**How would you propose to overcome limitations that the live fire testing program suffers due to shortages in threat-representative targets?**

*This question addresses two areas—weapon system Live Fire lethality (Section 2366) and operational end-to-end weapon effectiveness testing against threat systems, also referred to as “live fire testing.”*

*The shortage of high fidelity threat representative targets does not have a significant impact on characterizing munitions lethality. Much of this testing is at the warhead level in the laboratory or controlled test environment where there are adequate threat or threat surrogate targets, test methodology, and analytical tools to characterize warhead lethality.*

*The need for high fidelity threat representative targets is crucial for the operational end-to-end weapon effectiveness testing—especially in a joint environment where various weapon and sensor platforms using a variety of technologies have to detect, acquire, track, and successfully engage threat targets. The Department needs to have an integrated DoD approach to the target problem. In the near term, the Department should identify and fund innovative initiatives to improve the threat representation of the existing target suite. For the longer term, the Department should focus on the recent recommendations from the Defense Science Board to acquire threat representative supersonic missile targets and establish a replacement program for the aging QF-4 fixed wing aircraft target. If confirmed, this will be a high priority issue for me.*

## **Modeling and Simulation**

**Advances in modeling and simulation have provided an opportunity to streamline the testing process, saving time and expense.**

**What do you believe to be the proper balance between modeling and simulation and actual testing of the developed product?**

*It is appropriate to use models to support core T&E processes. For example, M&S can be used to effectively predict results of tests to be conducted. It can be used effectively to produce a full parametric evaluation of system performance where actual parametric testing may be too expensive. Models can also help the Department design tests to maximize learning and optimally apply resources. Still, M&S is a complement, not a replacement, for operational testing.*

**How is the amount of this actual testing determined to ensure reliability and maintainability thresholds are met with sufficient statistical confidence?**

*The amount of actual testing required to validate RAM thresholds would vary from program to program. In terms of using M&S to support that process, it would seem to me that program managers who make an early commitment to integrate the use of models as tools to support learning and to gain insight and understanding throughout the life cycle of a program would be much better positioned to be successful than those who try to use models late in the life of a program as a means to respond to resource or schedule constraints.*

**Can T & E modeling and simulation be integrated with exercise simulation?**

*Again, T&E modeling and simulation can help represent the environment during test to realistically stress the system under test. M&S should complement, not replace, actual testing.*

## **T & E Science and Technology**

**The Department's T & E science and technology (S & T) effort now falls under the jurisdiction of the Director of the Major Test Resource Management Center.**

**What are your views on the appropriate level of investment in the science and technology of testing?**

*Given my background, I believe strongly in a robust S&T effort. If confirmed, I look forward to investigating means by which we can apply technology to enhance our T&E capabilities.*

**What mechanisms will you employ to ensure the S & T portfolio is responsive to the department's future test instrumentation needs?**

*I look forward to working with the USD(AT&L) and his subordinate organizations to shape the S&T portfolio to best suit the Department's instrumentation needs, if confirmed. I am particularly interested in examining the use of embedded instrumentation that can be used by testers, trainers, and operator-maintainers.*

**Operational Test Agencies**

**Operational Test Agencies (OTA) are tasked with conducting independent operational testing and evaluation of acquisition programs. Recent demands on these organizations have increased to meet rapid acquisition initiatives, to demonstrate joint and advanced concept technology programs, and to evaluate information assurance, information operations, and joint T & E requirements.**

**In your view, are these agencies sufficiently staffed to perform the required functions?**

*The OTA staffs appear to be stretched thin by added test types and events, such as demonstrations of rapid acquisition initiatives; demonstrations of ACTDs; and evaluations of Information Assurance, Information Operations, and Joint Test and Evaluations. If confirmed, I intend to look into manning issues to ensure there is adequate military operational experience in the OTAs without inappropriate reliance upon contractor support.*

*I have also been made aware of the potential adverse impact on the Army Test and Evaluation Command of their impending relocation. If confirmed, I will monitor that situation closely as they may suffer a loss of experienced personnel and loss of continuity just as they will be involved in the testing of the very complex Future Combat System (FCS).*

**How would you propose to arbitrate shortfalls between program managers' limited funding and OTAs independent test requirements?**

*Title 10 and DoD Directives require DOT&E to assess the adequacy of operational testing. Service leadership retains the responsibility to ensure programs are managed to meet testing requirements. If confirmed, I will ensure the DOT&E staff continues to facilitate dialogue between program stake holders.*

**Do you have any concerns about the independence of the OTAs?**

*Yes, I am concerned that there will always be pressures on the OTA Commanders to support component acquisition strategies. I think that it is important that they continue to report to the top level of their respective components, independent of the acquisition organizations.*

**Should policies and procedures of the OTAs be standardized?**

*Each of the Component OTAs has unique processes for the conduct of OT&E. As long as these processes lead to a robust operational test and evaluation of all acquisitions, I believe DOT&E does not need to dictate standard processes that may limit component flexibility. I do, however, believe the capability to develop, test, train, and experiment complex systems in a Joint operational environment needs improvement. The “Testing in a Joint Environment Roadmap,” approved in November 2004, defines capabilities in common, measurable, war fighting terms. I look forward to advancing the objectives identified in the roadmap, if confirmed.*

**Information Assurance**

**Recent defense authorization legislation provided the Director of Operational Test and Evaluation with oversight responsibility for information assurance (IA) evaluations of fielded systems. There has reportedly been an increased focus on IA as an evaluation issue for systems on the operational T & E oversight list and a group of acquisition programs have been identified for an expanded review of the adequacy of IA evaluation planning.**

**Does the operational test and evaluation component of the Department possess adequate expertise, staffing, and funding to carry out its IA responsibilities?**

*The Information Assurance community, both in DoD as well as industry, has for many years been relatively small, but has experienced considerable growth in the past few years. At present, DoD appears to possess adequate expertise within the traditional cryptologic and communications professional fields, but may need increased staffing and funding to address all of the systems and areas where Information Assurance has become critical. In multiple assessments, it has been observed that the network support personnel are frequently over-tasked in what is a growing technical discipline. The Operational Test Agencies are not currently manned to address all of the areas of concern. If confirmed, I will support efforts to provide additional resources to the Operational Test Agencies for hiring, training, and fielding Information Assurance experts to test, assess, and validate the readiness of network systems for operations. Additionally, if confirmed, I will continue the work of my predecessor Tom Christie, in revising the Information Assurance acquisition policy to ensure that Information*

*Assurance is addressed in all operational testing for systems in which the secure exchange of information is integral to mission success.*

**What is the status of the recommendation that IA should become an exercise objective wherever information is critical to mission accomplishment?**

*The Chairman of the Joint Chiefs has provided direction to the Combatant Commanders requiring that Information Assurance be addressed in every major Combatant Command exercise by Fiscal Year 2007 (and in half of all Fiscal Year 2006 exercises). The Combatant Commanders have dramatically increased the focus on Information Assurance in recent years, and the inclusion of training objectives specifically addressing networks, network security, and network personnel has become more common. If confirmed, I will continue to work closely with the Combatant Commanders, the National Security Agency, the Joint Staff, and the Assistant Secretary of Defense for Networks, Intelligence, and Integration (ASD-NII) to increase attention on IA, improve the way it is assessed, and provide the operational commanders with the information they need.*

### **Ballistic Missile Defense**

**The United States is developing a Ballistic Missile Defense System that is intended to defeat ballistic missiles of all ranges, in all phases of flight, to defend the United States, its allies, and friends with a very high degree of confidence.**

**Can you assure the Committee that, if confirmed, you will ensure that adequate operational testing and evaluation is conducted of the Ballistic Missile Defense system, and that you will make a determination of whether the system and its elements that are tested are effective and suitable for combat?**

*DOT&E provides an annual report and a BMDS Block assessment report to Congress. If confirmed, I will assess BMDS system operational effectiveness and suitability as well as test adequacy in these reports.*

**If you determine that such operational testing and evaluation does not demonstrate that the BMDS or its elements are effective and suitable for combat, will you inform the Congress of that determination?**

*Yes. If confirmed, I will provide my assessment on test adequacy and Ballistic Missile Defense System and element effectiveness and suitability in the annual reports to Congress.*

**According to Title 10, U.S. Code, major defense acquisition programs are required to complete initial operational test and evaluation before proceeding beyond low-rate initial production. This is to ensure that weapons systems work effectively before they are produced in large numbers and at great expense. The Defense Department has exempted the Ballistic Missile Defense System (BMDS) from this requirement, saying that there will be only one BMDS, and thus no question of proceeding beyond low-rate initial production.**

**What do you believe is the appropriate role for the office of the Director of Operational Test and Evaluation in providing an independent and objective assessment of the operational effectiveness, suitability, and survivability of the BMDS?**

*I believe there should be adequate operational testing of any element to demonstrate its capability before it is fielded as an operational system. Where there are urgent requirements to rapidly deploy an element, testing should be conducted to confirm it is safe to operate and to characterize its performance capability to address the urgent requirement. After the urgency subsides, operational testing and assessment should continue to ensure the system is effective, suitable, and survivable for its intended mission.*

**Concerning the Ballistic Missile Defense System, the 2005 DOT&E Annual Report states: “As reported last year, there is insufficient evidence to support a confident assessment of Limited Defensive Operations or Block 04 capabilities.”**

**Do you believe it is essential to conduct operationally realistic testing of the Ballistic Missile Defense System to characterize its operational capability and assess whether it is operationally effective, and suitable for combat?**

*Yes. I believe operational testing should be conducted on the Ballistic Missile Defense System to characterize its operational capability and to demonstrate its effectiveness, suitability, and survivability.*

**Concerning the Ground-based Midcourse Defense (GMD) system, the 2005 DOT&E Annual report notes that the “lack of flight test validation data for the simulations that support the ground testing limits confidence in assessments of defensive capabilities,” that “robust testing is limited by the immaturity of some components,” and that “flight tests still lack operational realism.” The last five attempted intercept tests with the GMD system have resulted in failures.**

**Do you support robust, operationally realistic testing and disciplined operational test and evaluation of the GMD system as necessary steps to properly demonstrate the system’s capabilities and to assess its operational effectiveness, suitability, and survivability?**

*Yes. I believe there should be adequate, robust, operationally-realistic testing of GMD to demonstrate its capability. Where there are urgent requirements to rapidly deploy an element, testing should be conducted to confirm it is safe to operate and to characterize its performance capability to address the urgent requirement. After the urgency subsides, operational testing and assessment should continue to ensure the system is effective, suitable, and survivable for its intended mission.*

**In 2005 the Mission Readiness Task Force examined problems with the GMD testing program, found numerous problems, and recommended a number of corrective actions, which the Defense Department has adopted.**

**Do you support the MRTF findings and recommendations as appropriate and prudent steps to return the GMD program to successful flight testing?**

*Yes. The MRTF review was thorough and sobering. The review findings are a reminder that the GMD program is still in development. The MDA Director embraced the results and has taken actions to implement the recommendations. The slow down in the GMD test program is a direct result of his prudent philosophy of “test-analyze-fix-test” which has proven to be the correct approach as demonstrated by recent successes in the Aegis BMD, THAAD, and even the GMD programs.*

### **Ground-Based Midcourse Defense**

**The Senate-passed version of the National Defense Authorization Act for Fiscal Year 2007 includes an increase of \$45 million to improve the ability of the Missile Defense Agency to conduct concurrent test and operations of the Ground-based Midcourse Defense (GMD) System and to improve the pace of flight testing.**

**Do you support the establishment of procedures and infrastructure to support combined operations and robust testing?**

*The capability to test and train on the operational configured Ballistic Missile Defense System (BMDS) as it evolves is critical to ensuring the effectiveness, suitability, and readiness of the integrated fielded capability. MDA **should** develop and employ a concurrent test and operations capability for the full BMDS. The concept would be similar to that used for the Cheyenne Mountain Upgrade program for training and testing the “on-line” Integrated Tactical Warning and Attack Assessment mission capability. The solution should allow MDA to conduct robust end-to-end testing of the fully integrated operational system, including flight test interceptors, sensors, and launch equipment using war fighters and operational tactics, techniques, and procedures, while the Combatant Commanders maintain an on-alert posture for the BMDS.*

**Do you believe the pace of GMD flight testing can reasonably be accelerated?**

*The 1998 Welch Report on Reducing Risk in Ballistic Missile Defense Flight Test Programs concluded that schedules can be more aggressive, but only if justified by processes or approaches that support shorter development times. Accelerating schedules by simply accepting more risk carries a high risk of failure. Accelerating the Ground-based Midcourse Defense flight test schedule would add significant risk to the program. The program needs adequate time to accomplish the structured ground and flight test program currently planned. Recent intercept successes with THAAD and Aegis proves that MDA's current engineering, development, and test-analyze-fix-test philosophy is successfully maturing the elements. The Missile Defense Agency is finding and fixing problems that are only surfacing due to its test-analyze-fix-test initiatives. MDA is allocating time between the conduct of ground and flight tests to analyze data, and to find and fix design and manufacturing problems that surface from the previous tests. Accelerating flight-testing would reduce this critical time and limit the MDA's opportunities to find and fix problems that surfaced from the previous test. History shows that program timelines are shortened when all the essential steps are done right the first time. The Missile Defense Agency's test-analyze-fix-test philosophy reduces the potential for the "rush to failure" result highlighted in the Welch Report. MDA appears to be working hard to get it right this time--on its own schedule.*

**What Missile Defense lessons do you expect the operational test and evaluation community to learn from the North Korean flight test of short, medium, and long-range ballistic missiles in July 2006?**

*I am uncertain about what we might be able to learn from these recent events. These firings occurred just days ago. It will take time to analyze the data that our intelligence assets were able to collect. The data may be limited due to the extremely short duration of the ballistic missile's flight prior to failure. I am advised that any relevant lessons-learned from these events will be addressed as part of the February 2007 BMDS Report.*

**On April 4, 2006, the acting Director of Operational Test and Evaluation, David Duma, testified before the Strategic Forces Subcommittee that "with the current program and test events scheduled, it's very likely that the [GMD] system will demonstrate ultimately that it is effective."**

**Do you concur with this assessment, based upon your initial review of the GMD system?**

*Yes. Based on the reports I have seen and the briefings I have been given, I believe the Ground-based Midcourse Defense element is on a growth path towards maturity. However, I am not sure that there is sufficient test data to establish where the system is on the maturity growth curve. Future testing will ultimately demonstrate whether the system is effective and suitable.*

## Environmental Issues

**The National Defense Authorization Act for Fiscal Year 2004 included provisions that were intended to add flexibility to the Endangered Species Act and Marine Mammal Protection Act to ensure the ability to conduct realistic military testing and training.**

**What has the DOD experience been conducting test operations under these more flexible provisions?**

*Since enactment of the amendments, I understand that the Department has been able to conduct its test operations adequately while making compensating adjustments to address environmental issues when necessary.*

**What type of testing has the Department been able to conduct and what type of encroachment concerns on military testing have been avoided as a result of these provisions?**

*The provisions of the National Defense Authorization Act for Fiscal Year 2004 certainly provide the Department overall with greater flexibility to conduct its programs that address military readiness. Consequently, I believe that the Act's provisions effectively contribute to the accomplishment of adequate testing for the Department's acquisition programs.*

**The Secretary of Defense, after conferring with the Secretary of Commerce, recently invoked the national security exemption to the Marine Mammal Protection Act (MMPA) for a period of six months. During the same week, the Navy settled a lawsuit brought by the National Resources Defense Council that challenged Navy and Commerce Department compliance with the MMPA which sought to halt the Navy's Rim of the Pacific (RIMPAC) exercise near Hawaii.**

**How do you envision these developments impacting military test and evaluation of sonar and other technologies that involve the marine environment?**

*While I cannot speak to the terms of the litigation settlement reached between the Navy and the National Resources Defense Council, I believe the exemption is an essential element in the statutory framework that supports Departmental test programs and its judicious use will foster test adequacy.*

## Congressional Oversight

**In order to exercise its legislative and oversight responsibilities, it is important that this Committee and other appropriate committees of the Congress are able to receive testimony, briefings, and other communications of information.**

**Do you agree, if confirmed for this high position, to appear before this Committee and other appropriate committees of the Congress?**

*Yes*

**Do you agree, if confirmed, to appear before this Committee, or designated members of this Committee, and provide information, subject to appropriate and necessary security protection, with respect to your responsibilities as the Director of Operational Test and Evaluation?**

*Yes*

**Do you agree to ensure that testimony, briefings and other communications of information are provided to this Committee and its staff and other appropriate Committees? *Yes***