



## **FY 2008/2009 Budget Estimates**

# **OPERATIONAL TEST AND EVALUATION, DEFENSE APPROPRIATION (0460)**

**February 2007**

**UNCLASSIFIED**

Exhibit R-1, RDT&E Programs

Department of Defense

OPERATIONAL TEST AND EVALUATION, DEFENSE APPROPRIATION (0460)

Date: February 2007  
TOA, \$ in Millions

<u>R-1 Line</u> <u>Item No</u>	<u>Program</u> <u>Element</u> <u>Number</u>	<u>Item</u>	<u>Budget</u> <u>Activity</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2008</u> <u>Cost</u>	<u>FY 2009</u> <u>Cost</u>
1	0605118D8Z [U]	Operational Test and Evaluation	6	44.362			
2	0605118OTE [U]	Operational Test and Evaluation	6		53.859	48.627	53.466
3	0605131D8Z [U]	Live Fire Testing	6	10.160			
4	0605131OTE [U]	Live Fire Test and Evaluation	6		11.203	11.133	11.572
5	0605804D8Z [U]	Development Test and Evaluation	6	110.999			
6	0605814OTE [U]	Operational Test Activities and Analyses	6		119.029	120.504	124.004
<b>Total</b>	<b>Operational Test &amp; Evaluation, Defense</b>			<b>165.521</b>	<b>184.091</b>	<b>180.264</b>	<b>189.042</b>

**The following administrative change to the Program Elements in the Operational Test and Evaluation, Defense appropriation was necessary to reflect changes brought about by the June 7, 1999 disestablishment of the Director, Test, Systems Engineering and Evaluation and the subsequent realignment of programs and responsibilities to the Director, Operational Test and Evaluation.**

- The following program elements are retired effective FY 2007: Operational Test and Evaluation (PE 0605118D8Z), Live Fire Testing (PE 0605131D8Z), and Development Test and Evaluation (PE 0605804D8Z).
- The following program elements replace the preceding program elements effective FY 2007: Operational Test and Evaluation (PE 0605118OTE), Live Fire Test and Evaluation (PE 0605131OTE), and Operational Test Activities and Analyses (PE 0605814OTE).

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Exhibit R-2, RDT&E Project Justification							February 2007	
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX				OPERATIONAL TEST AND EVALUATION (OT&E) PROGRAM ELEMENT (PE) 0605118D8Z				
Cost (\$ In Millions)	FY 2006	FY 2007*	FY 2008*	FY 2009*	FY 2010*	FY 2011*	FY 2012*	FY 2013*
PE 0605118D8Z	44.362							

**\* Beginning in FY 2007 this program is funded in PE 0605118OTE.**

**A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION**

The Director of Operational Test and Evaluation (DOT&E) is responsible under Title 10 for policy and procedures for all aspects of operational test and evaluation within the Department of Defense (DoD). Particular focus is given to OT&E that supports major weapon system production decisions for acquisition programs included on the Office of the Secretary of Defense Test and Evaluation Oversight List that is prepared and approved annually. Generally, there are about 300 programs on the oversight list including all Major Defense Acquisition Programs (MDAP) and Major Automated Information Systems (MAIS). MDAPs may not proceed beyond low-rate initial production (BLRIP) until OT&E of the program is complete. DOT&E is involved early in the planning phase of each program to ensure adequate testing is planned and executed. Key elements of the DOT&Es oversight authority include:

- The approval of component test and evaluation master plans (TEMPs).
- The approval of component OT&E Test Plans (TPs).
- Oversight of Military Department preparation and conduct of field operational tests; analysis and evaluation of the resultant test data; assessment of the adequacy of the executed test and evaluation programs; and assessment of the operational effectiveness and suitability of the weapon systems.

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- Reporting results of OT&E that supports BLRIP decisions to the Secretary of Defense and Congress, as well as providing an annual report summarizing all OT&E activities, and the adequacy of test resources within DoD during the previous fiscal year.

DOT&E also oversees and resources OT&E community efforts to plan and execute joint operational evaluations of information assurance and interoperability of fielded systems during major combatant command and service exercises, and reports trends and findings in the annual report.

This PE includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the described tasks as well as travel funds to carry out oversight of the OT&E program.

This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support DOT&E for oversight of operational test and evaluation of the Department's weapon systems.

### **Accomplishments/Planned Programs:**

#### **FY 2006 Accomplishments:**

##### Operational Test and Evaluation Oversight

Provided Operational Test and Evaluation inputs for Test and Evaluation Master Plans, test plans, System Acquisition Reports, Defense Acquisition Executive Summary Reports for those programs designated for oversight by DOT&E and OUSD(AT&L). Major activities are described in the DOT&E FY 2006 Annual Report issued in January 2007. Key elements of DOT&Es oversight authority are identified in Calendar Year 2006 Office of the Secretary of Defense Test and Evaluation Oversight List.

##### Information Assurance and Interoperability Evaluations:

Assessed approximately 20 combatant command and service exercises, including lower level/preparatory exercises associated with these exercises. Full assessment of warfighter responses to computer network attack (ability to protect, detect, react, and restore) were captured in most events. Portrayal of advanced threats were included in four events, and evaluation support to development of enhanced defensive tactics, techniques, and procedures was provided. Trend analyses compared FY 2006 with FY 2004 and FY 2005

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results, both within and across combatant commands. Assessment results (identified vulnerabilities) were provided to all exercise authorities and the DoD Enterprise Solution Steering Group for remediation; remediation support (focused training and support to close thousands of vulnerabilities) was provided to all participating units, and in particular to units preparing to deploy to Iraq and Afghanistan. Interoperability evaluation findings were also identified.

### **FY 2007 Plans:**

- Please see Operational Test and Evaluation, Program Element 0605118OTE

### **FY 2008 Plans:**

- Please see Operational Test and Evaluation, Program Element 0605118OTE

### **FY 2009 Plans:**

- Please see Operational Test and Evaluation, Program Element 0605118OTE

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**B. (U) PROGRAM CHANGE SUMMARY**

(\$ in Millions)	<u>FY 2006</u>	<u>FY 2007*</u>	<u>FY 2008*</u>	<u>FY 2009*</u>
FY 2007 President's Budget	43.162			
Current Budget Submit	44.362			
Total Adjustments				
Congressional program reductions				
Congressional rescissions				
Congressional increases				
Fiscal Guidance Adjustments				
Inflation Adjustment				
Reprogramming	1.200			

**C. (U) OTHER PROGRAM FUNDING: NA**

**D. (U) ACQUISITION STRATGEY: NA**

**E. (U) PERFORMANCE METRICS:**

Percentage of required operational test planning documents, assessments, and reports applicable to acquisition programs on the OSD Test and Evaluation Oversight List and other special interest programs/legacy systems that are completed and delivered to the appropriate decision makers on time.

**Please see PE 0605118OTE for Performance Metrics discussion for FY 2006 actuals and discussion.**

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Exhibit R-2, RDT&E Project Justification							February 2007	
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX				OPERATIONAL TEST AND EVALUATION (OT&E) PROGRAM ELEMENT (PE) 0605118OTE				
Cost (\$ In Millions)	FY 2006*	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
PE 0605118OTE		53.859	48.627	53.446	55.977	56.193	57.103	58.058

**\* In FY 2006 and prior years, this program was funded in PE 0605118D8Z.**

**A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION**

The Director of Operational Test and Evaluation (DOT&E) is responsible under Title 10 for policy and procedures for all aspects of operational test and evaluation within the Department of Defense (DoD). Particular focus is given to OT&E that supports major weapon system production decisions for acquisition programs included on the Office of Secretary of Defense Test and Evaluation Oversight List that is prepared and approved annually. Generally, there are about 300 programs on the oversight list including all Major Defense Acquisition Programs (MDAP) and Major Automated Information Systems (MAIS). MDAPs may not proceed beyond low-rate initial production (BLRIP) until OT&E of the program is complete. DOT&E is involved early in the planning phase of each program to ensure adequate testing is planned and executed. Key elements of DOT&E's oversight authority include:

- The approval of component test and evaluation master plans (TEMPS).
- The approval of component OT&E Test Plans (TPs).
- Oversight of Military Department preparation and conduct of field operational tests; analysis and evaluation of the resultant test data; the assessment of the adequacy of the executed test and evaluation programs; and assessment of the operational effectiveness and suitability of the weapon systems.
- Reporting of results of OT&E that supports BLRIP decisions to the Secretary of Defense and Congress, as well as providing an

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annual report summarizing all OT&E activities and the adequacy of test resources within DoD during the previous fiscal year.

DOT&E also oversees and resources OT&E community efforts to plan and execute joint operational evaluations of information assurance and interoperability of fielded systems during major combatant command and Service exercises, and reports trends and findings in the annual report.

This PE includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the described tasks as well as travel funds to carry out oversight of the OT&E program.

This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support DOT&E for oversight of operational test and evaluation of the Department's weapon systems.

### **Accomplishments/Planned Program:**

#### **FY 2006 Accomplishments:**

- Please see Operational Test and Evaluation Program Element 0605118D8Z.

#### **FY 2007 Plans:**

##### Operational Test and Evaluation Oversight:

Provide Operational Test and Evaluation inputs for Test and Evaluation Master Plans, test plans, System Acquisition Reports, Defense Acquisition Executive Summary Reports for those programs designated for oversight by DOT&E and OUSD(AT&L). Key elements of DOT&E oversight authority are identified in Calendar Year 2007 Office of the Secretary of Defense Test and Evaluation Oversight List.

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### Information Assurance and Interoperability Evaluations:

Will continue to execute this effort across approximately 25 combatant command and Service exercises. Full assessment of warfighter responses to computer network attack (ability to protect, detect, react, and restore) will be captured in most events. Portrayal of advanced threats will be included in six to 10 events, and evaluation support to development of enhanced defensive tactics, techniques, and procedures will be provided. Fiscal Year 2007 information assurance evaluations will include trend analyses compared with prior year results, both within and across combatant commands. Interoperability evaluation trends will also be identified. Findings will be shared with enterprise solution steering groups for solutions to complex problems and shortfalls. Acquisition OT&E will be included in two to four exercises.

### **FY 2008 Plans:**

### Operational Test and Evaluation Oversight:

Key elements of DOT&E's oversight authority are identified in Calendar Year 2008 Office of the Secretary of Defense Test and Evaluation Oversight List.

### Information Assurance and Interoperability Evaluations:

Will assess approximately 25 combatant command and Service exercises. Full assessment of warfighter responses to computer network attack (ability to protect, detect, react, and restore) will be captured in most events. Portrayal of advanced threats will be included in most events, and evaluation support to development of enhanced defensive tactics, techniques, and procedures will be provided. FY 2008 information assurance and interoperability evaluations will include trend analyses compared with prior year results, both within and across combatant commands. Findings will be shared with enterprise solution steering groups for solutions to complex problems and shortfalls.

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### **FY 2009 Plans:**

#### **Operational Test and Evaluation Oversight:**

Key elements of DOT&E's oversight authority are identified in Calendar Year 2009 Office of the Secretary of Defense Test and Evaluation Oversight List.

#### **Information Assurance and Interoperability Evaluations:**

Will assess approximately 25 combatant command and service exercises. Full assessment of warfighter responses to computer network attack (ability to protect, detect, react, and restore) will be captured in most events. Portrayal of advanced threats will be included in most events, and evaluation support to development of enhanced defensive tactics, techniques, and procedures will be provided. FY 2009 information assurance and interoperability evaluations will include trend analyses compared with prior year results, both within and across combatant commands. Findings will be shared with enterprise solution steering groups for solutions to complex problems and shortfalls.

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**B. (U) PROGRAM CHANGE SUMMARY**

(\$ in Millions)	<u>FY 2006*</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY 2007 President's Budget		50.161	52.367	56.562
Current Budget Submit		53.859	48.627	53.466
Total Adjustments			(3.740)	
Congressional program reductions		(.202)		
Congressional rescissions				
Congressional increases				
Fiscal Guidance Adjustments			(3.740)	(3.096)
Inflation Adjustment				
Reprogramming		3.900 <sup>1</sup>		

1. The Congress added funding in the FY 2007 Department of Defense Appropriation Act for the Holloman High Speed Test Track to this PE. The Office of the Under Secretary of Defense (Comptroller) approved the reprogramming of these funds to an Air Force test and evaluation program element for execution per Congressional intent.

**C. (U) OTHER PROGRAM FUNDING: NA**

**D. (U) ACQUISITION STRATGEY: NA**

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**E. (U) PERFORMANCE METRICS:**

Performance Measure: Percentage of required operational test planning documents, assessments, and reports applicable to acquisition programs on the OSD Test and Evaluation Oversight List and other special interest programs/legacy systems that are completed and delivered to the appropriate decision makers on time.

Actual Performance and Goals:

<b>Operational Test and Evaluation</b>	<b>FY 2006 Actual</b>	<b>FY 2007 Goal</b>	<b>FY 2008 Goal</b>	<b>FY 2009 Goal</b>
<b>On-Time Completion Rate</b>	<b>90%</b>	<b>91%</b>	<b>91%</b>	<b>91%</b>

The on-time completion rate was computed on the basis of the number of required products that were submitted within established time standards relative to the total number of such products that fell due during the fiscal year. Products included in the measure include BLRIP reports, Test Plans, and Test and Evaluation Master Plans for operational test and evaluation oversight as well as assessment plans, “quick look” reports, and final reports for the information assurance and interoperability testing associated with scheduled test events. DOT&E plans to achieve its goals for FY 2007 through FY 2009 through increased management emphasis on timely delivery of required products to customer activities.

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Exhibit R-2, RDT&E Project Justification							February 2007	
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX				LIVE FIRE TESTING (LFT) PROGRAM ELEMENT (PE) 0605131D8Z				
Cost (\$ In Millions)	FY 2006	FY 2007*	FY 2008*	FY 2009*	FY 2010*	FY 2011*	FY 2012*	FY 2013*
PE 0605131D8Z	10.160							

\* Beginning in FY 2007 this program is funded in PE 0605131OTE.

**A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION**

This PE directly supports the Congressional statutory requirements for oversight of Live Fire Test and Evaluation (LFT&E). The primary objective of LFT&E is to assure that the vulnerability and survivability of Department of Defense (DoD) crew-carrying platforms and the lethality of our conventional munitions are known and acceptable before entering full-rate production. LFT&E encompasses realistic tests involving actual United States (U.S.) and foreign hardware or, if not available, acceptable surrogate threat hardware. The objective is to identify and correct design deficiencies early in the development process. A completed LFT&E test report is required before programs proceed beyond low-rate initial production (BLRIP). It also includes realistic modeling and simulation (M&S) to examine survivability and lethality attributes not assessed during testing. The LFT&E program is essential, especially in view of the escalating costs of technologically sophisticated weapons systems.

The LFT PE also supports DoD’s Joint Live Fire (JLF) Program. JLF was begun in 1984 under an OSD charter to test fielded front-line combat aircraft and armor systems for their vulnerabilities as well as fielded weapons, both U.S. and threat, for their lethalties against their respective targets.

This PE includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the analyses to support described tasks, as well as travel funds to carry out oversight of the LFT program.

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This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support LFT&E management activities for the oversight of RDT&E of new systems, as well as RDT&E of fielded systems.

### **Accomplishments/Planned Programs:**

#### **FY 2006 Accomplishments:**

##### Major T&E Programs:

Provided Live Fire Test and Evaluation inputs for test and evaluation master plans (TEMPS), test plans, System Acquisition Reports, Defense Acquisition Executive Summary reports, and BLRIP reports as described in the DOT&E FY 2006 Annual Report issued in January 2007.

##### JLF Programs:

Conducted tests of fielded systems to support DOT&E and warfighter data needs. Projects included:

- Predator Systems Vulnerability
- CF-6 Engine Vulnerability to MANPADS
- Enhanced Powder Panel Validation
- Kiowa Warrior Cockpit Ballistic Vulnerability
- A-10 Dry Bay Foam Verification
- Helicopter Ordnance Vulnerability
- Kiowa Warrior Fuel System Ballistic Vulnerability
- Kiowa Warrior Rotor Control Subsystem Vulnerability
- CH-53E Tail Gearbox and Rotating Control Vulnerability
- Helicopter Vulnerability to RPG
- AH-64 Nacelle Fire Extinguisher Effects
- FATEPEN Validation for High Energy Fragments
- Improvised Explosive Device Blast/Fragment Arena Test and Characterization

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- Military Operations in Urban Terrain Weapons Effects Secondary Debris Test
- Middle Eastern Masonry Structure
- Sensor Fuzed Weapon Cold Target Effectiveness
- Fragment Penetration Test and Analysis, Masonry
- Soft Body Armor Test Methods
- IED Characterized and Mitigation for Tactical Wheeled Vehicle Fuel Tanks
- Ship Damage Control Readiness Evaluation
- Recoverability in Network Fire Simulation
- Shipboard Space Fire Testing
- Ship Response to Terrorist Attack
- Test Alternatives to Explosive UNDEX
- Survivability of Ships Built to Commercial Standards
- Submarine Susceptibility to Mines

### **FY 2007 Plans:**

- Please see Live Fire Test and Evaluation, Program Element 0605131OTE

### **FY 2008 Plans:**

- Please see Live Fire Test and Evaluation, Program Element 0605131OTE

### **FY 2009 Plans:**

- Please see Live Fire Test and Evaluation, Program Element 0605131OTE

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**B. (U) PROGRAM CHANGE SUMMARY**

(\$ in Millions)	<u>FY 2006</u>	<u>FY 2007*</u>	<u>FY 2008*</u>	<u>FY 2009*</u>
FY 2007 President's Budget	10.160			
Current Budget Submit	10.160			
Total Adjustments				
Congressional program reductions				
Congressional rescissions				
Congressional increases				
Fiscal Guidance Adjustments				
Inflation Adjustment				
Reprogramming				

**C. (U) OTHER PROGRAM FUNDING: NA**

**D. (U) ACQUISITION STRATGEY: NA**

**E. (U) PERFORMANCE METRICS:**

Percentage of required live fire test planning documents, assessments, and reports applicable to acquisition programs on the OSD Test and Evaluation Oversight List and other special interest programs/legacy systems that are completed and delivered to the appropriate decision makers on time.

**Please see PE 0605131OTE for Performance Metrics discussion for FY 2006 actuals and discussion.**

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Exhibit R-2, RDT&E Project Justification							February 2007	
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX				LIVE FIRE TEST AND EVALUATION (LFT&E) PROGRAM ELEMENT (PE) 0605131OTE				
Cost (\$ In Millions)	FY 2006*	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
PE 0605131OTE		11.203	11.133	11.572	11.921	12.210	12.460	12.645

**\* In FY 2006 and prior years, this program was funded in PE 0605131D8Z.**

**A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION**

This PE directly supports the Congressional statutory requirements for oversight of Live Fire Test and Evaluation (LFT&E). The primary objective of LFT&E is to assure that the vulnerability and survivability of Department of Defense (DoD) crew-carrying platforms and the lethality of our conventional munitions are known and acceptable before entering full-rate production. LFT&E encompasses realistic tests involving actual United States (U.S.) and foreign threat hardware or, if not available, acceptable surrogate threat hardware. The objective is to identify and correct design deficiencies early in the development process. A completed LFT&E program and test report is required before programs proceed beyond low-rate initial production (BLRIP). LFT&E also includes realistic modeling and simulation (M&S) to examine survivability and lethality attributes not assessed during testing. The LFT&E program is essential, especially in view of the escalating costs of technologically sophisticated weapons systems.

The LFT&E PE also supports DoDs Joint Live Fire (JLF) Program. JLF was begun in 1984 under an OSD charter to test fielded front-line combat aircraft and armor systems for their vulnerabilities as well as fielded weapons, both U.S. and threat, for their lethalties against their respective targets.

This PE includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the analyses to support described tasks, as well as travel funds to carry out oversight of the LFT&E program.

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This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support LFT&E management activities for the oversight of RDT&E of new systems, as well as RDT&E of fielded systems.

### ACCOMPLISHMENTS/PLANNED PROGRAMS:

#### FY 2006 Accomplishments:

- Please see Live Fire Testing Program Element 0605131D8Z.

#### FY 2007 Plans:

##### Major T&E Programs:

Provide Live Fire Test and Evaluation input for Test and Evaluation Master Plans, test plans, System Acquisition Reports, Defense Acquisition Executive Summary reports, and BLRIP reports for those programs designated for oversight by DOT&E and OUSD(AT&L). The oversight list is developed and approved annually.

##### JLF Programs:

Conduct tests of fielded systems not previously tested under Air, Land, or Sea Joint Live Fire programs to support DOT&E and warfighter needs. The need for these tests result from systems being exposed to new threats, used in new unanticipated tactics, or being operated in new combat environments, and the subsequent need for an assessment of how they perform. Projects currently under consideration include:

- CF-6 Engine Vulnerability to MANPADS
- Kiowa Warrior Cockpit Ballistic Vulnerability
- Kiowa Warrior Fuel System Ballistic Vulnerability
- Kiowa Warrior Rotor Control Subsystem Vulnerability
- Foreign Unguided Rocket Lethality
- Fragment Restraint Solution for HH-60A/L Medevac OBOGGS

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- MH/UH-60M Black Hawk Composite Tailcone/Driveshaft Ballistic Vulnerability
- UH-60M Black Hawk Wide Chord Main Rotor Blade Ballistic Vulnerability
- Joint Helicopter Vulnerability to MANPADS
- C-130 Flare Bucket
- Dynamic MANPADS Testing and Model Correlation
- Large Turbofan Engine Vulnerability to MANPADS
- C-130 and C-17 LAST Armor Quantification
- BROAD DAGGER Fuzing
- Probability of Incapacitation Assessments fo V-shaped hull vehicles
- Improvised Explosive Device (IED) Blast/Fragment Arena test and characterization
- U. S. Small Arms Effectiveness vs. Threat Body Armor
- 30mm Ammunition vs. Threat ERA Characterization
- Military Operations in Urban Terrain Weapons Effects
- Penetration Characterization for Titanium Fragments
- Fragmentation and Penetration Testing for Hellfire Missiles
- Advanced Shoulder Fired Weapon Characterization Test and Analysis
- Stryker Armor Multi-hit Analysis
- Blast data & Validation for JTCG/ME Database
- Penetration Equation Extension for Deflection/Material Mismatch
- PAC-3 Vulnerability and Battle Damage Assessment and Repair
- Low Speed Rod Penetration
- RPG-22 Lethality Assessment
- Explosively Formed Penetrator Vulnerability Characterization
- Fragment Penetration Test and Analysis, Masonry
- Penetration Data Collection for Large Fragments
- Penetration Data Collection for AP projectiles
- Ballistic Limit Data for Yawed Impactors
- Ship Damage Control Readiness Evaluation
- Recoverability in Network Fire Simulation
- Shipboard Space Fire Testing
- Test Alternatives to Explosive UNDEX

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- Survivability of Ships Built to Commercial Standards
- Submarine Susceptibility to Mines
- Hydraulic Fluid Hazard Analysis and Explosion Mitigation

### **FY 2008 Plans:**

#### Major T&E Programs:

Provide Live Fire Test and Evaluation input for Test and Evaluation Master Plans, test plans, System Acquisition Reports, Defense Acquisition Executive Summary reports, and BLRIP reports for those programs designated for oversight by DOT&E and OUSD(AT&L). The oversight list is developed and approved annually.

#### JLF Programs:

Conduct tests of fielded systems not previously tested under Air, Land, or Sea Joint Live Fire programs to support DOT&E and warfighter needs. The need for these tests result from systems being exposed to new threats, used in new unanticipated tactics, or being operated in new combat environments, and the subsequent need for an assessment of how they perform.

### **FY 2009 Plans:**

#### Major T&E Programs:

Provide Live Fire Test and Evaluation input for Test and Evaluation Master Plans, test plans, System Acquisition Reports, Defense Acquisition Executive Summary reports, and BLRIP reports for those programs designated for oversight by DOT&E and OUSD(AT&L). The oversight list is developed and approved annually.

#### JLF Programs:

Conduct tests of fielded systems not previously tested under Air, Land, or Sea Joint Live Fire programs to support DOT&E

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and warfighter needs. The need for these tests result from systems being exposed to new threats, used in new unanticipated tactics, or being operated in new combat environments, and the subsequent need for an assessment of how they perform.

**B. (U) PROGRAM CHANGE SUMMARY**

(\$ in Millions)	<u>FY 2006*</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY 2007 President's Budget		11.245	11.472	11.701
Current Budget Submit		11.203	11.133	11.572
Total Adjustments			(.339)	(.129)
Congressional program reductions				
Congressional rescissions		(.042)		
Congressional increases				
Fiscal Guidance Adjustments			(.339)	(.129)
Inflation Adjustment				
Reprogramming				

**C. (U) OTHER PROGRAM FUNDING: NA**

**D. (U) ACQUISITION STRATGEY: NA**

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**E. (U) PERFORMANCE METRICS:**

Performance Measure: Percentage of required live fire test planning documents, assessments, and reports applicable to acquisition programs on the OSD Test and Evaluation Oversight List and other special interest programs/legacy systems that are completed and delivered to the appropriate decision makers on time. Percentage of required live fire test planning documents, assessments, and reports applicable to acquisition programs on the OSD Test and Evaluation Oversight List and other special interest programs/legacy systems that are completed and delivered to the appropriate decision makers on time.

Actual Performance and Goals:

<b>Live Fire Testing</b>	<b>FY 2006 Actual</b>	<b>FY 2007 Goal</b>	<b>FY 2008 Goal</b>	<b>FY 2009 Goal</b>
<b>On-Time Completion Rate</b>	<b>88%</b>	<b>90%</b>	<b>91%</b>	<b>91%</b>

The on-time completion rate was computed on the basis of the number of BLRIP live fire test and evaluation reports, Joint Live Fire Quick Look Reports, and Joint Live Fire Test reports that were submitted within established time standards relative to the total number of such products that fell due during the fiscal year. DOT&E plans to achieve its goals for FY 2007 through FY 2009 through increased management emphasis on timely delivery of required reports to customer activities.

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Exhibit R-2, RDT&E Project Justification							February 2007	
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX				DEVELOPMENT, TEST AND EVALUATION (DT&E) PROGRAM ELEMENT (PE) 0605804D8Z				
Cost (\$ In Millions)	FY 2006	FY 2007*	FY 2008*	FY 2009*	FY 2010*	FY 2011*	FY 2012*	FY 2013*
PE 0605804D8Z	110.999							

\* Beginning in FY 2007 this program is funded in PE 0605814OTE.

**A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION**

This program element consists of two programs: Test and Evaluation (T&E) Programs and T&E Independent Activities.

The T&E programs are continuing efforts that provide management and oversight of T&E functions and expertise to the Department of Defense (DoD). T&E programs consist of five activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); Center for Countermeasures (the Center); Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME); and Joint Aircraft Survivability Program (JASP).

JT&E projects are T&E activities conducted in a joint military environment that develop process improvements. These multi-Service projects, chartered by the Office of the Secretary of Defense (OSD) and coordinated with the Joint Staff, appropriate Combatant Commanders (COCOM) and Military Services, provide non-materiel solutions and improvements in joint interoperability of Service systems, in technical and operational concepts, in joint operational issues, in development and validation of joint test methodologies, and in test data for validating models, simulations, and test beds. JT&E projects address relevant joint war fighting issues in a joint T&E environment by developing and providing new tactics, techniques, and procedures to improve joint test capabilities and methodologies.

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Threat Systems activity, based on a memorandum of agreement between DOT&E and DIA, provides DOT&E support in the areas of threat resource analysis, intelligence support and threat systems investments. Threat Systems provides threat resource analyses on the availability, capabilities and limitations of threat representations (threat simulators, targets, models, US surrogates & foreign materiel) and analysis of test resources used for operational testing to support DOT&E's assessment of the adequacy of testing for those programs designated for oversight by DOT&E and OUSD (AT&L), including instrumentation, ranges, targets, specialty sites, and other consumables used for T&E. Threat Systems provides DOT&E assessment officers with program specific threat intelligence support. Threat Systems also funds management, oversight, and development of common-use threat specifications for threat simulators, threat representative targets, and digital threat models used for T&E.

The Center for Countermeasures, a Joint Service Countermeasure (CM) T&E Center, serves as DOD's focal point for countermeasure assessments of U.S. and Foreign precision guided weapons (PGW) and sensor systems, CMs, counter-countermeasures (CCMs), and warning devices. The Center provides independent assessments, including test activities, analysis of results, and consulting expertise in support of the Services, T&E Agencies, the Intelligence Community, and Homeland Defense. The Center identifies current weaknesses and limitations of systems and, through carefully developed assessment methodologies, provides the basis for understanding how systems might be affected by CMs in the battlefield. The Center's staff and CM knowledge base, developed for more than 30 years, provides the DoD acquisition community and the Combatant Commanders with the information and expertise necessary for survival of U.S. forces on the increasingly hostile modern battlefield.

The Joint Logistics Commanders JTCG/ME was chartered more than 30 years ago to serve as DOD's focal point for munitions effectiveness information (Joint Munitions Effectiveness Manuals (JMEMs)) on all major non-nuclear U.S. weapons. JTCG/ME authenticates weapons effectiveness data for use in training, systems acquisition, weapon procurement, and combat modeling and simulation. JMEMs are used by the Armed Forces of the U.S., NATO, and other allies to plan operational missions, support training and tactics development, and support force-level analyses. JTCG/ME also develops and standardizes methodologies for evaluation of munitions effectiveness and maintains databases for target vulnerability, munitions lethality, and weapon system accuracy. Operational lessons learned (Southern/Northern Watch, Enduring Freedom, Iraqi Freedom), Combatant Commands (COCOMs), Service, Military Targeting Committee (MTC), and Operational Users Working Groups (OUWGs) input for specific weapon-target pairings and methodologies continue to drive JMEM requirements and development processes. The Fiscal Year (FY) 2008-2013 funding, now shown in PE 0605814OTE, will develop target geometry models (e.g., surface mobile/fixed, air, hard/deeply buried, and ship targets) and vulnerability data. These data will be combined with weapons characteristics, delivery accuracies, and

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methodology enhancements to produce effectiveness indices for the specific weapon-target pairings in support of capability-based JMEMs.

The Joint Aircraft Survivability Program (JASP) is the DoD's focal point for joint service enhancement of military aircraft non-nuclear survivability. The JASP is chartered by the commanders of the USN Naval Air Systems Command, USA Aviation and Missile Command and USAF Aeronautical Systems Center to coordinate and conduct RDT&E to improve military aircraft survivability, develop and standardize aircraft survivability M&S, facilitate information exchange on aircraft survivability and support aircraft survivability education for the DoD and US aircraft community. Each chartering command provides a senior aircraft survivability expert for the JASP Principal Members Steering Group (PMSG), which guides the program and approves projects for funding. The JASP assesses and reports on combat damage incidents through the Joint Combat Assessment Team (JCAT), is the Executive Agent for the Joint Live Fire Aircraft Systems Program managed by the Live Fire Test office of DOT&E and is also an Executive Agent for the Survivability Vulnerability Information Analysis Center (SURVIAC), the repository for aircraft survivability information.

The Test and Evaluation Independent Activities program provides funding for DOT&E studies, analyses, and management to provide support of policy development oversight for DoD test and evaluation practices, infrastructure and resources; and test methods and infrastructure to ensure defense systems provide joint warfighting capabilities. Studies and analyses examine the implications of current and proposed policy, plans, operations, strategies, and budgets that are essential for the accomplishment of the DOT&E mission. This PE funds travel in support of its activities.

This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support the DOT&E oversight responsibility for T&E and T&E resources.

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### **Accomplishments/Planned Program:**

#### **FY 2006 Accomplishments:**

#### **T & E Programs:**

#### **JT&E:**

In FY 2006 the JT&E Program continued 11 Joint Test and Evaluation projects and initiated two new ones. The JT&E continued seven Quick Reaction Tests, of which four were initiated in FY 2006. These projects were conducted at more than a dozen locations throughout the nation. They worked on issues ranging from space operations to homeland defense.

The projects that closed down in FY 2006 produced enhancements in areas as diverse as logistics and data links. Joint Logistics-Planning Enhancement (JLOG), one of those to close down in FY 2006, produced a Rolling Brief that keeps all personnel in a logistics operations center aware of the status of key pieces of information in real time. JLOG also improved the National Level Ammunition Capability by making the system available to all Services. JLOG's Joint Logistics Training Package is a self-paced web-based training package developed for J4 staff responsible for managing joint theater operations. JLOG also established a procedure for using Joint Staff reports during joint training exercises.

Joint Data Link Information Combat Execution (JDICE) also closed down in FY 2006. It produced four TTPs for the Link 16 to enhance joint situational awareness which have been put into practice in current operations and in various training programs. Joint Forward Operations Base Force Protection (JFOB) Quick Reaction Test closed in FY 2006. JFOB produced a handbook that was distributed to units deployed for OIF to standardize FOB defense. The Joint and Army Doctrine Directorates have fielded the handbook as joint TTP and MTTP, respectively. On a continual basis, JT&E reviews nominations for new projects, reviews on-going projects, and ensures closing projects debrief, distribute final reports and transition to Service organizations as appropriate.

#### **Threat Systems:**

Provided analytical support for test adequacy issues for those programs designated for oversight by DOT&E and OUSD(AT&L). This included oversight of Service threat representation developments and acquisitions; oversight and analysis of

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service prepared threat representation validation reports; participation in technical and programmatic reviews; and, documenting threat resource descriptions and technical characteristics in the Automated Joint Threat Systems Handbook.

Threat Systems provided DOT&E assessment officers with program specific threat intelligence support by sponsoring threat analysis briefings in response to program technical issues; initiated DOT&E intelligence production requirements; and conducted liaison with the intelligence community. It also provided focused investments to apply new technologies and innovations for increased threat realism for T&E which included hardware / software development of threat simulators, targets, digital threat models, threat surrogates, foreign materiel and hardware-in-the-loop simulations.

Threat Systems improved threat representation of targets to address the operational test target resource issues that were reported within the FY 2005 Defense Science Board report on Aerial Targets. These activities helped DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing was realistic and suitable, and promoted common solutions to Service threat representation needs.

### CCM:

The Center conducted 19 tests of U.S. and foreign PGWs and CMs systems, including support of two special access programs. The Center also conducted an assessment of a new piece of test equipment, the Joint Mobile Infrared Test System (JMITS).

In FY 2006, the Center published 21 reports on previously conducted tests and analysis of system designs. Two reports were on systems under DOT&E oversight, 11 reports were CM systems or smaller programs that did not meet oversight thresholds, six reports were on foreign systems, and two reports were in direct support of warfighter training and pre-deployment exercises. Our support was distributed across all the Services as well as intelligence agencies and government technology developers.

The Center provided expertise to many organizations and was actively involved in the following panels: The Technical Coordination Panel (TTCP), Foreign Material Exploitation Working Group, Precision Strike Association, Threat Simulation Investment Working Group, Air Force Directed Energy Task Force – Laser, Joint Expendable Countermeasures (JECM) Working Group, Future Combat Systems (FCS) IPT, JMEM/ME Working Group, UJTL/JTRAT Working Group, and the Joint Aircraft Survivability Program.

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### JTCG/ME:

In order to enable operational commanders, DoD targeteers, weaponeers, and planners to prosecute the GWOT, the JTCG/ME developed and released JMEM Weaponeering System (JWS) v1.1.1 in September 2006 and Joint-Antiair Combat Effectiveness System (J-ACE) Air Superiority (AS) v3.2 in August 2006. Current JWS v1.1.1 contains JMEM/Air-to-Surface and Surface-to-Surface weapons with the following updated data and methods: (i) critical Combatant Command identified targets (~70); (ii) accuracy data for F-117a, F-14A, AV-8A, A/OA-10, GBU-10/12/24/27, EGBU-24, GBU-24/27, Tomahawk Land-Attack Missile (TLAM), and Small Diameter Bomb (SDB); (iii) updated Collateral Damage Estimation (CDE) Reference Tables and the related accreditation letters; (iv) Enhanced operational tools for Joint Delivery Accuracy Program (JDAP), Risk Estimates, Building Analysis Module (BAM), Hardened Target Module (HTM), Ship Targeting Analysis Tool (STAT), Target Acquisition Program (TAP), Target Complex (TARCOM), PC Effects, Paveway Munitions Planning Tool (PMPT), JMEM Air-to-Surface Content Addition Tool (JCAT), JMEM Air-to-Surface Trajectory (JAT), Bridge Analysis System (BAS), WinJMEM, ARTQUIK, and Joint Gun Effectiveness Model (JGEM), etc. J-ACE: AS v3.2 contains Joint Air-to-Air Model (JAAM) v3.2 which provides Air-to-Air and Surface-to-Air flyout simulations to the air combat operational community for tactics development and evaluation.

The updated J-ACE: AS v3.2 CD-ROM contains 14 Red, 10 Blue, 4 Gray, and 9 SAMs missile models in JAAM. In support of the Combatant Command Target Requirements, the JTCG/ME: (i) reviewed and prioritized target requirements based on DoD Munitions Requirements Process (MRP) document; (ii) conducted workshops with intelligence community (i.e., NGIC, NASIC, MSIC, ONI, and DIA) to collect intelligence data for Target Geometry Model (TGM) development; (iii) initiated the development of the TGM, generated vulnerability data, and produced JMEM data for approximately 40 high-priority Combatant Command targets (e.g., maritime, infrastructure, strategic, maneuver, air, and integrated air defense systems targets); and (iv) reviewed and approved tri-Service target surrogation techniques/methodologies to meet JMEM requirements (approximately 250 CoCom targets for JWS v1.2 inclusion).

Other critical activities accomplished were: (i) release of Advanced Joint Effectiveness Model (AJEM) v2.5 in January 2006 and updated 13 AJEM input files for JTCG/ME standard weapons; (ii) published draft documentation for 61JTCG/ME-1-8 “Requirements for Generating, Documenting, Reviewing, and Approving JTCG/ME Vulnerability Data”; (iii) developed tri-Service JMEM methodology for the Information Operations (IO) – Computer Network Attack (CNA) and for non-lethal weapons; (iv) provided connectivity to real time planning systems which are used to attack time sensitive targets (i.e., Joint Targeting Toolbox, Joint Mission Planning System, Advanced Deep Operations Coordination System, Air – Theater Battle Management Core Systems, and Naval Fires Control System, etc.); and provided on-site JMEM training to Service/Joint course instructors/trainers. In summary, the

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JTCG/ME implemented performance measures on all FY 2006 projects based on the delivery of the final product; for FY 2006, the JTCG/ME had an on-time completion rate of 81% based on 47 specific deliverables.

### **JASP:**

In FY 2006 the JASP executed 48 RDT&E projects through a dozen organizations across the country. Twenty-eight projects were new starts and 20 were continuing multi-year projects from the previous fiscal year. In the area of susceptibility reduction, projects varied from technology development and demonstration of an Infrared (IR) Hollow Core Photonic Bandgap (HC-PBG) fiber to determining the countermeasure susceptibility of several new foreign infrared threat seekers. Five of the projects were new starts that focused on reducing the susceptibility of aircraft to missiles with IR seekers. In the area of vulnerability reduction, the projects included collecting threat characteristics and damage effects data, developing high-fidelity hydrodynamic finite-element models of threat damage mechanisms and developing lighter and more effective opaque aircraft armor solutions and fuel/fire protection technologies. In aircraft survivability M&S, projects included improvements to vulnerability endgame capability, validation of threat engagement models, a new tool for warfighter combat damage assessment and a new model for passive covert radar countermeasures development.

The JCAT conducted 60 assessments of aircraft combat damage incidents in Iraq, reported their findings to the combatant commanders and archived the reports in SURVIAC. The JASP supported aircraft survivability education and information exchange through internet sites (public, restricted access and classified), by publishing the Aircraft Survivability Newsletter, developing educational materials and conducting training for the DoD and their contractors. In total, the JASP completed 32 RDT&E projects in FY 2006 and delivered 37 final reports.

### **T&E Independent Activities:**

Provided continuing analysis and analytical support for the Director, Operational Test and Evaluation, Title 10, United States Code, roles and responsibilities with regard to operational and live fire test and evaluation as the principal adviser to the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology, and Logistics and as the principal test and evaluation official within the senior management of the DoD. Supported the Director's operational and live fire test resource requirements for the statutory biennial strategic plan reflecting the needs of the Department with respect to T&E facilities and resources, as well as developing technical alternatives on issues affecting T&E resources and infrastructure. Procured administrative support to carry out oversight of DOT&E programs as well as provide accounting and financial management capability to DOT&E.

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**FY 2007 Plans:**

- Please see Operational Test Activities and Analyses, Program Element 0605814OTE.

**FY 2008 Plans:**

- Please see Operational Test Activities and Analyses, Program Element 0605814OTE.

**FY 2009 Plans:**

- Please see Operational Test Activities and Analyses, Program Element 0605814OTE.

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**B. (U) PROGRAM CHANGE SUMMARY**

(\$ in Millions)	<u>FY 2006</u>	<u>FY 2007*</u>	<u>FY 2008*</u>	<u>FY 2009*</u>
FY 2007 President's Budget	112.199			
Current Budget Submit	110.999			
Total Adjustments				
Congressional program reductions				
Congressional rescissions				
Congressional increases				
Fiscal Guidance Adjustments				
Inflation Adjustment				
Reprogramming		(1.200)		

**C. (U) OTHER PROGRAM FUNDING: NA**

**D. (U) ACQUISITION STRATGEY: NA**

**E. (U) PERFORMANCE METRICS:**

Percentage of required products, such as test planning documents, munitions effectiveness manuals, tactics-techniques-procedures, threat characteristics, assessments, and reports that are developed and delivered to program managers and customers on time.

**Please see PE 0605814OTE for Performance Metrics discussion for FY 2006 actuals and discussion.**

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Exhibit R-2, RDT&E Project Justification							February 2007	
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX				OPERATIONAL TEST ACTIVITIES AND ANALYSES (OT&A) PROGRAM ELEMENT (PE) 0605814OTE				
Cost (\$ In Millions)	FY 2006*	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
PE 0605814OTE		119.029	120.504	124.004	126.661	129.389	131.316	133.272

**\* In FY 2006 and prior years, this program was funded in PE 0605804D8Z.**

**A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION**

This program element consists of two programs: Test and Evaluation (T&E) Programs and T&E Independent Activities.

The T&E programs are continuing efforts that provide management and oversight of T&E functions and expertise to the Department of Defense (DoD). T&E programs consist of five activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); Center for Countermeasures (the Center); Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME); and Joint Aircraft Survivability Program (JASP).

JT&E projects are T&E activities conducted in a joint military environment that develop process improvements. These multi-Service projects, chartered by the Office of the Secretary of Defense (OSD) and coordinated with the Joint Staff, appropriate Combatant Commander (COCOM) and Military Services, provide non-materiel solutions and improvements in joint interoperability of Service systems, in technical and operational concepts, in joint operational issues, in development and validation of joint test methodologies, and in test data for validating models, simulations, and test beds. JT&E projects address relevant joint war fighting issues in a joint T&E environment by developing and providing new tactics, techniques, and procedures to improve joint test capabilities and methodologies.

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Threat Systems activity, based on a memorandum of agreement between DOT&E and DIA, provides DOT&E support in the areas of threat resource analysis, intelligence support and threat systems investments. Threat Systems provides threat resource analyses on the availability, capabilities and limitations of threat representations (threat simulators, targets, models, US surrogates & foreign materiel) and analysis of test resources used for operational testing to support DOT&E's assessment of the adequacy of testing for those programs designated for oversight by DOT&E and OUSD (AT&L), including instrumentation, ranges, targets, specialty sites, and other consumables used for T&E. Threat Systems provides DOT&E assessment officers with program specific threat intelligence support. Threat Systems also funds management, oversight, and development of common-use threat specifications for threat simulators, threat representative targets, and digital threat models used for T&E.

The Center for Countermeasures, a Joint Service Countermeasure (CM) T&E Center, serves as DOD's focal point for countermeasure assessments of U.S. and Foreign precision guided weapons (PGW) and sensor systems, CMs, counter-countermeasures (CCMs), and warning devices. The Center provides independent assessments, including test activities, analysis of results, and consulting expertise in support of the Services, T&E Agencies, the Intelligence Community, and Homeland Defense. The Center identifies current weaknesses and limitations of systems and, through carefully developed assessment methodologies, provides the basis for understanding how systems might be affected by CMs in the battlefield. The Center's staff and CM knowledge base, developed for more than 30 years, provides the DoD acquisition community and the Combatant Commanders with the information and expertise necessary for survival of U.S. forces on the increasingly hostile modern battlefield.

The Joint Logistics Commanders JTCG/ME was chartered more than 30 years ago to serve as DoD's focal point for munitions effectiveness information (Joint Munitions Effectiveness Manuals (JMEMs)) on all major non-nuclear U.S. weapons. JTCG/ME, authenticates weapons effectiveness data for use in training, systems acquisition, weapon procurement, and combat modeling and simulation. JMEMs are used by the Armed Forces of the U.S., NATO, and other allies to plan operational missions, support training and tactics development, and support force-level analyses. JTCG/ME also develops and standardizes methodologies for evaluation of munitions effectiveness and maintains databases for target vulnerability, munitions lethality, and weapon system accuracy. Operational lessons learned (Southern/Northern Watch, Enduring Freedom, Iraqi Freedom), Combatant Commands (COCOMs), Service, Military Targeting Committee (MTC), and Operational Users Working Groups (OUWGs) input for specific weapon-target pairings and methodologies continue to drive JMEM requirements and development processes. The FY 2007-2013 funding will develop target geometry models (e.g., surface mobile/fixed, air, hard/deeply buried, and ship targets) and vulnerability data. These data will be combined with weapons characteristics, delivery accuracies, and methodology enhancements to produce effectiveness indices for the specific weapon-target pairings in support of capability-based JMEMs.

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The Joint Aircraft Survivability Program (JASP) is the DoD's focal point for joint service enhancement of military aircraft non-nuclear survivability. The JASP is chartered by the commanders of the USN Naval Air Systems Command, USA Aviation and Missile Command and USAF Aeronautical Systems Center to coordinate and conduct RDT&E to improve military aircraft survivability, develop and standardize aircraft survivability M&S, facilitate information exchange on aircraft survivability and support aircraft survivability education for the DoD and US aircraft community. Each chartering command provides a senior aircraft survivability expert for the JASP Principal Members Steering Group (PMSG), which guides the program and approves projects for funding. The JASP assesses and reports on combat damage incidents through the Joint Combat Assessment Team (JCAT), is the Executive Agent for the Joint Live Fire Aircraft Systems Program managed by the Live Fire Test office of DOT&E and is also an Executive Agent for the Survivability Vulnerability Information Analysis Center (SURVIAC), the repository for aircraft survivability information.

The Test and Evaluation Independent Activities program is the only source of funding for DOT&E studies, analyses, and management to provide continuing support of policy development oversight of the Dodd test and evaluation practices, infrastructure and resources; and transformation of test methods and infrastructure to ensure future defense systems provide necessary joint warfighting capabilities. Studies and analyses examine the implications and consequences of current and proposed policy, plans, operations, strategies, and budgets and are essential for the accomplishment of the DOT&E mission. This PE funds travel in support of its activities.

This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support management activities for the DOT&E oversight responsibility for T&E and T&E resources.

### **Accomplishments/Planned Program:**

#### **FY 2006 Accomplishments:**

#### **T & E Programs:**

- Please see Development Test and Evaluation Program Element 0605804D8Z.

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### **FY 2007 Plans:**

#### **JT&E:**

In Fiscal Year (FY) 2007 JT&E will continue eight Joint Test projects and initiate new tests as approved by its Senior Advisory Council. The JT&E will continue five Quick Reaction Tests (QRT) and initiate new QRTs as approved by its Executive Steering Group. The JT&E Program is able to oversee the addition of three new feasibility study projects and three new QRTs each fiscal year.

Joint Space Control Operations-Negation Joint Test is scheduled to close in FY 2007 after three years of testing. To date, it has produced planning and assessment procedures that were incorporated into various contingency plans dealing with this mission. It also provided input into training curriculum in several Government and Service schools. On an operational level, it produced the “Reconnaissance, Surveillance, and Target Acquisition Intelligence Handbook” and “Strategic Instruction on Risk Assessment, Risk Mitigation and Deconfliction of Space Control Activities”. The Joint Interoperability for Maritime Interdiction (JIMI) QRT is scheduled to close in FY 2007. JIMI conducted testing to improve use of the Link 16 among joint assets carrying out the maritime interdiction mission.

The Joint Shipboard Ammunition and Ammunition Board QRT will close down in FY 2007. It focused on making Navy ships available for non-Navy ammunition by streamlining the identification and cataloging processes. This makes joint training and operations safer. It also provided input to OP4 and JP 3-04, publications that deal with shipboard operations. The Joint Counter Remote Control Improvised Explosive Device Electronic Warfare QRT will close in FY 2007. It produced a training handbook to improve employment of the CREW jammer by the warfighter and result in fewer lives lost to IED attacks. On a continual basis, JT&E reviews nominations for new projects, reviews on-going projects, and ensures closing projects debrief, distribute final reports and transition to Service organizations as appropriate.

#### **Threat Systems:**

Provides analytical support for test adequacy issues for those programs designated for oversight by DOT&E and OUSD(AT&L). This includes oversight of Service threat representation developments and acquisitions; oversight and analysis of service prepared threat representation validation reports; participation in technical and programmatic reviews; and, documentation of threat resource descriptions and technical characteristics in the Automated Joint Threat Systems Handbook.

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Threat Systems provides DOT&E assessment officers with program specific threat intelligence support by sponsoring threat analysis briefings in response to program technical issues; initiating DOT&E intelligence production requirements; and conducting liaison with the intelligence community. It also provides focused investments to apply new technologies and innovations for increased threat realism for T&E including hardware / software development of threat simulators, targets, digital threat models, threat surrogates, foreign materiel and hardware-in-the-loop simulations.

In FY 2007, the Threat Systems activity continued the oversight of Service threat representation developments and validation reports. In addition, the Threat Systems activity participated in test planning working group meetings, special studies conducted by the Test Resource Management Center, a follow-on to a Threat Systems initiative, to define infrared T&E infrastructure necessary to adequately test infrared missile warning and countermeasure equipment; initiated an effort to define methodologies to test against advanced surface-to-air systems; managed an effort to develop and field a ground target control system; and initiated an effort to determine what existing threat test assets can and should be modernized. These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable and promotes common solutions to Service threat representation needs.

### CCM:

The Center will test, analyze, and report on more than 20 U.S. and foreign PGW systems/components in a CM environment as well as CM and threat-warning systems and other programs. Each program supported will receive an independent assessment of our findings and test support for CM/CCM evaluations. Approximately 35% of the programs that are anticipated to receive support are under DOT&E oversight, 40% are countermeasure systems or smaller weapons and sensor programs that do not meet oversight criteria, 15% are foreign systems, and 10% of our efforts are in direct support of the warfighter. Our support is distributed across all the Services, as well as intelligence agencies and government technology developers.

The Center is improving its testing capability with the expected delivery of the Joint Mobile Infrared Countermeasure Test System (JMITS) and two new general purpose test vans. The Center will provide expertise to many organizations and will be actively involved in the following panels: The Technical Coordination Panel (TTCP), Foreign Material Exploitation Working Group, Precision Strike Association, Threat Simulation Investment Working Group, Air Force Directed Energy Task Force – Laser, Joint Expendable Countermeasures (JECM) Working Group, Future Combat Systems (FCS) IPT, JCTG/ME Working Group, UJTL/JTRAT Working Group, and the Joint Aircraft Survivability Program.

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### JTCG/ME:

In order to enable operational commanders, DoD targeteers, weaponeers, and planners to prosecute the GWOT, the JTCG/ME will develop and release JMEM Weaponeering System (JWS) v1.2 in May 2007 and Joint-Antiair Combat Effectiveness System (J-ACE) Air Superiority (AS) v3.2.1 in January 2007. JWS v1.2 will provide additional target and other critical data and methodology fixes to warfighters. This CD-ROM will include approximately 280 new targets with associated effectiveness data (20 surface mobile, 10 ships, 5 small boats, 17 submarine targets, 4 aircraft, and 211 surrogate targets). For new and updated warheads data, BLU-113, BLU-109, BLU-122, BLU-109 B/B, and AGM-114N will be included in this CD-ROM. Additionally, SLAM/ER and Hellfire II data will also be added. J-ACE: AS v3.2.1 will add 5 additional threat Anti-air missile models, 2 threat SAMs, and will provide a new rotary wing aircraft survivability data viewer.

In support of the Combatant Command Requirements, the JTCG/ME will: (i) continuously provide support to CoComs, Services, Joint Staff J8, OSD AT&L, and DIA; (ii) review and prioritize 2007 DoD Munitions Requirements Process (MRP) document and new CoCom requirements through data call in the April-May 2007 timeframe; (iii) continue to work with intelligence community (i.e., National Ground Intelligence Center, National Air and Space Intelligence Center, Missile and Space Intelligence Center, Office of Naval Intelligence, and Defense Intelligence Agency) to collect intelligence data for Target Geometry Model (TGM) development; and (iv) produce JMEM data for high-priority Combatant Command targets using full vulnerability/lethality analyses (~50) and surrogation techniques/methodologies (~100).

Other critical JMEM activities will be: (i) release of Advanced Joint Effectiveness Model (AJEM) v2.10; (ii) enhancement of methodology to evaluate collateral damage and weapons effects against above/below ground hardened target structures to include Military Operation Urban Terrain (MOUT); and (iii) implementation of bug fixes, improvements/enhancement, and accreditation of operational tools for JWS v2.0 based on warfighters' requirements (PVTM, JGEM, BAM, HTM, BAS, TARCOM, JAAM, FATEPEN, BAS and JMAE, etc.). In summary, the JTCG/ME will continuously measure performance on all FY 2007 projects based on the delivery of the final product. In FY 2007, there will be approximately 100 specific deliverables.

### JASP:

In FY 2007 the JASP will conduct 47 RDT&E projects through about a dozen organizations across the country. Twenty-five projects are new starts and 22 are continuing multi-year projects from the previous fiscal year. In the area of susceptibility reduction,

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projects will address the improvement of missile warning technologies and techniques, reducing the cost and weight of directed energy IRCM systems, enhancing survivability against RF guided threats and an initial look at requirements for active protection (hit-to-kill) systems on low/slow flying aircraft. In the area of vulnerability reduction, projects will continue collecting data and developing high-fidelity models for the design of ballistically tolerant aircraft, developing lighter and more effective aircraft armor solutions (including transparent armor), investigating new fuel/fire protection technologies and applying survivable engine control techniques to the T-700 turbo-shaft engine. In aircraft survivability M&S, projects will continue to improve vulnerability endgame capability and credibility, document warfighter requirements for aircraft survivability data, integrate DIA threat missile models into RF threat engagement codes (ESAMS and MOSAIC) and complete demonstration of the JASP Integrated Survivability Assessment (ISA) process for the MMA aircraft program.

The JCAT will continue to support the USMC, Army and Air Force in Operation Iraqi Freedom, train warfighters on threat effects and combat damage assessment before and during deployment, and report their findings to combatant commanders and the DoD S&T and acquisition communities. The JASP will continue supporting aircraft survivability education and information exchange through internet sites (public, restricted access and classified), by publishing the Aircraft Survivability Newsletter, developing educational materials and conducting training for the DoD and their contractors. The JASP will initiate, continue and complete other projects as approved by the JASP Principal Members Steering Group and OSD.

### **T&E Independent Activities:**

Provide continuing analysis and analytical support for the Director, Operational Test and Evaluation, Title 10, United States Code, roles and responsibilities with regard to operational and live fire test and evaluation as the principal adviser to the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology, and Logistics and as the principal test and evaluation official within the senior management of the DoD. Support the Director's operational and live fire test resource requirements for the statutory biennial strategic plan reflecting the needs of the Department with respect to T&E facilities and resources, as well as developing technical alternatives on issues affecting T&E resources and infrastructure. Procure administrative support to carry out oversight of DOT&E programs as well as provide accounting and financial management capability to DOT&E.

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### FY 2008 Plans:

#### JT&E:

In FY 2008 the JT&E will have seven on-going projects and new projects as approved by its Senior Advisory Council and Executive Steering Group. Two of these seven are schedule to close down in FY 2008. The Joint Fires Coordination Measures Joint Test is working on new TTP to standardize establishing a joint fires area using current command and control systems. To date it has provided input into various joint fires area publications. On a continual basis, JT&E reviews nominations for new projects, reviews on-going projects, and ensures closing projects debrief, distribute final reports and transition to Service organizations as appropriate.

#### Threat Systems

Provides analytical support for test adequacy issues for those programs designated for oversight by DOT&E and OUSD(AT&L). This includes oversight of Service threat representation developments and acquisitions; oversight and analysis of service prepared threat representation validation reports; participation in technical and programmatic reviews; and, documenting threat resource descriptions and technical characteristics in the Automated Joint Threat Systems Handbook.

Threat Systems provides DOT&E assessment officers with program specific threat intelligence support by sponsoring threat analysis briefings in response to program technical issues; initiating DOT&E intelligence production requirements; and conducting liaison with the intelligence community. It also provides focused investments to apply new technologies and innovations for increased threat realism for T&E including hardware / software development of threat simulators, targets, digital threat models, threat surrogates, foreign materiel and hardware-in-the-loop simulations.

In FY 2008, the Threat Systems activity will conclude its efforts in defining the infrared T&E infrastructure necessary to test missile warning and countermeasures equipment; conduct design studies for testing against advanced surface-to-air missile systems; initiate threat modeling and simulation efforts to standardize threat models used for T&E; continue to manage an effort to develop and field a ground target control system; and begin oversight of a full scale target replacement for the QF-4. In addition, the Threat Systems activity will continue test planning working group participation, conduct special studies and provide current intelligence support tailored to specific US weapon systems acquisition. These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable and promotes common solutions to Service threat representation needs.

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### CCM:

The Center will test, analyze, and report on more than 20 U.S. and foreign PGW systems/components in a CM environment as well as CM and threat-warning systems and other programs. Each program supported will receive an independent assessment of our findings and test support for CM/CCM evaluations. Approximately 30% of the programs that are anticipated to receive support are under DOT&E oversight, 45% are smaller programs that do not meet oversight criteria, 15% are foreign systems, and 10% of our efforts are in direct support of the warfighter. Our support is distributed across all the Services, as well as intelligence agencies and government technology developers.

The Center will provide expertise to many organizations and will be actively involved in the following panels: The Technical Coordination Panel (TTCP), Foreign Material Exploitation Working Group, Precision Strike Association, Threat Simulation Investment Working Group, Air Force Directed Energy Task Force – Laser, Joint Expendable Countermeasures (JECM) Working Group, Future Combat Systems (FCS) IPT, JCTG/ME Working Group, UJTL/JTRAT Working Group, and the Joint Aircraft Survivability Program.

### JTCG/ME:

In support of operational commanders, DoD targeteers, weaponeers, and planners, the JTCG/ME will develop and release JMEM Weaponeering System (JWS) v2.0 in March 2008 and Joint-Anti-air Combat Effectiveness System (J-ACE) Air Superiority (AS) v4.0 in April 2008. JWS v2.0, a capabilities-based JMEM, will provide a single weaponeering process (“one-stop shop” weaponeering) by integrating air-to-surface and surface-to-surface methods; provide the capability to “sanitize” for easy release to foreign customers and coalition partners; and, improve external interfaces for Mission Planning Systems and other external JMEM users. J-ACE: AS v4.0 will have additional air-to-air missile effectiveness models (PL-2, -2A, -5B/C, -7, A-Darter, ASRAAM, Astra, IRIS-T, Matra Super 530F, Python 5, etc); surface-to-air missile effectiveness models (SA-20, -12, -5, -15, and -18, etc.); rotary wing aircraft survivability data (AH-1W, AH-6M, and CH-47D/F, etc.); and, initial countermeasure system performance data.

JTCG/ME will continue to develop JMEM data for most critical Combatant Commander identified systems, to reduce CD-ROM update cycles through incremental updates; and develop tri-Service JMEM operation tools for JMEM/FX and IO programs. In summary, JTCG/ME will continue to: (i) implement a capabilities-based JMEM, accounting for newly fielded systems employing traditional and non-traditional damage mechanisms; (ii) expand existing databases to incorporate newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, and Antiair); (iii) enhance collateral damage methods; and, improve methods for

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estimating weapons effects against above/below ground hardened target to include MOUT structures; and, (iv) improve connectivity to real time planning systems assessing time sensitive targets.

### **JASP:**

In FY 2008 the JASP will continue work on at least 23 multi-year RDT&E projects and initiate new projects as approved by the JASP Principal Members Steering Group and OSD. In the area of susceptibility reduction, the JASP will address improving directed energy infrared countermeasures, electronic countermeasures technology and techniques, and address immediate warfighter needs. In the area of vulnerability reduction, the JASP will continue to address requirements for lighter and more effective armor, fuel containment and fire suppression. In aircraft survivability M&S, the JASP will continue to improve vulnerability endgame capability and credibility, integrate DIA threat missile models into RF threat engagement codes (ESAMS and MOSAIC) and address M&S requirements identified by the joint aircraft survivability community.

The JCAT will continue to support the USMC, Army and Air Force by assessing combat damage incidents as required, train warfighters on threat effects and combat damage assessment and report their findings to combatant commanders and the DoD S&T and acquisition communities. The JASP will continue supporting aircraft survivability education and information exchange through internet sites (public, restricted access and classified), by publishing the Aircraft Survivability Newsletter, developing educational materials and conducting training for the DoD and their contractors.

### **T&E Independent Activities:**

Provide continuing analysis and analytical support for the Director, Operational Test and Evaluation, Title 10, United States Code, roles and responsibilities with regard to operational and live fire test and evaluation as the principal adviser to the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology, and Logistics and as the principal test and evaluation official within the senior management of the DoD. Support the Director's operational and live fire test resource requirements for the statutory biennial strategic plan reflecting the needs of the Department with respect to T&E facilities and resources, as well as developing technical alternatives on issues affecting T&E resources and infrastructure. Procure administrative support to carry out oversight of DOT&E programs as well as provide accounting and financial management capability to DOT&E.

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### **FY 2009 Plans:**

#### **JT&E:**

In FY 2009, JT&E anticipates five projects will close down. It will have new, yet to be determined projects initiated in FY 2007 and FY 2008. The tests closing down in this fiscal year work on a broad range of issues, ranging from joint test methods to War on Terror activities. These projects are now in the early stages of testing and do not have substantial products to report. On a continual basis, JT&E reviews nominations for new projects, reviews on-going projects, and ensures closing projects debrief, distribute final reports and transition to Service organizations as appropriate.

#### **Threat Systems**

Provides analytical support for test adequacy issues for those programs designated for oversight by DOT&E and OUSD(AT&L). This includes oversight of Service threat representation developments and acquisitions; oversight and analysis of service prepared threat representation validation reports; participation in technical and programmatic reviews; and, documenting threat resource descriptions and technical characteristics in the Automated Joint Threat Systems Handbook.

Threat Systems provides DOT&E assessment officers with program specific threat intelligence support by sponsoring threat analysis briefings in response to program technical issues; initiating DOT&E intelligence production requirements; and conducting liaison with the intelligence community. It also provides focused investments to apply new technologies and innovations for increased threat realism for T&E including hardware / software development of threat simulators, targets, digital threat models, threat surrogates, foreign materiel and hardware-in-the-loop simulations.

In FY 2009, the Threat Systems activity will examine how to best test UHF/VHF systems; continue to address testing against advanced threats; continue test planning working group participation, conduct special studies and provide current intelligence support tailored to specific US weapon systems acquisition; continue efforts to develop standard target control systems and oversee the development of the replacement for the QF-4 full scale aerial target. These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable and promotes common solutions to Service threat representation needs.

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### CCM:

The Center will test, analyze, and report on more than 20 U.S. and foreign PGW systems/components in a CM environment as well as CM and threat-warning systems and other programs. Each program supported will receive an independent assessment of our findings and test support for CM/CCM evaluations. Approximately 35% of the programs that are anticipated to receive support are under DOT&E oversight, 40% are smaller programs that do not meet oversight criteria, 15% are foreign systems, and 10% of our efforts are in direct support of the warfighter. Our support is distributed across all the Services, as well as intelligence agencies and government technology developers.

The Center will provide expertise to many organizations and will be actively involved in the following panels: The Technical Coordination Panel (TTCP), Foreign Material Exploitation Working Group, Precision Strike Association, Threat Simulation Investment Working Group, Air Force Directed Energy Task Force – Laser, Joint Expendable Countermeasures (JECM) Working Group, Future Combat Systems (FCS) IPT, JMEM/ME Working Group, UJTL/JTRAT Working Group, and the Joint Aircraft Survivability Program.

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In support of operational commanders, DoD targeteers, weaponeers, and planners, the JTCG/ME will develop and release JMEM Weaponeering System (JWS) v2.x and Joint-Anti-air Combat Effectiveness System (J-ACE) Air Superiority (AS) v4.x.

JTCG/ME will continue to: (i) develop JMEM data for most critical Combatant Commander identified systems; (ii) reduce CD-ROM update cycles through incremental updates; (iii) develop tri-Service JMEM operation tools for JMEM/FX and IO programs; (iv) implement a capabilities-based JMEM, accounting for newly fielded systems employing traditional and non-traditional damage mechanisms; (v) expand existing databases to incorporate newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, and Anti-air); (vi) enhance collateral damage and hardened target structures; and, (vii) provide connectivity to real time planning systems assessing time sensitive targets.

### JASP:

In FY 2009 the JASP will continue work on at least seven multi-year RDT&E projects and initiate new projects as approved by the JASP Principal Members Steering Group and OSD. In the area of susceptibility reduction, the JASP will address improving  
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directed energy infrared countermeasures, electronic countermeasures technology and techniques, and address immediate warfighter needs. In the area of vulnerability reduction, the JASP will continue to address requirements for lighter and more effective armor, fuel containment and fire suppression. In aircraft survivability M&S, the JASP will continue to improve vulnerability endgame capability and credibility, integrate DIA threat missile models into RF threat engagement codes (ESAMS and MOSAIC) and address M&S requirements identified by the joint aircraft survivability community.

The JCAT will continue to support the USMC, Army and Air Force by assessing combat damage incidents as required, train warfighters on threat effects and combat damage assessment and report their findings to combatant commanders and the DoD S&T and acquisition communities. The JASP will continue supporting aircraft survivability education and information exchange through internet sites (public, restricted access and classified), by publishing the Aircraft Survivability Newsletter, developing educational materials and conducting training for the DoD and their contractors.

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**B. (U) PROGRAM CHANGE SUMMARY**

(\$ in Millions)	<u>FY 2006*</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY 2007 President's Budget		120.114	122.451	125.962
Current Budget Submit		119.029	120.504	124.004
Total Adjustments				
Congressional program reductions		(1.085)		
Congressional rescissions				
Congressional increases				
Fiscal Guidance Adjustments			(1.947)	(1.958)
Inflation Adjustment				
Reprogramming				

**C. (U) OTHER PROGRAM FUNDING: NA**

**D. (U) ACQUISITION STRATGEY: NA**

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**E. (U) PERFORMANCE METRICS:**

Performance Measure: Percentage of required products, such as test planning documents, munitions effectiveness manuals, tactics-techniques-procedures, threat characteristics, assessments, and reports that are developed and delivered to program managers and customers on time.

Actual Performance and Goals:

<b>Operational Test Activities and Analyses</b>	<b>FY 2006 Actual</b>	<b>FY 2007 Goal</b>	<b>FY 2008 Goal</b>	<b>FY 2009 Goal</b>
<b>On-Time Completion Rate</b>	<b>76%</b>	<b>85%</b>	<b>88%</b>	<b>91%</b>

The on-time completion rate was computed on the basis of the number of required products that were submitted within established time standards relative to the total number of such products that fell due during the fiscal year. DOT&E plans to achieve its goals for FY 2007 through FY 2009 through increased management emphasis on timely delivery of required products to customer activities.