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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2)					February 2000				
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX			LIVE FIRE TESTING PE 0605131D8Z						
\$'s in Millions	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	COST TO COMPLETE	TOTAL COST
PE 0604940D	18.934	16.669	9.712	9.887	10.032	10.204	10.417	Continuing	Continuing

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

This program element, 0605131D8Z, directly supports the Congressional statutory requirements for oversight of Live Fire Test and Evaluation (LFT&E). The Federal Acquisition Streamlining Act of 1994 amended Title 10 to transfer, within the Office of the Secretary of Defense, responsibility for monitoring and reviewing the live fire testing activities of the Department of Defense. Responsibility was reassigned from the Director of Test, Systems, Engineering and Evaluation, Office of the Under Secretary of Defense (Acquisition and Technology), to the Director of Operational Test and Evaluation (DOT&E) in FY 1995.

The primary objective of LFT&E is to assure that the vulnerability and survivability of DoD crew-carrying weapons platforms and the lethality of our conventional munitions are known and acceptable before entering full-rate production. LFT&E encompasses realistic tests involving actual U.S. and threat hardware or, if not available, acceptable surrogate threat hardware. The objective is to identify and correct design deficiencies early in the development process, and is required to be completed before weapons programs proceed beyond low-rate initial production. It also includes realistic modeling and simulation pretest predictions to assure the maximum benefit from the testing. The LFT&E program is essential, especially in view of the escalating costs of technologically sophisticated weapons systems.

The LFT&E program element also supports the DoD's Joint Live Fire (JLF) Program which began in 1984 under an OSD charter to test fielded front-line U.S. and threat combat aircraft and armor systems for their vulnerabilities and fielded weapons, both U.S. and threat, for their lethalties against their respective targets. The Congress, seeing the vulnerabilities and lethality issues raised by the JLF program of fielded systems, decided that there must be legislation to require that this realistic testing be done before these systems reach the field. Hence the Live Fire Test Legislation, Title X, Section 2366 was passed in 1987.

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For FY 1999, the Congress added \$4.0 million to the LFT&E PE for Radio Frequency (RF) Weapon Vulnerability Assessments. The LFT&E Program has been testing and evaluating the on-target effects of potential directed energy weapons (laser and RF) over the past two years.

The LFT&E program element also funds other activities used to support the functions of the LFT&E, JLF, LFT&T, and RF programs. The other activities, outlined below, are “Crew Casualty Assessment,” “Exploring New Technologies/Advanced Concepts and Survivability Initiatives,” and “Assuring Modeling and Simulation Adequacy.” Efforts in those categories are undergoing significant changes during FYs 1999 and 2000, as emphasis is growing on modeling and simulation in support of LFT&E.

LFT&E funding is part of management oversight over research, development, test, and evaluation (RDT&E) of new systems, as well as RDT&E of fielded systems, and therefore budgeted in Program Element Research Category 6.5.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

FY 1999 Accomplishments

COMPLETED:

Review and Monitor Major T&E Programs (\$3.586M): Completed development of the LFT&E Strategies for the CH-47D Improved Cargo Helicopter (ICH), M1A2 (Abrams Tank), Rolling Airframe Missile (RAM) Block 1, Follow-On to TOW (FOTT), M829E3 120mm Armor Piercing Fin Stabilized Discarding Sabot-Tracer (APFSDS-T) tank ammunition, and the XM1001 40mm Canister Cartridge. Approved updated Test and Evaluation Master Plans (TEMPs) for DD-21 Land Attack Destroyer and Seawolf (SSN-21). Approved alternative plans and concurred on LFT&E waiver certifications for CH-47D Improved Cover Helicopter (ICH), and for the MH-47E and MH-60K Special Operations Aircraft (SOA). Reviewed Event Design Plans for M1-based Wolverine Heavy Assault Bridge (HAB) and Grizzly Breacher, Command and Control Vehicle (C2V), M2A3 Bradley Fighting Vehicle System (FVS), Sensor Fuzed Weapon (SFW) P³I, M1 Grizzly Breacher, and F/A-18E/F Super Hornet. Reviewed Test Plans for all test programs currently in the execution phase, including V-22 Osprey, Stand-Off Land Attack Missile-Expanded Response (SLAM-ER), M2A3 Bradley FVS, C2V, and M1 HAB. Completed LFT&E testing of Sense and Destroy Armor Munition (SADARM) and the Wide Area Munition (WAM) program, with the report to Congress completed in FY 1999. Completed LFT&E Testing and Report to Congress for the Army Tactical Missile System (ATACMS) Block 1A, and the M993 7.62mm and M995 5.56mm armor piercing (AP) cartridges.

Manage Joint Live Fire Programs (\$3.829M): Completed testing on the static and dynamic vulnerability of the Cobra AH-1S helicopter tail rotor gear boxes, drive shafts, and fuel distribution systems, including an assessment of the battle damage and repair techniques on all these components. Provided helicopter damage predictions for all AH-1S components listed above, and completed a special study on the aerodynamic effects of vibrational damage resulting from ballistically damaged rotor blades. Completed all planned testing on the Spirit (classified system) armored target, although additional threat ammunition may become available for further testing against this target. Began testing of man-portable air defense systems (MANPADS) against F-14 and F-16 aircraft.

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Crew Casualty Assessment (\$0.750M): Conducted a Ground Collision Avoidance System (GCAS) Gravity-Induced Loss of Consciousness (G-LOC) flight demonstration. The G-LOC flight test demonstration evaluated the capability of the current GCAS design to recover aircraft from flight profiles typical of G-LOC incidents. The project “Transition of a Combined Toxic Gas Lethality Model to an Injury Model” was completed.

Assuring Modeling & Simulation Adequacy (\$1.114M): Completed a study of physics-based modeling techniques and their application to LFT&E problems. This activity, coordinated with the Department of Energy (DOE) laboratories, produced several technical proposals for improving key modeling capabilities. Completed an update and release of the Target Interaction Lethality and Vulnerability (TILV) Master Plan to support the Technology Area Review and Assessment (TARA) process.

Live Fire Test and Training (\$5.000M): Funded continuation of the five projects started in FY 1997 to transition simulation and modeling technologies between the live fire test and evaluation community and the military training communities. The projects include small arms effectiveness, combat trauma patient simulation, lethality/vulnerability simulation enhancements, visual target modeling, and synthetic environment support for live fire test of ground vehicles in visual target modeling, incorporating Battle Damage Assessment and Repair (BDAR) into training, and analyzing feasibility of incorporating virtual reality into Total Ship Survivability Trials (TSST). Funded initiation of four new projects in FY 1999 in the areas of dismounted infantry survivability and lethality, enhanced recovery of aircrew from gravity-induced loss of consciousness, battle damage assessment, and non-ballistic live fire test and training for laser threats. Completed solicitation phase that resulted in receipt of 47 proposed projects for funding consideration for FY 2000. Completed evaluation of proposals and selected 7 new projects for initiation in FY 2000. Set up and hosted a second annual National Conference on Testing and Training Partnerships in Orlando, Florida.

Radio Frequency (RF) Weapons Vulnerability Assessment (\$4.000M): Issued a broad agency announcement seeking qualified sources and soliciting research and development proposals which are capable of providing services in the achievement of development, test, and evaluation of RF devices and asymmetric threats. Completed the solicitation and evaluation phase that resulted in the receipt and review of 28 proposed efforts. Awarded contracts to a selected subset of these vendors. Supported a field test of a RF device against a building containing a set of test objects consisting primarily of off the shelf computer technologies.

Official Travel and Administrative Support (\$0.655M): Perform official travel and procure administrative support to carry out oversight of Live Fire Test and Evaluation programs as well as fund efforts of common interest with the Director, Operational Test and Evaluation.

ONGOING:

Review and Monitor Major T&E Programs: Provided oversight on the vulnerability of: the Advanced Amphibious Assault Vehicle (AAAV), the Command and Control Vehicle (C2V), the Crusader System (Self-Propelled Howitzer [SPH] and Resupply Vehicle (RSV), the M1-based Grizzly Breacher, the M1A2 Upgrade (Abrams-FY2000), the M2A3 and M3A3 Bradley Fighting Vehicle System (FVS) (M2/M3) Upgrades, the M1-based Wolverine HAB, the Light Tactical Vehicle (LTV), the Line-of-Sight Anti-Tank (LOSAT) weapon system, the AH-1W Helicopter Upgrade, the UH-60L Blackhawk, the Longbow Apache, the Airborne Laser (ABL), the UH-1N Helicopter Upgrade, the B-1B Lancer, the B-2 Spirit, the F-22 Raptor, the F/A-18E/F Super Hornet, the MH-47E Special Operations Aircraft, MH-60K Special Operations Aircraft, the OH-58D Kiowa Warrior,

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H-1 Helicopter Upgrades, the CH-60 Helicopter, the SH-60R Multimission Helicopter, the CH-47 Chinook Upgrade, the C-130J aircraft, the Joint Strike Fighter (JSF), the RAH-66 Comanche, the V-22 Osprey, the DD-21 Land Attack Destroyer, the CVNX Next Generation Aircraft Carrier, the NSSN (Virginia Class, SSN-774) New Attack Submarine, the SSN-21 Seawolf Class Submarine, the DDG-51 Arleigh Burke Class Guided Missile Destroyer, the Auxiliary Dry Cargo Ship (T-ADC(X)), and the LPD-17 Amphibious Transport Dock Ship. Provided oversight on the lethality of: the Army Tactical Missile System (ATACMS) Block 1A (APAM) and Block II (BAT), the Longbow HELLFIRE, the M829E3 120mm Armor-Piercing Fin-Stabilized Discarding Sabot Tracer (APFSDS-T), the Multiple Launch Rocket System (MLRS) (Guided Rocket (G-MLRS) and Extended Range Rocket (MLRS-ERR) versions), the XM1001 Cartridge, the Mk48 Advanced Capability (ADCAP) Torpedo, the Joint Direct Attack Munition (JDAM), the Medium Extended Air Defense System (MEADS), the Navy Area Tactical Ballistic Missile Defense (TBMD), the Navy Theater Wide (NTW) System, the Follow-On-To-Tow (FOTT), the Javelin Alternate Main Charge Warhead (AMCW), the Joint Air-to-Surface Standoff Missile (JASSM), the Joint Stand-Off Weapon (JSOW) (BLU-97, BLU-108, and Unitary warheads), the Line-of-Sight Anti-Tank (LOSAT) weapon, the Enhanced Fiber-Optic Guided Missile (EFOG-M), the M993 and M995 Armor Piercing Cartridges, the Objective Crew Served Weapon (OCSW), the Objective Individual Combat Weapon (OICW), the Sense and Destroy Armor Munition (SADARM), the Sensor Fuzed Weapon (SFW), the Stand-off Land Attack Missile-Expanded Response (SLAM-ER), the Standard Missile Block IVA, National Missile Defense (NMD), the Tomahawk Block IV, the Tactical Tomahawk, the Wide Area Munition (WAM), the Advanced Medium Range Air to Air Missile (AMRAAM), the AIM-9X Sidewinder missile, the Evolved Sea Sparrow Missile (ESSM), the Rolling Airframe Missile (RAM), the Lightweight Hybrid Torpedo (LHT), the Airborne Laser (ABL) system, the Patriot Advanced Capability-3 (PAC-3), and Theater High Altitude Area Defense (THAAD).

Review and Monitor Joint Live Fire Programs: Continued oversight of Joint Live Fire (JLF) armor/anti-armor and aircraft test programs. Analysis of data collected in FY 1997, FY 1998, and FY 1999 continues. Specifically, the analysis of the static-versus-dynamic testing methodology to determine the vulnerability of AH-1S helicopter engines and transmissions to: 1) assess their vulnerability when under load, 2) assess the adequacy of the test procedures followed for evaluating helicopter vulnerability, 3) assess the adequacy of damage models to predict the vulnerability of helicopter components and resulting probability of kills, 4) assess the difference between full-up and component-level testing, and 5) conducted battle damage assessment and repair exercises for actual ballistic impacts into operational aircraft. Started testing Spirit (classified system) and land combat system versus ballistic threats; testing will continue and is expected to be completed with analysis and reporting performed in FY 2000. The JLF program started planning a series of ballistic tests (using U.S. munitions) on SCUD B missiles in FY 1997; this effort is planned to start with actual testing in FY 1999.

Crew Casualty Assessment: Applications of software for crew casualty assessments were integrated into the Advanced Amphibious Assault Vehicle (AAAV) and C2 Vehicle LFT&E programs and the DD-21 and the DDG-51 Total Ship Survivability Test programs. Continued evaluation of aircraft mishaps due to contribution of gravity-induced loss of consciousness (G-LOC).

Exploring New Technologies/Advanced Concepts and Survivability Initiative: Continued participation in the development of new facilities to explore new technologies such as high power microwave and other directed-energy weapons. Monitored and participated in an ongoing effort to conduct a strategic warhead vulnerability exploitation to gain insights into defeat of strategic missiles in flight. These efforts are restricted to the LFT&E aspects of these technologies, rather than the development of the technology. Many of these programs are jointly funded in concert with the

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military services' in-house funded efforts. This ensures adequate linkage between the Office of the Secretary of Defense (OSD) and the technical communities such as the Joint Technical Coordinating Group/Munitions Effectiveness (JTTCG/ME), the Joint Technical Coordinating Group/Aircraft Survivability (JTTCG/AS), the Survivability/Vulnerability Information Analysis Center (SURVIAC), and the Joint Live Fire test agencies.

Assuring Modeling & Simulation Adequacy: 1) Continued to actively support Modeling and Simulation (M&S) policy and its integration into test and evaluation (T&E) strategies. 2) Updated the Target Interaction Lethality and Vulnerability (TILV) report to support decisions on Research, Development, Test, and Evaluation (RDT&E) funding. The transition of TILV to a structure co-chaired by the Director, Defense Research and Engineering provides a direct link between the T&E needs identified by the lethality/vulnerability subject matter experts in the services and the R&D prioritization process in OSD. 3) The Safety and Survivability of Aircraft Initiative has shown strong progress in the improvement of the modeling of dry bay fires on aircraft and detailed plans are being developed for next year's activities subject to available funds. Due to uncertainties in Ballistic Missile Defense (BMD) Office funding for related activities, the assessment of hypervelocity impact assessment started behind schedule. These three initiatives involve the DOE labs, Service labs and test agencies, OSD acquisition elements, and the Institute for Defense Analyses. The development of strategy to extend and coordinate the physics-based modeling activities with other department initiatives such as the High Performance Computing Modernization effort, Simulation Based Acquisition, and BMD M&S efforts will continue. Integrated Validation, Verification, and Accreditation processes were incorporated into the modeling and simulation efforts for DDG-51 guided missile destroyer, DD-21 land attack destroyer, LPD-17 transport ship, and B-1B bomber.

Live Fire Test and Training: Continued to monitor the progress of projects under the LFT&E Program. Three of the five projects forming the original program in FY 1997 will be completed; one was completed in FY 1998. Of the three new projects started in FY 1998, and the continuing one from FY 1997, all are expected to be completed in FY 2000. Four new projects were added in FY 1999 for a total of eight. Seven new projects will be started in FY 2000 for a total of 15 projects underway.

Radio Frequency (RF) Weapon Vulnerability Assessments: Initiated an assessment of the requirements for testing of the vulnerability of U.S. military systems to RF threats.

FY 2000 Plans:

Review and Monitor Major T&E Programs (\$3.451M): Complete LFT&E technical assessments for those systems approaching due dates for LFT&E reporting to Congress such as Joint Stand-Off Weapon (JSOW) (BLU-97 warhead), Stand-Off Land-Attack Missile-Expanded Response (SLAM-ER), B-1B Lancer Conventional Mission Upgrade Program (CMUP), B-2 Spirit, MH-47E and MH-60K Special Operations Aircraft, Rolling Airframe Missile (RAM), Command and Control Vehicle, and SH-60B Light Airborne Multi-Purpose System (LAMPS). Oversight of continuing efforts in FY 2000 will include: the Advanced Amphibious Assault Vehicle, the Crusader field artillery system, the M1-based Grizzly Breacher, the Light Tactical Vehicle, the M1A2 Upgrade, the M2A3 Bradley FVS upgrade, the M1-based Wolverine Heavy Assault Bridge (HAB), the Cobra AH-1W Upgrade, the Longbow HELLFIRE, M829E3 120mm Armor-Piercing Fin-Stabilized Discarding Sabot-Tracer (APFSDS-T) ammunition, the Multiple Launch Rocket System (MLRS) (Guided), the High Mobility Rocket System (HIMARS), the Stinger Reprogrammable Microprocessor (RMP)

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missile, XM1001 Cartridges, the Mk48 Advanced Capability (ADCAP) torpedo, the JDAM weapon, the Medium Extended Air Defense System (MEADS), Navy Theater Wide missile defense, the UH-1N Upgrade, the B-1B Lancer Conventional Munitions Upgrade Program (CMUP), the F-22 Raptor, the F/A-18E/F Super Hornet, the Joint Strike Fighter, the OH-58D Kiowa Warrior, the RAH-66 Comanche, the V-22 Osprey, the CVN(X) aircraft carrier, the SSN-774 (Virginia Class) attack submarine, the SSN-21 (Seawolf) submarine, the DDG-51 guided missile destroyer, the LPD-17 transport ship, the ATACMS Block II (BAT), the Follow-on-to-TOW (FOTT), the Javelin Alternate Main Charge Warhead (AMCW) system, the Joint Air to Surface Stand-off Missile (JASSM), the Joint Standoff Weapon (JSOW) (BLU-108 and Unitary warheads), the Objective Crew Served Weapon (OCSW), the Objective Individual Combat Weapon (OICW), Sense and Destroy Armor Munition (SADARM), the Sensor Fuzed Weapon (SFW), the Advanced Medium Air-to-Air Missile (AMRAAM), the AIM-9X Sidewinder missile, the Evolved Sea Sparrow Missile (ESSM), the Navy Area Tactical Ballistic Missile Defense System, Patriot Advanced Capability (PAC-3), Theater High Altitude Area Defense (THAAD), the Airborne Laser (ABL) system, the Medium Extended Air Defense (MEADS) System, and the National Missile Defense (NMD) System.

Review and Monitor Joint Live Fire Programs (\$3.750M): The F-16 JLF Program will determine the vulnerability to foreign MANPADS threats by identifying kill mechanisms and impacts to flight performance. The principal objectives are to: 1) obtain a physical understanding of kinetic energy kill mechanism, 2) identify vulnerable areas for potential reduction techniques, and, 3) collect test data to be used when performing predictive analyses. The F-14 JLF Program will continue to evaluate the vulnerability of its fuel system to gun and missile threats. Additionally, it will collect data to enhance existing analytical models and to aid the operational community in refining tactics and the design community to develop inexpensive hardware changes that will enhance survivability. CH-47D rotor blade tests will start in FY 2000. The advance planning for live fire testing of F-117 and C-130H aircraft components and/or subsystems will continue.

Crew Casualty Assessment (\$.250M): Continue the evaluation of aircraft mishaps due to contribution of gravity-induced loss of consciousness (G-LOC). Conduct a Ground Collision Avoidance System (GCAS) G-LOC flight demonstration with Air Force Combat Command operational pilots.

Exploring New Technologies/Advanced Concepts and Survivability Initiative (\$.750M): Begin sponsor testing program of contractor supplied passive ullage protective systems. A Broad Agency Announcement was written to solicit techniques to significantly reduce the risk of explosive fires in fuel tanks as a result of ballistic impact.

Assuring Modeling & Simulation Adequacy (\$.900M): Under the Safety and Survivability of Aircraft Initiative (SSAI) program, continue to address dry bay fire modeling and incorporate the explosive modeling techniques developed at the National Labs under the TWA Flight 800 effort. Continue hypervelocity impact work to identify and document the applicability of hydrocodes and engineering analysis tools to the problem of assessing intercept lethality. The physics-based modeling initiative will evolve and expand to incorporate elements of other DoD M&S efforts. Working meetings will be arranged to coordinate R&D, DoD High Performance Computing (HPC), technical support from DOE and Service labs, and acquisition decision needs from developmental testing through operational testing, including LFT&E. These meeting attendees will be of sufficiently high level to develop a Memorandum of Understanding committing the signatories to support a focused effort. Initiate an update of the Target Interaction, Lethality, and Vulnerability (TILV) Master Plan to support Directed Energy Weapons.

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Live Fire Testing and Training (\$6.918M): Complete the Effectiveness of Small Arms Fire project started under the FY 1997 program. Complete the Battle Damage Assessment and Repair, Realistic Munitions Impact Flash Events, and Augmented Reality for Total Ship Survivability Test projects started under the FY 1998 program. Complete the Enhance Recovery/Training of Aircrew, the LFT&E Training Opportunities for Battle Damage Assessment, and Non-ballistic Live Fire Test and Training Laser Threats projects started under the FY 1999 program. Complete solicitation, evaluation, and selection process to identify appropriate FY 2000 projects and initiate projects to the extent that funding allows.

Radio Frequency (RF) Weapons Vulnerability Assessment (no FY00 \$): Continue the assessment of the requirements for testing of the vulnerability of U.S. military systems to asymmetric threats. Initiate vulnerability testing and evaluation of the threat of RF devices (characteristic of what a rogue nation or terrorist could fabricate using only “open source” information and available hardware components) on modern and future military systems, support infrastructure, and systems under development using commercial off-the-shelf technology, which could or will have military application. These systems will be evaluated with regard to their vulnerability, susceptibility, and survivability to degradation, disruption, upset, and damage from the RF devices. The testing will be conducted in realistic environments where such RF devices would be used. A senior advisory group consisting of LFT&E personnel, RF experts, and senior military advisors will be formed and will meet frequently to review program progress and results.

Official Travel and Administrative Support (\$.650M): Perform official travel and procure administrative support to carry out oversight of Live Fire Test and Evaluation programs as well as fund efforts of common interest with the Director, Operational Test and Evaluation.

FY 2001 Plans:

Review and Monitor Major T&E Programs (\$3.550M): Complete LFT&E technical assessments for those systems approaching due dates for LFT&E reporting to Congress. Oversight of continuing efforts in FY 2001 will include the Advanced Amphibious Assault Vehicle, the Crusader field artillery system, the M1-based Grizzly Breacher, the Light Tactical Vehicle, the M1A2 Abrams Tank Upgrade, the M2A3 Bradley FVS upgrade, the M1-based Wolverine Heavy Assault Bridge (HAB), the AH-1W Helicopter Upgrade, the Longbow HELLFIRE, M829E3 120mm APFSDS-T ammunition, the Multiple Launch Rocket System (MLRS) (Guided), the High Mobility Rocket System (HIMARS), the Stinger-Reprogrammable MicroProcessor (RMP) missile, XM1001 Cartridges, the Mk48 Advanced Capability (ADCAP) torpedo, the Joint Direct Attack Munition (JDAM) weapon, the Medium Extended Air Defense System (MEADS), Navy Theater Wide missile defense, the UH-1N Upgrade, the B-1B Lancer Conventional Mission Upgrade Program (CMUP), the F-22 Raptor, the F/A-18E/F Super Hornet, the Joint Strike Fighter, the OH-58D Kiowa Warrior, the RAH-66 Comanche, the V-22 Osprey, the CVN(X) aircraft carrier, the Virginia Class (SSN-774) attack submarine, the Seawolf (SSN-21) submarine, the DDG-51 guided missile destroyer, the LPD-17 transport ship, the ATACMS Block II (BAT), the Follow-on-to-TOW (FOTT) , the Javelin Alternate Main Charge Warhead (AMCW) system, the Joint Air to Surface Stand-off Missile (JASSM), the Joint Standoff Weapon (JSOW) (BLU-108 and Unitary warheads), the Objective Crew Served Weapon (OCSW), the Objective Individual Combat Weapon (OICW), Sense and Destroy Armor Munition (SADARM), the Sensor Fuzed Weapon (SFW), the Advanced Medium Air-to-Air Missile (AMRAAM), the AIM-9X Sidewinder missile, the Evolved Sea Sparrow Missile (ESSM), the Navy Area Tactical Ballistic Missile Defense System, Patriot Advanced Capability

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(PAC-3), Theater High Altitude Area Defense (THAAD), the Airborne Laser (ABL) system, the Medium Extended Air Defense (MEADS) System, and the National Missile Defense (NMD) System.

Review and Monitor Joint Live Fire Programs (\$3.800M): Conduct tests of fielded systems not previously tested under Air, Land, or Sea Joint Live Fire programs. This fiscal year should see the completion of the fourth phase of testing for helicopters and initiate tests of foreign system acquired for exploitation. Testing of F-14 aircraft will continue, and F-117 and C-130H aircraft component and/or subsystem tests are expected to begin.

Crew Casualty Assessment (\$.250M): Complete the effort toward investigating the issues and potential user casualty risks associated with the operational impact of acceleration-induced incapacitation caused by highly dynamic aircraft flight.

Exploring New Technologies/Advanced Concepts and Survivability Initiative (\$.600M): Continue to sponsor testing of contractor-supplied passive ullage protective systems.

Assuring Modeling & Simulation Adequacy (\$.800M): Continue strong emphasis on understanding the application of physics-based modeling and simulations to test programs and the evaluation of their adequacy. Generate resources for continuing SSAI and provide seed funding for other efforts stemming from the LFT&E physics-based modeling workshops. Assure that programmatic focus is maintained in the development and application of M&S tools and that training capabilities are continuously improved to reflect more credible models. Push for a more consistent infrastructure for managing the M&S that supports T&E specifically and the acquisition process in general. In an environment of shrinking resources it is essential to understand the marginal return on M&S investment. Complete an update to and release of the Target Interaction, Lethality, and Vulnerability (TILV) Master Plan to support Directed Energy Weapons.

Live Fire Testing and Training (no FY01 \$ identified): Continue projects started in prior years and start new projects to the extent funding allows.

Radio Frequency (RF) Weapons Vulnerability Assessment (no FY01 \$ identified): Continue the testing of the vulnerability and survivability of U.S. military systems and commercial off-the-shelf (COTS) technologies to potential asymmetric RF devices of differing wavelengths to the extent funding permits. Expand the test and evaluation program to encompass more military weapon systems, new COTS technologies, and other directed energy threats.

Official Travel and Administrative Support (\$.712M): Perform official travel and procure administrative support to carry out oversight of Live Fire Test and Evaluation programs as well as fund efforts of common interest with the Director, Operational Test and Evaluation.

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B. (U) PROGRAM CHANGE SUMMARY

(\$ in Millions)	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
FY 2000 President's Budget	18.934	9.832	9.755
Testing and Training Initiative		7.000	
Appropriated Value	18.934	16.832	
Adjustments to Appropriated Value			
Government-wide Rescission		(0.163)	
Nonpay Purchase Inflation Adjustment			(0.043)
Current Budget Submit	18.934	16.669	9.712

C. (U) OTHER PROGRAM FUNDING NA

D. (U) ACQUISITION STRATEGY: NA

E. (U) SCHEDULE PROFILE:

Fiscal Year actual and planned events by quarter

<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
1	2	3	4	1	2	3	4	1	2	3	4

Contract Milestones: (See activities under Part A above.)