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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)
1999

February,

Appropriation: Operational Test and
Evaluation, Defense
Budget Activity: 06

Program Element Name: Live Fire Test
Program Element Number: 0605131D8Z

Cost (in Millions)	<u>FY1998</u>	<u>FY1999</u>	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>
Total Program								
Element Cost	13.640	18.934	9.832	9.755	9.937	10.095	10.276	10.503

A. 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 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.

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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 (LRIP). 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 a limited charter to test fielded "first line air-to-ground attack aircraft" and to test "the lethality of major caliber anti-armor munitions against first line armored vehicles." When the Congress passed Title 10, U.S. Code, Section 2366, which set forth specific requirements for the LFT&E of systems under development, it appeared that the earlier JLF program might be phased out as newer, tested systems replaced the older systems. This has not worked out as envisioned because:

- some systems not included in the original program will not be retired as early as planned, continuing in service well into the next century, to face new threats.
- later models of the initial systems have entered service and have not been tested in earlier configurations.
- systems are being tasked to perform additional missions and now face new threat environments that could not have been anticipated at the time the original program was envisioned.
- some development programs (e.g., F-117 and ships) have had limited or no LFT&E programs because of programmatic constraints.

In the FY 1997 DoD Appropriations Act, the Congress appropriated an initial \$3.0 million for the Live Fire Testing and Training (LFT&T) program, formalizing an important LFT&E program relationship. The funding strengthens the natural relationship between live fire test activities and the models and simulations being developed to support the Services' testing and training activities. The LFT&T program is directed by a Senior Advisory Group consisting of DOT&E's Deputy Director for Live Fire Test (Chair) and the four Military Service leaders for training technology located in Orlando, Florida. In FY 1998, the Congress appropriated \$4.0 million for continuation and expansion of the program. Again, in FY 1999, the Congress appropriated \$5.0 million for further continuation and expansion of the program. Beyond FY 1999 no funding for the Test and Training program is yet included in the budget, however it will be submitted as a POM Issue topic.

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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. This has been a small but important effort. However, recent technological advances have made such RF weapons more feasible to build and use, enabling major powers and even small rogue factions to potentially apply these types of asymmetric threats (the spending of small sums of money on terrorist weapons/tactics to attack the high technology, high expense weapons of our military forces) against our forces. The Congress has become increasingly concerned about these asymmetric threats to our military systems and supporting infrastructures, and, as a result, is requiring and funding the OSD LFT&E Office to give increased attention to the assessment of the vulnerability of fielded and developmental U.S. systems to these potential emerging threats.

The LFT&E program element also funds other activities used to support the functions of the LFT&E, JLF, and LFT&T programs. The other activities, outlined below, are "Crew Casualty Assessment," "Exploring New Technologies/Advanced Concepts and Survivability Initiatives," and "Assuring Modeling and Simulation." Efforts in those categories are undergoing significant changes during Fiscal Years 1998, 1999, and 2000, as emphasis is being increased in modeling and simulation in support of LFT&E.

LFT&E funding is part of management support of research and development (R&D), as well as R&D of fielded systems, and therefore budgeted in Program Element Research Category 6.5.

(U) FY 1998 Accomplishments

COMPLETED:

Review and Monitor Major T&E Programs: 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 alternative plans and concurred on LFT&E waiver certifications for CH-47D ICH, MH-47E and MH-60K Special Operations Aircraft (SOA). Reviewed Event Design Plans for M1 Wolverine Heavy Assault Bridge (HAB), 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.

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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, 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 to be 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.

Review and Monitor Joint Live Fire Programs: Completed testing on the static and dynamic vulnerability of 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.

Crew Casualty Assessment: FY 1998 work was limited to completing reports and applying the lessons learned to the DD-21 Surface Combatants for the 21st Century (SC-21), the DDG-51 Arleigh Burke Class Guided Missile Destroyers, and the Advanced Amphibious Assault Vehicle (AAAV) LFT&E programs.

Exploring New Technologies/Advanced Concepts and Survivability Initiative: Completed the second year of investigation and analysis of results of open-air experiments of High Powered Microwave (HPM) threat technologies used against a variety of classified military equipment. This HPM activity, along with that of other Radio Frequency (RF) weapons, were coordinated with civil organizations such as the Los Angeles Emergency Operations Center. These activities have received significant attention at the Congressional level as demonstrated by the request for testimony before the Joint Economic Committee of Congress and the formal General Accounting Office (GAO) investigation of the potential vulnerabilities of military weapons and civilian infrastructure to RF Weapons.

Assuring Modeling & Simulation Adequacy: 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

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Vulnerability (TILV) Master Plan to support the Technology Area Review and Assessment (TARA) process.

Live Fire Test and Training: 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. Selected and funded three additional projects in FY 1998 that build on results from FY 1997 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). Established a process for the solicitation, evaluation, and selection of applicable projects for funding in FY 1999. Completed solicitation phase that resulted in receipt of 56 proposed projects for funding consideration for FY 1999. Set up and hosted a two day national conference on Testing and Training Partnerships in Orlando, Florida.

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 Grizzly Breacher, the M1A2 Upgrade (Abrams-FY2000), the M2A3 and M3A3 Bradley Fighting Vehicle System (FVS) (M2/M3) Upgrades, the M1 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 Air Superiority Fighter, the F/A-18E/F Super Hornet, the MH-47E Special Operations Aircraft, MH-60K Special Operations Aircraft, the OH-58D Kiowa Warrior, 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 Vertical Aircraft, the DD-21 Land Attack Destroyer, the CV(X) Next Generation Aircraft Carrier, the NSSN New Attack Submarine, the SSN-21 Seawolf Class Submarine, the DDG-51 Arleigh Burke Class Guided Missile Destroyer, the Auxiliary Dry Cargo Ship (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 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

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(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), M993 and M995 Armor Piercing Cartridges, the Objective Crew Served Weapon (OCSW), the Objective Individual Combat Weapon (OICW), 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 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 and FY 1998 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 (BDAR) 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 in FY 1999. The JLF program started planning a series of ballistic tests (using U.S. munitions) on SCUD B missiles in FY 1997; this effort is expected to continue with actual testing being started in early FY 1999.

Crew Casualty Assessment: The project "Transition of a Combined Toxic Gas Lethality Model to an Injury Model" was continued. Applications of software for crew casualty LFT&E assessments were integrated into the DD-21, DDG-51, and the AAV programs.

Exploring New Technologies/Advanced Concepts and Survivability Initiative: Continued participation in the development of new facilities to explore new technologies such as HPM and directed-energy weapons (DEW). Monitored and participated in an ongoing effort to conduct a

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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 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 TILV report to support decisions on Research and Development (R&D) funding. The transition of TILV to a structure co-chaired by the Director, Defense Research and Engineering (DDR&E) 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 (SSAI) was 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. Due to uncertainties in Ballistic Missile Defense Office (BMDO) funding for related activities, the assessment of hypervelocity impact assessment started behind schedule. These three initiatives involved 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 (HPC) Modernization effort, Simulation Based Acquisition (SBA), and BMDO M&S efforts will continue. Integrated Validation, Verification, and Accreditation (VV&A) 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: Monitored the progress of five projects that were started in FY 1997. Four of the projects were continued into FY 1998 as well as three new projects started in FY 1998. Evaluated proposed FY 1999 projects for technical merit and possible funding.

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(U) FY 1999 Plans:

Review and Monitor Major T&E Programs: Complete LFT&E technical assessments for those systems approaching due dates for LFT&E reporting to Congress such as JSOW(BLU-97 warhead), SLAM-ER, WAM, B-1B Lancer CMUP, B-2 Spirit, MH-47E and MH-60K Special Operations Aircraft, RAM, and SH-60B LAMPS. Oversight of continuing efforts in FY 1999 will include the Advanced Amphibious Assault Vehicle, Command and Control Vehicle, the Crusader field artillery system, the M1 Grizzly Breacher, the Light Tactical Vehicle, the M1A2 Upgrade, the M2A3 Bradley FVS upgrade, the M1 Wolverine HAB, the AH-1W Upgrade, the Longbow HELLFIRE, M829E3 120mm APFSDS-T ammunition, the Multiple Launch Rocket System (MLRS) (Guided), the Stinger Reprogrammable Microprocessor (RMP) missile, XM1001 Cartridges, the Mk48 (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 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 CV(X) aircraft carrier, the NSSN attack submarine, the SSN-21 submarine, the DDG-51 guided missile destroyer, the LPD-17 transport ship, the ATACMS Block II (BAT), the FOTT, the Javelin 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: The F-16 JLF Program will determine the vulnerability to foreign man-portable air defense systems (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 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 1999. The advance planning for live fire testing of F-117 and C-130H components and/or subsystems will continue.

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Crew Casualty Assessment: Completion of the four-year project: "Transition of A Combined Toxic Gas Lethality Model to an Injury Model". Begin a project oriented towards investigation of the issues and risks associated with the operational impact of acceleration-induced incapacitation of pilots caused by high performance, dynamic aircraft flight. The research and development will build upon the findings presented during an FY 1997, DOT&E-sponsored acceleration-induced incapacitation symposium and workshop.

Exploring New Technologies/Advanced Concepts and Survivability Initiative: Begin sponsor testing program of contractor supplied passive ullage protective systems. A Broad Agency Announcement will be 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: Under the 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 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.

Live Fire Testing and Training (LFT&T): Complete two of the projects under the FY 1998 Program. Continue the other five projects currently underway. Start four projects in the areas of dismounted infantry survivability and lethality, acceleration induced loss of consciousness, LFT&E training opportunities for Battle Damage Assessment, and non-ballistic LFT&T laser threats. Commence solicitation, evaluation and selection process to identify appropriate FY 2000 projects.

Radio Frequency (RF) Weapons Vulnerability Assessment: Conduct an assessment of the requirements, techniques, and effects of testing and evaluation of the vulnerability of U.S. military systems to asymmetric radio frequency (RF) threats. Initiate tests of the vulnerability of a number of military systems to RF weapons of differing wavelengths and power outputs. Both use and damage will be assessed during the testing. This project will not only

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build on the data that have been collected in other related efforts, but will also begin to assess the vulnerabilities in circumstances that have not been examined to date. Namely, while data have been gathered and evaluated in related contexts, such as Electromagnetic Pulse (EMP) testing, this project will look specifically at the threat from high power, ultra-wideband, short pulse threats, evaluated at combat distances, i.e., outdoors.

(U) FY 2000 Plans:

Review and Monitor Major T&E Programs: Complete LFT&E technical assessments for those systems approaching due dates for LFT&E reporting to Congress. Oversight of continuing efforts in FY 2000 will include the Advanced Amphibious Assault Vehicle, Command and Control Vehicle, the Crusader field artillery system, the M1 Grizzly Breacher, the Light Tactical Vehicle, the M1A2 Upgrade, the M2A3 Bradley FVS upgrade, the M1 Wolverine HAB, the AH-1W Upgrade, the Longbow HELLFIRE, M829E3 120mm APFSDS-T ammunition, the Multiple Launch Rocket System (MLRS) (Guided), the Stinger RMP missile, XM1001 Cartridges, the Mk48 (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 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 CV(X) aircraft carrier, the NSSN attack submarine, the SSN-21 submarine, the DDG-51 guided missile destroyer, the LPD-17 transport ship, the ATACMS Block II (BAT), the FOTT, the Javelin 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: Conduct tests of fielded systems not previously tested under Air, Land, or Sea Joint Live Fire (JLF) 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 component and/or subsystem tests are expected to begin.

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Crew Casualty Assessment: Continue 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: Continue sponsoring testing of contractor supplied passive ullage protective systems.

Assuring Modeling & Simulation Adequacy: 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. There is no methodology or framework being applied to this problem in a consistent way.

Live Fire Testing and Training (LFT&T): Continue projects started in prior years and start new projects to the extent funding allows.

Radio Frequency (RF) Weapons Vulnerability Assessment: Continue the testing of the vulnerability and survivability of U.S. military systems to potential asymmetric RF weapons of differing wavelengths to the extent funding permits.

(U) FY 2001 Plans:

Review and Monitor Major T&E Programs: 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, Command and Control Vehicle, the Crusader field artillery system, the M1 Grizzly Breacher, the Light Tactical Vehicle, the M1A2 Upgrade, the M2A3 Bradley FVS Upgrade, the M1 Wolverine HAB, the AH-1W Upgrade, the Longbow HELLFIRE, M829E3 120mm APFSDS-T ammunition, the Multiple Launch Rocket System (MLRS) (Guided), the Stinger RMP missile, XM1001 Cartridges, the Mk48 (ADCAP) torpedo, the JDAM weapon, the Medium Extended Air Defense System (MEADS), Navy Theater Wide missile

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defense, the UH-1N Upgrade, the B-1B Lancer 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 CV(X) aircraft carrier, the NSSN attack submarine, the SSN-21 submarine, the DDG-51 guided missile destroyer, the LPD-17 transport ship, the ATACMS Block II (BAT), the FOTT , the Javelin 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: Conduct tests of fielded systems not previously tested under Air, Land, or Sea Joint Live Fire (JLF) programs. Tests of foreign systems acquired for exploitation will continue. Testing of F-117 and C-130H components and/or subsystems will also continue.

Crew Casualty Assessment: Complete the project towards investigating the issues and risks associated with the operational impact of acceleration-induced incapacitation caused by high dynamics aircraft flight.

Exploring New Technologies/Advanced Concepts and Survivability Initiative: Complete the testing of contractor supplied passive ullage protective systems. Test results will be reported and supplied to participating contractors as well as the services and major airframe manufacturers.

Assuring Modeling & Simulation Adequacy: Emphasis will continue in the area of physics-based modeling and simulation and its close connection to realistic assessment and training. Continue development of consistent approaches to risk evaluation and T&E prioritization based on modeling.

Live Fire Testing and Training (LFT&T): Continue projects started in prior years and start new projects to the extent funding allows.

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Radio Frequency (RF) Weapons Vulnerability Assessment: Continue the testing of the vulnerability and survivability of U.S. military systems to potential asymmetric RF weapons of differing wavelengths to the extent funding permits.

B. Program Change Summary

	<u>FY1998</u>	<u>FY1999</u>	<u>FY2000</u>	<u>FY2001</u>	<u>Total Program</u>
Previous President's Budget	13.640	9.934	10.352	10.331	NA
Appropriated Value	13.640	18.934			NA
Adjustments to Appropriated Value					
Adjustments to Budget Years Since FY1999 President's Budget			-.520	-.576	
Current Budget Submit	13.640	18.934	9.832	9.755	NA

C. Other Program Funding Summary

DOT&E is responsible for policy and procedures for all aspects of operational test and evaluation (OT&E) conducted within the Department of Defense. The authorization legislation which established DOT&E specifically requires that DOT&E: provide guidance on all OT&E within DoD; report on the adequacy of OT&E resources; approve plans for, monitor, and analyze the results of OT&E conducted for each Major Defense Acquisition Program (MDAP); coordinate operational testing conducted jointly by more than one DoD component; and coordinate joint OT&E programs. Funding for these responsibilities is under Program Element 0605118D8Z, Director of Operational Test and Evaluation, and is as follows:

	Cost (in Millions)							
	<u>FY1998</u>	<u>FY1999</u>	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>
Total Program								
Element Cost	16.154	15.311	14.602	14.249	14.467	14.651	14.916	15.247

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D. Schedule Profile

Fiscal Year actual and planned events by quarter

FY1998				FY1999				FY2000				FY2001			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

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