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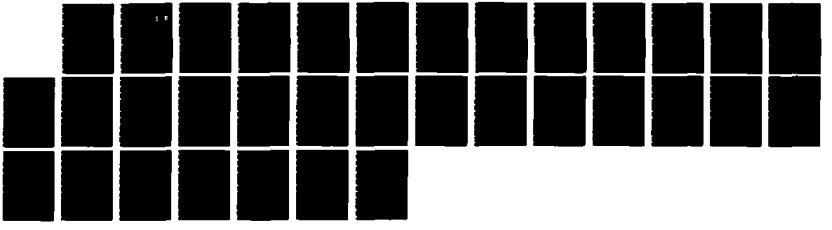

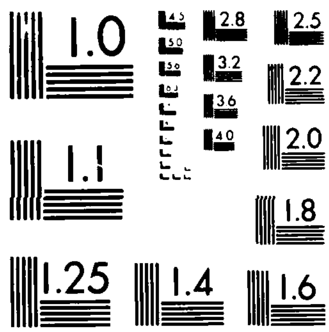
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DEPARTMENT OF DEFENSE

OPERATIONAL TEST AND EVALUATION REPORT

FY 1983

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SUMMARY

(U) This report summarizes DoD Operational Test and Evaluation conducted during FY 1983. It identifies the DoD organzations responsible for this testing, highlights major test program activity, and provides comments and recommendations on test resources, facilities, and funding.

(U) The report does not discuss specific weapon system performance or deficiencies, rather, it addresses requirements and limitations relative to the conduct of operational testing including operational realism, schedules, range restrictions, target limitations, etc. The report discusses in sequence the Army, Air Force and Navy operational test activities.

(U) Reviewing the full spectrum of FY 1983 operational testing the following issues emerge as areas requiring improvement to strengthen DoD operational test:

a. (U) Increased emphasis on early funding for operational test hardware.

b. (U) Continued emphasis on acquiring prototype hardware for initial testing that reasonably represents the production system in order to assess operational effectiveness and suitability prior to the production decision.

c. (U) Improvements in test instrumentation to track larger numbers of systems and provide data without compromising operational realism, i.e., minimum modification to operational systems and minimum interference with participants.

d. (U) Aerial targets are a matter of concern to all test agencies. The number of targets available, cost and ability to replicate threat performance characteristics.

e. (U) Range restrictions on use of non-eye-safe lasers could become critical in the future with the development of high energy lasers and directed energy systems.

f. (U) More realistic simulations of threat Air Defense systems are required to project weapon system effectiveness in the operational environment.

g. (U) Operational test of Anti-radiation missiles and electronic countermeasures equipment requires emitters which can simulate the capability and density of enemy combat systems.

INTRODUCTION

(U) The primary objective of Test and Evaluation (T&E) in the Department of Defense is to support the acquisition of reliable and effective weapon systems for the operating forces. During the early phases of a weapon system development, T&E is conducted to demonstrate feasibility, to minimize design risks, and to determine the design alternative and tradeoffs necessary to achieve program objectives. Testing normally progresses from component and subsystem testing to full system testing and ultimately to operational tests of the system in a realistic environment. During the development cycle, emphasis shifts between development and operational testing with development test and evaluation concerned primarily with verification of engineering design and operational test and evaluation concentrating on questions of operational effectiveness and suitability. A third type of testing, production acceptance test and evaluation, is undertaken to ensure that the system procured fulfills the requirements and specifications of the procuring contract. During FY 1983, the Director Test and Evaluation was the central focal point for both development and operational tests. In compliance with PL 98-94 the Directorate of Operational Test and Evaluation was established within the Department of Defense in November 1983. This report is hereby submitted to present an overview of significant operational test and evaluation activities, resources and facilities relative to major program efforts in FY 1983.

(U) Essential to effective implementation of Department of Defense test and evaluation policies are the procedures and organizational support provided by the Services. Each Military Service has an independent test agency, separate from the development and using agencies/commands, reporting directly to the Military Service Chiefs. These independent test agencies examine and assess the significant testing during weapon system development, and plan and conduct operationally oriented tests. They use test results to evaluate development progress and provide reports directly to the Military Service's Chief and in turn, to the Office of the Secretary of Defense. Multiservice testing is accomplished when a system interfaces with or may be acquired by more than one military Service.

(U) The independent test agencies are the Army's Operational Test and Evaluation Agency (OTEA), the Navy's Operational Test and Evaluation Force (OPTEVFOR), and the Air Force's Operational Test and Evaluation Center (AFOTEC). Operational testing of most major weapon systems for Marine Corps acquisition is included in testing performed by either OPTEVFOR or OTEA; however, the Marine Corps Operational Test and Evaluation Agency (MCOTEA) conducts tests for systems unique to the Marine Corps mission.

INTRODUCTION

(U) The primary objective of Test and Evaluation (T&E) in the Department of Defense is to support the acquisition of reliable and effective weapon systems for the operating forces. During the early phases of a weapon system development, T&E is conducted to demonstrate feasibility, to minimize design risks, and to determine the design alternative and tradeoffs necessary to achieve program objectives. Testing normally progresses from component and subsystem testing to full system testing and ultimately to operational tests of the system in a realistic environment. During the development cycle, emphasis shifts between development and operational testing with development test and evaluation concerned primarily with verification of engineering design and operational test and evaluation concentrating on questions of operational effectiveness and suitability. A third type of testing, production acceptance test and evaluation, is undertaken to ensure that the system procured fulfills the requirements and specifications of the procuring contract. During FY 1983, the Director Test and Evaluation was the central focal point for both development and operational tests. In compliance with PL 98-94 the Directorate of Operational Test and Evaluation was established within the Department of Defense in November 1983. This report is hereby submitted to present an overview of significant operational test and evaluation activities, resources and facilities relative to major program efforts in FY 1983.

(U) Essential to effective implementation of Department of Defense test and evaluation policies are the procedures and organizational support provided by the Services. Each Military Service has an independent test agency, separate from the develop-

(U) Over 100 systems were in some phase of testing by these agencies during FY 1983. Section I of this report highlights FY 1983 operational test activities and section II contains comments and recommendations on test resources, facilities and funding.

SECTION I

OPERATIONAL TEST AND EVALUATION ACTIVITIES

ARMY OT&E ACTIVITIES

(U) PERSHING II MISSILE SYSTEM. The PERSHING II Operational Test III, a series of non-firing tactical exercises conducted at Fort Sill, OK from January to May 1983, was an Operational Test of the effectiveness and suitability of the PERSHING II in a field environment. The principal objectives of the test were to assess system response to mission requirements, estimate pre-flight reliability, availability and maintainability performance; and determine the adequacy of training, and the logistic support concept. Data on inflight reliability and missile accuracy were provided from development testing to support the operational evaluation.

(U) The test was conducted in three phases: training, pilot test, and execution. The execution phase was divided into four ten-day exercises in which a total of 87 missile countdowns were conducted under day and night conditions.

(U) The test was limited in that all PERSHING II automatic test equipment was not available or fully functional. Additional maintenance assessments and check tests were conducted following Operational Test III to address unresolved issues in this area. The Army Operational Test and Evaluation Agency is continuing to assess the adequacy of actions taken to correct operational deficiencies as the system is being fielded in Europe.

(U) MULTIPLE LAUNCH ROCKET SYSTEM. The Multiple Launch Rocket System (MLRS) operational test was conducted at Fort Bliss, TX, from October 1982 through January 1983 to assess MLRS Battery mission effectiveness, compatibility with other field artillery systems, training, reliability characteristics and the logistics concept. To achieve these goals, personnel training (14 weeks) was followed by six weeks of field exercises at Fort Bliss under realistic wartime conditions. A total of 144 rockets were fired at White Sands to provide an assessment of system accuracy. The Fort Bliss field exercises were conducted using nine firing sections, seven manned by U.S. crews, and the remaining two manned by FRG and UK crews. Ten percent of the field exercises were conducted in a nuclear, biological or chemical environment and two-thirds in an electronic warfare environment. The Electronic Countermeasure threat was adequately portrayed by jamming, direction finding, and counter battery radar. A follow-on evaluation will be conducted during the period April through June 1984.

(U) PATRIOT MISSILE SYSTEM. Patriot follow-on operational evaluation was conducted at Fort Bliss, TX and White Sands Missile Range, NM from May through July 1983 to stress the Patriot system in an environment that simulated, as closely as possible, that expected in the first days of a declared war.

Emphasis was placed on assessing the capability of the systems engagement software and computerized command and control components. Raids of large numbers of aircraft were flown against Patriot under electronic warfare conditions to determine if the system could discriminate between friendly and hostile aircraft, maintain track of multiple aircraft, and engage in a timely manner those aircraft presenting the greatest threat. Electronic Countermeasures consisted of a mix of types of jammers. Altitudes of hostile aircraft were varied to test the extremes of the system's capability. The Flight Mission Simulator provided additional target loading of the system. Live firing tests were deferred to the follow-on evaluation. The interoperability of Patriot with other air defense systems was examined by having a HAWK unit participate in this test. The reliability, availability and maintainability of the system, logistical supportability, and training concept were also assessed. A follow-on evaluation will be conducted during the period April through June 1984.

(U) SGT YORK AIR DEFENSE GUN SYSTEM. The SGT York Air Defense Gun System test was conducted at Fort Bliss, TX during June and July 1983 to assess the performance of a single fire control unit in a cluttered environment characterized by rolling vegetated terrain; electronic countermeasure; nuclear, biological and chemical warfare conditions; and enemy and friendly aircraft.

(U) The test was conducted in two phases. During the first phase the SGT York engaged ground targets and remotely controlled stationary and moving targets. During the second phase the system was evaluated against low level fixed wing and rotary wing aircraft flying Nap of the Earth tactics. Tactical missions performed during the testing included defense of maneuver units, protection of fixed assets, and convoy escort under conditions of electronic countermeasures and nuclear, biological and chemical warfare. USAF and Army aircraft using threat tactics, formations and flight profiles provided adequate fixed wing and helicopter threats for dry fire testing.

(U) Live fire testing against the aerial threat was not planned because of the lack of drone aircraft which could represent the threat. Remote controlled target tanks were used to simulate the ground threat during both live fire and dry fire. These targets provided minimal representation of threat armor tactics and techniques. SGT York's vulnerability to anti-radiation missiles will be examined in a follow-on evaluation.

(U) There were three significant instrumentation needs in the SGT York test in addition to target track radar and the range facilities at the test site. Position location devices

were needed to locate up to 15 players. Only eight of the devices were available during test and that limited the ability to determine the firing position to threat aircraft relationship accurately. An engagement line of sight capability was required to determine intervisibility between the test unit (a single SGT York) and the threat players. The systems provided were not accurate enough for the mission, experienced some maintenance and training problems and were not available in sufficient quantities. These instrumentation limitations impacted OTEAs ability to assess system survivability and mission performance.

(U) The test was conducted on an improved prototype unit which was available for operational testing for 11 days. As a result, adequate time was not afforded for pilot testing and calibration of test equipment and all test issues were not fully addressed. Follow-on evaluations are scheduled to be conducted in May 1984 and in the period March through April 1985 on production items.

(U) SINGLE CHANNEL GROUND AND AIRBORNE RADIO SUBSYSTEM (SINCGARS). The SINCGARS Limited Operational Test was conducted at Fort Riley, KS in November 1982 to support source selection and an initial production decision for a program with an accelerated acquisition strategy. Two candidate advanced developmental systems and the current baseline VRC-12 Series radio were evaluated sequentially during the test. Principal test objectives included: vulnerability of the candidate systems to electronic countermeasures; interoperability with complementary voice and data communications systems; and operational suitability. The test consisted of a series of tactical exercises involving direct support artillery battalion, manuever battalion, and administrative/logistical support net operations.

(U) The limited scope of the test allowed for data collection using hand-held radios for transmission/time line control. At the conclusion of these exercises the radios were provided to the USAF for the final week of testing. During USAF testing the candidate systems were operated in conjunction with other USAF radios on Tactical Air Control Party nets. Program acceleration contributed to testing which was significantly limited by a shortage of test items (only four of approximately 20 originally planned) and inadequate test time (the test was reduced from 11 weeks to four weeks). For this reason not all test objectives were fully achieved.

(U) Additional operational testing was conducted at Fort Riley, KS between September and December 1983. The independent evaluation report will be published in FY 1984 and will address t e testing done in FY 1983 and FY 1984.

(U) LIGHT ARMORED VEHICLE-25 (LAV-25). LAV-25 testing was conducted at Fort Benning, GA from February to March 1983 to determine whether General Motors of Canada had accomplished the required corrections to problems revealed in the earlier multiservice tests. One prototype vehicle was available and was adequate for the limited purpose of the test. The primary test objectives were to gather data to assess fightability, safety, and tactical transportability; a secondary objective was to provide information on reliability, availability, maintainability and logistical supportability. An opposing force consisting of a mechanized infantry platoon with an attached tank section was used to induce realism into the operational scenarios during tactical and firing exercises. These forces employed both hostile electronic warfare and nuclear, biological and chemical tactics. Four hundred eighty-eight vehicle displacements were conducted with a total of 2152 Km accumulated to obtain reliability, availability and maintainability data. In order to address weapon performance and in particular the effectiveness of the stabilization system, the LAV-25 25mm weapon engaged a total of 384 targets while moving and 224 targets while stationary. Communications jamming was incorporated in 10 percent of the scenario activity and a nuclear, biological and chemical environment in approximately 20 percent of all exercises.

(U) The test location, Fort Benning, GA was chosen because of the similarities of its terrain and trafficability to those expected in European employment, the availability of adequate ranges for live fire, and the ready access to Infantry Center and School expertise. No future operational testing is planned. However, OTEA will observe confirmatory and initial Production testing in FY 1984.

(U) METEOROLOGICAL DATA SYSTEM AN/TMQ-31. Operational Test II of the Meteorological Data System was conducted at Fort Sill, OK from November 1982 to February 1983 to provide field test data and associated analysis in support of a production decision. Principal test objectives included: system effectiveness in an operational environment, reliability, availability, maintainability and logistical supportability, and adequacy of training and organizational concepts. Two prototypes were available for test during eight field exercises. The meteorological data system teams operated under tactical conditions responding to the operational requirements of simulated field artillery command and control elements. Testing also included an assessment of interoperability with other field artillery systems including TACFIRE. Sufficient data was collected to adequately address all test issues. No additional operational testing is planned.

began in May 1982 at Eglin AFB, FL. This phase was conducted using F-4E aircraft with PAVE SPIKE and PAVE TACK airborne laser designators and the Army's Ground Locator Laser Designator. At the end of FY 1982, 13 weapons had been dropped.

(U) Active testing continued into FY 1983. A total of 26 additional bombs were dropped from the F-4E and a F-111F from McClellan AFB, CA. Testing was stopped three times and the program returned to the developer for the correction of failure modes discovered in IOT&E. Subsequent GBU-24 (2000 lb bomb) performance proved satisfactory and testing was completed in June 1983. An initial limited production decision was made in July 1983.

(U) Testing will resume in FY 1984 with evaluation of the proposed fixes for the GBU-22 (500 lb bomb). As the fixes are common to both weapons, this additional testing will include the GBU-24 to insure there is no loss in its performance. Additionally, AFOTEC will monitor production qualification tests in the spring of 1984 and Tactical Air Command will perform follow-on testing.

(U) ALQ-131 SELF PROTECTION JAMMER. Initial testing is being conducted on the ALQ-131 by the Tactical Air Warfare Center (TAWC) to evaluate the operational effectiveness of two modifications to the jammer pod, an improved receiver-processor and a modification to the high frequency band jammer. Seven weeks of simulation runs at the Air Force Electronic Warfare Evaluation Simulator in Fort Worth, TX, were conducted in July-September 1983 to optimize the ALQ-131 jamming techniques and prove preliminary jammer effectiveness information.

(U) Actual flight testing will begin in FY 1984. The pod will be carried by F-4, F-16 and A-10 aircraft flying operational profiles against simulated groundbased threats on the ranges at Eglin AFB, FL, and Nellis AFB, NV. Twenty sorties will be flown at Eglin AFB using close air support, offensive counter air, and defensive counter air profiles. Six offensive counter air sorties are planned at Nellis AFB.

(U) Additional operational tests are planned for the ALQ-131 system in FY 1986 and beyond to evaluate the operational effectiveness and suitability of further modifications to add more jamming techniques and increase availability.

(U) IR MAVERICK (IR MAV). The IR MAV was tested at Fort Polk, LA and Baumholder, West Germany in 1977-1978. Initial operational testing was conducted at Fort Riley, KS (1981); Fort Drum, NY (1981); Eglin AFB, FL (1981); China Lake Naval Weapons Center, CA (1982); and the Utah Test and Training Range, UT (1982). This testing was completed in August 1982. After incorporation of contractor modifications a Reliability/ Maintainability Validation Program test was performed by AFOTEC at Nellis AFB, NV and completed in February 1983 with satisfactory results.

(U) AFOTEC will conduct an operational test of production weapons from June 1984 through May 1985 at Eglin AFB, FL and Volk Field, WI to evaluate reliability/maintainability, acquisition of targets in unfamiliar terrain and survivability of delivery aircraft in interdiction scenerios.

(U) PEACEKEEPER MISSILE. Combined development and operational testing for Peacekeeper commenced in September 1982 with ground test activities at Vandenberg AFB, CA using an inert missile to verify compatibility of facility procedures prior to assembly and launch of the first flight missile. The first three flight tests were conducted on 17 June, 14 October, and 20 December 1983. The Operational Test and Evaluation Center's participation included reentry vehicle buildup, transportation, and handling tasks. Flight tests will progress from the pad launch configuration to operationally representative silo launches on flight number nine. This initial testing is projected to be completed in November 1987.

(U) SPACE TRANSPORTATION SYSTEM (STS). NASA has developed the STS flight hardware, East Coast launch site, and mission control center (Kennedy Space Center, FL). The evaluation of NASA-developed segments is a joint Air Force Systems Command and AFOTEC responsibility. DoD is developing the West Coast launch site (Vandenberg AFB, CA), the expendable Inertial Upper Stage (IUS), a secure control center (Johnson Space Center, TX), and systems required for integration of DoD payloads with the STS. Operational test and evaluation of DoD-developed segments is the responsiblity of AFOTEC.

(U) Operational testing began in 1979 and is continuing with the current operational missions. An interim Shuttle Assessment Report on results of flights through STS-6, including an STS survivability addendum, was published in FY 1983. The final Shuttle Assessment Report is keyed to the first flight of Orbiter 103, which is a lightweight vehicle scheduled for launch in mid-1984. Test plans for evaluating the secure control center and the west coast launch site are scheduled to be published in FY 1984.

(U) NAVSTAR GLOBAL POSITIONING SYSTEM (GPS). AFOTEC monitored portions of the GPS validation phase in early 1979 and wrote an independent assessment for the Milestone II program review. AFOTEC also conducted an independent operational utility evaluation of the projected GPS space segment, and published their report in March 1982.

(U) In FY 1983 the Air Force developed plans for multi-service, Air Force-led, operational test of the Global Positioning System user segments and for an Air Force operational test of the space and control segments. All three Services will conduct user segment testing in late 1984 or early 1985 on four types of host vehicles. Testing of the control and space segment is scheduled for October to December 1986.

(U) B-52 INTEGRATED WEAPON SYSTEM (IWS). The B-52 IWS is a combination of the Air Launched Cruise Missile (ALCM) and B-52 Offensive Avionics System. Phase I of the operational test of production systems was conducted by AFOTEC, from October 1982 to July 1983, as a test of the combined systems at Griffiss AFB, NY. AFOTEC published a final report in September 1983, concluding that the IWS, with planned corrections, was potentially capable of meeting Strategic Air Command requirements.

(U) GROUND LAUNCHED CRUISE MISSILE (GLCM). Initial testing of the GLCM weapon system started on 19 May 1982, with the first of two combined developmental/operational flight tests.

(U) FY 1983 testing, which ended on 31 May 1983, included five more flight tests at Dugway Proving Ground, UT and the Utah Test and Training Range, UT; a 30-day dispersal evaluation at McChord AFB and Fort Lewis, WA; mobility testing at Aberdeen Proving Ground, MD; and operations and maintenance demonstrations at Dugway, UT. AFOTEC concluded that the GLCM weapon system was ready for initial operational capability. The final report of test results will be published in late January 1984. A three flight operational test will be conducted by AFOTEC in FY 1984.

(U) KC-135 REENGINE. A combined development/operational test using the first KC-135R began on 4 August 1982 at Wichita, KS, and continued into FY 1983 at Edwards AFB, CA, ending on 5 April 1983. Dedicated operational testing began at the first main operating base, McConnell AFB, KS, on 5 April 1983 and was concluded on 31 December 1983. An interim report was published noting satisfactory to excellent aircraft performance in an operational environment.

(U) Climatic testing will be conducted from 3 January 1984 through 29 February 1984 at Eglin AFB. During these last two test periods new auxillary power units, critical to the aircraft's emergency war order capability, will be evaluated.

(U) JOINT TACTICAL COMMUNICATIONS PROGRAM (TRI-TAC). The following systems completed initial testing prior to FY 1983: AN/TYC-39 message switch, AN/TTC-39 circuit switch, AN/TSQ-111 communication nodal control element, AN/UXC-4 tactical digital fascimile, TA-954 and TA-984 digital nonsecure telephones, digital multiplex equipment, AN/TRC-170 tropospheric scatter radio, and associated communication security equipment.

(U) The AN/TYC-39 Follow-on Evaluation was conducted by the U.S. Army Operational Test and Evaluation Agency (OTEA) at Fort Hood, TX in April 1983 to ensure that the deficiencies noted in earlier operational testing had been corrected in production items. Mission performance and mobility of production systems, operator training, and communications control procedures were also addressed. OTEA reviewed the reliability, availability and maintainability of the switch in Europe during REFORGER 83 (September-October 1983) and will review the same during field exercise ABLE ARCHER (January-February 1984).

(U) During FY 1983 the secure digital net radio interface unit (SDNRIU), a device that provides a secure interface between the TRI-TAC groundswitched system and a secure radio network, was tested by OTEA. AFOTEC participated by providing personnel and assistance in test design. The test was conducted at Fort Huachuca, AZ between 7 February and 28 April 1983 in an operationally representative environment.

(U) The initial test of the AN/UGC-137 single subscriber terminal; the unit level circuit switches, AN/TTC-42 and SB-3865; and an advanced narrowband digital voice terminal are scheduled during FY 1984.

(U) JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS). The first operational test of the JTIDS occurred in 1978 with a terminal installed in the E-3A. Additional tests were conducted on the Adaptable Surface Interface Terminal with elements of the Tactical Air Control System and on an advanced development model terminal in fighter aircraft. Planning for future testing continued in FY 1983 but there was no active operational testing. A joint Army and Air Force test is scheduled for CY85.

(U) ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM). AFOTEC conducted an operational utility evaluation (OUE) in FY 1982 using an air-to-air combat simulator with F-15/16 pilots

from operational units. Test planning for a combined development/ operational test and for an independent captive-carry reliability test was accomplished during FY 1983. The combined test will begin in mid-FY 1984 and will continue into FY 1985 at the Eglin Gulf Test Range and the White Sands Missile Range. The independent captive-carry reliability test will be conducted at Nellis AFB, NV in FY 1985.

(U) LOW ALTITUDE NAVIGATION AND TARGETING INFRARED FOR NIGHT (LANTIRN). LANTIRN testing began in FY 1983 with evaluation of A-10 and F-16 wide field-of-view head-up displays at Edwards AFB, CA. Both tests were conducted in conjunction with development tests. The A-10 head-up display test was satisfactorily completed and a final report published. The F-16 wide field-of-view head-up display had several deficiencies and future testing will be conducted after receipt of redesigned hardware.

(U) The first LANTIRN-compatible F-16 and LANTIRN navigation pod were delivered to Edwards AFB in July 1983. Initial testing by AFOTEC will be conducted in conjunction with development tests at Edwards AFB, CA and Loring AFB, ME in FY 1984. Edwards AFB, CA tests will be conducted in the desert environment. Loring AFB, ME tests will be flown in New Brunswick, Canada, which has terrain and climate similar to Europe. Operational tests will focus on single seat effectiveness, mission performance, survivability, reliability and maintainability. Sorties will be flown in close air support, battlefield air interdiction, offensive counterair, and air interdiction mission scenarios. This testing will be completed in January 1985.

(U) F-16/F-15 DUAL ROLE FIGHTER (DRF). In conjunction with development tests, AFOTEC conducted operational utility evaluation of the F-16XL and an F-15D with conformal tanks, representative of proposed DRFs, at Edwards AFB, CA, from July 1982 through June 1983. Tests included limited evaluations of the range, payload, and performance of the two aircraft types with emphasis on their air-to-surface capabilities. Further testing is programmed for FY 1987 or 1988, after a decision is made on which system to pursue.

(U) B-1B STRATEGIC BOMBER. Operational testing of the B-1B is currently in the planning phase. All development flights are being monitored for data applicable to operational test requirements to preclude duplication during later testing. There were 25 development test flights in FY 1983, some of which yielded data appropriate to operational effectiveness and suitability objectives.

(U) The first opportunity to gather operational test data directly will be in July 1984 when B-1A number 4 (B-1B avionics test bed) operations begin. B-1B number 1 will fly approximately five months later and will provide additional data. Operational testing beginning in July 1985 at Dyess AFB, TX will be conducted in an operational environment using operational aircraft and SAC aircrews.

NAVY OT&E ACTIVITIES

(U) F/A-18 HORNET. COMOPTEVFOR has monitored all F/A-18 development testing, both contractor and Navy. Independent operational evaluation (OPEVAL) was conducted from 3 May to 4 October 1982 by a composite test squadron comprised of 17 aviators from Air Test and Evaluation Squadron Four and Five (VX-5 and VX-4). A total of ten airplanes flew 1235 OPEVAL sorties for 1619 flight hours. Four of the ten OPEVAL airplanes were production representative. They accumulated 459 sorties for 641 of the 1619 total flight hours. These four airplanes were used during the eight days embarked in USS CONSTELLATION.

(U) COMOPTEVFOR concluded that the F/A-18 unrefueled has the potential for limited effectiveness in the Navy attack (VA) mission and the potential for operational effectiveness in the Navy fighter and Marine fighter/attack (exclusive of carrier operations) missions, but was not operationally suitable because of parachute problems. Testing is ongoing to certify two replacement parachutes; expected to be available in FY 1985.

(U) FY 1983 operational test activity concentrated on tactics development. Of significance was a follow-on test and evaluation effort in which members of Marine Air Group ELEVEN, Strike Fighter Squadron ONE TWO FIVE, Air Test and Evaluation Squadron FOUR (VX-4) and Air Test and Evaluation Squadron FIVE (VX-5) conducted joint F/A-18 strike fighter operations from Naval Air Station Point Mugu, CA. Results of this joint tactical evaluation with respect to operational employment of the F/A-18 strike fighter for Navy/Marine tactical scenarios demonstrated the HORNET to be capable of meeting the required combat role.

(U) FY 1984 operational test activity will include HARM/EW Suite effectiveness and suitability testing, Walleye and Maverick integration, and further development of strike fighter tactics.

(U) AV-8B HARRIER. AV-8B testing is scheduled to be conducted in three phases. Phases I and II supported the August 1983 Milestone IIIA DNSARC. Using Full Scale Development (FSD) AV-8Bs, Phase I was completed in October 1982. It accumulated

46.7 flight hours during 32 sorties evaluating AV-8B potential capabilities in Close Air Support, tactical performance and Vertical/Short Takeoff and Landing handling. Phase II was completed in July 1983. It accumulated 24.7 flight hours during 16 sorties assessing AV-8B potential capabilities in Close Air Support and interdiction in a low altitude high threat environment. Maintenance and logistic support were contractor furnished during Phase I and II. The test articles used in Phases I and II were immature FSD models and did not have all of the performance improvements features incorporated, nor was the flight envelope sufficiently opened for objective assessment of AV-8B secondary mission potential.

(U) AV-8B Phase III test, completed during December 1983, evaluated GAU-12 25mm Guns system capabilities and aircraft improvements incorporated during FSD. OPEVAL is scheduled during May-September 1984. Utilizing one FSD and one production AV-8B pilots will assess the aircraft's combat capabilities in operational scenarios, supported by organic USMC maintenance. OPEVAL will support Milestone IIIB and complete FSD operational testing.

(U) TOMAHAWK CRUISE MISSILE WEAPON SYSTEM. The Tomahawk initial operational test commenced in January 1981. Fiscal Year 1981 and 1982 events included Anti-Ship and Conventional Land Attack missile firings from a submarine. Independent Operational Evaluation of the Submarine Launched Tomahawk Anti-Ship missile system continued in FY 1983 and Nuclear Land Attack missile systems commenced in FY 1983.

(U) Initial operational testing for the Nuclear Land Attack missiles started in May 1983 with mission planning at the Theater Mission Planning Centers. Operational Flight testing for the submarine launched missile started in June 1983 with one flight test combining developmental and operational test objectives.

(U) Operational flight testing for the submarine launched Anti-Ship missile 1983 included two combined developmental and operational flight tests and one solely operational flight test. Testing was conducted utilizing simulated operational scenarios presented to the submarine via normal over the horizon targeting communication nets. Targets consisted of one or two stationary ship hulks employing threat representative ECM, chaff and radar emitters. Missiles were non-warhead impact vehicles. Overwater missile survivability objectives were included in all three flight tests.

(U) OPEVAL of submarine launched TOMAHAWK will continue through first quarter FY 1984. Missile survivability and vulnerability objectives are included in the test plans.

(U) OPEVAL of the surface ship launched Tomahawk Weapons System is scheduled to start the Second Quarter FY 1984. Flight testing will be conducted for both missile variants. Operational testing methodology will be similar to that used for the submarine platform.

(U) TRIDENT I SUBMARINE. Follow-on OPEVAL testing was done on board Trident I Submarine USS OHIO from July-December 1982. Due to strategic operational requirements, none of the required ASW encounters with an augmented SSN have taken place. As a result, final testing will not occur until late 1984 when there will be enough operational TRIDENT Submarines to support the final phase of follow-on OPEVAL. COMOPTEVFOR in its interim OPEVAL report stated that the AN/BQQ-6 Sonar System has the potential to be operationally effective and the potential to be operationally suitable.

(U) The MK 118 Fire Control System/Combat System (FCS/CS) was tested in parallel with the AN/BQQ-6 Sonar System. COMOPTEVFOR reported in its interim follow-on OPEVAL report that the FCS/CS has the potential to be operationally effective and operationally suitable.

(U) TRIDENT I (C-4) STRATEGIC WEAPONS SYSTEM (SWS). The Navy has conducted Trident I SWS developmental and operational test firings of missiles from both land based pads and submerged submarines. Further operational testing is being conducted during demonstration and shake down operations and the operational test program. COMOPTEVFOR's involvement in the operational evaluation of the TRIDENT I SWS consisted of monitoring firings, and reviewing patrol and other test data. No dedicated missile flight tests were conducted as a part the of the OPEVAL. Because of weapon system and missions complexities, many design parameters have been tested using mathematical models. These include assessment of Reentry Body penetration at various speeds and reentry angles, estimation of minimum and maximum ranges at various payloads to overcome range safety constraints, and replication of target missions to simulate representative trajectory and azimuths.

(U) All operational missile firings conducted during FY 1983 were observed by OPTEVFOR. These tests completed the OPEVAL, and test results are being analyzed.

(U) AN/SQR-19 TACTICAL TOWED ARRAY SONAR (TACTAS). OPEVAL of TACTAS was conducted from November-December 1982 aboard USS MOOSBRUGGER. COMOPTEVFOR concluded that the SQR-19 was operationally effective and potentially operationally suitable and recommended limited fleet introduction. Follow-on Operational Testing was conducted in February-March 1983 aboard MOOSBRUGGER. COMOPTEVFOR concluded that the SQR-19 was operationally effective and appeared to be operationally suitable, and recommended that the SQR-19 be approved for full fleet introduction contingent upon fulfillment of the 2000 hour array mean time between failures requirement.

(U) AIM-54C PHOENIX. The improved Phoenix Missile development program commenced in 1976. AIM-54C Missile operational test, conducted by COMOPTEVFOR with Air Test and Evaluation Squadron Four (VX-4), commenced March 1983 using low rate production missiles. A total of 15 AIM-54Cs will be captive carried and fired in operational scenarios to evaluate missile operational effectiveness and suitability in the fleet environment, including shipboard operations.

(U) The availability of QF-4s forced scheduling and priority conflicts with T&E of other projects. Target limitations are addressed in Section II of this report.

(U) OPEVAL will continue and is scheduled for completion late in the third quarter of FY 1984.

(U) CLOSE-IN WEAPONS SYSTEM (CIWS). Phase IA of the operational test of the CIWS was conducted aboard USS ARTHUR W. RADFORD on 16 September 1981 and aboard USS ANTRIM on 9-10 February 1983.

(U) The OT-IIB Phase IB of the operational test was started 15 July 1983 at San Nicolas Island, CA and was completed in December 1983.

(U) Phase II tactical missile tests are scheduled to begin 1 May 1984.

(U) CIWS operational tests have not been fully representative of wartime operational conditions because of tow target, drone, range and safety constraints (see Section II).

(U) AGM-88 HARM. Between November 1981 and November 1982, 34 operational test firings and 1972.2 hours of captive flight testing were conducted on low rate initial production HARM missiles in two phases. The first phase tested a baseline configuration of the software and was concluded in September

1982 with captive-carry and live firings successfully completed. As a result of Phase One, the primary concern of the Air Force was to make the missile perform differently in a dense emitter environment. The primary concern of the Navy was to make the system fully compatible with equipment on board the aircraft. On 30 June 1982 the Vice Chief of Naval Operations determined that reliability and performance trends were sufficiently positive to allow an assembly rate increase to 25 per month.

(U) Phase II testing was concluded on 5 November 1982. The major concerns of OPTEVFOR and AFOTEC will be addressed in follow-on operational tests in 1984-85. COMOPTEVFOR concluded that HARM's capability is far superior to current Fleet capabilities and that HARM is potentially operationally effective and suitable. COMOPTEVFOR recommended that HARM be approved for limited fleet introduction. AFOTEC concluded that HARM is operationally effective and potentially suitable and recommended it for production.

(U) Follow-on operational test and evaluation will be conducted by the Navy and the Air Force in FY 1984 with production-configured missiles and avionics.

(U) LIGHT AIRBORNE MULTI-PURPOSE SYSTEM (LAMPS) MK III. Initial operational evalaution and OPEVAL was conducted ashore and at sea from 1 May 1981 to 11 February 1982. Combined development and operational testing of the Rapid Assist Securing and Traversing System was conducted with a helicoptor in the Virginia Capes and Jacksonville, FL operating areas. No additional testing was conducted pending the correction of deficiencies identified during OPEVAL and the delivery of the first production LAMPS MK III helicoptor in September 1983.

(U) Concurrent development of the AN/SQQ-89 ASW Combat System and the non-availability of a completely up and integrated LAMPS MK III capable ship limited the scope of operational testing. Operational testing is scheduled for March through September 1984 and will be conducted using the earliest available fleet representative production SH-60B aircraft and a fully integrated LAMPS MK III capable ship. Testing with SQR-19 TACTAS will not occur until late 1985.

(U) AEGIS/CG-47 CLASS CRUISER. Initial testing of the AEGIS/CG-47 was conducted during the period 17 March to 22 December 1982 at the Combat System Engineering Development Site and in TICONDEROGA. TICONDEROGA operations included sea trials and an in-port anti-air warfare/electronic warfare exercise. It was concluded that the AEGIS Combat System and CG-47 class

have the potential to be operationally effective and operationally suitable. Continued AEGIS/CG-47 class operational test and evaluation was recommended.

(U) A full operational test was conducted from January to September 1983, including dedicated operational test periods at sea in April and September. Numerous simulated engagements were conducted against both live aircraft and simulated targets. The targets utilized were those available in the Navy inventory and did not fully represent the spectrum of actual threats. Future tests of CG-47 or CG-48 will be contingent upon the analysis of these tests.

SECTION II

RESOURCES, FACILITIES AND FUNDING

ARMY RESOURCES, FACILITIES AND FUNDING

(U) General. The Operational Test and Evaluation Agency (OTEA) exercises responsibility for all Army operational testing and conducts testing of designated major acquisition program and Category 1 nonmajor systems. The U.S. Army Training and Doctrine Command (TRADOC) normally conducts operational testing for Category 2 and 3 nonmajor systems. Eight TRADOC test boards conduct operational tests in the functional areas of airborne, air defense, aviation, communication-electronics, intelligence security, infantry, field artillery and armor/engineer equipment. The TRADOC Combined Arms Test Activity (TCATA) and the TRADOC Combat Development Experimentation Center (CDEC) conduct some of the critical operational tests on major Army systems under OTEA's supervision. Additionally, the U.S. Army Communications Command and the Surgeon General conduct tests of mission unique systems. The Army has allocated approximately 3,200 military and civilian spaces to these units to conduct operational testing, an adequate level for the current test mission.

(U) Resources. Troops to conduct operational testing are provided by typical user units, primarily U.S. Forces Command (FORSCOM) and TRADOC. In order to minimize impact of force readiness and because of workload, civilian overtime, overhire and contract support is used. Adequate user troop resources were committed to insure valid testing. During FY 1983, a need for additional dedicated operational test personnel in the future was identified. The General Accounting Office, in its 12 September 1983 report entitled "The Army Needs More Comprehensive Evaluation to Make Effective Use of its Weapon System Testing," found that testing by the Army's independent test agency should start earlier, use more data sources and continue longer. Prior to this report, the Army had proposed to initiate a method of continuous and comprehensive evaluation and had designated five major systems for a trial of this expanded procedure. The initial trial requires ten additional personnel. A decision will be made in the future if other systems will be required to be evaluated under this expanded concept which would require additional personnel.

(U) Items to be tested are provided by Project Managers and/or Production/Candidate Contractors. During FY 1983, most materiel systems presented for test were found by the Independent Test Agency to be not completely ready. In almost every case maintenance support equipment and parts were incomplete or not available. The basic cause of lack of readiness for test is inadequate funding for prototypes early in the development process. The Deputy Secretary of Defense recognized this in a 30 April 1981 memorandum directing "front end funding for hardware" among other improvements to the defense acquisition

process. The Army has been implementing this policy but systems that have reached these test levels during FY 1983 were funded before the FY 1981 direction. As funding plans for newer systems catch up, system readiness for test can be expected to improve.

(U) Instrumentation to conduct operational tests falls into two categories: (1) data collection and recording systems that permit capture of data during simulated combat conditions; and (2) replica simulators of Soviet weapons that are used to provide a realistic threat environment for testing. Data collection systems are located at the eight test boards, TCATA and CDEC. The Army is in the process of developing a new Mobile Automated Field Instrumentation System that will replace an aging data collection system and provide a significant improvement in its ability to test in an operational combat environment. The Army operates and maintains approximately 52 items that are replica simulators of major Soviet weapons systems. These items are centrally located at Fort Bliss, TX and are transported to test locations as required to support operational tests. The Army is initiating a major increase in the effort to develop new threat simulators in order to provide a more realistic threat environment in which to test the operational capabilities of new equipment. The new developments in the instrumentation and threat simulator programs are crucial to ensuring that new weapon systems being fielded can operate adequately in combat. The increased funding to sustain these new initiatives must be supported as outlined below.

(U) Shortfalls in the Army's inventory of aerial targets are a matter of concern throughout the test and evaluation community. The current and projected inventory of Army target assets is not sufficient, in capability or quantity, to meet the recognized short and long term testing requirement because of lack of funding and priority. Present aerial targets do not match RED THREAT capabilities which new weapons systems are designed to defeat. The many aspects of the shortfalls were thoroughly documented and outlined by the Army Materiel Systems Analysis Activity (AMSAA), the U.S. Army Air Defense Board, the General Accounting Office (GAO), and the Army Missile Command (MICOM) Targets Management Office (TMO), during early FY 1983. Commanders of TRADOC and DARCOM are currently redirecting and revitalizing the targets program through identification of target requirements and prioritization commensurate with the weapons systems programs to be supported. This effort should result in a comprehensive and viable aerial target program. A development program for a new family of helicoptor targets will be started in FY 1985 with an initial operational capability in FY 1987 to replace the limited inventory of existing targets.

(U) Facilities. With few exceptions, facilities used for operational testing were adequate. Tests were scheduled at installations best suited to host the tests consistent with agreements between and desires of the host installation and the operational tester. Other considerations for conducting tests at specific installations include use of the initial operational capability unit, range restrictions, and terrain similar to that in which the system will be employed. Federal regulations which protect commercial communications limited the use of electronic warfare devices at all except the most remote test locations and is expected to continue to be a problem in the future.

(U) Range restrictions on the use of non-eye-safe lasers were not a major problem in executing the FY 1983 test program. However, with the increasing development of weapons systems using laser and directed energy, safety considerations may inhibit testing in the future of full system capabilities at U.S. installations. In anticipation of laser restrictions, OTEA coordinated with the U.S. Army Environmental Hygiene Agency for laser surveys at installations where tests with laser implications are scheduled. The Army, in October 1983, initiated efforts to scrutinize test and evaluation requirements on an annual basis to permit test planning and test conduct to proceed smoothly and identify early instances where laser restrictions could determine the location of a test.

(U) Funding. The Army supports its operational testing mission by allocating funds from the research and development, procurement and operations and maintenance appropriations. These funds are used to support five main areas of testing: (1) recurring overhead costs of test activities; (2) instrumentation required to capture quantitative data under operational combat conditions; (3) threat simulators required to portray a realistic threat environment during testing; (4) costs involved in conducting the operational tests; and (5) costs to conduct experiments on new materiel concepts. There has been a significant increase in the amount of RDTE funds budgeted in support of operational testing. Program element 6.5712A, Support of Operational Testing, was increased from approximately $48M in FY 1983 to $62M for FY 1984. The increase was to support the development and acquisition of improved test instrumentation and replica simultors of Soviet weapon systems to be used to provide an adequate threat environment during operational testing. However, the Congressional Authorization Bill and the subsequent Appropriation Bill cut these testing funds to $50M.

(U) Recommendation. That Congressional Committees examine and support the Army's FY 1985 request for RDTE funds in PE 6.5712A, Support of Operational Testing. The FY 1985 request

of approximately $61M is an improvement over the $50M appropriated in FY 1984, but is still insufficient to develop the full capability to conduct adequate instrumented testing of Army systems and to achieve the needed operational testing.

AIR FORCE RESOURCES, FACILITIES AND FUNDING

(U) A large number and variety of resources are required to create a realistic Air Force operational test environment. The following paragraphs address range improvements needed to satisfy these requirements. Due to overall Air Force resource limitations some test support systems/capabilities remain unfunded. These deficiencies are identified within the text below.

(U) Early Warning and Acquisition Radars/Surface-to-Air Missile (SAM)/Anti-Aircraft Artillery (AAA) Systems Requirements. Operational testing has a continuing requirement for realistic simulations of Soviet early warning and acquisition radars, SAM/AAA systems and tactical laser weapons.

(U) Funded.

a. (U) AN/MSQ-T38. The development of a simulator has been underway for several years. Two systems will be procured for the Nellis Range.

b. (U) Modular Threat Emitter. The Modular Threat Emitter replicates threat signals. Approximately 20 systems will be procured to meet training requirements. While these systems are primarily for training they do have operational test utility for providing threat density and system loading.

c. (U) AN/MSQ-T13 Update. This is the intelligence update on an existing system that will use the latest intelligence to modify existing simulators to the current baseline.

d. (U) AN/MPS-TYY. This is the development and procurement of a SAM threat simulator. This system will be deployed on the Nellis Range to meet training and test requirements.

e. (U) Advanced SAM System. This is a program to develop threat simulators.

(U) Jammer Requirements. Operational testing a capability to provide communication, radar, data link, and weapon system guidance jamming comparable to what is projected to occur in an operational environment. Potentially susceptable Air Force systems should be evaluated against such capabilities.

(U) Funded.

a. (U) MLQ-T4. This system duplicates threat jammers. It is designed to have growth capability to replicate future jammers.

b. (U) Communications Jammer. This system will duplicate a threat communication jammer. It will have growth potential to duplicate future threat communication jammers.

(U) Command and Control Requirements. Operational testing requires a valid replication of a threat C3 systems. There are many aspects of overall air defense capabilities that are significantly enhanced by effective C3. Without this capability to test against, one could seriously overestimate or underestimate an Air Force weapon system's effectiveness.

(U) Funded.

a. (U) Ground Control Intercept Command and Control ($GCIC^2$) Simulator. The $GCIC^2$ system simulates other important C3 and GCI systems. This system will be deployed to the Nellis North Range.

b. (U) Tactical/Strategic Command and Control (TSC^2). This system simulates other threat C2 systems. It is located on the Nellis North Range and will include man-in-the-loop reaction times/decision logic.

(U) Range Instrumentation Requirements.

a. (U) In order for the realistically simulated environment to provide maximum benefits to the weapon system development process, extensive data must be taken of events occurring during the tests. Several types of specialized equipment are needed to accomplish this task.

1. (U) The instrumentation required to support testing must provide time correlated aircraft/missile position which can be directly related to the simulated threats/targets positional frame of reference. Threats and targets must be instrumented to detect and record internal switch functions and event data. The event data must permit reconstruction of the interplay between any operator decision and aircraft or missile actions.

2. (U) A spectrum analysis capability is required to monitor and record the performance parameters of both the threat simulators and on-board electromagnetic combat systems.

3. (U) For air-to-air missiles, there is a standing requirement for low-level multiple drone control and missile end-game scoring.

b. (U) The specific instrumentation programs listed below provide data, information, control, safety, etc. during conduct of a test. Future testing will be inadequate without the output and support of such equipment.

(U) Funded.

(U) The following systems are funded adequately to meet presently identified test requirements.

- (U) Global Positioning System Applications/ Integration
- (U) Missile End-Game System
- (U) Red Flag Measurement and Debriefing System
- (U) TAF Range Communication Expansion
- (U) Gulf Range Drone Control Upgrades
- (U) Gulf Range Telemetry Relay/Airborne Platforms
- (U) F-15 and F-16 Radar Test Bench Sets
- (U) Tyndall Range Control Facility Upgrade

(U) Unfunded Requirements. Requirements not funded are identified below. They are either not currently funded, or are funded at a level which does not allow development/procurement in sufficient time to meet test requirements.

(U) An Electronic Support Measure Simulator.

a. (U) Portions of the SA-11 threat simulator

b. (U) Soviet Odd Group Radar

c. (U) Laser Weapons Simulator

d. (U) Portions of the Advanced Command and Control system

e. (U) Signal Analysis Systems

f. (U) Weather Instrumentation

NAVY RESOURCES, FACILITIES AND FUNDING

(U) Range/Target Requirements. The resources and facilities required for effective operational testing are many and varied. Improved weapon systems require more capable test support equipment not all of which can be funded given overall Navy resource constraints. Identified below are test resources that are currently funded. Unfunded requirements are addressed at the conclusion.

(U) Electronic Simulator Requirements. Testing of weapons sytems requires equipment which can simulate enemy weapons.

(U) Funded.

a. (U) Semi-Active Tracking System (SATS) and Crossbow Generic Radar (CGR). CGR and SATS will soon be operational at the Navy's China Lake, CA test range. These improvements will allow the full capabilities of certain missiles to be evaluated and greatly increase the realism of the electronic environment.

b. (U) AN/ALQ-170. Introduction of this equipment will greatly supplement the inventory of this type simulator. Among other things, it is vital for testing the response of ships' direct control defensive systems.

c. (U) AN/DLQ-3B Threat Electronic Countermeasure Simulator. Navy inventory of this simulator is insufficient. Procurement funding in the budget will make several more available.

d. (U) Empress II. This mobile barge for generating some of the effects of an overground nuclear explosion should be ready for use soon. A facility for testing these effects on the first AEGIS cruiser, USS TICONDEROGA, was not available. In such a computer oriented ship this is an extremly important test.

(U) Target Requirements. Operational testing of new Navy weapon systems require airborne, surface, or subsurface targets which adequately represent the capabilities of the enemy. Speed, altitude capability, maneuverability, etc., are important to be replicated. Ranges should have the capability to stress test weapon systems at realistic levels.

(U) Funded.

a. (U) Supersonic Low Alti ıde Target (SLAT). This development will provide the characterics to adequately test new sea-borne weapons systems.

b. (U) Firebolt. This high-altitude target will replicate certain threat missiles to fully test air-to-air and surface-to-air systems. The Navy will procure Firebolt beginning in 1984.

c. (U) QF-4. There are insufficient QF-4 assets which cause scheduling and priority conflicts. Projected conversion of additional Phantoms to QF-4 targets during the FY 1985-1986 period should alleviate the problem to some degree.

d. (U) Integrated Target Control System (ITCS). The capability to better launch and control aerial targets is required at the Atlantic Fleet Weapons Training Facility (AFWTF). This will permit the testing of counter-air weapons systems in a mode designed to exercise their new capabilities. Integrated Target Control System (ITCS), is programmed for installation at AFWTF in FY 84. Other ITCS systems are employed and active at Naval Weapons Center, China Lake and the Pacific Missile Test Center, CA.

(U) Instrumentation Requirements. In addition to the simulations of systems (EW simulators, aerial targets) discussed above, extensive data acquisition resources are needed to monitor the test and collect the data for subsequent analysis and evaluation. The Navy makes extensive use of its existing highly instrumented ranges for many of its operational tests. These facilities include, the Pacific Missile Test Center, Naval Weapons Center, Naval Air Test Center, Atlantic Undersea Test and Evaluation Center, Atlantic Fleet Weapons Training Facility and others. Some objectives cannot be fully accomplished at the fixed sites and testing at-sea is also a Navy objective.

(U) Unfunded requirements.

a. (U) The largest target used to test missiles is the QF-4. No current drone, regardless of augmentation, can accurately represent a large target. A bomber size target is needed.

b. (U) Improvements to the Semi-Active Tracking System (SATS) and Crossbow Generic Radar (CGR) at the Navy Weapons Center China Lake, CA test range will be needed to provide the capabilities of integrated air defense, acquisition radar systems, and newer types of enemy weapons systems.

c. (U) Target Control System. A new target tracking and control system is needed for deployment on ships of opportunity to support target presentations at sea. This requirement will be addressed in POM 86.

d. (U) Atlantic Undersea Test and Evaluation Center Acoustic Range. A replacement measurement system to test and evaluate new techniques on submarines and surface ships. The House Appropriation Committee deferred this program in FY 84 pending receipt of an assessment of undersea testing and training requirements.

e. (U) Extended Area Test System (EATS). The Pacific Missile Test Center (EATS) needs to be expanded for further offshore capability to support more realistic test and evaluation. A basic two aircraft capability is currently funded.

END

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