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AFWTF

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#13

Department of Defense

**1995 Base Realignment and Closure
T&E Joint Cross-Service Group Data
Guidance**

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components: data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

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Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling

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and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

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1.3.A Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major sub-systems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

1.3.B Electronic Combat (EC) Systems

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

1.3.C Armaments / Weapons

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

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2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

AFWTF does not operate in a purely RDT&E mode. Efforts which may be undertaken in a RDT&E or T&E role have historically occurred concurrent with a scheduled fleet or program exercise evolution. Consequently, a distinction between testing and training cannot be made, particularly for funding and manpower.

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

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AFWTF does not operate in a purely RDT&E mode. Efforts which may be undertaken in a RDT&E or T&E role have historically occurred concurrent with a scheduled fleet or program exercise evolution. Consequently, a distinction between testing and training cannot be made, particularly for funding and manpower. An estimate of test work is provided below for each of the four ranges (Inner Range, Outer Range, Underwater Tracking Range (UTR), and Electronic Warfare Range (EW Range))

	FY 92	FY 93
Outer Range:	15%	15%
Inner Range:	> 2%	> 2%
EW Range:	5%	5%
UTR:	12%	12%

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming man-power and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in Appendix A.

-2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Outer Range/Inner Range/EW Range: No. Capacity based upon standard year (261 range days/2088 hrs).

UTR: No. The capacity is limited only by the current contract in effect with the range contractor.

2.3 TECHNICAL RESOURCES

-2.3.A Does the facility have a specified war-time or contingency role established in approved war plans?

All Ranges: No.

-2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

Outer Range: Yes. In accordance with CNALINST 5450.45C, AFWTF provides services in direct support of other activities' T&E. AFWTF itself does not perform T&E. Any loss of this function would impact those commands requiring AFWTF test sites. However, impact is not harmful to Fleet training mission. **Inner Range:** Yes. There is no other naval gunfire range on the Atlantic coast to test long range fire.

EW Range: Yes. AFWTF provides Electronic Combat T&E for U.S. and foreign services. Currently, there is an increase of T&E by foreign services, without which AFWTF funding would be severely impacted.

UTR: Yes. The UTR, as an integral part of AFWTF, is available to support fleet ASW training.

-2.3.B.1 On the test mission of any other activity?

Outer Range: Yes. Without Outer Range, other facilities such as NSWC PHD, NAVSEA, NAVAIR, OPTENFOR, etc., would have no place to test.

Inner Range: No.

EW Range: Yes. AFWTF is a one of a kind test facility capable of providing all facets of electronic combat training, testing and evaluation to a variety of activities.

UTR: Yes. Impact would be felt in other areas of the Navy and other commands of the Navy. Testing of underwater weapons systems and submarine development would have to be done at an alternative location that does not provide the realistic ASW environment that AFWTF has to offer.

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-2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

Outer Range: Yes. Range irreplaceable on the Atlantic coast of the U.S.. Range is capable of full spectrum of Joint and battlegroup training in all warfare areas within the confines of the total AFWTF training complex.

Inner Range: Yes. AFWTF conducts NGFS qualification exercises for all Atlantic Fleet ships in accordance with FXP-5 prior to deployment.

EW Range: Yes. AFWTF is currently capable of training joint services, U.S. and foreign services in joint EW operations.

UTR: Yes. The only other range that could accompany ASW services on the east coast is AUTEK in the Bahama Islands.

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

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The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

3.1.A. Interconnectivity (MV I) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

-3.1.A.1 What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal and external to the site.

Outer Range: N/A. Currently the Outer Range is a stand alone facility. As part of the AFWTF range complex the Outer Range is critical in maintenance of a full warfare training capability.

Inner Range: N/A.

EW Range:

UNIT	SIMULTANEOUS	EXT/INT
Fleet Tactical Readiness Group	Y	E
Naval Security Group	N	I
COMNAVSURFLANT (Assets)	Y	E
COMNAVAIRLANT (Assets)	Y	E
COMSECONDFLT (Assets)	Y	E
COMSUBLANT (Assets)	Y	E
COMNAVSEASYSKOM (Assets)	Y	E
COMNAVAIRSYSKOM (Assets)	Y	E

UTR: N/A. The UTR is a stand alone facility.

-3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected?

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Outer Range: Yes. Closure would directly impact training capability of the AFWTF training complex.

Inner Range: Yes. No other NGFS range with our capabilities exists on the east coast. AFWTF would be harmed by not offering any NGFS, ATG or amphibious capabilities.

EW Range: Yes. The following services would be severely impacted upon the closure of this facility: Testing and Evaluation; Pre-Deployment Workups; Multi-National Training; Joint Service Training. Loss of this range from the AFWTF complex would eliminate a critical aspect of this comprehensive training area which is able to accommodate all warfare areas within the total training area.

UTR: Yes. While AUTEK could handle the annual training and RDT&E requirements in ASW for the Atlantic Fleet, the loss of this range from the AFWTF complex would eliminate a critical aspect of this comprehensive training area which is able to accommodate all warfare areas within the total training area.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*

Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit: *Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.*

- 3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility?

Outer Range: No.

Inner Range: Currently operates under formal MOU between Puerto Rico and U.S. Navy which provides guidance and mitigation measures for use of range properties on Vieques.

EW Range: No.

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UTR: No.

- 3.1.C.2 How much could workload be increased before this limit would be reached? Express your answer as a percentage of your current workload.

All Ranges: Workload is not impacted by current environmental requirements.

- 3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

Inner Range: Range is currently operating under an agreement with the EPA as it awaits renewal of a water quality permit which previously expired in 1989. Permit will be issued through the host (NAVSTA Roosevelt Roads, Puerto Rico). Permit application has been filed and awaits action of the Puerto Rican Environmental Quality Board (EQB).

Outer Range: No.

EW Range: No.

UTR: No.

- 3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

All Ranges:

50 mile radius - 1.9 million
100 mile radius - 3.6 million
150 mile radius - 3.8 million
200 mile radius - 4.0 million (all estimated)

- 3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

Outer Range: Air routes amber 312, 632, 300, G431, 432; Local air routes 2, 4, and 6 all cross operating areas. Joint USN/FAA agreements provide mutually acceptable operating procedures that do not hinder range operations to

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any significant degree.

Inner Range: Air routes 2, 4 and 6 outside of warning areas.

EW Range: None.

UTR: The UTR is not a restricted area. Commercial traffic is authorized to use the area. Coordination with all users of the area is maintained to ensure safety and mission accomplishment.

- 3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

All Ranges: None.

- 3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

All Ranges: None.

3.1.D Specialized Test Support Facilities and Targets (MV I) - Measure of Merit: *Extent to which specialized test support facilities and targets are available.*

-3.1.D.1 Do you have specialized facilities are required to support you in conducting your test operations at your facility (e.g. Aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

Outer Range: Yes. Range infrastructure - radars systems used for area surveillance; two way UHF/VHF/HF radios; microwave links connecting outer sites with main facility; hangars used for aerial target storage, maintenance and build-up; control center; computers used for control and coordination of Range activities; aerial target launch sites.

Inner Range: Yes. Aerial delivery load build-up facilities, parachute facilities

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and mission planning facilities at NAVSTA Roosevelt Roads. Vehicle washdown facilities at NAVSTA Roosevelt Roads and Inner Range Camp Garcia.

EW Range: Yes. Airborne Target Shop (ATS) provides maintenance and repair of AST-4 Simulator Pods and ALQ-167 Jamming Pods. Marine Ocean and Engineering (MOE) provides ships for mobile threat simulator and drone launching. VC-8 provides A-4 aircraft to carry simulator pods for fleet operational and training missions.

UTR: Yes:

- Dive Locker: Supports dive operations in support of ASW Range.
- Portable Underwater Tracking Translator (PUTT) Shop: Build up and test of tracking instrumentation used on ASW Range.
- MK 46 IMA: Build up of MK 46 exercise torpedoes for use on the ASW Range.
- MK 48 Flush Facility: Decontamination and preparation of expended exercise MK 48 torpedoes for shipment to stateside MK 48 IMA.
- OTTO Fuel/HAZMAT Storage: Collect and prepare hazardous material from expended MK 46 and MK 48 exercise torpedoes for transportation and CONUS disposal.
- Other Support: Although not a physical element of the UTR, the following additional support assets are required to maintain range operations:
 - Ships - Marine Ocean Engineering (MOE) operated Navy Vessels of 65, 85 and 180(2) feet operate as the primary recovery and launch platform for the MK 30 target and recovery of MK 46/48 torpedoes.
 - Aircraft - SH3 helicopters owned by VC 8 (Secondary MK 30 and MK 48 recovery platform).

-3.1.D.2 Are specialized targets required to support this facility?

Outer Range: Yes. Contemporary USN aerial and surface targets which include BQM-74E, BQM-34S, AQM-37C, TDU-34A, QST-35, QF-84, 1STT, WILLIAMS TOW, TRIMARAN TOW.

Inner Range: No.

EW Range: Yes. ATS provides AST-4, ALQ-167 airborne simulators; MOE provides mobile threat simulator and drone launching capability.

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UTR: Yes. The MK 30 Mobile Antisubmarine Warfare Target (MAST) is required to support fleet and units training in the event real world assets are unavailable.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

Outer Range: Yes. By NAVAIRSYSCOM & NAVSEASYSYSCOM.

Inner Range: N/A.

EW Range: Yes. Naval Air Weapons Center, Point Magu, CA.

UTR: Yes. MK 30 specialized targets are validated annually by COMNAVSEASYSYSCOM.

3.1.E Expandability (MV III) - Measure of Merit: *Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.*

-3.1.E.1 Other than the expandability inherent in unconstrained capacity, discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? Yes/no. If yes, explain.

Outer Range: Yes. Relatively sparsely travelled open ocean areas vis-a-vis surface and air traffic. Minimal with no pleasure craft (yachts and smaller) traffic. No commercial fishing. Minimal marine live area (animals/turtles).

Inner Range: No.

EW Range: No.

UTR: Yes. The UTR is the only east coast ASW range that provides the largest training area with the acoustic background characteristics that are inherent to the real world.

-3.1.E.1.A Can you accept new T&E workload different from what you are

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currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Outer Range: Yes. Functional Areas: Armament/weapons, air vehicles, electronic combat. Test Types: Rocket Interceptor Missile Exercise (RIMEX), Missile Exercise (MISSLEX), Gun Exercise (GUNEX), Air to Air and Air to Surface Warfare (AAW/ASUW)

UTR: Yes. Functional Areas: Armament/weapons. Test Types: Torpedo Exercise (TORPEX), ASW Exercise (ASWEX).

EW: Yes. Functional Areas: Electronic combat. Test Types: ELW-1-SS, ELW-3-SF, ELW-4-SF, ELW-1-A, ELW-11-A, ELW-12-A, ELW-10-SF, ELW-11-SF, ELW-12-SF, NJS-DEMO, ADEX-325, ADEX-326, ADEX-451, ADEX-452, ADEX 4, EWX207, EWX208, EWX209, EWX210, EWX211, EWX221, EWX222, EWX410, EWX411, EWX412, EWX413, EWX414.

Inner Range: Yes. Functional Areas: Armament/weapons. Test Types: Mine Exercise (MINEX), Mine Readiness Certification Inspection (MRCI), Naval Gunfire Support (NGFS).

-3.1.E.2 Are airspace, land, and water areas--adjacent to areas under DoD control--available and/or suited for physical expansion to support new missions or increased footprints? Yes/no. If yes, please explain.

Outer Range: Yes. Relatively "clean" area now available for expansion within charted operating areas to double or triple the current area.

Inner Range: Yes. North and South Range. Available airspace is primarily located in areas of open ocean and remains reasonably clear of conflicting traffic. Existing areas are sufficiently large to accommodate increased military traffic and missions. Land on Vieques Island under military control is available for expanded use within constraints of existing environmental regulations and MOU which exists between the U.S. Navy and Puerto Rico. Available water areas surrounding the Inner Range are suitable for continued and expanded military use within existing environmental regulations and MOU which exists between the U.S. Navy and Puerto Rico.

EW Range: Yes. Located within major open ocean and land training ranges.

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UTR: Yes. Open ocean areas surround the range; the range could be expanded without any impact to environmental or commercial concerns.

-3.1.E.3 Is the facility equipped to support secure operations? Yes/no. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

Outer Range/Inner Range: Yes; Top Secret.

EW Range/UTR: Yes. Secret

-3.1.E.4 Are there any capital improvements underway or programmed in the 95 FYDP, that would change your capacity/capability? Yes/no. If yes, explain.

Outer Range/Inner Range/UTR: No.

EW Range: Yes. Expansion to include: EW Range Operations Center (ROC) refurbishment of TPS Sites, installation of I-Band Sea going threat emitter, UPQ-8 GTE, possible acquisition of AST-6 pods.

3.1.F Uniqueness (MV I) - Measure of Merit: *Extent to which the facility is one-of-a kind.*

-3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Outer Range: Yes. (Qualified) Only facility of its type on Atlantic coast.

Inner Range: Yes. The Inner Range complex is a multi-purpose target complex consisting of NGFS, air-to-ground, mining and land based supporting arms ranges with amphibious operating areas and landing beaches, capable of conducting all types of operations/scenarios simultaneously.

EW Range: Yes. The only training facility in which all facets of warfare can be performed in one day and at one location. (Level 4 training capability)

UTR: Yes. The UTR is the ASW range that provides the largest training area with the acoustic background characteristics that are inherent to the real world.

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The range also has the capability to train in Electronic Warfare while conducting ASW.

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

Outer Range: No. NAWCWD PT Mugu in accordance with Social Ranges provides much of the same services, but it is not able to support multi warfare scenarios.

Inner Range: Yes. The Inner Range complex is a multi-purpose target complex consisting of NGFS, air-to-ground, mining and land based supporting arms ranges with amphibious operating areas and landing beaches, capable of conducting all types of operations/scenarios simultaneously.

EW Range: Yes. Seaborne capacity for level 4 training.

UTR: Yes. The UTR is the ASW range that provides the largest training area with the acoustic background characteristics that are inherent to the real world. The range also has the capability to train in Electronic Warfare while conducting ASW.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

Outer Range: Yes. There is only one comprehensive site on the east coast.

Inner Range: Yes. The Inner Range complex is a multi-purpose target complex consisting of NGFS, air-to-ground, mining and land based supporting arms ranges with amphibious operating areas and landing beaches, capable of conducting all types of operations/scenarios simultaneously.

EW Range: Yes. Seaborne capacity for level 4 training.

UTR: Yes. The UTR is the ASW range that provides the largest training area with the acoustic background characteristics that are inherent to the real world. The range also has the capability to train in Electronic Warfare while conducting ASW.

-3.1.F.2 Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

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Outer Range: Yes. USAF. Less than 5% for FY 92/93.

Inner Range: Yes:

	FY 92	FY 93
DOT	2%	2%
USAF	4%	1%
PRNG/ANG	4%	1.5%
USA	4%	0
Foreign	11%	11%

NOTE: Department of Transportation (DOT), U.S. Air Force (USAF), Puerto Rico National/Air National Guard (PRNG/ANG), U.S. Army (USA), and foreign services

EW Range: Yes. FYs 92/93 USAF (10%)

UTR Range: No.

3.1.G Available Air, Land, and Sea Space (MV II) - Measure of Merit:
Extent to which controlled test ranges satisfy weapon system test requirements.

-3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

Outer Range: 194,000 square miles of open sea ranges which includes air.

Inner Range:

Land:

Inner Range: 22.65 square miles

AFWTF: 5.46 square miles

Live Impact: 1.40 square miles

Air:

R-7104 110.00 square miles

W-428 224.00 square miles

EW Range: 32,000 square miles (enhanced by mobile sea platform capability)

UTR: 400 square miles of open ocean area is available.

-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

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Outer Range/Inner Range/EW Range: U.S. GOVT and Commonwealth of Puerto Rico. Also AFWTF uses some international Sea/Air space.

UTR: N/A.

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

Outer Range: When activated, to infinity.

Inner Range: All 110 square miles, surface to 50,000 feet

EW Range: N/A

UTR: N/A.

-3.1.G.4 Do you have special use airspace other than supersonic airspace?

Yes/no. If yes, for what types of test (e.g. terrain following radar)?

Dimensions? Will it support simultaneous users? Yes/no.

Outer Range: Yes. Surface-to-air, air-to-air, surface-to-surface, air-to-surface missile firings. Alfa Range, north and east of Puerto Rico, is 120,000 square miles. Bravo Range, south of Puerto Rico, is 74,000 square miles.

Yes, it will support simultaneous users.

Inner Range: No.

EW Range: No.

UTR: Yes. Notices of Instructions for Special Use Airspace is requested only during Anti-Submarine Rocket launches. This occurs approximately 10 days per year for a total of 100 hours. A letter of agreement is on file with the FAA when such area is to be activated. No, it will not support simultaneous users.

-3.1.G.5 Is the airspace over land or water? List the number of square miles over each.

Outer Range: Over water - 194,000 square miles.

Inner Range: Over water - 305.49 square miles; over land - 28.51 square miles

EW Range: N/A

UTR: 400 square miles over water.

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-3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

All Ranges: None.

-3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

Outer Range: 600 nautical miles

Inner Range: 22 nautical miles

EW Range: N/A

UTR: 40 nautical miles

-3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes/no.

Outer Range/Inner Range/EW Range: None.

UTR: Anti-submarine Rocket launches are the only weapons that are launched into the air space. Approximately 10 tests per year are scheduled. No problems with air space scheduling are anticipated with future launches.

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit:
Extent to which types of climatic/geographic conditions represent world-wide operational conditions.

-3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap-of-the-earth capability). Identify all of the following that apply: mountains, forest/jungle, cultivated lowland, swamp/riverine, desert, and sea. State the area of each in square miles.

Outer Range: North Range: 120,000 square miles; south range: 74,000 square miles open ocean. Large open ocean warning areas could support performance and qualitative handling qualities tests for fixed and rotary wing aircraft. Aircraft can depart and return to NAVSTA Roosevelt Roads airfield

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without overflying personnel and all air vehicle testing can be accomplished over water making Roosevelt Roads an excellent candidate for air vehicle testing. Unmanned vehicles could be launched from the airfield or Cabras Island and mission profiles accomplished over water. Cruise missile profiles could be flown in the warning areas and, as air and sea traffic is sparse, safety is increased.

Inner Range: Forest/jungle, dense mesquite type brush. Nape-of-earth capable both land and water. Over land - 28.51 square miles; over water - 305.49 square miles.

EW Range: Primarily mountains and sea. Mountains are approximately 300 square miles and play an important role in EW simulations. Remaining 32,000 square miles is sea.

UTR: 400 square miles of open ocean.

-3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

Outer Range/Inner Range/UTR: No.

EW Range: Yes. The height of our simulator greatly enhances the reception range and multiple islands allow for multiple threat axis.

-3.1.H.3 Did you have to go to other geographical locations to satisfy test requirements? Yes/no and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

All Ranges: No; all test requirements can be satisfied within the AFWTF complex.

-3.1.H.4 What is the number of days per year the average temperature is below 32 degrees F? Between 32 and 95 degrees? Above 95 degrees?

All Ranges:

32 degrees F - 0

Between 32 and 95 degrees - 365 days

Above 95 degrees - 0

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-3.1.H.5 What is the number of days per year the average relative humidity is below 30%? Between 30 and 80%? Above 80%?

All Ranges:

Below 30% - 0

Between 30 and 80% - 265 days

Above 80% - 100 days

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

Outer Range/Inner Range: None.

EW Range: 3.

UTR: 10 missions per year are cancelled due to high sea states (sea state greater than 4).

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

Outer Range: 60 days lost due to hurricane damage in 1989. Total delayed due to weather is approximately 40. Delays are associated with reduced visibility in rain showers.

Inner Range: None.

EW Range: 5 days.

UTR: 10 range days per year are cancelled due to high sea states.

-3.1.H.8 What is the number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

All Ranges:

Statistical data does not support determination of numbers of days rather a frequency. Less than 1NM: .1%; 1-2NM: .1%; 2-5NM: .7% and greater than 5NM: 99.1%.

-3.1.H.9 What is the average number of flying days available per year for flight test? Provide historical average from the past eight years.

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Outer Range/EW Range: Flying days are available year around as requested.

Inner Range: N/A

UTR: N/A

-3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Outer Range: Less than 10%.

Inner Range: 0

EW Range: 1%

UTR: Less than 5%

3.2 AIR VEHICLES

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

3.2.A Supersonic Airspace (MV II) - Measure of Merit: *Extent of range size to support weapon system requirements.*

-3.2.A.1 Do supersonic corridors or areas exist?

Outer Range: Yes.

Inner Range/EW Range/UTR: N/A

-3.2.A.2 Where are they located relative to your airfield?

Outer Range: 30NM to border of areas.

Inner Range/EW Range/UTR: N/A

-3.2.A.3 At what altitude (upper and lower altitude)?

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Outer Range: Surface to Infinity.
Inner Range/EW Range/UTR: N/A

-3.2.A.4 Over land or water? What size and shape (length and width)?

Outer Range: Water. 200NM X 600NM and 180NM X 240NM.
Inner Range/EW Range/UTR: N/A

-3.2.A.5 Are there restrictions you must observe to use this space?

Outer Range: Yes. Activation procedures in accordance with USN/FAA joint agreements, international notice to Mariners, Airmen.
Inner Range/EW Range/UTR: N/A

-3.2.A.6 What is the maximum number of simultaneous users?

Outer Range: Dependent upon exercises.
Inner Range/EW Range/UTR: N/A

-3.2.B **Airfield and Facility Characteristics (MV II) - Measure of Merit:**
Extent of air vehicle infrastructure to support T&E operations.

-3.2.B.1 Provide a brief description of your airfield and support facilities, to include the following: number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

AFWTF does not have a custodied airfield. As a tenant of the host (Naval Station Roosevelt Puerto Rico (UIC 00389)), AFWTF Ranges utilize airfield facilities of that command.

-3.2.B.2 How close and how many emergency runways or airfields are in your

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area of operation?

6 within 30 miles (5 civilian and 1 military (NAVSTA Roosevelt Roads)).

-3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Outer Range: Within 5NM.

Inner Range/EW Range/UTR: N/A

-3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Outer Range: Isolated location and relatively clear airspace.

Inner Range/EW Range/UTR: N/A

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

All Ranges: No.

-3.2.B.6 Including hangers and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

All Ranges: N/A. NAVSTA Roosevelt Roads operates airfield, not AFWTF.

-3.2.C Test Operations (MV II) - Measure of Merit: *Extent of T&E operations that the airspace can accommodate.*

-3.2.C.1 What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g. performance, handling qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

Outer Range: Inflight tests. Large open ocean warning areas could support

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performance and qualitative handling qualities tests for fixed and rotary wing aircraft. Aircraft can depart and return to NAVSTA Roosevelt Roads airfield without overflying personnel and all air vehicle testing can be accomplished over water making Roosevelt Roads an excellent candidate for air vehicle testing. Unmanned vehicles could be launched from the airfield or Cabras Island and mission profiles accomplished over water. Cruise missile profiles could be flown in the warning areas and, as air and sea traffic is sparse, safety is increased.

Inner Range/EW Range/UTR: N/A

-3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Outer Range: Routine NAS facilities located at NAVSTA Roosevelt Roads offsite airfield.

Inner Range/EW Range/UTR: N/A

-3.2.C.3 What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

Outer Range: Any type/number of manned. Six to eight unmanned. (dependent upon type.)

Inner Range/EW Range/UTR: N/A

-3.2.C.4 Does UAV and or rotary wing operations pose any limitation on other types of missions?

Outer Range: Yes. Only those inherent with platform type.

Inner Range/EW Range/UTR: N/A

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

Outer Range: All assigned missions.

Inner Range/EW Range: N/A

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UTR: Unlimited. Overlying airspace is unrestricted.

-3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Outer Range: Dependent upon type and active TCM antennas. Virtually unlimited manned vehicles. Unmanned limited to six BQM-34/74 and two AQM-37 targets.

Inner Range/EW Range/UTR: N/A

-3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Outer Range: Eight unmanned. Unlimited manned.

Inner Range/EW Range/UTR: N/A

-3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

AFWTF has no aircraft. Host command (NAVSTA Roosevelt Roads) provides the operational airfield.

3.3 ELECTRONIC COMBAT

The EW functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

NOTE: The AFWTF EW Range utilizes the Outer Range's test/exercise areas for operations.

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3.3.A Threat Environment (MV I) - Measure of Merit: *Extent to which the capability satisfies weapon system requirements.*

-3.3.A.1 What is the number of threats simulated?

Outer Range: N/A
Inner Range: N/A
EW Range: 500 plus.
UTR: N/A

-3.3.A.2 How many simultaneous threats can be simulated? What type (e.g. AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?

Outer Range/Inner Range/UTR: N/A

EW Range:

SYSTEM	NUMBER	TYPE	POWER	BAND	RAD/INJ
TRS	49	ALL	200kw 100kw	E/F H/I/J	RAD RAD
TPS-1	5	ALL	200kw 100kw	H/F/H/I J	RAD RAD
TPS-2	5	ALL	200kw 100kw	E/F/H/I J	RAD RAD
NJS	6	ECM		B/C/G-J	RAD
ALQ-167(2)	2	ECM	4kw	B/C/E/F/G-J	RAD
AST-4(4)	4	ALL	70kw	H/I/J	RAD

Maximum Density: As required by the scenario.

Average Density: Scenario dependent.

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

Outer Range/Inner Range/UTR: N/A
EW Range: No.

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-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Outer Range/Inner Range/UTR: No

EW Range: Yes for each.

-3.3.A.5 What is the threat representation (fidelity) and density?

Outer Range/Inner Range/UTR: N/A

EW Range: All threat simulations are exact parametrically. The maximum number of radiated signals is 71.

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Outer Range/Inner Range/UTR: N/A

EW Range: Land threats - yes; sea threats - yes; combined land/sea threats - yes. AFWTF is capable of radiating air, surface, and subsurface.

-3.3.A.7 What geographic dispersion can be simulated?

Outer Range/Inner Range/UTR: N/A

EW Range: Three axis threat environment.

-3.3.A.7.A Threat lay down?

Outer Range/Inner Range/UTR: N/A

EW Range: Multiple threats from three different axis in a signal dense environment.

-3.3.A.7.B Representative distance?

Outer Range/Inner Range/UTR: N/A

EW Range: Any distance from 0-60 nautical miles.

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-3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario?
relocatable to new scenarios? yes/no

Outer Range/Inner Range/UTR: N/A

EW Range: Yes.

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how
are you linked?

Outer Range/Inner Range/UTR: N/A

EW Range: Yes. EW Range is linked with airborne and seaborne threat
simulators via voice communication and other land based threat simulators via
microwave link.

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

Outer Range/Inner Range/UTR: N/A

EW Range: No. As long as receiving platforms remain within range of our
simulators and receivers, no limitation exists.

**3.3.B Test Article Support (MV II) - Measure of Merit: *Extent to which
test support satisfies weapon system test requirements.***

-3.3.B.1 Is there a size, weight, or other limitation on test operations the
facility can support? Yes/no. If so, identify the limits and measures to remove
them.

Outer Range/Inner Range/UTR: N/A

EW Range: No.

-3.3.B.2 What is the number of simultaneous countermeasures that can be
evaluated?

Outer Range/Inner Range/UTR: N/A

EW Range: None currently.

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-3.3.B.3 What range of spectra can be tested and evaluated?

Outer Range/Inner Range/UTR: N/A

EW Range:

2.7 - 3.1 GHZ E/F

7.8 - 9.6 GHZ H/I TPS/TRS

14.4 - 15.0 GHZ J

-3.3.B.4 What are the available spectra?

Outer Range/Inner Range/UTR: N/A

EW Range: Up to 49 simultaneous signals can be radiated from 3 sites.

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

All Ranges: No.

3.4 ARMAMENTS/WEAPONS

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

3.4.A Directed Energy (MV II) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

This includes testing of all types of directed energy weapons.

-3.4.A.1 Do you currently test directed energy weapon systems?

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All Ranges: No.

3.4.B Rocket / Missile / Bomb Systems (MV II) - Measure of Merit: *Extent capability satisfies weapon system test requirements.*

This includes the testing of all types of rocket, missile, and bomb systems at the system/ subsystem/component level, both stand alone and integrated into the launch platform. This includes testing of air-to-air, air-to-surface, and surface-to-air missiles.

-3.4.B.1 Ground Space

-3.4.B.1.A What is the area in square miles of the land and water space which you can use to conduct tests of live rocket, missile, or bomb systems?

Outer Range: 194,000 square miles.

Inner Range: 1.5 square miles (Impact area of Inner Range Complex; no missiles allowed)

EW Range: N/A

UTR: 400 square miles of open ocean

-3.4.B.1.B How many separate and distinct land and water test areas are available to conduct tests of live weapons? List them and the size of each in acres.

Outer Range: 120,000 square miles (North over water), 74,000 square miles (South over water), both divided into internal sub divisions.

Inner Range: 1 area, no water space, 900 acres of land

EW Range: N/A

UTR: N/A; no live fire exercises

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

Outer Range: Ship/Air launched missiles out to 600 nautical miles.

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Inner Range: 11 nautical miles for any accepted ordnance. The range accepts the following ordnance:

Inert: MK76, MK106, MK20, MK82, MK83, MK84, 5"54 PUF AND 16"50.

Live: 3"50, 4.5", 5"38, 5"54, 16"50, MK20, NAPALM, MK81, MK82, MK83, MK84, 2.75R, ZUNI, HELLFIRE, MINE, FLARE, 20MM, 25MM, 30MM, 40MM, 60MM, 76MM, 81MM, 100MM, 105MM, 120MM, 155MM, AT-4, .50C, 7.62 AND 5.56

EW Range: N/A; no live fire exercises allowed

UTR: 400 square miles

3.4.B.2 Test Operations

-3.4.B.2.A For each of your land and water ranges, how many test missions were scheduled in FY92 and FY93 that were required to use safety footprints comparable to those required for the following types of weapons:

Outer Range:

--Unguided 2000 pound-class ballistic weapon

---live? None

---inert? None

--Guided weapon (e.g., GBU-24 class)

---live? None

---inert? None

--Stand-off weapon (e.g., AGM-130 class)

---live? None

---inert? None

--Short-range missile (e.g., AIM-9)

---below 5000 feet MSL

---between 5000 and 20,000 feet MSL

---above 20,000 feet MSL

Note: Fired through or in all altitudes.

FY92: 165 FY93: 123

--Long-range missile (e.g., AIM-120)

---below 5000 feet MSL

---between 5000 and 20,000 feet MSL

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---above 20,000 feet MSL

Note: Fired through or in all altitudes.

FY92: 122 FY93:120

- Inner Range:** --Unguided 2000 pound-class ballistic weapon
 ---live? FY 92 = 36 FY 93 = 52
 ---inert? FY 92 = 145 FY 93 = 0
--Guided weapon (e.g., GBU-24 class)
 ---live? None
 ---inert? None
--Stand-off weapon (e.g., AGM-130 class)
 ---live? None
 ---inert? None
--Short-range missile (e.g., AIM-9)
 ---below 5000 feet MSL None
 ---between 5000 and 20,000 feet MSL None
 ---above 20,000 feet MSL None
--Long-range missile (e.g., AIM-120)
 ---below 5000 feet MSL None
 ---between 5000 and 20,000 feet MSL None
 ---above 20,000 feet MSL None

- EW Range:** --Unguided 2000 pound-class ballistic weapon
 ---live? None
 ---inert? None
--Guided weapon (e.g., GBU-24 class)
 ---live? None
 ---inert? None
--Stand-off weapon (e.g., AGM-130 class)
 ---live? None
 ---inert? None
--Short-range missile (e.g., AIM-9)
 ---below 5000 feet MSL None
 ---between 5000 and 20,000 feet MSL None

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- above 20,000 feet MSL None
- Long-range missile (e.g., AIM-120)
 - below 5000 feet MSL None
 - between 5000 and 20,000 feet MSL None
 - above 20,000 feet MSL None

UTR: --Unguided 2000 pound-class ballistic weapon

- live? None
- inert? None
- Guided weapon (e.g., GBU-24 class)
 - live? None
 - inert? None
- Stand-off weapon (e.g., AGM-130 class)
 - live? None
 - inert? None
- Short-range missile (e.g., AIM-9)
 - below 5000 feet MSL None
 - between 5000 and 20,000 feet MSL None
 - above 20,000 feet MSL None
- Long-range missile (e.g., AIM-120)
 - below 5000 feet MSL None
 - between 5000 and 20,000 feet MSL None
 - above 20,000 feet MSL None

-3.4.B.2.B Were flight termination systems required?

Outer Range: Required only if part of normal missile configuration.

Inner Range: No

EW Range: N/A

UTR: N/A

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

Outer Range: Type of weapon not normally employed in open ocean

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scenarios.

Inner Range: Missile firings are not allowed within the Inner Range.

EW Range: N/A

UTR: No live fire exercises allowed; UTR is strictly an instrumented underwater range.

-3.4.B.2.D Were any scheduled missions canceled before the mission, or terminated/aborted during the mission because of encroachments into the safety footprint?

Outer Range: Yes. No record of cancellations exist, delays exist only to allow encroachers to clear area or for geometry of area to be modified.

Inner Range: No.

EW Range/UTR: N/A

Service: N Organization/Activity: Atlantic Fleet Weapons Training Facility (AFWTF)

Location: Naval Station, Roosevelt Roads, PR

T&E Functional Area: ARMAMENT/WEAPONS UIC = 0017A

T&E Test Facility Category Open Air Ranges

	<u>T&E</u>	<u>S&T</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER</u>	= 100%
PERCENTAGE USE:	<u>30%</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>70%</u>	

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	<u> </u>						
Armanent/Weapons	<u>30%</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>70%</u>	
EC	<u> </u>						
Other	<u> </u>						

Total in Breakout Must Equal "Percentage Use" On First Line

GENERAL INFORMATION

Facility/Capability Title:

Outer Range

Origin Date: 4-29-94

TECHNICAL INFORMATION

Facility/Capability Title:

Outer Range

Facility Description; Including mission statement:

The Outer Range encompasses two open ocean OPAREAS, Alfa or North Range, and Bravo or South Range. It is utilized for various types of live ordnance exercises and other events requiring large air or sea space. The Range operations center (ROC) located at AFWTF Headquarters is the control center for all outer range activities. All data from radar, IFF, NTDS links and other sources are received, processed, and displayed at the ROC. Operational data are recorded for exercise reconstruction or mission playback for concerned personnel.

Interconnectivity/Multi-Use of T&E Facility:

Inter connectivity to the exercise participant through LINK-11 (LINK4A future). No multi use other type facilities.

Type of Test Supported: Surface to air, air to air, surface to surface, and air to surface missile firing. Surface to air, surface to surface gunnery.

Summary of Technical Capabilities:

Long range air and surface surveillance, aerial target control and tracking IFF, Naval Tactical Data System (NTDS) with associated data links, UHF/VHF/HF communications station.

Keywords:

ROC- Range Operations Center

NTDS- Naval Tactical Data System

IFF- Identification Friend or FOE

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: OUTER RANGE

AGE: 1964 (30)
replacement)

REPLACEMENT VALUE: \$428 Million (includes cost of equipment

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Installation of a nike-hercules Radar at Pico del Este, Puerto Rico

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Next generation target control system

TOTAL PROGRAMMED AMOUNT: \$100 Million

SUMMARY DESCRIPTION: Replace existing ITCS

2. UPGRADE TITLE: Keep Alive ITCS

TOTAL PROGRAMMED AMOUNT: _____

SUMMARY DESCRIPTION: Keep alive ITCS until installation of next generation Target Control System.

3. UPGRADE TITLE: Fleet area control and surveillance Facility (FACSFAC)

TOTAL PROGRAMMED AMOUNT: \$700 K (Est)

SUMMARY DESCRIPTION: Upgrade the military Radar Unit (MRU) to provide full air-traffic control and

communications capability with Range Operating area.

ADDITIONAL INFORMATION

Facility/Capability Title: Outer Range

PERSONNEL

	FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
Officer	3	3	3	3	3	3	3
Enlisted	32	32	32	32	32	32	32
Civilian	25	25	25	25	25	25	25
Contractor	98	98	98	98	98	98	98
Total	158						

Total Square Footage: 212,211

Indoor Test Area Square Footage: 182,327

Office Space Square Footage: 4352 sq ft

Tonnage of Equipment: 175,25 tons

Volume of Equipment: 54,300 cu ft

Annual Maintenance Cost: \$6.33 Estimated Moving Cost: 21.7 Million

CAPITAL EQUIPMENT INVESTMENT:

FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
858K	400K	N/A	N/A	N/A	N/A	N/A

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: _____ Outer Range

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	N/A	MISSIONS							
EC	DIRECT LABOR								
	TEST HOURS								
	N/A	MISSIONS							
ARMAMENT/WEAPONS	DIRECT LABOR	3330	333	333	333	333	333	333	333
	*(Man Hours)	0	00	00	00	00	00	00	00
	TEST HOURS	1403	228	304	397	328	243	209	385
		.5	7.5	4.5	2.8	6.7	4.7	2.1	0.9
	MISSIONS	405	400	404	378	385	435	528	511
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	N/A	MISSIONS							

OTHER N/A	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: _____ Outer Range _____

ANNUAL HOURS OF DOWNTIME 1. 4380
 AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) 2. 12 Hrs.
 AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3. 12 Hrs.

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8 <u>14,400</u>
<u>Sur-to-Air MSLX</u>	<u>1</u>	<u>240</u>	<u>240</u>	
<u>Air to Air MSLX</u>	<u>1</u>	<u>240</u>	<u>240</u>	
<u>Air to Surface MSLX</u>	<u>1</u>	<u>240</u>	<u>240</u>	9 <u>5,256,000</u>
_____	<u>1</u>	<u>240</u>	<u>240</u>	
_____	<u>1</u>	<u>240</u>	<u>240</u>	
<u>"TYPICAL"</u>	_____	_____	_____	
"				

TOTAL Σ 1200

GENERAL INFORMATION

Facility/Capability Title: Inner Range (IR)

Origin Date: 4-29-94

Service: N

Organization/Activity: Atlantic Fleet

Weapons Training Facility

Location: Vieques PR

T&E Functional Area: Armament/Weapons

UIC = 0017A

T&E Test Facility Category Open Air Ranges

	<u>T&E</u>	<u>S&T</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER</u>	
PERCENTAGE USE:	<u>5%</u>	—	—	—	<u>95%</u>	—	= 100%

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	—	—	—	—	—	—
Armanent/Weapons	<u>5%</u>	—	—	—	<u>95%</u>	—
EC	—	—	—	—	—	—
Other	—	—	—	—	—	—

Total in Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title:

Inner Range (IR)

Facility Description; Including mission statement: The Inner Range complex is a multi-purpose target complex consisting of NGFS, air-to-ground, mining and land based supporting arms ranges with amphibious operating areas and landing beaches, capable of conducting all types of operations/scenarios simultaneously.

Interconnectivity/Multit-Use of T&E Facility: Naval Surface Warfare Center, Crane IN., Long Range NGFS test. Naval Special Weapons Center, Dahlgren VA., Long Range NGFS test.

Type of Test Supported: Long range NGFS test, Combat Systems Ships Qualification Trials, Range Accuracy Monitoring Program, Over-the-Horizon Missile tracking, Radar Beacon Acquisition (RBA) exercises.

Summary of Technical Capabilities: Skin and beacon tracking - Nike Hercules radar; RBA exercises - AN/PPN-19 RABFAC beacon; Optical scoring with Weapons Impact Scoring System, Acoustical Strafe scoring - EON scoring system

Keywords: Naval Gunfire Support (NGFS), Combat Systems Ship Qualification Test (CSSQT), Radar Beacon Acquisition (RBA), Range Accuracy Monitoring Program (RAMP), Inner Range (IR), Eastern Training Area (ETA), Long Range Naval Gunfire Support (LRNGFS).

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Inner Range (IR)

AGE: 1963
replacement)

REPLACEMENT VALUE: \$6 Million (includes cost of equipment

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Laser target upgrade/repairs for aircrew target designation performance
evaluation.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Weapon Impact Scoring System (WISS) Upgrade

TOTAL PROGRAMMED AMOUNT: \$900K

SUMMARY DESCRIPTION: Provide Mining Scoring
Capability in addition to Bomb Scoring.

2. UPGRADE TITLE: _____

TOTAL PROGRAMMED AMOUNT: _____

SUMMARY DESCRIPTION: _____

ADDITIONAL INFORMATION

Facility/Capability Title: Inner Range (IR)

PERSONNEL

	FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
Officer	2	1	1	1	1	1	1
Enlisted	2	3	3	3	3	3	3
Civilian	0	0	0	0	0	0	0
Contractor	23	23	23	23	23	23	23
Total	27						

Total Square Footage: 13,823

Test Area Square Footage: 13,823

Office Space Square Footage: 0

Tonnage of Equipment: 11.5 Tons

Volume of Equipment: 5,756 cu. ft.

Annual Maintenance Cost: \$ 3.28M

Estimated Moving Cost: \$2.25M

CAPITAL EQUIPMENT INVESTMENT:

FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
N/A	N/A	N/A	900K	N/A	N/A	N/A

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Inner Range (IR)

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES N/A	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC N/A	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	2127	2618	2576	2489	2397	1960	2300	176 5
	TEST HOURS	(1)	(1)	(1)	(1)	(1)	10	30	20
	MISSIONS	1416	2316	2291	2836	2559	2116	2419	208 4
OTHER T&E	DIRECT LABOR	(1)	(1)	(1)	(1)	(1)	10	30	20
	TEST HOURS	(1)	(1)	(1)	(1)	(1)	10	30	20

	MISSIONS	(1)	(1)	(1)	(1)	(1)	10	30
OTHER	DIRECT LABOR							
N/A	TEST HOURS							
	MISSIONS							

NOTE: (1) Data unavailable

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Inner Range (IR)

ANNUAL HOURS OF DOWNTIME 1. 1680
 AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) 2. 4.6
 AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3. 19.4

NOTE: ETA avail 24hr/day 365 day a year

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8
LRNGFS	<u>1</u>	<u>88</u>	<u>88</u>	<u>1,707.2</u>
_____	_____	_____	_____	ANNUAL UNCONSTRAINED CAPACITY
_____	_____	_____	_____	9 <u>623,128</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
<u>"TYPICAL"</u>	_____	_____	_____	_____
"	_____	_____	_____	_____
-	_____	_____	_____	_____
			TOTAL Σ	<u>88</u>

GENERAL INFORMATION

Facility/Capability Title: Electronic Warfare Range (EWR)

Origin Date: 27 April 1994

Service: USN Organization/Activity: Atlantic Fleet Weapons Training Facility (AFWTF)
 Location: Roosevelt Roads, PR

T&E Functional Area: Electronic Combat UIC = 0017A

T&E Test Facility Category Open Air Ranges

	<u>T&E</u>	<u>S&T</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER</u> = 100%
PERCENTAGE USE:	<u>8.75%</u>	_____	_____	_____	<u>91.25%</u>	

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	_____	_____	_____	_____	_____	_____
Armanent/Weapons	_____	_____	_____	_____	_____	_____
EC	<u>8.75%</u>	_____	_____	_____	<u>91.25%</u>	_____
Other	_____	_____	_____	_____	_____	_____

Total in Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title:

Electronic Warfare Range (EWR)

Facility Description; Including mission statement: The Electronic Warfare Range (EWR) consists of a signal Threat Radiation Simulator (TRS) (AN/FPQ-23), two (2) Threat Platform Simulators (TPS) (AN/ULQ-13 (XDV-2(V))), a signal Noise Jammer Simulator (NJS) (AN/FLQ-4), and a signal Outboard Stimulator (OBS) (AN/FSQ-154). The purpose of the Electronic Warfare Range is to provide full spectrum electronic warfare operation training for surface, sub-surface, combat system teams and fleet aircrews.

Interconnectivity/Multit-Use of T&E Facility: N/A

Type of Test Supported: Electronic Support Measures (ESM) equipment verification testing.

Summary of Technical Capabilities: Instrumentation/Assets

- 2 ALQ-167 Jammer Pods
- 4 AST-4 Missile Simulator Pods
- 2 TPS (AN/ULQ-139XDV-2) (V)
- 1 TRS (AN/FPQ-23)
- 1 NJS (AN/FLQ-4)
- 2 UYA-4 NTDS Consoles
- Atlantic Fleet Weapons Training Facility UHF Communications Equipment

No electronic recording equipment available for data compilation of electronic support measures simulations.

Keywords: EWR - Electronic Warfare Range

- TPS - Threat Platform Simulator
- TRS - Threat Radiation Simulator
- OBS - Outboard Stimulator
- ESM - Electronic Support Measures
- ECM - Electronic Counter Measures
- NTDS - Naval Tactical Data System
- REWS - Range Electronic Warfare System
- GTE - Ground Threat Emitter
- SAM - Surface to Air Missile

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Electronic Warfare Range (EWR)

AGE: 1974 (20) REPLACEMENT

VALUE: \$120 million (includes equipment replacement cost)

MAINTENANCE AND REPAIR BACKLOG: Unknown

DATE OF LAST UPGRADE: 20 April 1994

NATURE OF LAST UPGRADE: Range Electronic Warfare Systems (REWS) installation provides for remote control and integration of all land based EWR assets.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Ground Threat Emitter (GTE) 10/94

TOTAL PROGRAMMED AMOUNT: \$265,000.00

SUMMARY DESCRIPTION: ESM simulation for surface to air

(SAM) and triple A (AAA) threats.

2. UPGRADE TITLE: _____

TOTAL PROGRAMMED AMOUNT: _____

SUMMARY DESCRIPTION: _____

ADDITIONAL INFORMATION

Facility/Capability Title: ELECTRONIC WARFARE RANGE (EWR)
PERSONNEL

	FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
Officer	1	1	1	1	1	1	1
Enlisted	10	9	9	9	9	9	9
Civilian	0	0	0	0	0	0	0
Contractor	42	42	42	42	42	42	42
Total	53	52	52	52	52	52	52

Total Square Footage: 4,692

Test Area Square Footage: 4,692

Office Space Square Footage: 0

Tonnage of Equipment: 35.0

Volume of Equipment: 29,590 CU. FT.

Annual Maintenance Cost: \$2.81 M

Estimated Moving Cost: \$2.25 M

*Appendix A
 (a few more) -
 stand alone -
 no total for station
 to list of DC*

CAPITAL EQUIPMENT INVESTMENT:

FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
N/A	N/A	\$2.2M	\$2.2M	\$750K	N/A	N/A

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Warfare Range (EWR)

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR	(1)	(1)	(1)	409 2	165 1	200 4	213 0	286 6
	TEST HOURS	(1)	(1)	(1)	409 2	165 1	200 4	213 0	223 1
	MISSIONS	(1)	(1)	(1)	914	526	475	504	467
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

Note: (1) Data unavailable

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Electronic Warfare Range (EWR)

ANNUAL HOURS OF DOWNTIME	1. <u>0</u>
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2. <u>0</u>
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3. <u>24</u>

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL) 8
4	5	6	7	<u>288</u>
<u>Design validation</u>	<u>3</u>	<u>4</u>	<u>12</u>	
_____	_____	_____	_____	ANNUAL UNCONSTRAINED CAPACITY
_____	_____	_____	_____	9 <u>105,120</u>
_____	_____	_____	_____	
_____	_____	_____	_____	
<u>"TYPICAL"</u>	_____	_____	_____	
"	_____	_____	_____	
-	_____	_____	_____	
			TOTAL Σ	<u>12</u>

Service: N

Organization/Activity AFWTF

Location: UTR Facility St. Croix, U.S.V.I.

T&E Functional Area: Armament/Weapons

UIC: 0017A

T&E Test Facility Category: Open Air Range

T&E S&T D&E IE T&D OTHER = 100%
PERCENTAGE USE: 10% — — — 90% —

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	—	—	—	—	—
Armament/Weapons	<u>10%</u>	—	—	<u>90%</u>	—
EC	—	—	—	—	—
Other	—	—	—	—	—

Total in Breakout Must Equal "Percentage Use" On First Line

GENERAL INFORMATION

Facility/Capability Title: Underwater Tracking Range (UTR)

Origin Date: 4-29-94

TECHNICAL INFORMATION

Facility/Capability Title:

UNDERWATER TRACKING RANGE (UTR)

Facility Description; Including mission statement: The UTR supports all facets of training fleet units in Anti-submarine Warfare. Open ocean instrumented range exercises take place with the fleet involving exercise torpedoes, ASW targets, submarines, sonar systems and ASW mines. RDT&E is tailored to the customers' needs on a limited basis.

Interconnectivity/Mult-Use of T&E Facility: None at present.

Type of Test Supported: Torpedo firings, submarine training readiness evaluations, and any operation for which precise in water special data is required.

Summary of Technical Capabilities: The Underwater Range facility, located on the west coast of St. Croix, provides the capability to conduct a variety of Anti-submarine Warfare exercises along with research/development and independent ship qualifications. Services available include torpedo firing exercises, Surface Ship Radiated Noise Measurement trails, submarine training readiness evaluations, and any operations for which precise, in-water spatial data is required. AFWTF provides exercise torpedoes, MK-30 targets, tracking instrumentation, and rapid post-analysis data products which can be custom made for the individual unit. Four hundred square nautical miles of instrumented acoustic tracking range allows multi-ship and submarine battle group training.

K
Tra.

Is: Anti Submarine Warfare (ASW), Mobile Anit Sub
ducer (PUTT)

Warfare Target (NASWT) Portable Underwater Track

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: UNDERWATER TRACKING RANGE (UTR)

AGE: 1967 REPLACEMENT VALUE: \$100 million (includes equipment replacement cost)

MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: DECEMBER 1992

NATURE OF LAST UPGRADE: PROCESSING SYSTEM UPGRADED TO A TWELVE TARGET TRACKING SYSTEM
PREVIOUS SYSTEM WAS AN EIGHT TRACK PROCESSOR.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Underwater hydrophone repair /replacement

TOTAL PROGRAMMED AMOUNT: \$10 million

SUMMARY DESCRIPTION: Repair/replace 9 hydrophone arrays

2. UPGRADE TITLE: Underwater communications system

TOTAL PROGRAMMED AMOUNT: \$1 million

SUMMARY DESCRIPTION: provide underwater communication system to the

UTR

ADDITIONAL INFORMATION

Facility/Capability Title: Underwater Tracking Range (UTR)

PERSONNEL

	FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
Officer	2	1	1	1	1	1	1
Enlisted	3	3	3	3	3	3	3
Civilian	0	0	0	0	0	0	0
Contractor	172	169	163	163	163	163	163
Total	177	173	167	167	167	167	167

Total Square Footage: 73,844.96

Test Area Square Footage: 73,844.96

Tonnage of Equipment: 60.0

Annual Maintenance Cost: 11.01M

Office Space Square Footage: 0
 Volume of Equipment: 8140 cu.ft
 Estimated Moving Cost: 51.6M

CAPITAL EQUIPMENT INVESTMENT:

FY-93	FY-94	FY-95	FY-96	FY-97	FY-98	FY-99
N/A						

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: UNDERWATER TRACKING RANGE (UTR)

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES N/A to the UTR	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC N/A to the UTR	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR							(1)	134 12
	TEST HOURS	(1)	(1)	(1)	(1)	(1)	(1)	152	80
	MISSIONS	(1)	(1)	(1)	(1)	(1)	(1)	19	10
OTHER T&E N/A to the UTR	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: UNDERWATER TRACKING RANGE

ANNUAL HOURS OF DOWNTIME 1. 0

AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) 2. 0

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3. 24

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	
<u>CSSQT</u>	<u>2</u>	<u>544</u>	<u>1088</u>	<u>8 26,112</u>
_____	_____	_____	_____	ANNUAL
_____	_____	_____	_____	UNCONSTRAINED
_____	_____	_____	_____	CAPACITY
_____	_____	_____	_____	9 <u>9,530,880</u>
<u>"TYPICAL</u>	_____	_____	_____	
"	_____	_____	_____	
-	_____	_____	_____	
			TOTAL Σ <u>1088</u>	

AFWTF ROOSEVELT ROADS UIC N0017A
DATA CALL THIRTEEN

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

NEXT ECHELON LEVEL (if applicable)

NAME (Please type or print)

Signature

Title

Date

Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

NEXT ECHELON LEVEL (if applicable)

NAME (Please type or print)

Signature

Title

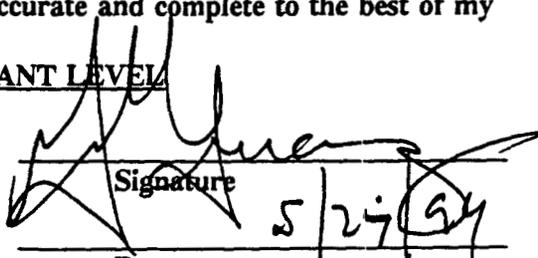
Date

Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

MAJOR CLAIMANT LEVEL

H. H. MAUZ, JR.
NAME (Please type or print)



Signature

Admiral
Title Commander in Chief
U.S. Atlantic Fleet

5/27/94
Date

Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

DEPUTY CHIEF OF NAVAL OPERATIONS (LOGISTICS)
DEPUTY CHIEF OF STAFF (INSTALLATIONS & LOGISTICS)

J. B. GREENE, JR.
NAME (Please type or print)



Signature

ACTING
Title

2 JUN 94
Date

I certifying that the information contained herein is accurate and complete to the best of my knowledge and belief.

NEXT ECHELON LEVEL (if applicable)

T. S. THERRELL
Name (Please type or print)

T. S. Therrell
Signature

CHIEF OF STAFF
Title

4 May 1994
Date

COMMANDER FLEET AIR CARIBBEAN
Activity

I certifying that the information contained herein is accurate and complete to the best of my knowledge and belief.

NEXT ECHELON LEVEL (if applicable)

L.P. LALLI
Name (Please type or print)

L.P. Lalli
Signature

ACTING
Title

5/6/94
Date

COMMANDER NAVAL AIR FORCE
Activity U.S. ATLANTIC FLEET

I certifying that the information contained herein is accurate and complete to the best of my knowledge and belief.

MAJOR CLAIMANT LEVEL

Name (Please type or print)

Signature

Title

Date

Activity

I certifying that the information contained herein is accurate and complete to the best of my knowledge and belief.

DEPUTY CHIEF OF NAVAL OPERATIONS (LOGISTICS)
DEPUTY CHIEF OF STAFF (INSTALLATIONS & LOGISTICS)

Name (Please type or print)

Signature

Title

Date

Activity

Activity: 0017A

Reference: SECNAVNOTE 11000 of 08 December 1993

In accordance with policy set forth by the Secretary of the Navy, personnel of the Department of the Navy, uniformed and civilian who provide information for use in the BRAC-95 process are required to provide a signed certification that states "I certify that the information contained herein is accurate and complete to the best of my knowledge and belief."

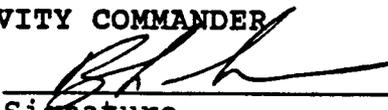
The signing of this certification constitutes a representation that the certifying official has reviewed the information and either (1) personally vouches for its accuracy and completeness or (2) has possession of, and is relying upon, a certification executed by a competent subordinate.

Each individual in your activity generating information for the BRAC-95 process must certify that information. Enclosure (1) is provided for individual certifications and may be duplicated as necessary. You are directed to maintain those certifications at your activity for audit purposes. For purposes of this certification sheet, the Commander of the activity will begin the certification process and each reporting senior in the Chain of Command reviewing the information will also sign this certification sheet. This sheet must remain attached to this package and be forwarded up the Chain of Command. Copies must be retained by each level in the Chain of Command for audit purposes.

I certifying that the information contained herein is accurate and complete to the best of my knowledge and belief.

ACTIVITY COMMANDER

B. L. LINER, CAPT, USN
Name


Signature

Commanding Officer
Title

4 MAY 94
Date

AFWTF (UIC 0017A)
Activity

Document Separator

(CORONA)

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**NAVAL WARFARE ASSESSMENT
DIVISION**

WARFARE ASSESSMENT LABORATORY

Department of Defense

**1995 Base Realignment and Closure
T&E Joint Cross-Service Group Data Guidance**

March 31, 1994

FOR OFFICIAL USE ONLY

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

- 1.1 GUIDANCE
 - 1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities/Capabilities
 - 1.1.B Guidance for Military Department Data Collection
 - 1.1.C Guidance for Military Department Data Analysis
- 1.2 ASSUMPTIONS
- 1.3 FUNCTIONAL AREAS
 - 1.3.A Air Vehicles
 - 1.3.B Electronic Combat (EC) Systems
 - 1.3.C Armaments/Weapons

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- 2.1 WORKLOAD
 - 2.1.A Historical Workload
 - 2.1.B Forecasted Workload
- 2.2 UNCONSTRAINED CAPACITY
- 2.3 TECHNICAL RESOURCES

SECTION 3: MEASURES OF MERIT

- 3.1 OVER-ARCHING MEASURES OF MERIT
 - 3.1.A Interconnectivity
 - 3.1.B Facility Condition
 - 3.1.C Environmental and Encroachment Carrying Capacity
 - 3.1.D Specialized Test Support Facilities and Targets
 - 3.1.E Expandability
 - 3.1.F Uniqueness
 - 3.1.G Available Air, Land, and Sea Space
 - 3.1.H Geographic/Climatological Features
- 3.2 AIR VEHICLES
 - 3.2.A Supersonic Airspace
 - 3.2.B Airfield and Facility Characteristics
 - 3.2.C Test Operations
- 3.3 ELECTRONIC COMBAT
 - 3.3.A Threat Environment
 - 3.3.B Test Article Support
- 3.4 ARMAMENTS/WEAPONS
 - 3.4.A Directed Energy
 - 3.4.B Rocket/Missile/Bomb Systems

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

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The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components:

data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

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1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission

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Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

1.3.B Electronic Combat (EC) Systems

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

1.3.C Armaments / Weapons

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight

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testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

See Historical Workload Form in Appendix A.

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

As the revised forms deleted space for this information, the Forecast Workload is not provided.

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

See Historical Workload Form in Appendix A.

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in Appendix A.

See Unconstrained Capacity Form in Appendix A.

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-2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

No.

2.3 TECHNICAL RESOURCES

-2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.

Yes. The Naval Sea Systems Command is revising the mobilization responsibilities for each cognizant field activity. The Naval Warfare Assessment Division will be assigned responsibilities in three areas: support of industrial base mobilization; training of individual units through Battle Groups and Joint Battle Forces; and, assessment of weapon performance in actual combat. In supporting the Defense Industrial Base mobilization, the Naval Warfare Assessment Division will provide assistance in quality control, metrology, and automated test equipment for expansion of existing industrial facilities and start up assistance in the same areas for converting of new industrial facilities. This assistance will be primarily in providing on site government representation to facilitate decision making and implementation of those decisions. A 100% increase in training requirements, especially for individual aircrews on the TACTS (Tactical Aircrew Training Site) and WISS (Weapon Impact Scoring System) ranges, is anticipated in the first 3 months of mobilization. Battle Group and Joint Battle Force Training support will increase, and simulation support from the Naval Warfare Assessment Laboratory will focus on actual or predicted combat operations. Weapon and combat system performance in actual combat will be analyzed using existing data reduction capabilities in the Warfare Assessment Laboratory. Trends and results will be used to develop enhanced capabilities to counter enemy tactics or technology.

The general guidelines for the mobilization responsibility of the Naval Warfare Assessment Division are found in OPNAVINST S 3060.1 and the NAVSEA Logistics Support Mobilization Plan.

-2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

Yes. The facility/capability is critical to our established mission.

-2.3.B.1 On the test mission of any other activity?

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Yes. OPTEVFOR, Fleet Commands, Warfare Centers, and others rely heavily on our technical support to execute their test missions.

-2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

Yes. The T&E assessment process is critical to proving the performance of weapons and systems against their operational threats in their anticipated operational environments.

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SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

3.1.A. Interconnectivity (MV I) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

-3.1.A.1 What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal and external to the site.

The real time or near real time exchange of data or control with other facilities occurs in two basic ways for the Warfare Assessment capability: (1) through the transmission/linking of test exercise data for AEGIS, Fleet exercise and weapons/combat systems testing and (2) through the on-site support to tests conducted for DT/OT, Fleet training exercises, and many weapon/combat system tests where the on-site interaction is

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real or near real time with data/results transmitted subsequently. The overall total test workload with real or near real time data transmission in FY 93 involved is estimated at:

38.6 WY's for FY 93

- (1) Operational Test and Evaluation Force (OPTEVFOR), Norfolk - external.
- (2) AEGIS Combat Systems Centers - internal (APAN) and external.
- (3) Atlantic Fleet Weapons Training Facility - internal and external.
- (4) NATO Allied Missile Firing Installation (NAMFI), Crete - external.
- (5) Pacific Missile Test Center, Pt. Mugu, CA - external.
- (6) Pacific Missile Range Facility, Barking Sands, HI - external.
- (7) Naval Surface Warfare Center, Port Hueneme, CA - external.
- (8) Naval Surface Warfare Center, Dahlgren, VA - external.
- (9) Naval Surface Warfare Center, White Oak - external.
- (10) Naval Air Warfare Center, Weapons Div, Pt. Mugu - external.
- (11) Naval Air Warfare Center, Weapons Div, China Lake - external
- (12) Fleet Commands; Second Fleet, Third Fleet, Sixth Fleet - external

-3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

Yes.

(1) Operational Test & Evaluation Force, Norfolk

The Warfare Assessment function provided by the Warfare Assessment Laboratory (WAL) facility/capability is essential to the DT/OT function carried out by the Operational Test and Evaluation Force for the Navy. The need for DT/OT testing results from the increasing complexity of systems and their application to effectively function in various environments against various threats. This complexity cannot be assessed through inspection methods on the hardware of the systems themselves, but is assessed by OPTEVFOR utilizing an independent reporting hierarchy and in designing, conducting and reporting on the operational effectiveness and suitability of these complex systems. NWAD's Warfare Assessment facility/capability is a critical link in accomplishing this important operational testing function in support of many OPTEVFOR DT/OT test exercises. This facility/capability is tied to NWAD's independent reporting assessment role making it suited to the "trusted technical agent" support required by OPTEVFOR in the DT/OT test of complex systems. Loss of this facility/capability would have a severe adverse impact on the DT/OT test process maintained by OPTEVFOR.

(2) AEGIS Combat System Center.

This facility/capability provides the AEGIS Performance Assessment Network (APAN) interconnectivity with the AEGIS community for movement of test and evaluation data and products. The independent assessment, technical function/role supports the AEGIS T&E effort by providing evaluation/assessment data and products. Loss would result in an adverse impact on ship delivery and testing schedules.

(3) AFWTF

This facility/capability has a satellite link to AFWTF for the near real time transmission of T&E technical data during weapons/combat systems tests for Fleet DT/OT, SQT and other exercises. The independent assessment (technical) function/role supports all specified tests by providing evaluation and assessment data and products. Loss would result in an adverse impact in weapon combat system testing.

(4) PMTC; PMRE; NAMFI, Crete.

This facility/capability provides independent weapon and combat system assessment/evaluation (technical) services to the users of these test ranges. Telemetry data collection services are provided by the NWAD field site at NAMFI, Crete to provide the ability to collect telemetry data from missiles and targets. Loss would adversely impact these facilities as these services would be unavailable at any USN sea range.

(5) Naval Surface Warfare Center and Naval Air Warfare Center.

This facility/capability provides independent assessment (technical) data products and services to NSWC and NAWC in support of their ISEA and acquisition/development roles. Loss would adversely impact these Centers.

(6) Numbered Fleet Commands.

This facility/capability provides independent assessment and evaluation (technical) data products and services to various Fleet commands in support of Fleet training exercises such as battlegroup training, refresher training, and other Fleet training exercises. Support is provided at the training range/facility conducting operations through use of carry-on data collection equipment, analysts, and data links. Loss would adversely impact these training exercises.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*

Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

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See Facility Condition Form in Appendix A.

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit:
Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.

- **3.1.C.1** Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility?

Yes/no. If yes, explain.

No limiting (current or future) environmental and/or encroachment characteristics are known.

- **3.1.C.2** How much could workload be increased before this limit would be reached?
Express your answer as a percentage of your current workload.

As answer to 3.1.C.1 is no, this question is not applicable.

- **3.1.C.3** Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

No.

- **3.1.C.4** What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

50 mile radius: 12,480,490

100 mile radius: 18,218,705

150 mile radius: 19,098,545

200 mile radius: 20,070,191

- **3.1.C.5** Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

None. As this is an enclosed, secure facility, there are no external forces that effect mission accomplishment.

- **3.1.C.5.A** How many test missions per year are canceled due to commercial or

public use?

None.

- 3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D Specialized Test Support Facilities and Targets (MV I) - Measure of Merit: *Extent to which specialized test support facilities and targets are available.*

-3.1.D.1 Do you have specialized facilities are required to support you in conducting your test operations at your facility (e.g. Aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

No. The Warfare Assessment Laboratory is a specialized, highly secure, self-contained 48,000 sq.ft. facility with stand alone back-up power, secure data transmission links, satellite communications, and internal vaults and SCIFS providing highly secure conference facilities, work areas and video Teleconferencing for T&E programs/projects classified at SECRET or above. A STILO function is included. No other specialized facilities are required to support our operations.

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

No.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

Not Applicable (N/A)

3.1.E Expandability (MV III) - Measure of Merit: *Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.*

-3.1.E.1 Other than the expandability inherent in unconstrained capacity, discussed earlier,

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are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? Yes/no. If yes, explain.

Yes. Technology advances in the area of data transfer and telecommunications technology which are programmed into the planned up-grades as provided in Appendix A.

-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes. Submarine/Underwater weapons and combat systems DT/OT through Fleet training exercise workload and land based or portable/moveable weapons and combat systems operational and Field tests including missiles, guns, radar and electronic warfare.

-3.1.E.2 Are airspace, land, and water areas--adjacent to areas under DoD control--available and/or suited for physical expansion to support new missions or increased footprints? Yes/no. If yes, please explain.

Yes. Expansion capability is currently not constrained by this new facility, but sufficient facility/space exists for expansion.

-3.1.E.3 Is the facility equipped to support secure operations? Yes/no. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

Yes. Special Access Required.

-3.1.E.4 Are there any capital improvements underway or programmed in the 95 FYDP, that would change your capacity/capability? Yes/no. If yes, explain.

Yes. Capital improvements are delineated in data sheet #4, Facility Condition, of Appendix A. These include computer/ADP and data processing up-grades and data transmission and telecommunication enhancements.

3.1.F Uniqueness (MV I) - Measure of Merit: *Extent to which the facility is one-of-a kind.*

-3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes. The integration of the large "Special Access Required" areas with interconnectivity

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with external facilities via secure LAN, satellite, included teleconferencing capabilities with STILO included make this capability unique within DoD and the U.S.

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

Yes. Same response as to 3.1.F.1 above.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

Yes. Same response as to 3.1.F.1 above.

-3.1.F.2 Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

Yes. Estimated: FY 92 - 10%, FY 93 - 10%. Primarily Foreign Military Sales (FMS).

3.1.G Available Air, Land, and Sea Space (MV II) - Measure of Merit: *Extent to which controlled test ranges satisfy weapon system test requirements.*

-3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

N/A, not an open air facility.

-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

N/A

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

N/A

-3.1.G.4 Do you have special use airspace other than supersonic airspace? Yes/no. If yes, for what types of test (e.g. terrain following radar)? Dimensions? Will it support simultaneous users? Yes/no.

N/A

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-3.1.G.5 Is the airspace over land or water? List the number of square miles over each.

N/A

-3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

N/A

-3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

N/A

-3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes/no.

N/A

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit: *Extent to which types of climatic/geographic conditions represent world-wide operational conditions.*

-3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap-of-the-earth capability). Identify all of the following that apply: mountains, forest/jungle, cultivated lowland, swamp/riverine, desert, and sea. State the area of each in square miles.

Not an open air range. N/A.

-3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

N/A

-3.1.H.3 Did you have to go to other geographical locations to satisfy test requirements? Yes/no and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

N/A

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-3.1.H.4 What is the number of days per year the average temperature is below 32 degrees F? Between 32 and 95 degrees? Above 95 degrees?

N/A. Temperature is controlled in facility.

-3.1.H.5 What is the number of days per year the average relative humidity is below 30%? Between 30 and 80%? Above 80%?

N/A. Humidity controlled.

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

None. N/A.

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

None. N/A.

-3.1.H.8 What is the number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

N/A

-3.1.H.9 What is the average number of flying days available per year for flight test? Provide historical average from the past eight years.

N/A

-3.1.H.10 What percentage of the time are your test operations restricted due to weather?

None. N/A.

3.2 AIR VEHICLES

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air

vehicles and cruise missiles are included.

3.2.A Supersonic Airspace (MV II) - Measure of Merit: *Extent of range size to support weapon system requirements.*

-3.2.A.1 Do supersonic corridors or areas exist? Yes/no.

N/A

-3.2.A.2 Where are they located relative to your airfield?

N/A

-3.2.A.3 At what altitude (upper and lower altitude)?

N/A

-3.2.A.4 Over land or water? What size and shape (length and width)?

N/A

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

N/A

-3.2.A.6 What is the maximum number of simultaneous users?

N/A

-3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: *Extent of air vehicle infrastructure to support T&E operations.*

-3.2.B.1 Provide a brief description of your airfield and support facilities, to include the following: number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

N/A

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-3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

N/A

-3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

N/A

-3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

N/A

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

No. N/A.

-3.2.B.6 Including hangers and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

N/A

-3.2.C Test Operations (MV II) - Measure of Merit: *Extent of T&E operations that the airspace can accommodate.*

N/A

-3.2.C.1 What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g. performance, handling qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

N/A

-3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

N/A

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-3.2.C.3 What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

N/A

-3.2.C.4 Does UAV and or rotary wing operations pose any limitation on other types of missions? If yes, explain.

N/A

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

N/A

-3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

N/A

-3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

N/A

-3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

N/A

3.3 ELECTRONIC COMBAT

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

3.3.A Threat Environment (MV I) - Measure of Merit: *Extent to which the capability satisfies weapon system requirements.*

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-3.3.A.1 What is the number of threats simulated?

N/A

-3.3.A.2 How many simultaneous threats can be simulated? What type (e.g. AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?

N/A

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

N/A

-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

N/A

-3.3.A.5 What is the threat representation (fidelity) and density?

N/A

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

N/A

-3.3.A.7 What geographic dispersion can be simulated?

N/A

-3.3.A.7.A Threat lay down?

N/A

-3.3.A.7.B Representative distance?

N/A

-3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario? relocatable to new

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scenarios? yes/no

N/A

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

N/A

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

N/A

3.3.B Test Article Support (MV II) - Measure of Merit: *Extent to which test support satisfies weapon system test requirements.*

-3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? Yes/no. If so, identify the limits and measures to remove them.

N/A

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

N/A

-3.3.B.3 What range of spectra can be tested and evaluated?

N/A

-3.3.B.4 What are the available spectra?

N/A

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

N/A

3.4 ARMAMENTS / WEAPONS

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of

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the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

3.4.A Directed Energy (MV II) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

This includes testing of all types of directed energy weapons.

-3.4.A.1 Do you currently test directed energy weapon systems? Yes/no.

No. N/A

If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

3.4.B Rocket / Missile / Bomb Systems (MV II) - Measure of Merit: *Extent capability satisfies weapon system test requirements.*

This includes the testing of all types of rocket, missile, and bomb systems at the system/subsystem/component level, both stand alone and integrated into the launch platform. This includes testing of air-to-air, air-to-surface, and surface-to-air missiles.

-3.4.B.1 Ground Space

-3.4.B.1.A What is the area in square miles of the land and water space which you can use to conduct tests of live rocket, missile, or bomb systems?

N/A

-3.4.B.1.B How many separate and distinct land and water test areas are available to conduct tests of live weapons? List them and the size of each in acres.

N/A

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

N/A

3.4.B.2 Test Operations

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N/A

-3.4.B.2.A For each of your land and water ranges, how many test missions were scheduled in FY92 and FY93 that were required to use safety footprints comparable to those required for the following types of weapons:

- Unguided 2000 pound-class ballistic weapon
 - live?
 - inert? N/A
- Guided weapon (e.g., GBU-24 class)
 - live?
 - inert? N/A
- Stand-off weapon (e.g., AGM-130 class)
 - live?
 - inert? N/A
- Short-range missile (e.g., AIM-9)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL
 - above 20,000 feet MSL N/A
- Long-range missile (e.g., AIM-120)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL N/A
 - above 20,000 feet MSL

-3.4.B.2.B Were flight termination systems required? Yes/no.

N/A

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

N/A

-3.4.B.2.D Were any scheduled missions canceled before the mission, or terminated/aborted during the mission because of encroachments into the safety footprint? Yes/no. If yes, how many per year.

N/A

APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

Facility/Capability: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

Origin date: Enter today's date in the format MM/DD/YY.

Military Department: Allowable entries include "N" for Navy, "A" for Army, and "AF" for Air Force. If the facility/capability is managed by an "Other Government Agency" (e.g. ARPA, DNA, ACC) enter the appropriate Agency name.

Organization/Activity: Enter the name (with acronym) for the field activity. Example: White Sands Missile Range (WSMR).

Location: Enter the location where the facility/capability is physically located (installation, city or other common name).

Unit Identification Code (UIC): Enter the UIC.

T&E Functional Area: Enter the single area this facility/capability primarily supports: Air Vehicles, Armament/Weapons, Electronic Combat, or Other.

T&E Test Facility Category: Enter the facility category based on the following definitions:

(1) **Digital Models and Computer Simulations (DMS)**- Those models and simulations which either provide a simulated test environment or representations of systems, components, and platforms. DMSs are used throughout the development and test process, as analytical tools, as well as tools to drive or control electronic and other environmental stimuli provided, the test articles on Open Air Ranges (OARs), Installed Systems Test Facilities (ISTFs), Hardware in the Loop Test Facilities (HITLs), Integration Laboratories (ILs), and Measurement Facilities (MFs).

(2) **Measurement Facilities (MF)**- Those facilities used to provide a specialized test environment and/or data collection capability. MFs may be ground based laboratories or open air facilities (often located at or part of OARs).

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(3) Integration Laboratories (IL)- Those facilities designed to support the integration and test of various systems and components that will be installed in a host platform. ILs are generally platform specific or unique. However, the simulated stimuli and data collection capabilities required by ILs are often common with those required by HITLS and ISTFs.

(4) Hardware-In-The-Loop (HITL)- Those facilities which provide capabilities to test systems or their components at various stages of development (e.g., brassboard, breadboard, prototype, preproduction, production). HITLs provide stimuli and data collection capabilities to permit test and evaluation of a system/component independent of the host platform.

(5) Installed Systems Test Facilities (ISTF)- Ground based test facilities (usually chambers) that allow test of systems and weapons as installed in the combat platform. ISTFs provide simulated test environments and stimuli and data collection capabilities for the test article(s).

(6) Open Air Ranges (OAR)- Those facilities which consist of controlled or restricted areas to support the test of platforms/systems in a real world, dynamic environment. They are instrumented with data collection, time-space-position information, positive control of test participants, and real or simulated targets and threats as appropriate.

Percentage Use: Enter percentage of time, based on hours, the facility is used to support each of the following (total must sum to 100%):

(1) Test and Evaluation (T&E)- Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment of these facilities are typically funded from 6.5 or procurement program elements. Facilities in this category were developed to support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity of production processes, and compliance with system specifications and quality standards.

(2) Science & Technology (S&T)- Any facility that is accountable to Military Department and/or OSD S&T management oversight. Operation and sustainment of these facilities are typically funded from 6.1, 6.2, and 6.3a program elements. Facilities in this category were developed to support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.

(3) Developmental Engineering (DE)- Any facility that is accountable to Military Department and/or OSD Research, Development and Engineering or acquisition management oversight. Operation and sustainment of these facilities are typically funded from 6.3b through 6.4 or procurement program elements. Facilities in this category were developed to support

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proof-of-principle and engineering development of systems.

(4) **In-Service Engineering (IE)**- Any facility that is accountable to Military Department and/or OSD logistics management oversight. Operation and sustainment of these facilities are typically funded from 6.7 or Operations and Maintenance (O&M) program elements. Facilities in this category were developed to support the maintenance facilities. These facilities tend to be system peculiar capabilities to conduct checkouts of the system/subsystems after they have undergone a modification, upgrade or improvement.

(5) **Training and Doctrine (T&D)**- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements. Facilities in this category were developed to support the training and proficiency of operational forces and/or the development of new tactics, doctrine or force structure concepts.

(6) Other - Any work outside the above.

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, IE, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

Facility Description: Enter a brief description of the facility, including the mission statement.

Interconnectivity/Multi-Use of Facility: Describe any linking/interconnectivity with other T&E facilities. Include physical and/or data linkages (bandwidth, data rate, etc.). Describe any unique characteristics or multiple use of the resource (e.g., operating by rotating crew, availability of resource dependent on ..., equipment will be obsolete by ..., etc.)

Type Tests Supported: Enter specific types of tests accomplished by the Facility (e.g., electromagnetic compatibility, radar cross section, missile miss distance, air-to-air radar simulation, etc).

Summary of Technical Capabilities: Describe technical capabilities at your facility to include:

Instrumentation/Assets: Enter instrumentation and other assets (e.g., jammers, target generators, recording equipment, computer support equipment) associated with the resource.

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Provide fact sheets, not to exceed two pages.

Keywords: Enter any keywords (spelled-out with acronyms) associated with functions and capabilities of the facility (e.g., electromagnetic interference/electromagnetic compatibility (EMI/EMC), anechoic chamber, radar cross section (RCS)).

3. Form, Additional Information

Additional Information Form. Enter facility name. Provide personnel numbers for FY93, FY94, and each year in the FY95 FYDP broken out according to officers, enlisted, civilians and contractors. Enter total area square footage of indoor space, test area square footage of indoor space used for T&E purposes, and list office space square footage separately. Tonnage of equipment is the weight of all equipment associated with this facility. Volume of equipment is the volume of all equipment associated with this facility. Annual maintenance cost is self explanatory. Moving costs are estimates for packing equipment at the losing site and reassembly, calibration, etc at the receiving site, not including transportation costs. Capital equipment investments are the current improvement and modernization funds as well as any programs funds earmarked for equipment purchase.

4. Form, Facility Condition

Facility/Capability: Enter the descriptive title for the facility/capability.

Age: Indicate the age of the facility/capability as of the date on the General Information Form.

Replacement Value: Enter the replacement value for the facility/capability. Indicate whether this includes the replacement cost for the equipment.

Maintenance and Repair Backlog: Enter the total dollar amount of the backlog for maintenance and repair items.

Date of Last Upgrade: Date of the last major upgrade to the facility.

Nature of Last Upgrade: Describe the purpose and capability increase from the last major upgrade. Indicate the date this upgrade became available for use.

Major Upgrades Programmed: Enter information on each of the major upgrades that are programmed. Indicate the total programmed amount and provide a summary description of the upgrade.

5. Form, Historical Workload

Use this form to report the workload performed at this facility each year from FY86-93.

Facility/Capability Title: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

T&E Functional Area: For each of these functional areas (Air Vehicles, Armament/Weapons, Electronic Combat, Other Test, and Other), enter direct labor hours, test hours, and/or missions for FY86 through FY93. For open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

6. Form, Determination of Unconstrained Capacity

Annual Hours of Downtime, 1: If the facility were required to operate continuously for 24 hours a day, seven days a week, 52 weeks a year, determine the number of hours per day the facility can reasonably operate if it is not constrained by personnel strength? Consider your facilities, equipment, and instrumentation fixed at current levels.

1. Add up the total hours of downtime per year for maintenance, weather, darkness (daylight), holidays, etc. Enter in line 1.

Average Downtime Per Day, 2: Divide line 1 by 365 to get the average downtime per day. Fill in at line 2.

Average Hours Available Per Day, 3: Subtract line 2 from 24 hours to get the average number of hours per day the facility is available for test. Fill in at line 3.

Analyze your historic workload mix to determine the average number and type of tests that have been run simultaneously at your facility. Determine the maximum number of tests that can be run simultaneously if there is no limit to personnel authorizations. Enter the following data from your analysis

Test Types, 4: Enter in column 4 the name of the type of test.

Tests at One Time, 5: List the number of each type of test that can be conducted simultaneously in column 5.

Workload Per Test

Per Facility Hour, 6: List the workload (reported in units as follows: For open air range flight testing, report workload in flight hours and numbers of missions. For all other test facility categories, including open air range other than flight testing, report workload in direct labor hours) represented by each hour the test is run. Do this at line 6.

From the historic workload analysis, determine the average workload per facility hour represented by the average or "typical" test. In the row titled "TYPICAL", in column 5, enter the number of these "typical" tests that can be run in addition to those already listed above. Enter the workload per "typical" test per facility hour in column 6. To estimate test hours from direct labor hours for the Historic Workload Form, divide the facility workload by this number (the number of direct labor hours per "typical" test per facility hour) and enter in the test hour block on the Historic Workload Form.

Workload Per

Facility Hour, 7: Multiply column 5 by column 6. Enter in column 7. Total column 7.

Unconstrained

Capacity Per Day, 8: Multiply the total from column 7 by line 3 to get the unconstrained capacity per average day. Enter in line 8.

Annual

Unconstrained

Capacity, 9: Multiply line 8 by 365 to get the unconstrained capacity per year for the facility. Enter on line 9.

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Naval Warfare Assessment
Division

**GAGE ENGINEERING
LABORATORY**

Department of Defense

**1995 Base Realignment and Closure
T&E Joint Cross-Service Group Data Guidance**

March 31, 1994

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

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The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components:

data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

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Cross-service analyses will use the following assumptions:

1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the

overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

1.3.B Electronic Combat (EC) Systems

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

1.3.C Armaments / Weapons

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

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Annual workload will be reported in units as follows: for open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

See attached forms.

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

NOTE: As the revised forms deleted space for this information, the forecast workload is not provided.

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

See attached forms.

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in Appendix A.

See attached forms.

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-2.2B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Yes, the size of the facility limits the number of employees, hence the capacity of this capability.

2.3 TECHNICAL RESOURCES

-2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.

The Naval Sea Systems Command is revising the mobilization responsibilities for each cognizant field activity. The Naval Warfare Assessment Division will be assigned responsibilities in three areas: support of industrial base mobilization; training of individual units through Battle Groups and Joint Battle Forces; and, assessment of weapon performance in actual combat. In supporting the Defense Industrial Base mobilization, the Naval Warfare Assessment Division will provide assistance in quality control, metrology, and automated test equipment for expansion of existing industrial facilities and start up assistance in the same areas for converting or new industrial facilities. This assistance will be primarily in providing on site government representation to facilitate decision making and implementation of those decisions. A 100% increase in training requirements, especially for individual aircrews on the TACTS (Tactical Aircrew Training Site) and WISS (Weapon Impact Scoring System) ranges, is anticipated in the first 3 months of mobilization. Battle Group and Joint Battle Force training support will increase, and simulation support from the Naval Warfare Assessment Laboratory will focus on actual or predicted combat operations. Weapon and combat system performance in actual combat will be analyzed using existing data reduction capabilities in the Warfare Assessment Laboratory. Trends and results will be used to develop enhanced capabilities to counter enemy tactics or technology.

The general guidelines for the mobilization responsibility of the Naval Warfare Assessment Division are found in OPNAVINST S3060.1 and the NAVSEA Logistics Support Mobilization Plan.

-2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

GAGE: If the Gage Engineering Laboratory cannot perform its T&E core function on new Special Interface Gages, the development of the gages will not be executed..

-2.3.B.1 On the test mission of any other activity?

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If new special interface gages are not properly tested initially, this can lead to gages that are inaccurately mass produced for the manufacturer T&E and production and the Fleet test and acceptance sites.

-2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

Special Interface gages ensure physical interchangeability between weapons assemblies and ensure that weapons will operate safely. If new gages cannot be properly tested to see if design specifications are met, then the ammunition, weapons, and guns used in the Fleet will not be ensured to operate properly. This could lead to assembly problems of different weapons sections, that could impact fleet personnel safety and readiness. Examples are torpedoes not fitting into tubes properly, gun barrels undersized due to pitting/corrosion, and wings falling off air missiles.

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

3.1.A. Interconnectivity (MV I) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

-3.1.A.1 What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal and external to the site.

100%

-3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

Yes. The Gage Engineering Laboratory is tied organizationally to the Gage Engineering designers and life cycle managers within NWAD's Measurement Science Directorate. Together they act as the technical authority for the Navy's Special Interface Gage Programs. The laboratory proofs out the gage designs and warehouses and certifies the standard interface gages in support of the life cycle gage engineering manager. The gage engineers perform physical interface analysis on weapons component/subassembly mating sections to determine interchangeability requirements. If gages are required, then the design engineer works with the physical measurement experts in the laboratory on the design; the prototype gage is constructed, tested, and modified by laboratory personnel until the gage meets its specifications. This program and laboratory facilities are unique to the Navy and DOD. If the laboratory facility were to be closed; then the gage design would not have the necessary input from the physical measurement expert, or a laboratory to perform the testing and modifications required to put a safe, accurate, and operable weapon component acceptance device in the Fleet/field. This would impact weapons components manufacturers ability to deliver interchangeable parts/subassemblies to the Fleet, which will lead to weapons assembly and safety problems at the Fleet. Examples are torpedoes not fitting in tubes, ammunition not fitting in guns, and wings falling off missiles in flight.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*

Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

See attached forms

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit: *Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.*

- 3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility?

Yes/no. If yes, explain.

No.

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- 3.1.C.2 How much could workload be increased before this limit would be reached?
Express your answer as a percentage of your current workload.

N/A

- 3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

No.

~~- 3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?~~

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- 3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

N/A

- 3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

N/A

- 3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

N/A

3.1.D Specialized Test Support Facilities and Targets (MV I) - Measure of Merit: *Extent to which specialized test support facilities and targets are available.*

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- 3.1.C.2 How much could workload be increased before this limit would be reached? Express your answer as a percentage of your current workload.

N/A

- 3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

No.

- 3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

50 mile radius: 12,480,490
100 mile radius: 18,218,705
150 mile radius: 19,098,545
200 mile radius: 20,070,191

(R)

- 3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

N/A

- 3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

N/A

- 3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

N/A

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11 R 6/2/9

0043. a.



DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20350-1000

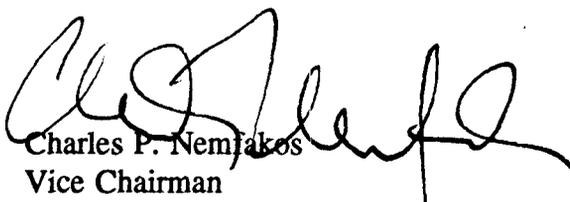
MM-0301-F6
BSAT/MS
24 August 1994

MEMORANDUM FOR CO-CHAIRS, TEST AND EVALUATION JOINT CROSS-SERVICE
GROUP

SUBJECT: PROVISION OF CERTIFIED NAVY DATA TO BRAC 95 TEST AND
EVALUATION JOINT CROSS-SERVICE GROUP

In compliance with the Internal Control Plan for Managing the Identification of DoD Cross-Service Opportunities as Part of the DoD 1995 Base Realignment and Closure Process, dated 13 April 1994 and as authorized by the BRAC 95 Steering Group by memorandum dated 5 August 1994, I am forwarding the enclosed data and information to be used for analysis by the Test and Evaluation Joint Cross-Service Group. This data was obtained by the Department of the Navy (DoN) in response to the Test and Evaluation Joint Cross-Service Group Guidance Package issued on 30 March 1994 and was certified in accordance with the DoN BRAC 95 certification policy and procedure.

The documents enclosed consist of a certified true copy of the revised data call response received from the Naval Warfare Assessment Division, Corona, CA. This revision provides a certified corrected response for question 3.1.C.4 of the Gage Engineering Laboratory section of the Test and Evaluation Joint Cross-Service Group Data Call. Specifically, it provides population density data that was omitted from the original response. If further revisions are necessary another formal transmission will be made by DoN.


Charles P. Nemfakos
Vice Chairman
Base Structure Evaluation Committee

Enclosures

0043.b.
a.

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

NEXT ECHELON LEVEL (if applicable)

R. SUTTON, RADM, USN
NAME (Please type or print)
COMMANDER

[Signature]
Signature

6/3/94
Date

Title
NAVAL ORDNANCE CENTER

Activity

~~I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.~~

~~NEXT ECHELON LEVEL (if applicable)~~

~~NAME (Please type or print)~~

~~Signature~~

~~Title~~

~~Date~~

~~Activity~~

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

MAJOR CLAIMANT LEVEL

G. R. STERNER

NAME (Please type or print)

[Signature]
Signature

7-19-94
Date

Title Commander
Naval Sea Systems Command

Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

DEPUTY CHIEF OF NAVAL OPERATIONS (LOGISTICS)
DEPUTY CHIEF OF STAFF (INSTALLATIONS & LOGISTICS)

W. A. EARNER

NAME (Please type or print)

[Signature]
Signature

8/9/94
Date

Title

WC 004B.C.
(b)

BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

In accordance with policy set forth by the Secretary of the Navy, personnel of the Department of the Navy, uniformed and civilian, who provide information for use in the BRAC-95 process are required to provide a signed certification that states "I certify that the information contained herein is accurate and complete to the best of my knowledge and belief."

The signing of this certification constitutes a representation that the certifying official has reviewed the information and either (1) personally vouches for its accuracy and completeness or (2) has possession of, and is relying upon, a certification executed by a competent subordinate.

Each individual in your activity generating information for the BRAC-95 process must certify that information. Enclosure (1) is provided for individual certifications and may be duplicated as necessary. You are directed to maintain those certifications at your activity for audit purposes. For purposes of this certification sheet, the commander of the activity will begin the certification process and each reporting senior in the Chain of Command reviewing the information will also sign this certification sheet. This sheet must remain attached to this package and be forwarded up the Chain of Command. Copies must be retained by each level in the Chain of Command for audit purposes.

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

ACTIVITY COMMANDER

Edward G. Schwier
NAME (Please type or print)


Signature

Commanding Officer
Title

6/2/94
Date

Naval Warfare Assessment Division
Activity

004B d.
C

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-3.1.D.1 Do you have specialized facilities are required to support you in conducting your test operations at your facility (e.g. Aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

Yes, the equipment and facilities that make up the Gage Engineering Laboratory are required to support the T & E capability. This includes the environmently controlled laboratory spaces and the state of art dimensional/optical equipment/standards (CMMs, rotary tables, large surface plates, hundreds of dimensional/optical standards).

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

No.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

3.1.E Expandability (MV III) - Measure of Merit: *Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.*

-3.1.E.1 Other than the expandability inherent in unconstrained capacity, discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? Yes/no. If yes, explain.

No.

-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes, we perform all the special interface gage T & E for the Navy. T&E of other high accuracy dimensional instrumentation and gages or weapons components can be performed in this facility.

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-3.1.E.2 Are airspace, land, and water areas--adjacent to areas under DoD control--available and/or suited for physical expansion to support new missions or increased footprints? Yes/no. If yes, please explain.

No.

-3.1.E.3 Is the facility equipped to support secure operations? Yes/no. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

Yes, Secret. Plus, other facilities are available on the base to support Top Secret and Special Access required projects.

-3.1.E.4 Are there any capital improvements underway or programmed in the 95 FYDP, that would change your capacity/capability? Yes/no. If yes, explain.

Yes, MILCON 167 is programmed for FY 1998 to consolidate measurement science laboratory operations at the Corona Site. This improves both capacity and capability.

3.1.F Uniqueness (MV I) - Measure of Merit: *Extent to which the facility is one-of-a kind.*

-3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes, the Gage Engineering Laboratory is unique to the Navy, and also DoD. The laboratory is the only DoD installation capable of providing the wide range of dimensional/optical measurement capability in its test item size, range and accuracy. The laboratory supports all Navy requirements and Army/Air Force requirements when requested.

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

Yes. The National Institute for Standards Technology possess the Nation's highest level measurement standards and may serve to some extent in this area. DOE has a limited capability in the dimensional area. The focus, knowledge and experience of these activities is on their respective mission, hence their knowledge of the Navy and Marine Corps T&E requirements and environment is very limited.

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-3.1.F.1.B Within the US? Yes/no. If yes, describe.

No..

-3.1.F.2 Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

About 1% total Army, Air Force, and Coast Guard for FY 92 & 93.

3.1.G Available Air, Land, and Sea Space (MV II) - Measure of Merit: *Extent to which controlled test ranges satisfy weapon system test requirements.*

-3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

N/A

-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

N/A

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

N/A

-3.1.G.4 Do you have special use airspace other than supersonic airspace? Yes/no. If yes, for what types of test (e.g. terrain following radar)? Dimensions? Will it support simultaneous users? Yes/no.

N/A

-3.1.G.5 Is the airspace over land or water? List the number of square miles over each.

N/A

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-3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

N/A

-3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

N/A

-3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes/no.

N/A

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit: *Extent to which types of climatic/geographic conditions represent world-wide operational conditions.*

-3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap-of-the-earth capability). Identify all of the following that apply: mountains, forest/jungle, cultivated lowland, swamp/ravine, desert, and sea. State the area of each in square miles.

N/A

-3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

N/A

-3.1.H.3 Did you have to go to other geographical locations to satisfy test requirements? Yes/no and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

No

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-3.1.H.4 What is the number of days per year the average temperature is below 32 degrees F? Between 32 and 95 degrees? Above 95 degrees?

<u>DAYS</u>	<u>TEMP. RANGE</u>
5	< 32°F
310	32-95°F
50	> 95°F

NOTE: T&E is normally performed in an environmentally controlled space and is not affected by ambient conditions.

-3.1.H.5 What is the number of days per year the average relative humidity is below 30%? Between 30 and 80%? Above 80%?

<u>DAYS</u>	<u>TEMP. RANGE</u>
30	< 30 %
325	30 - 80 %
10	> 80 %

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

Zero missions.

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

Zero missions.

-3.1.H.8 What is the number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

N/A

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-3.1.H.9 What is the average number of flying days available per year for flight test?
Provide historical average from the past eight years.

N/A

-3.1.H.10 What percentage of the time are your test operations restricted due to weather?

0%

3.2 AIR VEHICLES

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

3.2.A Supersonic Airspace (MV II) - Measure of Merit: *Extent of range size to support weapon system requirements.*

-3.2.A.1 Do supersonic corridors or areas exist? Yes/no.

No.

-3.2.A.2 Where are they located relative to your airfield?

N/A

-3.2.A.3 At what altitude (upper and lower altitude)?

N/A

-3.2.A.4 Over land or water? What size and shape (length and width)?

N/A

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-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

N/A

-3.2.A.6 What is the maximum number of simultaneous users?

N/A

-3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: *Extent of air vehicle infrastructure to support T&E operations.*

-3.2.B.1 Provide a brief description of your airfield and support facilities, to include the following: number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

N/A

-3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

N/A

-3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

N/A

-3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

N/A

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

N/A

-3.2.B.6 Including hangers and ramp space, how many fighter size aircraft could you

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support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

N/A

-3.2.C Test Operations (MV II) - Measure of Merit: *Extent of T&E operations that the airspace can accommodate.*

-3.2.C.1 What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g. performance, handling qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

N/A

-3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

N/A

-3.2.C.3 What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

N/A

-3.2.C.4 Does UAV and or rotary wing operations pose any limitation on other types of missions? If yes, explain.

N/A

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

N/A

-3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

N/A

-3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

N/A

-3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

N/A

3.3 ELECTRONIC COMBAT

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

3.3.A Threat Environment (MV I) - Measure of Merit: *Extent to which the capability satisfies weapon system requirements.*

-3.3.A.1 What is the number of threats simulated?

N/A

-3.3.A.2 How many simultaneous threats can be simulated? What type (e.g. AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?

N/A

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

N/A

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-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

N/A

-3.3.A.5 What is the threat representation (fidelity) and density?

N/A

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

N/A

-3.3.A.7 What geographic dispersion can be simulated?

-3.3.A.7.A Threat lay down? N/A

-3.3.A.7.B Representative distance? N/A

-3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario? relocatable to new scenarios? yes/no

N/A

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

N/A

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

N/A

3.3.B Test Article Support (MV II) - Measure of Merit: *Extent to which test support*

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satisfies weapon system test requirements.

-3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? Yes/no. If so, identify the limits and measures to remove them.

No.

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

N/A

-3.3.B.3 What range of spectra can be tested and evaluated?

N/A

-3.3.B.4 What are the available spectra?

N/A

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

N/A

3.4 ARMAMENTS / WEAPONS

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

3.4.A Directed Energy (MV II) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

This includes testing of all types of directed energy weapons.

-3.4.A.1 Do you currently test directed energy weapon systems? Yes/no.

No.

If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

3.4.B Rocket / Missile / Bomb Systems (MV II) - Measure of Merit: *Extent capability satisfies weapon system test requirements.*

This includes the testing of all types of rocket, missile, and bomb systems at the system/subsystem/component level, both stand alone and integrated into the launch platform. This includes testing of air-to-air, air-to-surface, and surface-to-air missiles.

-3.4.B.1 Ground Space

-3.4.B.1.A What is the area in square miles of the land and water space which you can use to conduct tests of live rocket, missile, or bomb systems?

N/A

-3.4.B.1.B How many separate and distinct land and water test areas are available to conduct tests of live weapons? List them and the size of each in acres.

N/A

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

N/A

3.4.B.2 Test Operations

-3.4.B.2.A For each of your land and water ranges, how many test missions were scheduled in FY92 and FY93 that were required to use safety footprints comparable to those required for the following types of weapons:

N/A

--Unguided 2000 pound-class ballistic weapon
--live?

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- inert?
- Guided weapon (e.g., GBU-24 class)
 - live?
 - inert?
- Stand-off weapon (e.g., AGM-130 class)
 - live?
 - inert?
- Short-range missile (e.g., AIM-9)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL
 - above 20,000 feet MSL
- Long-range missile (e.g., AIM-120)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL
 - above 20,000 feet MSL

-3.4.B.2.B Were flight termination systems required? Yes/no.

N/A

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

N/A

-3.4.B.2.D Were any scheduled missions canceled before the mission, or terminated/aborted during the mission because of encroachments into the safety footprint? Yes/no. If yes, how many per year.

N/A

APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

Facility/Capability: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

Origin date: Enter today's date in the format MM/DD/YY.

Military Department: Allowable entries include "N" for Navy, "A" for Army, and "AF" for Air Force. If the facility/capability is managed by an "Other Government Agency" (e.g. ARPA, DNA, ACC) enter the appropriate Agency name.

Organization/Activity: Enter the name (with acronym) for the field activity. Example: White Sands Missile Range (WSMR).

Location: Enter the location where the facility/capability is physically located (installation, city or other common name).

Unit Identification Code (UIC): Enter the UIC.

T&E Functional Area: Enter the single area this facility/capability primarily supports: Air Vehicles, Armament/Weapons, Electronic Combat, or Other.

T&E Test Facility Category: Enter the facility category based on the following definitions:

(1) **Digital Models and Computer Simulations (DMS)**- Those models and simulations which either provide a simulated test environment or representations of systems, components, and platforms. DMSs are used throughout the development and test process, as analytical tools, as well as tools to drive or control electronic and other environmental stimuli provided, the test articles on Open Air Ranges (OARs), Installed Systems Test Facilities (ISTFs), Hardware in the Loop Test Facilities (HITLs), Integration Laboratories (ILs), and Measurement Facilities (MFs).

(2) **Measurement Facilities (MF)**- Those facilities used to provide a specialized test environment and/or data collection capability. MFs may be ground based laboratories or open air facilities (often located at or part of OARs).

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(3) Integration Laboratories (IL)- Those facilities designed to support the integration and test of various systems and components that will be installed in a host platform. ILs are generally platform specific or unique. However, the simulated stimuli and data collection capabilities required by ILs are often common with those required by HITLS and ISTFs.

(4) Hardware-In-The-Loop (HITL)- Those facilities which provide capabilities to test systems or their components at various stages of development (e.g., brassboard, breadboard, prototype, preproduction, production). HITLs provide stimuli and data collection capabilities to permit test and evaluation of a system/component independent of the host platform.

(5) Installed Systems Test Facilities (ISTF)- Ground based test facilities (usually chambers) that allow test of systems and weapons as installed in the combat platform. ISTFs provide simulated test environments and stimuli and data collection capabilities for the test article(s).

(6) Open Air Ranges (OAR)- Those facilities which consist of controlled or restricted areas to support the test of platforms/systems in a real world, dynamic environment. They are instrumented with data collection, time-space-position information, positive control of test participants, and real or simulated targets and threats as appropriate.

Percentage Use: Enter percentage of time, based on hours, the facility is used to support each of the following (total must sum to 100%):

(1) Test and Evaluation (T&E)- Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment of these facilities are typically funded from 6.5 or procurement program elements. Facilities in this category were developed to support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity of production processes, and compliance with system specifications and quality standards.

(2) Science & Technology (S&T)- Any facility that is accountable to Military Department and/or OSD S&T management oversight. Operation and sustainment of these facilities are typically funded from 6.1, 6.2, and 6.3a program elements. Facilities in this category were developed to support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.

(3) Developmental Engineering (DE)- Any facility that is accountable to Military Department and/or OSD Research, Development and Engineering or acquisition management oversight. Operation and sustainment of these facilities are typically funded from 6.3b through 6.4 or procurement program elements. Facilities in this category were developed to support

proof-of-principle and engineering development of systems.

(4) In-Service Engineering (IE)- Any facility that is accountable to Military Department and/or OSD logistics management oversight. Operation and sustainment of these facilities are typically funded from 6.7 or Operations and Maintenance (O&M) program elements. Facilities in this category were developed to support the maintenance facilities. These facilities tend to be system peculiar capabilities to conduct checkouts of the system/subsystems after they have undergone a modification, upgrade or improvement.

(5) Training and Doctrine (T&D)- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements. Facilities in this category were developed to support the training and proficiency of operational forces and/or the development of new tactics, doctrine or force structure concepts.

(6) Other - Any work outside the above.

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, IE, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

Facility Description: Enter a brief description of the facility, including the mission statement.

Interconnectivity/Multi-Use of Facility: Describe any linking/interconnectivity with other T&E facilities. Include physical and/or data linkages (bandwidth, data rate, etc.). Describe any unique characteristics or multiple use of the resource (e.g., operating by rotating crew, availability of resource dependent on ..., equipment will be obsolete by ..., etc.)

Type Tests Supported: Enter specific types of tests accomplished by the Facility (e.g., electromagnetic compatibility, radar cross section, missile miss distance, air-to-air radar simulation, etc).

Summary of Technical Capabilities: Describe technical capabilities at your facility to include:

Instrumentation/Assets: Enter instrumentation and other assets (e.g., jammers, target generators, recording equipment, computer support equipment) associated with the resource.

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Provide fact sheets, not to exceed two pages.

Keywords: Enter any keywords (spelled-out with acronyms) associated with functions and capabilities of the facility (e.g., electromagnetic interference/electromagnetic compatibility (EMI/EMC), anechoic chamber, radar cross section (RCS)).

3. Form, Additional Information

Additional Information Form. Enter facility name. Provide personnel numbers for FY93, FY94, and each year in the FY95 FYDP broken out according to officers, enlisted, civilians and contractors. Enter total area square footage of indoor space, test area square footage of indoor space used for T&E purposes, and list office space square footage separately. Tonnage of equipment is the weight of all equipment associated with this facility. Volume of equipment is the volume of all equipment associated with this facility. Annual maintenance cost is self explanatory. Moving costs are estimates for packing equipment at the losing site and reassembly, calibration, etc at the receiving site, not including transportation costs. Capital equipment investments are the current improvement and modernization funds as well as any programs funds earmarked for equipment purchase.

4. Form, Facility Condition

Facility/Capability: Enter the descriptive title for the facility/capability.

Age: Indicate the age of the facility/capability as of the date on the General Information Form.

Replacement Value: Enter the replacement value for the facility/capability. Indicate whether this includes the replacement cost for the equipment.

Maintenance and Repair Backlog: Enter the total dollar amount of the backlog for maintenance and repair items.

Date of Last Upgrade: Date of the last major upgrade to the facility.

Nature of Last Upgrade: Describe the purpose and capability increase from the last major upgrade. Indicate the date this upgrade became available for use.

Major Upgrades Programmed: Enter information on each of the major upgrades that are programmed. Indicate the total programmed amount and provide a summary description of the upgrade.

5. Form, Historical Workload

Use this form to report the workload performed at this facility each year from FY86-93.

Facility/Capability Title: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

T&E Functional Area: For each of these functional areas (Air Vehicles, Armament/Weapons, Electronic Combat, Other Test, and Other), enter direct labor hours, test hours, and/or missions for FY86 through FY93. For open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

6. Form, Determination of Unconstrained Capacity

Annual Hours of Downtime, 1: If the facility were required to operate continuously for 24 hours a day, seven days a week, 52 weeks a year, determine the number of hours per day the facility can reasonably operate if it is not constrained by personnel strength? Consider your facilities, equipment, and instrumentation fixed at current levels.

1. Add up the total hours of downtime per year for maintenance, weather, darkness (daylight), holidays, etc. Enter in line 1.

Average Downtime Per Day, 2: Divide line 1 by 365 to get the average downtime per day. Fill in at line 2.

Average Hours Available Per Day, 3: Subtract line 2 from 24 hours to get the average number of hours per day the facility is available for test. Fill in at line 3.

Analyze your historic workload mix to determine the average number and type of tests that have been run simultaneously at your facility. Determine the maximum number of tests that can be run simultaneously if there is no limit to personnel authorizations. Enter the following data from your analysis

Test Types, 4: Enter in column 4 the name of the type of test.

Tests at One Time, 5: List the number of each type of test that can be conducted simultaneously in column 5.

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Workload Per Test

Per Facility Hour, 6: List the workload (reported in units as follows: For open air range flight testing, report workload in flight hours and numbers of missions. For all other test facility categories, including open air range other than flight testing, report workload in direct labor hours) represented by each hour the test is run. Do this at line 6.

From the historic workload analysis, determine the average workload per facility hour represented by the average or "typical" test. In the row titled "TYPICAL", in column 5, enter the number of these "typical" tests that can be run in addition to those already listed above. Enter the workload per "typical" test per facility hour in column 6. To estimate test hours from direct labor hours for the Historic Workload Form, divide the facility workload by this number (the number of direct labor hours per "typical" test per facility hour) and enter in the test hour block on the Historic Workload Form.

Workload Per

Facility Hour, 7: Multiply column 5 by column 6. Enter in column 7. Total column 7.

Unconstrained

Capacity Per Day, 8: Multiply the total from column 7 by line 3 to get the unconstrained capacity per average day. Enter in line 8.

Annual

Unconstrained

Capacity, 9: Multiply line 8 by 365 to get the unconstrained capacity per year for the facility. Enter on line 9.

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NAVAL WARFARE ASSESSMENT DIVISION

METROLOGY ENGINEERING
LABORATORY

Department of Defense

**1995 Base Realignment and Closure
T&E Joint Cross-Service Group Data
Guidance**

March 31, 1994

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

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1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components:

data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

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1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

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1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

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1.3.A Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

1.3.B Electronic Combat (EC) Systems

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

1.3.C Armaments / Weapons

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

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SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

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2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

See attached forms.

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

Note: As the revised forms deleted space for this information, the forecast workload is not provided.

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-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

See attached forms

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in Appendix A.

See attached forms.

Definitions of others test are as follows:

T&E Calibration Standard: The T& E function of calibration standards for the Metrology Engineering Laboratory is part of NWAD's charter functions to the Navy Metrology and Calibration Program. As required in NAVELEXINST 4355.2 and NAVSEAINST 4734.1A, NWAD is to develop, evaluate, and designate calibration standards and equipment to meet operational requirements for the calibration of Navy Test and Monitoring Systems. With new and emerging weapon systems/test equipment, NWAD has the responsibility to determine calibration standard support requirements. NWAD performs this mission by performing T&E on commercial off the shelf calibration standards, or if nothing is commercially available, developing and performing T&E on the standard thru the Navy Metrology R&D Program. T&E performed in this matter is listed in Appendix A under "T&E Calibration Standard".

Bid sample General Purpose Electronic Test Equipment and Bid Sample Calibration Standard: This is a program that we work with the Navy Ship's Parts and Provisioning Center (SPCC) Mechanicsburg. SPCC performs calibration standards and General Purpose Electronic Test Equipment (GPETE) procurement for NAVSEA. SPCC utilizes NWAD as the technical agent. NWAD develops the technical specifications that SPCC goes out for bids on. When SPCC receives the bids, they determine which bids are

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acceptable, and request the acceptable manufacturer to submit a bid sample unit (production unit that the manufacturer claims meets the specification) to NWAD for evaluation. NWAD performs the evaluations on the calibration standards and GPETE and submits a technical evaluation report back to SPCC. Based upon the technical evaluation report and cost, SPCC then awards the contract.

-2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Yes, the size of the facility limits the number of employees; hence the capacity of this capability.

2.3 TECHNICAL RESOURCES

-2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.

The Naval Sea Systems Command is revising the mobilization responsibilities for each cognizant field activity. The Naval Warfare Assessment Division will be assigned responsibilities in three areas: support of industrial base mobilization; training of individual units through Battle Groups and Joint Battle

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Forces; and, assessment of weapon performance in actual combat. In supporting the Defense Industrial Base mobilization, the Naval Warfare Assessment Division will provide assistance in quality control, metrology, and automated test equipment for expansion of existing industrial facilities and start up assistance in the same areas for converting or new industrial facilities. This assistance will be primarily in providing on site government representation to facilitate decision making and implementation of those decisions. A 100% increase in training requirements, especially for individual aircrews on the TACTS (Tactical Aircrew Training Site) and WISS (Weapon Impact Scoring System) ranges, is anticipated in the first 3 months of mobilization. Battle Group and Joint Battle Force training support will increase and simulation support from the Naval Warfare Assessment Laboratory will focus on actual or predicted combat operations. Weapon and combat system performance in actual combat will be analyzed using existing data reduction capabilities in the Warfare Assessment Laboratory. Trends and results will be used to develop enhanced capabilities to counter enemy tactics or technology.

The general guidelines for the mobilization responsibility of the Naval Warfare Assessment Division are found in OPNAVINST S3060.1 and the NAVSEA Logistics Support Mobilization Plan.

-2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

If the Metrology Engineering Laboratory cannot perform its T& E core function for new calibration standards procurement, the development of Fleet calibration standards could not be executed.

-2.3.B.1 On the test mission of any other activity?

Operational suitability is a component of OPEVAL; T&E of Test and Calibration capability is part of operational suitability if included in the TEMP. Use of this Command's capability would not be available to OPTEVFOR.

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-2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

Calibration Standards are used to calibrate support/test equipment that is used to ensure that our weapon systems are operating within performance specifications. If these standards are not tested and evaluated properly, then this calibration standard will negatively impact the accuracy of support/test equipment and all the various prime weapon systems that it supports. For a surface ship one standard supports on an average, approximately ten pieces of test equipment. A piece of test equipment then supports approximately three prime systems. Therefore, an improperly tested standard could effect approximately 30 prime fleet systems, leading to incorrect measurements that could impact prime system performance and availability.

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

- CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.
- CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.
- CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.
- CRITERION 4: The cost and manpower implications.

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3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

3.1.A. Interconnectivity (MV I) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

-3.1.A.1 What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal and external to the site.

0%

-3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

The T&E function for the Metrology Engineering Laboratory is part of NWAD's charter to the Navy's Metrology and Calibration Program. As specified in NAVSEAINST 4355.2 and NAVSEAINST 4734.1A, NWAD is to develop, evaluate and designate calibration standards and equipment to meet technical and operational requirements for calibration of Navy Test and Monitoring Systems.

As new and emerging test equipment is delivered to the Fleet to support today's state-of-the-art weapon systems, this also will have a spiraling effect on the calibration laboratories that have to support it. New standards are required to support the more stringent test equipment/weapon system requirements.

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NWAD has the responsibility, assigned by the Navy, to review new weapons systems and test equipment to determine the required calibration standards. NWAD performs this mission by: (1) performing T&E on commercial off the shelf calibration standards, (2) writing a specification and performing T&E on the bid sample/prototype when it is delivered; (3) turning the requirement over to the Navy's METCAL R&D program, also managed by NWAD, having a prototype developed and then performing T&E. There are over 750 Navy calibration laboratories that depend on NWAD for this service. If the laboratory were to be closed, then these 750 Navy calibration laboratories would not be provided with the standards necessary to support the emerging test equipment/weapons measurement requirements, nor with a vehicle to replace their obsolete, broken standards. This will have a direct impact on weapon systems performance. It is estimated that one calibration standard thru support of various models of test equipment, can impact 30 prime systems. If a calibration standard is not available that provides a sufficient test accuracy ratio for the test equipment, then that will lead to erroneous test equipment measurements which will impact the prime system.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*

Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

See attached forms.

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit: *Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.*

- 3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility?

Yes/no. If yes, explain.

No.

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- 3.1.C.2 How much could workload be increased before this limit would be reached?
Express your answer as a percentage of your current workload.

Not Applicable

- 3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

No.

- 3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

<u>RADIUS</u>	<u>POPULATION</u>
50 Miles	12,480,490
100 Miles	18,218,705
150 Miles	19,098,545
200 Miles	20,070,191

- 3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

N/A

- 3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

N/A

- 3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

N/A

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3.1.D Specialized Test Support Facilities and Targets (MV I) - Measure of Merit: *Extent to which specialized test support facilities and targets are available.*

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-3.1.D.1 Do you have specialized facilities are required to support you in conducting your test operations at your facility (e.g. Aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

Yes, the equipment and facilities that make up the Metrology Engineering Laboratory are required to support the T & E capability. This includes the environmental controlled laboratory spaces and the most current standards available today to conduct T & E in the technology areas of electronics, microwave, electro-optical, physical, mechanical, and optical/dimensional.

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

No.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

N/A

3.1.E Expandability (MV III) - Measure of Merit: *Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.*

-3.1.E.1 Other than the expandability inherent in unconstrained capacity, discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? Yes/no. If yes, explain.

No.

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-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes, our Metrology laboratory performs T & E primarily on calibration standards, but also performs a small portion of the General Purpose Electronic Test Equipment (GPETE) Bid Sample Testing for NAVSEA. Since calibration standards are more accurate and complex than GPETE, this facility could easily handle the entire GPETE bid sample and other testing now being performed by NESEA, St. Inigoes, which will be closed via BRAC 93. Test and Evaluation of special purpose electronic test equipment and mechanical test equipment can also be accommodated due to the wide range of technologies addressed by the laboratory.

-3.1.E.2 Are airspace, land, and water areas--adjacent to areas under DoD control--available and/or suited for physical expansion to support new missions or increased footprints? Yes/no. If yes, please explain.

No.

-3.1.E.3 Is the facility equipped to support secure operations? Yes/no. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

Yes, Secret. Plus, other facilities are available on the base to support Top Secret and Special Access required projects.

-3.1.E.4 Are there any capital improvements underway or programmed in the 95 FYDP, that would change your capacity/capability? Yes/no. If yes, explain.

Yes, MILCON 167 is programmed for FY 98. This project will improve and consolidate Measurement Science Laboratory operations at the Corona site.

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In addition, upgrades to buildings 517 and 541 are in process that will upgrade force, dimensional, optical capability at the Corona Site.

3.1.F Uniqueness (MV D) - Measure of Merit: *Extent to which the facility is one-of-a kind.*

-3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes, partially. The Metrology Engineering Laboratory is not totally unique in DoD; it is unique in the Navy. The Air Force and Army have similar facilities at Newark AFB and Redstone Arsenal. Newark AFB is being closed due to BRAC 93. The Air Force workload will require support elsewhere. The Army's TMDE support site in Huntsville, AL provides general and specialized services to the Army TMDE program, which is smaller in technology scope and therefore generates a small T&E requirement. Coordination of all metrology engineering functions including calibration standards T&E, are regularly coordinated by the Joint Logistics Commanders Joint Technical Coordination Group (CMT).

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

Yes, partially. The National Institute for Standards & Technology possess the Nation's highest level measurement standards and many serve to some extent in this area. DOE and NASA have specialized measurement capabilities for their missions. The focus, knowledge, and experience of these activities is on their mission, hence their knowledge of Navy and Marine Corps T&E requirements and environments is very limited.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

NO.

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-3.1.F.2 Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

METROLOGY: Yes, as managers of the R & D Metrology Program for the DoD tri-services; part of that charter includes T & E. Therefore, the T & E that is performed for the R & D Metrology program applies equally to Army, Air Force, and Navy requirements. It is estimated that 20% of workload applies to the Air Force, and Army, for FY 92 & 93.

3.1.G Available Air, Land, and Sea Space (MV II) - Measure of Merit: *Extent to which controlled test ranges satisfy weapon system test requirements.*

N/A

-3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

N/A

-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

N/A

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

N/A

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-3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

No.

-3.1.H.3 Did you have to go to other geographical locations to satisfy test requirements? Yes/no and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

Yes, sometimes we perform T & E on calibration standards/GPETE whose final destination is shipboard. Therefore, in order to simulate actual use conditions, T & E is performed on board a ship. Here the actual environmental conditions, handling, and customer comments can be assessed. Also, some specialized vibration and shock tests are performed off site.

-3.1.H.4 What is the number of days per year the average temperature is below 32 degrees F? Between 32 and 95 degrees? Above 95 degrees?

<u>DAYS</u>	<u>TEMP RANGE</u>
5	< 32°
310	32 - 95°F
50	> 95°F

NOTE: T&E is normally performed in an environmentally controlled space and is not affected by ambient conditions.

-3.1.H.5 What is the number of days per year the average relative humidity is below 30%? Between 30 and 80%? Above 80%?

<u>DAYS</u>	<u>REL. HUMIDITY</u>
30	< 30%
325	30-80
10	> 80%

NOTE: T&E normally performed in an environmentally controlled space and is not affected by ambient conditions.

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-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

Zero missions

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

Zero days

-3.1.H.8 What is the number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

N/A

-3.1.H.9 What is the average number of flying days available per year for flight test? Provide historical average from the past eight years.

N/A

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-3.1.H.10 What percentage of the time are your test operations restricted due to weather?

0%

3.2 AIR VEHICLES

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

3.2.A Supersonic Airspace (MV II) - Measure of Merit: *Extent of range size to support weapon system requirements.*

-3.2.A.1 Do supersonic corridors or areas exist? Yes/no.

No.

-3.2.A.2 Where are they located relative to your airfield?

N/A

-3.2.A.3 At what altitude (upper and lower altitude)?

N/A

-3.2.A.4 Over land or water? What size and shape (length and width)?

N/A

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-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

N/A

-3.2.A.6 What is the maximum number of simultaneous users?

N/A

-3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: *Extent of air vehicle infrastructure to support T&E operations.*

-3.2.B.1 Provide a brief description of your airfield and support facilities, to include the following: number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

N/A

-3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

N/A

-3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

N/A

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-3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

N/A

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

N/A

-3.2.B.6 Including hangers and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

N/A

-3.2.C Test Operations (MV II) - Measure of Merit: *Extent of T&E operations that the airspace can accommodate.*

-3.2.C.1 What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g. performance, handling qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

N/A

-3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

N/A

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-3.2.C.3 What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

N/A

-3.2.C.4 Does UAV and or rotary wing operations pose any limitation on other types of missions? If yes, explain.

N/A

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

N/A

-3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

N/A

-3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

N/A

-3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

N/A

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3.3 ELECTRONIC COMBAT

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

3.3.A Threat Environment (MV I) - Measure of Merit: *Extent to which the capability satisfies weapon system requirements.*

-3.3.A.1 What is the number of threats simulated?

N/A

-3.3.A.2 How many simultaneous threats can be simulated? What type (e.g. AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?

N/A

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

N/A

-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

N/A

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-3.3.A.5 What is the threat representation (fidelity) and density?

N/A

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

N/A

-3.3.A.7 What geographic dispersion can be simulated?

N/A

-3.3.A.7.A Threat lay down? N/A

-3.3.A.7.B Representative distance? N/A

-3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario? relocatable to new scenarios? yes/no

N/A

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

N/A

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

N/A

3.3.B Test Article Support (MV II) - Measure of Merit: *Extent to which test support satisfies weapon system test requirements.*

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-3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? Yes/no. If so, identify the limits and measures to remove them.

No.

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

N/A

-3.3.B.3 What range of spectra can be tested and evaluated?

N/A

-3.3.B.4 What are the available spectra?

N/A

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

N/A

3.4 ARMAMENTS / WEAPONS

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

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3.4.A Directed Energy (MV II) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

This includes testing of all types of directed energy weapons.

-3.4.A.1 Do you currently test directed energy weapon systems? Yes/no.

No.

If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

3.4.B Rocket / Missile / Bomb Systems (MV II) - Measure of Merit: *Extent capability satisfies weapon system test requirements.*

This includes the testing of all types of rocket, missile, and bomb systems at the system/subsystem/component level, both stand alone and integrated into the launch platform. This includes testing of air-to-air, air-to-surface, and surface-to-air missiles.

-3.4.B.1 Ground Space

-3.4.B.1.A What is the area in square miles of the land and water space which you can use to conduct tests of live rocket, missile, or bomb systems?

N/A

-3.4.B.1.B How many separate and distinct land and water test areas are available to conduct tests of live weapons? List them and the size of each in acres.

N/A

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-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

N/A

3.4.B.2 Test Operations

-3.4.B.2.A For each of your land and water ranges, how many test missions were scheduled in FY92 and FY93 that were required to use safety footprints comparable to those required for the following types of weapons:

N/A

- Unguided 2000 pound-class ballistic weapon
 - live?
 - inert?
- Guided weapon (e.g., GBU-24 class)
 - live?
 - inert?
- Stand-off weapon (e.g., AGM-130 class)
 - live?
 - inert?
- Short-range missile (e.g., AIM-9)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL
 - above 20,000 feet MSL
- Long-range missile (e.g., AIM-120)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL
 - above 20,000 feet MSL

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-3.4.B.2.B Were flight termination systems required? Yes/no.

N/A

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

N/A

-3.4.B.2.D Were any scheduled missions canceled before the mission, or terminated/aborted during the mission because of encroachments into the safety footprint? Yes/no. If yes, how many per year.

N/A

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APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

Facility/Capability: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

Origin date: Enter today's date in the format MM/DD/YY.

Military Department: Allowable entries include "N" for Navy, "A" for Army, and "AF" for Air Force. If the facility/capability is managed by an "Other Government Agency" (e.g. ARPA, DNA, ACC) enter the appropriate Agency name.

Organization/Activity: Enter the name (with acronym) for the field activity. Example: White Sands Missile Range (WSMR).

Location: Enter the location where the facility/capability is physically located (installation, city or other common name).

Unit Identification Code (UIC): Enter the UIC.

T&E Functional Area: Enter the single area this facility/capability primarily supports: Air Vehicles, Armament/Weapons, Electronic Combat, or Other.

T&E Test Facility Category: Enter the facility category based on the following definitions:

(1) **Digital Models and Computer Simulations (DMS)**- Those models and simulations which either provide a simulated test environment or representations of systems, components, and platforms. DMSs are used throughout the development and test process, as analytical tools, as well as tools to drive or control electronic and other environmental stimuli provided, the test articles on Open Air Ranges (OARs), Installed Systems Test Facilities (ISTFs), Hardware in the Loop Test Facilities (HITLs), Integration Laboratories (ILs), and Measurement Facilities (MFs).

(2) **Measurement Facilities (MF)**- Those facilities used to provide a specialized test environment and/or data collection capability. MFs may be ground based laboratories or

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open air facilities (often located at or part of OARs).

(3) Integration Laboratories (IL)- Those facilities designed to support the integration and test of various systems and components that will be installed in a host platform. ILs are generally platform specific or unique. However, the simulated stimuli and data collection capabilities required by ILs are often common with those required by HITLS and ISTFs.

(4) Hardware-In-The-Loop (HITL)- Those facilities which provide capabilities to test systems or their components at various stages of development (e.g., brassboard, breadboard, prototype, preproduction, production). HITLS provide stimuli and data collection capabilities to permit test and evaluation of a system/component independent of the host platform.

(5) Installed Systems Test Facilities (ISTF)- Ground based test facilities (usually chambers) that allow test of systems and weapons as installed in the combat platform. ISTFs provide simulated test environments and stimuli and data collection capabilities for the test article(s).

(6) Open Air Ranges (OAR)- Those facilities which consist of controlled or restricted areas to support the test of platforms/systems in a real world, dynamic environment. They are instrumented with data collection, time-space-position information, positive control of test participants, and real or simulated targets and threats as appropriate.

Percentage Use: Enter percentage of time, based on hours, the facility is used to support each of the following (total must sum to 100%):

(1) Test and Evaluation (T&E)- Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment of these facilities are typically funded from 6.5 or procurement program elements. Facilities in this category were developed to support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity of production processes, and compliance with system specifications and quality standards.

(2) Science & Technology (S&T)- Any facility that is accountable to Military Department and/or OSD S&T management oversight. Operation and sustainment of these facilities are typically funded from 6.1, 6.2, and 6.3a program elements. Facilities in this category were developed to support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.

(3) Developmental Engineering (DE)- Any facility that is accountable to Military

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Department and/or OSD Research, Development and Engineering or acquisition management oversight. Operation and sustainment of these facilities are typically funded from 6.3b through 6.4 or procurement program elements. Facilities in this category were developed to support proof-of-principle and engineering development of systems.

(4) In-Service Engineering (IE)- Any facility that is accountable to Military Department and/or OSD logistics management oversight. Operation and sustainment of these facilities are typically funded from 6.7 or Operations and Maintenance (O&M) program elements. Facilities in this category were developed to support the maintenance facilities. These facilities tend to be system peculiar capabilities to conduct checkouts of the system/subsystems after they have undergone a modification, upgrade or improvement.

(5) Training and Doctrine (T&D)- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements. Facilities in this category were developed to support the training and proficiency of operational forces and/or the development of new tactics, doctrine or force structure concepts.

(6) Other - Any work outside the above.

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, IE, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

Facility Description: Enter a brief description of the facility, including the mission statement.

Interconnectivity/Multi-Use of Facility: Describe any linking/interconnectivity with other T&E facilities. Include physical and/or data linkages (bandwidth, data rate, etc.). Describe any unique characteristics or multiple use of the resource (e.g., operating by rotating crew, availability of resource dependent on ..., equipment will be obsolete by ..., etc.)

Type Tests Supported: Enter specific types of tests accomplished by the Facility (e.g., electromagnetic compatibility, radar cross section, missile miss distance, air-to-air radar simulation, etc).

Summary of Technical Capabilities: Describe technical capabilities at your facility to include:

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Instrumentation/Assets: Enter instrumentation and other assets (e.g., jammers, target generators, recording equipment, computer support equipment) associated with the resource.

Provide fact sheets, not to exceed two pages.

Keywords: Enter any keywords (spelled-out with acronyms) associated with functions and capabilities of the facility (e.g., electromagnetic interference/electromagnetic compatibility (EMI/EMC), anechoic chamber, radar cross section (RCS)).

3. Form, Additional Information

Additional Information Form. Enter facility name. Provide personnel numbers for FY93, FY94, and each year in the FY95 FYDP broken out according to officers, enlisted, civilians and contractors. Enter total area square footage of indoor space, test area square footage of indoor space used for T&E purposes, and list office space square footage separately. Tonnage of equipment is the weight of all equipment associated with this facility. Volume of equipment is the volume of all equipment associated with this facility. Annual maintenance cost is self explanatory. Moving costs are estimates for packing equipment at the losing site and reassembly, calibration, etc at the receiving site, not including transportation costs. Capital equipment investments are the current improvement and modernization funds as well as any program funds earmarked for equipment purchase.

4. Form, Facility Condition

Facility/Capability: Enter the descriptive title for the facility/capability.

Age: Indicate the age of the facility/capability as of the date on the General Information Form.

Replacement Value: Enter the replacement value for the facility/capability. Indicate whether this includes the replacement cost for the equipment.

Maintenance and Repair Backlog: Enter the total dollar amount of the backlog for maintenance and repair items.

Date of Last Upgrade: Date of the last major upgrade to the facility.

Nature of Last Upgrade: Describe the purpose and capability increase from the last major

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upgrade. Indicate the date this upgrade became available for use.

Major Upgrades Programmed: Enter information on each of the major upgrades that are programmed. Indicate the total programmed amount and provide a summary description of the upgrade.

5. Form, Historical Workload

Use this form to report the workload performed at this facility each year from FY86-93.

Facility/Capability Title: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

T&E Functional Area: For each of these functional areas (Air Vehicles, Armament/Weapons, Electronic Combat, Other Test, and Other), enter direct labor hours, test hours, and/or missions for FY86 through FY93. For open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

6. Form, Determination of Unconstrained Capacity

Annual Hours of Downtime, 1: If the facility were required to operate continuously for 24 hours a day, seven days a week, 52 weeks a year, determine the number of hours per day the facility can reasonably operate if it is not constrained by personnel strength? Consider your facilities, equipment, and instrumentation fixed at current levels.

1. Add up the total hours of downtime per year for maintenance, weather, darkness (daylight), holidays, etc. Enter in line 1.

Average Downtime Per Day, 2: Divide line 1 by 365 to get the average downtime per day. Fill in at line 2.

Average Hours Available Per Day, 3: Subtract line 2 from 24 hours to get the average number of hours per day the facility is available for test. Fill in at line 3.

Analyze your historic workload mix to determine the average number and type of tests that have been run simultaneously at your facility. Determine the maximum number of

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tests that can be run simultaneously if there is no limit to personnel authorizations. Enter the following data from your analysis

Test Types, 4: Enter in column 4 the name of the type of test.

Tests at One Time, 5: List the number of each type of test that can be conducted simultaneously in column 5.

Workload Per Test

Per Facility Hour, 6: List the workload (reported in units as follows: For open air range flight testing, report workload in flight hours and numbers of missions. For all other test facility categories, including open air range other than flight testing, report workload in direct labor hours) represented by each hour the test is run. Do this at line 6.

From the historic workload analysis, determine the average workload per facility hour represented by the average or "typical" test. In the row titled "TYPICAL", in column 5, enter the number of these "typical" tests that can be run in addition to those already listed above. Enter the workload per "typical" test per facility hour in column 6. To estimate test hours from direct labor hours for the Historic Workload Form, divide the facility workload by this number (the number of direct labor hours per "typical" test per facility hour) and enter in the test hour block on the Historic Workload Form.

Workload Per

Facility Hour, 7: Multiply column 5 by column 6. Enter in column 7. Total column 7.

Unconstrained

Capacity Per Day, 8: Multiply the total from column 7 by line 3 to get the unconstrained capacity per average day. Enter in line 8.

Annual

Unconstrained

Capacity, 9: Multiply line 8 by 365 to get the unconstrained capacity per year for the facility. Enter on line 9.

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**NAVAL WARFARE ASSESSMENT
DIVISION**

**TACTICAL AIRCREW TRAINING SYSTEM (TACTS)
RANGE SUPPORT**

Department of Defense

**1995 Base Realignment and Closure
T&E Joint Cross-Service Group Data Guidance**

March 31, 1994

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

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The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components:
data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

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1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission

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Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

1.3.B Electronic Combat (EC) Systems

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

1.3.C Armaments / Weapons

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight

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testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

See Historical Workload Form in Appendix A.

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

As the revised forms deleted space for this information, the Forecast Workload is not provided.

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

See Historical Workload Form in Appendix A.

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in Appendix A.

See Unconstrained Capacity Form in Appendix A.

-2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

No.

2.3 TECHNICAL RESOURCES

-2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.

Yes. The Naval Sea Systems Command is revising the mobilization responsibilities for each cognizant field activity. The Naval Warfare Assessment Division will be assigned responsibilities in three areas: support of industrial base mobilization; training of individual units through Battle Groups and Joint Battle Forces; and, assessment of weapon performance in actual combat. In supporting the Defense Industrial Base mobilization, the Naval Warfare Assessment Division will provide assistance in quality control, metrology, and automated test equipment for expansion of existing industrial facilities and start up assistance in the same areas for converting of new industrial facilities. This assistance will be primarily in providing on site government representation to facilitate decision making and implementation of those decisions. A 100% increase in training requirements, especially for individual aircrews on the TACTS (Tactical Aircrew Training Site) and WISS (Weapon Impact Scoring System) ranges, is anticipated in the first 3 months of mobilization. Battle Group and Joint Battle Force Training support will increase, and simulation support from the Naval Warfare Assessment Laboratory will focus on actual or predicted combat operations. Weapon and combat system performance in actual combat will be analyzed using existing data reduction capabilities in the Warfare Assessment Laboratory. Trends and results will be used to develop enhanced capabilities to counter enemy tactics or technology.

The general guidelines for the mobilization responsibility of the Naval Warfare Assessment Division are found in OPNAVINST S 3060.1 and the NAVSEA Logistics Support Mobilization Plan.

-2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

NWAD EMS

The Naval Warfare Assessment Division is Naval Air Systems Command's (NAVAIR)

lead field activity for Tactical Aircrew Combat Training System (TACTS) Foreign Military Sales (FMS) engineering and technical program support. NWAD provides technical management, engineering, operation, maintenance, and logistics support of Thailand and Taiwan TACTS ranges. In this capacity, NWAD is critical for executing the Department of Defense Letter of Offer and Acceptance and Foreign Military Sales Cases with the Kingdom of Thailand and with Taiwan, Republic of China for maintaining operational TACTS ranges and implementing approved system changes, modifications, and upgrades. These foreign governments are dependent on NWAD for keeping their TACTS ranges operational for training their Air Force's aircrews and pilots. If NWAD support were terminated, the foreign governments of Thailand and Taiwan could be put in a position to attempt to provide their own technical operation, maintenance, logistics and engineering support. In fact, this particular goal had been planned early in both programs and included extensive training programs. Both training programs failed due to the lack of skilled technicians and engineers in both Thailand and Taiwan Air Forces. Additionally, the U.S. provides logistics support because it cannot be provided locally in Thailand and Taiwan. Spare and repair parts, which are essential to maintenance of the Thailand and Taiwan TACTS equipment, are provided from multiple sources within the U.S. NWAD coordinates supply support and shipping/transportation requirements for new parts and for repair/refurbishment of failed equipment through multiple U.S. companies. Therefore, it would follow that both the Thailand and Taiwan TACTS ranges might become inoperative within a very short time without NWAD's level of technical/engineering facility support. Also, both countries are continually expanding Air Force capabilities which in turn require TACTS modifications for maintaining realistic and effective training. The U.S. has an inherent responsibility to maintain these foreign systems as effective training systems and both countries demand and pay for extensive systems engineering and software support which is currently provided under NAVAIR's FMS cases. Termination of this support would also significantly impact the foreign customer's aircrew and pilot training capabilities, which would directly impact their overall defense and readiness capabilities.

NWAD TACTS

Vital training for Fleet and other service aircrews would be lost. For example: the Navy Fighter Weapons School (TOPGUN) and Marine Aviation Weapons and Tactics Squadron-1 (MAWTS-1) Weapons and Tactical Instructor (WTI) courses are run at MCAS Yuma several times each year; the Fleet Fighter Air Combat Manuvering Readiness Program (FFARP) is flown at NAS Oceana; the Naval Strike Warfare Center (NSWC) trains extensively at NAS Fallon; and MCAS Cherry Point offers Littoral warfare training capability.

-2.3.B.1 On the test mission of any other activity?

Yes. In FY 93 5250 Marine Corps sorties, 2508 Air Force sorties, and 3402 Air National Guard sorties were supported by TACTS.

Regarding the NTTR DAPML logistics and instrumentation function reported upon herein, without the end-item products and services, in terms of both hardware and logistics support, the host installation (NWAD) would not suffer, but the training ranges would not be delivered instrumentation, nor necessary logistics support to maintain them. The operating Fleet readiness would be negatively affected as the range instrumentation utilized in training exercises would be unavailable or unacceptably degraded.

Further, as NAVAIRSYSCOM (PMA 248's) DAPML for training range instrumentation, we respond to all Logistics Review Group (LRG) audits for training range projects as required by DoDINST 5000.2, dated 23 Feb 91. Accordingly, we interconnect/interface directly with not only PMA 248, but also other Navy lead field activities in the range instrumentation community such as:

- Naval Surface Warfare Center, Dahlgren**
- Naval Air Warfare Center, Point Mugu**
- Naval Air Warfare Center, China Lake**
- Naval Air Warfare Center, Patuxent River**

-2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

The training given at the TACTS ranges is an important part of Fleet aviator training. The TACTS system was developed due to failure of aircrews to recognize proper weapons envelopes and lack of sufficient ACM training. The TACTS is leader in these training situations and has been expanded to include Electronic Warfare Simulation (EWS) and Non-Drop Bomb Scoring (NDBS). Second Fleet has determined that all of it's FLEETEX's will be done at the Cherry Point range.

Naval Tactical Training Ranges (NTTR) affected by the loss of NWAD NTTR acquisition and logistics support products and services would include:

- Pacific Missile Range Facility, HI**
- Atlantic Fleet Weapons Training Facility, PR**
- Southern California Offshore Range, CA**
- Major Tactical Aircrew Combat Training Ranges at:
NAS Fallon, NV**

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MCAS Yuma, AZ
NAS Oceana, VA
MCAS Cherry Point, NC
MCAS Beaufort, SC
NAS Key West, FL

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

- CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.
- CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.
- CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.
- CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

3.1.A. Interconnectivity (MV I) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

-3.1.A.1 What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal and external to the site.

Fallon Field Site

- 1% Whidbey Island Strike Attack Force
- 10% Nellis AFB
- 5% Joint Camouflage Concealment Deception (JCCD)

Yuma Field Site

All Yuma TACTS training flights are interconnected to another site for display/debrief/backup capabilities. The Yuma TACTS is connected to NAS Miramar and NAF El Centro 36 Aircraft Display and Debriefing Subsystems (DDS) and is connected to the MCAS El Toro 8 aircraft DDS. All live training is conducted with aircrews flying on the range and a range training officer located at one or more of the DDS's and debrief their mission.

Oceana Field Site

- 25% Langley AFB

Key West Field Site

- 25%. Homestead Air Reserve Base.

Beaufort Field Site

- 25% Jacksonville ACMI
- 25% Savannah Combat Readiness Training Center ACMI

Cherry Point

- 5% SWATSLANT exercises (Oceana)

For the NTTR Training Range logistics and instrumentation acquisition function, this command is linked by real time exchange of logistics and planning data by way of the OPNAV (889K)/NAVAIRSYSCOM (PMA 248) NTTR instrumentation EMail network, connecting this activity to the ranges, as well as the other key lead field activities, such as NAWC Point Mugu, NAWC China Lake, NAWC Patuxent River, and Naval Surface Warfare Center, Dahlgren. We regularly send instrumentation program data and support information back and forth for review, comment, information, and update. These sites are all external to NWAD.

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Internal to NWAD, the same EMail network services and is used by the TACTS/EW range operations and maintenance Level II, as well as the Performance Assessment Directorate.

-3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

Yes. NWAD provides COMNAVAIRPAC, COMNAVAIRLANT, Thailand FMS, and NAVAIR management, administration, fiscal, on site engineering, fleet logistics and contracting support at Corona which ensures full Operations and Maintenance (O&M) of tactical training ranges for military fighter aircrews training in a simulated hostile environment. The tactical training ranges supported include; Oceana, Langley, Cherry Point, Beaufort, Savannah ANG, Jacksonville ANG, Cecil Field, Cecil Field Detachment, Key West, Fallon , China Lake, Lemoore, Yuma, El Centro, El Toro, and Miramar sites. NWAD Intra-service support agreements with range sites ensure proper management is established for training range services.

Closure of Yuma would mean that missions for TACTS and EWS at NAS Miramar, NAF El Centro and MCAS El Toro could not be supported.

Closure of Beaufort would mean that missions for TACTS at Savannah Combat Readiness Training Center - ACMI, NAS Cecil Field TACTS, Jacksonville, FL, Jacksonville ANG ACMI, Jacksonville FL., and Pinecastle Range Complex, Astor FL. would not be supported.

Closure of the joint Navy Air Force range at Key West would mean that the missions at Homestead Air Reserve Base would not be supported.

Additionally, the EW capability at Fallon, Cherry Point and Yuma would have to be moved to other activities at great expense.

Yes. There would be a major effect should NWAD be closed on the Naval Tactical Training Range community, as there would be no activity responsible any longer as the PMA 248 deputy assistant program manager for logistics (DAPML). PMA 248 would have no organization capable (as NWAD Corona provides this unique service to them for training range instrumentation of providing ILS support to the program office or to the fleet training ranges. Also, there would be no support to PMA 248 to respond to the logistics review group audits mandated by DoDINST 5000.2.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the*

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T&E facilities for supporting assigned test missions.

Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

See Facility Condition Form in Appendix A.

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit:
Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.

- 3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility?

Yes/no. If yes, explain.

Not Applicable (N/A)

- 3.1.C.2 How much could workload be increased before this limit would be reached?
Express your answer as a percentage of your current workload.

N/A

- 3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

No.

- 3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

Fallon Field Site

50 mile radius - 30,000
100 mile radius - 300,000
150 mile radius - 400,000
200 mile radius - 1Million

Yuma Field Site

50 mile radius - 30,000
100 mile radius - 300,000

150 mile radius - 400,000
200 mile radius - 1 Million

Oceana Field Site

50 mile radius - 1 Million
100 mile radius - 2 Million
150 mile radius - 5 Million
200 mile radius - 10 Million

Key West Field Site

50 mile radius - 30,000
100 mile radius - 50,000
150 mile radius - 70,000
200 mile radius - 1.5 Million

Beaufort Field Site

50 mile radius - 100,000
100 mile radius - 1 Million
150 mile radius - 1.5 Million
200 mile radius - 3 Million

Cherry Point Field Site

50 mile radius - 100,000
100 mile radius - 1 Million
150 mile radius - 1.5 Million
200 mile radius - 3 Million

NWAD

50 mile radius - 12,480,490
100 mile radius - 18,218,705
150 mile radius - 19,098,545
200 mile radius - 20,070,191

- 3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space,

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and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

None.

- 3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

- 3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D Specialized Test Support Facilities and Targets (MV I) - Measure of Merit: *Extent to which specialized test support facilities and targets are available.*

-3.1.D.1 Do you have specialized facilities are required to support you in conducting your test operations at your facility (e.g. Aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

All TACTS/EWS/WISS facilities in support of the range are specialized. They consists of:

Fallon Field Site

Control and Computation Subsystem (CCS) at NAS Fallon

Display and Debriefing Subsystems (DDS)

8 at NAS Fallon

1 at NAF Whidbey

2 at Lemoore

Pod shops for Aircraft Instrumentation Subsystems (AIS) storage and repair at NAS Fallon

AIS Maintenance and Storage facility

Radio Controlled Remote Interrogator Station Power Shutdown (RCRISP)

Tracking Instrumentation Subsystem (TIS)

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0117

**EW Threat Simulators
Bombing Range Safety Surveillance Systems
Range Air Surveillance Systems**

Yuma Field Site

CCS at MCAS Yuma

DDSs

- 3 at MCAS Yuma**
- 2 at NAS Miramar**
- 2 at NAF El Centro**
- 1 at MCAS El Toro**

Pod shops for AIS storage and repair

- 1 at MCAS Yuma**
- 1 at NAS Miramar**
- 1 at NAF El Centro**
- 1 at MCAS El Toro**

EW Maintenance facility at MCAS Yuma

WISS Operation and Maintenance facilities

- 1 at MCAS Yuma**
- 1 at El Centro**

Tracking Instrumentation Subsystem (TIS)

EW Threat Simulators

Oceana Field Site

CCS at NAS Oceana

DDSs

- 4 at NAS Oceana**
- 3 at Langley AFB**

1 TIS master and 9 TIS remotes

AIS/DDS maintenance facility

- 1 at NAS Oceana**
- 1 at Langely AFB**

Key West Field Site

1 DDS

1 AIS maintenance facility

Beaufort Field Site

CCS at MCAS Beaufort

DDS

- 2 at MCAS Beaufort
- 2 at NAS Cecil Field
- 2 at Savannah ANG
- 1 at Jacksonville ANG

AIS maintenance facility

- 1 at MCAS Beaufort
- 1 at NAS Cecil Field
- 1 at Savannah ANG
- 1 at Jacksonville ANG

Off Shore "Ocean Towers", 8 each with TIS remotes
Pinecastle bombing range complex/towers

Cherry Point Field Site

CCS at MCAS Cherry Point

3 DDS

TIS and 6 remotes

AIS maintenance facility

EW maintenance facility at MCOLF Atlantic Field

EW maintenance facility at Piney Island

Boat support facility at Thorofare Landing/BT-11

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

Yes. NAS Fallon and MCAS Yuma have WISS targets and TACTS visual cues for NDBS training. MCAS Cherry Point has a target complex at BT-11.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

WISS systems have been validated for accuracy. Visual cues have all been placed and surveyed, but have not been validated for IR, RF, or visual signatures.

-1.E Expandability (MV III) - Measure of Merit: *Extent to which an installation/facility is*

able to expand to accommodate additional workload or new missions.

-3.1.E.1 Other than the expandability inherent in unconstrained capacity, discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? Yes/no. If yes, explain.

No.

-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes. Air vehicles, EC and other.

-3.1.E.2 Are airspace, land, and water areas--adjacent to areas under DoD control--available and/or suited for physical expansion to support new missions or increased footprints? Yes/no. If yes, please explain.

N/A

-3.1.E.3 Is the facility equipped to support secure operations? Yes/no. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

Yes. SECRET/NOFORN/WNINTEL level.

-3.1.E.4 Are there any capital improvements underway or programmed in the 95 FYDP, that would change your capacity/capability? Yes/no. If yes, explain.

Yes. Advanced Display and Debriefing Subsystem, Geodetic Positioning System (GPS) tracking capability, Joint TCTS (JTCTS), and new weapons and EW capabilities. Cherry Point is designated to move forward to a level 4 range.

3.1.F Uniqueness (MV I) - Measure of Merit: *Extent to which the facility is one-of-a kind.*

Fallon Field Site

Yes. This is the only range with an integrated Orange C3, FME EW, and TACTS range.

Key West Field Site

Yes. This is the only range with unencumbered airspace.

Beaufort Field Site

Yes. Only Tactical Aircrew Combat Training range with three instrumented master tracking ranges. Also Beaufort is the only TACTS facility with a complete offshore unrestricted range.

Cherry Point Field Site

This is the only defended, coastal, Littoral instrumented target complex in the world.

This command has been tasked since the early 1970s to serve NAVAIRSYSCOM (PMA 248) as the deputy assistant program manager for logistics (DAPML) for NTTR range instrumentation systems. To reduce costs, maximize efficiency, and for the best value to the Navy, PMA 248 has vested all logistics work for NTTR systems at NWAD. We have a staff of nearly 40 civil service engineers and logisticians (plus an available cadre of contractors) working in this unique field. Thus, this is a "one-of-a-kind" unique capability the Navy has developed for range instrumentation systems, resident at NWAD Corona.

-3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Fallon Field Site

Yes. Same as above.

Key West Field Site

Yes. Same as above.

Beaufort Field Site

Yes. Same as above.

Cherry Point Field Site

Yes. Same as above.

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-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

Fallon Field Site

Yes. Same as above.

Key West Field Site

Yes. Same as above.

Beaufort Field Site

Yes. Same as above.

Cherry Point Field Site

Yes. Same as above.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

Fallon Field Site

Yes. Same as above.

Key West Field Site

Yes. Same as above.

Beaufort Field Site

Yes. Same as above.

Cherry Point Field Site

Yes. Same as above.

-3.1.F.2 Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by

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Military Department.

Fallon Field Site

FY92 7.5% USMC
FY93 6.5% USMC
1.4% USAF

Yuma Field Site

FY92 31% USMC
1.2% USAF
FY93 44.7% USMC
4.4% USAF

Oceana Field Site

FY92 4.3% USMC
13.5% USAF
FY93 7.4% USMC
12.8% USAF

Key West Field Site

FY92 - 2.8% Air Force
3.5% Marines
FY93 - 2.8% Air Force
3.5% Marines

Air Force usage will increase to 40% as Homestead Air Reserve Base comes on-line.

Beaufort Field Site

FY92 29% USMC
16.1% USAF
42.1% ANG
FY93 26.4% USMC
12.9% USAF
49.2% ANG

Cherry Point Field Site

FY92 51.5% USMC
2.3% USAF
FY93 24.7% USMC
11.3% USAF

3.1.G Available Air, Land, and Sea Space (MV II) - Measure of Merit: *Extent to which controlled test ranges satisfy weapon system test requirements.*

-3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

Fallon Field Site

9,000 square miles.

Yuma Field Site

R2301 W Range is approximately 1544 square miles. Inclusion of El Centro, WISS/ EW and adjacent area expands the total to 4,000 square miles..

Oceana Field Site

9500 square miles.

Key West Field Site

5000 square miles.

Beaufort Field Site

3200 square nautical miles over ocean, 1200 square miles over land.

Cherry Point Field Site

R-5306A is approximately 900 square nautical miles, but there are adjacent Military Operational Air Space (MOAS) and the offshore warning area and sea space are virtually unlimited.

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-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

Department of Defense.

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

Fallon Field Site

100% restricted to military use. Unrestricted altitude.

Yuma Field Site

100% restricted to military use. Unrestricted altitude.

Oceana Field Site

100 % restricted military use. Unrestricted altitude.

Key West Field Site

No restricted airspace, just warning area. Altitude restricted to 70K ft..

Beaufort Field Site

20% of the over land airspace is restricted with limits to average 30K ft.

Cherry Point Field Site

R-5306A surface to 17,999. MOAS vary, Warning Areas unrestricted.

-3.1.G.4 Do you have special use airspace other than supersonic airspace? Yes/no. If yes, for what types of test (e.g. terrain following radar)? Dimensions? Will it support simultaneous users? Yes/no.

No.

-3.1.G.5 Is the airspace over land or water? List the number of square miles over each.

N/A

-3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

None.

-3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

Fallon Field Site

250 NM.

Yuma Field Site

80 NM.

Oceana Field Site

100 NM.

Key West Field Site

300 NM.

Beaufort Field Site

60 NM.

Cherry Point Field Site

30 NM.

-3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes/no.

None/no.

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit: *Extent to which*

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types of climatic/geographic conditions represent world-wide operational conditions.

-3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap-of-the-earth capability). Identify all of the following that apply: mountains, forest/jungle, cultivated lowland, swamp/riverine, desert, and sea. State the area of each in square miles.

Fallon Field Site

Mountain, high desert, desert, 9000 square miles.

Yuma Field Site

Desert, 4000 square miles.

Oceana Field Site

Atlantic ocean, coastline, 9500 square miles.

Key West Field Site

Gulf of Mexico (ocean) 5000 square miles.

Beaufort Field Site

**Atlantic Ocean, 3200 square nautical miles
land - flat/sand/pine trees, 1200 square miles**

Cherry Point Field Site

Littoral environment and marsh, 900 square miles.

-3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

Varied geology allows realistic training scenarios in all climates and ground conditions.

-3.1.H.3 Did you have to go to other geographical locations to satisfy test requirements? Yes/no and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

No.

-3.1.H.4 What is the number of days per year the average temperature is below 32 degrees F? Between 32 and 95 degrees? Above 95 degrees?

Fallon Field Site

90 days below 32 degrees, 240 days between 32 and 95 degrees, 30 days above 95 degrees.

Yuma Field Site

180 days between 32 and 95 degrees, 180 days above 95 degrees.

Oceana Field Site

365 days between 32 and 95 degrees.

Key West Field Site

365 days between 32 and 95 degrees.

Beaufort Field Site

4 days less than 32 degrees. 350 days between 32 and 95 degrees.

Cherry Point Field Site

360 days between 32 and 95 degrees.

-3.1.H.5 What is the number of days per year the average relative humidity is below 30%? Between 30 and 80%? Above 80%?

Fallon Field Site

340 days below 30%, 20 days between 30 and 80%.

Yuma Field Site

220 days below 30%, 140 days above 80%.

Oceana Field Site

265 days between 30 and 80%. 100 days above 80%.

Key West Field Site

265 days between 30 and 80%. 100 days above 80%.

Beaufort Field Site

265 days between 30 and 80%. 100 days above 80%.

Cherry Point Field Site

265 days between 30 and 80%. 100 days above 80%.

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

All sites are less than 1% canceled due to weather except for Key West due to Hurricane Andrew (Key West Field Site - 116 test missions cancelled from 1989-1993).

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

All sites are less than 1% canceled due to weather, except for Key West due to Hurricane Andrew. (Key West Field Site - 10 days cancelled from 1989-1993).

-3.1.H.8 What is the number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

10 Days, 15 Days, 340 Days.

-3.1.H.9 What is the average number of flying days available per year for flight test? Provide historical average from the past eight years.

360 days.

-3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Less than 1%.

3.2 AIR VEHICLES

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

3.2.A Supersonic Airspace (MV II) - Measure of Merit: *Extent of range size to support weapon system requirements.*

-3.2.A.1 Do supersonic corridors or areas exist? Yes/no.

Yes.

-3.2.A.2 Where are they located relative to your airfield?

Fallon Field Site

East, in Austin 1 MOA and Gabbs North MOA (Dixie Valley).

Yuma Field Site

Southeast portion of restricted area 2301 West

Oceana Field Site

Offshore.

Key West Field Site

40 NM offshore in W474 B, F, and G.

Beaufort Field Site

Off-shore range: W-157, W-158.

Cherry Point Field Site

East.

-3.2.A.3 At what altitude (upper and lower altitude)?

Fallon Field Site

100 lower, 18,000 upper.

Yuma Field Site

15,000 lower (over Cabeza), 50,000.

Oceana Field Site

0 to unlimited.

Key West Field Site

70,000 feet upper, 5,000 feet lower.

Beaufort Field Site

0-55,000 Off-Shore

Cherry Point Field Site

0 to unlimited.

-3.2.A.4 Over land or water? What size and shape (length and width)?

Fallon Field Site

Over land, 40 x 100 nautical miles.

Yuma Field Site

Over land, 5 x 15 nautical miles.

Oceana Field Site

Over water, 30 x 150 nautical miles.

Key West Field Site

Over water, 40 x 80 miles.

Beaufort Field Site

Over water, 25 x 60 nautical miles.

Cherry Point Field Site

Over water, 40 x 80 miles.

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

No.

-3.2.A.6 What is the maximum number of simultaneous users?

36 high activity aircraft, 100 low activity aircraft.

-3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: *Extent of air vehicle infrastructure to support T&E operations.*

-3.2.B.1 Provide a brief description of your airfield and support facilities, to include the following: number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

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This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.2.B.6 Including hangers and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.2.C Test Operations (MV II) - Measure of Merit: *Extent of T&E operations that the airspace can accommodate.*

-3.2.C.1 What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g. performance, handling qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

Fixed and rotary wing.

-3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

-3.2.C.3 What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

The following aircraft are supported by TACTS:

A-4 A-6 A-7 A-10 AH-1 AV-8A

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AV-8B	B-1	B-52	CH-46	CH-53	EA-6B
F-4	F-5	F-8	F-14	F-15	F-16
F-18	F-22	F-104	F-106	F-111	Jaguar
P-3	S-3	TORNADO		UH-1	

In addition, any aircraft which can carry an AIM-9 sidewinder can carry a TACTS/EWS AIS and will track on the system utilizing the standard power to the AIM-9 rail.

-3.2.C.4 Does UAV and/or rotary wing operations pose any limitation on other types of missions? If yes, explain.

No.

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

The TACTS/EWS supports the following major training modes/categories:

Air Combat Maneuvering (ACM): Training in Air-to-air maneuvers and weapons employment under realistic conditions for manned, high performance, fixed wing and rotary wing aircraft. This includes weapons simulations (such as the Sidewinder and Sparrow missiles) from launch to impact, with kill or miss indications. Probability of kill (Pk) values and/or reasons for miss are also provided.

Electronic Warfare (EW): Training in threat recognition, self-protection and defense suppression techniques in a dynamic, coordinated threat environment.

No Drop Weapons Scoring (NDWS): Training in conventional Air-to-surface weapons delivery (such as the MK-82 bomb), showing impact point on a variety of pre-selected targets of target complexes. Joint Munitions Effectiveness Manual Scoring (JMEMS) indicates damage to a pre-selected type of target (i.e., tank, truck, building, etc.).

Anti-Radiation Missile (ARM): Training in ARM delivery with simulated missile flyout (such as the Shrike and HARM missiles) and kill indications.

Weapons Impact Scoring Set (WISS): Training in conventional Air-to-surface weapons delivery using practice bombs. Impact points are calculated and scored.

-3.2.C.6 What is the maximum number of simultaneous missions you can support that

require telemetry?

Can support up to 4 simultaneous TACTS training missions with a total of 36 aircraft combined. Each mission can be of a different type. EW threats could support other missions simultaneously in other areas.

-3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

The Cherry Point range had 28 aircraft simultaneously.

-3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

This answer is under the purview of the Host activity at which the TACTS equipment is located.

3.3 ELECTRONIC COMBAT

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

3.3.A Threat Environment (MV I) - Measure of Merit: *Extent to which the capability satisfies weapon system requirements.*

-3.3.A.1 What is the number of threats simulated?

Yuma Field Site

Nine actual threat emitters (hardware) which can simulate 15 different ground-to-air software threats.

Fallon Field Site

52 actual threat emitters which can simulate 15 different ground-to-air threats.

Cherry Point Field Site

14 actual threat emitters which can simulate 15 different ground-to-air threats.

-3.3.A.2 How many simultaneous threats can be simulated? What type (e.g. AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?

Surface-to-Air threats which can be simulated are the SA-2, SA-3, SA-4, SA-5, SA-6, SA-7, SA-8, SA-9, MIM-23 (I-HAWK), FIM-92 (Stinger); AAA threats which can be simulated are the ZSU-23, SA-60, Firecan, Flapwheel.

At Cherry Point, nine manned and four unmanned threats can be simultaneously simulated. At Fallon 30 manned and unmanned threats can be simultaneously simulated.

Additional data is classified.

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

Yes. Validation is by: Naval Air Warfare Center Weapons Division, China Lake, CA and Naval Air Warfare Center Aircraft Division, Warminster, PA.

-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

No.

-3.3.A.5 What is the threat representation (fidelity) and density?

Technical specification of threats are classified.

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Yes. A mix of land and sea threats can be simulated, both hardware and software.

-3.3.A.7 What geographic dispersion can be simulated?

Yuma Field Site

Two threats are mounted on permanent sites and 7 mobile threats. Software threats can be placed anywhere within the R2301W range.

Cherry Point Field Site

Very limited. All are fixed on BT-11 or MCOLF Atlantic Field with exception of 1 mobile AAA simulator.

Fallon Field Site

52 permanent and two mobile AA sites.

-3.3.A.7.A Threat lay down?

-3.3.A.7.B Representative distance?

-3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario? relocatable to new scenarios? yes/no

Yuma Field Site

No. The hardware threats are not moveable.

Yes. The hardware threats are relocatable.

Cherry Point Field Site

No. The hardware threats are not moveable.

Yes. The hardware threats are relocatable.

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

Yes. The threats are linked through microwave data links and RF data radios.

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

If utilized with the TACTS system, there is a 36 aircraft limitation. When used as stand-alone units there is no limit.

3.3.B Test Article Support (MV II) - Measure of Merit: *Extent to which test support*

satisfies weapon system test requirements.

-3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? Yes/no. If so, identify the limits and measures to remove them.

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

Not applicable.

-3.3.B.3 What range of spectra can be tested and evaluated?

RF, IR, LASER, and visual are modes of training used at the TACTS/EWS/WISS complexes.

-3.3.B.4 What are the available spectra?

RF, IR, LASER, visual.

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

No.

3.4 ARMAMENTS / WEAPONS

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

3.4.A Directed Energy (MV II) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

This includes testing of all types of directed energy weapons.

-3.4.A.1 Do you currently test directed energy weapon systems? Yes/no.

If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

This answer is under the purview of the Host activity at which the TACTS equipment is located.

3.4.B Rocket / Missile / Bomb Systems (MV II) - Measure of Merit: *Extent capability satisfies weapon system test requirements.*

This includes the testing of all types of rocket, missile, and bomb systems at the system/subsystem/component level, both stand alone and integrated into the launch platform. This includes testing of air-to-air, air-to-surface, and surface-to-air missiles.

-3.4.B.1 Ground Space

-3.4.B.1.A What is the area in square miles of the land and water space which you can use to conduct tests of live rocket, missile, or bomb systems?

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.4.B.1.B How many separate and distinct land and water test areas are available to conduct tests of live weapons? List them and the size of each in acres.

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

This answer is under the purview of the Host activity at which the TACTS equipment is located.

3.4.B.2 Test Operations

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.4.B.2.A For each of your land and water ranges, how many test missions were scheduled in FY92 and FY93 that were required to use safety footprints comparable to those required for the following types of weapons:

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- Unguided 2000 pound-class ballistic weapon
 - live?
 - inert?
- Guided weapon (e.g., GBU-24 class)
 - live?
 - inert?
- Stand-off weapon (e.g., AGM-130 class)
 - live?
 - inert?
- Short-range missile (e.g., AIM-9)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL
 - above 20,000 feet MSL
- Long-range missile (e.g., AIM-120)
 - below 5000 feet MSL
 - between 5000 and 20,000 feet MSL
 - above 20,000 feet MSL

-3.4.B.2.B Were flight termination systems required? Yes/no.

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

This answer is under the purview of the Host activity at which the TACTS equipment is located.

-3.4.B.2.D Were any scheduled missions canceled before the mission, or terminated/aborted during the mission because of encroachments into the safety footprint? Yes/no. If yes, how many per year.

This answer is under the purview of the Host activity at which the TACTS equipment is located.

3.5 OTHER INSTRUMENTATION

NWAD ADDITION: Notice that NWAD has added this section which will provide the reviewers of this data call with information as to the kind and wide variety of Navy

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Tactical Range (NTTR) instrumentation systems we are providing unique acquisition, planning, configuration management, and integrated logistics support for, as we serve NAVAIRSYSCOM (PMA 248) as Deputy Assistant Program Manager for Logistics (DAPML) for this equipment.

-3.5.1 SYSTEMS REPLACEMENT AND MODERNIZATION

The Systems Replacement and Modernization (SRAM) project, year-after-year, is the Fleet's number 1 priority instrumentation project to keep the training ranges modern and operating. SRAM provides for range equipment and instrumentation not specifically identified under other instrumentation categories which are of greater dollar value, listed in the NTTR Program Objective Memorandum (POM) by OPNAV 889K. The SRAM project was established to provide items for which the cost is considered too small (\$100K or less) to establish as a separate project in the Weapons Range Support Equipment budget line. The training ranges have near-term requirements for minor equipment to support, modernize, and/or replace existing instrumentation. Since those requirements cannot be identified in the long-range POM planning process, SRAM provides the means to satisfy those requirements. SRAM procurements may expand the capability of current systems, modernize or upgrade existing components, simplify operation and maintenance, enhance safety and security, reduce manpower requirements, or provide capabilities not previously available at the range. Examples of major SRAM items procured and supported annually by NWAD, fall into (but are not limited to) six major types:

- o Support equipment
- o Communications equipment
- o Strafe Scoring Systems
- o Safety/Surveillance Systems
- o Target Augmentation
- o Power Systems

-3.5.2 AIRCREW ELECTRONIC WARFARE TRAINING SYSTEMS

Electronic warfare (EW) ranges for aircrew training are located at NAS Fallon, NV; Pinecastle, FL; MCAS Cherry Point, NC; and MCAS Yuma, AZ. NWAD provides logistics support, including procurement annually of millions of dollars worth of initial spare parts for the ranges.

Typical aircrew EW projects supported are:

- o AN/MPS-38 (Acquisition Radar Simulator)

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- o AN/GPQ-11 (Threat Radar Emitter Simulator)
- o Various Radar Jammers
- o Infrared Simulators
- o ESM/Jammer Control Systems
- o FSQ-T22 Electronic Combat Environment Analyzer/Simulator
- o Marine Air Command Control Squadron (MACCS), Light Anti-Aircraft Missile Battalion (LAAM BN), and Low Altitude Air Defense (LAAD) Integration System

-3.5.3 TACTICAL AIRCREW COMBAT TRAINING SYSTEM (TACTS)

The TACTS is the state-of-the-art system used by the Navy (the counterpart system used by the Air Force is the Air Combat Training System (ACTS)) to train aircrews in air combat. The TACTS provides real-time monitoring and post-exercise of aircrew performance of air combat maneuvering, simulated air-to-ground ordnance deliveries, simulated mine-laying, simulated anti-radiation missile, air weapons, and EW systems employment.

-3.5.4 WEAPONS IMPACT SCORING SETS

The AN/FXQ-3(V) Weapons Impact Scoring Set (WISS) is an optical scoring system which scores inert and live weapons deliveries at fleet training ranges that employ land and water targets, both fixed and moving. A WISS typically is comprised of two video cameras overlooking the target area, a microwave datalink to relay the camera video data back to a central location, and a display/scoring console generally located at the range operations center. There are presently 28 systems located at 14 different fleet training ranges. The AN/FXQ-4(V) is currently under development at NWAD to replace the version 3.

-3.5.5 UNDERWATER TWELVE-TARGET TRACKING SYSTEM

The Twelve-target Tracking System (TTTS) project provides a new acoustical signal processor having the capability to track and reconstruct the movements of up to 12 surface and subsurface objects.

-3.5.6 UNDERWATER HYDROPHONE REPLACEMENT SYSTEM

This Barking Sands Underwater Range (BARSTUR) hydrophone replacement project is to replace the currently-installed, but not all currently operating, 37 hydrophones with 42. Along with improved tracking algorithms, this project will increase tracking

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coverage at the BASTUR, HI, range by 120 square nmi.

-3.5.7 SURFACE ELECTRONIC WARFARE SIMULATORS

There are several EW simulator systems (collectively comprising what is known as the Range Electronic Warfare Simulator (REWS) system) designed to train EW crews aboard surface combatants for which NWAD provides logistics support.

-3.5.7.1 THREAT RADAR SIMULATOR (TRS)

The TRS electromagnetically simulates radars associated with anti-ship missile systems providing ESM/ECM training to operators of EW suites such as the AN/SLQ-32(V). The TRS is capable of simulating up to 50 threat radar signals simultaneously in three radar frequency bands at realistic power levels.

-3.5.7.2 ELECTRONIC WARFARE RESPONSE MONITOR (EWRM)

The EWRM is to function as a receiver to monitor the shipboard operator's actions in response to the TRS or other Noise Jammer Simulators (NJS) at the training ranges. In this role, the EWRM will receive and measure ECM and ECCM actions initiated by training exercise participants.

-3.5.7.3 CONTROL AND MAINTENANCE SUBSYSTEMS (CAMS)

Operational control of the (REWS) equipments described above, will be handled by the CAMS, consisting of several subsystems and support equipment tailored to each ranges' configuration and needs. Primary CAMS subsystems are the Communications Subsystem, the Antenna Pointing Subsystem, and the Safety and Security Subsystem.

-3.5.7.4 ELECTRONIC WARFARE RANGE OPERATIONS CENTER (EWROC)

The EWROC provides the capability to remotely control the REWS equipment at the remote sites from a central location. This includes controlling the emission parameters and antenna pointing of the NJS, TRS, and other REWS subsystems as they become operational. It is comprised of a Scenario Control Subsystem and datalinks to the CAMS at the remote REWS site. The EWROC will have growth potential designed to support additional emitters and other REWS capabilities under development such as the Computerized Threat Simulator.

-3.5.7.5 SKIN RETURN SIMULATOR/DECEPTION JAMMER SIMULATOR

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(SRS/DJS)

The SRS/DJS will provide the capability to generate a simulated target on the exercise participants' radar scopes, thereby eliminating the need for actual aircraft in certain scenarios, e.g., in providing ECCM training for radar operators using the REWS NJS. The SRS/DJS will also provide the capability to simulate RF emissions characteristic of threat deception jammers such as angle-gate or range-gate-stealing.

**-3.5.7.5 COMMUNICATIONS, NAVIGATION, IDENTIFICATION
JAMMER/SIMULATOR (CNIJ/S)**

The CNIJ will provide the capability to jam the exercise participants' communications, navigation, and IFF systems in order to provide ECCM training for operators of those systems. It will also simulate hostile CNI systems to provide ESM training for operators of systems such as the OUTBOARD and Combat DF (AN/SRS-1) and to support training in the Over-the-Horizon Targeting (OTHT).

-3.5.7.6 CRYPTOLOGICAL SIGNAL SIMULATOR (CSS)

The CSS will generate and radiate generic communications, command, and control signals for training of Navy OUTBOARD operators.

-3.5.7.8 COMPUTERIZED THREAT SIMULATOR (CTS)

The CTS will provide the capability to generate pseudo threats on exercise participants' radar and EW equipment. Simulations will be accomplished by transmitting digital signals from the CTS to the equipment onboard ships. The signals will command the shipboard equipment to display pseudo threats to the operators. These pseudo threats will supplement the radiated REWS threats providing a dense threat environment for more realistic EW training. Although CTS is a REWS subsystem, the CTS capability can be imported to other non-REWS training systems such as the Large Area Tracking System (LATR) and the Joint Tactical Combat Training System (JTCTS).

-3.5.8 LARGE AREA TRACKING RANGE (LATR)

The LATR will provide air- and surface- tracking out to a range of 500 nmi. It will provide real-time monitoring of the training exercise for the battlegroup commander and post-exercise debrief for all surface participants and remote land sites. Global Positioning System (GPS) position data, weapon events data, and tactical data will be linked to and from the ROC via airborne relays and satellites. Post-exercise data will

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be integrated with other range data and relayed to surface platforms and remote sites for display and debrief. At IOC, VACAPES LATR capabilities will include an interface to the TACTS and rehosted TACTS simulations for mine, bomb, AIM-9, AIM-7, and AIM-54 missile data. The LATR is being designed with planned potential growth to incorporate weapon simulations, ship weapon/event data collection interfaces, a submarine data collection and debrief interface, and a dual-frequency transponder that will operate on both TACTS and LATR ranges.

-3.5.9 JOINT TACTICAL COMBAT TRAINING SYSTEM (JTCTS)

The JTCTS will provide Air Force and Navy training units with deployable instrumentation for ship/aircrew proficiency training while at sea and for large area battle group/force tactics assessment. It will support coordinated exercises in multiple warfare areas including anti-air warfare, anti-surface warfare, anti-submarine, mine, space and electronic, and strike warfare. The system will include platform EW stimulation, platform weapons simulations, paired engagement scoring, integration of simulated weapons firings with live weapons firings, integrated exercise displays, and debriefing displays. The JTCTS will consist of a core unit containing data processing computers and display equipment placed on the flag-configured ship. The core unit will be linked via datalink to exercise participants out to 400 nmi. The system will support up to 24 ships, 6 submarines, and 100 aircraft.

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APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

Facility/Capability: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

Origin date: Enter today's date in the format MM/DD/YY.

Military Department: Allowable entries include "N" for Navy, "A" for Army, and "AF" for Air Force. If the facility/capability is managed by an "Other Government Agency" (e.g. ARPA, DNA, ACC) enter the appropriate Agency name.

Organization/Activity: Enter the name (with acronym) for the field activity. Example: White Sands Missile Range (WSMR).

Location: Enter the location where the facility/capability is physically located (installation, city or other common name).

Unit Identification Code (UIC): Enter the UIC.

T&E Functional Area: Enter the single area this facility/capability primarily supports: Air Vehicles, Armament/Weapons, Electronic Combat, or Other.

T&E Test Facility Category: Enter the facility category based on the following definitions:

(1) **Digital Models and Computer Simulations (DMS)**- Those models and simulations which either provide a simulated test environment or representations of systems, components, and platforms. DMSs are used throughout the development and test process, as analytical tools, as well as tools to drive or control electronic and other environmental stimuli provided, the test articles on Open Air Ranges (OARs), Installed Systems Test Facilities (ISTFs), Hardware in the Loop Test Facilities (HITLs), Integration Laboratories (ILs), and Measurement Facilities (MFs).

(2) **Measurement Facilities (MF)**- Those facilities used to provide a specialized test

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environment and/or data collection capability. MFs may be ground based laboratories or open air facilities (often located at or part of OARs).

(3) Integration Laboratories (IL)- Those facilities designed to support the integration and test of various systems and components that will be installed in a host platform. ILs are generally platform specific or unique. However, the simulated stimuli and data collection capabilities required by ILs are often common with those required by HITLS and ISTFs.

(4) Hardware-In-The-Loop (HITL)- Those facilities which provide capabilities to test systems or their components at various stages of development (e.g., brassboard, breadboard, prototype, preproduction, production). HITLS provide stimuli and data collection capabilities to permit test and evaluation of a system/component independent of the host platform.

(5) Installed Systems Test Facilities (ISTF)- Ground based test facilities (usually chambers) that allow test of systems and weapons as installed in the combat platform. ISTFs provide simulated test environments and stimuli and data collection capabilities for the test article(s).

(6) Open Air Ranges (OAR)- Those facilities which consist of controlled or restricted areas to support the test of platforms/systems in a real world, dynamic environment. They are instrumented with data collection, time-space-position information, positive control of test participants, and real or simulated targets and threats as appropriate.

Percentage Use: Enter percentage of time, based on hours, the facility is used to support each of the following (total must sum to 100%):

(1) Test and Evaluation (T&E)- Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment of these facilities are typically funded from 6.5 or procurement program elements. Facilities in this category were developed to support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity of production processes, and compliance with system specifications and quality standards.

(2) Science & Technology (S&T)- Any facility that is accountable to Military Department and/or OSD S&T management oversight. Operation and sustainment of these facilities are typically funded from 6.1, 6.2, and 6.3a program elements. Facilities in this category were developed to support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.

(3) Developmental Engineering (DE)- Any facility that is accountable to Military Department and/or OSD Research, Development and Engineering or acquisition management

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oversight. Operation and sustainment of these facilities are typically funded from 6.3b through 6.4 or procurement program elements. Facilities in this category were developed to support proof-of-principle and engineering development of systems.

(4) In-Service Engineering (IE)- Any facility that is accountable to Military Department and/or OSD logistics management oversight. Operation and sustainment of these facilities are typically funded from 6.7 or Operations and Maintenance (O&M) program elements. Facilities in this category were developed to support the maintenance facilities. These facilities tend to be system peculiar capabilities to conduct checkouts of the system/subsystems after they have undergone a modification, upgrade or improvement.

(5) Training and Doctrine (T&D)- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements. Facilities in this category were developed to support the training and proficiency of operational forces and/or the development of new tactics, doctrine or force structure concepts.

(6) Other - Any work outside the above.

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, IE, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

Facility Description: Enter a brief description of the facility, including the mission statement.

Interconnectivity/Multi-Use of Facility: Describe any linking/interconnectivity with other T&E facilities. Include physical and/or data linkages (bandwidth, data rate, etc.). Describe any unique characteristics or multiple use of the resource (e.g., operating by rotating crew, availability of resource dependent on ..., equipment will be obsolete by ..., etc.)

Type Tests Supported: Enter specific types of tests accomplished by the Facility (e.g., electromagnetic compatibility, radar cross section, missile miss distance, air-to-air radar simulation, etc).

Summary of Technical Capabilities: Describe technical capabilities at your facility to include:

Instrumentation/Assets: Enter instrumentation and other assets (e.g., jammers, target generators, recording equipment, computer support equipment) associated with the resource.

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Provide fact sheets, not to exceed two pages.

Keywords: Enter any keywords (spelled-out with acronyms) associated with functions and capabilities of the facility (e.g., electromagnetic interference/electromagnetic compatibility (EMI/EMC), anechoic chamber, radar cross section (RCS)).

3. Form, Additional Information

Additional Information Form. Enter facility name. Provide personnel numbers for FY93, FY94, and each year in the FY95 FYDP broken out according to officers, enlisted, civilians and contractors. Enter total area square footage of indoor space, test area square footage of indoor space used for T&E purposes, and list office space square footage separately. Tonnage of equipment is the weight of all equipment associated with this facility. Volume of equipment is the volume of all equipment associated with this facility. Annual maintenance cost is self explanatory. Moving costs are estimates for packing equipment at the losing site and reassembly, calibration, etc at the receiving site, not including transportation costs. Capital equipment investments are the current improvement and modernization funds as well as any programs funds earmarked for equipment purchase.

4. Form, Facility Condition

Facility/Capability: Enter the descriptive title for the facility/capability.

Age: Indicate the age of the facility/capability as of the date on the General Information Form.

Replacement Value: Enter the replacement value for the facility/capability. Indicate whether this includes the replacement cost for the equipment.

Maintenance and Repair Backlog: Enter the total dollar amount of the backlog for maintenance and repair items.

Date of Last Upgrade: Date of the last major upgrade to the facility.

Nature of Last Upgrade: Describe the purpose and capability increase from the last major upgrade. Indicate the date this upgrade became available for use.

Major Upgrades Programmed: Enter information on each of the major upgrades that are programmed. Indicate the total programmed amount and provide a summary description of the upgrade.

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5. Form, Historical Workload

Use this form to report the workload performed at this facility each year from FY86-93.

Facility/Capability Title: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

T&E Functional Area: For each of these functional areas (Air Vehicles, Armament/Weapons, Electronic Combat, Other Test, and Other), enter direct labor hours, test hours, and/or missions for FY86 through FY93. For open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

6. Form, Determination of Unconstrained Capacity

Annual Hours of Downtime, 1: If the facility were required to operate continuously for 24 hours a day, seven days a week, 52 weeks a year, determine the number of hours per day the facility can reasonably operate if it is not constrained by personnel strength? Consider your facilities, equipment, and instrumentation fixed at current levels.

1. Add up the total hours of downtime per year for maintenance, weather, darkness (daylight), holidays, etc. Enter in line 1.

Average Downtime Per Day, 2: Divide line 1 by 365 to get the average downtime per day. Fill in at line 2.

Average Hours Available Per Day, 3: Subtract line 2 from 24 hours to get the average number of hours per day the facility is available for test. Fill in at line 3.

Analyze your historic workload mix to determine the average number and type of tests that have been run simultaneously at your facility. Determine the maximum number of tests that can be run simultaneously if there is no limit to personnel authorizations. Enter the following data from your analysis

Test Types, 4: Enter in column 4 the name of the type of test.

Tests at One Time, 5: List the number of each type of test that can be conducted simultaneously in column 5.

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Workload Per Test

Per Facility Hour, 6: List the workload (reported in units as follows: For open air range flight testing, report workload in flight hours and numbers of missions. For all other test facility categories, including open air range other than flight testing, report workload in direct labor hours) represented by each hour the test is run. Do this at line 6.

From the historic workload analysis, determine the average workload per facility hour represented by the average or "typical" test. In the row titled "TYPICAL", in column 5, enter the number of these "typical" tests that can be run in addition to those already listed above. Enter the workload per "typical" test per facility hour in column 6. To estimate test hours from direct labor hours for the Historic Workload Form, divide the facility workload by this number (the number of direct labor hours per "typical" test per facility hour) and enter in the test hour block on the Historic Workload Form.

Workload Per

Facility Hour, 7: Multiply column 5 by column 6. Enter in column 7. Total column 7.

Unconstrained

Capacity Per Day, 8: Multiply the total from column 7 by line 3 to get the unconstrained capacity per average day. Enter in line 8.

Annual

Unconstrained

Capacity, 9: Multiply line 8 by 365 to get the unconstrained capacity per year for the facility. Enter on line 9.

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**NAVAL WARFARE ASSESSMENT DIVISION
TELEMETRY FIELD STATIONS**

Department of Defense

**1995 Base Realignment and Closure
T&E Joint Cross-Service Group Data Guidance**

March 31, 1994

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic

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combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components:
data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

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1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to Foreign Military Sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future

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contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

1.3.B Electronic Combat (EC) Systems

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

1.3.C Armaments / Weapons

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight

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testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

See Historical workload form in Appendix A.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

NOTE: As the revised forms deleted space for this information, the forecast workload is not provided.

2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

See Historical workload form in Appendix A.

2.2 UNCONSTRAINED CAPACITY

2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in Appendix A.

See unconstrained capacity form in Appendix A.

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2.2B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

No.

2.3 TECHNICAL RESOURCES

-2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.

The Naval Sea Systems Command is revising the mobilization responsibilities for each cognizant field activity. The Naval Warfare Assessment Division will be assigned responsibilities in three areas: support of industrial base mobilization; training of individual units through Battle Groups and Joint Battle Forces; and, assessment of weapon performance in actual combat. In supporting the Defense Industrial Base mobilization, the Naval Warfare Assessment Division will provide assistance in quality control, metrology, and automated test equipment for expansion of existing industrial facilities and start up assistance in the same areas for converting or new industrial facilities. This assistance will be primarily in providing on site government representation to facilitate decision making and implementation of those decisions. A 100% increase in training requirements, especially for individual aircrews on the Tactical Aircrew Training Site (TACTS) and Weapon Impact Scoring System (WISS) ranges, is anticipated in the first 3 months of mobilization. Battle Group and Joint Battle Force training support will increase, and simulation support from the Naval Warfare Assessment Laboratory will focus on actual or predicted combat operations. Weapon and combat system performance in actual combat will be analyzed using existing data reduction capabilities in the Warfare Assessment Laboratory. Trends and results will be used to develop enhanced capabilities to counter enemy tactics or technology.

The general guidelines for the mobilization responsibility of the Naval Warfare Assessment Division are found in OPNAVINST S3060.1 and the NAVSEA Logistics Support Mobilization Plan.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

Yes. Telemetry technology is integral to our mission of warfare assessment.

2.3.B.1 On the test mission of any other activity?

Yes. We provide telemetry capability to AFWTF, Roosevelt Roads, Puerto Rico; NAMFI,

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Crete, Greece; and Naval Air Station, Oceana, VA. This allows these facilities to support telemetered missile firings and other telemetered tests.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

Yes. Assessment of telemetered missile firings requires access to telemetered ranges, in order to assess operational effectiveness. Also, NAMFI, Crete, Greece supports NATO operations which include telemetered missile firings.

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SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value (MV). The four MV criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for MV.

3.1.A. Interconnectivity (MV I) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

3.1.A.1 What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal and external to the site.

100%; AFWTF, Puerto Rico; NAMFI, Crete; NAS Oceana - all external

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

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Yes. We provide all telemetry services for AFWTF, NAMFI and NAS Oceana. NATO and U.S. Fleet exercises would be impacted adversely.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*

Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

See Facility Condition Form in Appendix A.

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit: *Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.*

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility?

Yes/no. If yes, explain.

No. Most of the OPS areas are open ocean.

3.1.C.2 How much could workload be increased before this limit would be reached?

Express your answer as a percentage of your current workload.

N/A

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

N/A

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

N/A - Open ocean ranges.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

None known.

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3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

Reported by host commands.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

Reported by host commands.

3.1.D Specialized Test Support Facilities and Targets (MV I) - Measure of Merit: *Extent to which specialized test support facilities and targets are available.*

3.1.D.1 Do you have specialized facilities are required to support you in conducting your test operations at your facility (e.g. Aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

Specialized facilities are required at all ranges. Facilities include multiple tracking antenna systems, generator and UPS facilities, telemetry receiving and processing facilities, and satellite link systems.

3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

Yes. Specialized targets such as AQMs, BQMs, tow targets, and QF-86s are required.

3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

Yes. Standard Navy targets.

3.1.E Expandability (MV III) - Measure of Merit: *Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.*

3.1.E.1 Other than the expandability inherent in unconstrained capacity, discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? Yes/no. If yes, explain.

Yes. The telemetry facility is being expanded to facilitate remote operation, quicker operation, and faster turn-around of performance evaluation data. The system is now linked

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via satellite to the Warfare Assessment Laboratory at NWAD Corona. This will improve the capability to operate multiple threats in multiple range areas with multiple customers.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

No.

3.1.E.2 Are airspace, land, and water areas--adjacent to areas under DoD control--available and/or suited for physical expansion to support new missions or increased footprints?

Yes/no. If yes, please explain.

Yes. The open ocean areas at AFWTF Puerto Rico range are potentially expandable.

3.1.E.3 Is the facility equipped to support secure operations? Yes/no. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

Yes. All ranges are currently equipped for secure operations or can be easily up-graded.

3.1.E.4 Are there any capital improvements underway or programmed in the 95 FYDP, that would change your capacity/capability? Yes/no. If yes, explain.

Yes. The TLM sites are in mid-process of a major improvement program to increase their capability. This includes satellite earth stations, new facilities, and total TLM systems modernization. These efforts will improve TLM acquisition and processing speeds and provide a large increase in all levels of support to the customers.

3.1.F Uniqueness (MV I) - Measure of Merit: *Extent to which the facility is one-of-a kind.*

3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes. The TLM stations are nearly a one-of-a-kind facility for shipboard use in a near open ocean operation. The only other similar facilities are at San Nicholas Island in CA and at the Pacific Missile Range Facility in HI. The NWAD facilities provide the only TLM functions on the eastern seaboard, Puerto Rican operating area, and Mediterranean area.

3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

Yes. Same response as 3.1.F.1 above.

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3.1.F.1.B Within the US? Yes/no. If yes, describe.

Yes. Same response as 3.1.F.1 above.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

Yes. The TLM facilities provide service to users from: Navy, Marine Corps, Army, Air Force, NATO countries, and virtually all other military countries friendly to the U.S.

3.1.G Available Air, Land, and Sea Space (MV II) - Measure of Merit: *Extent to which controlled test ranges satisfy weapon system test requirements.*

3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

Reported by host command.

3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

Host Commands or by agreement (NATO).

3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

Reported by hosts commands.

3.1.G.4 Do you have special use airspace other than supersonic airspace? Yes/no. If yes, for what types of test (e.g. terrain following radar)? Dimensions? Will it support simultaneous users? Yes/no.

Reported by host commands.

3.1.G.5 Is the airspace over land or water? List the number of square miles over each.

Most by water/open ocean. Reported by host commands.

3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

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Reported by host commands.

3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

Reported by host commands.

3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes/no.

Reported by host commands.

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit: *Extent to which types of climatic/geographic conditions represent world-wide operational conditions.*

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap-of-the-earth capability). Identify all of the following that apply: mountains, forest/jungle, cultivated lowland, swamp/ravine, desert, and sea. State the area of each in square miles.

The ranges are over open ocean with the TLM facilities located on shore. Elevated antenna locations and remote island antenna positioning result in wide area coverage.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

The topographical conditions at AFWTF allow for simulated condition over open ocean, littoral conditions, and amphibious transitional conditions.

3.1.H.3 Did you have to go to other geographical locations to satisfy test requirements? Yes/no and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

No

3.1.H.4 What is the number of days per year the average temperature is below 32 degrees F? Between 32 and 95 degrees? Above 95 degrees?

Reported by host commands.

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3.1.H.5 What is the number of days per year the average relative humidity is below 30%? Between 30 and 80%? Above 80%?

Reported by host commands.

3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

Reported by host commands.

3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

Reported by host commands.

3.1.H.8 What is the number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Reported by hosts commands.

3.1.H.9 What is the average number of flying days available per year for flight test? Provide historical average from the past eight years.

Reported by host commands.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Reported by host commands.

3.2 AIR VEHICLES

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

3.2.A Supersonic Airspace (MV II) - Measure of Merit: *Extent of range size to support weapon system requirements.*

3.2.A.1 Do supersonic corridors or areas exist? Yes/no.

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Yes

3.2.A.2 Where are they located relative to your airfield?

Reported by host commands.

3.2.A.3 At what altitude (upper and lower altitude)?

Reported by host commands.

3.2.A.4 Over land or water? What size and shape (length and width)?

Reported by host commands.

3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

Reported by host commands.

3.2.A.6 What is the maximum number of simultaneous users?

Reported by host commands.

3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: *Extent of air vehicle infrastructure to support T&E operations.*

These questions should be answered by host commands.

3.2.B.1 Provide a brief description of your airfield and support facilities, to include the following: number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

N/A

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

N/A

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting

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test operations?

Reported by hosts.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Reported by hosts.

3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

Reported by hosts.

3.2.B.6 Including hangers and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

Reported by hosts.

3.2.C Test Operations (MV II) - Measure of Merit: *Extent of T&E operations that the airspace can accommodate.*

3.2.C.1 What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g. performance, handling qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

Cruise missiles are routinely tested as are air-to-air missiles and fixed wing exercises.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Reported by hosts.

3.2.C.3 What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

Reported by hosts.

3.2.C.4 Does UAV and or rotary wing operations pose any limitation on other types of missions? If yes, explain.

Reported by hosts.

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3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

Missions include: surface to surface, surface to air, air to air, air to surface and EW.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Reported by host.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Reported by host.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Reported by host.

3.3 ELECTRONIC COMBAT

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the Radio Frequency (RF) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

3.3.A Threat Environment (MV D) - Measure of Merit: *Extent to which the capability satisfies weapon system requirements.*

3.3.A.1 What is the number of threats simulated?

Reported by hosts.

3.3.A.2 How many simultaneous threats can be simulated? What type (e.g. AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?

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Reported by hosts.

3.3.A.3 Are the threat software models and simulators (software/hardware) validated?
Yes/no. If yes, by whom?

Reported by hosts.

3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Reported by hosts.

3.3.A.5 What is the threat representation (fidelity) and density?

Reported by hosts.

3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Reported by hosts.

3.3.A.7 What geographic dispersion can be simulated?

Reported by hosts.

3.3.A.7.A Threat lay down? Reported by hosts.

3.3.A.7.B Representative distance? Reported by hosts.

3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario? relocatable to new scenarios? yes/no

Reported by hosts.

3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

Yes, REWS interlinked to off-site threats.

3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

N/A: Reported by hosts

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3.3.B Test Article Support (MV II) - Measure of Merit: *Extent to which test support satisfies weapon system test requirements.*

3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? Yes/no. If so, identify the limits and measures to remove them.

N/A

3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

N/A

3.3.B.3 What range of spectra can be tested and evaluated?

N/A

3.3.B.4 What are the available spectra?

N/A

3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

N/A

3.4 ARMAMENTS / WEAPONS

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe), while the testing of the weapon system's vehicle is in another functional area.

3.4.A Directed Energy (MV II) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

This includes testing of all types of directed energy weapons.

3.4.A.1 Do you currently test directed energy weapon systems? Yes/no.

No.

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If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

N/A

3.4.B Rocket / Missile / Bomb Systems (MV II) - Measure of Merit: *Extent capability satisfies weapon system test requirements.*

This includes the testing of all types of rocket, missile, and bomb systems at the system/subsystem/component level, both stand alone and integrated into the launch platform. This includes testing of air-to-air, air-to-surface, and surface-to-air missiles.

3.4.B.1 Ground Space

3.4.B.1.A What is the area in square miles of the land and water space which you can use to conduct tests of live rocket, missile, or bomb systems?

N/A. Reported by hosts.

3.4.B.1.B How many separate and distinct land and water test areas are available to conduct tests of live weapons? List them and the size of each in acres.

N/A. Reported by hosts.

3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

N/A. Reported by hosts.

3.4.B.2 Test Operations

3.4.B.2.A For each of your land and water ranges, how many test missions were scheduled in FY92 and FY93 that were required to use safety footprints comparable to those required for the following types of weapons:

- Unguided 2000 pound-class ballistic weapon
 - live? Reported by hosts
 - inert? Reported by hosts
- Guided weapon (e.g., GBU-24 class)
 - live? Reported by hosts
 - inert? Reported by hosts

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- Stand-off weapon (e.g., AGM-130 class)
 - live? Reported by hosts
 - inert? Reported by hosts
- Short-range missile (e.g., AIM-9)
 - below 5000 feet MSL Reported by hosts
 - between 5000 and 20,000 feet MSL Reported by hosts
 - above 20,000 feet MSL Reported by hosts
- Long-range missile (e.g., AIM-120) Reported by hosts
 - below 5000 feet MSL Reported by hosts
 - between 5000 and 20,000 feet MSL Reported by hosts
 - above 20,000 feet MSL Reported by hosts

3.4.B.2.B Were flight termination systems required? Yes/no.

Reported by hosts

3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

N/A

3.4.B.2.D Were any scheduled missions canceled before the mission, or terminated/aborted during the mission because of encroachments into the safety footprint? Yes/no. If yes, how many per year.

Reported by hosts.

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APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

Facility/Capability: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

Origin date: Enter today's date in the format MM/DD/YY.

Military Department: Allowable entries include "N" for Navy, "A" for Army, and "AF" for Air Force. If the facility/capability is managed by an "Other Government Agency" (e.g. ARPA, DNA, ACC) enter the appropriate Agency name.

Organization/Activity: Enter the name (with acronym) for the field activity. Example: White Sands Missile Range (WSMR).

Location: Enter the location where the facility/capability is physically located (installation, city or other common name).

Unit Identification Code (UIC): Enter the UIC.

T&E Functional Area: Enter the single area this facility/capability primarily supports: Air Vehicles, Armament/Weapons, Electronic Combat, or Other.

T&E Test Facility Category: Enter the facility category based on the following definitions:

(1) **Digital Models and Computer Simulations (DMS)**- Those models and simulations which either provide a simulated test environment or representations of systems, components, and platforms. DMSs are used throughout the development and test process, as analytical tools, as well as tools to drive or control electronic and other environmental stimuli provided, the test articles on Open Air Ranges (OARs), Installed Systems Test Facilities (ISTFs), Hardware in the Loop Test Facilities (HITLs), Integration Laboratories (ILs), and Measurement Facilities (MFs).

(2) **Measurement Facilities (MF)**- Those facilities used to provide a specialized test environment and/or data collection capability. MFs may be ground based laboratories or open air facilities (often located at or part of OARs).

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(3) Integration Laboratories (IL)- Those facilities designed to support the integration and test of various systems and components that will be installed in a host platform. ILs are generally platform specific or unique. However, the simulated stimuli and data collection capabilities required by ILs are often common with those required by HITLS and ISTFs.

(4) Hardware-In-The-Loop (HITL)- Those facilities which provide capabilities to test systems or their components at various stages of development (e.g., brassboard, breadboard, prototype, preproduction, production). HITLs provide stimuli and data collection capabilities to permit test and evaluation of a system/component independent of the host platform.

(5) Installed Systems Test Facilities (ISTF)- Ground based test facilities (usually chambers) that allow test of systems and weapons as installed in the combat platform. ISTFs provide simulated test environments and stimuli and data collection capabilities for the test article(s).

(6) Open Air Ranges (OAR)- Those facilities which consist of controlled or restricted areas to support the test of platforms/systems in a real world, dynamic environment. They are instrumented with data collection, time-space-position information, positive control of test participants, and real or simulated targets and threats as appropriate.

Percentage Use: Enter percentage of time, based on hours, the facility is used to support each of the following (total must sum to 100%):

(1) Test and Evaluation (T&E)- Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment of these facilities are typically funded from 6.5 or procurement program elements. Facilities in this category were developed to support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity of production processes, and compliance with system specifications and quality standards.

(2) Science & Technology (S&T)- Any facility that is accountable to Military Department and/or OSD S&T management oversight. Operation and sustainment of these facilities are typically funded from 6.1, 6.2, and 6.3a program elements. Facilities in this category were developed to support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.

(3) Developmental Engineering (DE)- Any facility that is accountable to Military Department and/or OSD Research, Development and Engineering or acquisition management oversight. Operation and sustainment of these facilities are typically funded from 6.3b through 6.4 or procurement program elements. Facilities in this category were developed to

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support proof-of-principle and engineering development of systems.

(4) In-Service Engineering (IE)- Any facility that is accountable to Military Department and/or OSD logistics management oversight. Operation and sustainment of these facilities are typically funded from 6.7 or Operations and Maintenance (O&M) program elements. Facilities in this category were developed to support the maintenance facilities. These facilities tend to be system peculiar capabilities to conduct checkouts of the system/subsystems after they have undergone a modification, upgrade or improvement.

(5) Training and Doctrine (T&D)- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements. Facilities in this category were developed to support the training and proficiency of operational forces and/or the development of new tactics, doctrine or force structure concepts.

(6) Other - Any work outside the above.

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, IE, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

Facility Description: Enter a brief description of the facility, including the mission statement.

Interconnectivity/Multi-Use of Facility: Describe any linking/interconnectivity with other T&E facilities. Include physical and/or data linkages (bandwidth, data rate, etc.). Describe any unique characteristics or multiple use of the resource (e.g., operating by rotating crew, availability of resource dependent on ..., equipment will be obsolete by ..., etc.)

Type Tests Supported: Enter specific types of tests accomplished by the Facility (e.g., electromagnetic compatibility, radar cross section, missile miss distance, air-to-air radar simulation, etc).

Summary of Technical Capabilities: Describe technical capabilities at your facility to include:

Instrumentation/Assets: Enter instrumentation and other assets (e.g., jammers, target generators, recording equipment, computer support equipment) associated with the resource.

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Provide fact sheets, not to exceed two pages.

Keywords: Enter any keywords (spelled-out with acronyms) associated with functions and capabilities of the facility (e.g., electromagnetic interference/electromagnetic compatibility (EMI/EMC), anechoic chamber, radar cross section (RCS)).

3. Form, Additional Information

Additional Information Form. Enter facility name. Provide personnel numbers for FY93, FY94, and each year in the FY95 FYDP broken out according to officers, enlisted, civilians and contractors. Enter total area square footage of indoor space, test area square footage of indoor space used for T&E purposes, and list office space square footage separately. Tonnage of equipment is the weight of all equipment associated with this facility. Volume of equipment is the volume of all equipment associated with this facility. Annual maintenance cost is self explanatory. Moving costs are estimates for packing equipment at the losing site and reassembly, calibration, etc at the receiving site, not including transportation costs. Capital equipment investments are the current improvement and modernization funds as well as any programs funds earmarked for equipment purchase.

4. Form, Facility Condition

Facility/Capability: Enter the descriptive title for the facility/capability.

Age: Indicate the age of the facility/capability as of the date on the General Information Form.

Replacement Value: Enter the replacement value for the facility/capability. Indicate whether this includes the replacement cost for the equipment.

Maintenance and Repair Backlog: Enter the total dollar amount of the backlog for maintenance and repair items.

Date of Last Upgrade: Date of the last major upgrade to the facility.

Nature of Last Upgrade: Describe the purpose and capability increase from the last major upgrade. Indicate the date this upgrade became available for use.

Major Upgrades Programmed: Enter information on each of the major upgrades that are programmed. Indicate the total programmed amount and provide a summary description of the upgrade.

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5. Form, Historical Workload

Use this form to report the workload performed at this facility each year from FY86-93.

Facility/Capability Title: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

T&E Functional Area: For each of these functional areas (Air Vehicles, Armament/Weapons, Electronic Combat, Other Test, and Other), enter direct labor hours, test hours, and/or missions for FY86 through FY93. For open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

6. Form, Determination of Unconstrained Capacity

Annual Hours of Downtime, 1: If the facility were required to operate continuously for 24 hours a day, seven days a week, 52 weeks a year, determine the number of hours per day the facility can reasonably operate if it is not constrained by personnel strength? Consider your facilities, equipment, and instrumentation fixed at current levels.

1. Add up the total hours of downtime per year for maintenance, weather, darkness (daylight), holidays, etc. Enter in line 1.

Average Downtime Per Day, 2: Divide line 1 by 365 to get the average downtime per day. Fill in at line 2.

Average Hours Available Per Day, 3: Subtract line 2 from 24 hours to get the average number of hours per day the facility is available for test. Fill in at line 3.

Analyze your historic workload mix to determine the average number and type of tests that have been run simultaneously at your facility. Determine the maximum number of tests that can be run simultaneously if there is no limit to personnel authorizations. Enter the following data from your analysis

Test Types, 4: Enter in column 4 the name of the type of test.

Tests at One Time, 5: List the number of each type of test that can be conducted simultaneously in column 5.

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Workload Per Test

Per Facility Hour, 6: List the workload (reported in units as follows: For open air range flight testing, report workload in flight hours and numbers of missions. For all other test facility categories, including open air range other than flight testing, report workload in direct labor hours) represented by each hour the test is run. Do this at line 6.

From the historic workload analysis, determine the average workload per facility hour represented by the average or "typical" test. In the row titled "TYPICAL", in column 5, enter the number of these "typical" tests that can be run in addition to those already listed above. Enter the workload per "typical" test per facility hour in column 6. To estimate test hours from direct labor hours for the Historic Workload Form, divide the facility workload by this number (the number of direct labor hours per "typical" test per facility hour) and enter in the test hour block on the Historic Workload Form.

Workload Per

Facility Hour, 7: Multiply column 5 by column 6. Enter in column 7. Total column 7.

Unconstrained

Capacity Per Day, 8: Multiply the total from column 7 by line 3 to get the unconstrained capacity per average day. Enter in line 8.

Annual

Unconstrained

Capacity, 9: Multiply line 8 by 365 to get the unconstrained capacity per year for the facility. Enter on line 9.

1. GENERAL INFORMATION

Facility/Capability Title: WARFARE ASSESSMENT LABORATORY Origin Date: 5/4/94

Service: NAVY Organization/Activity: NWAD Location: CORONA, CA

T&E Functional Area: ALL UIC = N64267

T&E Test Facility Category MEASUREMENT

	<u>T&E</u>	<u>S&T</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER=100%</u>
PERCENTAGE USE:	<u>46.5</u>	<u>2</u>	<u>3.7</u>	<u>26</u>	<u>20</u>	<u>1.8</u>

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	<u>5</u>	<u>0.1</u>	<u>0.2</u>	<u>9.2</u>	<u>5</u>	<u>0</u>
Armament/Weapons	<u>20.6</u>	<u>1.5</u>	<u>2.2</u>	<u>5.2</u>	<u>5.8</u>	<u>1.8</u>
EC	<u>20.5</u>	<u>0.4</u>	<u>1.3</u>	<u>11.6</u>	<u>5.2</u>	<u>0</u>
Other	<u>0.4</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>0</u>

Total in Breakout Must Equal "Percentage Use" On First Line

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2. TECHNICAL INFORMATION

Facility/Capability Title: WARFARE ASSESSMENT LABORATORY

Facility Description; Including mission statement:

The WAL provides a consolidated secure facility to analyze Fleet readiness and capability during world-wide multi-services training exercises. In addition, the WAL is used to conduct detailed evaluations of Defense Department weapons system performance, readiness and effectiveness. The assessment results are used to enhance force readiness, and as source data to improve the development, test evaluation, and in-service support of the Navy's weapons and combat systems. Thus, building and operating the WAL demonstrates the long-term commitment by the Navy to improve Fleet and Marine Force readiness as Defense Department restructures the Armed Forces to meet the challenges of tomorrow in a dynamic and fast-changing world.

Interconnectivity/Multi-Use of T&E Facility:

The Warfare Assessment Laboratory is linked with other T&E facilities as follows:

1. Commander, Operational Test and Evaluation Force, Norfolk, VA. The WAL provides COMOPTEVFOR an essential capability in accomplishing their mission of determining the operational effectiveness and suitability of Navy acquisition systems prior to recommending approval for services use. The data processing and analysis capabilities of the WAL are essential to the impartial assessment of post-development weapon and combat systems. Because of these inherent capabilities, COMOPTEVFOR traditionally assigns NWAD lead analysis responsibility in support of Operational Test and Evaluation on Navy AAW and ASUW weapons and combat systems. Currently, COMOPTEVFOR is relying on the WAL, and the connectivity it offers with major test participants and range facilities, to support the quick look analysis and reporting requirements of the Cooperative Engagement Capability operational assessment.
2. Naval Surface Warfare Center, Dahlgren, VA. The WAL provides electronic interconnectivity with NSWC DD by means of the AEGIS Performance Assessment Network (APAN), which makes the connection via two types of terrestrial fiber circuits: the Defense Commercial Telecommunications Network and switched 56 kbps network. Secure communication, up to the SECRET level, is accomplished using NSA-approved encryption. All types of electronic files - including data tape, ASCII, binary, object, and executable formats - may be transferred to/from the WAL and NSWC DD.
3. Naval Surface Warfare Center, Port Hueneme, CA. The WAL provides electronic interconnectivity with NSWC PHD by means of APAN. The capabilities are identical to those described in the preceding paragraph.

Interconnectivity/Multi-Use of T&E Facility (CONTINUED):

4. Naval Air Warfare Center, China Lake, CA. China Lake controls the Navy Western Test Range Complex, Land Range, a major facility for acquisition testing. Fleet Development Squadron Five (VX-5), reporting to COMOPTEVFOR, is based at China Lake. China Lake is the lead Navy laboratory in control of special project programs and tasking. The WAL provides access spaces that support tasking by China Lake.

5. Naval Air Warfare Center, Point Mugu, Ca.. THE WAL provides a secure T1 communications link to NAWC/WPN PM. Point Mugu controls the Navy Western Test Range Complex, Sea Range, a major facility for acquisition testing. Fleet Development Squadron Four (VX-4), reporting to COMOPTEVFOR, is base at Point Mugu. NWAD personnel provide on-site support for many of the weapon and combat systems tests and Fleet training exercises conducted on the Sea Range. Test data collected during such tests and exercises are transferred to NWAD for engineering analysis and performance assessment.

6. Pacific Missile Range Facility, Barking Sands, HI. The WAL provides an encrypted T1 interconnectivity with PMRF via APAN. The capabilities are identical to those described above.

7. Atlantic Fleet Weapons Training Facility, Roosevelt Roads, PR. The WAL provides an encrypted T1 interconnectivity with AFWTF via APAN. NWAD personnel operate the telemetry site at AFWTF and provide on-site support during most weapon and combat system tests and Fleet training exercises. Data collected during these tests are transferred in real-time to the WAL for engineering analysis. The T1 connectivity also provides a means of giving rapid feedback to exercise performance assessment results.

8. Eglin Air Force Base, Florida. The WAL provides electronic interconnectivity with Eglin AFB via DCTN and switched 56 kbps circuits. This prototype capability permits near real time missile telemetry data transfer from Eglin AFB to the WAL for TOMAHAWK missile flight tests.

9. Other T&E Facilities. The WAL is a designated node of the Test and Evaluation Range Internet System (TERIS). TERIS is a tri-service cooperative venture that is currently in development and scheduled to become operational in FY 96. The system will provide interconnectivity with other designated TERIS nodes including, as a minimum, the following sites:

<u>Navy</u>	<u>Air Force</u>	<u>Army</u>
NAWC/WPN CL	AFDTC, Eglin AFB	White Sands Missile Range
NAWC/WPN PM	AFFTC, Edwards AFB	Yuma Proving Grounds

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Type of Test Supported:

Performance and capability assessment of

1. Missile/Weapons Systems (DT, DT/OT, FOT&E, and Fleet training)
2. Combat Systems (DT, DT/OT, FOT&E, and Fleet training)
3. Theater Air Defense Systems (DT, DT/OT, FOT&E, and Fleet training)
4. Multi-Warfare Battle Group Exercises (Fleet training)
5. Joint and Combined Forces Exercises (Fleet training)

Summary of Technical Capabilities:

At the center of the WAL is an integrated operations center with 12 large screen displays and capacity to seat more than 100 people. State-of-the-art technology is used, including: scientific graphical analysis workstations, multi-dimensional analytical models, parallel computer processing, large screen displays, and video teleconferencing. Assessment information is integrated using high speed, fiber optic computer networks. Please refer to attached fact sheets for additional details.

Keywords:

Combat System Sea Qualification Trial (CSSQT), Development Test (DT), Operational Test (OT), Test and Evaluation (T&E), Warfare Assessment Laboratory (WAL), Test & Evaluation Range Internet System (TERIS), Operational Test and Evaluation (OPEVAL), Performance Assessment, AEGIS Performance Assessment Network (APAN), Engineering Analysis, Warfare Assessment Model (WAM), Surface Warfare Integrated Flight Analysis Technology (SWIFT), Operational Assessment (OA), Cooperative Engagement Capability (CEC), Weapon System, Combat System, Fleet Training, Defense Commercial Telecommunications Network (DTCN), Switched 56 kbps Network, INMARSAT, COMOPTEVFOR, Atlantic Fleet Weapons Training Facility (AFWTF), Eglin Air Force Base, Commander Operational Test and Evaluation Force (COMOPTEVFOR)

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FACT SHEETS FOR TECHNICAL INFORMATION DATA FORM

Summary of Technical Capabilities:

I. Facility

A. Physical Characteristics: 48,000 sq. ft.; two stories; 2,000 tons concrete; 400 tons reinforced steel; 8" concrete walls and floors; built on special bedrock foundation.

B. Rooms with short description of Technical/Functional capability: Lobby/visitor control; message center; data vault; telemetry ground station; telemetry quick look analysis rooms; lab services; computer processing; data communication control; theater; SCIF; special project areas; video teleconferencing center; conference rooms; project rooms; open engineering areas; support rooms.

C. Special Security Features:

1. Intrusion Detection System
2. Copper shielding in all external walls, with connection to an equipotential earth ground plan.
3. 95% of the facility is built as a Class C vault
4. Secure internal data vault/project areas built per DIAM 50-3 requirements, including TEMPEST protection.
5. Secure internal data vault/project areas also meet STC 45 requirements for acoustic isolation.

II Internal Data Communications

A. Baseline Ethernet Network (10 Base-T; 10 mega bit-per-second; approximately 250 connections).

B. Fiber optic high speed network (Fiber Distributed Data Interface (FDDI); multi-mode fiber; 100 Mega bit-per-second; approximately 180 connections).

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FACT SHEETS FOR TECHNICAL INFORMATION DATA FORM (Continued)

III. Major Items of Equipment (Warfare Assessment Laboratory core equipment)

- A. Approximately 40 engineering workstations, with an additional 68 workstations programmed between FY95 and FY97.
- B. One SGI VGX and two SGI Crimson real-time processors.
- C. One SUN 690 data base machine.
- D. 12 large screen displays (8-1/2' x 10') driven by light valve technology projectors (>1,000 lumens each), together with ancillary control and interface equipment.
- E. Two conference room size large screen displays (TACTS - ADDS).
- F. Optical scanning, digitizing, and storage workstation.
- G. Telemetry Processing Equipment.
- H. Satellite Interface Equipment.

4. FACILITY CONDITION

FACILITY/CAPABILITY TITLE: WAREFARE ASSESSMENT LABORATORY

NEW, HOWEVER, THE CAPABILITY HAS

AGE: BEEN IN EXISTENCE SINCE 1950 REPLACEMENT VALUE: \$13,800,000

MAINTENANCE AND REPAIR BACKLOG: \$38,000

DATE OF LAST UPGRADE: N/A FACILITY OPENED IN FY94

NATURE OF LAST UPGRADE: N/A

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: PHASE III ADP OUTFITTING (FY 94)

TOTAL PROGRAMMED AMOUNT: \$1,120,000

SUMMARY DESCRIPTION: ADDITIONAL REAL-TIME COMPUTER SYSTEMS TO SUPPORT
MULTIPLE/SIMULTANEOUS MISSILE FIRINGS; DATABASE DEVELOPMENT FOR PERFORMANCE HISTORY;
ADDITIONAL GRAPHICS/ENGINEERING WORKSTATIONS (PHASED INTEGRATION)

2. UPGRADE TITLE: PHASE IV ADP OUTFITTING (FY 95)

TOTAL PROGRAMMED AMOUNT: \$1,025,000

SUMMARY DESCRIPTION: ADDITIONAL REAL-TIME COMPUTER SYSTEMS TO SUPPORT
MULTIPLE/SIMULTANEOUS MISSILE FIRINGS; DATABASE DEVELOPMENT FOR PERFORMANCE HISTORY;
ADDITIONAL GRAPHICS/ENGINEERING WORKSTATIONS (PHASED INTEGRATION)

3. UPGRADE TITLE: PHASE V ADP OUTFITTING (FY 96)

TOTAL PROGRAMMED AMOUNT: \$950,000

SUMMARY DESCRIPTION: ADDITIONAL REAL-TIME COMPUTER SYSTEMS TO SUPPORT MULTIPLE/SIMULTANEOUS MISSILE FIRINGS; DATABASE DEVELOPMENT FOR PERFORMANCE HISTORY; ADDITIONAL GRAPHICS/ENGINEERING WORKSTATIONS (PHASED INTEGRATION)

4. UPGRADE TITLE: COMPUTER-AIDED SYSTEM ENGINEERING/OPEN SYSTEM DATABASE MIGRATION PHASE I

TOTAL PROGRAMMED AMOUNT: \$500,000 (FY 97)

SUMMARY DESCRIPTION: ADDS COMPUTER-AIDED SYSTEM ENGINEERING HARDWARE/SOFTWARE FOR USE IN MODELING AND SIMULATION; MIGRATION OF EXISTING DATA BASES TO VENDOR INDEPENDENT "OPEN" SYSTEMS

5. UPGRADE TITLE: COMPUTER-AIDED SYSTEM ENGINEERING/OPEN SYSTEM DATABASE MIGRATION PHASE II

TOTAL PROGRAMMED AMOUNT: \$500,000 (FY 98)

SUMMARY DESCRIPTION: ADDS COMPUTER-AIDED SYSTEM ENGINEERING HARDWARE/SOFTWARE FOR USE IN MODELING AND SIMULATION; MIGRATION OF EXISTING DATA BASES TO VENDOR INDEPENDENT "OPEN" SYSTEMS

6. UPGRADE TITLE: WAREFARE ASSESSMENT LAB MODERNIZATION PHASE I (FY 99)

TOTAL PROGRAMMED AMOUNT: \$965,000

SUMMARY DESCRIPTION: UPGRADES MULTIPLE LARGE SCREEN DISPLAY SYSTEMS; ADDS OPTICAL PULSE RESPONSE MEASURING CAPABILITY TO CHARACTERIZE LIGHT-WAVE COMPONENTS; REPLACES EXISTING SATELLITE EARTH STATION

3. ADDITIONAL INFORMATION

Facility/Capability Title: WARFARE ASSESSMENT LABORATORY

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Civilian	264	250	259	266	266	266	266
Contractor	70	75	82	80	80	80	80
Total	334	325	341	346	346	346	346

Total Square Footage: 48,000

Test Area Square Footage: 22,523

Office Space Square Footage: 10,528

Tonnage of Equipment: 191

Volume of Equipment: 30,551

Annual Maintenance Cost: \$1,628,000

Estimated Moving Cost: \$1,146,000

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
\$755,000	\$1,120,000	\$1,025,000	\$950,000	\$500,000	\$500,000	\$965,000

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5. HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: WAREFARE ASSESSMENT LABORATORY

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	23290	23966	26962	23602	21667	20743	22231	20523
	TEST HOURS	934	961	1081	947	869	832	892	823
	MISSIONS	318	343	342	319	311	296	294	279
EC	DIRECT LABOR	107395	122109	131726	136130	152143	143919	157759	155584
	TEST HOURS	4307	4897	5282	5459	6101	5771	6326	6239
	MISSIONS	300	280	275	250	253	234	237	217
ARMAMENT/WEAPONS	DIRECT LABOR	163238	162662	168081	167741	174899	171853	173125	169853
	TEST HOURS	6546	6523	6740	6726	7013	6891	6942	6811
	MISSIONS	1252	1203	1147	1020	941	785	934	851
OTHER T&E	DIRECT LABOR	22188	22188	23963	25738	26625	26625	28400	29288
	TEST HOURS	890	890	691	1032	1068	1068	1139	1174
	MISSIONS	106	109	118	143	143	164	165	163
OTHER	DIRECT LABOR	3550	3550	3550	3550	3550	3550	3550	3550
	TEST HOURS	142	142	142	142	142	142	142	142
	MISSIONS	4	4	4	4	4	4	4	4

1610

6. DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: WARFARE ASSESSMENT LABORATORY

ANNUAL HOURS OF DOWNTIME	1	<u>976</u>
AVERAGE DOWNTIME PER DAY (LINE 1+ 365)	2	<u>0.6</u>
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	<u>21.4</u>

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL =)
4	5	6	7	8
AIR VEHICLE	11	0.04	0.44	
EC	3	0.30	0.90	
ARMAMENT/ WEAPONS	15	0.09	1.35	
OTHER T&E	3	0.10	0.30	
OTHER	3	0.50	1.5	
"TYPICAL"	0	0.12	0	
			TOTAL =	<u>4.49</u>

ANNUAL
UNCONSTRAINED
CAPACITY
9 35,071.4

}

*applicable
T&E*

0192

GENERAL INFORMATION

Facility/Capability Title: GAGE ENGINEERING LABORATORY

Origin Date: 5 May 1994

Service: <u>NAVY</u> Organization/Activity: <u>NAVAL WARFARE ASSESSMENT CENTER</u> Location: <u>Pomona, CA</u>						
T&E Functional Area: <u>OTHER T&E</u> UIC = <u>43438</u>						
T&E Test Facility Category <u>MEASUREMENT FACILITIES</u>						
	<u>T&E</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER</u>	<u>=100%</u>
PERCENTAGE USE:	<u>75</u>	<u> </u>	<u>25</u>	<u> </u>	<u> </u>	<u> </u>
BREAKOUT BY T&E FUNCTIONAL AREA (%)						
Air Vehicles	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Armament/Weapons	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
EC	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Other	<u>75</u>	<u> </u>	<u> </u>	<u>25</u>	<u> </u>	
Total in Breakout Must Equal "Percentage Use" On First Line						

0193

TECHNICAL INFORMATION

Facility/Capability Title: GAGE ENGINEERING LABORATORY

Facility Description; Including mission statement: The Naval Warfare Assessment Division, Measurement Science Directorate executes its core function as the technical authority for the Combat Systems Special Interface Gage Program through NAVSEAINST 4855.10A. The Gage Engineering Laboratory is environmentally controlled to meet high accuracy critical dimensional requirements for the Navy Special Interface Gage program for NAVSEA, NAVAIR, and SP Program Managers manufacturers and customers. The purpose of the measurements are for the verification and control of component interface form, fit, and function to assure the safe and reliable operation of Fleet weapons systems.

Interconnectivity/Multit-Use of T&E Facility: **Interconnectivity:** Certified gages are used by the NSWC at Louisville, KY in support of gun ammunition. **Multi-use:** The facility is used throughout the life cycle of a weapon system. It is used in the conceptual and early design phase of the weapon; it is used in the T & E phase to test/proof out the initial design; it is used during the in-service support of the useful life of the weapon and it is also used in the retirement phase where the gage is checked out, preserved, and stored in an environmentally controlled warehouse located on the property for potential mobilization action.

Type of Test Supported: Special Interface Gage Measurements. An interface gage: (1) is an acceptance device used to assure dimensional, physical, and functional interchangeability of major interfaces for weapons and combat system requirements (2) a Fleet assurance device that provides dates to gunfire-control equations (3) a Fleet assurance device used to ensure weapon system components are within were limits.

Summary of Technical Capabilities: The Gage Engineering Laboratory provides the highest level of measurement accuracy for interface gages to assure dimensional, physical, and functional interchangeability of major weapons interface. Measurements cover workload sizes as small as 1/64" thread to a 27 ft third stage TRIDENT motor gage, where thousands of measurements are taken automatically and rapidly. Achievable accuracies within the laboratory range from 0.000010" to 0.0001" depending on workload size and measurement type.

Keywords: Special Interface Gage, Coordinate Measurement Machine, Optical/Dimensional Standards, Rotary Tables, Surface Plates, Gage Blocks, Optical Comparators, Laser Interferometer.

019A

DIMENSIONAL MEASUREMENT CAPABILITIES

Three Dimensional Measurements	48" x 40" x 24"	within .000075"
Open Set Up Inspection Measurement	120" x 120"	within .0015" at 120"
Rotary Stage Measurements	Up to 120" diameter	within 1.5 arc second
Taper Measurements	Up to 45"	within .000010"
Thread Lead Measurements	Up to 42"	within .000025"
Positional Accuracies	Up to 48" x 24"	within .00010"
Form and Profile Determinations	Up to 72" x 72"	within .00010"
Laser Interferometer Measurements	Up to 250 ft.	within .0001" in 10 ft or .000001" in 1 ft
Laser Positional Measurements	Up to 70 ft	within .001"
	Up to 25 ft	within .0002"
Optical Comparators	Up to 24" x 16"	within .0002"

FABRICATION CAPABILITIES

Sawing	12" x 12"	within .090"
Turning	19" x 15"	within .0005"
Precision Boring	48" x 24" x 24"	within .0003"
Surface Grinding	6" x 12" x 14"	within .0001"
Outside Diameter Grinding	14.5" x 33"	within .00005"
Positional Grinding	16" x 10" x 18"	within .00005"
Honing	1.00" Inside Diameter	within .00005"
Welding Stick and T.I.G.	up to 350 Amps	
Heating Treating	17.5" x 10" x 7.5"	within 3 points R.C.
Soldering and Oxyacetylene Torch		

Available Finishing: Glass bead, black oxide, lapping, paint, anodizing, all types of plating.

Shipping: Truck, two day, next day, and hand carry, domestic and international.

Packing: Freight crating, normal boxing, and shipboard preparation.

0195

ENVIRONMENTALLY CONTROLLED LABORATORY

Size
Temperature
Relative Humidity

6700 square feet
20°C
45%

within 0.5°C
within 5%

0196

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: GAGE ENGINEERING LABORATORY

AGE: 35 YEARS REPLACEMENT VALUE: \$2 MILLION

MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: 2 YEARS

NATURE OF LAST UPGRADE: UPGRADE AIR CONDITIONING

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: MILCON 167

TOTAL PROGRAMMED AMOUNT: \$ 7300k

SUMMARY DESCRIPTION: This project will construct a I-shpaed two story reinforced concrete Measurement Science Laboratory. It will provide space and controlled environments for various measurement science laboratories, including the Gage Engineering Laboratory.

2. UPGRADE TITLE: _____

TOTAL PROGRAMMED AMOUNT: _____

SUMMARY DESCRIPTION: _____

0197

ADDITIONAL INFORMATION

Facility/Capability Title: GAGE ENGINEERING LABORATORY

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	1	1	1	1	1	1	1
Contractor							
Total	1	1	1	1	1	1	1

Total Square Footage: 8550 ft²

Test Area Square Footage: 7900 ft² Office Space Square Footage: 650ft²

Tonnage of Equipment: 200 tons Volume of Equipment: 22,000 ft³

Annual Maintenance Cost: \$200K Estimated Moving Cost: \$40 K

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
\$0	0	0	0	0	0	0

8610

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: GAGE ENGINEERING LABORATORY

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER T&E:	DIRECT LABOR	2120	2035	2035	1950	1560	1400	1225	1000
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS	150	150	150	150	120	120	100	80

0199

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: GAGE ENGINEERING LABORATORY

ANNUAL HOURS OF DOWNTIME	1	<u>336 Hrs</u>
AVERAGE DOWNTIME PER DAY (LINE 1÷365)	2	<u>0.92</u>
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	<u>23.08</u>

TEST TYPES	TEST AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3X TOTAL \$)
4	5	6	7	8
INITIAL GAGE CERTIFICATION	<u>8</u>	<u>.056</u>	<u>.448</u>	<u>10.34</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
<u>"TYPICAL"</u>	<u>0</u>	<u>.056</u>	<u>N/A</u>	_____
TOTALS			<u>.448</u>	9 <u>3774 Hrs</u>

0200

GENERAL INFORMATION

Facility/Capability Title: METROLOGY ENGINEERING LABORATORY

Origin Date: 5 May 1994

Service: NAVY Organization/Activity: NAVAL WARFARE ASSESSMENT DIVISION Location: Corona, CA

T&E Functional Area: OTHER T&E UIC = 64267

T&E Test Facility Category MEASUREMENT FACILITIES

	<u>T&E</u>	<u>S&T</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER</u> = 100%
PERCENTAGE USE:	<u>30</u>	<u> </u>	<u>40</u>	<u>30</u>	<u> </u>	<u> </u>

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	<u> </u>					
Armanent/Weapons	<u> </u>					
EC	<u> </u>					
Other	<u>30</u>	<u> </u>	<u>40</u>	<u>30</u>	<u> </u>	<u> </u>

Total in Breakout Must Equal "Percentage Use" On First Line

0701

TECHNICAL INFORMATION

METROLOGY ENGINEERING LABORATORY

Facility/Capability Title:

Facility Description; Including mission statement: The Naval Warfare Assessment Division, Measurement Science Directorate executes its core function as the technical authority for Metrology Engineering functions per SECNAVINST 3960.6 and via NAVLEXINST 4355.2 using the Measurement Engineering Laboratory. The Metrology Engineering Laboratory is an environmentally controlled (temperature, humidity, and air flow) space to meet critical high accuracy measurement requirements for Navy Metrology Calibration Program. The Laboratory measurement areas include: physical, mechanical, electronic, microwave, electro optical, dimensional, optical, force in order to provide a wide range of engineering test, evaluation, and calibration capabilities with measurement accuracies approaching state-of-the-art.

Interconnectivity/Mult-Use of T&E Facility: Interconnectivity: Standards calibration services are provided to the Gage Engineering Laboratory. Multiuse of Facility: Same facility is used to support various phases during the life of support equipment: As an R & D facility to develop new measurement techniques/standards five years prior to Fleet introduction. As a T & E facility to evaluate off-the shelf/new standards development; and as an in service support activity to evaluate problems that the Fleet is having with current standards/procedures via Fleet feedback and instrument calibration procedures. Same facility is also used as a Type II calibration standards laboratory to support precision Fleet standards.

Type of Test Supported: State-of-the-art critical high accuracy measurements in the following metrology technology areas: physical, mechanical, electronic, microwave, electro optical, dimensional, optical, force. Specifically for: bid sample testing of Calibration Standards, bid sample testing of General Purpose Electronic Test Equipment (GPETE), and T & E of Calibration Standards.

Summary of Technical Capabilities: The Metrology Engineering Laboratory provides state-of-the-art measurement accuracies in support of a wide range of engineering test, evaluation, and calibration capabilities. Accuracies range from Type I (second only to National Institute of Science and Technology (NIST) in Optical/Dimensional, Force, Pressure, Temperature, D C voltage, to Type II capability in Electronic and Microwave Measurements.

Keywords: Metrology, calibration standards, NIST, Optical, Dimensional, Force, Pressure Temperature, D C voltage, Electronic, Microwave, Mass, Torque, Humidity, Photometry, AC voltage, Current, Capacitance, Inductance, AC Ration, Resistance, Power, Frequency, Phase, VSWR, Impedance, Attenuation.

MEASUREMENT SCIENCE LABORATORY
MEASUREMENT SERVICES AND CAPABILITIES

Measurement Characteristic	Range	Uncertainties
AC Ratio	10^7 to 1	± 0.5 PPMI
Synchro Resolver	0° to 360°	± 2 sec of arc
DC Voltage	0 to 10 V	± 0.0001 PPM
	10^6 to 2000 V	± 0.001 to $\pm 0.01\%$
DC Ratio	10^7 to 1	± 1 PPMI or $\pm 0.02\%$
DC Resistance	1 ohm	$\pm 0.0001\%$
	0.0001 to 1 megohm	± 0.001 to $\pm 0.01\%$
DC Current	10^{-14} to 10^8 A	± 0.04 to $\pm 1.6\%$
	10^9 to 600 A	± 0.004 to $\pm 0.04\%$
Attenuation	0 to 100dB, 10 MHz to 18 GHz	± 0.05 dB/10 dB
RF Power	10 W to 10 mW	$\pm 1\%$ to $\pm 3\%$
Frequency	DC to 26.5 GHz	as low as 5×10^{-12}
Phase	0 to 360° , 400 Hz to 50 kHz	$\pm 0.03^\circ$ to $\pm 0.1^\circ$
VSWR	1.00 to 10, 30 MHz to 18GHz	$\pm 2\%$ to $\pm 5\%$ of VSWR
Impedance	2.60 to 26.0 GHz	1% of the VSWR
Phase Shift	5.3 to 18.00 GHz, 0 to 360°	$\pm 1^\circ$ to $\pm 2^\circ$

0703

MEASUREMENT SCIENCE LABORATORY

MEASUREMENT SERVICES AND CAPABILITIES

Measurement Characteristic	Range	Uncertainties
Length	0.010" to 20.000"	± 1 to ± 4 microinch
Flatness/Parallelism		± 2 microinch
Thread Wires	2 to 80	± 10 microinch
Steel Balls	1/16" to 1.000"	± 5 microinch
Ring Gages	0.040" to 11.000"	± 10 to ± 30 microinch
Plug Gages	1/8" to 6.000"	± 10 to ± 30 microinch
Angle Blocks	0° to 45	± 0.5 to 1.0 sec arc
Mass	0.05 mg thru 25 kg	as low as ± 0.005 mg
	0.0005 lb thru 100lb	as low as ± 0.02 lb
Pressure	0 to 110 in Hg	$\pm (0.0003 \text{ In Hg} + 0.003\% \text{ I.P.})$
Pneumatic Pressure	2 to 100,000 PSIG	$\pm 0.01\%$
Torque Testers	0 to 3000 lb ft	$\pm 0.1\%$
Thermometers	-182 to 630°C	$\pm 0.01^\circ \text{ C}$
Thermocouples	-196 to 1450°C	± 0.1 to 4.0° C
Humidity	20% to 95%	$\pm 2.0\%$
Specific Gravity	0.650 to 2.000 SG	$\pm 0.0005\text{SG}$
Load or Force	100 to 100,000 lbs	$\pm 0.01\%$
	100,000 to 300,000	$\pm 0.05\%$
AC Voltage	0.0001 to 1200 V, 20 Hz to 30 MHz	$\pm 0.007\%$ to $\pm 0.40\%$
AC Current	0.005 to 20 A, 20 kHz & 50 kHz	$\pm 0.02\%$
Capacitance	-0.5 aF to 100 F, 50 Hz to 10 kHz	$\pm 0.001\%$ to $\pm 0.005\%$
Inductance	50 H to 10 H, 100 to 1000 Hz	± 0.035 to $\pm 0.2\%$

0204

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: METROLOGY ENGINEERING LABORATORY

AGE: 5 YEARS REPLACEMENT VALUE: \$2 MILLION

MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: IN PROCESS

NATURE OF LAST UPGRADE: Upgrade fiber optic and dimensional laboratory to meet safety and boundry requirements. Upgrade HVAC (1993-94) for Bldg 517. Upgrade HVAC in 1988 for Bldg 541.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: BLDG 517, CORONA (FY 94)

TOTAL PROGRAMMED AMOUNT: \$ 100K

SUMMARY DESCRIPTION: ENVIRONMENTALLY CONTROLLED SPACES 68° +/- 1/4° F
OPTICAL/DIMENSIONAL STANDARDS LABORATORY

2. UPGRADE TITLE: BLDG 541, CORONA FY (94/95)

TOTAL PROGRAMMED AMOUNT: \$300K

SUMMARY DESCRIPTION: FORCE LABORATORY FACILITY

0205

9020

ADDITIONAL INFORMATION

Facility/Capability Title: METROLOGY ENGINEERING LABORATORY

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	13	13	13	13	13	13	13
Contractor							
Total	13	13	13	13	13	13	13

Total Square Footage: 15,000ft²

Test Area Square Footage: 10,000 ft²

Office Space Square Footage: 150ft²

Tonnage of Equipment: 150 tons

Volume of Equipment: 8,000ft³

Annual Maintenance Cost: \$150K

Estimated Moving Cost: \$70 K

CAPITAL EQUIPMENT INVESTMENT

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
\$0	0	0	0	\$405K	\$175K	0	0

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: METROLOGY ENGINEERING LABORATORY

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER T&E: *	DIRECT LABOR	17600	18480	24670	30500	29980	22510	24190	18505
	(1) Calibration Standards TEST HOURS	1343	1410	1883	2328	2289	1718	1846	1412
	(2) GPETE MISSIONS	60	60	90	140	150	92	126	85

*The category involves (1) T & E calibration standards that are being evaluated as potential calibration standards candidates for Navy Calibration Shipboard and Shorebase Facilities. There are approximately 750 Navy calibration laboratories at four levels of echelon (Type I, II, III, IV), and T & E are performed on equipment/standards candidates to determine their applicability across laboratory echelon level laboratory type (shipboard, shipbase).
 (2) T & E of GPETE that is used on board combat ships that supports the prime system weapon system measurements.

0207

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: METROLOGY ENGINEERING LABORATORY

ANNUAL HOURS OF DOWNTIME	1	<u>336 Hrs</u>
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2	<u>0.92</u>
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	<u>23.08</u>

TEST TYPES	TEST AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3X TOTAL \$)
4	5	6	7	8
OTHER	<u>43</u>	<u>.13</u>	<u>5.59</u>	<u>129</u>
_____	_____	_____	_____	ANNUAL CONTRAINED CAPACITY 9 <u>47091 Hrs</u>
_____	_____	_____	_____	
_____	_____	_____	_____	
<u>"TYPICAL"</u>	<u>0</u>	<u>.13</u>	<u>N/A</u>	
TOTALS			<u>.5.59</u>	

0208

1. GENERAL INFORMATION

Facility/Capability Title: TACTICAL AIRCREW COMBAT TRAINING SYSTEM SITES

Origin Date: 5 May 1994

Service: NAVY Organization/Activity: NAVAL WARFARE ASSESSMENT DIVISION Location: Corona, CA

T&E Functional Area: AIR VEHICLES/EC UIC = N64267

T&E Test Facility Category MEASUREMENT

	<u>T&E</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER</u>	<u>=100%</u>
PERCENTAGE USE:	<u>1.4</u>	<u> </u>	<u>0.7</u>	<u>97.9</u>	<u> </u>	<u> </u>

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	<u> </u>	<u> </u>	<u> </u>	<u>67.2</u>	<u> </u>	<u> </u>
Armanent/Weapons	<u> </u>	<u> </u>	<u> </u>	<u>0.7</u>	<u> </u>	<u> </u>
EC	<u> </u>	<u> </u>	<u>0.7</u>	<u>17.1</u>	<u> </u>	<u> </u>
Other	<u>1.4</u>	<u> </u>	<u> </u>	<u>12.9</u>	<u> </u>	<u> </u>

Total in Breakout Must Equal "Percentage Use" On First Line

0209

2.A TECHNICAL INFORMATION

Facility/Capability Title: TACTICAL AIRCREW COMBAT TRAINING SYSTEM SITES (OPERATORS & MAINTENANCE)

Facility Description; Including mission statement: TACTS/EW/WISS ranges provide a realistic combat threat environment in which aircrews learn and practice the proper responses and maneuvering tactics to counter hostile aircraft weapons and ground threats in addition to the proper release and delivery of air-to-air and air-to-ground ordnance in order to increase the probability of survival of aircrews and weapon systems in actual combat situations. The TACTS contains a Control and Computation Subsystem (CCS), Display and Debriefing Subsystem (DDS), Aircraft Instrumentation Subsystem (AIS), and Tracking Instrumentation Subsystem (TIS). TACTS Systems are located at MCAS Yuma, AZ with remote DDSs at NAS Miramar, CA, NAF El Centro, CA, and MCAS El Toro, CA; NAS Oceana, VA with remote DDS at Langley AFB, VA; MCAS Beaufort with remote DDSs at NAS Cecil Field, Savannah ANG, and Jacksonville ANG; Fallon TACTS; Cherry Point TACTS; and Key West DDS linked to Homestead Air Reserve Base ACMI. EW capabilities are provided at Yuma, Fallon and Cherry Point. WISS capability is provided at Fallon and Yuma.

Interconnectivity/Mult-Use of T&E Facility: MCAS Yuma - Interconnectivity with NAS Miramar, NAF El Centro, and MCAS El Toro via T-1 Links . NAS Oceana - Interconnectivity with Langley AFB (Hampton, VA) via T-1 Data Link. MCAS Beaufort - Interconnectivity with NAS Cecil Field, Savannah ANG, and Jacksonville ANG via T-1 Links. NAS Key West - Interconnectivity with Homestead Air Reserve Base via T-1 Link.

Type of Test Supported: Air Combat Maneuvering (ACM), No-Drop Weapons Scoring (NDWS), Electronic Warfare Training, Electronic Counter-Measures (ECM), Ordnance delivery and scoring, and Integrated Air Defense System (IADS) training scenario.

Summary of Technical Capabilities: 36 Aircraft TACTS instrumentation (ACM, NDBS, HARM, EW Training). Surface-to-air missile EW threat simulators, Integrated Air Defense System (IADS).

Keywords: Littoral Warfare Training Complex (LWTC); No Drop Bomb Scoring (NDBS); Weapons Tactic Instruction (WTI); TOPGUN; STRIKE; FLEET FIGHTER AIR COMBAT MANEUVERING READINESS PROGRAM (FFARP) Weapons Impact Scoring Set (WISS); Tactical Aircrew Combat Training System (TACTS).

010

2.B TECHNICAL INFORMATION

Facility/Capability Title: TACTICAL AIRCREW COMBAT TRAINING SYSTEM SITES (LOGISTICS)

Facility Description; Including mission statement: In the accomplishment of the "10.2 Logisitcs Planning and Implementation" assignment NWAD has from NAVAIRSYSCOM (PMS 248), we utilize a sedentary, office setting for about 40 engineers and logisticians, complete with networked PCs to prepare technical instrumentation specifications, accomplish logistics planning, and prepare the technical logistics documentation (ILS Specs, ILS SOWs, ILSPs, OLSPs, PSPs, OLSSs, maintenance concepts and plans, configuration management plans, training range directory, and annual training range POM) for PMA 248 and ONAV 889K. Our NWAD mission for PMA 248 is to develop, acquire, plan for, and logistically support Navy Tactical Training Range (NTTR) instrumentation systems. We are assigned by PMA 248 as the NTTR instrumentation Deputy Assistant Program Manager for Logistics (DAPML).

Interconnectivity/Mulit-Use of T&E Facility: The NTTR DAPML group at NWAD is interconnected with OPNAV 889K, NAVAIRSYSCOM PMA 248, the training ranges, major lead field activities in the training range acquisition community such as: NAWC Point Mugu, NAWC China Lake, NAWC Patuxent River, and NSWC Dahlgren. We are the unique, one-stop-shop, for providing logistics planning and for maintaining all logistics documentation for all NTTR training range equipments, for the Navy.

Type of Test Supported: The NTTR instrumentation support group here at NWAD supports a wide range of tests on behalf of NAVAIRSYSCOM PMS 248. The tests include being the government acceptance test agent for new Systems Replacement and Modernization (SRAM) equipments delivered to the ranges by contractors (for which our group prepared the specifications, based on technical requirement inputs received direct from the ranges). Also, we perform Integrated Logistics Support reviews, inspections, and audits for NTTR insturmentation suites and equipments delivered to the ranges, not only which are built by contractors from the private sector under Navy contract, but also by the several lead, Navy range field activities, such as: NAWC Point Mugu, NAWC China Lake, NAWC Patuxent River, and NSWC Dahlgren.

Summary of Technical Capabilities: We have a cadre of about 40 engineers and logisticians here under continual tasking since the 1970s from NAVAIRSYSCOM PMA 248, to translate technical requirements from the Fleet into technical specifications leading to hardware contracts for instrumentation. In addition, we have engineers with expertise in the configuration management discipline, who review and process Engineering Change Proposals (ECPs) for electronic warfare equipments having achieved Initial Operating Capability (IOC) in the field. We also have a group of logisticians responsible for doing cradle-to-grave planning for logistics support for NTTR equipments, unique to the Navy NTTR instrumentation project managed by PMA 248. (We are also PMA 248's unique support in the responses to DoDINST 5000.2 Logistics Review Group (LRG) audits for range instrumentation systems). In the accomplishment of our assigned tasking as described, there is no special instrumentation required to do our work, other than the individual PCs, printers, servers, plotters, scanners, and software we utilize.

Keywords: Range Planning, Configuration Management (CM), Engineering Change Proposals (ECPs), Integrated Logistics Support (ILS), Navy Tactical Training Ranges (NTTR), Instrumentation Contracting, Logistics Review Group (LRG) audits.

4. FACILITY CONDITION

FACILITY/CAPABILITY TITLE: TACTICAL AIRCREW COMBAT TRAINING SYSTEM SITES

AGE: Ranges from 3 to 20 Years REPLACEMENT VALUE: Ranges from \$2.5 Million to \$75 Million, dependent on site, area coverage, and EW capability

MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: Ranges from 88-93

NATURE OF LAST UPGRADE:

Contruction of additonal remote sites, MILCON of Support Buildings, Expansion of EW Capabilities

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Bodie Island (Oceana) TIS Tower Replacement

TOTAL PROGRAMMED AMOUNT: \$500,000

SUMMARY DESCRIPTION: Replaces existing towers

2. UPGRADE TITLE: Fallon East Range Expansion

TOTAL PROGRAMMED AMOUNT: \$5,500,000

SUMMARY DESCRIPTION: Add second TACTS Master Station and 11 Remote Tracking Sites

3. UPGRADE TITLE: Advanced Display/Debriefing Subsystem (Beaufort)

TOTAL PROGRAMMED AMOUNT: \$1,000,000

SUMMARY DESCRIPTION: Replaces current Display/Debrief System

0213

3. ADDITIONAL INFORMATION

Facility/Capability Title: TACTICAL AIRCREW COMBAT TRAINING SYSTEM SITES

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Civilian	80	77	85	85	86	87	88
Contractor	409	398	413	424	436	446	456
Total	489	475	498	509	522	533	544

Total Square Footage: N/A

Test Area Square Footage: N/A Office Space Square Footage: 6000

Tonnage of Equipment: 2,180 TONS Volume of Equipment: See note below

Annual Maintenance Cost: \$25,000,000 Estimated Moving Cost: \$183,250,000

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
\$0	0	0	0	0	0	0

NOTE: TACTS/EW Range equipments on/in numerous environmental situations. Tracking Instrumentation, Data Links, Communications Links and antennas, fiber optics, lasers, and electronic warfare hardwares are located on high mountains, rolling hills, desert areas, atop deep ocean towers, 500 ft to 1500 ft towers, islands, marsh areas etc. Control and Computational and

021A

5. HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: TACTICAL AIRCREW COMBAT TRAINING SYSTEM SITES

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	202198	195079	210534	217819	279645	341177	362756	331625
	TEST HOURS	1340	1293	1395	1444	1853	2261	2404	2198
	MISSIONS	8950	8792	9207	9308	10215	9818	10355	9278
EC	DIRECT LABOR	283739	276620	308665	293619	284445	319056	372460	369000
	TEST HOURS	1880	1833	2046	1946	1885	2115	2469	2446
	MISSIONS	4510	4372	4787	4888	4610	4064	4665	3670
ARMAMENT/WEAPONS	DIRECT LABOR	36700	36700	36700	52057	52057	52057	52057	65488
	TEST HOURS	243	243	243	345	345	345	345	434
	MISSIONS	1400	1400	1400	1400	1400	1400	1400	1400
OTHER:	DIRECT LABOR	61950	61950	63720	65490	65490	67260	67260	71080
	TEST HOURS	411	411	422	434	434	446	446	471
	MISSIONS	4953	4855	5131	5199	5408	5094	5473	4783

5180

6. DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: TACTICAL AIRCREW COMBAT TRAINING SYSTEM SITES

ANNUAL HOURS OF DOWNTIME	1	<u>87 Hrs</u>
AVERAGE DOWNTIME PER DAY (LINE 1+365)	2	<u>.24</u>
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	<u>23.75</u>

TEST TYPES	TEST AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3X TOTAL \$)
4	5	6	7	8
AIR VEHICLES	<u>36</u>	<u>.02</u>	<u>.72</u>	
EC	<u>36</u>	<u>.04</u>	<u>1.44</u>	ANNUAL CONSTRAINED CAPACITY
ARMAMENTS/ WEAPONS	<u>36</u>	<u>.02</u>	<u>.72</u>	9 <u>28,086.8 Hrs</u>
OTHER	<u>36</u>	<u>.01</u>	<u>.36</u>	
<u>"TYPICAL"</u>	<u>0</u>	<u>.02</u>	<u>0</u>	
TOTALS			<u>3.24</u>	

0216

1. GENERAL INFORMATION

Facility/Capability Title: NWAD TELEMETRY FIELD STATIONS Origin Date: 5/4/94

Service: NAVY Organization/Activity: NWAD Location: NAVAL STATION ROOSEVELT ROADS, PR:
OCEANA, VA; CRETE, GREECE

T&E Functional Area: OTHER UIC = 00389, 60191, 66691

T&E Test Facility Category MEASUREMENT FACILITY

	<u>T&E</u>	<u>S&T</u>	<u>D&E</u>	<u>IE</u>	<u>T&D</u>	<u>OTHER=100%</u>
PERCENTAGE USE:	<u>20</u>				<u>80</u>	
BREAKOUT BY T&E FUNCTIONAL AREA (%)						
Air Vehicles	<u>1</u>					
Armament/Weapons	<u>19</u>				<u>80</u>	
EC						
Other						

Total in Breakout Must Equal "Percentage Use" On First Line

0217

2. TECHNICAL INFORMATION

Facility/Capability Title: NWAD TELEMETRY FIELD STATIONS

Facility Description; Including mission statement:

The NWAD Telemetry Field offices in Puerto Rico, Oceana, and Crete provide missile telemetry services to Fleet elements for both test and evaluation and Fleet training exercises. The field offices operate in concert with the Atlantic Fleet Weapons Training Facility (AFWTF), Virginia Capes (VACAPES) Operating Area Coordinators, and NAMFI Range Coordinator, in support of on-range exercises. The field offices' mission is to acquire, process, display, and transmit missile telemetry data from all telemetered missiles fired at these ranges.

Interconnectivity/Multi-Use of T&E Facility:

Interconnectivity between Puerto Rico, Oceana, and Crete and NWAD Warfare Assessment Laboratory is provided via secure satellite transmission and land line.

Type of Test Supported:

Fleet Training: Fleet Exercise, Combined Test Unit Exercise and Readiness Exercise. T&E: Combat System Shipboard Qualification Test; Development Test & Evaluation; and Operational Test & Evaluation.

Summary of Technical Capabilities:

Each field office is capable of: (1) Dynamically tracking both missiles and targets in flight (2) Collecting and recording telemetered data for performance analysis (3) Displaying data in real time to provide "quick look" analysis feedback to the Fleet (4) Providing digitized data to remote sites for analysis; and (5) Receiving and displaying analyzed data.

Keywords:

TM, Telemetry, TLM, AFWTF, Analog, Digital Data, NWAD, FO, PR

0218

3. ADDITIONAL INFORMATION

Facility/Capability Title: NWAD TELEMETRY FIELD STATIONS

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	12	12	12	14	14	14	14
Contractor							
Total	12	12	12	14	14	14	14

Total Square Footage: 20,350

Test Area Square Footage: 16,985

Office Space Square Footage: 3,365

Tonnage of Equipment: 124

Volume of Equipment: 70,000 cu ft

Annual Maintenance Cost: \$525K

Estimated Moving Cost: \$2 MILLION

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
\$0	\$1048K	\$1048K	\$0	\$0	\$0	\$0

4. FACILITY CONDITION

FACILITY/CAPABILITY TITLE: TELEMETRY FIELD STATIONS

AGE: 23 YEARS REPLACEMENT VALUE: \$36 MILLION

MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: 1/94

NATURE OF LAST UPGRADE: ALL TELEMETRY GROUND STATION HARDWARE AT PUERTO RICO WAS UPGRADED BY THE FLEET TRAINING RANGE TELEMETRY STATION DEVELOPMENT (FTRTSD) PROGRAM

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: TELEMETRY IMPROVEMENT AND MODERNIZATION

TOTAL PROGRAMMED AMOUNT: \$2.7 MILLION

SUMMARY DESCRIPTION: TELEMETRY ANTENNAS, RECEIVERS, TRANSMITTERS, AND RECORDING EQUIPMENT

2. UPGRADE TITLE: _____

TOTAL PROGRAMMED AMOUNT: _____

SUMMARY DESCRIPTION: _____

0770

5. HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: _____

NWAD TELEMETRY FIELD STATIONS

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	200	400	500	200	100	200	700	500
	TEST HOURS	111	222	277	111	55	111	388	277
	MISSIONS	2	4	5	2	1	2	7	5
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR (MY)*	23200	23000	22900	23200	23300	21400	20000	22900
	TEST HOURS	12867	12757	12701	12867	12922	11869	11093	12701
	MISSIONS	401	386	321	331	461	393	412	309
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

0221

6. DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: NWAD TELEMETRY FIELD STATIONS

ANNUAL HOURS OF DOWNTIME	1	<u>312</u>
AVERAGE DOWNTIME PER DAY (LINE 1+ 365)	2	<u>0.28</u>
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	<u>23.72</u>

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL =)
4	5	6	7	8 <u>6.4</u>
<u>AIR VEHICLES</u>	3	0.06	0.18	
<u>ARMAMENT/ WEAPONS</u>	3	0.03	0.09	ANNUAL UNCONSTRAINED CAPACITY
<u>"TYPICAL"</u>	0	0.03	0	9 <u>2,337.6</u>
TOTAL =				<u>0.27</u>

0110

BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

In accordance with policy set forth by the Secretary of the Navy, personnel of the Department of the Navy, uniformed and civilian, who provide information for use in the BRAC-95 process are required to provide a signed certification that states "I certify that the information contained herein is accurate and complete to the best of my knowledge and belief."

The signing of this certification constitutes a representation that the certifying official has reviewed the information and either (1) personally vouches for its accuracy and completeness or (2) has possession of, and is relying upon, a certification executed by a competent subordinate.

Each individual in your activity generating information for the BRAC-95 process must certify that information. Enclosure (1) is provided for individual certifications and may be duplicated as necessary. You are directed to maintain those certifications at your activity for audit purposes. For purposes of this certification sheet, the commander of the activity will begin the certification process and each reporting senior in the Chain of Command reviewing the information will also sign this certification sheet. This sheet must remain attached to this package and be forwarded up the Chain of Command. Copies must be retained by each level in the Chain of Command for audit purposes.

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

ACTIVITY COMMANDER

Edward G. Schwier
NAME (Please type or print)

Edward G. Schwier
Signature

Commanding Officer
Title

5 May 1994
Date

Naval Warfare Assessment Division

Activity

This certification covers the Naval Warfare Assessment Division's submission for the 1995 Base Realignment and Closure T&E Joint Cross-Service Group Data Call (Data Call 13) for the Warfare Assessment Laboratory (WAL), the Gage Engineering Laboratory, the Metrology Engineering Laboratory, the Tactical Aircrew Combat Training System (TACTS), and the Telemetry Field Stations.