DCN 549

# Document Separator

# Integration Laboratory

# Document Separator

# Tab 36. Actuator and Power Systems Laboratory



0523

# GENERAL INFORMATION

Facility/Capability Title: Actuator and Power Systems Laboratory

Origin Date: 4/25/94

Service: N

Organization/Activity: NAWCWPNS, CL Location: Code C27

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 5 | 20 | 60 | 15 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 0 | 0 | 0 | 0 | 0 | 0 |
| Armament/Weapons | 5 | 20 | 60 | 15 | 0 | 0 |
| EC | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

Total in breakout must equal "Percentage Use" on first line.

0524

# TECHNICAL INFORMATION

Facility/Capability Title: Actuator and Power Systems Laboratory

**Facility Description, Including Mission Statement:**

A group of buildings in the CLPL area of NAWCWPNS that has the capacity to conduct developmental evaluation and test of actuation and power system components of missiles and related equipment, and the capacity to pressure test and hydroburst test motor cases, igniter housings, and other pressure vessels. The full range of actuation systems including electromechanical, hydraulic and pneumatic, and energy storage systems can be evaluated at either the component level, or as part of a larger control assembly. The laboratory can conduct load testing, performance characterization, and acceptance testing of missile and air-vehicle flight-control actuators, separately or as an integral part of the missile-flight control autopilot.

**Interconnectivity/Multi-Use of T&E Facility:**

Portions of these facilities are certified for ordnance operations and are in close proximity to other functional, safety, and radiographic test areas to provide for efficient operations. There are twelve rooms/test bays that allow for simultaneous testing. An environmental chamber on the premises allows for testing of conditioned units. Easy access is also available to all range operations. Because of separation of buildings, multiple concurrent operations are possible.

**Type of Test Supported:**

Static and dynamic testing of actuation and control systems. Failure analysis testing, pressure-proof testing, leak testing, hydroburst testing.

**Summary of Technical Capabilities:**

Simulated-missile power supplies including electrical (110 and 208 VAC, 200 VDC 100 AMP) and high pressure hydraulic (up to 2500 PSI) and pneumatic (up to 25000 PSI). Actuation load simulators including programmable hydraulic simulator, electric-motor test station, torsion-bar simulators and pneumatic-load simulators. Command generators including computerized digital source and data collection and analog sources. Miscellaneous instruments and data-acquisition systems including digital and analog oscilloscopes, multimeters, function generators, pulse generators, sweep generators, computerized multichannel data-acquisition systems to 100 kHz sample rate, transient analyzers, DSP Fourier analyzers, and analog frequency analyzers. Full-scale models of several missile systems for failure analysis testing. Vessel-pressurization device (up to 10000PSI). Miscellaneous monitoring and control equipment.

**Keywords:**

Actuation, Power Systems, Control Systems, Burst Test, Pressure, Hydroburst, Leak Test

0525

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Actuator and Power Systems Laboratory
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 29750 | 29750 | 29750 | 27890 | 27890 | 37180 | 37180 | 29750 |
| | TEST HOURS | 5950 | 5950 | 5950 | 5590 | 5590 | 7440 | 7440 | 5950 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



0526

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Actuator and Power Systems Laboratory

ANNUAL HOURS OF DOWNTIME (1) 40

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 0.11

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.89

| 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) 280.71 |
| Actuator Performance | 3 | 1 | 3 | |
| Burst | 1 | 2 | 2 | ANNUAL UNCONSTRAINED CAPACITY (9) 102458 |
| Temp. Cycling | 1 | .25 | .25 | |
| Troubleshooting | 3 | 1.5 | 4.5 | |
| "TYPICAL" | | | | |
| | | TOTAL | 9.75 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? Yes

If yes, explain: PARTIALLY LIMITED BY SAFETY CONSIDERATIONS (LIMITS, ARCS, ETC.) IF TESTING SYSTEMS WITH ENERGETIC MATERIALS.

0527

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Actuator and Power Systems Laboratory

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 17 | 15 | 15 | 16 | 17 | 17 | 17 |
| Contractor | | | | | | | |
| Total | 17 | 15 | 15 | 16 | 17 | 17 | 17 |

Total Square Footage 11072

Test Area Square Footage 4838

Office Space Square Footage 5939

Tonnage of Equipment: 29

Volume of Equipment: 38200

Annual Maintenance Cost: 10000

Estimated Moving Cost: 105000

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 300K | 70K | 93K | 0 | 55K | 0 | 0 |
| 15K | 10K | 10K | 15K | 10K | 15K | 20K |
| | | | | | | |

0528

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Actuator and Power Systems Laboratory

AGE: 49 REPLACEMENT VALUE: $6676K = TOTAL, $5964K = BUILDINGS

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

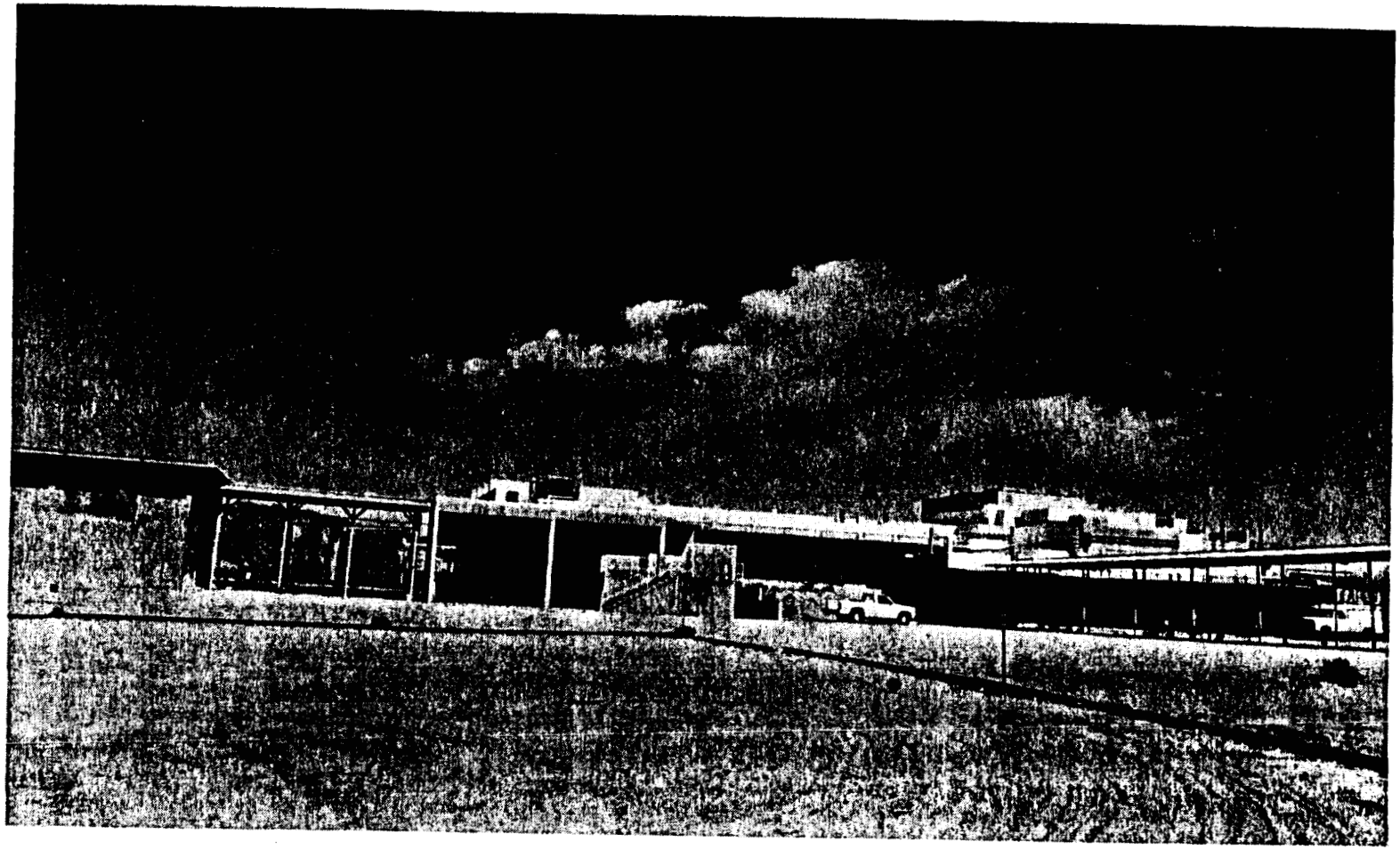
SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:

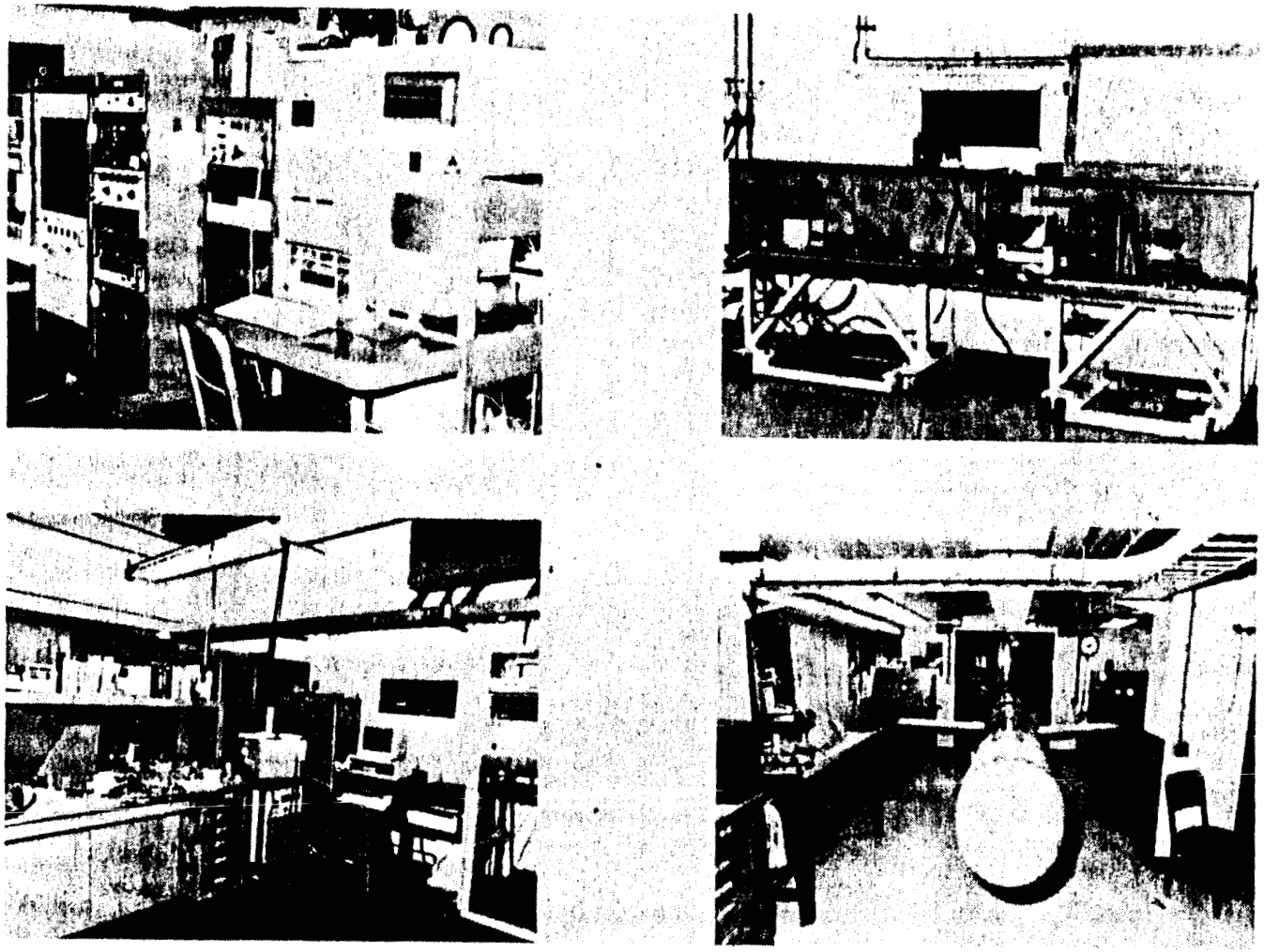
0529



Actuator and Power Systems Laboratory



0530



Actuator and Power Systems Laboratory



0531

# Document Separator

# Tab 37. Antiradiation Missile Integration Complex

# GENERAL INFORMATION

Facility/Capability Title: Antiradiation Missile Integration Complex

Origin Date: 4/23/94

Service: NAVY Organization/Activity: NAWC- CHINA LAKE Location: CODE C2825

T&E Functional Area: ARMAMENT/WEAPONS UIC = 60530

T&E Test Facility Category INTEGRATION LABORATORIES

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 60 | | 20 | 10 | 10 | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 30 | 30/60 = 50% | 10 | 10 | 10 | |
| EC | 30 | | 10 | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.

0533 A

# GENERAL INFORMATION

Facility/Capability Title: Antiradiation Missile Integration Complex

Origin Date: 4/23/94

Service: NAVY Organization/Activity: NAWC- CHINA LAKE Location: CODE C2825

T&E Functional Area: ARMAMENT/WEAPONS UIC = 60530

T&E Test Facility Category INTEGRATION LABORATORIES

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 60 | | 20 | 10 | 10 | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 60 | | 20 | 10 | 10 | |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.

0533

# TECHNICAL INFORMATION

Facility/Capability Title: Antiradiation Missile Integration Complex

Facility description; including mission statement:

This capability is a multisite organization including a 6-DOF Analysis Computer Laboratory, mission-planning module development, Data Reduction Facility, Advanced HARM Workstation, Weapon System Integration Facility, and Weapon System Verification Facility. The purpose of the complex is to do lab-based RD&T of static and dynamic hardware, ELINT test and verification, electronic warfare suite integration, production hardware verification, assemble and electrically test antiradiation missiles (ARM) for the multiple services/ foreign governments, perform electrical test and repairs of arm avionics, perform ARM integration with Navy aircraft OFPS), dynamic-missile computer simulation, mission-planning software development (TAMPS), test and debug of ARM ground support equipment, and ARM software debug for live fire-mission scenario testing.

Interconnectivity/Multi-Use of T&E Facility:

COMPLETE DATA LINK WITH TELEMETRY DATA LINK (640,000 BPS), FULL BANDWIDTH CONNECTION WITH INTERNET AND REMOTE-ARM THEATER TARGETING TEST AND EVALUATION.

Type of Test Supported:

MISSILE INTEGRATION, MISSILE AVIONICS TO AIRCRAFT OFP/SMS/EW SUITE and MISSILE, ELINT INTEGRATION, EW INTEGRATION (LABORATORY, AIRCRAFT AND AIRBORNE), TACTICAL FIRING SCENARIO DEVELOPMENT, 6DOF SIMULATION, HARDWARE-IN-THE-LOOP (HIL) 6-DOF SIMULATION, PROTOTYPE DEVELOPMENTAL ENGINEERING, SOFTWARE AND HARDWARE ANOMALY RESOLUTION, MISSION-PLANNING SOFTWARE DEVELOPMENT, GROUND-SUPPORT EQUIPMENT SOFTWARE AND HARDWARE VERIFICATION.

Antiradiation Missile Integration Complex

Summary of Technical Capabilities:

VAX MINICOMPUTER, COMMAND LAUNCH COMPUTER CLC) DATA RECORDER, VAX WORKSTATION TERMINAL, F/A-18 DDI SIMULATION (2), AVIONICS CONTROL PANEL, RWR SIMULATOR, 1553 MUXBUS SIMULATOR, MICROPROCESSOR-BASED AIRCRAFT OFP SIMULATION, CLC-MAINTENANCE HARDWARE, REALTIME MISSILE TELEMETRY (TM) DISPLAY, 5 VAX WORKSTATIONS, 12 USER STATIONS, 5 DATA- REDUCTION VAX MINICOMPUTERS, 4 ANALOG TAPE RECORDERS, 10 HIGH-CAPACITY DIGITAL TAPE DRIVES, 30KW HR UPS, 4 SERIAL-DATA DECOMMUTATION WORKSTATIONS, 5 SIMULATION VAXES, 1 COMMUNICATION VAX, 5 MISSION-PLANNING SUN WORKSTATIONS, DCT2 MISSION-PLANNING WORKSTATION, 1 POST-FLIGHT ANALYSIS VAX, 2 VIDEO WORKSTATIONS, 3 DSM160 MISSILE TEST SET, 3 AVIONICS SYSTEM TEST SETS, 2 400HZ POWER SUPPLIES, 6-CERTIFIED OVERHEAD CRANES, ALL UP-ROUND STATIC MEASUREMENT (WEIGHT and CENTER OF GRAVITY) CAPABILITY, WIDE ASSORTMENT OF LAB ELECTRONIC TEST EQUIPMENT AND KEY LOADER VERIFIER FOR ENCRYPTION OF MISSILE TM.

Keywords:

ARM, HARM, 6-DOF, CLC, Threat, Generation, RF, HIL, Simulation, TAMPS, Mission Planning, COMSEC, Tempest, Encryption, Classified, Software Development, Flight

0535

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Antiradiation Missile Integration Complex
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | 4000 | 4000 | 4000 | 4000 | 18000 | 18750 | 20500 | 17000 |
| | TEST HOURS | 2000 | 2000 | 2000 | 2000 | 2000 | 2500 | 3000 | 3000 |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | 55500 | 85000 | 110000 | 142000 | 132200 | 107400 | 88100 | 46300 |
| | TEST HOURS | 2775 | 4250 | 5500 | 7100 | 6600 | 5370 | 4405 | 2315 |
| | MISSIONS | 42 | 53 | 55 | 290 | 373 | 528 | 418 | 217 |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0536

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Antiradiation Missile Integration Complex

ANNUAL HOURS OF DOWNTIME (1) 2758

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 7.5

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 16.4

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR |
|---|---|---|---|
| (4) | (5) | (6) | (7) |
| Misc Lab | 4 | 1 | 4 |
| F18A Flt | 1 | 3 | 3 |
| F18C Flt | 1 | 3 | 3 |
| Data Red | 1 | 1 | 1 |
| Mod Verif | 2 | 1 | 2 |
| 6DOF | 5 | .01 | .05 |
| DSM160 | 3 | 1 | 3 |
| F18 WSSA | 1 | 2 | 2 |
| A6 WSSA | 1 | 2 | 2 |
| A6 Flight | 1 | 4 | 4 |
| | | TOTAL | 24.05 |

UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL) (8) 394.42

ANNUAL UNCONSTRAINED CAPACITY (9) 143963.3

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:

0537

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Antiradiation Missile Integration Complex

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 21 | 13 | 11 | 10 | 10 | 10 | 10 |
| Contractor | 24 | 6.5 | 5.5 | 4 | 4 | 4 | 4 |
| Total | 45 | 19.5 | 16.5 | 14 | 14 | 14 | 14 |

Total Square Footage 14300

Test Area Square Footage 7800

Office Space Square Footage 6500

Tonnage of Equipment: 45

Volume of Equipment: 16800

Annual Maintenance Cost: $190K

Estimated Moving Cost: $2M

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | 60K | 70K | 30K | | | |
| $1.08M | 400K | 100K | 100K | 100K | 100K | 100K |
| | | | | | | |



0538

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Antiradiation Missile Integration Complex

AGE: 17YR REPLACEMENT VALUE: $10.6M=B & E Bldg =$621K

MAINTENANCE AND REPAIR BACKLOG: $0

DATE OF LAST UPGRADE: 6/1/88

NATURE OF LAST UPGRADE: ADDITION OF DATA REDUCTION STRUCTURE

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: NONE

   TOTAL PROGRAMMED AMOUNT:

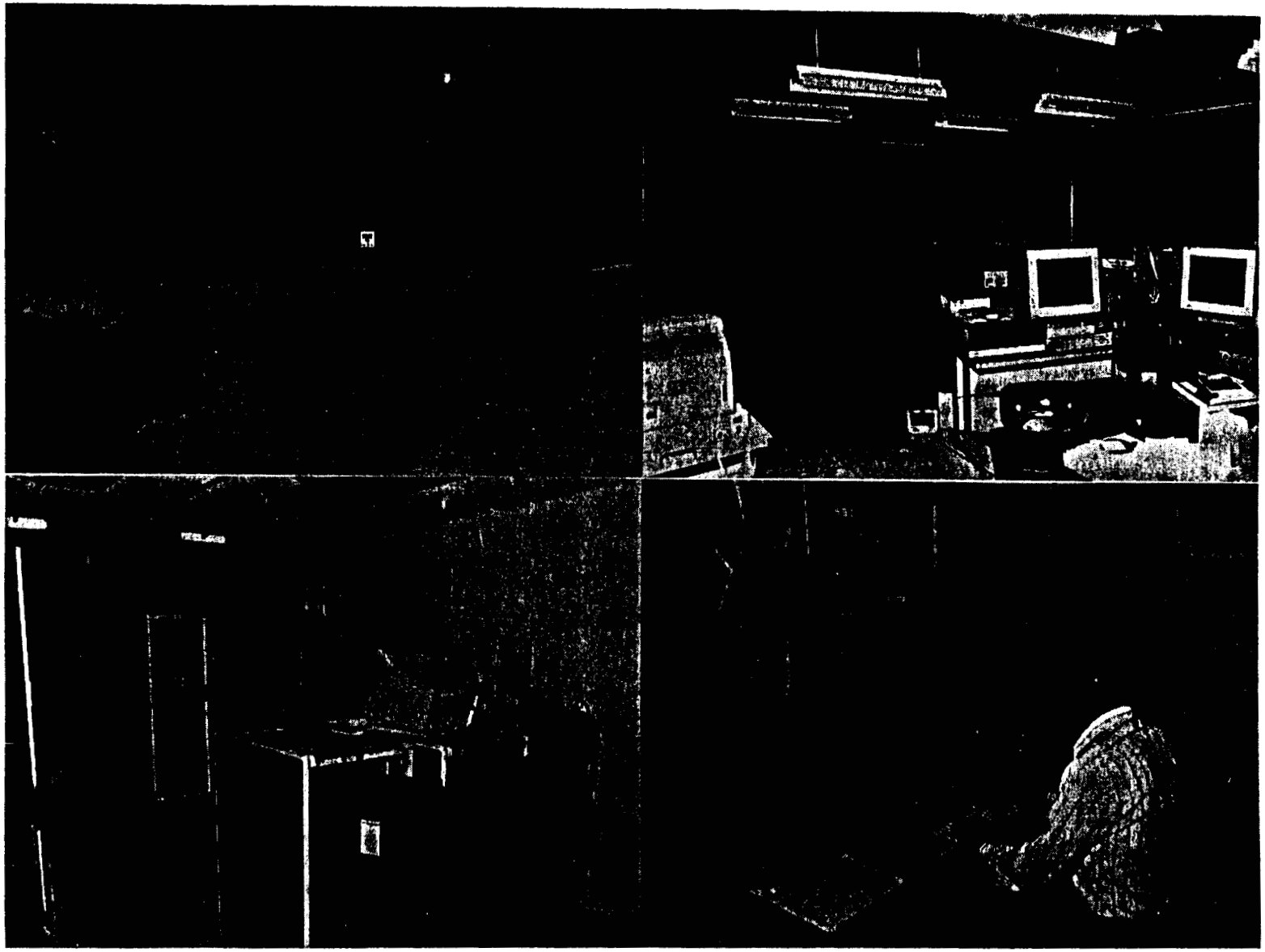
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

0539



Antiradiation Missile Integration Complex



0540

Document Separator

# Tab 38. Armament/Weapons Design, Prototyping, & Integration Facility

# GENERAL INFORMATION

Facility/Capability Title: Armament/Weapons Design, Prototyping, & Integration Facility

Origin Date: 04/23/94

Service: N Organization/Activity: NAWCAD Location: CHINA LAKE

T&E Functional Area: Armament / Weapons UIC = 60530

T&E Test Facility Category Integration Laboratories (IL)

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 8 | 20 | 72 | 0 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 2 | 5 | 16 | 0 | 0 | 0 |
| Armament/Weapons | 5 | 13 | 48 | 0 | 0 | 0 |
| EC | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 1 | 2 | 8 | 0 | 0 | 0 |

Total in breakout must equal "Percentage Use" on first line.

0542 A

# GENERAL INFORMATION

Facility/Capability Title: Armament/Weapons Design, Prototyping, & Integration Facility

Origin Date: 04/23/94

Service: N Organization/Activity: NAWCAD Location: CHINA LAKE

T&E Functional Area: Armament / Weapons UIC = 60530

T&E Test Facility Category Integration Laboratories (IL)

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 8 | 19 | 70 | 2 | 1 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 2 | 7 | 12 | 0 | 0 | 0 |
| Armament/Weapons | 5 | 10 | 55 | 2 | 1 | 0 |
| EC | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 1 | 2 | 3 | 0 | 0 | 0 |

Total in breakout must equal "Percentage Use" on first line.



0542

# TECHNICAL INFORMATION

Facility/Capability Title: Armament/Weapons Design, Prototyping, & Integration Facility

Facility Description, Including Mission Statement:

The facility consists of 6 major areas for the purpose of providing electronic/mechanical design, fabrication, test, and evaluation of prototype proof-of-concept hardware. The facility also provides a multidisciplined modeling (CAD/CAE), simulation, analysis, and engineering capability to conduct concept development and demonstration of advanced seekers/fuzes (RF, IR, EO, laser), signal processors, advanced trackers, and stabilized platforms /control systems for armament/weapons. The facility also provides for all-up weapon system integration and demonstration through laboratory and flight testing. Other capabilities include providing consulting services on materials, components, and design/fabrication processes.

The specific facility capabilities include a CAE/CAD facility, electronic/mechanical assembly areas, electronic test areas, environmental labs, plastics/materials lab, mechanical fabrication facilities, anechoic chamber, carpentry shop, bonded storage areas, and classified vaults.

Interconnectivity/Multi-Use of T&E Facility:

Facility connected to Ethernet / Internet . All other T&E and non-T&E facilities can gain access to various resources via the internet using standard TCP/IP protocols.

Type of Test Supported:

EO, IR and RF seeker system integration tests; RF fuzing, RF antenna tests; aircraft integration/flight test; armament/weapon subsystem proof-of-concept testing; environmental component testing; simulation and modeling.

Summary of Technical Capabilities:

Technical capabilities include the electronic/mechanical design, fabrication, integration, test, and evaluation of prototype proof-of-concept hardware. Capabilities also include a multidisciplined modeling (CAD/CAE), simulation, and analysis capability to conduct concept verification. Other capabilities include providing consulting services on materials, components, and design/fabrication processes. Equipment to support these efforts include oscilloscopes, spectrum analyzers, logic analyzers, programmable logic array, RF receivers, misc. test equipment, elec. assembly equipment, RF anechoic chamber, environmental chambers, and computers/peripherals.

Armament/Weapons Design, Prototyping, & Integration Facility

Keywords:

Electronic/Mechanical Design; Electronic/Mechanical Assembly; Modeling and Simulation; Computer-Aided Engineering/Computer-Aided Design (CAE/CAD); Weapon Integration; Electro-Optical (EO), Infrared (IR), Radar Frequency (RF) Seekers; RF Fuzing.

0544

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Armament/Weapons Design, Prototyping, & Integration Facility
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 24125 | 30365 | 36525 | 40685 | 37685 | 33525 | 30785 | 24042 |
| | TEST HOURS | 303 | 371 | 436 | 451 | 449 | 423 | 372 | 332 |
| | MISSIONS | 0 | 0 | 0 | 3 | 5 | 5 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 97475 | 99555 | 102785 | 109965 | 101785 | 97805 | 106645 | 95945 |
| | TEST HOURS | 1264 | 1216 | 1226 | 1218 | 1213 | 1234 | 1289 | 1327 |
| | MISSIONS | 50 | 60 | 75 | 125 | 200 | 175 | 100 | 25 |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 13350 | 13350 | 7350 | 7350 | 7350 | 7350 | 7350 | 6563 |
| | TEST HOURS | 183 | 163 | 88 | 81 | 88 | 93 | 89 | 91 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



0545 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Armament/Weapons Design, Prototyping, & Integration Facility
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| AIR VEHICLES | DIRECT LABOR | 24125 | 30365 | 36525 | 40685 | 41185 | 37025 | 30785 | 24042 |
| | TEST HOURS | 0 | 0 | 50 | 60 | 300 | 350 | 250 | 0 |
| | MISSIONS | 0 | 0 | 0 | 3 | 5 | 5 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 114975 | 117055 | 120285 | 127465 | 119285 | 115305 | 110145 | 99445 |
| | TEST HOURS | 3100 | 3150 | 675 | 750 | 2500 | 2400 | 2200 | 1050 |
| | MISSIONS | 50 | 60 | 75 | 125 | 200 | 175 | 100 | 25 |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 13350 | 13350 | 7350 | 7350 | 7350 | 7350 | 7350 | 6563 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0545

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Armament/Weapons Design, Prototyping, & Integration Facility

ANNUAL HOURS OF DOWNTIME (1) 490

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 1.34

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 22.66

| 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) 4,713 |
| SYS INT | 16 | 8 | 128 | |
| DEVEL | 10 | 8 | 80 | ANNUAL UNCONSTRAINED CAPACITY (9) 1,720,347 |

"TYPICAL"

TOTAL 208

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Armament/Weapons Design, Prototyping, & Integration Facility

**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 | 74 | 58 | 59 | 62 | 73 | 73 | 73 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 74 | 58 | 59 | 62 | 73 | 73 | 73 |

Total Square Footage 37,000

Test Area Square Footage 19,700

Office Space Square Footage 17,300

Tonnage of Equipment: 150

Volume of Equipment: 100,000

Annual Maintenance Cost: $100K

Estimated Moving Cost: $300K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $394K | $22K | $37K | $30K | $162K | $17K | $17K |
| $14K | $19K | $54K | $54K | $54K | $54K | $54K |
| | | | | | | |



2450

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Armament/Weapons Design, Prototyping, & Integration Facility

AGE: 25 yrs REPLACEMENT VALUE: $14M

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 10/15/92

NATURE OF LAST UPGRADE: Complete rehabilitation of 25% of existing Armament/Weapons Design, Prototyping, and Integration Facility.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT: 0

   SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT: 0

   SUMMARY DESCRIPTION: N/A

A 9450

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Armament/Weapons Design, Prototyping, & Integration Facility

AGE: 25 yrs REPLACEMENT VALUE: 20,000K total/6,000K bldg

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 10/15/92

NATURE OF LAST UPGRADE: Complete rehabilitation of 25% of existing Armament/Weapons Design, Prototyping, and Integration Facility.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT: 0

   SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT: 0

   SUMMARY DESCRIPTION: N/A

3450

Armament/Weapons Design, Prototyping, & Integration Facility



0449

# Document Separator

# Tab 39. Composites Development Laboratory

0550

# GENERAL INFORMATION

Facility/Capability Title: Composites Development Laboratory

Origin Date: 4/25/94

Service: N Organization/Activity: NAWCWPNS, CL Location: C28904

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 10 | 65 | 15 | 10 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 0 | 5 | 0 | 2 | 0 | 0 |
| Armament/Weapons | 10 | 60 | 15 | 8 | 0 | 0 |
| EC | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

Total in breakout must equal "Percentage Use" on first line.

1550

# TECHNICAL INFORMATION

Facility/Capability Title: Composites Development Laboratory

**Facility Description, Including Mission Statement:**

The primary purpose of this S&T laboratory is to Provide advanced composite development from design/analysis methodology, materials development and characterization, and fabrication methods through testing for tactical missile airframes and propulsion systems. This laboratory function is located at 3 primary sites. Plastic and composite parts are developed from bulkheads to complete airframes and nozzles, liners/insulators to rocket motor cases. The laboratory includes unique design, fabrication, and test equipment that are integrated together. The lab provides quick turn-around, and special one-of-a-kind solutions to science and technology projects. Layup tables, presses up to 720 tons, autoclaves, and curing ovens afford a self-contained capability to meet all manner of non-metallic parts fabrication requirements. the Composite winding equipment can fabricate solid rocket motor cases and complete airframes for any size tactical missile. Design and analysis tools are integrated into the fabrication and test facility to form a full spectrum composite development lab.

**Interconnectivity/Multi-Use of T&E Facility:**

Facility is in close proximity to other functional, quality, and radiographic test areas to provide for efficient operations. Easy access is also available to all range operations and test facilities.

**Type of Test Supported:**

Molding, constructing, designing, forming of composite and plastic parts supporting range tests on ordnance items. Design material property(coupon) testing, and structural and dynamic testing are supported.

**Summary of Technical Capabilities:**

Development of fabrication processes and design methods for advanced composite materials for tactical missile applications; design and fabrication of unique developmental and test items in support of R&D projects. Composite winder, autoclaves, various size presses, various capability ovens, large walk-in freezers, complete machine shop.

**Keywords:**

Advanced Materials, Composites, Plastics, Design/Fabrication

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Composites Development Laboratory

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | 969 | 969 | 969 | 1090 | 1090 |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | 13848 | 13848 | 13848 | 15580 | 15580 |
| | TEST HOURS | | | | 300 | 300 | 350 | 400 | 500 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0553 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Composites Development 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 | | | | 5160 | 3440 | 3440 | 4300 | 4330 |
| | TEST HOURS | | | | 300 | 300 | 350 | 400 | 500 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0553

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Composites Development Laboratory

ANNUAL HOURS OF DOWNTIME (1) 145

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 0.4

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.6

| 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) 118 |
| | 2 | 1 | 2 | |
| Structural | 3 | 1 | 3 | ANNUAL UNCONSTRAINED CAPACITY (9) 43070 |

"TYPICAL"

TOTAL 5

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:

0554

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Composites Development 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 | 9 | 8 | 8 | 10 | 10 | 10 | 10 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 9 | 8 | 8 | 10 | 10 | 10 | 10 |

Total Square Footage 11868

Test Area Square Footage 5628

Office Space Square Footage 1440

Tonnage of Equipment: 68.25

Volume of Equipment: 164,890

Annual Maintenance Cost: $40285

Estimated Moving Cost: $590,000.00

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 50 | 20 | 30 | 350 | 50 | 150 | 100 |
| 100 | 10 | 0 | 0 | 100 | 0 | 50 |
| | | | | | | |



0555

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Composites Development Laboratory

AGE: 50 yrs/sf

REPLACEMENT VALUE: $6,000K; $2,500K facilities; $3,500K equipment

MAINTENANCE AND REPAIR BACKLOG: Total backlog is $122K

DATE OF LAST UPGRADE: 1-1-44

NATURE OF LAST UPGRADE: No major upgrades for this capability following initial construction of Bldg 10690 (12,867 sq ft) Propulsions Systems Lab) in 1944.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Fire Alarms, Bldg 10690

   TOTAL PROGRAMMED AMOUNT: $18K

   SUMMARY DESCRIPTION: Install radio frequency fire alarm transmission modules and connect to Bldg transmitter.

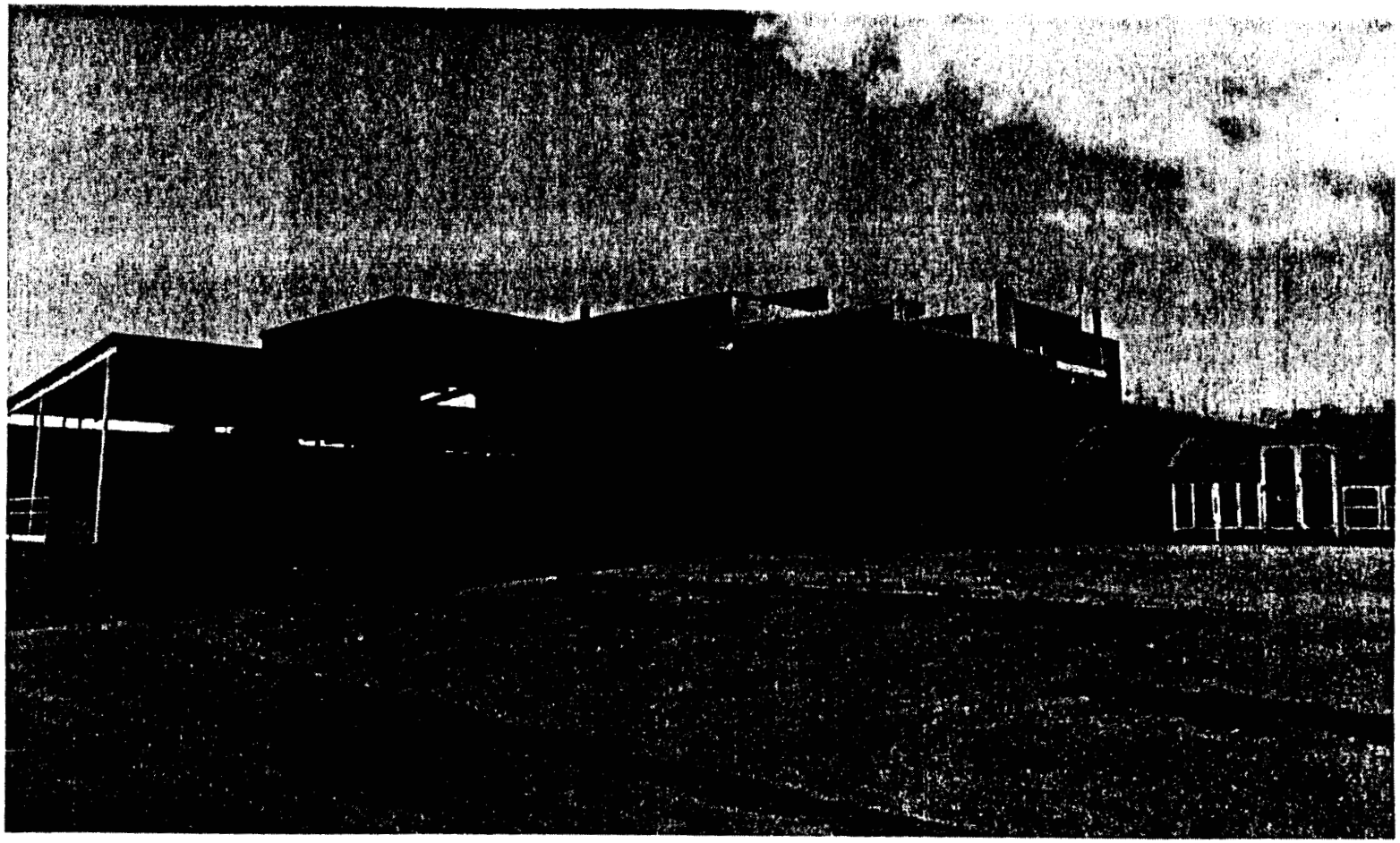
2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



0550



Composites Development Laboratory



0557

# Document Separator

# Tab 40. Data Link Development Laboratory

# GENERAL INFORMATION

Facility/Capability Title: Data Link Development Laboratory

Origin Date: 04/20/94

Service: Navy Organization/Activity: NAWCWPNS CL Location: C2874

T&E Functional Area: Armament / Weapons UIC = 60530

T&E Test Facility Category Integration Laboratories (IL)

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 20% | | 80% | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 8% | | 32% | | | |
| Armament/Weapons | 12% | | 48% | | | |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.

0559

# TECHNICAL INFORMATION

Facility/Capability Title: Data Link Development Laboratory

**Facility Description, Including Mission Statement:**

Mission is to design, develop, test and evaluate two-way RF weapon data links for Man-In-The-Loop (MITL) control of air-to-ground weapons, Battle Damage Assessment (BDA), and Bomb Impact Assessment Systems (BIAS). Laboratory for the design, development, and testing of two-way RF weapon data links.

The facility consists of an R&D lab, prototype fabrication facility, flight test support equipment with communications gear and antennas, and office spaces.

**Interconnectivity/Multi-Use of T&E Facility:**

All Navy air-to-ground missile programs using data links utilize this facility.

**Type of Test Supported:**

Development tests (lab, ground and airborne), independent alternative system performance and capability testing.

**Summary of Technical Capabilities:**

RF and signal processing hardware design, development, lab testing and flight testing. Independent test and analysis of weapon data link hardware performance and capabilities. Development of specialized test, interface and integration equipment for weapon data link applications. Analysis of data link requirements for emerging weapon programs. Evaluation of data link systems for applicability to air-to-ground weapons, BDA/BIAS systems.

**Keywords:**

Data Links, Weapon Data Links, RF Data Links, Man-in-the-Loop (MITL)

0560

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Data Link Development Laboratory
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 6650 | 8050 | 8400 | 7700 | 9800 | 11200 | 10850 | 9800 |
| | TEST HOURS | 135 | 155 | 225 | 250 | 320 | 380 | 225 | 175 |
| | MISSIONS | 6 | 7 | 10 | 11 | 14 | 17 | 10 | 8 |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | 9975 | 12075 | 12600 | 11550 | 14700 | 16800 | 16275 | 14700 |
| | TEST HOURS | 225 | 245 | 315 | 390 | 500 | 570 | 355 | 240 |
| | MISSIONS | 10 | 11 | 14 | 17 | 22 | 25 | 16 | 11 |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

8/40

71 48

0521

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Data Link Development Laboratory

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) |
|---|---|---|---|---|
| (4) | (5) | (6) | (7) | (8) 264 |
| Dev. Eng. | 2 | 4 | 8 | |
| T&E | 1 | 3 | 3 | ANNUAL UNCONSTRAINED CAPACITY (9) 96,360 |

"TYPICAL"

TOTAL 11

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:



0552

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Data Link Development Laboratory

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 14 | 12 | 12 | 12 | 12 | 12 | 12 |
| Contractor | | | | | | | |
| Total | 14 | 12 | 12 | 12 | 12 | 12 | 12 |

Total Square Footage 2640

Test Area Square Footage 1752

Office Space Square Footage 888

Tonnage of Equipment: 14.25 Tons

Volume of Equipment: 10,500 cu ft

Annual Maintenance Cost: $6K

Estimated Moving Cost: $20K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $0 | $0 | | | | | |
| $15K | $5K | | | | | |
| | | | | | | |

0563

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Data Link Development Laboratory

AGE: 8 years REPLACEMENT VALUE: $3,379K Total, Bldg. = $439K

MAINTENANCE AND REPAIR BACKLOG: Work bench replacement ($10K)

DATE OF LAST UPGRADE: 05/11/93

NATURE OF LAST UPGRADE: Electrical circuit breaker (safety issue).

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

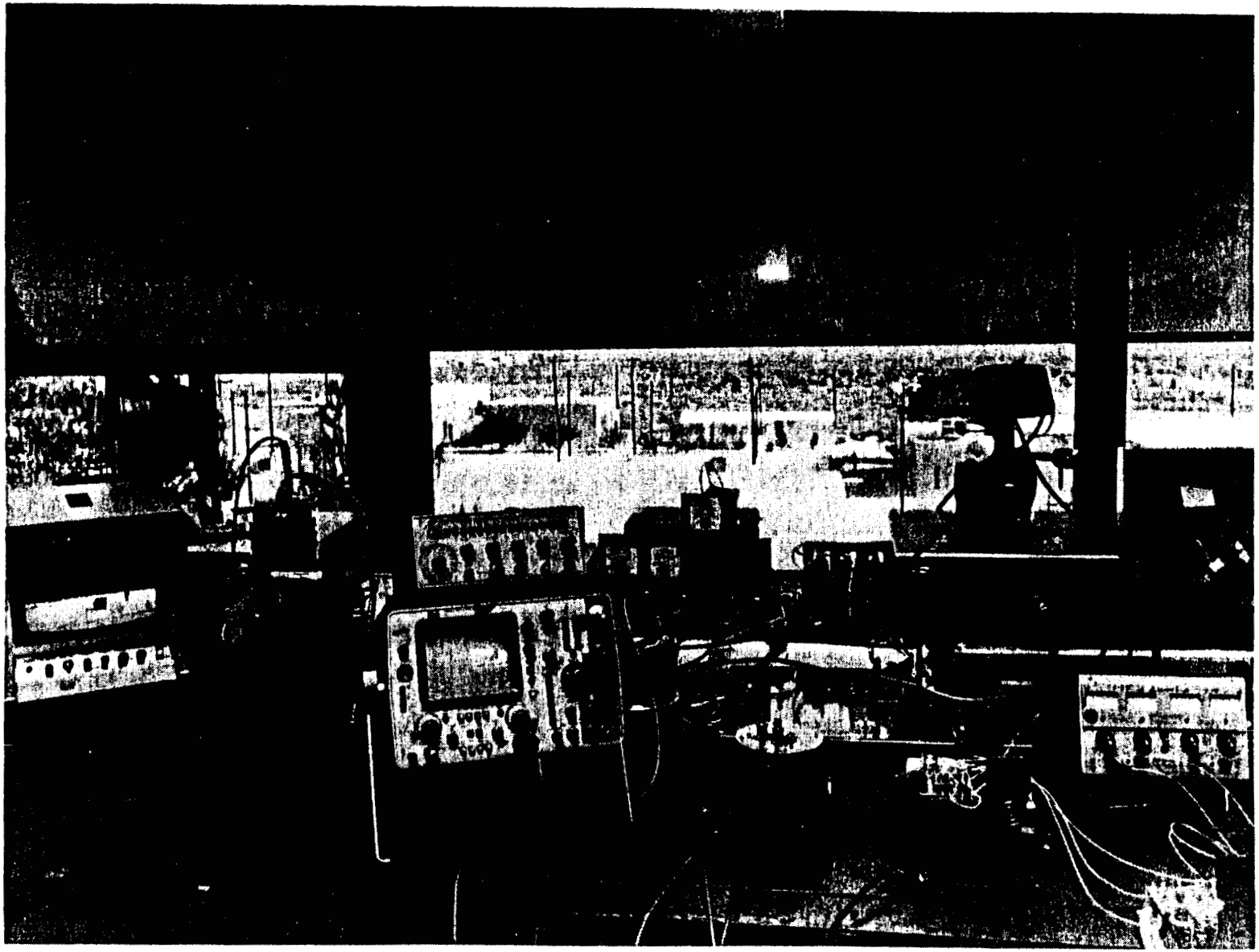
2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



0564



Data Link Development Laboratory



5050

Document Separator

# Tab 41. Electronic Warfare Integration Laboratory

# GENERAL INFORMATION

Facility/Capability Title: Electronic Warfare Integration Laboratory

Origin Date: 4/21/94

Service: N

Organization/Activity: NAWCWPNS Location: China Lake, CA

T&E Functional Area: Air Vehicles

UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 10 | 0 | 90 | 0 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 9 | 0 | 81 | 0 | 0 | 0 |
| Armament/Weapons | 1 | 0 | 9 | 0 | 0 | 0 |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.

0567 A

# GENERAL INFORMATION

Facility/Capability Title: Electronic Warfare Integration Laboratory

Origin Date: 4/21/94

Service: N

Organization/Activity: NAWCWPNS Location: China Lake, CA

T&E Functional Area: Air Vehicles

UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 10 | 0 | 90 | 0 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 9 | 0 | 81 | 0 | 0 | 0 |
| Armament/Weapons | 1 | 0 | 9 | 0 | 0 | 0 |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.

0560

# GENERAL INFORMATION

Facility/Capability Title: Electronic Warfare Integration Laboratory

Origin Date: 4/21/94

Service: N

Organization/Activity: NAWCWPNS Location: China Lake, CA

T&E Functional Area: Air Vehicles

UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 10 | 0 | 90 | 0 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 10 | 0 | 90 | 0 | 0 | 0 |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.

# TECHNICAL INFORMATION

Facility/Capability Title: Electronic Warfare Integration Laboratory

**Facility Description, Including Mission Statement:**

The EW Integration Lab with its Multiple Agile Radar Threat Simulator (MARTS) work station is actually several electronic warfare (EW) laboratories integrated together in one building with an equipment replacement value of $2 Million. These laboratories are:

a. Multi-target radio frequency (RF) environment (up to 112 simultaneous emitters, 14 pulse dopplers, 600 MHz to 18 GHz, capable of dynamic control as in a scenario). Emitters are available in an anechoic chamber at RF.

b. EW suite integration laboratory: Powered spread-benches for radar warning receivers (RWRs), e.g. AN/ALR-67 (V)2 (V)3&4, AN/ALR-45F, etc.), self-protect jammers (ALQ-126B, ALQ-165 (ASPJ), ALQ-162, ALQ-164, etc.), anti-radiation missile (ARM) seekers and associated command-launch computer, and emulated aircraft mission computers on MIL-Std 1553 data buses.

c. Anit-radiation seeker development laboratory, utilizing the multi-target RF environment and ARM system development environment.

d. Radar warning receiver development laboratory, utilizing the multi-target RF environment and RWR system development environment.

**Interconnectivity/Multi-Use of T&E Facility:**

Multi-target radio frequency environment
Electronic Warfare suite Integration/Anti-radiation seeker development
Radar warning receiver development laboratory

**Type of Test Supported:**

The EWIL is used to integrate the AN/ALR-67 (V)2 and (V)3 with Navy tactical aircraft avionics, weapons and other EW systems. This has to be done each time the OFP and/or UDF in the RWR changes.

Electronic Warfare Integration Laboratory

Summary of Technical Capabilities:

This lab has the capability of generating multiple threat emitter radio frequency (RF) simulations, introducing these simulated RF emitters into a small anechoic chamber and radiating a HARM seeker section. A HARM CLC emulation and all of the control panels exist in the lab. The lab is designed to integrate the AN/ALR-67 (V)2 and (V)3 OFPs and UDFs with HARM, ALQ-126B, ASPJ, mission computers, IBUs, MLVs, ALE-47s, etc.. It has all of the bus/hookup harnesses, control panels, patch panels, etc to do a complete RWR/avionics/weapons integration.

Keywords:

EW Integration, Radar Warning Receivers



0569

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Warfare Integration Laboratory
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | 8925 | 8925 | 8925 |
| | TEST HOURS | | | | | | 1872 | 1872 | 1872 |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | 992 | 992 | 992 |
| | TEST HOURS | | | | | | 208 | 208 | 208 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0570 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Warfare Integration Laboratory
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| AIR VEHICLES | DIRECT LABOR | | | | | | 8925 | 8925 | 8925 |
| | TEST HOURS | | | | | | 1872 | 1872 | 1872 |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | 992 | 992 | 992 |
| | TEST HOURS | | | | | | 208 | 208 | 208 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Warfare Integration Laboratory
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | 9917 | 9917 | 9917 |
| | TEST HOURS | | | | | | 1560 | 1560 | 1560 |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0570

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Electronic Warfare Integration Laboratory

ANNUAL HOURS OF DOWNTIME (1) 292

AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) (2) .8

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.2

| 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) 185.6 |
| ALR-67 Integ. | 2 | 4 | 8 | |

ANNUAL UNCONSTRAINED CAPACITY (9) 67,744

TOTAL 8

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:

1250

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Electronic Warfare Integration Laboratory

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 1 MY | 1 MY | 1 My | 1 MY | 1 MY | 1 MY | 1 MY |
| Contractor | 2 MY | 2 my | 2 MY | 2 MY | 2MY | 2 MY | 2 MY |
| Total | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

Total Square Footage 2,400

Test Area Square Footage 2,100

Office Space Square Footage 300

Tonnage of Equipment: 5

Volume of Equipment: 2,000

Annual Maintenance Cost: $20,000

Estimated Moving Cost: $2,000

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 200 | 200 | 200 | 100 |
| 120 | 75 | 200 | 75 | 100 | 150 | 150 |
| | | | | | | |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Electronic Warfare Integration Lab (EWIL) (Bldg 31462)

AGE: 4 Years REPLACEMENT VALUE: $3195 K TOTAL, $3000 K EQUIPMENT

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Dropped ceiling for noise abatement

   TOTAL PROGRAMMED AMOUNT: $30K

   SUMMARY DESCRIPTION: Drop ceiling with acoustic tile to cut noise level in the main lab.

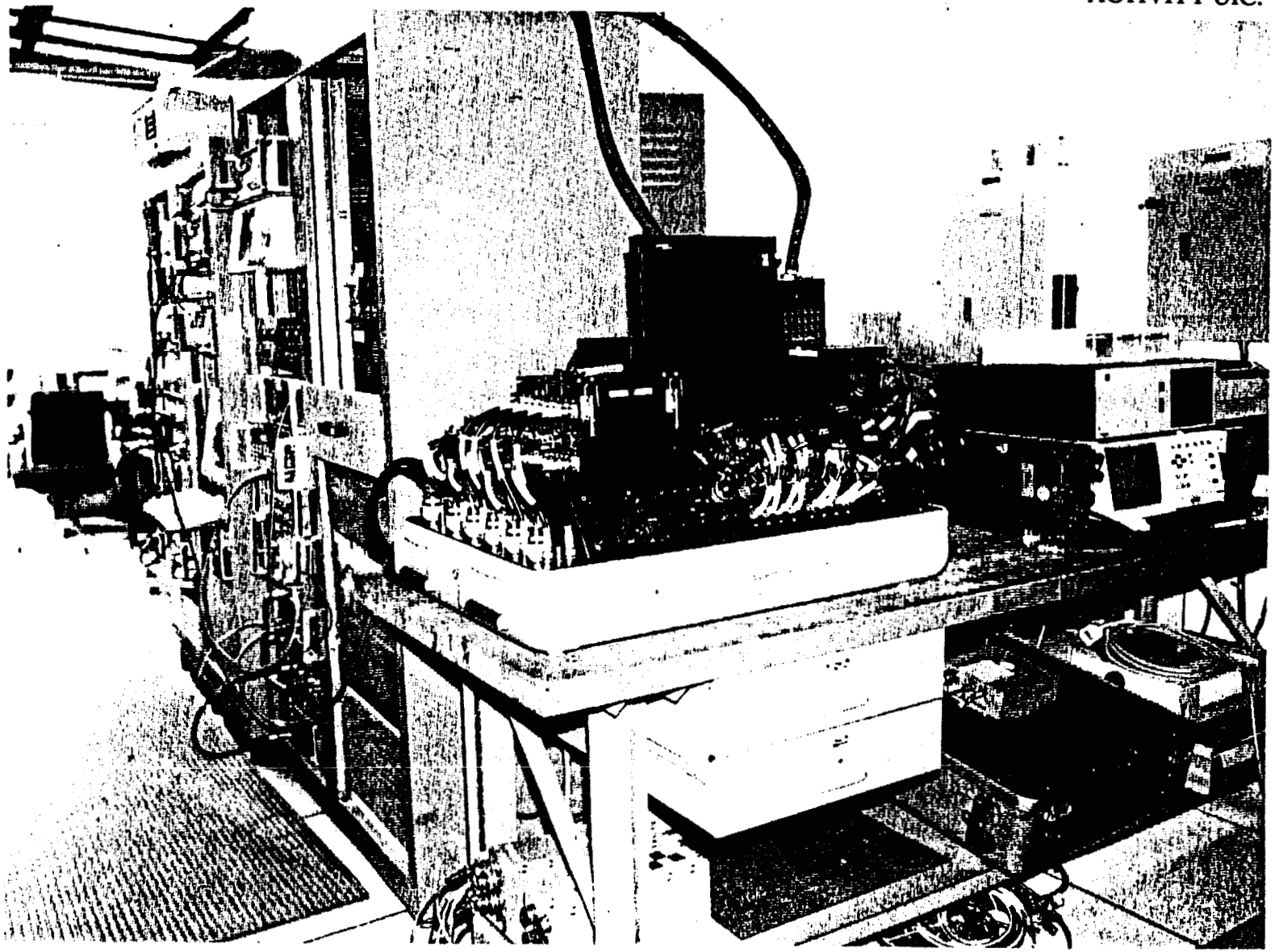
2. UPGRADE TITLE: Realign power

   TOTAL PROGRAMMED AMOUNT: $11K

   SUMMARY DESCRIPTION: Power circuits and plugs to be relocated to balance the power according to the equipment location



0573



Electronic Warfare Integration Laboratory

# Document Separator

# Tab 42. Fuze Development Laboratory



0525

# GENERAL INFORMATION

Facility/Capability Title: Fuze Development Laboratory

Origin Date: 4/25/94

Service: N  Organization/Activity: NAWCWPNS Location: Code C27

T&E Functional Area: Armament/Weapons  UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 8 | 50 | 42 | 0 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 8 | 50 | 42 | 0 | 0 | 0 |
| EC | | | | | | |
| Other | | | | | | |

8/100 = 8%

Total in breakout must equal "Percentage Use" on first line.

0576

# TECHNICAL INFORMATION

Facility/Capability Title: Fuze Development Laboratory

Facility Description, Including Mission Statement:

The C274 Fuze Development Laboratories is made up of six buildings, three specialty test docks, two storage areas, five explosive magazines and four magazettes, all with limited access. All together the facilities provide approximately 11,500 sq ft of office space and 13,800 sq ft of laboratory and explosive operations space. The facilities primary mission is Science and Technology (S andT) and Development Engineering (DE) on safety and arming devices, contact fuzes and explosive components used in missiles and free-fall weapons. The Fuze Development Lab's primary capabilities include the design, test, and evaluation of inert and explosively loaded Arming and Firing Devices, Safety and Arming Devices, and Fuzes. Evaluations are performed on the devices in exploratory development, demonstration and validation, engineering, or production support phases. The Facility, with the associated equipment, has the capability of subjecting test items to a range of electrical environmental stimuli including acceleration, shock, vibration, temperature and humidity. The facilities and equipment provide for design, design modeling, computer analysis, data analysis, environmental testing, explosive output and performance testing.

Interconnectivity/Multi-Use of T&E Facility:

The C274 Fuze Development laboratories can provide connections for a full range of Safety and Arming Device, Contact Fuzing Devices and Explosive Components, from Science and Technology through Integration and In-Service testing. The facilities are co-located with over 80 ordnance engineers and technicians. The facilities are connected to the NAWC network via a T1 link, this permits communication with the remainder of NAWCWPNS, and any site in the world with internet access capability.

Type of Test Supported:

Primarily used for Development, facilities in place to perform a full spectrum of fuzing and explosive component related environmental, performance and integration testing. Facilities routinely operate with classified material up to secret.



2250

Fuze Development Laboratory

| Summary of Technical Capabilities: |
| --- |
| Instrumentation and assets include the following: two explosive firing chambers and related equipment, two laser firing chambers (one explosive) and related equipment, two temperature and humidity chambers, a Monterey shock machine, two centrifuges, temperature conditioned sine and random vibration tables and related equipment, jolt, jumble and 40-ft drop equipment, 6-in. air gun facility, five explosive magazines and four magazettes, fuze electronics/exploding foil initiator/hot bridgewire detonator/exploding bridgewire/explosive component manufacturing and test facilities. Remote (explosive proof) machining capabilities, explosive packing/shipping/handling facility. |
| Keywords: |
| Safety and Arming Device, Contact Fuze, Explosive Component, Environmental, Explosive, Testing, Laser |



8250

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Fuze Development Laboratory
300300

| 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 | 146,000 | 147,000 | 143,500 | 161,000 | 148,800 | 141,800 | 120,800 | 115,500 |
| | TEST HOURS | 6720 | 6720 | 6720 | 6720 | 6720 | 6720 | 6300 | 5040 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0579 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Fuze Development Laboratory
300300

| 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 | 146,000 | 147,000 | 143,500 | 161,000 | 148,800 | 141,800 | 120,800 | 115,500 |
| | TEST HOURS | 2100 | 2100 | 2100 | 2300 | 2200 | 2200 | 1800 | 1700 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0579

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Fuze Development Laboratory

ANNUAL HOURS OF DOWNTIME (1) 208

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) .57

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.47

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR |
|---|---|---|---|
| (4) | (5) | (6) | (7) |
| vibration | 2 | 1 | 2 |
| shock | 1 | 1 | 1 |
| centrifuge | 2 | 1.1 | 2.2 |
| temperature | 2 | .1 | .2 |
| laser evaluation | 2 | 1.5 | 3 |
| explosive firing | 3 | 2 | 6 |
| impact | 1 | 1 | 1 |
| Fire set evaluation | 2 | 1 | 2 |
| Elec. Circuit Evaluation | 4 | 1 | 4 |
| Mechanical Evaluation | 2 | 1 | 2 |
| S-A Operability Testing | 2 | 1 | 2 |
| EFI flyer velocity | 1 | 1 | 1 |
| | 24 | TOTAL | 26.4 |

UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL) (8) 619

ANNUAL UNCONSTRAINED CAPACITY (9) 225,771

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:



0580

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Fuze Development Laboratory

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 66 | 52 | 52 | 52 | 52 | 52 | 52 |
| Contractor | | | | | | | |
| Total | 66 | 52 | 52 | 52 | 52 | 52 | 52 |

Total Square Footage 25,300

Test Area Square Footage 13,800

Office Space Square Footage 11500

Tonnage of Equipment: 92.6

Volume of Equipment: 2968

Annual Maintenance Cost: $30000

Estimated Moving Cost: 593600

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 145 | 75 | 0 | 50 | 50 | 50 | 50 |
| | | | | | | |
| | | | | | | |

1850

CHANGES REQUESTED PER NAWC HQ FAX OF 20 MAY 94

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Fuze Development Laboratory

AGE: 48 years REPLACEMENT VALUE: $14,800K = total, $12,700K = buildings

MAINTENANCE AND REPAIR BACKLOG: $42K

DATE OF LAST UPGRADE: 1/26/88

NATURE OF LAST UPGRADE: Installation of vacuum gun, projectile catch room and instrumentation cabling. ($65K total cost.)

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: No major upgrades planned. R

TOTAL PROGRAMMED AMOUNT: N/A

SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE: N/A R

TOTAL PROGRAMMED AMOUNT: N/A

SUMMARY DESCRIPTION: N/A

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Fuze Development Laboratory

AGE: 48 years

REPLACEMENT VALUE: $14,800K = total, $12,700K = buildings

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

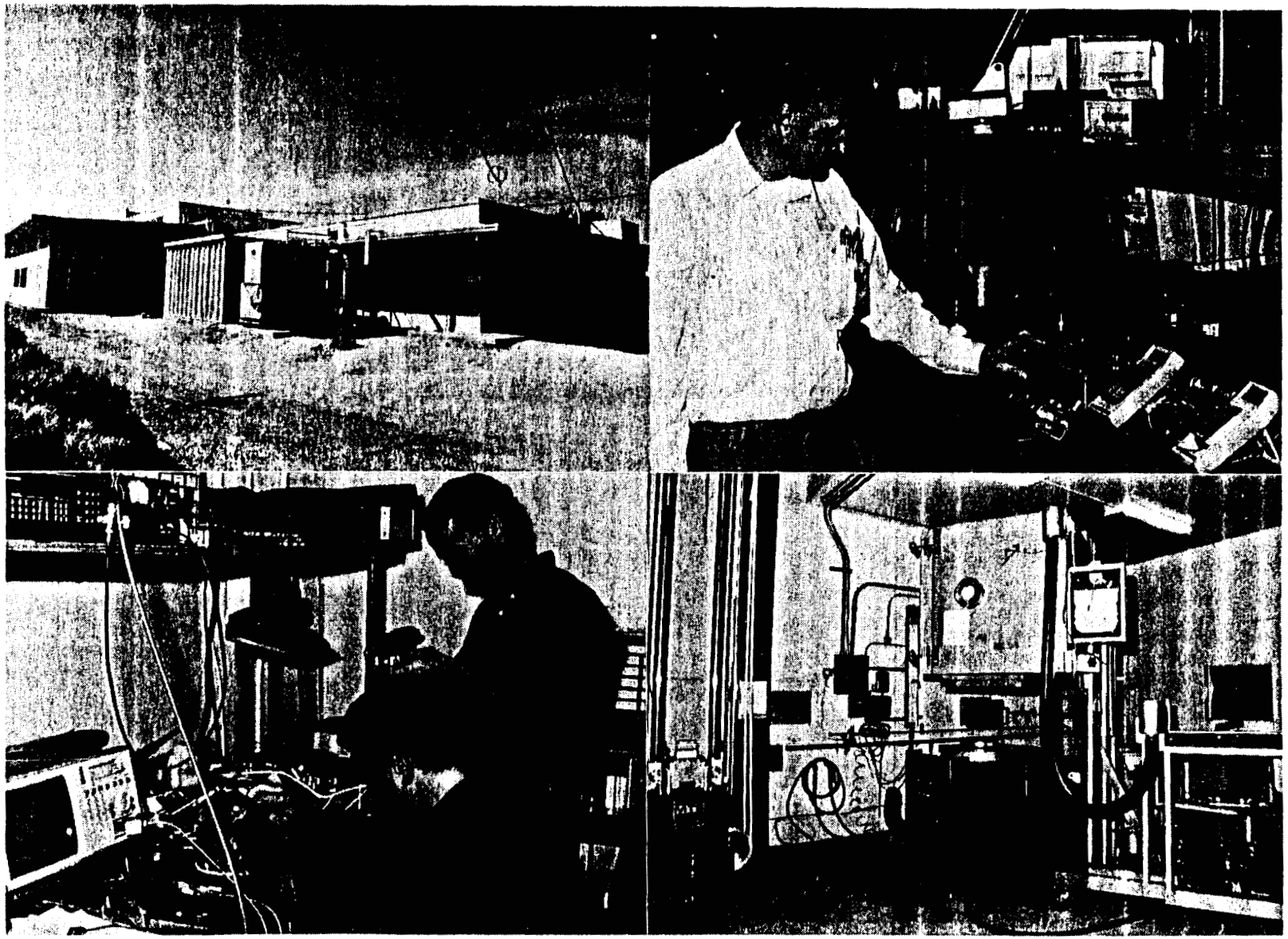
2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



E350



Fuze Development Laboratory



0584

Document Separator

# GENERAL INFORMATION

Facility/Capability Title: Laser Seeker Integration and Test Facility

Origin Date: 4/20/94

Service: Navy Organization/Activity: NAWC WPNS Location: China Lake

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratories

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 100 | | | | | |

BREAKOUT BY T&E FUNCTIONAL AREA (%)

| | |
|---|---|
| Air Vehicles | |
| Armament/Weapons | 100 |
| EC | |
| Other | |

Total in breakout must equal "Percentage Use" on first line.



2850

# TECHNICAL INFORMATION

Facility/Capability Title: Laser Seeker Integration and Test Facility

| |
|---|
| Facility Description, Including Mission Statement:<br><br>This facility occupies 2888 sq ft of laboratory space and consists of 2 pulsed YAG lasers, one helium neon laser (for aligning the system), one rate table, and the laser flight simulator source (LFSS). In addition, the system also includes the optical benches on which the laser and the LFSS mount and the optics and ducting used to route the laser energy to the rate table room.<br><br>The purpose of this facility is to test and evaluate the operation of semiactive laser guided weapons in scenarios which mimic the actual flight of such weapons. This allows for cost effective debugging and optimization of seekers early in their development stage, increasing the likelihood of successful flight tests at later stages. |
| Interconnectivity/Multi-Use of T&E Facility:<br><br>The capability to interconnect with the ethernet for networking on center and around the country is available in each laboratory room. The rate table portion of the facility can also be used by itself to conduct certain types of tests on gimbaled seekers containing other types of sensors (e.g., imaging infrared). |
| Type of Test Supported:<br><br>The primary type of test supported is that of exercising semi-active laser guidance systems in both static and dynamic modes. |
| Summary of Technical Capabilities:<br><br>With this facility, we have the capability to thoroughly bench test a wide variety of laser guided weaponry. This, combined with our portable equipment and test van, allows carry the testing all the way from the bench, through the range, and to the flight tests. |
| Keywords:<br><br>Laser Closing, Ranging, Laser Seeker Testing, Dynamic Test, Static Laser Test |

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Laser Seeker Integration and Test Facility

| 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 | 2625 | 2625 | 2625 | 430 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 2000 | 4000 | 3000 | 500 | 0 | 0 | 0 | 0 |
| | MISSIONS | 20 | 50 | 35 | 10 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

*The LFTS facility has not been used in the past four years because there has been no work requiring its capabilities. It was last used extensively between 1986 and 1989 to assist in the design and testing of the Laser Guided Training Round (LGTR). The two lasers assoociated with this facility have been loaned to other on-center groups during this four year period, but they can be recalled at any time. The facility is completely intact and available but would require realigning of mirrors and lubricating of the electro-mechanical parts of the Laser Flight Simulator Source (LFSS) to become operational. The expertise needed to operate and maintain this facility is still resident at China Lake awaiting the opportunity to go to work.



A 9950

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Laser Secker Integration and Test Facility

| 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 | 2625 | 2625 | 2625 | 430 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 2000 | 4000 | 3000 | 500 | 0 | 0 | 0 | 0 |
| | MISSIONS | 20 | 50 | 35 | 10 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



8350

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Laser Seeker Integration and Test Facility

ANNUAL HOURS OF DOWNTIME (1) 280

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 0.75

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.25

| 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) T&E | (5) 1 | (6) 1 | (7) 1 | (8) 23.25 |
| | | | | ANNUAL UNCONSTRAINED CAPACITY (9) 8486 |

"TYPICAL"

TOTAL 1

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? no

If yes, explain:



0589

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Laser Seeker Integration and Test Facility

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 0 | 0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Contractor | | | | | | | |
| Total | 0 | 0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |

Total Square Footage 3888

Test Area Square Footage 2888

Office Space Square Footage 1000

Tonnage of Equipment: 1

Volume of Equipment: 800

Annual Maintenance Cost: $10K

Estimated Moving Cost: $500K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 0 | 0 | 25K | 30K | 35K | 35K | 40K |
| | | | | | | |
| | | | | | | |



0590

CHANGES REQUESTED PER NAWC HQ FAX OF 20 MAY 94

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Laser Seeker Integration and Test Facility

AGE: 7 REPLACEMENT VALUE: Total 1,900K/Equip 1,500 K

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 7/1/88

NATURE OF LAST UPGRADE: Laser's overhauled, LFSS operation verified, and mirror alignment verified.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: No major upgrades planned.

   TOTAL PROGRAMMED AMOUNT: N/A R

   SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT: N/A R

   SUMMARY DESCRIPTION: N/A



Corrected Page 0591

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Laser Seeker Integration and Test Facility

AGE: 20 REPLACEMENT VALUE: Total 1,900K/Equip 1,500 K

MAINTENANCE AND REPAIR BACKLOG: YAG lasers must be overhauled. Rate table must be inspected and maintenance performed as needed. Mirror alignment must be checked, and the correct operation of the LFSS must be verified.

DATE OF LAST UPGRADE: 7/1/88

NATURE OF LAST UPGRADE: Laser's overhauled, LFSS operation verified and mirror alignment verified.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:

0582

Laser Seeker Integration and Test Facility



0593

# Tab 43. Laser Seeker Integration and Test Facility



0585

# Document Separator

# Tab 44. Missile/Rocket Motor Assembly Facility

0594

# GENERAL INFORMATION

Facility/Capability Title: Missile/Rocket Motor Assembly Facility

Origin Date: 4/25/94

Service: N Organization/Activity: NAWCWPNS, CL Location: Code C27

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 45 | 15 | 40 | 0 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 0 | 0 | 0 | 0 | 0 | 0 |
| Armament/Weapons | 45 | 15 | 40 | 0 | 0 | 0 |
| EC | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

45/100 = 45%

Total in breakout must equal "Percentage Use" on first line.

0595

# TECHNICAL INFORMATION

Facility/Capability Title: Missile/Rocket Motor Assembly Facility

Facility Description, Including Mission Statement:

A GROUP OF BUILDINGS IN THE CLPL AREA OF NAWCWPNS WITH THE CAPACITY TO HANDLE FULL ASSEMBLY AND DISASSEMBLY, INSPECTION, MASS PROPERTIES MEASUREMENT, AND INTEGRATION, CHECKOUT AND FITMENT TESTING OF MISSILES AND THEIR COMPONENTS INCLUDING ROCKET MOTORS, WARHEADS, IGNITERS, AND SAFING/ARMING DEVICES. MISSILES AND COMPONENTS ARE ALSO INSTRUMENTED HERE FOR FLIGHT TESTING, STATIC FIRING, SAFETY, HAZARD, AND ENVIRONMENTAL TESTING. THE FACILITIES ARE UNIQUE IN THAT THEIR PROXIMITY TO THE TEST RANGES, AND THEIR ABILITY TO ACCOMMODATE LIVE ORDNANCE PERMIT PRETEST CHECKOUT AND MODIFICATIONS FOR R&D TESTS TO BE TURNED AROUND IN VERY QUICK, ECONOMICAL MANNER.

Interconnectivity/Multi-Use of T&E Facility:

FACILITY IS CERTIFIED FOR ORDNANCE OPERATIONS AND IS IN CLOSE PROXIMITY TO OTHER FUNCTIONAL, SAFETY, AND RADIOGRAPHIC TEST AREAS TO PROVIDE FOR EFFICIENT OPERATIONS. EASY ACCESS IS ALSO AVAILABLE TO ALL RANGE OPERATIONS. BECAUSE OF SEPARATION OF BUILDINGS, MULTIPLE CONCURRENT OPERATIONS ARE POSSIBLE.

Type of Test Supported:

MASS PROPERTIES TESTING, INTEGRATION TESTING, FITMENT CHECKS, DIMENSIONAL CHECKS, FIRING CIRCUIT CONTINUITY CHECKS, SAFETY INSPECTION, MOTOR AND WARHEAD DISSECTION. BUILD-UP FOR ALL RANGE AND HITL TESTING.

Summary of Technical Capabilities:

MASS PROPERTIES TABLE, CRANES AND LIFTS, SPECIALIZED MISSILE TEST EQUIPMENT, CIRCUIT TESTING EQUIPMENT, MISSILE HANDLING EQUIPMENT, SCALES, BORESCOPE.

Keywords:

Assembly, Inspection, Integration

0594

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Missile/Rocket Motor Assembly Facility
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 13300 | 14000 | 14150 | 14150 | 14150 | 14150 | 13475 | 12250 |
| | TEST HOURS | 3325 | 3500 | 3537 | 3537 | 3537 | 3537 | 3370 | 3062 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



0597

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Missile/Rocket Motor Assembly Facility

ANNUAL HOURS OF DOWNTIME (1) 146

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 0.40

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.6

| 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) 590 |
| MASS PROPERTIES | 2 | 3 | 6 | |
| INTEGRATION | 1 | 3 | 3 | ANNUAL UNCONSTRAINED CAPACITY (9) 215350 |
| FITMENT | 2 | 2 | 4 | |
| CONTINUITY | 2 | 2 | 4 | |
| "TYPICAL" | | | | |
| | | TOTAL | 17 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? Yes

If yes, explain: SAFETY CONSIDERATIONS LIMIT NUMBER OF SIMULTANEOUS OPERATIONS.



0596

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Missile/Rocket Motor Assembly Facility

**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 | 7 | 8 | 9 | 9 | 9 | 7 | 7 |
| Contractor | 0 | 0 | 7 | 7 | 7 | 0 | 0 |
| Total | 7 | 8 | 16 | 16 | 16 | 7 | 7 |

Total Square Footage 8523

Test Area Square Footage 2150

Office Space Square Footage 160

Tonnage of Equipment: 11.15

Volume of Equipment: 6126

Annual Maintenance Cost: 152000

Estimated Moving Cost: 620000

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 20K | 100K | 50K | 20K | 20K | 50K | 20K |
| 200K | 200K | 20K | 20K | 20K | 20K | 20K |
| | | | | | | |



0599

CHANGES REQUESTED PER NAWC HQ FAX OF 20 MAY 94

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Missile/Rocket Motor Assembly Facility

AGE: 49 REPLACEMENT VALUE: $9600K = TOTAL, $5655K = BUILDINGS

MAINTENANCE AND REPAIR BACKLOG: $243K

DATE OF LAST UPGRADE: 1/1/51

NATURE OF LAST UPGRADE: Construction of 6,961 sq. ft. Propulsion Fuel Laboratory

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Relocate Paint Booth

   TOTAL PROGRAMMED AMOUNT: $16K

   SUMMARY DESCRIPTION: Relocate paint booth to bldg. 15950, rm 101.

2. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT: N/A

   SUMMARY DESCRIPTION: N/A

R

Corrected Page

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Missile/Rocket Motor Assembly Facility

AGE: 49 REPLACEMENT VALUE: $5960K = TOTAL, $5655K = BUILDINGS

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:

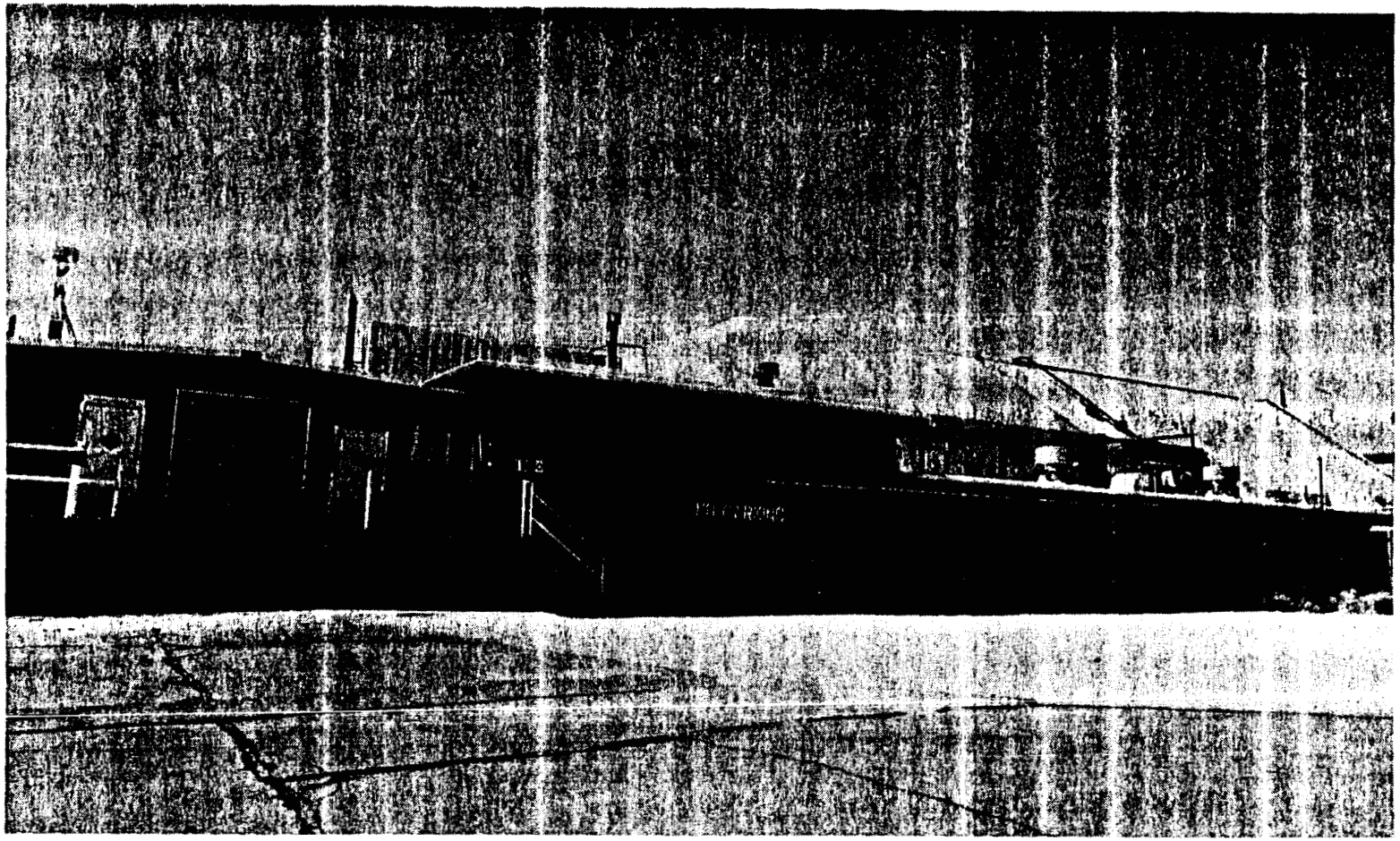
2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:



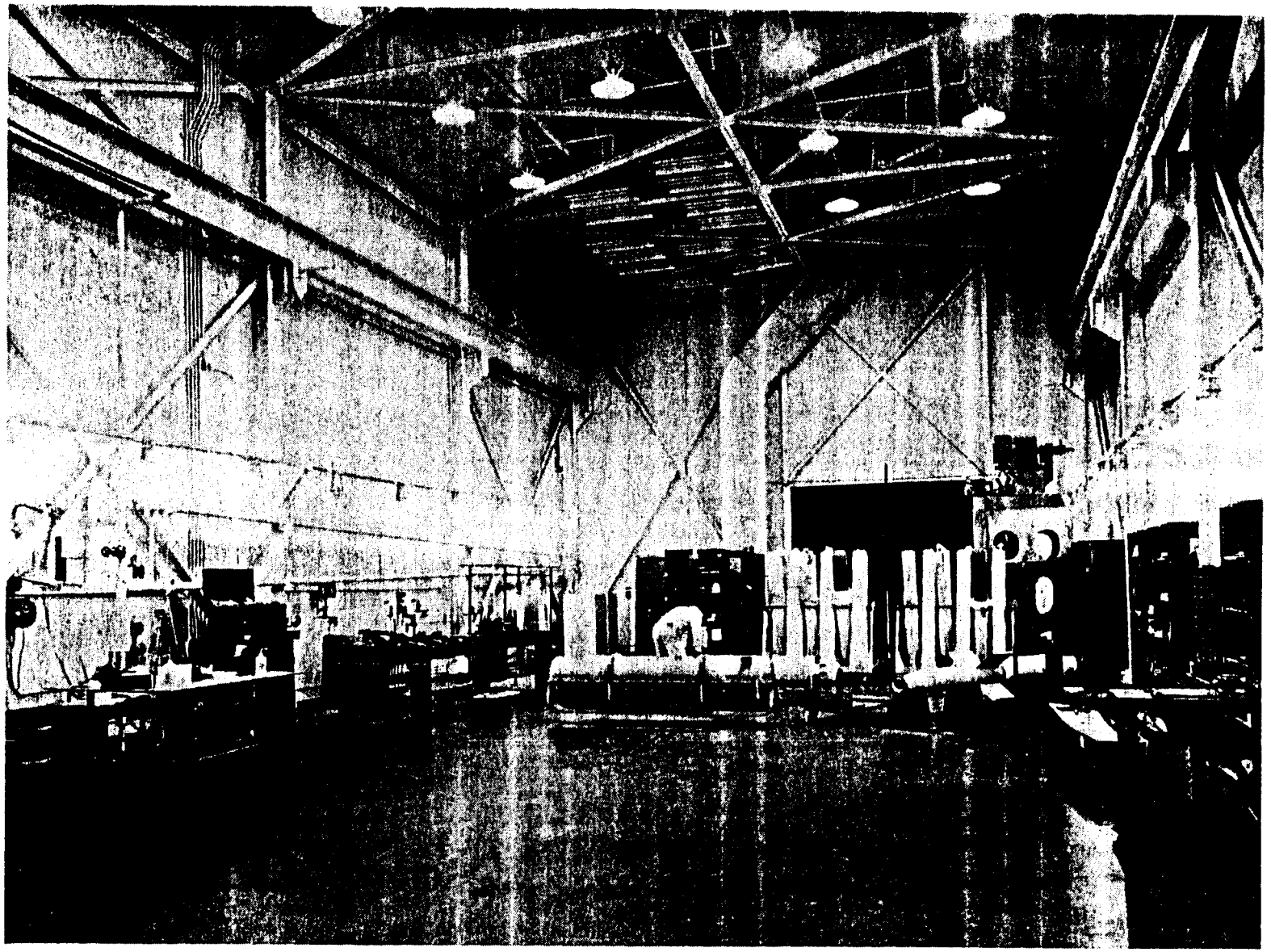
0601



Missile/Rocket Motor Assembly Facility



0602



Missile/Rocket Motor Assembly Facility



0603

# Document Separator

# Tab 45. Ordnance Assembly Facility



0604

# GENERAL INFORMATION

Facility/Capability Title: Ordnance Assembly Facility

Origin Date: 4/22/94

Service: Navy Organization/Activity: NAWCWPNS Location: China Lake

T&E Functional Area: Armament/weapons UIC = N60530

T&E Test Facility Category Integration Laboratories (IL)

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 55 | 25 | 10 | 10 | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 55 | 25 | 10 | 10 | | |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.



5090

# TECHNICAL INFORMATION

Facility/Capability Title: Ordnance Assembly Facility

| |
|---|
| Facility Description, Including Mission Statement:<br><br>This facility supports the flight tests of weapons, guns, and other ordnance items by assembling the item and performing preflight check out. From this facility the item is loaded on the aircraft for flight test. This facility has the capability to conduct weapons continuity and electrical test of weapons. This facility can support pre-flight operational check out of weapons systems. |
| Interconnectivity/Multi-Use of T&E Facility:<br><br>N/A |
| Type of Test Supported:<br><br>Flight tests |
| Summary of Technical Capabilities:<br><br>Electrical test sets for weapon pre-flight checks. Capability to install and check out command destruct system. |
| Keywords:<br><br>Assembly, Ordnance, Pre-Flight Check, Weapons, Aircraft |

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Ordnance Assembly Facility

| 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 | 5534 | 5534 | 5534 | 5534 | 5534 | 5534 | 5534 | 5534 |
| | TEST HOURS | 1300 | 1300 | 1300 | 1300 | 1300 | 1300 | 1300 | 1300 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0607 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Ordnance Assembly Facility

| 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 | 5534 | 5534 | 5534 | 5534 | 5534 | 5534 | 5534 | 5534 |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0607

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Ordnance Assembly Facility

ANNUAL HOURS OF DOWNTIME (1) 316

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) .9

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.1

| 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) 207 |
| Electrical | 1 | 3 | 3 | |
| Continuity | 1 | 3 | 3 | ANNUAL UNCONSTRAINED CAPACITY (9) 75,555 |
| Pre-flight | 1 | 3 | 3 | |
| "TYPICAL" | | | | |
| | | TOTAL | 9 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? Yes

If yes, explain: Safety limitations establish the maximum number of personnel at 10 and the net explosive weight is limited to 20000 lbs .



0608

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Ordnance Assembly Facility

**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 | 5 | 4 | 4 | 4 | 4 | 4 | 4 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 5 | 4 | 4 | 4 | 4 | 4 | 4 |

Total Square Footage 8500

Test Area Square Footage

Office Space Square Footage 1500

Tonnage of Equipment: 2

Volume of Equipment: 1360

Annual Maintenance Cost: $2400

Estimated Moving Cost: $4,000

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | |
| | | | | | | |



0609

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Ordnance Assembly Facility

AGE: 8 REPLACEMENT VALUE: $464,000 Bldg cost 444,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 4/25/94

NATURE OF LAST UPGRADE: New construction of one additional ammunition storage bay

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: No major upgrades planned.

   TOTAL PROGRAMMED AMOUNT: N/A

   SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT: N/A

   SUMMARY DESCRIPTION: N/A



0610 A

T&E

CHANGES REQUESTED PER NAWC HQ FAX OF 20 MAY 94

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Ordnance Assembly Facility

AGE: 8 REPLACEMENT VALUE: $464K Bldg cost $269K

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 4/25/94

NATURE OF LAST UPGRADE: New construction of one additional ammunition storage bay

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: No major upgrades planned. R

TOTAL PROGRAMMED AMOUNT: N/A

SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE: N/A

TOTAL PROGRAMMED AMOUNT: N/A R

SUMMARY DESCRIPTION: N/A

Corrected Page 0210

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Ordnance Assembly Facility

AGE: 8 REPLACEMENT VALUE: $464,000 Bldg cost 444,00

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: 4/25/94

NATURE OF LAST UPGRADE: New construction of one additional ammunition storage bay

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

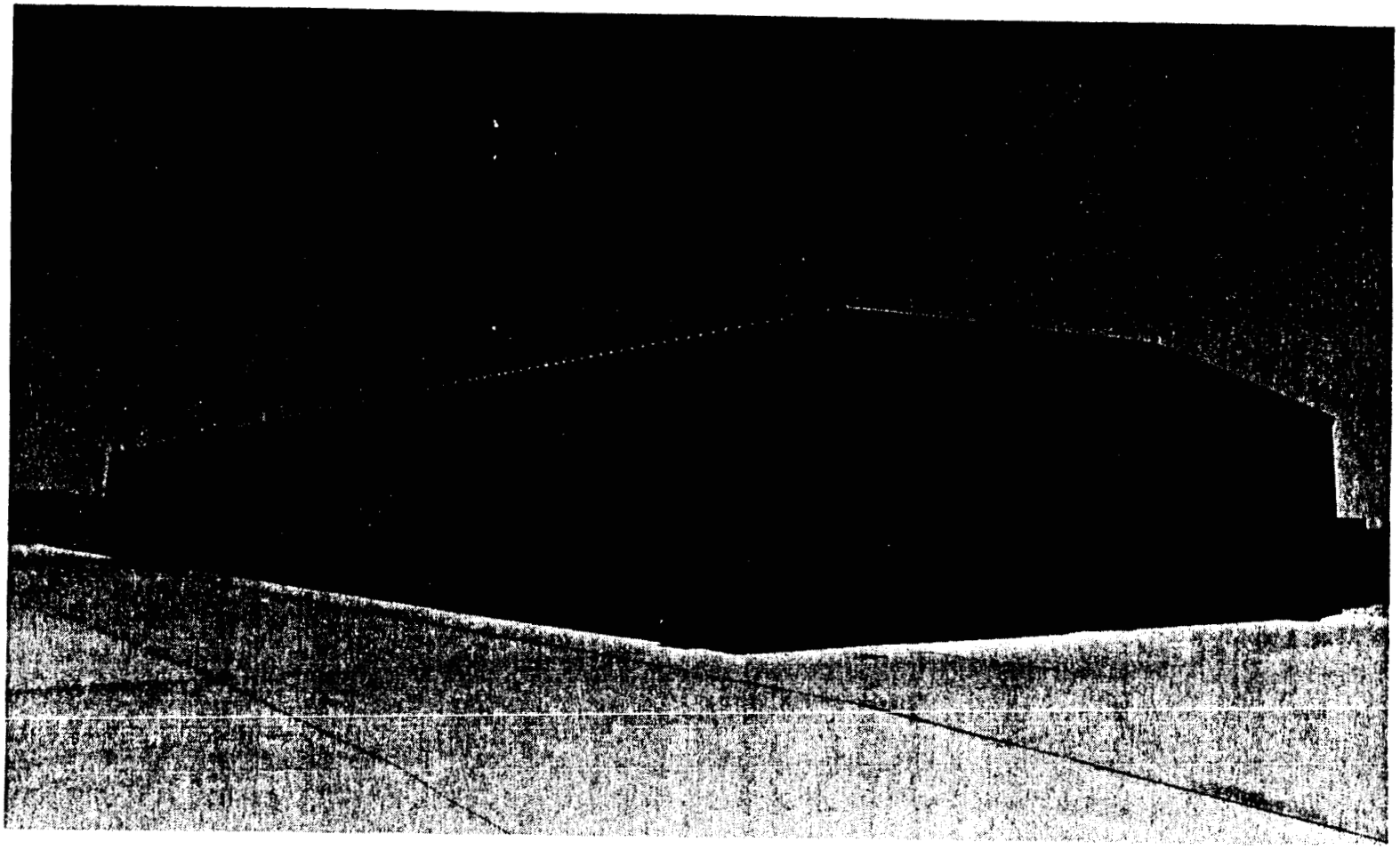
TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:



Ordnance Assembly Facility

# Document Separator

# Tab 46. Telemetry Development Laboratory



0613

# GENERAL INFORMATION

Facility/Capability Title: Telemetry Development Laboratory

Origin Date: 4/20/94

Service: N Organization/Activity: NAWCWPNS Location: China Lake, CA

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratories

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 20 | | 80 | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armanent/Weapons | 20 | | 80 | | | |
| EC | | | | | | |
| Other | | | | | | |

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

0614

# TECHNICAL INFORMATION

Facility/Capability Title: Telemetry Development Laboratory

Facility Description; Including mission statement:

The Telemetry Development Laboratory provides for design, development, fabrication and application of instrumentation systems technology to airborne weapons for gathering diagnostic information in support of test and evaluation programs. Facility description: The Telemetry Development Laboratory facilities are housed in three separate buildings: the Instrumentation Laboratory Building (ILB) which is shared with another group, Telemetry Facility and Transducer Calibration Laboratory and three mobile labs. The ILB houses major assets required for the design of secure (encrypted) telemetry systems. It contains five (5) RF screen rooms, a walk-in vault used to store COMSEC assets used in the design and development of secure telemetry systems, environmental ovens, and specialized equipment for component and system testing. The Telemetry Facility contains office space, a video encryption laboratory, an RF transmitter laboratory, and a documentation control room. The Transducer Calibration Laboratory contains office and laboratory space.

Interconnectivity/Multi-Use of T&E Facility:

None, although plans are to network with Point Mugu to allow use of common software and workstations to allow efficient use of personnel resources between the two sites of the Telemetry Division.

Type of Test Supported:

Weapons performance testing.

Summary of Technical Capabilities:

The Telemetry Development Laboratory makes use of commercial ground station equipment, including antenna systems and laboratory-grade test equipment configured into test systems for the testing and test equipment configured into test systems for the testing and evaluation of telemetry systems and components. Use is also made of three specialized mobile laboratories to evaluate telemetry weapon systems during actual field usage as well as environmental and integration tests with the weapon systems. It provides prototype, pre-production and pilot production support to assure producibility of instrumentation systems prior to competitive procurement. It is responsible for the planning and implementation of encryption techniques and systems for the protection of weapon telemetry data including protection of weapons and range video systems.

Keywords:

Telemetry, Instrumentation



5190

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Telemetry Development Laboratory
300300

| 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 | 96250 | 94500 | 92750 | 88900 | 93100 | 87150 | 80500 | 61600 |
| | TEST HOURS | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



OC 16 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Telemetry Development Laboratory
300300

| 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 | 96250 | 94500 | 92750 | 88900 | 93100 | 87150 | 80500 | 61600 |
| | TEST HOURS | 48125 | 47250 | 46375 | 44450 | 46550 | 43575 | 40250 | 30800 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0616

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Telemetry Development Laboratory

ANNUAL HOURS OF DOWNTIME (1) 182.5

AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) (2) 0.5

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.5

| 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) 611 |
| Components | 6 | 1 | 6 | |
| Acceptance | 3 | 2 | 6 | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | (9) 223,000 |
| Environmnt | 1 | 2 | 2 | |
| Integration | 1 | 2 | 2 | |
| Calibration | 2 | 2 | 4 | |
| Pre-flight | 1 | 3 | 3 | |
| Flight | 1 | 3 | 3 | |
| | | TOTAL | 26 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Telemetry Development 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 | 54 | 46 | 46 | 46 | 46 | 46 | 46 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 54 | 46 | 46 | 46 | 46 | 46 | 46 |

Total Square Footage 13727

Test Area Square Footage 7097

Office Space Square Footage 6630

Tonnage of Equipment: 36.3

Volume of Equipment: 7181

Annual Maintenance Cost: $55.1K

Estimated Moving Cost: $677K

## CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 231K | 157K | 300K | 241K | 363K | 380K | 425K |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | |



0018

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Telemetry Development Laboratory

AGE: 8 REPLACEMENT VALUE: $9106K Total, $2.34M Bldg

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 7/20/91

NATURE OF LAST UPGRADE: Built the Telemetry Facility to provide additional office and lab space for video encryption and RF transmitter test areas and documentation control area.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT: 2097K

   SUMMARY DESCRIPTION: I&M equipment upgrades to the lab to provide higher bit rate capability and increased video encryption capability.

2. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



0619

Telemetry Development Laboratory



06 20

Document Separator

# Tab 47. TSSAM Mission Planning Facility

# GENERAL INFORMATION

Facility/Capability Title: TSSAM Mission Planning Facility

Origin Date: 04/22/94

Service: N Organization/Activity: NAWCAD China Lake Location: C28E

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 25 | | 50 | 25 | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 25 | | 50 | 25 | | |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.



0622

# TECHNICAL INFORMATION

Facility/Capability Title: TSSAM Mission Planning Facility

| |
|---|
| Facility Description, Including Mission Statement:<br><br>To develop, support, and maintain TSSAM Mission Planning software. |
| Interconnectivity/Multi-Use of T&E Facility:<br><br>This facility may be used by other programs with similar mission planning requirements |
| Type of Test Supported:<br><br>Regression testing and functional testing of TSSAM MPS software in conjunction with TAMPS. System performance testing in conjunction with the TSSAM HITL. |
| Summary of Technical Capabilities:<br><br>S/W design development and maintenance |
| Keywords: |

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: TSSAM Mission Planning Facility

| 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 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 1225 |
| | TEST HOURS | | | | | | | | 306 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0624

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: TSSAM Mission Planning Facility

ANNUAL HOURS OF DOWNTIME (1) 448

AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) (2) 1.2

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 22.8

| 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) 182.4 |
| MPM | 7 | 1 | 7 | |
| IV&V | 1 | 1 | 1 | ANNUAL UNCONSTRAINED CAPACITY (9) 66576 |

"TYPICAL"

TOTAL 8

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc?

If yes, explain:



0625

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: TSSAM Mission Planning Facility

**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 | 5 | 7 | 7 | 7 | 7 | 7 | 7 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 5 | 7 | 7 | 7 | 7 | 7 | 7 |

Total Square Footage 1100

Test Area Square Footage 300

Office Space Square Footage 800

Tonnage of Equipment: 2

Volume of Equipment: unknown

Annual Maintenance Cost: $30K

Estimated Moving Cost: $30K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | | | | | | |
| $100K | $150K | $50K | $200K | $50K | $50K | $50K |
| | | | | | | |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: TSSAM Mission Planning Facility

AGE: New REPLACEMENT VALUE: $400K

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: TAC-3

   TOTAL PROGRAMMED AMOUNT: $200K

   SUMMARY DESCRIPTION: Addition of TAC-3 computer system

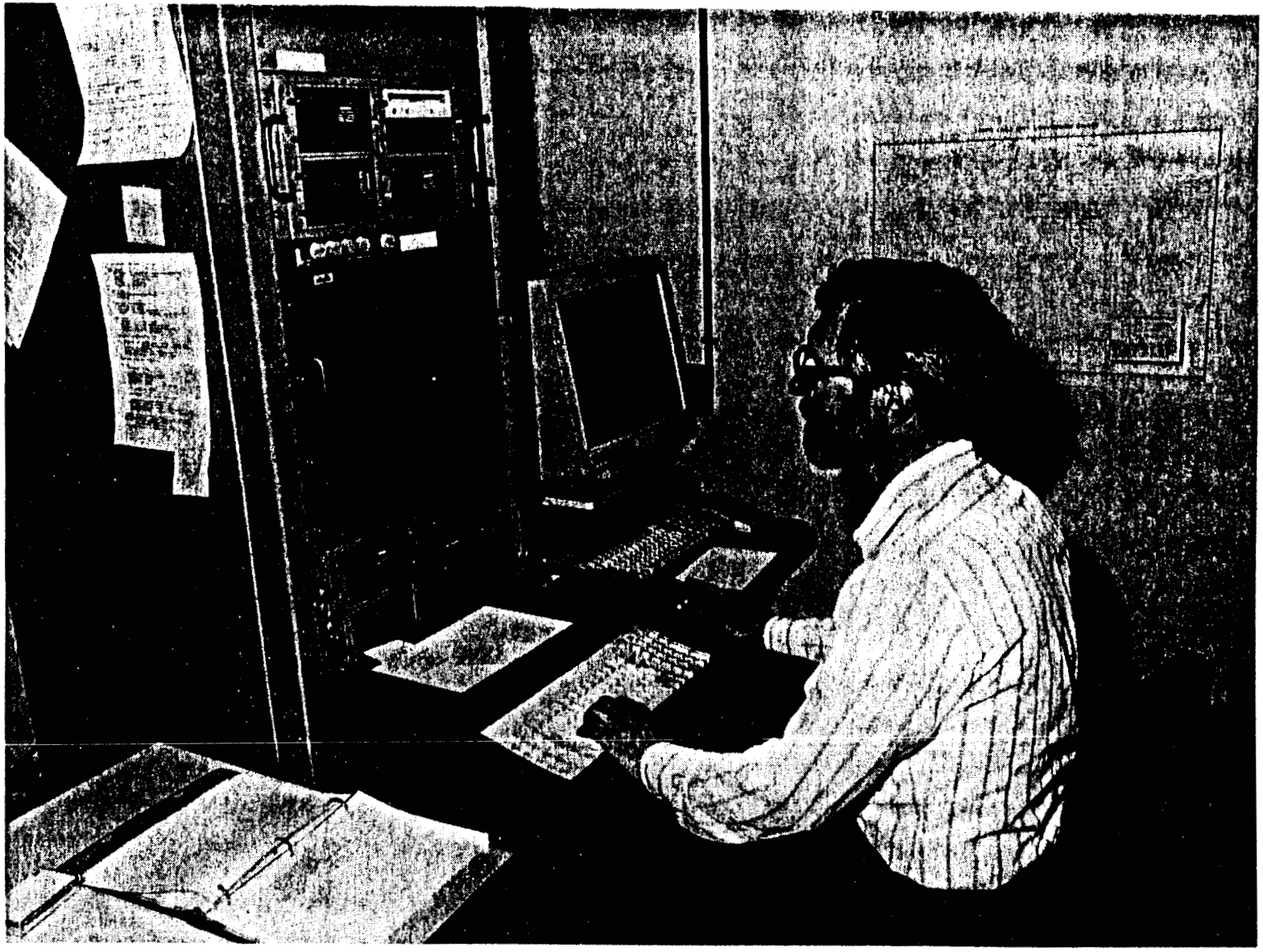
2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



0627



TSSAM Mission Planning Facility



0628

# Document Separator

# Tab 48. Warhead/Bomb Assembly/Integration Facilities



0629

# GENERAL INFORMATION

Facility/Capability Title: Warhead/Bomb Assembly/Integration Facilities

Origin Date: 4/25/94

Service: N

Organization/Activity: NAWCWPNS, CL Location: Code C27

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 50 | 15 | 30 | 5 | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 45 | 10 | 30 | 5 | | |
| EC | | | | | | |
| Other | 5 | 5 | | | | |

Total in breakout must equal "Percentage Use" on first line.

# TECHNICAL INFORMATION

Facility/Capability Title: Warhead/Bomb Assembly/Integration Facilities

**Facility Description, Including Mission Statement:**

Missile/Bomb Assembly/Integration Facilities: Comprised of three (Explosives/Weapon/Hardware) assembly buildings, four large explosive storage docks, four explosive storage magazines, and three small magazettes for less than 50 lbs of explosive storage and one large concrete explosive component assembly building with access to four explosive magazines and three magazettes with 50 lb explosive capacities.. These facilities have in the past been used for T&E support, however, the current mission is Science and Technology (S&T) and Development Engineering (DE) for explosive devices, warheads, various munitions, weapon systems and sub-systems. Classified materials are accommodated. This facility supports warhead, explosive component, and munitions assembly and checkout without explosive detonation tests. Explosive components and munitions test hardware handling and storage are accommodated. Modifications are limited to removal/replacement of components and subassemblies. Modifications to explosive devices/hardware requires removal to remote control/handling areas. The facilities and equipment provide for design, design modeling, computer analysis, and data analysis in support of its weapon integration mission.

**Interconnectivity/Multi-Use of T&E Facility:**

These multi-use facilities are utilized for small devices through AURs and Weapon System Assembly and checkout. The assembly buildings are large and will accommodate heavy equipment, provide overhead crane access and temporary storage of LIVE ordnance and INERT test hardware. Actuator/Integration facility designed and constructed to accommodate multiple operations in separate rooms connected by explosive doorways. Work areas also accommodate small man-portable warhead and munitions assembly. Remote location with street access for safety.

**Type of Test Supported:**

Functional testing in these facilities is limited to electrical and mechanical component checkouts and will not accommodate explosive testing. Separate work areas to allow multiple explosive component operations simultaneously are available.



0031

Warhead/Bomb Assembly/Integration Facilities

| Summary of Technical Capabilities: |
| --- |
| Equipment available to support explosive component assembly and includes workbenches, transporters, assembly stands, fixtures, shop tools and equipment, overhead crane, weight and C.G., easy access for heavy equipment. Temporary storage areas, small office space, secure areas, and situated in remote areas for safety. Actuator/Integration facility requires no instrumentation except portable equipment to operate. Isolated rooms accommodate multiple explosive operations simultaneously. |
| Keywords: |
| Explosive Weapons, Explosive Hardware, Assembly buildings, Explosive Storage, Explosive Component, Actuator |



0632

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Warhead/Bomb Assembly/Integration Facilities
300300

| 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 | 64750 | 64750 | 64750 | 61250 | 61250 | 61250 | 57750 | 52500 |
| | TEST HOURS | 2000 | 2000 | 2000 | 2000 | 2000 | 1600 | 900 | 820 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | 1750 |
| | TEST HOURS | | | | | | | | 80 |
| | MISSIONS | | | | | | | | |



0633

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Warhead/Bomb Assembly/Integration Facilities

ANNUAL HOURS OF DOWNTIME (1) 208

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) .6

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.4

| 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) 421 |
| Data Collection | 3 | 3 | 9 | |
| Fit Checks Wpn Component | 3 | 3 | 9 | ANNUAL UNCONSTRAINED CAPACITY (9) 153,665 |

"TYPICAL"

TOTAL 18

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:



0634

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Warhead/Bomb Assembly/Integration Facilities

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Enlisted | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Civilian | 31 | 28 | 26 | 24 | 22 | 22 | 22 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 32 | 29 | 27 | 25 | 23 | 23 | 23 |

Total Square Footage 28,372

Test Area Square Footage 22072

Office Space Square Footage 6300

Tonnage of Equipment: 15

Volume of Equipment: 960

Annual Maintenance Cost: 4500

Estimated Moving Cost: $192000

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $16.5K | $10K | $50K | $25K | | | |
| | | | | | | |



5390

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Warhead/Bomb Assembly/Integration Facilities

AGE: 48 yrs REPLACEMENT VALUE: TOTAL= $13,900K, Buildings= $13,855K

MAINTENANCE AND REPAIR BACKLOG: None.

DATE OF LAST UPGRADE: 04/01/92

NATURE OF LAST UPGRADE: Construct Bldg. 11092.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None.

   TOTAL PROGRAMMED AMOUNT: N/A

   SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



0636

Warhead/Bomb Assembly/Integration Facilities



0637

Document Separator

# Tab 49. Weapons Guidance/Control/Seeker IL



0638

# GENERAL INFORMATION

Facility/Capability Title: Weapons Guidance/Control/Seeker IL

Origin Date: 4/23/94

Service: Navy (N) Organization/Activity: NAWC, China Lake Location: Code 29

T&E Functional Area: Armaments/Weapons UIC = 60530

T&E Test Facility Category Integrated Laboratories (IL)

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 42% | 22% | 32% | 4% | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 2% | 45% | 1% | 1% | | |
| Armament/Weapons | 40% 40/89 | 15% | 31% | 3% | | |
| EC | | 2% | | | | |
| Other | | 5% | | | | |

Total in breakout must equal "Percentage Use" on first line.



0639

# TECHNICAL INFORMATION

Facility/Capability Title: Weapons Guidance/Control/Seeker IL

**Facility Description, Including Mission Statement:**

This lab provides full integration and test support (cradle to grave) for EO, IR, RF and IR/RF missile seeker/guidance/control systems. Development, integration, and testing is provided on rate tables (for EO and IR) and in the Dual Mode Facility (for RF and IR/RF); all provide digital data retrieval, storage, and processing capability which allows real time evaluation and analysis. In addition, this lab has the facilities and equipment, including an integration van, for Sidewinder missile build-up and aircraft integration support as well as factory level electronics manufacturing. This lab also supports assembly, repair and test of EO/IR/RF seekers. This includes maintaining an expertise in clean room procedures, bearing replacement, lubrication and test, optics assembly and test, inspection of mechanical and optical parts, exploitation/repair of foreign EO seekers. Systems level 6DOF fly-out simulation, circuit design analysis and missile transfer functions are also done. Special signal analysis on a variety of systems is performed.

**Interconnectivity/Multi-Use of T&E Facility:**

Capability for direct classified data link between rate table test stations and the Signal Processor in-the-Loop (SPIL) laboratory. The Dual Mode Facility can be connected with the MHIP Common Seeker Test Facility to allow for better IR target presentation and sensor data fusion. Support guidance/control integration with other missile components and Navy and Air Force fixed wing aircraft and Army rotary aircraft for any missile system. Ordnance handling capability. Can provide electronics hardware production per applicable specifications. The 6DOF system level simulation provides Test and Evaluation support for signal processing analysis, end game analysis, plus target signature analysis. For the full missile life cycle it is used to evaluate hardware changes prior to hardware commitment.

**Type of Test Supported:**

Electronics bench testing, integration activities, and checkout of missile guidance/control sections, including functional checkouts, performance testing of target recognition and acquisition capabilities, missile tracking accuracies, air-to-air missile radar simulation, multi-sensor handover performance, and investigation of fuze sensor technology. Fly-out analysis, missile miss distance, target signatures, counter measures assessment, captive carry, signal processing. Field test support. Seeker focus, sensitivity and stray light measurement. Seeker static and dynamic balancing. Bearing noise measurements. Optical and mechanical inspection of dimensions. Precise measurement of optical assemblies.



0540

Weapons Guidance/Control/Seeker IL

Summary of Technical Capabilities:

focalometer, monochromatic light source collimators, air spindles, surface plates, electro and mechanical indicators, a magnetizer, air gaging instruments, rate tables, target generator, data acquisition/recording equipment, spectrum analyzer, dual target rail system, vector network analyzer, 1553 bus capability, VXI Instrumentation/Switching Matrix, missile specific power sources, modulation domain analyzer, peak power analyzer, power meters, microwave frequency counter, synthesized signal generators, oscilloscopes, missile build-up/assembly facilities, missile assembly tools, missile integration van, electronics fabrication tools

Keywords:

Focus, Sensitivity, Stray Light, Optophonics, Microphonics, Balance, Scan, Anechoic Chamber, Guidance/Control, Target Acquisition, Missile, Missile-Aircraft Integration, Field Test Support, Ordnance Handling, Electronics Production, Engineering Analysis, Analog, Digital, System-Level Simulation, Digital Signal Processing, 6-DOF Simulation



0641

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Weapons Guidance/Control/Seeker IL
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 1890 | 1890 | 1890 | 1890 | 1890 | 2520 | 2520 | 1890 |
| | TEST HOURS | 1134 | 1134 | 1134 | 1134 | 1134 | 2016 | 2016 | 1134 |
| | MISSIONS | 14 | 14 | 14 | 14 | 14 | 25 | 25 | 14 |
| EC | DIRECT LABOR | 438 | 438 | 438 | 438 | 438 | 438 | 350 | 263 |
| | TEST HOURS | 350 | 350 | 350 | 350 | 350 | 350 | 280 | 210 |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | 42832 | 45095 | 48422 | 50085 | 47547 | 44817 | 38430 | 29698 |
| | TEST HOURS | 18051 | 18074 | 18107 | 18124 | 18099 | 20573 | 18802 | 12153 |
| | MISSIONS | 64 | 64 | 64 | 64 | 64 | 115 | 115 | 64 |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | 1225 | 700 | 875 | 962 | 1750 | 2100 | 2450 | 3062 |
| | TEST HOURS | 12 | 7 | 9 | 10 | 18 | 21 | 24 | 31 |
| | MISSIONS | | | | | | | | |



0642 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Weapons Guidance/Control/Seeker IL
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| AIR VEHICLES | DIRECT LABOR | 1890 | 1890 | 1890 | 1890 | 1890 | 2520 | 2520 | 1890 |
| | TEST HOURS | 1134 | 1134 | 1134 | 1134 | 1134 | 2016 | 2016 | 1134 |
| | MISSIONS | 14 | 14 | 14 | 14 | 14 | 25 | 25 | 14 |
| EC | DIRECT LABOR | 438 | 438 | 438 | 438 | 438 | 438 | 350 | 263 |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | 42832 | 45107 | 54557 | 56220 | 53682 | 50952 | 44555 | 35035 |
| | TEST HOURS | 14901 | 14924 | 14956 | 14974 | 14949 | 18053 | 16282 | 9633 |
| | MISSIONS | 64 | 64 | 64 | 64 | 64 | 115 | 115 | 64 |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | 1957 | 1957 | 1957 | 1957 |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0642

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Weapons Guidance/Control/Seeker IL

ANNUAL HOURS OF DOWNTIME (1) 1737

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 4.76

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 19.24

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR |
|---|---|---|---|
| (4) | (5) | (6) | (7) |
| Seeker | 7 | 1 | 7 |
| Electr. | 8 | 1 | 8 |
| LOS rate | 2 | 2.5 | 5 |
| IR G&C | 2 | 2 | 4 |
| RF G&C | 1 | 1 | 1 |
| Flight | 1 | 2 | 2 |
| Acft. Inte | 1 | 2 | 2 |
| Msl Build | 1 | 1 | 1 |
| Manufact. | 3 | 1 | 3 |
| Sign Anly | 1 | 1 | 1 |
| | | TOTAL | 34 |

UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL) (8) 654.16 hours

ANNUAL UNCONSTRAINED CAPACITY (9) 238768 hours

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:



6673

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Weapons Guidance/Control/Seeker IL

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 26.5 | 24.5 | 27 | 27 | 28 | 29 | 31 |
| Contractor | | | | | | | |
| Total | 26.5 | 24.5 | 27 | 27 | 28 | 29 | 31 |

Total Square Footage 15686 sq. ft.

Test Area Square Footage 10456 sq. ft.

Office Space Square Footage 5230 sq. ft.

Tonnage of Equipment: 67.4 Tons

Volume of Equipment: 39585 cu. ft.

Annual Maintenance Cost: $130K

Estimated Moving Cost: $1.07M

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $15K | $15K | $75K | $35K | $15K | $15K | $15K |
| $71K | $59K | $59K | $259K | $579K | $389K | $89K |
| $1,350K | $1,005K | | | | | |



0674

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Weapons Guidance/Control/Seeker IL

AGE: 20 years REPLACEMENT VALUE: $15234.2K ($3214.2K)

MAINTENANCE AND REPAIR BACKLOG: $10K due to uncalibrated equipment.

DATE OF LAST UPGRADE: 11/1/94

NATURE OF LAST UPGRADE: The RF Integration Facility (providing support to SPARROW AIM-7E/F/M by maintaining the SPARROW Missile Guidance Test Set and to RAM by maintaining the RAM Test Set) was upgraded to provide support to all RF and IR/RF missile guidance/control systems . This upgrade is the Dual Mode Facility, paid for by OSD Productivity Investment Funds ($2.35M) Project Number SPAJ92.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: AIM-9 Upgrade (AIM-9X and later versions)

TOTAL PROGRAMMED AMOUNT: $1.452M

SUMMARY DESCRIPTION: Upgrade two rate table test stations for preflight functional checkout of AIM-9X Guidance and Control units. Modify missile guidance and control functions to include next generation AIM-9 Guidance and Control. Upgrade integration tools and van to accommodate future weapon guidance and control sections.

2. UPGRADE TITLE: Weapons-Aircraft Integration Laboratory

TOTAL PROGRAMMED AMOUNT: $250K

SUMMARY DESCRIPTION: Provide electronics manufacturing equipment to upgrade capability for surface mount technology.



0645

Weapons Guidance/Control/Seeker IL



0646

Document Separator

# Tab 50. Weapons System Support Facility, A-6



0647

# GENERAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, A-6

Origin Date: 4/29/94

Service: N Organization/Activity: NAWCWPNS CL Location: C2104

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 34% | 0% | 54% | 12% | 0% | 0% |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 3.4% | 0% | 5.4% | 1.2% | 0% | 0% |
| Armanent/Weapons | 30.6% | 0% | 48.6% | 10.8% | 0% | 0% |
| EC | 0% | 0% | 0% | 0% | 0% | 0% |
| Other | 0% | 0% | 0% | 0% | 0% | 0% |

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



06478

# TECHNICAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, A-6

Facility Description; Including mission statement:

The A-6 Weapon System Support Facility (WSSF) is comprised of a group of computer-based laboratories and Hot Benches with real integrated avionics used to perform system and subsystem level test and evaluation of the A-6 avionics embedded computer systems and their associated Operational Flight Programs. It is a completely integrated facility capable of supporting system engineering, software engineering, avionics and weapons integration, software maintenance and incorporation of new systems, technology and concepts. The A-6 WSSF is the primary tool used to provide quick response investigations of Fleet reported problems, corrections of errors and deficiencies, investigation of changes, integration and test of new technology and weapons, development testing, verification & validation, and safety of flight testing. The A-6 WSSF supports the following Test Capability Requirements: Rapid Pre & Post Flight Testing in support of Open Air Range testing, Hot Bench Mockup Accommodation, Scenario Synchronization, MIL-STD-1553 Avionics Bus simulation, Munitions and avionics imagery video simulation, Global Positioning System (GPS) constellation simulator, High fidelity (6 DOF) flight motion simulation, System-Under-Test Data Collection, and Real-time Interrelated scenario parameter measurement.

Interconnectivity/Mulit-Use of T&E Facility:

The A-6 WSSF can be linked to the Inertial Navigation Lab for integration testing allowing a Global Positioning System (GPS) satellite simulator to stimulate the A-6 GPS receiver.

Type of Test Supported:

Test & Evaluate all mission and combat control system functions for the A-6 weapon system. These include subsystem functionality and interfaces, moding, cockpit control and display functions, weapon delivery functionality and accuracies, and weapons integration testing.



0649

Weapons System Support Facility, A-6

Summary of Technical Capabilities:

Real-time performance monitoring, control, and recording for MIL-STD-1553 based systems. A variety of test equipment including weapons simulators, computer support equipment, 6 DOF Airframe and Engine Simulation, environment simulation, and avionics sensor simulations to stimulate hardware-in-the-loop throughout a range of operational scenarios.

Keywords: IL 5-13-94

WSSA, WSSF, ITL, ISTF, OFP, V&V, SOF, MIL-STD-1553, Simulation, Internetting, Weapons Integration, Mission Computers, Embedded Software, Safety-Of-Flight, Target Generator, and display design.

0650

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, A-6
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 5075 | 5600 | 4725 | 5075 | 4550 | 7000 | 8225 | 4900 |
| | TEST HOURS | 416 | 416 | 416 | 416 | 416 | 416 | 624 | 624 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 45675 | 50400 | 42525 | 45675 | 40950 | 63000 | 74025 | 44100 |
| | TEST HOURS | 3744 | 3744 | 3744 | 3744 | 3744 | 3744 | 5616 | 5616 → ? |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



1590

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, A-6

ANNUAL HOURS OF DOWNTIME (1) 548

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 1.5

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 22.5

| 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) 180 |
| All (D&D, V&V, IV&V,SOF,INTEGR, ENG, INVEST) | 2 | 4 | 8 | ANNUAL UNCONSTRAINED CAPACITY (9) 65,700 |
| "TYPICAL" | | | TOTAL 8 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? No

If yes, explain:

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, A-6

## 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 | 12 | 7 | 3 | 3 | 0 | 0 | 0 |
| Contractor | 16 | 5 | 2 | 2 | 0 | 0 | 0 |
| Total | 28 | 12 | 5 | 5 | 0 | 0 | 0 |

Total Square Footage 4,404 Sq Ft

Test Area Square Footage 3,167 Sq Ft

Office Space Square Footage 1,237 Sq Ft

Tonnage of Equipment: 28.2 Tons

Volume of Equipment: 8,807 Ft3

Annual Maintenance Cost: $490K

Estimated Moving Cost: $950K

## CAPITAL EQUIPMENT INVESTMENT ($K) Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $65K | $0K | $0K | $0K | $0K | $0K | $0K |
| $357K | $30K | $15K | $10K | $0K | $0K | $0K |
| $0K | $0K | $0K | $0K | $0K | $0K | $0K |

0653 A

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, A-6

**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 | 12 | 7 | 3 | 3 | 0 | 0 | 0 |
| Contractor | 16 | 5 | 2 | 2 | 0 | 0 | 0 |
| Total | 28 | 12 | 5 | 5 | 0 | 0 | 0 |

Total Square Footage 4,404 Sq Ft

Test Area Square Footage 3,167 Sq Ft

Office Space Square Footage 1,237 Sq Ft

Tonnage of Equipment: 28.2 Tons

Volume of Equipment: 8,807 Ft3

Annual Maintenance Cost: $490K

Estimated Moving Cost: $950K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $65K | $0K | $0K | $0K | $0K | $0K | $0K |
| $375K | $30K | $15K | $10K | $0K | $0K | $0K |
| $0K | $0K | $0K | $0K | $0K | $0K | $0K |

0653

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, A-6

AGE: 16 REPLACEMENT VALUE: $24,100K (includes $1,400K Building)

MAINTENANCE AND REPAIR BACKLOG: There is a $4K backlog for the A-6 WSSF Building.

DATE OF LAST UPGRADE: 10/1/93

NATURE OF LAST UPGRADE: A-6 Block 1A Upgrade. Supports system integration and testing of most Block 1A avionics (i.e. new mission computer, Inertial Navigation System, Global Positioning System, Data Storage Set, Digital Signal Data Converter, Standard Central Air Data Computer, Display Suite including Head Up Display, Multi Function Display and Display Processor, IDAP and Avionics Interface Set) via modeled and actual units. Flight Software development. System integration of stores/missiles. Lab changed from a Validation facility to a Validation and Integration facility.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None Planned

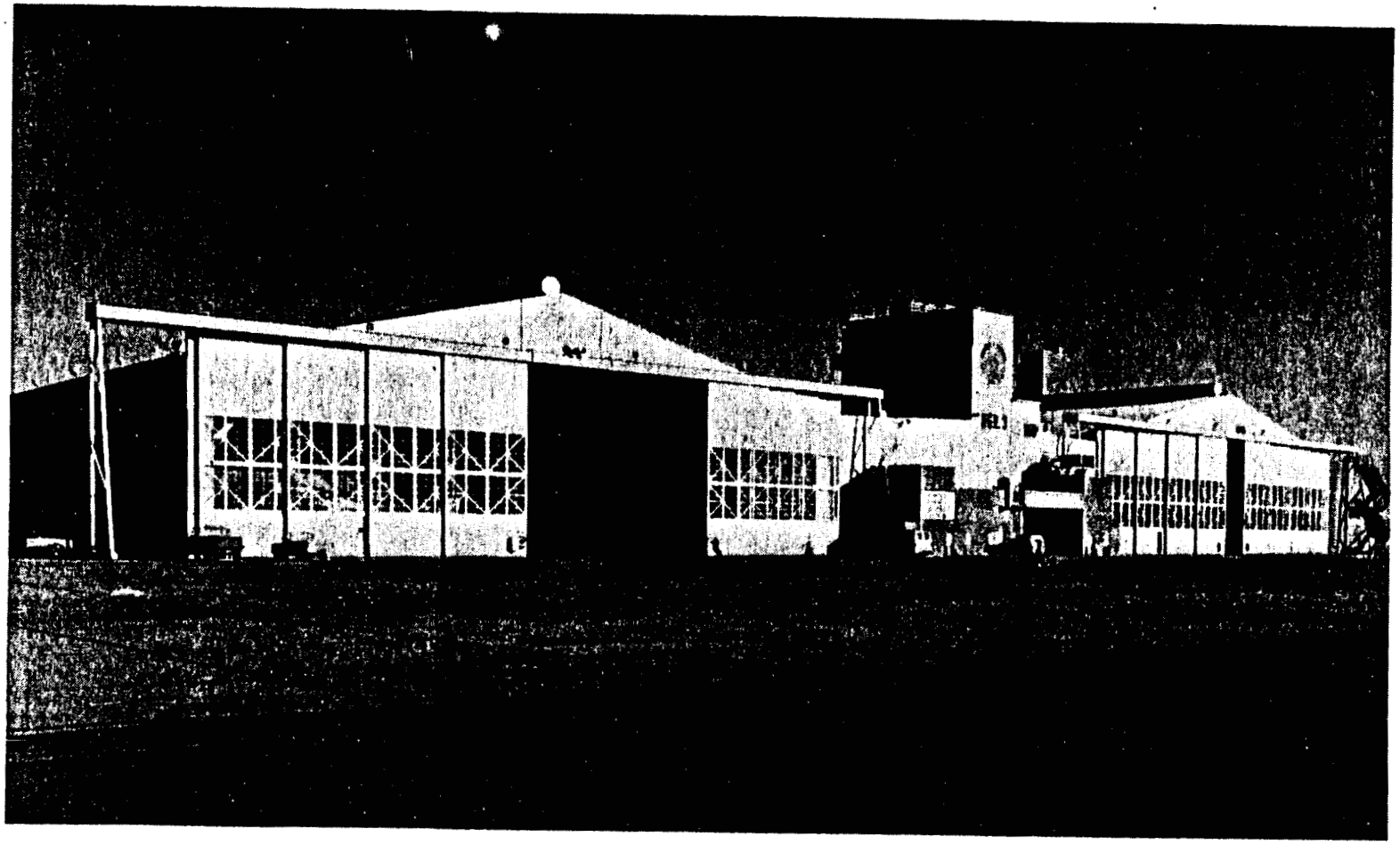
   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: None Planned

   TOTAL PROGRAMMED AMOUNT:

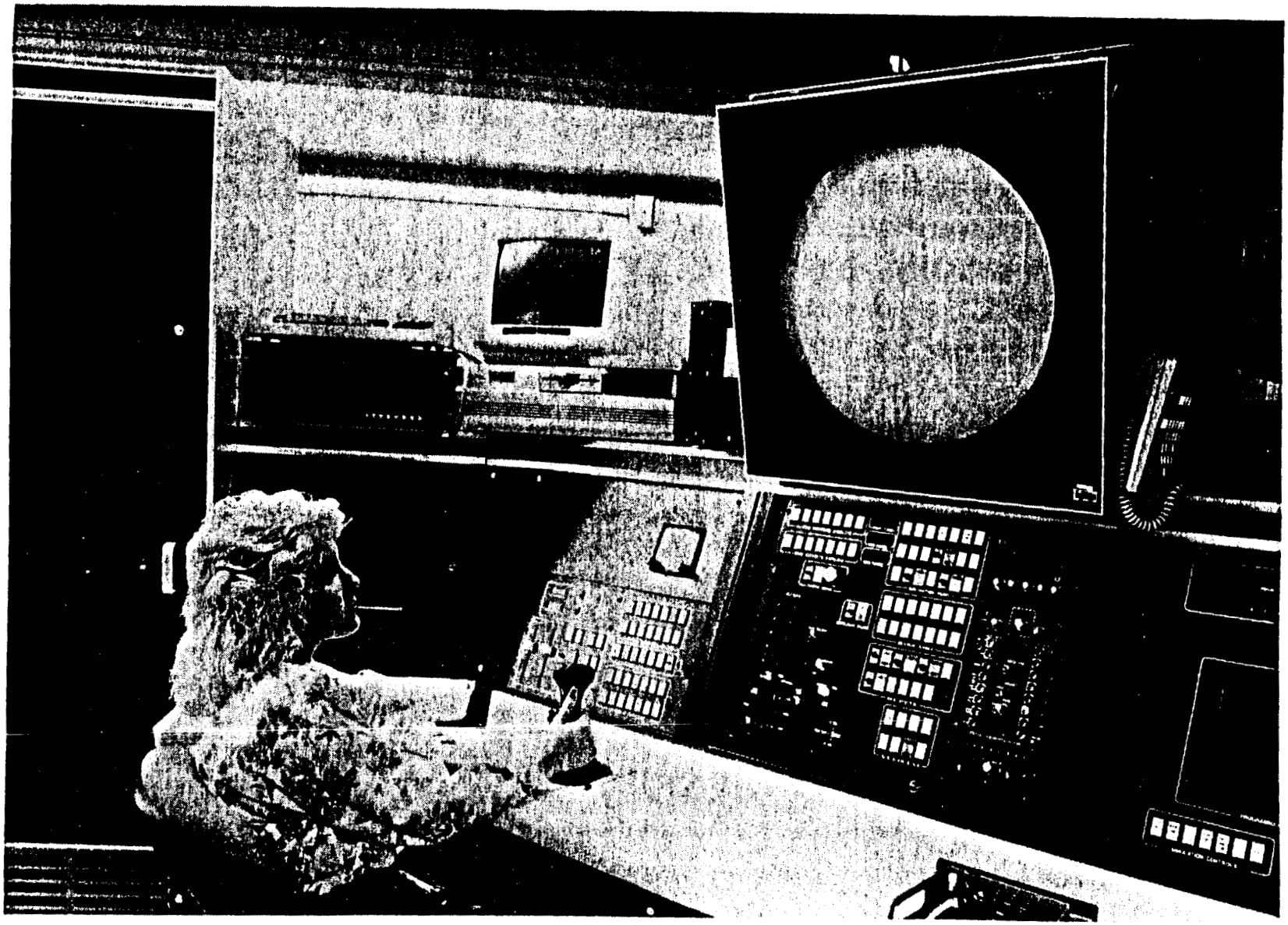
   SUMMARY DESCRIPTION:



Weapons System Support Facility, A-6



0655



Weapons System Support Facility, A-6



0656

# Document Separator

# Tab 51. Weapons System Support Facility, AH-1



0657

# GENERAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, AH-1

Origin Date: 4/29/94

Service: N Organization/Activity: NAWCWPNS CL Location: C2111-2

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 47.5% | 2.4% | 13.2% | 13.6% | 0% | 23.3% |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 4.7% | 0.3% | 1.3% | 1.4% | 0% | 2.3% |
| Armanent/Weapons | 42.8% | 1.8% | 11.6% | 12.2% | 0% | 21.3% |
| EC | 0% | 0% | 0.3% | 0% | 0% | 0% |
| Other | 0% | 0.3% | 0% | 0% | 0% | 0% |

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



0590

# TECHNICAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, AH-1

**Facility Description; Including mission statement:**

The AH-1 Facility has one (1) Control Display System hot bench, one (1) combination integrated Global Positioning System (GPS) and Inertial Navigation System (IGI) hot bench, and one (1) combination integration/hot bench for the Cntrol Display System and Cockpit Control System (CCS) systems. A Night Targeting System (NTS) hot bench is ready for use (awaiting aircraft avionics for completion of bench software and user certification).

Rapid prototyping & evaluation of crewstation systems related to aircraft and weapon control. This functional area includes survivability and lethality aspects of mission performance for air-to-air and air-to-surface weapons. The criticality of this functional area will continue to increase as weapons systems increase in number and complexity, while aircrew capabilities remain constant.

**Interconnectivity/Mulit-Use of T&E Facility:**

All the hot benches can be interconnected for simultaneous sub-system and integration testing of the aircraft.

**Type of Test Supported:**

System, sub-system, weapons, and embedded software test and development capability for the AH-1 aircraft.

**Summary of Technical Capabilities:**

MIL-STD 1553 Analyzers, scopes, voltmeters, strip charts, In Circuit Emulators. Real-time performance monitoring, control, and recording for MIL-STD-1553 based systems. A variety of test equipment including computer support equipment, 6 DOF Airframe and Engine Simulation, environment simulation, and avionics sensor simulations to stimulate hardware-in-the-loop throughout a range of operational scenarios.

**Keywords:**

JL MGH 5-13-94

WSSA, WSSF, ITL, ISTF, OFP, V&V, SOF, MIL-STD-1553, Simulation, Internetting, Weapons Integration, Mission Computers, Embedded Software, Safety-Of-Flight, Target Generator, 1553, Human Factors, Crewstation design, human performance, display design, targeting capabilities.



0659

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AH-1

| T&E FUNCTIONAL AREA | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 700 | 700 | 1108 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 204 | 204 | 204 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 00 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 6300 | 6300 | 9970 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 1836 | 1836 | 5508 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | 7000 | 7900 | 8750 | 9625 | 10500 | 7000 | 480 | 480 |
| | TEST HOURS | 7000 | 7900 | 8750 | 9625 | 10500 | 7000 | 480 | 480 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



0690 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AH-1

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 700 | 700 | 1108 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 204 | 204 | 204 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 00 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 6300 | 6300 | 9970 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 1836 | 1836 | 5508 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | 7000 | 7900 | 8750 | 9625 | 10500 | 7000 | 480 | 480 |
| | TEST HOURS | 7000 | 7900 | 8750 | 9625 | 10500 | 700 | 480 | 480 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



0960

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AH-1

ANNUAL HOURS OF DOWNTIME (1) 435

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 1.2

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 22.8

| 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) 638 |
| ALL (D&D, V&V, IV&V,SOF,INTEGR, ENG, HMN FAC, INVEST) | 5 | 4 | 20 | ANNUAL UNCONSTRAINED CAPACITY (9) 232,870 |
| "TYPICAL" | 4 | 2 | 8 | |
| | | TOTAL | 28 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? No

If yes, explain:

1990

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AH-1

**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 | 4 | 6 | 9 | 13 | 17 | 17 | 17 |
| Contractor | 3 | 4 | 8 | 8 | 8 | 8 | 8 |
| Total | 7 | 10 | 17 | 21 | 25 | 25 | 25 |

Total Square Footage 5,925 Sq Ft

Test Area Square Footage 2,508 Sq Ft

Office Space Square Footage 3,417 Sq Ft

Tonnage of Equipment: 28 Tons

Volume of Equipment: 12,730 Ft3

Annual Maintenance Cost: $163K

Estimated Moving Cost: $550K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $0K | $0K | $0K | $0K | $0K | $0K | $0K |
| $450K | $485K | $565K | $585K | $545K | $560K | $600K |
| $0K | $0K | $0K | $0K | $0K | $0K | $0K |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AH-1

AGE: 6

REPLACEMENT VALUE: $10,926K (includes $491K Building)

MAINTENANCE AND REPAIR BACKLOG: There is no significant repair backlog.

DATE OF LAST UPGRADE: 2/16/94

NATURE OF LAST UPGRADE: The upgrades for the laboratory were in support of Cobra 1-A and Cobra II. Added support for the Cockpit Control System to the Integrated Hot Bench, and upgraded the capability of the Control Display and Stand Alone CCS system.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Night Targeting System

TOTAL PROGRAMMED AMOUNT: $200K

SUMMARY DESCRIPTION: This upgrade is in progress at this time and consists of a combination integration and hot bench capability for the Night targeting System on the AH-1. Upgrade consists of hardware interface designs, console designs and the addition of simulation test software in support of the NTS.

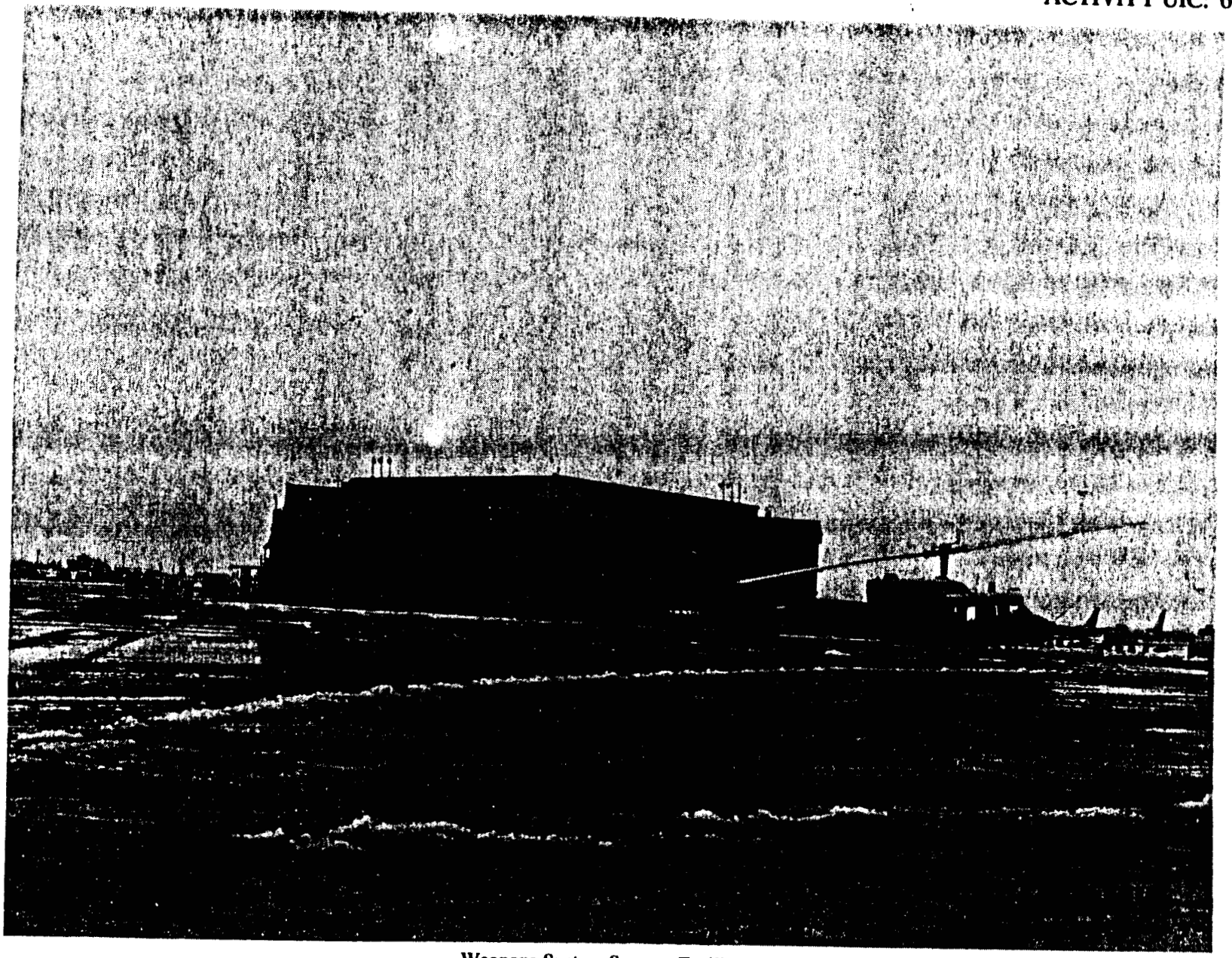
2. UPGRADE TITLE: Communication/Navigation System

TOTAL PROGRAMMED AMOUNT: $325K

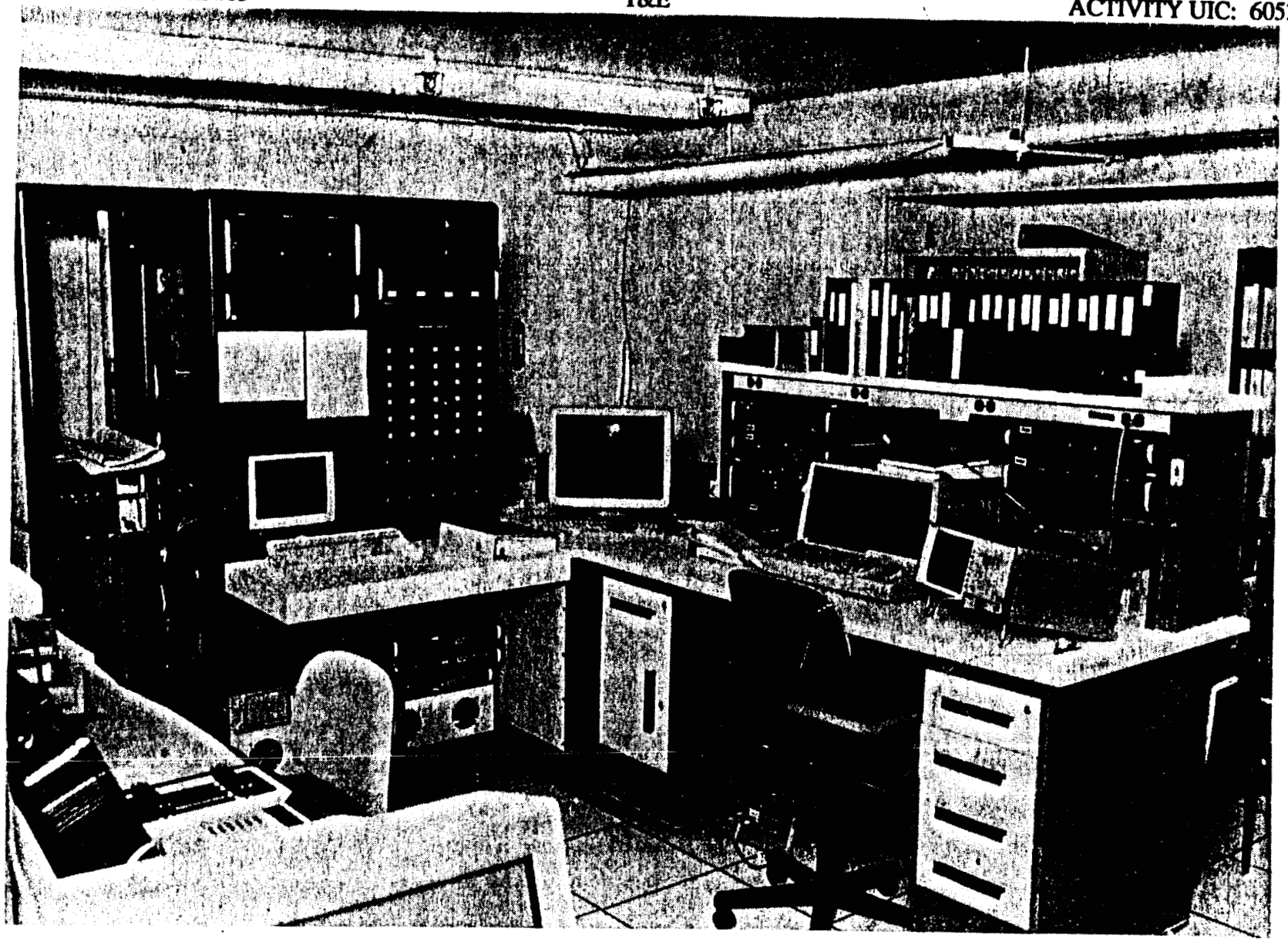
SUMMARY DESCRIPTION: Upgrade Integrated Hot Bench to support new communication/navigation system for the AH-1 Cobra-1A development. (ARC210 Radios, Tacan and Enhanced Global Positioning System/Inertial Navigation System (EGPS/INS).



0663



Weapons System Support Facility, AII-1



Weapons System Support Facility, AII-1



5990

Document Separator

# Tab 52. Weapons System Support Facility, AV-8

# GENERAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, AV-8

Origin Date: 4/29/94

Service: N Organization/Activity: NAWCWPNS CL Location: C2111-1

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 35% | 0% | 24% | 36% | 0% | 5% |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 3.5% | 0% | 2.4% | 3.6% | 0% | 0.5% |
| Armanent/Weapons | 31.5% | 0% | 21.6% | 32.4% | 0% | 4.5% |
| EC | 0% | 0% | 0% | 0% | 0% | 0% |
| Other | 0% | 0% | 0% | 0% | 0% | 0% |

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



0667

# TECHNICAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, AV-8

Facility Description; Including mission statement:

The AV-8 Weapon System Support Facility (WSSF) consists of two AV-8 Day Attack Integration Workstations, a Night Attack Integration Workstation, a Radar AV-8 hot bench, Day Attack Stores Management System (SMS) hot bench, and a combination Day/Night SMS hot bench. The AV-8 WSSF has the capability of complete dynamic and static testing of all the avionics on the three (Day/Night/Radar) versions of the AV-8 aircraft. Inertial Navigation System (INS) and Air Data Computer (ADC) models are provided for complete system functionality. Four weapons simulators are used to simulate the aircraft armament and munitions. Real weapons may be connected to the workstations for a variety of ground tests. The types of testing include; preflight, post flight, integration testing, sub-system testing, in both dynamic and static modes. Data can be logged for post analysis. Bomb scoring algorithms can be tested interactively or in batch mode.

The AV-8 Radar Facility supports testing of the APG-65 Radar into the AV-8 Embedded systems. By interconnecting to the Radar system of the Stores Management system, the workstation can be rapidly converted to provide Hot Bench capability for both the Radar and the SMS for integration testing. The workstation has the ability to provide complete dynamic and static test capability for all the major embedded systems on the AV-8.

Interconnectivity/Mulit-Use of T&E Facility:

All the AV-8 integration workstations can be interconnected to the hot benches for simultaneous sub-system and integration testing of the aircraft embedded system. The facility can be interconnected with a remotely located Global Positioning System (GPS) test set for dynamic testing of the GPS. This capability is shared with the F/A 18 facility. The AV-8 Radar workstation can be interconnected to the main AV-8 Integration lab for simultaneous sub-system or integration testing, or may be used in a standalone configuration for testing of these systems.

Type of Test Supported:

The types of testing include: preflight, post flight, integration testing, and sub-system testing. Data can be logged for post-flight or post-simulation analysis. System, sub-system, weapons, and embedded software test and development capability for all three versions of the AV-8.

Weapons System Support Facility, AV-8

| Summary of Technical Capabilities: |
| --- |
| MIL-STD 1553 Analyzers, scopes, voltmeters, strip charts, In Circuit Emulators for the Mission Computer, Stores Management System, and Display Computer. The AV-8 Radar workstation provides a complete Avionics test bed capability for development of OFP's, Regression Testing, Prototyping, and embedded software validation and certification. |
| Keywords: IL mad 5-17-94<br>WSSA, WSSF, ITL, ISTF, OFP, V&V, SOF, MIL-STD-1553, MIL-STD-1760, Simulation, Internetting, RF, RADAR, FLIR, Weapons Integration, Mission Computers, Embedded Software, Safety-Of-Flight, Target Generator, targeting capabilities. |



0669

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AV-8
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| AIR VEHICLES | DIRECT LABOR | 5075 | 5075 | 5600 | 6300 | 4375 | 4200 | 4900 | 3500 |
| | TEST HOURS | 338 | 350 | 418 | 533 | 725 | 530 | 310 | 803 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 45675 | 45675 | 50400 | 56700 | 39375 | 37800 | 44100 | 31500 |
| | TEST HOURS | 3042 | 3150 | 3762 | 4797 | 6525 | 4770 | 2790 | 7223 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AV-8

ANNUAL HOURS OF DOWNTIME (1) 377

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 1

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23

| 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) 644 |
| ALL (D&D, V&V, IV&V,SOF,INTEGR, ENG, INVEST) | 7 | 4 | 28 | ANNUAL UNCONSTRAINED CAPACITY (9) 235,060 |
| "TYPICAL" | | | | |
| | | TOTAL | 28 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? No

If yes, explain:



0671

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AV-8

**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 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Contractor | 10 | 11 | 11 | 10 | 15 | 15 | 15 |
| Total | 20 | 21 | 21 | 20 | 25 | 25 | 25 |

Total Square Footage 6,856 Sq Ft

Test Area Square Footage 4,586 Sq Ft

Office Space Square Footage 2,270 Sq Ft

Tonnage of Equipment: 33.2 Tons

Volume of Equipment: 13,712 Ft3

Annual Maintenance Cost: $195K

Estimated Moving Cost: $1, 782K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $0K | $0K | $0K | $0K | $0K | $0K | $0K |
| $1,100K | $830K | $875K | $920K | $950K | $970K | $1,040K |
| $0K | $0K | $0K | $0K | $0K | $0K | $0K |



0672

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, AV-8

AGE: 15

REPLACEMENT VALUE: $34,357K (includes $1,757K Building)

MAINTENANCE AND REPAIR BACKLOG: There is no significant repair backlog.

DATE OF LAST UPGRADE: 3/9/94

NATURE OF LAST UPGRADE: The upgrade consisted of the addition of Air-To-Air test capability for the Radar version of the AV-8 and addition of test capability to the Target Generator for testing of the AV-8 APG-65 Radar System.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Add EM support capability

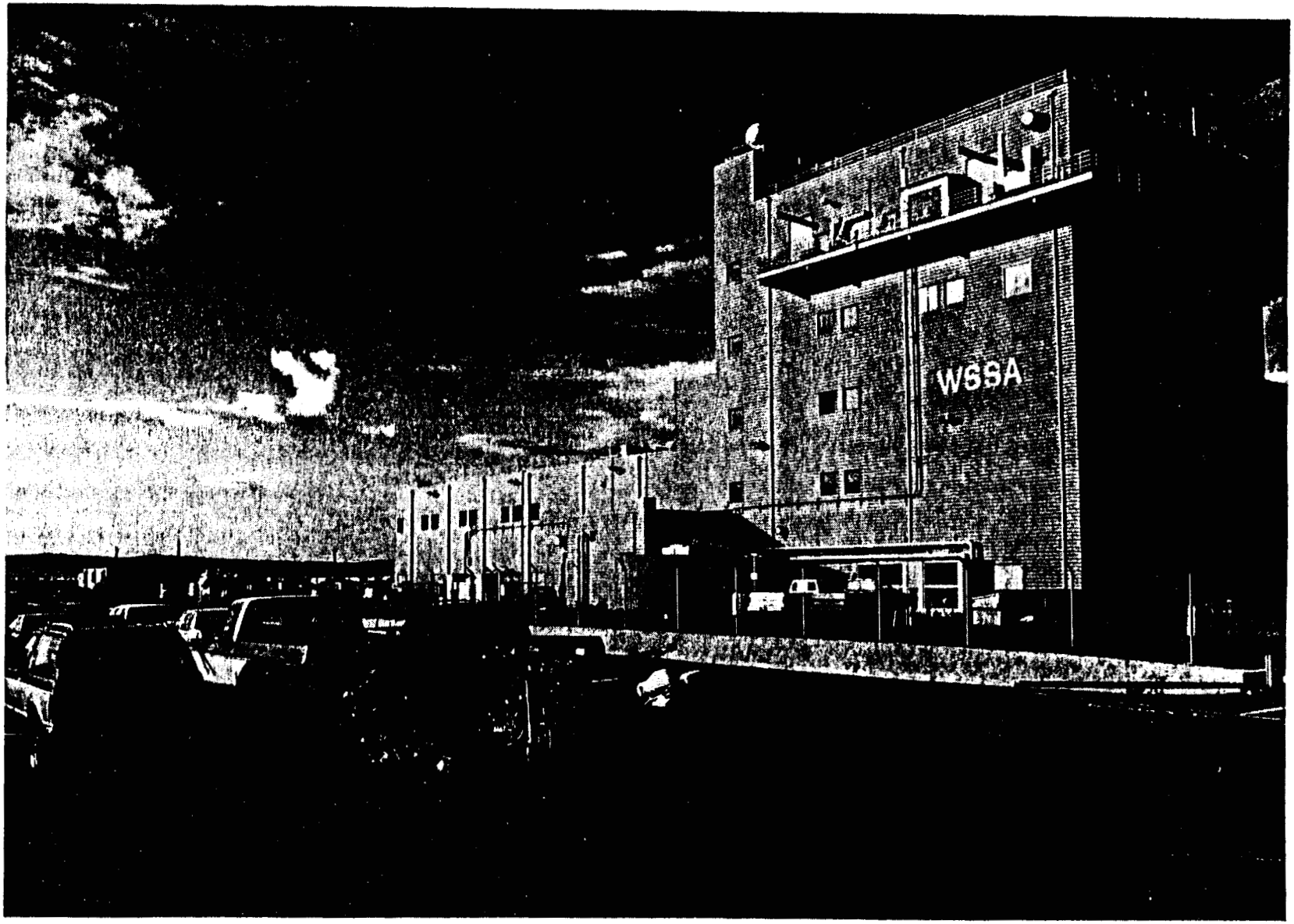
   TOTAL PROGRAMMED AMOUNT: $500K

   SUMMARY DESCRIPTION: Support for the ALR 67 will be added to the Radar Laboratory. The equipment will be obtained from projects that no longer need the ALR 67 equipment. Upgrade consists primarily of software mods to integrate the ALR 67 with the main support workstation.

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

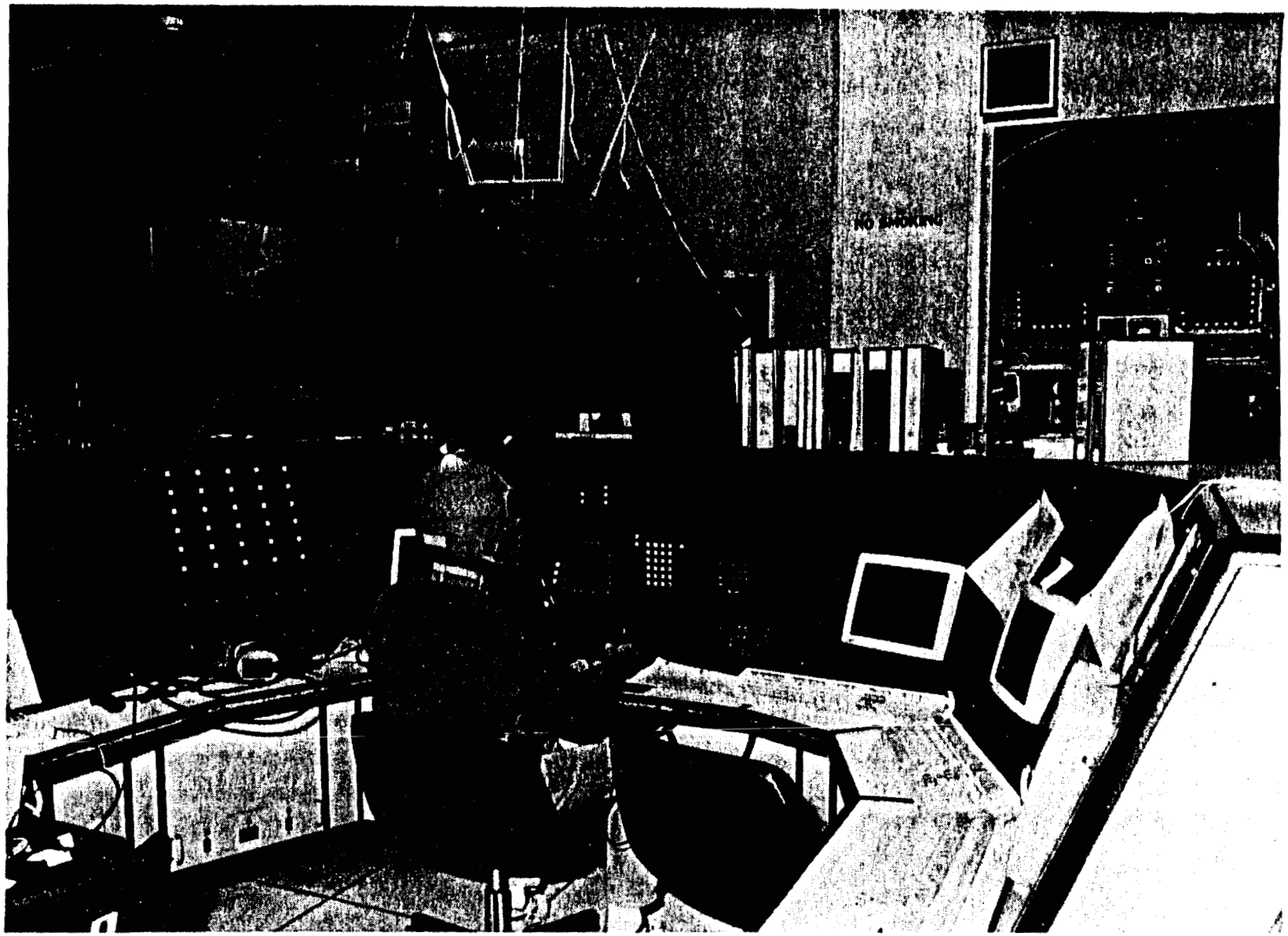
   SUMMARY DESCRIPTION:




Weapons System Support Facility, AV-8



0674




Weapons System Support Facility, AV-8



0625

# Document Separator

# Tab 53. Weapons System Support Facility, F/A-18

# GENERAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, F/A-18

Origin Date: 4/29/94

Service: N Organization/Activity: NAWCWPNS CL Location: C2114

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Integration Laboratory

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 38% | 0% | 48% | 3% | 0% | 11% |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 3.8% | 0% | 4.8% | 0.3% | 0% | 1.1% |
| Armanent/Weapons | 34.2% | 0% | 43.2% | 2.7% | 0% | 9.9% |
| EC | 0% | 0% | 0% | 0% | 0% | 0% |
| Other | 0% | 0% | 0% | 0% | 0% | 0% |

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



0622

# TECHNICAL INFORMATION

Facility/Capability Title: Weapons System Support Facility, F/A-18

Facility Description; Including mission statement:

The F/A-18 Weapon System Support Facility (WSSF) is comprised of a group of computer-based laboratories and Hot Benches with real integrated avionics used to perform system and subsystem level test and evaluation of the F/A-18 avionics embedded computer systems (Mission Computer and Stores Management) and their associated Operational Flight Programs. It is a completely integrated facility capable of supporting system engineering, software engineering, avionics and weapons integration, software maintenance and incorporation of new systems, technology and concepts. The F/A-18 WSSF is the primary tool used to provide development testing, verification & validation, and safety of flight testing, quick response investigations of Fleet reported problems, corrections of errors and deficiencies, investigation of changes, integration and test of new technology and weapons .The F/A-18 WSSF supports the following Test Capability Requirements: Rapid Pre & Post Flight Testing in support of OAR testing, Hot Bench Mockup Accommodation, MIL-STD-1760 Transparency, Scenario Synchronization, MIL-STD-1553 Avionics Bus simulation, MIL-STD-1760 Weapons Interface Bus Simulations, Munitions and avionics imagery video simulation, Global Positioning System (GPS) constellation simulator, High fidelity (6 DOF) flight motion simulation, System-Under-Test Data Collection, and Real-time Interrelated scenario parameter measurement.

The F/A-18 Sensors Facility is a multi-use facility supporting integration, validation and development of Operation Flight Programs. The facility directly supports the APG-65 Radar Set, APG-73 Radar Set, FLIR/NAVFLIR/TINS Pods, ALR-67/ASPJ/ALE-47 Electronic Warfare suites, and Stores Management Set of the F/A-18 Aircraft through integration of actual avionics. The facility can also support any armament/munitions which can be physically connected to the integration benches or simulated through various test sets. The Sensors Facility encompasses 4 workstations: 1) APG-65 Radar, 2) APG-73 Radar, 3) FLIR Bench and 4) Special Projects. Each Lab is capable of independent operation or integration with the capabilities of any of the other labs. APG-65 and 73 workstations timeshare the Stores Management Set and EW Suite components. Integral to the Special Projects is the Flight Test Ground Station, which is capable of performing telemetry and data analysis tasks to assist in Flight Test Operations.

Weapons System Support Facility, F/A-18

Interconnectivity/Mulit-Use of T&E Facility:

The F/A-18 Weapon System Support Facility (WSSF) has been internetted with the F/A-18 Sensors Laboratory to provide FLIR and radar data to the aircraft's' fire control systems. This data enables multi-source Sensor fusion Integration testing to be performed in the facility. The F/A-18 WSSF was connected to the Electronic Combat Range to enable EW equipment to be tested against actual and simulated threat radar systems, and yet use the F/A-18 WSSF to provide the remainder of the avionics systems. The WSSF Complex has been internetted with the NAWCWPNS's Inertial Navigation Lab's GPS Satellite simulator to provide cost effective dynamic test capability for the GPS. The WSSF Complex also is being linked to the missile hardware-in-the-loop SIMLAB to provide preflight integration weapons testing; including captive carry, launch, and post-launch data link. The IRIS Project (Internetted Range Interactive Simulations) is in development phase. The IRIS project will link the WSSF with the Weapons and Tactics Center (WEPTAC) at China Lake and the Battle Management Interoperability Center (BMIC) at Pt Mugu, to work out the technical issues and investigate benefits obtained by linking real, virtual, and constructive systems together. The infrastructure established by IRIS can be used as leverage to bridge the gap in using Modeling & Simulation in T&E and training scenarios. The F/A-18 is also participating in a Joint Advanced Distributed Simulation test where it will be linked with an AMRAAM HWIL facility at Eglin AFB. Additionally, the F/A-18 WSSF is investigating establishing links with other DoD Contractors to perform R&D testing, i.e. with Northrop to perform development of a new generation of Tactical Training System. In addition to the above internetting, the WSSFs have also been linked to actual aircraft using the platform radios to perform data-linking and communication tests.

The F-18 Sensor's FLIR workstation can be integrated with any of the other labs to provide hardware FLIR capability. This can be extended to other facilities using the above mentioned Ethernet link. All workstations can acquire and use real targets by radiating from the real Radar Sets. The F/A-18 Sensors Facility has established a T-1 connectivity with Hughes El Segundo for exchange of technical information and Flight Software.



0679

Weapons System Support Facility, F/A-18

Type of Test Supported:

Test & Evaluate all mission and combat control system functions for the supported aircraft's weapon Radar and Electronic Warfare systems. These include subsystem functionality and interfaces, moding, cockpit control and display functions, weapon delivery functionality and accuracy's, and weapons integration testing. The types of tests include Design &Development (D&D), Verification & Validation (V&V), Safety-Of-Flight (SOF), Integration, Independent V&V, Engineering Investigation, and Foreign Military Sales.

The types of testing include: preflight, post flight, integration testing, and sub-system testing. Data can be logged for post-flight or post-simulation analysis.

Summary of Technical Capabilities:

Real-time performance monitoring, control, and recording for MIL-STD-1553 based systems. A variety of test equipment including weapons simulators, computer support equipment, 6 DOF Airframe and Engine Simulation, environment simulation, and avionics sensor simulations to stimulate hardware-in-the-loop throughout a range of operational scenarios, regression testing, prototyping, and embedded software validation and certification.
MIL-STD 1553 Analyzers, scopes, voltmeters, strip charts, In Circuit Emulators for the Mission Computer, Stores Management System, and Display Computer. Simulated Multi-function displays, network of special-purpose computers, Multi tasking environments for human performance evaluation, evaluation of aircraft-weapons systems human interfaces, automated human performance measurement and data capture. Target generators are provided for both Radar Sets which provide up to 4 RF targets with 6 DOF, jamming and Jet Engine Modulation (JEM) signatures. A single RF target can be simulated for the EW suite with complete control of waveform characteristics. These targets can also be integrated with the Missing Peripheral Simulator to provide simulated FLIR, HARM and Data Link targets. Full instrumentation capability is provided both Radar Sets. This capability includes laboratory recording and reproduction, reproduction of aircraft flight instrumentation tapes and data reduction systems which allow data to be analyzed on-site. Data recording, reproduction and analysis is also provided for AMRAAM Data Link Instrumentation, allowing complete analysis of AMRAAM Data Link messages.

Keywords: IL mea 5-13-94

WSSA, WSSF, ITL, ISTF, OFP, V&V, SOF, MIL-STD-1553, MIL-STD-1760, Simulation, Internetting, RF, RADAR, FLIR, Weapons Integration, Mission Computers, Embedded Software, Safety-Of-Flight, Target Generator, targeting capabilities.

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, F/A-18
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 8225 | 8925 | 9450 | 9450 | 8400 | 8575 | 9275 | 8400 |
| | TEST HOURS | 1244 | 1244 | 1244 | 1562 | 1880 | 1880 | 1880 | 1880 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 74025 | 80325 | 85050 | 85050 | 75600 | 77175 | 83475 | 75600 |
| | TEST HOURS | 11192 | 11192 | 11192 | 11192 | 14054 | 16916 | 16916 | 16916 ← ? |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



1390

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, F/A-18

ANNUAL HOURS OF DOWNTIME (1) 590

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 1.6

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 22.4

| 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) 806 |
| ALL (D&D, V&V, IV&V,SOF,INTEGR, ENG, INVEST) | 9 | 4 | 36 | ANNUAL UNCONSTRAINED CAPACITY (9) 294,190 |
| "TYPICAL" | | | | |
| | | TOTAL | 36 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? No

If yes, explain:

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, F/A-18

**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 | 30 | 29 | 30 | 31 | 31 | 31 | 31 |
| Contractor | 18 | 22 | 23 | 22 | 21 | 21 | 21 |
| Total | 48 | 51 | 53 | 53 | 52 | 52 | 52 |

Total Square Footage 9,670 Sq Ft

Test Area Square Footage 7,364 Sq Ft

Office Space Square Footage 2,306 Sq Ft

Tonnage of Equipment: 86 Tons

Volume of Equipment: 19,339 Ft3

Annual Maintenance Cost: $873K

Estimated Moving Cost: $4,500K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $235K | $235K | $0K | $0K | $0K | $0K | $0K |
| $4,744K | $4,504K | $7,935K | $9,080K | $3,845K | $2,890K | $700K |
| $0K | $0K | $0K | $0K | $0K | $0K | $0K |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Weapons System Support Facility, F/A-18

AGE: 17 REPLACEMENT VALUE: $90,504K (includes $2,294K Building)

MAINTENANCE AND REPAIR BACKLOG: In the process of upgrading several of the host computers in the labs. Constantly upgrading to keep current with changes in the aircraft Operational Flight Programs (OFP). There is no significant repair backlog.

DATE OF LAST UPGRADE: 1/1/83

NATURE OF LAST UPGRADE: Date listed is for last Facility Building Upgrade. No major Building upgrades are planned following the initial construction of Facility space with MILCON project , P302, 47,264 Sq Ft costing $5.99 built in 1983. The Laboratories and equipment are constantly be upgraded to maintain currency with aircraft which Laboratories support.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: E/F Upgrade to APG-73 Spread Bench

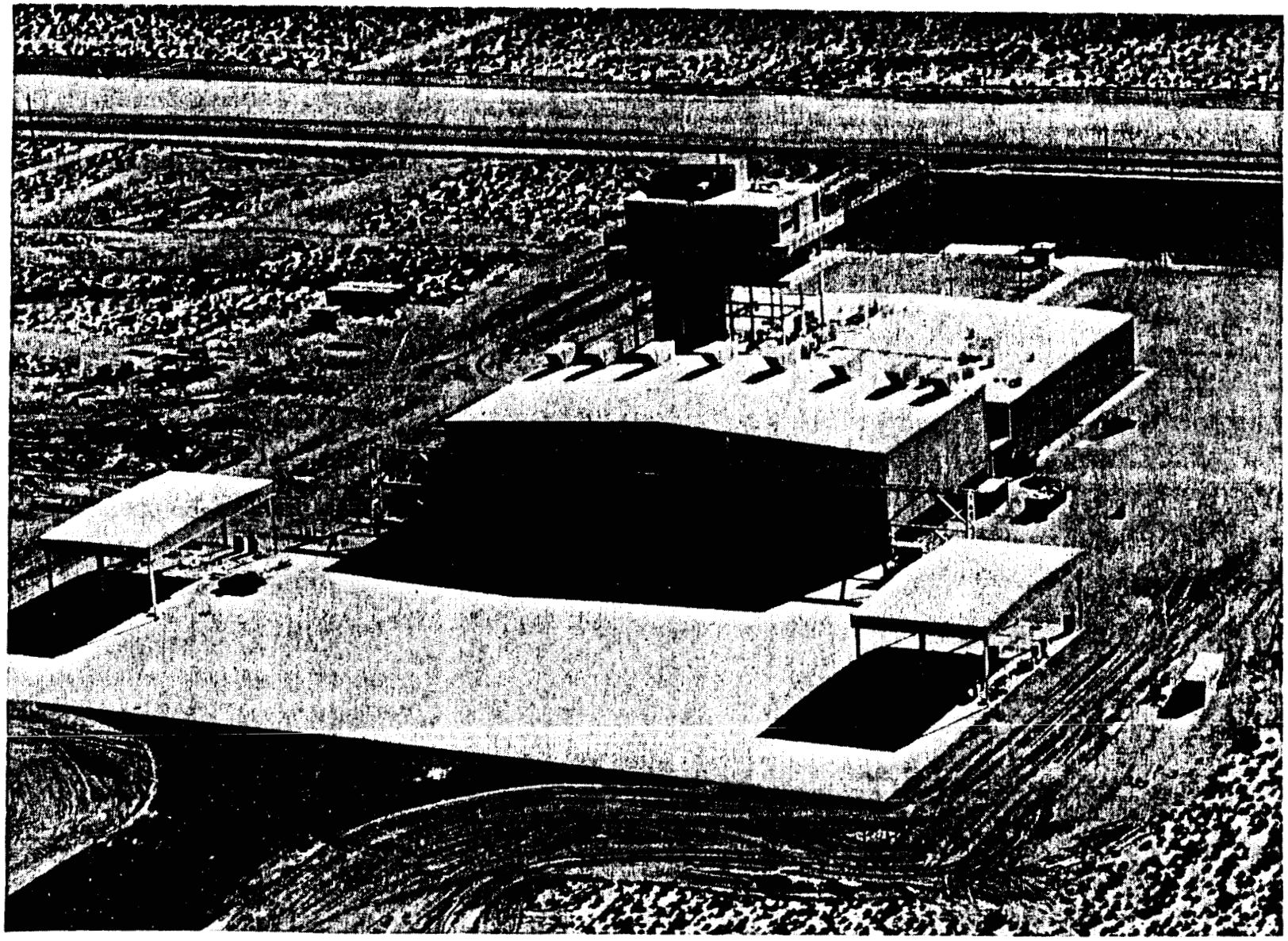
TOTAL PROGRAMMED AMOUNT: $5,295K

SUMMARY DESCRIPTION: Upgrade of existing APG-73 Spread Bench to F/A-18 E/F configuration, including, E/F avionics, APG-73 radar, target generator, and instrumentation modifications

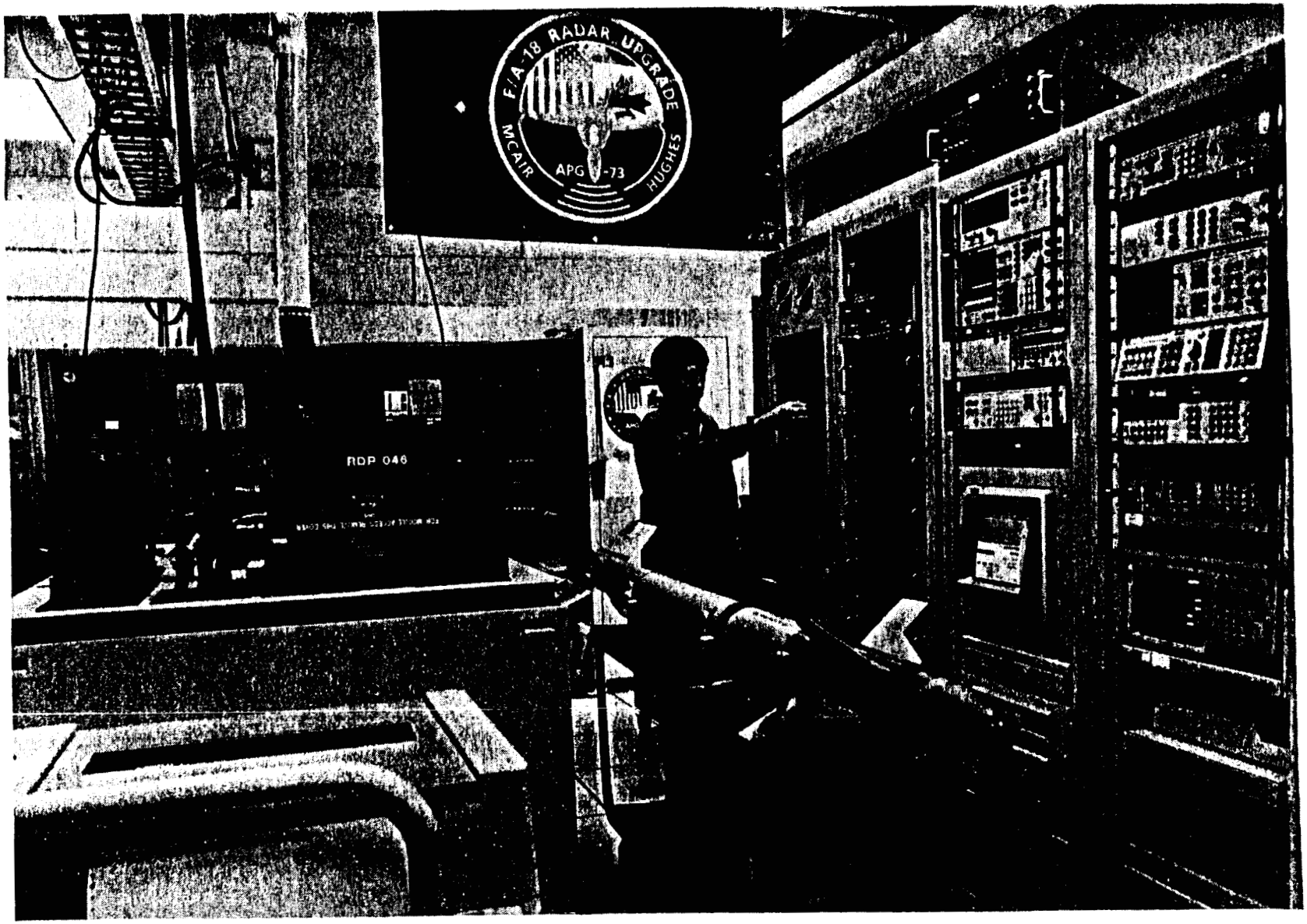
2. UPGRADE TITLE: Upgrade the F/A-18 WSSF to E/F Aircraft Configuration

TOTAL PROGRAMMED AMOUNT: $2,875K

SUMMARY DESCRIPTION: This effort includes design, fabrication and integration of full lab capability to support testing of the F/A-18 E/F embedded computer system. All labs system would have to be build and modified to be capable of supporting E/F configuration and test requirements.



Weapons System Support Facility, F/A-18




Weapons System Support Facility, F/A-18

# Document Separator

# Hardware-in-the-Loop

# Document Separator

# Tab 54. Mk-45 TDD (Target Detecting Device) Engineering Development HITL/Test Laboratory

# GENERAL INFORMATION

Facility/Capability Title: Mk 45 TDD Engineering Development HITL/Test Laboratory

Origin Date: 04/20/94

Service: NAVY Organization/Activity: NAWCWPNS/CL Location: C2934

T&E Functional Area: ARMAMENT/WEAPONS UIC = N60530

T&E Test Facility Category Hardware in the Loop

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 40 | 0 | 50 | 10 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 0 | 0 | 0 | 0 | 0 | 0 |
| Armament/Weapons | 40 40/100 = 40% | 0 | 50 | 10 | 0 | 0 |
| EC | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

Total in breakout must equal "Percentage Use" on first line.

0689

# TECHNICAL INFORMATION

Facility/Capability Title: Mk 45 TDD Engineering Development HITL/Test Laboratory

**Facility Description, Including Mission Statement:**

The Mk 45 laboratory consists of three test sets which together are capable of conducting hardware in the loop, RF proximity fuze engineering development testing on the various mods of the Mk 45 fuze system. The test sets employ state of the art computer controlled equipment for control of the simulation of the fuze encounter environment. The software control language is a high level graphical interface language which speeds and eases development of new scenarios for performance evaluation testing. The test sets are the only ones available which use actual sea and target data to create the missile flyout environment and a probability of detection.
The mission of the laboratory is to support the host mission as Technical Development Agent for the Mk 45 Fuze, by simulating fuze/target encounters to evaluate fuze performance for design, development and test analysis.

**Interconnectivity/Multi-Use of T&E Facility:**

NONE

**Type of Test Supported:**

Test and evaluation of all Mk 45 proximity fuzes are supported including engineering development and test events throughout the product life cycle. The test set is capable of testing all electrical specifications to the limits of the requirements. The test set can also create realistic sea and targets from digital flight test and target encounter data to test the fuze to a flyout encounter scenario. The test set simulates all I/O from the fuze to the guidance/autopilot/and battery sections of the missile.

**Summary of Technical Capabilities:**

The test sets are fuze hardware/SW in the loop sets capable of creating or recreating realistic encounter conditions for the evaluation of fuze operation.

**Keywords:**

Proximity fuze, Mk 45 , TDD, TDD Test Set, Modeling, Simulation, Pd, Development, Design.

0690

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Mk 45 TDD Engineering Development HITL/Test Laboratory
300300

| 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 | 3600 | 3980 | 5250 | 54400 | 54400 | 38940 | 30260 | 30260 |
| | TEST HOURS | 1400 | 1400 | 3000 | 3000 | 3000 | 1400 | 1400 | 1000 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0691

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Mk 45 TDD Engineering Development HITL/Test Laboratory

ANNUAL HOURS OF DOWNTIME (1) 184

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 0.504

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.496

| 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) 141 |
| HITL #1 | 1 | 1 | 1 | |
| HITL #2 | 1 | 4 | 4 | ANNUAL UNCONSTRAINED CAPACITY (9) 51.456 |
| SW Int | 1 | 1 | 1 | |
| "TYPICAL" | | | | |
| | | TOTAL | 6 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:

0692

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Mk 45 TDD Engineering Development HITL/Test Laboratory

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 17 | 17 | 22 | 23 | 23 | 18 | 18 |
| Contractor | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Total | 18 | 18 | 23 | 24 | 24 | 19 | 19 |

Total Square Footage 4960

Test Area Square Footage 2600

Office Space Square Footage 2100

Tonnage of Equipment: 3.8 T

Volume of Equipment: 1860

Annual Maintenance Cost: $53K

Estimated Moving Cost: $92K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | | | | | | |
| 1,000K | 1,100K | 1,200K | 800K | 800K | 800K | 800K |
| | | | | | | |



0693

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Mk 45 TDD Engineering Development HITL/Test Laboratory

AGE: 1-15yr;2-7yr 3-new

REPLACEMENT VALUE: $13,484 K (756K Bldg)

MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: 4/20/94

NATURE OF LAST UPGRADE: The newest test set is in the final development phase, most recent upgrades include refining hardware and software capabilities in clutter and ECM environments.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Block IVA test set

TOTAL PROGRAMMED AMOUNT: $3M

SUMMARY DESCRIPTION:
Design and develop a SM2 Block IVA TDD (MOD TBD) test set with similar capabilities as the Mk 45 Nod9/10 (most current) Engineering Test Set.

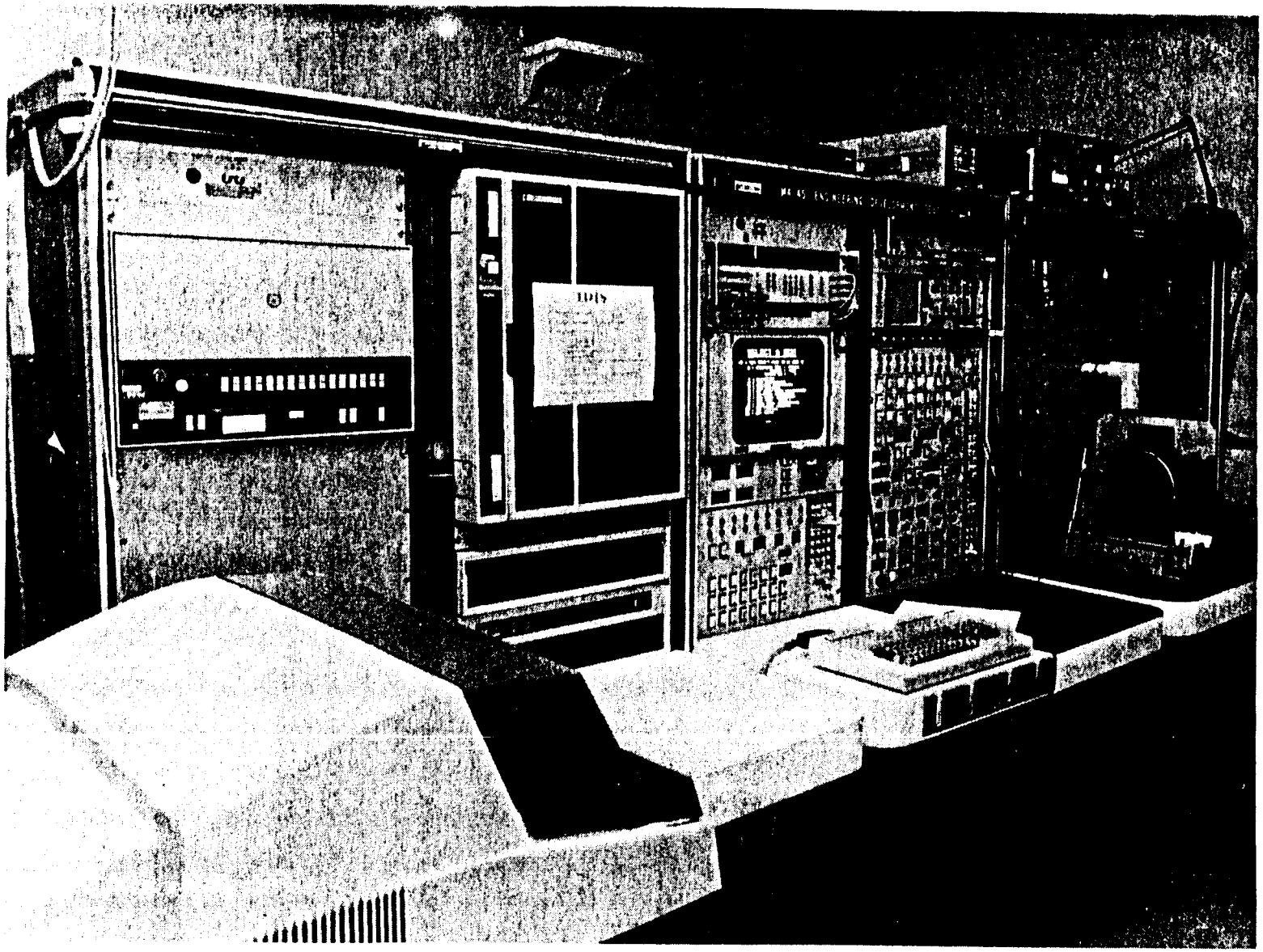
2. UPGRADE TITLE: Mk 45 MOD 7/8 improvement

TOTAL PROGRAMMED AMOUNT: $1.2M

SUMMARY DESCRIPTION: Mod existing Mk 45 MOD 0-8 test set. Improve capability to test Mk 45 MOD 7/8



0694



Mk 45 TDD Engineering Development HITL/Test Laboratory

Document Separator

# Tab 55. Simulation Laboratory—Missile HITL

# GENERAL INFORMATION

Facility/Capability Title: Simulation Laboratory—Missile HITL

Origin Date: 04/21/94

Service: Navy Organization/Activity: NAWCWPNS-CL Location: C291

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Hardware-in-the-Loop

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 20 | 40 | 40 | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 20 20/100 = 20% | 40 | 40 | | | |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.



0697

# TECHNICAL INFORMATION

Facility/Capability Title: Simulation Laboratory—Missile HITL

**Facility Description, Including Mission Statement:**

The China Lake Missile Simulation Laboratory (SIMLAB) is a fully equipped, state-of-the-art hardware-in-the-loop simulation facility, the acquisition cost of which has been close to $30M spread over 20 years. The SIMLAB consists of three RF facilities, two IR/EO facilities, an inertial flight table for testing inertial sensor packages, an imaging systems lab, and an assortment of real-time simulation computers and engineering work stations. Each of the RF facilities includes an anechoic chamber, a flight motion table, a target motion system, and RF target, background and CM generation equipment. Each of the IR/EO facilities similarly includes a flight motion table, a target motion simulator, and a target, background, and CM presentation capability in multiple spectral bands. . Mission is complete evaluation of missile hardware from component level to total system performance; pre/post-flight hardware testing; digital simulation validation.

**Interconnectivity/Multi-Use of T&E Facility:**

A fiber optic data link, networking hardware, and special purpose hardware and software interfaces between the SIMLAB and the China Lake F/A-18 Weapon System Support Activity (WSSA) will be in place by the end of FY94 which will allow real-time testing of an integrated weapon/platform system utilizing actual avionics and missile hardware for full system testing of captive-carry, launch, flyout, post launch data link, and terminal guidance.

**Type of Test Supported:**

Missile system/subsystem performance assessment - miss distance, seeker tracking, ECCM, IRCM, IRCCM, etc; missile integration testing; missile software V&V; missile G&C flight qualification testing.



0698

Simulation Laboratory—Missile HITL

Summary of Technical Capabilities:

RF #1: 30'X17'X15' anechoic chamber, 3 axis flight table, linear track target motion system (3 targets), 16 element phased array (8 - 18 GHz), various transmitters and jammers. RF #2: 31'X28'X29' anechoic chamber, 3 axis flight table, 3 element phased array, various transmitters and jammers. RF #3: 50'X30'X16' anechoic chamber, 3 axis flight table, dual spectrum (IR and RF) two target X-Y motion system, various transmitters and jammers. IR #1: 3 axis flight table, IR/EO target presentation system - X-Y motion, variable intensity target with multi-flare simulator to 100 flares/sec. IR #2: 3 axis flight table, IR/EO target presentation system - 5 independent targets (3 point and 2 variable size sources), multi-flare simulator to 100 flares/sec, IR background slides with X-Y motion. Inertial Flight Table: 3 axis flight table. Computing Resources: 16 real time computer systems with I/O for hardware interface (4 -AD10, 8-AD100, 4- ADRTS), 9 Silicon Graphics workstations, 2 Pixar image generation computers, 32 engineering workstations (13 Micro VAX, 1 DEC Alpha, 6 Sun, 12 PCs), 3 general purpose computers (1 VAX 780, 2 VAX 750), 6 analog computers (4 EAI 781, 2 EAI 2000) for interfacing and analog signal processing. Various test and calibration equipment.

Keywords:

Hardware-in-the-Loop, Simulation, Anechoic Chambers, Flight Motion Tables, Computers, EO, IR, RF Dual-Spectrum



0699

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Simulation Laboratory—Missile HITL
300300

| 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 | 15600 | 16800 | 16800 | 16800 | 16800 | 24000 | 18000 | 14400 |
| | TEST HOURS | 5200 | 5600 | 5600 | 5600 | 5600 | 8000 | 6000 | 4800 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0700

T&E

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Simulation Laboratory—Missile HITL

ANNUAL HOURS OF DOWNTIME (1) 730

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

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 22

| 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) 396 |
| HITL | 6 | 3 | 18 | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY (9) 144,540 |

"TYPICAL"

TOTAL 18

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:



0201

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Simulation Laboratory—Missile HITL

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 11 | 11 | 11 | 11 | 12 | 13 | 14 |
| Contractor | | | | | | | |
| Total | 11 | 11 | 11 | 11 | 12 | 13 | 14 |

Total Square Footage 23,000

Test Area Square Footage 21,300

Office Space Square Footage 1700

Tonnage of Equipment: 100

Volume of Equipment: 55000

Annual Maintenance Cost: $250K (EQPT only) Would take about $1M total to maintain minimum Simlab capability operational considering all factors.

Estimated Moving Cost: $5M

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 400K | 200K | 1750K | 475K | 900K | 800K | 1200K |
| 250K | 100K | 200K | 200K | 300K | 350K | 400K |

0762 A

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Simulation Laboratory—Missile HITL

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 11 | 11 | 11 | 11 | 12 | 13 | 14 |
| Contractor | | | | | | | |
| Total | 11 | 11 | 11 | 11 | 12 | 13 | 14 |

Total Square Footage 25,600

Test Area Square Footage 23,000

Office Space Square Footage 3600

Tonnage of Equipment: 100

Volume of Equipment: 14000

Annual Maintenance Cost: $250K (EOPT only) Would take about $1M total to maintain minimum Simlab capability operational considering all factors.

Estimated Moving Cost: $10M

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 400K | 200K | 1750K | 475K | 900K | 800K | 1200K |
| 250K | 100K | 200K | 200K | 300K | 350K | 400K |

0702

BRAC 95 DATA CALL #13 T&E ACTIVITY UIC: 60530

CHANGES REQUESTED PER NAWC HQ FAX OF 20 MAY 94

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Simulation Laboratory—Missile HITL

AGE: 23 yr REPLACEMENT VALUE: $50,400K(10,400KBldg

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: 9/1/1991

NATURE OF LAST UPGRADE: Construction of Advanced Anti-Air Facility, RF3

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: No major upgrades planned.

TOTAL PROGRAMMED AMOUNT: N/A R

SUMMARY DESCRIPTION: N/A

2. UPGRADE TITLE: N/A

TOTAL PROGRAMMED AMOUNT: N/A R

SUMMARY DESCRIPTION: N/A

Corrected Page 0703

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Simulation Laboratory—Missile HITL

AGE: 23 yr REPLACEMENT VALUE: $50,400K(10,400KBldg

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: 9/1/1991

NATURE OF LAST UPGRADE: Construction of Advanced Anti-Air Facility, RF3

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

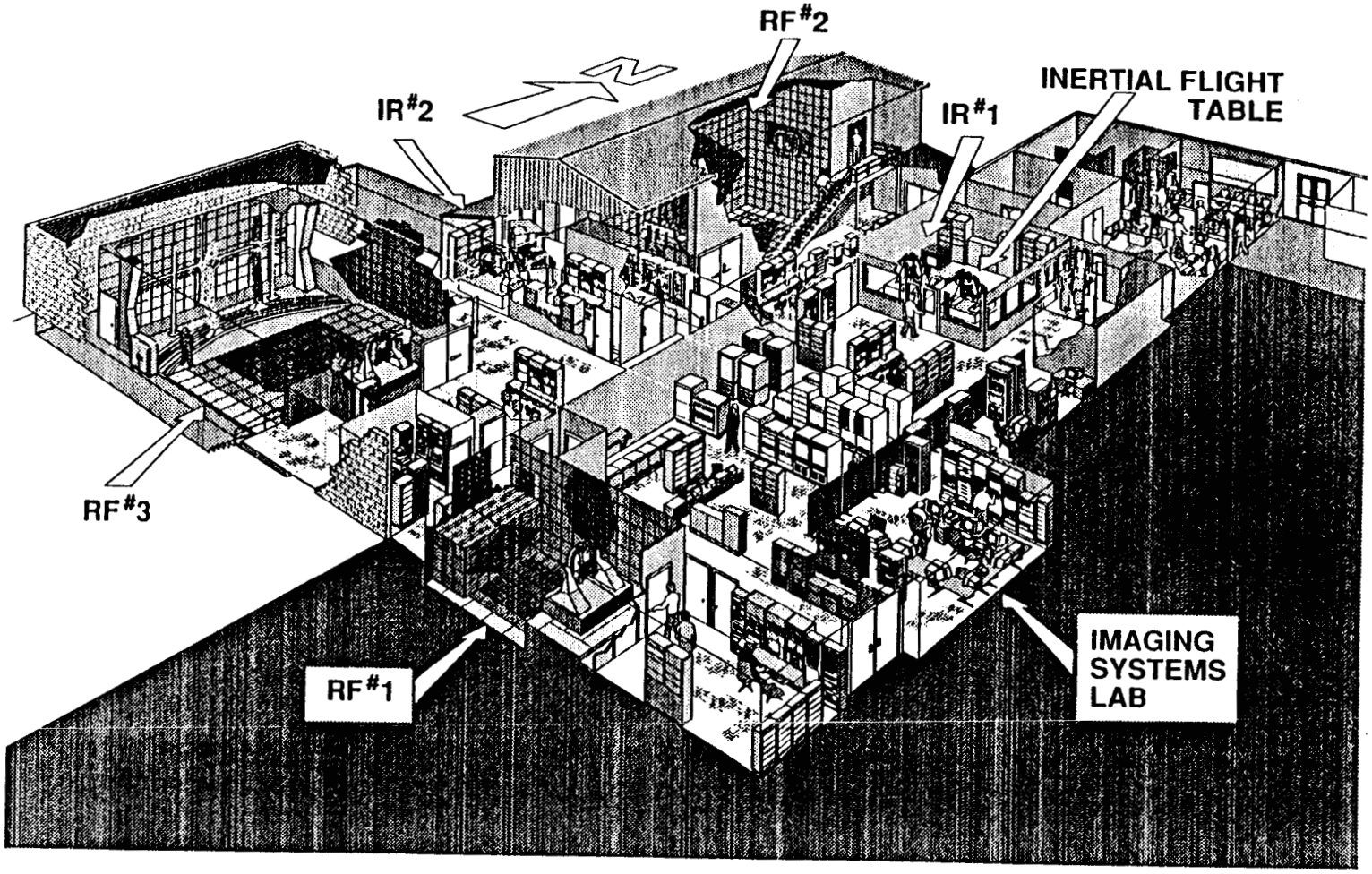
2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



0204




Simulation Laboratory—Missile HITL



0705

Document Separator

# Tab 56. TSSAM Hardware in the Loop



0706

# GENERAL INFORMATION

Facility/Capability Title: TSSAM Hardware in the Loop

Origin Date: 04/20/94

Service: N  Organization/Activity: NAWCAD China Lake Location: C28E

T&E Functional Area: Armament/Weapons  UIC = 60530

T&E Test Facility Category Hardware-in-the-Loop

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 50 | | 50 | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 5 | | 5 | | | |
| Armament/Weapons | 45 | 65/90 = 50% | 45 | | | |
| EC | | | | | | |
| Other | | | | | | |

Total in breakout must equal "Percentage Use" on first line.



0707

# TECHNICAL INFORMATION

Facility/Capability Title: TSSAM Hardware in the Loop

| |
|---|
| Facility Description, Including Mission Statement:<br><br>This facility is designed to test, evaluate and assist in the development of the TSSAM weapons System hardware and software throughout the life cycle of the program. |
| Interconnectivity/Multi-Use of T&E Facility:<br><br>This facility is used in conjunction with TSSAM Mission Planning facilities and local aircraft assets to provide an end-to end system capability for the TSSAM weapon system. The HITL may also be used by other systems with similar type components. |
| Type of Test Supported:<br><br>Testing consists of system level testing including launch platform interfaces, avionics systems, guidance systems, and their associated hardware and software. |
| Summary of Technical Capabilities:<br><br>This facility includes the full range of instrumentation and target generation capabilities required to fully evaluate the weapon system. |
| Keywords:<br><br>Simulator, Embedded Computers, Real-Time, Graphics, Life-Cycle Support, System Test, Analysis Tools |



0708

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: TSSAM Hardware in the Loop

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 350 | 700 | 1050 | 1575 | 2800 | 3185 |
| | TEST HOURS | | | | | 22 | 36 | 58 | 82 |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | 0 | 0 | 3150 | 6300 | 9450 | 14175 | 25200 | 28665 |
| | TEST HOURS | | | | | 220 | 368 | 562 | 734 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0709 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: TSSAM Hardware in the Loop

| T&E FUNCTIONAL AREA | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 350 | 700 | 1050 | 1575 | 2800 | 3185 |
| | TEST HOURS | | | | | 262 | 787 | 2800 | 3185 |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | 0 | 0 | 3150 | 6300 | 9450 | 14175 | 25200 | 28665 |
| | TEST HOURS | | | | | 2362 | 7087 | 25200 | 28665 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

?



0209

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: TSSAM Hardware in the Loop

ANNUAL HOURS OF DOWNTIME (1) 448

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 1.2

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 22.8

| 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) 410.4 |
| HITL | 3 | 6 | 18 | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY (9) 149796 |

"TYPICAL"

TOTAL 18

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? yes

If yes, explain: The unconstrained capacity is limited by the hardware and laboratory space available but is sufficient to support this program as well as other similar programs.



0710

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: TSSAM Hardware in the Loop

**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 | 19 | 16 | 19 | 17 | 16 | 14 | 14 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 19 | 16 | 19 | 17 | 16 | 14 | 14 |

Total Square Footage 3100

Test Area Square Footage 2900

Office Space Square Footage 200

Tonnage of Equipment: 50

Volume of Equipment: 8000

Annual Maintenance Cost: $546K

Estimated Moving Cost: 300

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | | | | | | |
| $404K | $256K | $166K | $284K | $398K | $209K | $154K |
| | | | | | | |

T&L

CHANGES REQUESTED PER NAWC HQ FAX OF 20 MAY 94

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: TSSAM Hardware in the Loop

AGE: 4 Years REPLACEMENT VALUE: $10,250 K (250K Bldg)

MAINTENANCE AND REPAIR BACKLOG: $11K

DATE OF LAST UPGRADE: 10/1/93

NATURE OF LAST UPGRADE: Moved laboratory to co-locate with other facilities and provide more space. Laboratory has been in development mode and has been constantly upgraded to its current fully operational condition.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Interior Security Upgrades

TOTAL PROGRAMMED AMOUNT: $15K R

SUMMARY DESCRIPTION: Relocate existing security door.

2. UPGRADE TITLE: Construct Block Wall

TOTAL PROGRAMMED AMOUNT: $18K R

SUMMARY DESCRIPTION: Construct block wall for rainwater diversion and wind break.

Correct page

0212

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: TSSAM Hardware in the Loop

AGE: 4 Years REPLACEMENT VALUE: $10,250 K (250K Bldg)

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: 10/1/93

NATURE OF LAST UPGRADE: Moved laboratory to co-locate with other facilities and provide more space. Laboratory has been in development mode and has been constantly upgraded to its current fully operational condition.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:

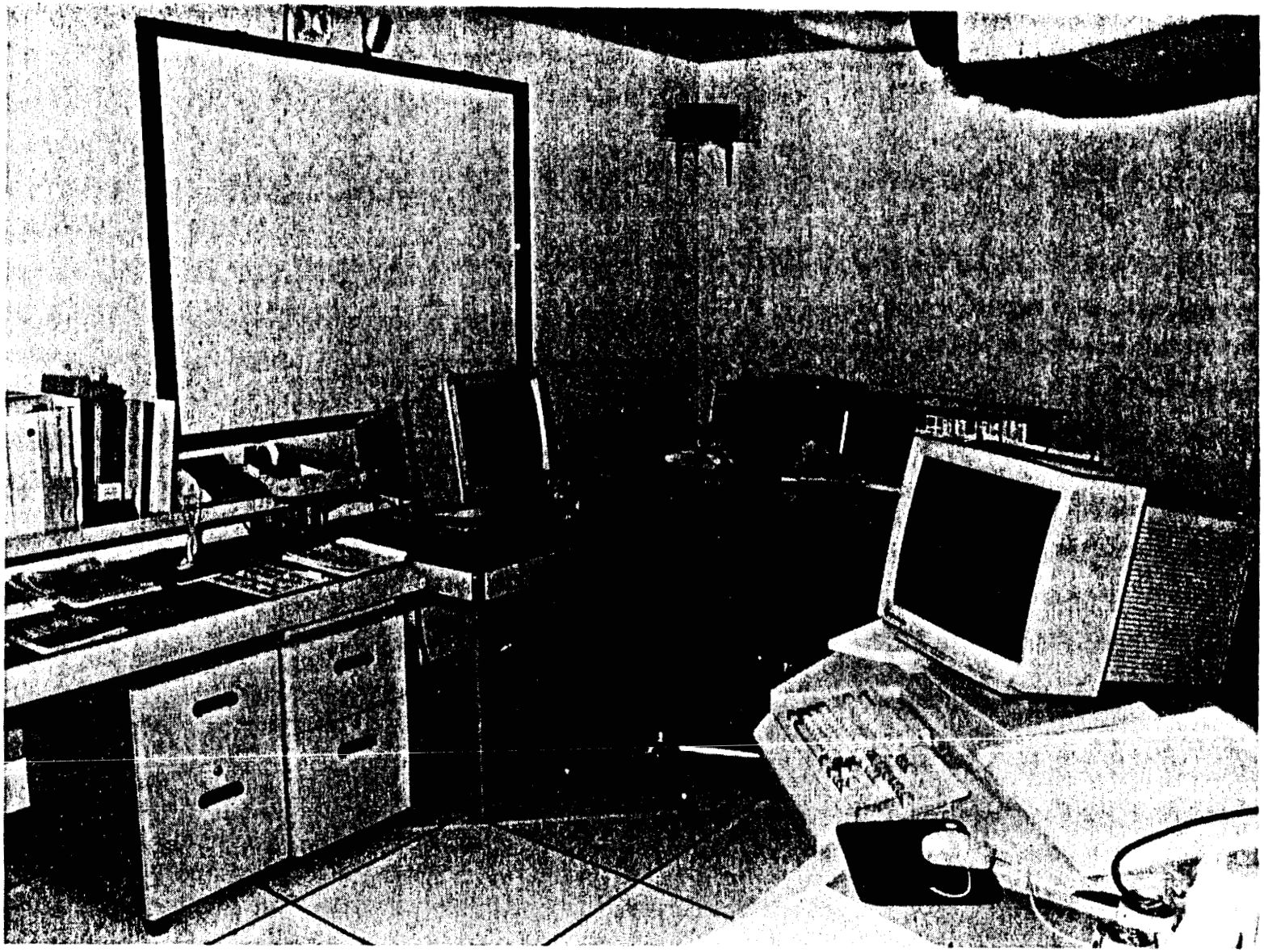
2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:

SUMMARY DESCRIPTION:



0213



TSSAM Hardware In the Loop



0214

# Document Separator

# Open Air



6715

# Document Separator

# GENERAL INFORMATION

.: Air/Ground Range

Origin Date: 4/19/94

Service: Navy Organization/Activity: NAWC China Lake Location: C322

T&E Functional Area: Armament / Weapons UIC = 60530

T&E Test Facility Category Open Air Ranges

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 98 | 0 | 0 | 0 | 2 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 3 | 0 | 0 | 0 | 0 | 0 |
| Armament/Weapons | 85 | 1 | 0 | 0 | 0 | 0 |
| EC | 2 | 0 | 0 | 0 | 0 | 0 |
| Other | 8 | 0 | 0 | 0 | 0 | 0 |

Total in breakout must equal "Percentage Use" on first line.

?



0127

# Tab 57. Air/Ground Range



0716

# GENERAL INFORMATION

Facility/Capability Title: Air/Ground Range

Origin Date: 4/19/94

Service: Navy Organization/Activity: NAWC China Lake Location: C322

T&E Functional Area: Armament / Weapons UIC = 60530

T&E Test Facility Category Open Air Ranges

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 95 | 0 | 0 | 0 | 5 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 3 | 0 | 0 | 0 | 0 | 0 |
| Armament/Weapons | 85 | 1 | 0 | 0 | 0 | 0 |
| EC | 1 | 0 | 0 | 0 | 0 | 0 |
| Other | 6 | 0 | 0 | 0 | 5 | 0 |

85/86 = 99%

Total in breakout must equal "Percentage Use" on first line.

0717 A

# TECHNICAL INFORMATION

Facility/Capability Title: Air/Ground Range

Facility Description, Including Mission Statement:

The North Range is a fully instrumented MRTFB facility supporting T&E for both air and ground testing of conventional weapons - including cruise missiles, air vehicle tests, training and tactics development, and parachute systems.

The Range includes over 1.1 million acres of land and over 20,000 sq mi. of restricted air space. The primary range can be subdivided into smaller ranges that are used independently or collectively depending on test scenarios.

The climate and geography of these lands are typical of the arid regions of the U.S. Southwest. The weather is usually clear, with very little precipitation and practically unlimited visibility throughout most of the year. The land is barren consisting mainly of flat dry lake beds, large dry washes, alluvial fans, and rugged mountains. Nearly all the land is used exclusively for test and evaluation or as a buffer between sensitive / hazardous tests and the surrounding civilian lands.

Outside Center boundaries the land is sparsely populated, equally as diverse in topography and ground cover, and, within a radius of 50 miles, mainly in the public domain. The airspace over the test ranges is restricted from surface to infinity; the surrounding lands are overlain by the R-2508 complex of restricted airspaces (20,000 ft above sea level to infinity), which center on NAWC and cover an area larger than the state of Maryland. These restricted airspaces combine with the surrounding desert to provide safe and secure air and ground range operational areas.

Interconnectivity/Multi-Use of T&E Facility:

The range areas are interconnected internally and externally. Internally all "sub" ranges are connected via fiber optic and other communications networks along with a common work force and instrumentation suite. The range test activities are also closely integrated with the centers R&D activities, multiple laboratories, and airfield.

Externally the North ranges are electronically linked with the Electronic Combat Range, Edwards AFB, Vandenberg AFB, and Pt Mugu. Other interrange tests have also been accomplished with Ft. Irwin and UTTR.

Future programmed links include connecting the ranges with the F-18 WSSA, WEPTAC, and the Simulation Labs.

The North Range complex includes a tri-service customer base along with a variety of other customers - DOE, NASA, DOT, foreign militaries, and private corporations.

Percentage of total test work load involving linking in FY93 was less than 1%. The information provided on the following pages lists those dedicated interconnection activities on-line during FY93 or in development for the Electronic Combat Range (ECR) during FY94. Additional temporary interconnection activities that have been activated to support single test events or concept exploration are also included. Due to ECRs unique capability and remote location, all other facilities are considered external sites.

Type of Test Supported:

Tests supported include: air-to-air and air-to-surface missiles and guns, rockets, bombs, cluster munitions, cruise missiles, VAVs, small to large caliber guns and artillery, fuzing and sensor tests, and mass detonations tests.

Summary of Technical Capabilities:

The China Lake North Range is a full spectrum land range for T&E of conventional weapons and aircraft systems. Capable of day or night operations with a complete instrumentation suite including: photo-optical, telemetry, and radar systems; video and laser trackers; meteorological data; and command and communications systems. The range also provides a wide range of targets from simple billboards to full scale aerial targets and has the largest array of 'shootable' RF targets for anti-radiation missile testing in the US.

Keywords:

Land Range, Armament/Munitions, Test and Evaluation, Training



0219

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Air/Ground Range
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | |
|---|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 7,200 | 6,800 | 6,500 | 6,700 | 7,300 | 6,800 | 6,000 | 5,600 | |
| | TEST HOURS | 126 | 124 | 114 | 98 | 106 | 110 | 84 | 103 | |
| | MISSIONS | 77 | 75 | 70 | 66 | 69 | 68 | 56 | 53 | = 534 |
| EC | DIRECT LABOR | 2,400 | 2,300 | 2,200 | 2,200 | 2,400 | 2,300 | 2,000 | 1,900 | |
| | TEST HOURS | 42 | 41 | 38 | 33 | 35 | 36 | 28 | 35 | |
| | MISSIONS | 26 | 25 | 23 | 22 | 23 | 23 | 18 | 18 | = 178 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 203,200 | 191,300 | 183,600 | 189,600 | 206,600 | 193,800 | 170,900 | 159,800 | |
| | TEST HOURS | 3572 | 3514 | 3231 | 2787 | 3006 | 3104 | 2371 | 2933 | |
| | MISSIONS | 2171 | 2135 | 1994 | 1857 | 1964 | 1929 | 1546 | 1504 | |
| OTHER T&E | DIRECT LABOR | 14,300 | 13,500 | 13,000 | 13,400 | 14,600 | 13,700 | 12,100 | 11,300 | = 15100 |
| | TEST HOURS | 252 | 248 | 228 | 197 | 212 | 219 | 167 | 207 | |
| | MISSIONS | 153 | 151 | 141 | 131 | 139 | 136 | 109 | 106 | 1066 |
| OTHER | DIRECT LABOR | 11,600 | 11,300 | 10,800 | 11,200 | 12,200 | 11,400 | 10,000 | 9,400 | |
| | TEST HOURS | 210 | 207 | 191 | 164 | 177 | 183 | 139 | 172 | |
| | MISSIONS | 128 | 126 | 117 | 109 | 116 | 113 | 91 | 88 | 888 |

24,120
77%
24,770

17766

20,770
6354



0720

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Air/Ground Range

ANNUAL HOURS OF DOWNTIME (1) 2672

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 7.3

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 16.7

| 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) 6012 Hrs |
| Air | 3 | 60 | 180 | |
| Ground | 3 | 60 | 180 | ANNUAL UNCONSTRAINED CAPACITY (9) 2,194.4 k Hrs |

Air = A/A, A/S, S/A

Grd = S/S, missiles, guns, rockets, mass det.

TOTAL 360

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain: N/A



024

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Air/Ground Range

**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 | 204 | 188 | 185 | 185 | 185 | 185 | 185 |
| Contractor | 75 | 79 | 75 | 75 | 75 | 75 | 75 |
| Total | 279 | 267 | 260 | 260 | 260 | 260 | 260 |

Total Square Footage Bdg = 229,059

Test Area Square Footage >1.1M Acres

Office Space Square Footage 9,162

Tonnage of Equipment: >1,000

Volume of Equipment: > 1M

Annual Maintenance Cost: 7322k

Estimated Moving Cost: >500M

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 3666 | 3627 | 2956 | 3342 | 2013 | 2697 | 5182 |
| 6570 | 5720 | 1190 | 0 | 0 | 0 | 0 |
| | | | | | | |

0722 A

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Air/Ground Range

**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 | 204 | 188 | 185 | 185 | 185 | 185 | 185 |
| Contractor | 75 | 79 | 75 | 75 | 75 | 75 | 75 |
| Total | 279 | 267 | 260 | 260 | 260 | 260 | 260 |

Total Square Footage Bdg = 229,059

Test Area Square Footage ≥1.1M Acres

Office Space Square Footage 9,162

Tonnage of Equipment: ≥1,000

Volume of Equipment: ≥ 1M

Annual Maintenance Cost: 7322k

Estimated Moving Cost: ≥500M

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 3666 | 3627 | 2956 | 3342 | 2013 | 2697 | 5182 |
| | | | | | | |
| | | | | | | |

0722

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Air/Ground Range

AGE: Ave = 27.9

REPLACEMENT VALUE: $231,000k (Bldgs $67,600k)

MAINTENANCE AND REPAIR BACKLOG: Total backlog is $2.58M.

DATE OF LAST UPGRADE: 1/1/91

NATURE OF LAST UPGRADE: Recent major facility upgrades have included:

(1) FY91, New Operations & Instrumentation Lab

(2) FY84, New Range Control Facility (P-268). Upgraded included all new range control facility - test bays, video center, airspace control center, drone control, and communications room.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Relocate Capri Radar, Baker Range

TOTAL PROGRAMMED AMOUNT: $300K

SUMMARY DESCRIPTION: Construct new transmitter building and pedestal for Capri radar to correct RADHAZ safety regulation.

2. UPGRADE TITLE: Communications Upgrades

TOTAL PROGRAMMED AMOUNT: $3129KK

SUMMARY DESCRIPTION: Upgrade and expansions of range communications systems.



0723

3. UPGRADE TITLE: Data Processing & Control Enhancements

TOTAL PROGRAMMED AMOUNT: $3849K

SUMMARY DESCRIPTION: Replacement of flight-termination transmitters and completion of data-processing center rehost.

4. UPGRADE TITLE: Telemetry Upgrades

TOTAL PROGRAMMED AMOUNT: $2777K

SUMMARY DESCRIPTION: Upgrade of telemetry data-acquisition system.

5. UPGRADE TITLE: Time, Space, and Position Data

TOTAL PROGRAMMED AMOUNT: $9510K

SUMMARY DESCRIPTION: Procurement and upgrade of Kineto tracking mounts along with GPS and Laser tracker upgrades.



0724

# CHINA LAKE RANGE ASSETS

Air/Ground Range

**LAND AND AIRSPACE**

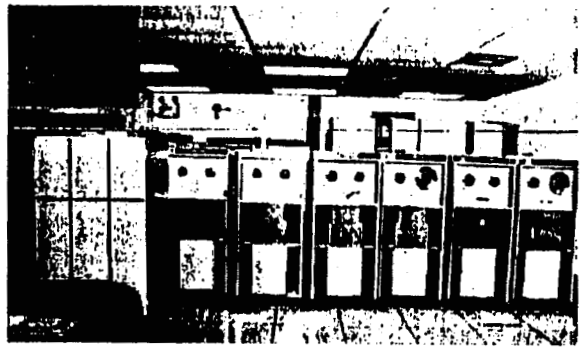
- 1,127,016 ACRES
- 20,000 SQ MILES RESTRICTED AIR SPACE

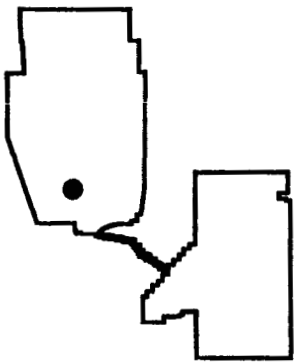


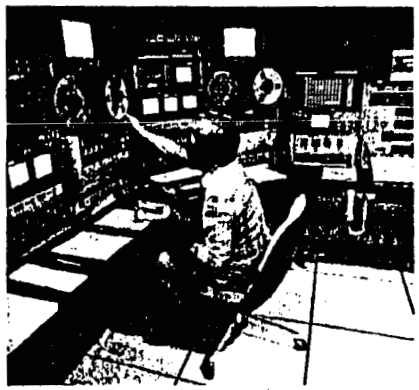
0725

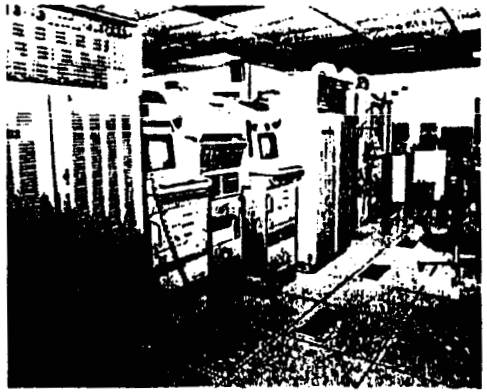
# RANGE CONTROL CENTER

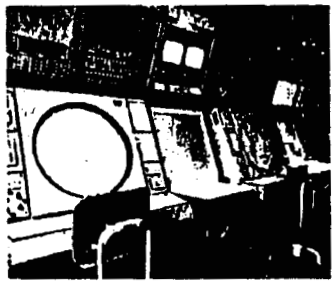
- TEST PLANNING/ COORDINATION
- TEST CONTROL
- DATA ACQUISITION
- DRONE OPERATIONS
- QUICK LOOK DATA
- 24 HOUR DATA TURN AROUND









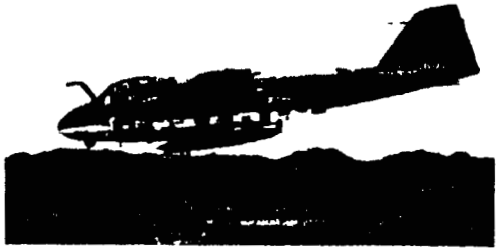


Air/Ground Range

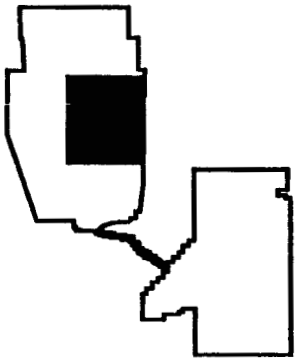


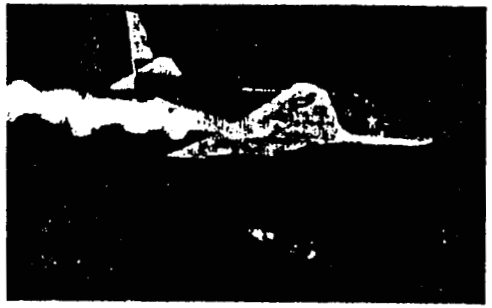
0726

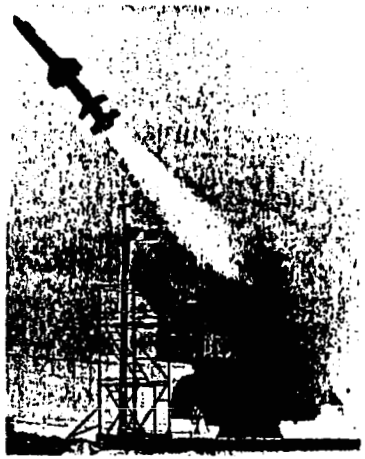
# GEORGE RANGE



- AIR-AIR, AIR-GROUND, GROUND-GROUND GUIDED MISSILES
- AIRCRAFT/MISSILE ELECTRONIC/ MECHANICAL COMPATIBILITY
- SEEKER TESTS
- MISSILE CONTROL SOFTWARE
- WARHEAD EFFECTIVENESS



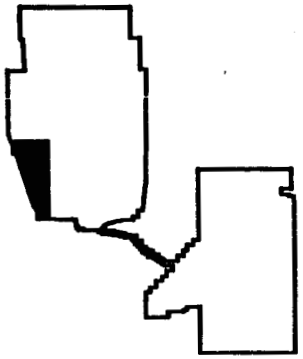




Air/Ground Range

# BAKER/CHARLIE RANGES

- AIR DELIVERED BOMBS/ROCKETS
- AIR-GROUND WEAPONS SYSTEM SOFTWARE
- VALIDATE UNGUIDED WEAPONS BALLISTICS
- FUZING DEVICE TESTS
- VIDEO IMPACT SCORING



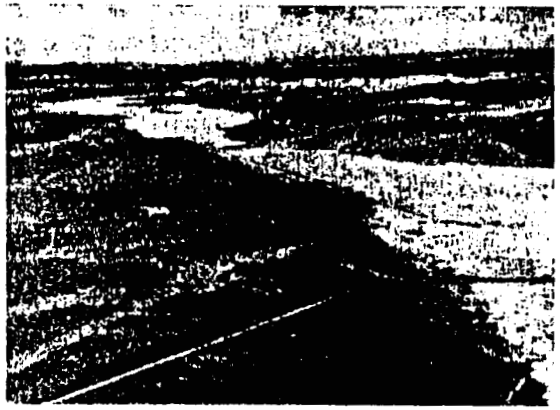
Air/Ground Range

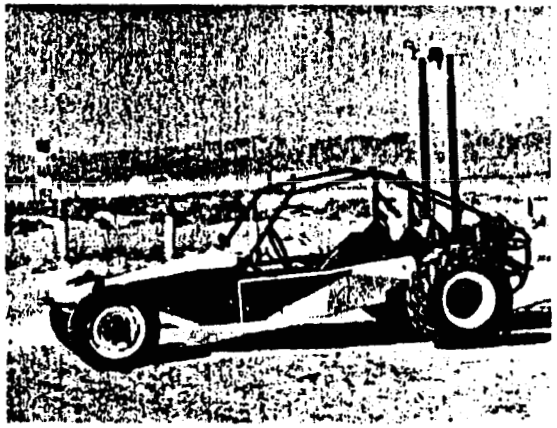


0728

# AIRPORT LAKE

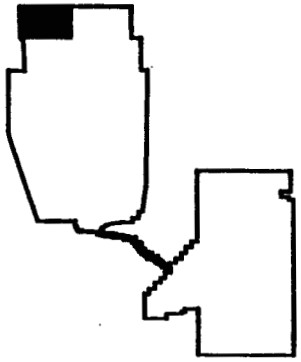
- 37 SQ MILE AREA INCLUDES DRY LAKE BED
- IDEAL RACE TRACK FOR MOBILE LAND TARGETS
- AIR-GROUND, GROUND-GROUND WEAPONS
- CLUSTER WEAPONS
- SEEKER/FUZES
- WARHEAD EFFECTIVENESS



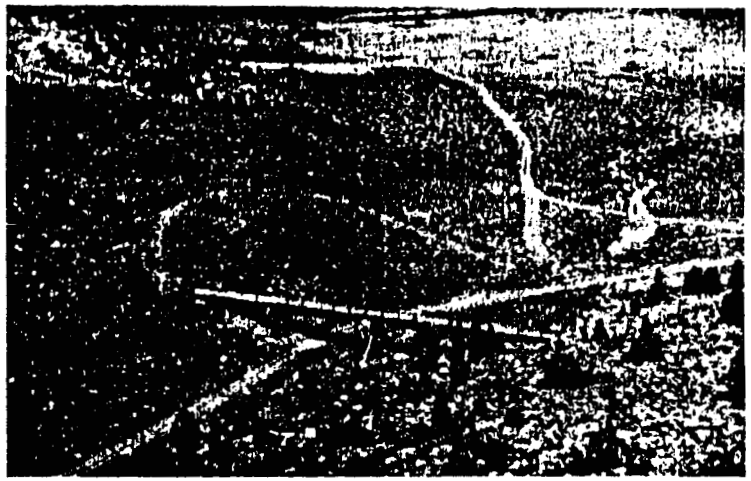


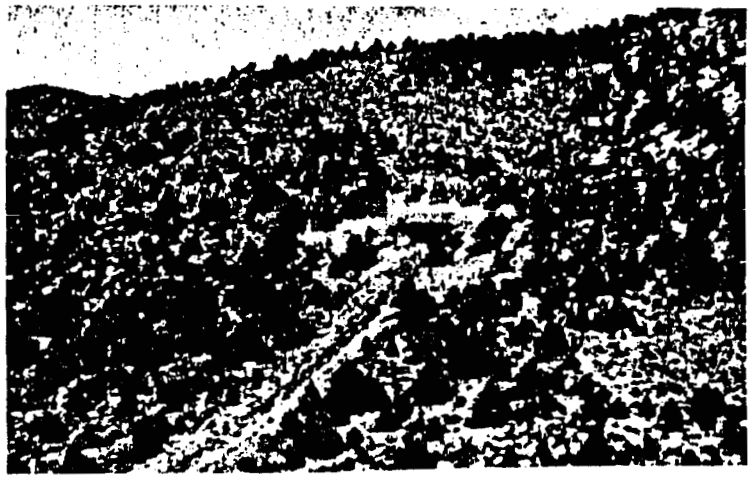
Air/Ground Range

# COSO MILITARY TARGET RANGE



- REALISTIC TACTICAL ENVIRONMENT
- A-G WEAPONS SYSTEMS
- GUIDED WEAPONS
- AIRBORNE SENSORS
- ATTACK TECHNIQUES

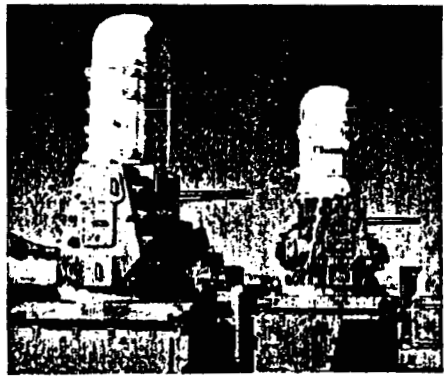


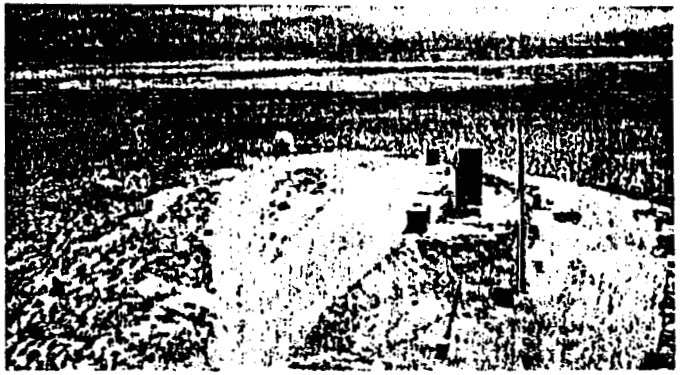


Air/Ground Range

# G-6 ANTI-SHIP MISSILE DEFENSE RANGE

- CLOSE IN WEAPONS SUPPORT SYSTEMS (PHALANX)
- VERTICAL LAUNCH WEAPONS
- HILLTOP LOCATION, 700 FT ABOVE VALLEY FLOOR
- WITHSTAND IMPACT OF FULL-SCALE AERIAL TARGET





Air/Ground Range

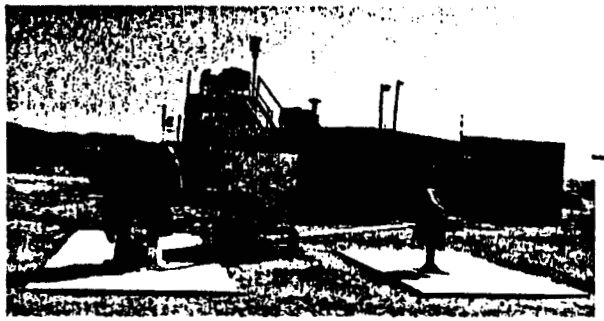
# MISCELLANEOUS AIR/GROUND RANGES

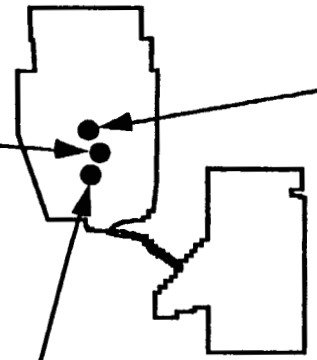
**REDEYE SMALL MISSILE RANGE**

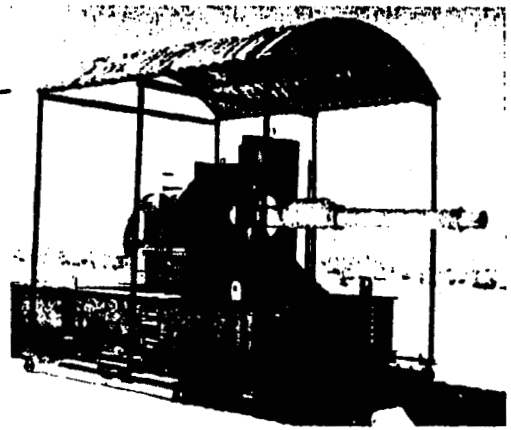
- SHORT RANGE GROUND-AIR, GROUND-GROUND MISSILES

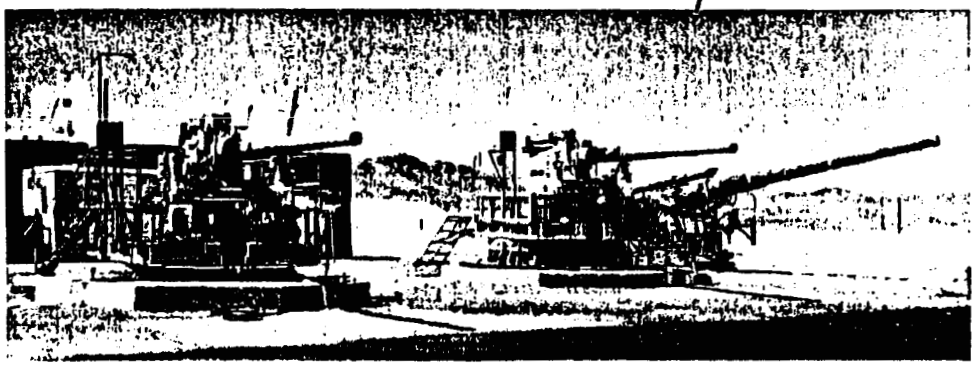
**120mm GUN LINE**

- LOT ACCEPTANCE
- FUZE TESTS









**G-2 EXTERIOR BALLISTICS RANGE**

- GUN LINES
- SURFACE LAUNCH MISSILES

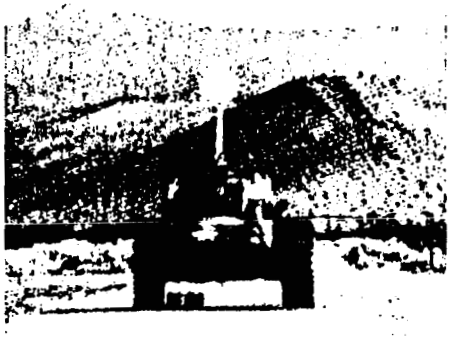
Air/Ground Range

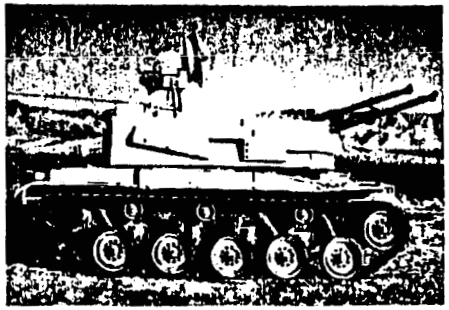


0732

# TARGETS

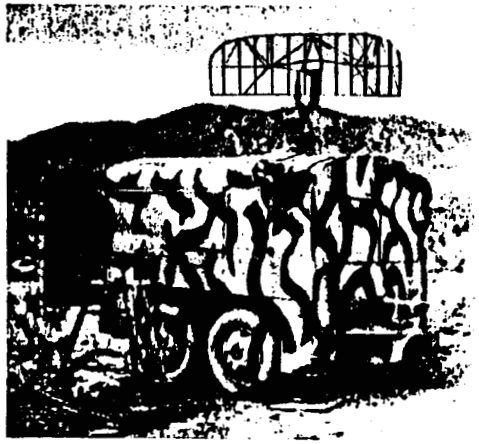
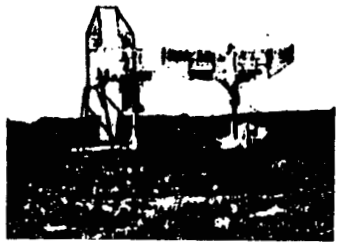
- TANK PARK
- 120mm ANTI-AIRCRAFT BATTERY
- MILITARY SUPPLY DUMP
- TRUCK CONVOY
- TWO 260 FT BAILEY BRIDGES
- REVETTED SURFACE-TO-AIR MISSILE SITE
- BILLBOARDS
- AERIAL (QF-4, QF-86, QH-50)
- AIRCRAFT FOR TRACKING TESTS
- RF TARGETS
- FIXED OR MOVING GROUND TARGETS
- TUNNEL ENTRANCES
- SPECIALIZED TARGETS AS REQUIRED
- IR SOURCES

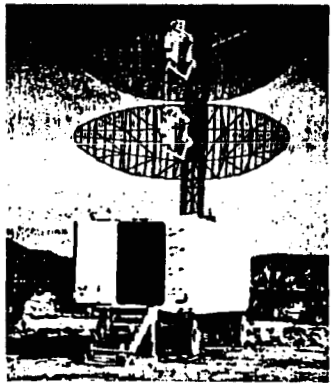
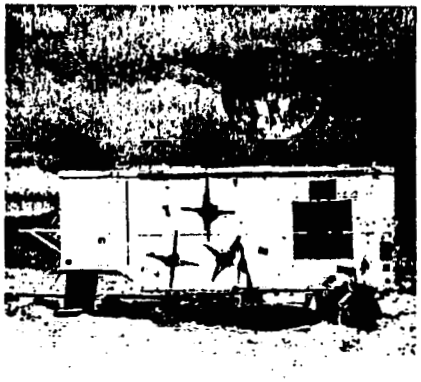
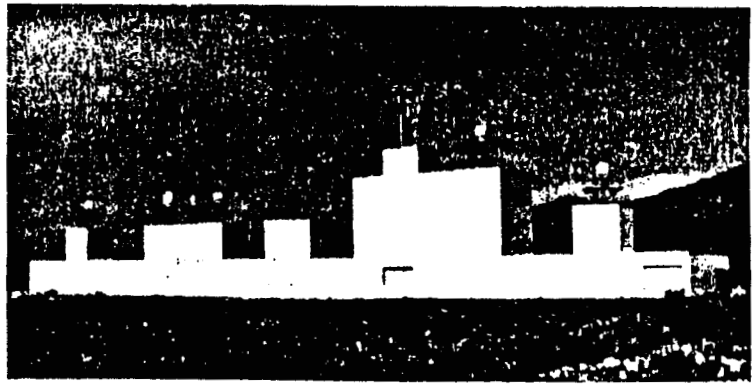




Air/Ground Range

# ARM TARGETS

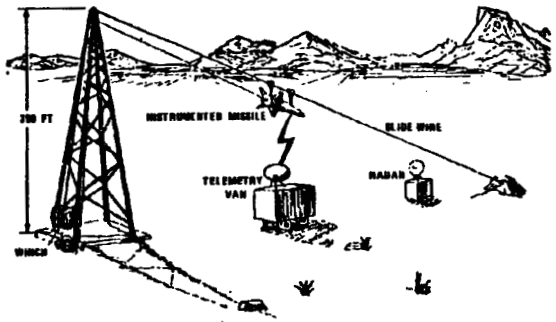
Air/Ground Range

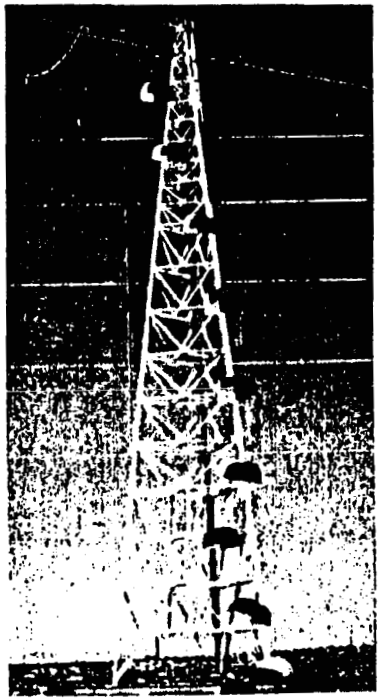


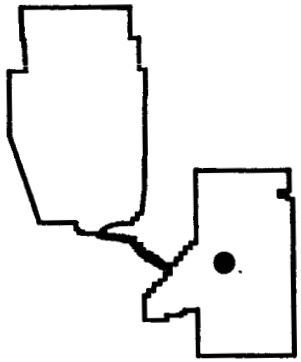
0734

# RANDSBURG WASH FUZE RANGE

- GUN LINE
- SURFACE MISSILE LAUNCHERS
- FULL-SCALE TARGET SUSPENSION 250 FT AGL
- ARM PULL-BYS
- PARACHUTE TESTS



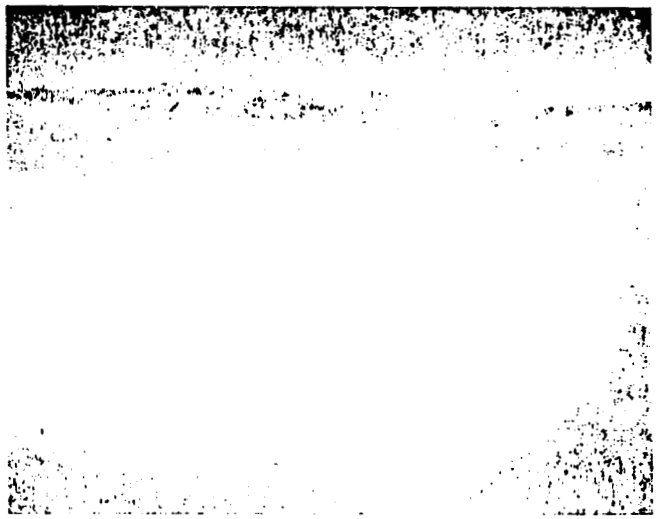



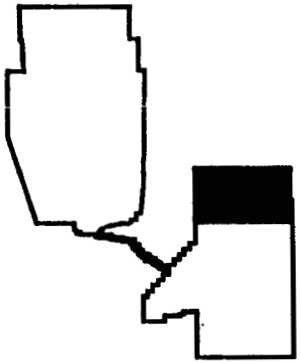


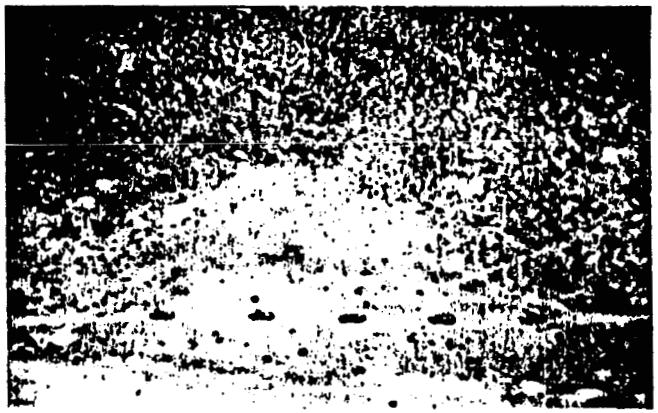
Air/Ground Range

# MOJAVE B NORTH

- DESERT TACTICAL ENVIRONMENT
- AIR-GROUND & GROUND-AIR SYSTEMS
- REMOTE/ISOLATED







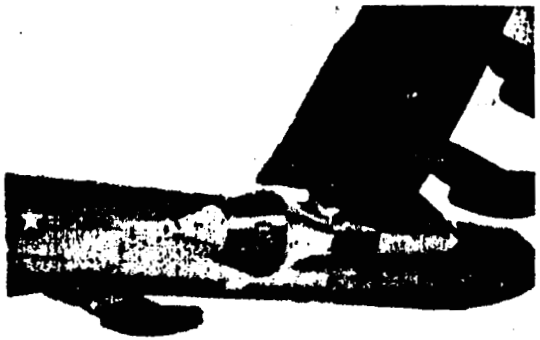
Air/Ground Range

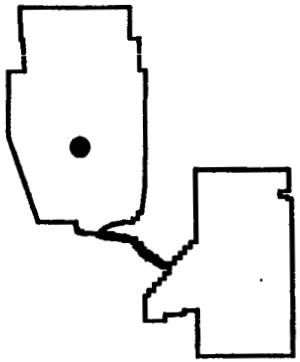


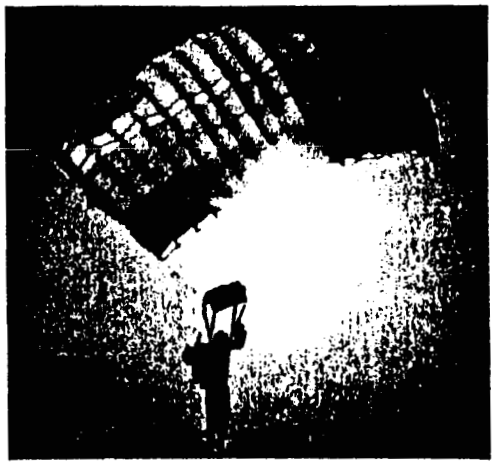
0736

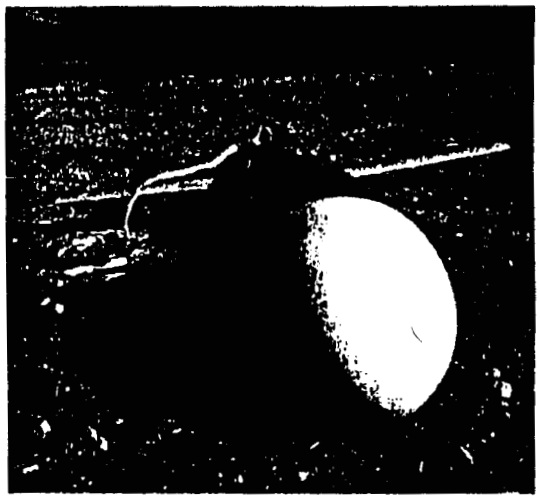
# PARACHUTE DROP ZONE

- AIR CREW ESCAPE SYSTEMS
- PARACHUTE STABILIZED AIR-DELIVERED WEAPONS
- PROFICIENCY/QUALIFICATION JUMPS
- WEAPONS/VEHICLE RECOVERY









Air/Ground Range



6737

# Document Separator

# Tab 58. Electronic Combat Range (ECR)



0738

# GENERAL INFORMATION

Facility/Capability Title: Electronic Combat Range (ECR)

Origin Date: 4/19/94

Service: Navy Organization/Activity: NAWCWPNS Location: CODE C33

T&E Functional Area: ELECTRONIC COMBAT UIC = 60530

T&E Test Facility Category OPEN AIR RANGE (OAR)

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 83 | 0 | 0 | 0 | 13 | 4 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 1 | | | | | |
| Armament/Weapons | 27 | | | | | 2 |
| EC | 55 | 0 | 0 | 0 | 13 | 2 |
| Other | | | | | | 0 |

27/29 = 93%

Total in breakout must equal "Percentage Use" on first line.

0739 A

# GENERAL INFORMATION

Facility/Capability Title: Electronic Combat Range (ECR)

Origin Date: 4/19/94

Service: Navy Organization/Activity: NAWCWPNS Location: CODE C33

T&E Functional Area: ELECTRONIC COMBAT UIC = 60530

T&E Test Facility Category OPEN AIR RANGE (OAR)

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 60 | 0 | 0 | 0 | 13 | 27 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | | | | | | |
| EC | 60 | 0 | 0 | 0 | 0 | 0 |
| Other | | | | | | 0 |

Total in breakout must equal "Percentage Use" on first line.



0739

# TECHNICAL INFORMATION

Facility/Capability Title: Electronic Combat Range (ECR)

Facility Description, Including Mission Statement:

The Electronic Combat Range (ECR) is one of the Land Ranges supporting the Test and Evaluation mission of the Center. ECR specifically provides the open air range (free space) resources (people, land, airspace, facilities, air defense threat systems, instrumentation, data reduction) required to support customers who need to test airborne systems designed to collect signals from, counter or penetrate air defenses. The technical activity of ECR includes the acquisition and/or development of threat air defense systems, acquisition or development of communication and instrumentation systems and facilities, and the operation and maintenance of the range. This includes research and implementation of threat intelligence data and operating doctrine. Unique threat systems at ECR include Russian Naval Systems, shipboard C2 system, same land based systems, and some blue/gray systems. ECR is the only EW OAR that has any Russian Naval Systems or associated shipboard C2 simulations.

Interconnectivity/Multi-Use of T&E Facility:

ECR is interconnected by a DS-3 Digital data link to the NAVAIR/NAWCWPNS Corporate Data Network. Through this network ECR has been interconnected by multiple T-1 links with the FA-18 WSSA at China Lake and the China Lake North Range Control Center (RCC). This network provides connectivity with the workwide DOD data network and ECR data has been passed to various places over this net-work. ECR also receives data through this network on the current R-2508 air situation from the Edwards AFB. ECR has a three runway airfield with a hanger, support facilities which are used for testing of UAV systems. ECR also has a Parachute Drop Zone which can be used

Type of Test Supported:

The ECR supports the development, production, and employment of airborne EC systems by providing the resources necessary to carry out development and operational testing during the acquisition process. Limited multispectral measurements can be made using non-ECR NAWCWPNS assets. Captive ARM weapons seekers and related avionics systems are tested. Unmanned air vehicles and cruise missiles are tested in a variety of ways in an EC environment.

Summary of Technical Capabilities:

Full systems integration testing is performed for air vehicles including avionics integration and EC systems integration. ECM effectiveness tests, including track error measurement, missile and gun miss distance calculations, and probability of engagement are conducted. Threat warning receiver tests include accuracy, sensitivity and logic. Radar cross section measurements are made from the Threat Point of View for both air vehicles and expendables as seen by the threat for up to four frequencies simultaneously. Free space hardware in the loop (HITL) tests are conducted at the Slate Range Facility (SRF) using the Moving Target Simulation (MTS).

Keywords:

Electronic Combat (EC), Open-Air Range (OAR), Electronic Countermeasure (ECM) Testing



0440

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Combat Range (ECR)
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | |
|---|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | | 12473 | 858 | |
| | TEST HOURS | | | | | | | 283 | 14 | |
| | MISSIONS | | | | | | | 100 | 4 | 104 |
| EC | DIRECT LABOR | 76650 | 85050 | 74200 | 71575 | 74550 | 102200 | 64915 | 70404 | |
| | TEST HOURS | 1645 | 1825 | 1592 | 1533 | 1598 | 2305 | 1470 | 1149 | |
| | MISSIONS | 779 | 740 | 712 | 727 | 779 | 1018 | 596 | 552 | 5903 |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | | 15362 | 29713 | |
| | TEST HOURS | | | | | | | 348 | 484 | |
| | MISSIONS | | | | | | | 173 | 174 | 347 |
| OTHER T&E | DIRECT LABOR | | | | | | | | | |
| | TEST HOURS | | | | | | | | | |
| | MISSIONS | | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | | |
| | TEST HOURS | | | | | | | | | |
| | MISSIONS | | | | | | | | | |

0741 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Combat Range (ECR)
300300

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | 76650 | 85050 | 74200 | 71575 | 74550 | 102200 | 92750 | 100975 |
| | TEST HOURS | 1645 | 1825 | 1592 | 1533 | 1598 | 2305 | 1750 | 1648 |
| | MISSIONS | 779 | 740 | 712 | 727 | 779 | 1018 | 869 | 730 |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0741

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Electronic Combat Range (ECR)

ANNUAL HOURS OF DOWNTIME (1) 365

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 1

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23

| 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) 10189 |
| EC | 2 | 205 | 410 | |
| Ground | 3 | 11 | 33 | ANNUAL UNCONSTRAINED CAPACITY (9) 3718985 |
| "TYPICAL" | 1 | 1 | | |
| | | | TOTAL 443 | |

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? NO

If yes, explain:

0742

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Electronic Combat Range (ECR)

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Enlisted | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Civilian | 148 | 143 | 142 | 132 | 126 | 126 | 126 |
| Contractor | 101 | 100 | 101 | 111 | 117 | 117 | 117 |
| Total | 251 | 245 | 245 | 245 | 245 | 245 | 245 |

Total Square Footage 101,815 SF

Test Area Square Footage 81,452 SF

Office Space Square Footage 4072 SF

Tonnage of Equipment: 1,940

Volume of Equipment: 1,240,000

Annual Maintenance Cost: $8.3M

Estimated Moving Cost: $165 M

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 1751 | 2554 | 2718 | 3327 | 2681 | 3026 | 2955 |
| 11204 | 11415 | 10075 | 12465 | 12262 | 14150 | 13109 |
| 2880 | 1767 | 4025 | 2375 | | | |



0743

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Electronic Combat Range (ECR)

AGE: 1945 to 94

REPLACEMENT VALUE: ($32.2M Buildings)

MAINTENANCE AND REPAIR BACKLOG: $204K for Buildings

DATE OF LAST UPGRADE: August 94

NATURE OF LAST UPGRADE: Sea Site 3/Engineering Support Facility (MILCON P-454). Sea Site 3 will be the third "ship" in the ECR Integrated Naval Air Defense Simulation (INADS). Sea Site 3 will house an existing ECR naval search and acquisition radar, a gun control radar, and an IR seeker simulator currently located at various locations throughout the range, and will be home for future systems. Additionally, ECR's latest land-based long range fire control radar will be installed at the site.

The Engineering Support Facility is being built at ECR Central Site and will house engineering staff, laboratories, and a High Bay facility to be used for radar integration, maintenance, repair and Foreign Material Exploitation. The ESF will also house the ECR classified material library. Sea Site 3 and the ESF are scheduled to be completed in August 94.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: EO602 Simulator Development Program (PE 064256N)

TOTAL PROGRAMMED AMOUNT: $150K

SUMMARY DESCRIPTION: Constructs facilities to support ground testing for ALR-67, ALQ-126B, TEWS & Electronic Countermeasures Testing

2. UPGRADE TITLE: Reconfigure Bldg 70048, ECR

TOTAL PROGRAMMED AMOUNT:

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| E0602 FUNDING | $11,204 K | $11,415 K | $10,075 K | $12,465 K | $12,262 K | $14,150 K | $13,109 K |

SUMMARY DESCRIPTION: Improvements required to meet near term OT&E test requirements. Projects include the procurement of Foreign Military Equipment (FMA); development of a pulse doppler stimulator to enhance EC Countermeasure testing; an emitter simulator system to increase signal density; and acquisition of an I-Hawk system.

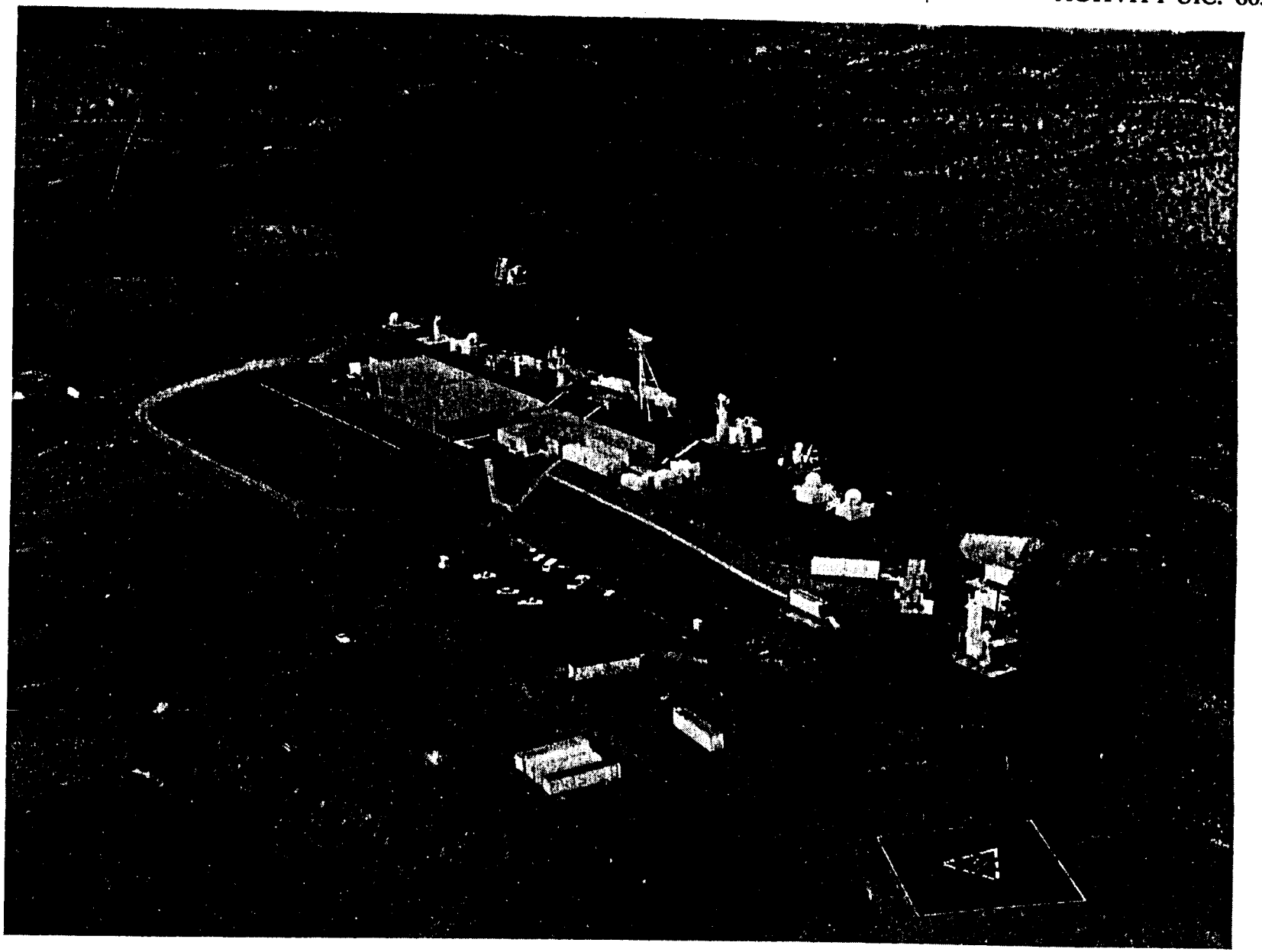


0444

Electronic Combat Range (ECR), Central Site With New Engineering Support Building



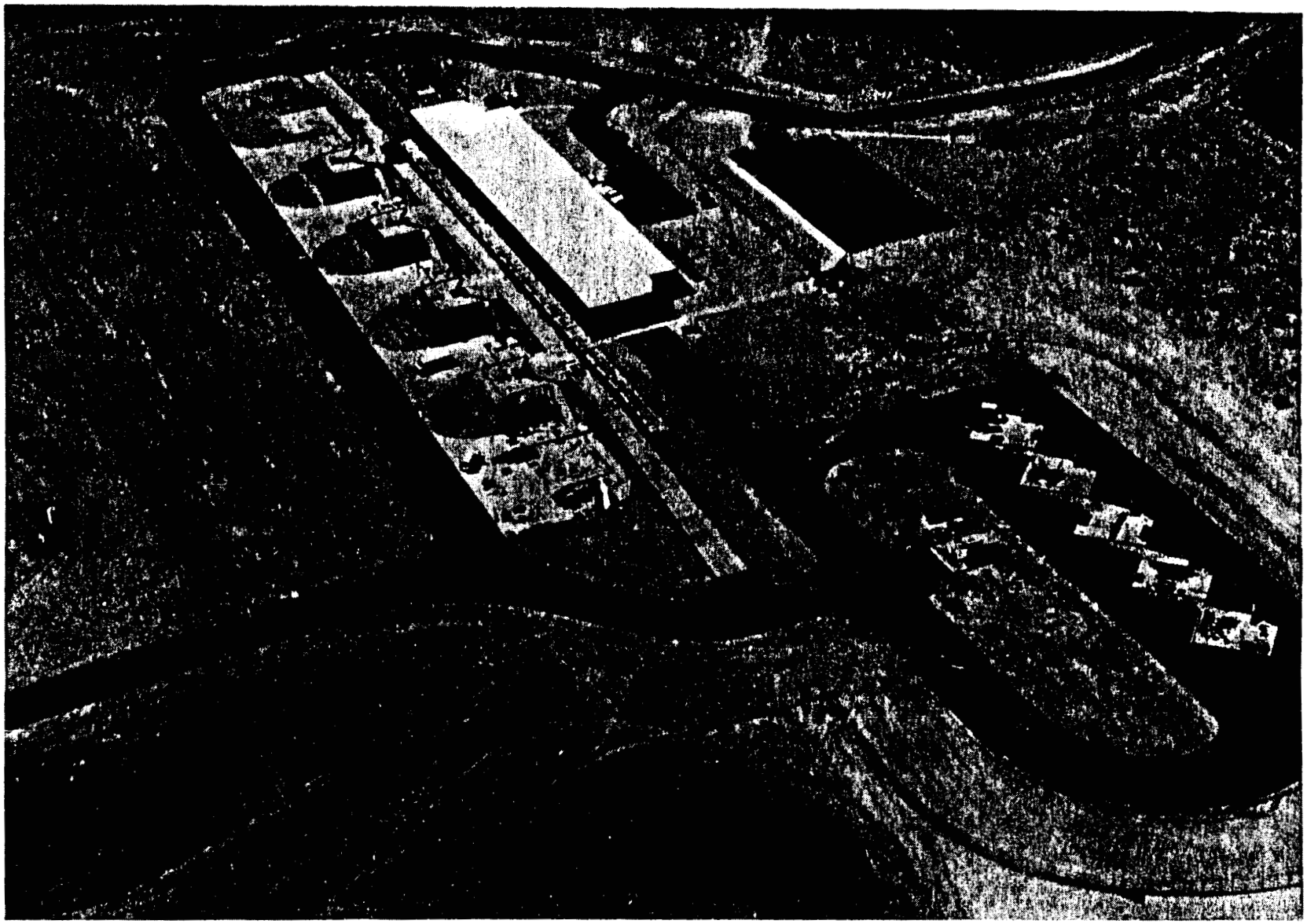
07425



Electronic Combat Range (ECR), Sea Site #1



0746



Electronic Combat Range (ECR), New Sea Site #3



0747

Electronic Combat Range (ECR), Land Site #1



07428

# Document Separator

# Tab 59. Flight Test Capability



0749

# GENERAL INFORMATION

Facility/Capability Title: Flight Test Capability

Origin Date: 5/2/94

Service: Navy : NAWCWPNS Location: China Lake, CA

T&E Functional Area: Armament/Weapons UIC = 60530

T&E Test Facility Category Open Air Ranges (OAR

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 100 | 0 | 0 | 0 | 0 | 0 |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | 0 | 0 | 0 | 0 | 0 | 0 |
| Armament/Weapons | 97.3 | 0 | 0 | 0 | 0 | 0 |
| EC | 2.7 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

Total in breakout must equal "Percentage Use" on first line.



0250

# TECHNICAL INFORMATION

Facility/Capability Title: Flight Test Capability

Facility Description, including mission statement:

The mission is to provide total aviation support (airfield and aircraft ops, aircraft, pilots, maint., aircraft mods and related support functions) to all Air Armament RDT&E activities conducted in the surrounding special use airspace and to deploy this mission support capability to other installations as required. Armitage Field lies completely within R-2505 airspace. The Airfield can be utilized to support variety of test profiles. There is immediate entry into T&E ranges from take off resulting in no transit time. The Airfield provides support to full scale drone operations. A mutual use agreement exists with Edwards AFB for divert, Gas & Co, weapons up/download. A 10-plane DET area is provided for range use, weapons test, R&D support. OPTEVFOR's VX-9 is a tenant performing OT&E Air Armament Mission.



0751

Flight Test Capability

Interconnectivity/Multi-Use of T&E Facility:

Unique Synergism: China Lake's basic work philosophy has always been that RDT&E progresses most efficiently and effectively when the scientists and engineers can readily witness and participate in tests of equipment and systems they are developing. China Lake's airfield, test activities and labs are located inside the R2505 and R2508 Airspace, therefore, closely integrated with Airspace and RDT&E activities. The interplay between the Airfield, Center's laboratory personnel and the test ranges is constant. The result is coordinated T&E within R2505 and R2508 that includes an airfield and T&E laboratories that does not exist anywhere else in DOD. Loss of the functional capability of this technical center would wrench most of the T&E out of the NAWCWPN's RDT&E and result in the loss of synergism which now benefits both the weapons developers and the weapons testers and would significantly increase cost of weapons development.

Location: Sited in the Southwestern United States remote High Desert region, the airfield is centrally situated in terrain offering level unobstructed Desert/Sage Brush (2200 ft elev.) to granite composition Mountains towering over 14,000 ft. This terrain provides an infinite variety of background environment for radar systems RDT&E. The temperature extremes of 0 degrees fahrenheit to 120 degrees fahrenheit provides a vast range of temperature simulations for RDT&E purposes. The Airfield remoteness also affords ease of implementing unusual security measures sometimes required by special programs. Two SCIF level hangar/laboratories exist at the Airfield to support these security requirements.

Flying Days: A review of eight years of historical weather data yields an average of 357.7 fly days per year available for flight testing. This is based upon climatology data showing a ceiling above 5000 feet and/or over 3 miles of visibility. In other words, for only 2% of an average year (8 days) can Airfield Ops anticipate flight test cancellations due to adverse weather. The low probability of weather impacting ops provides a high degree of reliability in missions planning and accomplishment. In fact, R-2508 overlies Edwards AFB and China Lake's Armitage Field and is used by NASA's Space Shuttle for access to Edwards AFB when the primary landing site in Florida is experiencing unfavorable weather conditions. China Lake is an alternate airfield for the space shuttle.

Special Use Airspace: The R-2508 Complex is a tri-service test complex used by the Department of Defense for the advancement of weapons systems technology and training. Including the internal ranges of China Lake (R-2505, R-2524, and R-2506), Edwards AFB Flight Test Center (R-2515), and the Army's National Training Center (R-2502), there are a total of 19,445 square statute miles (16,879 square nautical miles) of special use airspace. Additionally, the Federal Aviation Administration has designated certain airspace external to the R-2508 boundaries as available for military for special use. Adding this to the R-2508 airspace makes a total of 24,056 square miles (20,882 square nautical miles) of special use airspace available for use.

Flight Test Capability

| Type of Test Supported: |
|---|
| Flight test support of air weapon systems RDT&E is performed supported with high performance aircraft. Time is approaching when military services will have very few places within the continental U.S. where high performance aircraft operations representative of actual combat conditions can be carried out. High performance aircraft operational requirements—ample airspace in which to conduct evaluation and training operations, large land and sea areas where low altitude operations at high speed are permissible, and the capability to launch standoff weapons and associated employment of missile propellants and live warheads—are attainable fom China Lake's airfield enabling all-up realistic assessment of developmental systems and proposed tactics for employing them. |
| Summary of Technical Capabilities: |
| Flight test ops support, "O" & "I" level aircraft maintenance, aircraft modifications and instrumentation (design, fabrication, and installation), modifications flight test mission support, world-wide communications networked meterological service, air-launched weapons assembly/aircraft loading, aircraft storage/preservation in desert environment.<br><br>INSTRUMENTATION/ASSETS: (3) runways (200 feet wide by 9,991, 9,011, and 7,701 feet long, (26) tactical aircraft (NAWCWPNS, China Lake) (supplementable by NAWCWPNS Point Mugu: Full Scale Aircraft Targets and 41 aircraft), (5) hangars (2 SCIF rated), 1,429,863 square feet aircraft parking area, combat ordnance loading area, ramp capacity to site 461 additional tactical aircraft, hangar capacity to site 335 additional tactical aircraft. |
| Keywords: |
| Aircraft, weapons, RDT&E, maintenance, modifications, runways, hangars, flight test, instrumentation |



0753 A

Flight Test Capability

Type of Test Supported:

Flight test support of air weapon systems RDT&E is performed supported with high performance aircraft. Time is approaching when military services will have very few places within the continental U.S. where high performance aircraft operations representative of actual combat conditions can be carried out. High performance aircraft operational requirements—ample airspace in which to conduct evaluation and training operations, large land and sea areas where low altitude operations at high speed are permissible, and the capability to launch standoff weapons and associated employment of missile propellants and live warheads—are attainable fom China Lake's airfield enabling all-up realistic assessment of developmental systems and proposed tactics for employing them.

Summary of Technical Capabilities:

Flight test ops support, "O" & "I" level aircraft maintenance, aircraft modifications and instrumentation (design, fabrication, and installation), modifications flight test mission support, world-wide communications networked meterological service, air-launched weapons assembly/aircraft loading, aircraft storage/preservation in desert environment.

INSTRUMENTATION/ASSETS: (3) runways (200 feet wide by 9,991, 9,011, and 7,701 feet long, (49) tactical aircraft (NAWCWPNS, China Lake and VX-9) (supplementable by NAWCWPNS Point Mugu: Full Scale Aircraft Targets and 41 aircraft), (5) hangars (2 SCIF rated), 1,429,863 square feet aircraft parking area, combat ordnance loading area, ramp capacity to site 461 additional tactical aircraft, hangar capacity to site 335 additional tactical aircraft.

Keywords:

Aircraft, weapons, RDT&E, maintenance, modifications, runways, hangars, flight test, instrumentation



0753

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Flight Test Capability
00

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EC | DIRECT LABOR | Data not available | Data not available | Data not available | Data not available | Data not available | 3670 | 2964 | 1867 |
| | TEST HOURS | 1645 | 1825 | 1592 | 1533 | 1598 | 2305 | 1750 | 1648 |
| | MISSIONS | 779 | 740 | 712 | 727 | 779 | 1018 | 869 | 730 |
| ARMAMENT/WEAPONS | DIRECT LABOR | Data not available | Data not available | Data not available | Data not available | Data not available | 132255 | 102893 | 67274 |
| | TEST HOURS | 3403 | 3557 | 3584 | 3855 | 4667 | 4961 | 5201 | 4092 |
| | MISSIONS | 54701 | 48390 | 43381 | 43014 | 35420 | 36873 | 29934 | 26254 |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0754 A

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Flight Test Capability
00

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 54701 | 48390 | 43381 | 43014 | 35420 | 36873 | 29934 | 26254 |
| EC | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 779 | 740 | 712 | 727 | 779 | 1018 | 869 | 730 |
| ARMAMENT/WEAPONS | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER T&E | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | DIRECT LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TEST HOURS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MISSIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

?



0759

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Flight Test Capability

ANNUAL HOURS OF DOWNTIME (1) 16

AVERAGE DOWNTIME PER DAY (LINE 1+ 365) (2) 0.4

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 23.96

| 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) 1631 |
| Air Ops | 1 | 70 | 70 | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY (9) 595,315 |

"TYPICAL"

TOTAL 70

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? YES

If yes, explain: Restrained by runways layout to 70 ops/hr (Data call #4 airfield question #27). Only 2% year (8 days @ 1–2 hr each day) are weather downtime (Data call #13 Sect. 3.1.H.9)



0255

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: Flight Test Capability

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | 17 | 16 | 15 | 15 | 15 | 15 | 15 |
| Enlisted | 340 | 352 | 352 | 342 | 342 | 342 | 342 |
| Civilian | 71 | 68 | 67 | 67 | 67 | 67 | 67 |
| Contractor | 164 | 135 | 135 | 145 | 150 | 155 | 160 |
| Total | 592 | 571 | 569 | 569 | 574 | 579 | 584 |

Total Square Footage 646,167

Office Space Square Footage 40,210

Test Area Square Footage 0 (OAR Support)

Volume of Equipment ($Ft^3$): 516.9K

Tonnage of Equipment: 522.8 W/O A/C&GSE

Estimated Moving Cost: $69.2M

Annual Maintenance Cost: $1.1M

Annual Maintenance Cost: 100000

Estimated Moving Cost: 200K

**CAPITAL EQUIPMENT INVESTMENT ($K)** Top: current IM funds. Bottom: program funds.

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | |



0750

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Flight Test Capability

AGE: 49

REPLACEMENT VALUE: $1492M (includes equip.)
* (initial cost + upgrade cost) * inflation factor (see conversion table)

MAINTENANCE AND REPAIR BACKLOG: Armitage Field, China Lake consist of 129 facilities constructed from 1945 through 1994. Maintenance and Repair backlog total: $941,961.00 Information provided by NAWS Public Work Facilities Inspection Report (FIS) dated 3 May 1994.

DATE OF LAST UPGRADE: 1/11/93

NATURE OF LAST UPGRADE: (1) 1994 installation of VOR (Very High Omidirectional Range) Navigational Aid (2) 1989 Construction of Hangar 4 (NAVFAC CAT CODE 311-25) SCIF rated facility 25,580 SF hangar facility + 145350 SF concrete apron (3) 1994 Construction of Hangar 5 (NAVFAC CAT CODE 311-25) SCIF rated facility 88491 SF hangar facility + 80160 SF concrete apron.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Construct AIRCRAFT READY FUEL STORAGE FACILITY (Milcon P-469) Programmed 1995

TOTAL PROGRAMMED AMOUNT: 7.7 Mil

SUMMARY DESCRIPTION: Provides 400,000 gallons of aircraft ready fuel storage (Fuel Farm) for JP-8 with associated aircraft truck fueling and receiving facilities, site work, roads, fencing, test labs/offices and support facilities. Replacement of fuel farm brings China Lake airfield into full compliance with environmental requirements.

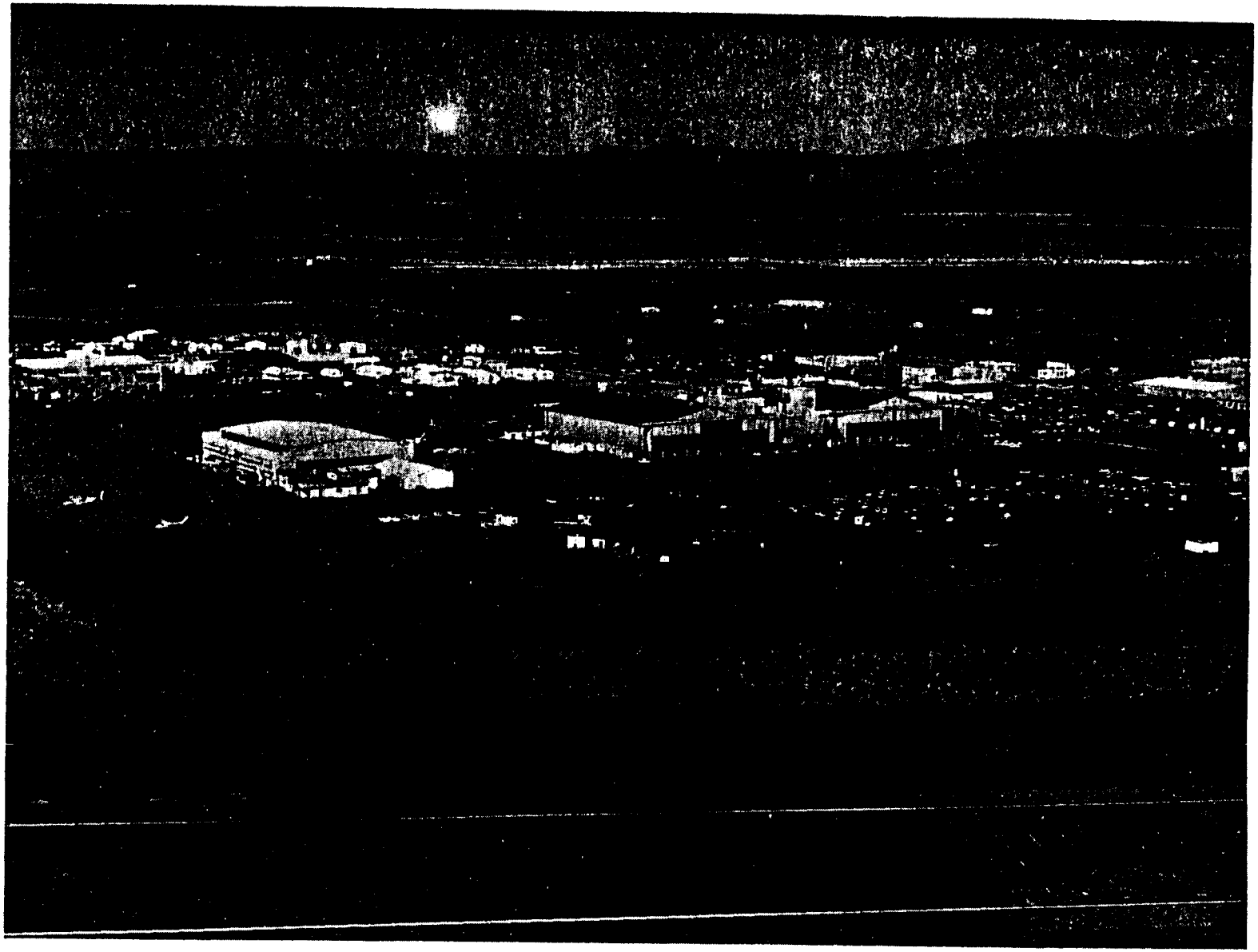
2. UPGRADE TITLE: NONE

TOTAL PROGRAMMED AMOUNT: NONE

SUMMARY DESCRIPTION: NONE



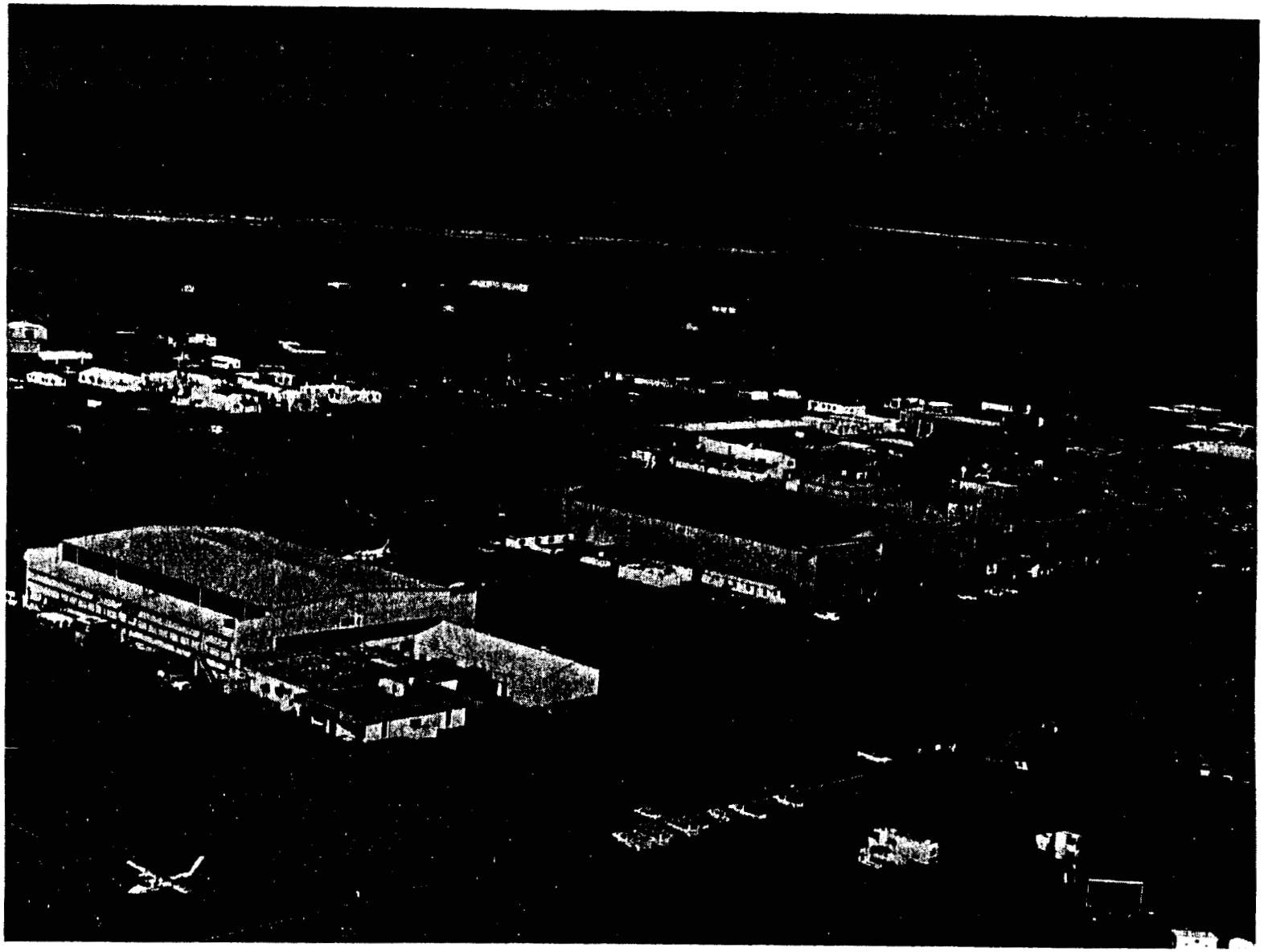
0252



Flight Test Capability



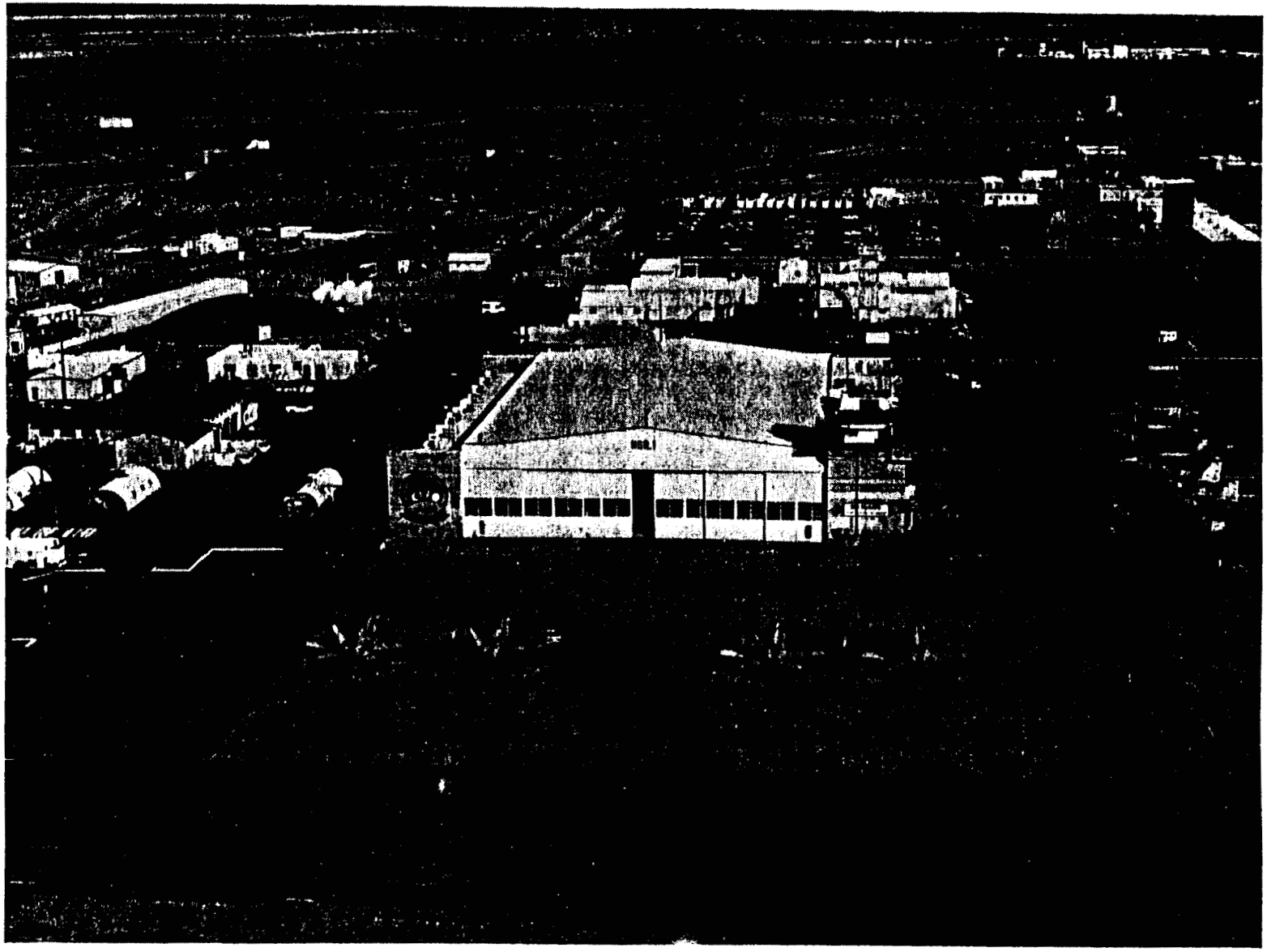
0158



Flight Test Capability



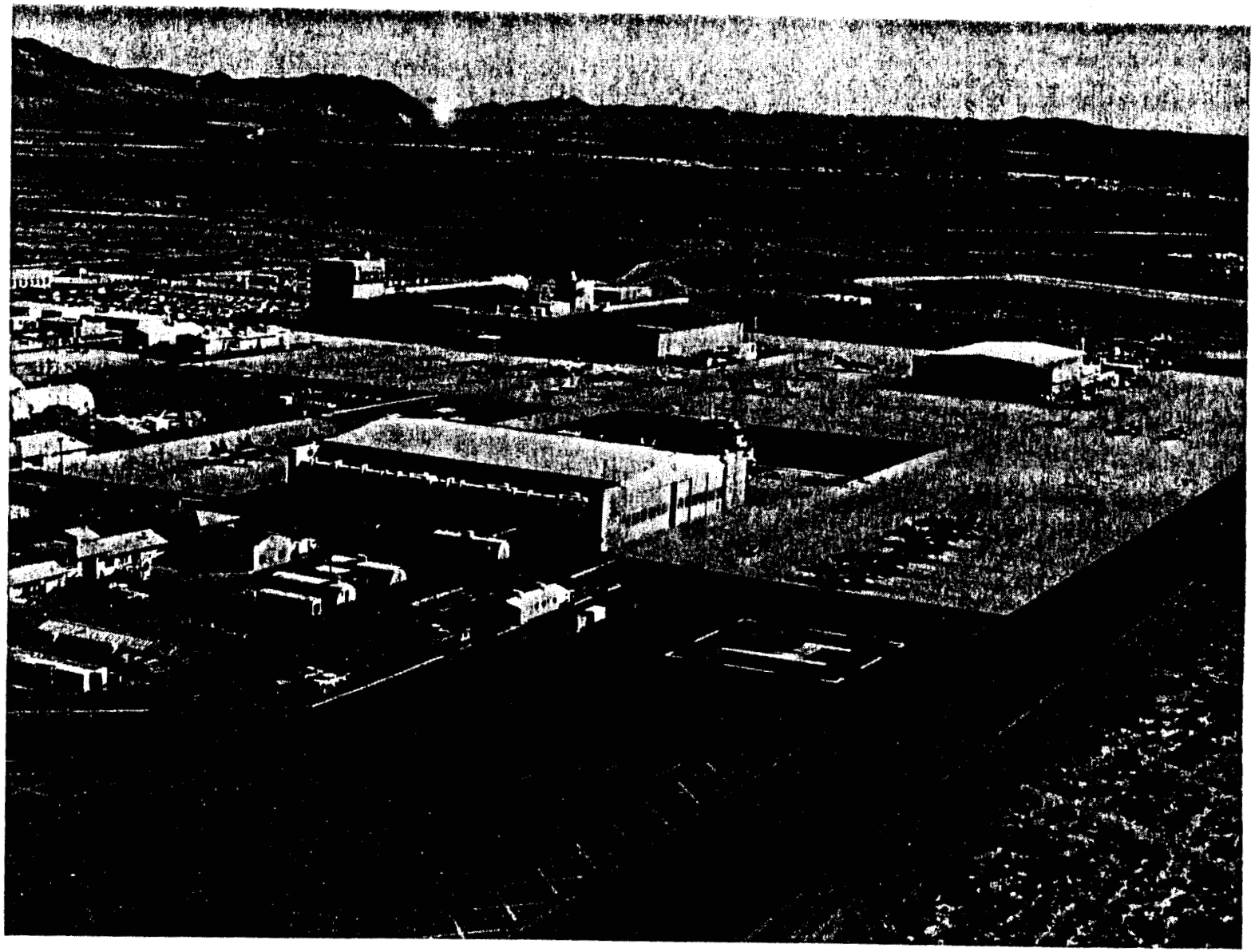
0759



Flight Test Capability



0760



Flight Test Capability



0761

# Document Separator

# Tab 60. NAWCWPNS-White Sands



60

0762

# GENERAL INFORMATION

Facility/Capability Title: NAWCWPNS-White Sands

Origin Date: 4/29/94

Service: N Organization/Activity: NAWCWPNSDETWS Location: WSMR

T&E Functional Area: Armaments /Weapons UIC = 61762

T&E Test Facility Category Open Air Range

| | T&E | S&T | D&E | IE | T&D | OTHER |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 85% | 0 | 0 | | | 15% |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 85% | 0 | 0 | | | 0 |
| EC | | | | | | |
| Other | | | | | | 15% |

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

# TECHNICAL INFORMATION

Facility/Capability Title: NAWCWPNS-White Sands

Facility Description; Including mission statement:
Overall NAWCWPNSDETWS White Sands Mission Statement: To provide high quality and responsive technical and material support for land-based research, development, test and evaluation (RDT&E) of Naval weapon systems, for RDT&E and validation of directed energy systems and subsystems, and for launch of suborbital space systems and research rockets.

The facilities that support this mission are:

- **Standard Missile/Vertical Launching System (VLS) Test Complex.** This complex is the land based test site for the Standard Missile program and VLS, and as such supports open air range developmental engineering and production surveillance of Standard Missile , plus VLS integration for other missiles fired from the MK 41 VLS. Standard Missile fire control, MK-41 VLS, MK-10 rail launcher system and MK-39 5"/54 Gun are permanently installed at the complex, as is a Target Monitor Station for verification of target augmentation and electronic countermeasures equipment. More than ten versions of Standard Missile can be flight tested, including SM-2 Blocks IIIA, IIIB, and IV. Standard Missile Theater Missile Defense (TMD) capable rounds (SM-2 Block IVA-, and Block IVA) will be tested at this Test Complex starting in FY95. Other development T&E programs which use(d) or will use this facility include Vertical Launch Anti Submarine Rocket, Evolved Seasparrow, Tomahawk, and Navy Advanced Gun Weapons System. Air and ground targets, industrial support, maintenance, and logistics support are all provided as part of this Test Complex. The operational environment includes airspace from surface to unlimited, subsonic /supersonic, day or night, and a variety of overland terrain. Maximum firing range is 100 miles. Reference Figures WS1, WS3, WS4, WS5, WS6, WS7, WS9, WS16.

- **Ship Self Defense Test Complex.** Two launch sites, with south and central locations at White Sands Missile Range (WSMR) support Ship Self Defense Surface-to-Air testing of Navy Weapon Systems. These launch sites support the land-based developmental engineering and production surveillance of Navy self defense, ship-to-air missiles. Specifically, the south site is the land based test site for the Rolling Airframe Missile (RAM); the central site supports NATO Seasparrow. Site blockhouses are hardened for Close-In Live Fire Weapon Test against low/high altitude single and multiple subscale, subsonic aerial targets. Short range, self defense engagements are conducted with the target(s) directed radially inbound toward the weapon system. Weapon system equipments and personnel are located in hardened earth covered bunkers with launchers, antenna, and other ancillary support equipments located above ground. Hazardous pretest ordnance assembly and missile system checks are performed at the NAWCWPNSDETWS Missile Assembly Facility. The operational environment includes airspace from surface to unlimited, subsonic /supersonic, day or night, and a variety of overland terrain. Maximum firing range is 100 miles. Reference Figures WS10, WS11, WS12, WS16



0264

NAWCWPNS-White Sands

Facility Description (con't)

- **Air to Surface Target Sites.** Ground impact areas are available throughout White Sands Missile Range (WSMR) supporting a variety of air -to-surface scenarios. Targets are setup in the impact area according to specific customer requirements and are removed from the impact area at completion of the test series. Live fire tests of submunition configured warheads can be accomplished at some impact sites. The operational environment includes airspace from surface to unlimited, subsonic /supersonic, day or night, and a variety of overland terrain. Maximum firing range is 100 miles. Standoff Land Attack Missile (SLAM) is currently the only Navy sponsored air-to-surface program at WSMR. Planning is in process for the Joint Standoff Weapon System (JSOW) to include live submunitions testing. Air-to-air testing can also be accommodated. Reference Figures WS14, WS15, WS17

- **TMD Targets Launch Sites.** Facilities and equipments are located at launch complexes at the south and north end of WSMR, 90 miles apart. The mission of these sites is to support BMDO technology demonstrator programs and BMDO, Navy, and Army Theater Missile Defense (TMD) interceptor testing. These two sites have existing hardened blockhouses housing launch control system, system monitoring equipments, range interface equipment, and configurable bays to meet unique payload monitoring and control requirements. Stool launchers with environmental (weather) enclosures are installed at both sites. Assembly/test, integration and launch of one and two stage sub-orbital rockets with TMD target reentry vehicles is supported. Three areas are also available for Hypergolic (liquid) fueling of vehicles such as the LEAP Interceptor. Transient and permanent ordnance storage facilities are nearby. Reference Figures WS13, WS18, WS19,WS20

- **Research Rockets Launch Complex.** This complex supports buildup and launch of high altitude (up to 350 miles) suborbital research rocket payloads for NASA, Air Force Geophysics Lab, Navy Research Lab, and commercial customers. Launchers include one stool, one tower (160 foot rail), and two rail launchers (up to 40K pound capacity) with removable environmental (weather) shelters. The MAF supports rocket build-up and test. Reference Figures WS13, WS19, WS20, WS21, WS22, WS23

- **Advanced Gun System Test Complex.** Gun ammunition testing is supported with an existing MK 39 Gun Mount. Increased capabilities will be achieved with an FY95 MILCON. Additionally, numerous inert and live munitions impact areas exist at WSMR. The mission of this complex is to test advanced gun weapon systems to include barrels, propellants, projectiles and submunitions to increase the range, accuracy and lethality of Navy Gun Weapon Systems. Reference Figures WS3, WS8

- **High Energy Laser Experimental Test System (HELETS).** This complex consists of the Mid-infrared Advanced Chemical Laser (MIRACL) and Sea-Lite Beam Director (SLBD) and associated fire control systems. HELETS has the mission to perform DOD tri-service high energy laser (HEL) research, development, test & evaluation capability; materials damage and vulnerability support; and a limited contingency anti-satellite operational capability. HELETS is installed at the US Army High Energy Laser System Test Facility (HELSTF) located at WSMR. HELETS was built for the US Navy for ground-based testing and evaluation of a prototype shipboard laser weapon. The megawatt class, deuterium fluoride, chemical laser is used to evaluate anti-air warfare laser system effectiveness against subsonic and supersonic aerial targets. The laser's beam director optical system is also used to support Theater Missile Defense (TMD) testing at WSMR as a passive infrared instrument to collect high quality radiometric imagery of not only intercepts of TMD targets, bust also imagery of various rocket and missile launches. Parametric and radiometric imaging supports the national IR signature database. Reference Figures WS24, WS25



0265

NAWCWPNS-White Sands

Interconnectivity/Multi-Use of T&E Facility:

NAWCWPNSDETWS mission is interconnected with and dependent on the Army White Sands Missile Range (WSMR). This complex is interconnected with WSMR (National Range) for radar tracking, telemetry data receipt/recording, high altitude meteorological measurement, and flight termination systems. Fiber optics, microwave, landline, and RF systems interconnect resources providing communications, telemetry, video, and ground data interchange for initialization and in-flight support of missiles, targets, and TMD/research rocket (exoatmospheric) altitude control of payloads. The WSMR infrastructure supports mission operations, surveillance, airspace control, data collection, debris/test article (including target) recovery, explosive ordnance disposal, etc on a reimbursable basis. Other WSMR tenant facilities provide a variety of laboratory (Shock/vibration, climatics, chemical, radiology, etc.) on a reimbursable basis. Specific interconnectivity includes:

- Standard Missile/Vertical Launching System Test Complex. This Test Complex is dependent on interconnection with WSMR for fire control tracking inputs, telemetry data receipt/recording and Flight Termination System operation. Debris recovery capabilities also provide valuable post-launch evaluation/reconstruction. This Test Complex is the only land based test site for Standard Missile and Vertical Launch Anti-Submarine Rocket. It is the Navy's only test site, including Navy ships, capable of firing SM-1 Block VI and all versions of SM-2 Block II/III (Terrier, Tartar, AEGIS, and Vertical Launched AEGIS), SM-2 Block IIIA/IIIB (Vertical Launched AEGIS), and SM-2 Block IV (Extended Range Vertical Launched AEGIS).

- Ship Self Defense Test Complex. This test complex is the only land based test site for Rolling Air Frame Missile (RAM) and NATO Seasparrow open air testing. Testing is focused on realistic threat representative scenarios that can not be safely accomplished at sea. Scenarios with potential for direct target impact on manned launch sites are safely and routinely conducted. Air Force manned aircraft operating at Holloman Airforce Base support dress rehearsal of scenarios. Launch sites are interconnected with WSMR instrumentation and communication systems via land lines, fiber optics, microwave, and RF data links.

- Air-to-Surface Target Complex. - Interconnectivity with WSMR communications and instrumentation systems is via landline, microwave, and RF data links. WSMR siting uniquely supports open air firing tests with ranges to 100 miles, a variety of level and mountainous terrain and live warhead impact areas including live submunition capabilities. A variety of static and dynamic targets are readily available including tanks, trucks, vehicles, aircraft, helicopters, etc.



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NAWCWPNS-White Sands

Interconnectivity/Multi-Use of T&E Facility (con'd):

- Theater Missile Defense (TMD) Target Launch Complex. In addition to interconnectivity with WSMR, TMD target launch sites are uniquely situated and interconnected with TMD interceptor programs such as Standard Missile (Blk IVA- and Blk IVA), LEAP, THAADS, ERINT, and Patriot. Interconnectivity is via WSMR landline, RF, and micorwave communications, tracking, and timing. Common exoatmospheric target systems are available/planned for these programs. This complex is also used to launch Ballistic Missile Defense Organizaiton exoatmospheric technology demonstration experiments. This complex is dual use with the research rockets launch complex (see below).

- Research Rocket Launch Complex. In addition to interconnectivity with WSMR, rocket buildup is supported with NASA facilities and equipment including fin alignment, vibration, spin balance, collimation, and bend testing.

- HELETS. This complex is integrated into both the HELSTF and WSMR, with available support including radars, optics, telemetry, support systems, and targets. HELETS also complements range optical sensors using the Sea Lite Beam Director as a precision infrared telescope. This capability has been used effectively to image theater ballistic missiles (and surrogates) in flight on the range.

Types of Test Supported:

The Naval Air Warfare Center Weapons Division Detachment White Sands (NAWCWPNSDETWS) is a tenant activity at WSMR. Types of tests supported include open air range testing for:

Surface-to-air missiles (short to long range)
Air-to-surface missiles
Air-to-air missiles (to date a single Navy AMRAAM mission has been conducted)
Theater Missile Defense
Gun systems
Directed Energy (high energy laser, open air range and indoor)

In addition to the above types of test support, NAWCWPNSDETWS supports buildup and launch of high altitude (up to 350 miles) suborbital research rocket payloads for NASA, Air Force Geophysics Lab, Navy Research Lab, and commercial customers.



0262

NAWCWPNS-White Sands

Summary of Technical Capabilities:

The Naval Air Warfare Center Weapons Division Detachment White Sands (NAWCWPNSDETWS) is a tenant activity at WSMR and is fully integrated/interconnected with WSMR (National Range) range control and instrumentation including communication, timing, radar, telemetry, tracking/fixed photography, meteorology, flight safety, target control, and other systems. NAWCWPNSDETWS technical capabilities include:

Surface-to-air missiles (short to long range) (reference Figures WS1, WS3, WS4, WS5, WS6, WS7, WS9, WS10, WS11, WS12, WS16):

- The Navy's only test site, including Navy ships, capable of firing SM-1 Block VI and all versions of SM-2 Block II/III (Terrier, Tartar, AEGIS, and Vertical Launched AEGIS), SM-2 Block IIIA/IIIB (Vertical Launched AEGIS), and SM-2 Block IV (Extended Range Vertical Launched AEGIS). Targets include subscale and full scale, subsonic and supersonic airborne targets; static targets; and augmented and non-augmented targets; in clear and ECM environments.

- The Navy's only land based test site supporting Rolling Airframe Missile, NATO Seasparrow and Vertical Launch Anti-Submarine Rocket. Scenarios with potential for direct target impact on manned launch sites are safely and routinely conducted. Targets include subscale and full scale, subsonic and supersonic airborne targets; static targets; and augmented and non-augmented targets; in clear and ECM environments.



0768

NAWCWPNS-White Sands

Air-to-surface missiles (reference Figures WS14, WS15, WS17):

- Long distance overland flight testing of Standoff Land Attack Missile. Targets include a variety of static targets including simulated buildings and military command posts and static vehicles including tanks, trucks, vehicles, aircraft , and helicopters.

Air-to-air missiles (reference Figure WS15)

- to date a single Navy AMRAAM mission has been conducted

Theater Missile Defense (TMD) (reference Figures WS13, WS18, WS19,WS20):

- Target launch operations for BMDO, Navy, and Army TMD interceptor testing

- BMDO technology demonstrator programs and scientific experiment programs

Gun systems (reference Figures WS3, WS8)

- Advanced gun weapon systems testing, to include barrels, propellants, projectiles and submunitions to increase the range, accuracy and lethality of Navy Gun Weapon Systems; numerous inert and live munitions impact areas exist.

Directed Energy (reference Figures WS24, WS25):

- Megawatt class chemical laser to evaluate anti-air warfare laser system effectiveness against subsonic and supersonic aerial targets; materials damage and vulnerability testing; limited contingency anti-satellite operational capability

- Beam director optical system used as a passive infrared instrument to collect high quality radiometric imagery of intercepts of TMD targets; imaging of rocket and missile launches supports the national IR signature database



0769

NAWCWPNS-White Sands

Keywords:

surface-to-air, air-to-surface, air-to-air, gun, missile, rockets, fire control, launch control, Theater Missile Defense (TMD), research rockets, gun, sub-munitions, propellant, projectiles, impact areas, high energy laser, directed energy, beam director; open air range, White Sands Missile Range (WSMR), targets

Standard Missile, Vertical Launching System (VLS), Rolling Airframe Missile (RAM), NATO Seasparrow, Standoff Land Attack Missile (SLAM), Joint Standoff Land Attack Missile (JSOW), Light Weight Exoatmospheric Projectile (LEAP)

# ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: NAWCWPNS-White Sands

## PERSONNEL

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | 6 | 6 | 4 | 4 | 4 | 4 | 4 |
| Enlisted | 67 | 67 | 67 | 57 | 57 | 57 | 57 |
| Civilian | 74 | 74 | 79 | 79 | 79 | 79 | 79 |
| Contractor | 32 | 32 | 33 | 33 | 33 | 33 | 33 |
| Total | 179 | 179 | 183 | 173 | 173 | 173 | 173 |

Total Square Footage 226,699

Test Area Square Footage 201,750

Office Space Square Footage 24,949

Tonnage of Equipment: 3,195

Volume of Equipment: 527,883

Annual Maintenance Cost: $4,622,700

Estimated Moving Cost: $63.6M

## CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $238K | $400K | $690K | $270K | $285K | $315K | $325K |
| $113.5K | $1013.5K | $2300K | | | | |
| | | | | | | |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: NAWCWPNS-White Sands

AGE: > 20 Years

REPLACEMENT VALUE: $56.6M (= $35.8M Bldg Cost + $20.8M Equip Cost)*
* Does not include value of SPAWAR HELSTF Facility

MAINTENANCE AND REPAIR BACKLOG: Maintenance and Repair Backlog is $1293K. This includes misc. repairs spread over all facilities. These repairs include electrical wire replacement, asbestos removal, replacement of HVAC equipment, installation of explosion proof electrical fittings, and other minor repairs. $481K of this is one tower that is awaiting a decision on whether it should be in active service. General condition of facilities is above average and none of the required repairs negatively affects the mission of the facilities.

DATE OF LAST UPGRADE: 4/1/94

NATURE OF LAST UPGRADE: MILCON at Sulf Site providing improved access road and modifications to launcher environmental (weather) protection system tracks and pad. MILCON Cost $0.68M

MILCON P003 - Missile Assembly Facility (MAF). Completed construction of the MAF (2/25/92), a state-of-the-art ordnance build-up and test facility. The MAF MILCON was sponsored by the Naval Sea Systems Command for the Standard Missile Program. It provides the capability to build-up and perform end-to-end test of Standard Missile in an isolated ordnance environment. MAF construction cost was $6.8M.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: FY 95 MILCON P008 Advanced Gun Weapons System Technology Facility

TOTAL PROGRAMMED AMOUNT: $1,390K

SUMMARY DESCRIPTION: This facility will have two each three story concrete and steel gun test stands to house guns up to 8", a concrete pad and a work area. Facility is designed with a wide degree of flexibility to allow mounting any new R&D guns or fleet weapons in the structure and safety test fire the weapons. Site includes a bunker for personnel protection during hazardous operations.

2. UPGRADE TITLE: Missile Magazine

TOTAL PROGRAMMED AMOUNT: $260K

SUMMARY DESCRIPTION: Construction of a conditioned magazine for storage of missiles awaiting servicing in the Missile Assembly Facility. This magazine will increase the safety and efficiency of ordnance handling operations.

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: NAWCWPNS-White Sands
300300

| 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 | 151,200 | 149,100 | 152075 | 155050 | 163450 | 175000 | 189000 | 182000 |
| | TEST HOURS | 1400 | 900 | 1960 | 2250 | 2495 | 1895 | 1050 | 3925 |
| | MISSIONS | 43 | 44 | 32 | 52 | 34 | 32 | 19 | 39 |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | 68,250 | 55,650 | 53,375 | 59,850 | 58,100 | 62,300 | 48,650 | 46,725 |
| | TEST HOURS | 1125 | 600 | 825 | 1725 | 1425 | 1575 | 1425 | 1425 |
| | MISSIONS | 15 | 8 | 11 | 23 | 19 | 21 | 19 | 19 |



0224

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: NAWCWPNS-White Sands

ANNUAL HOURS OF DOWNTIME (1) 480

AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) (2) 1.3

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) (3) 22.7

| 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) 2.706 |
| Missile Firing | 2 | 35 | 70 | |
| | 2 | 6 | 12 | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | (9) 987.804 |
| | 1 | 0.7 | 0.7 | |
| | 1 | 2 | 2 | |
| | 2 | 5.6 | 11.2 | |
| | 2 | 7.2 | 14.4 | |
| | 1 | 9 | 9 | |
| "TYPICAL" | | | | |
| | | TOTAL | 119 | |

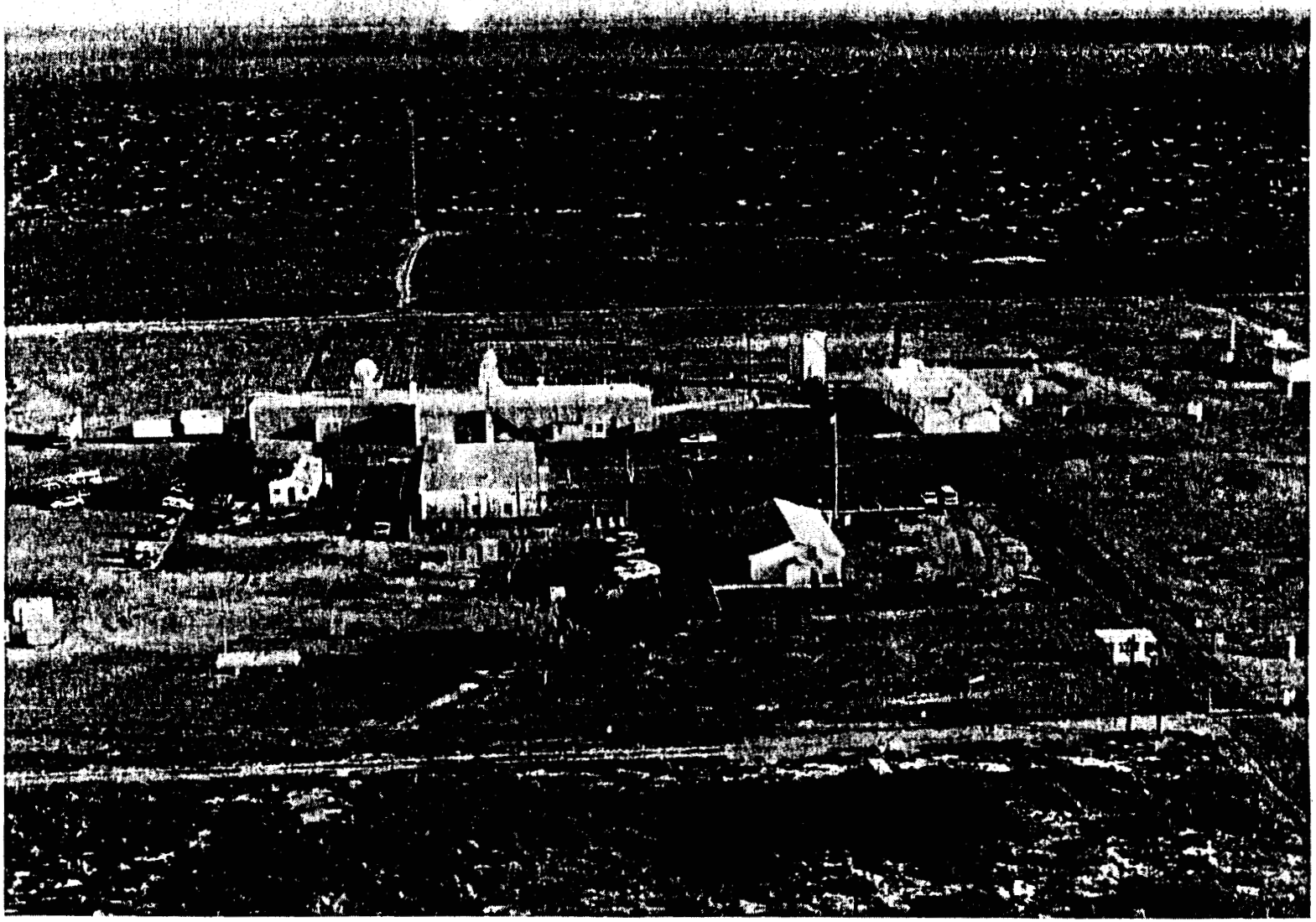
NOTE: NAWCWPNSDETWS is a tenant activity at the U.S. Army White Sands Missile Range. Potential exists for unconstrained capacity (specifically as related to tests that must be scheduled on the Range–e.g., missile firings) to be affected by WSMRs capacity to schedule/accommodate all users (Army, Navy, Air Force, etc.)

Is the unconstrained capacity limited by the physical characteristics of the facility/capability itself, safety or health considerations, commercial utility availability, etc? No

If yes, explain:



0225

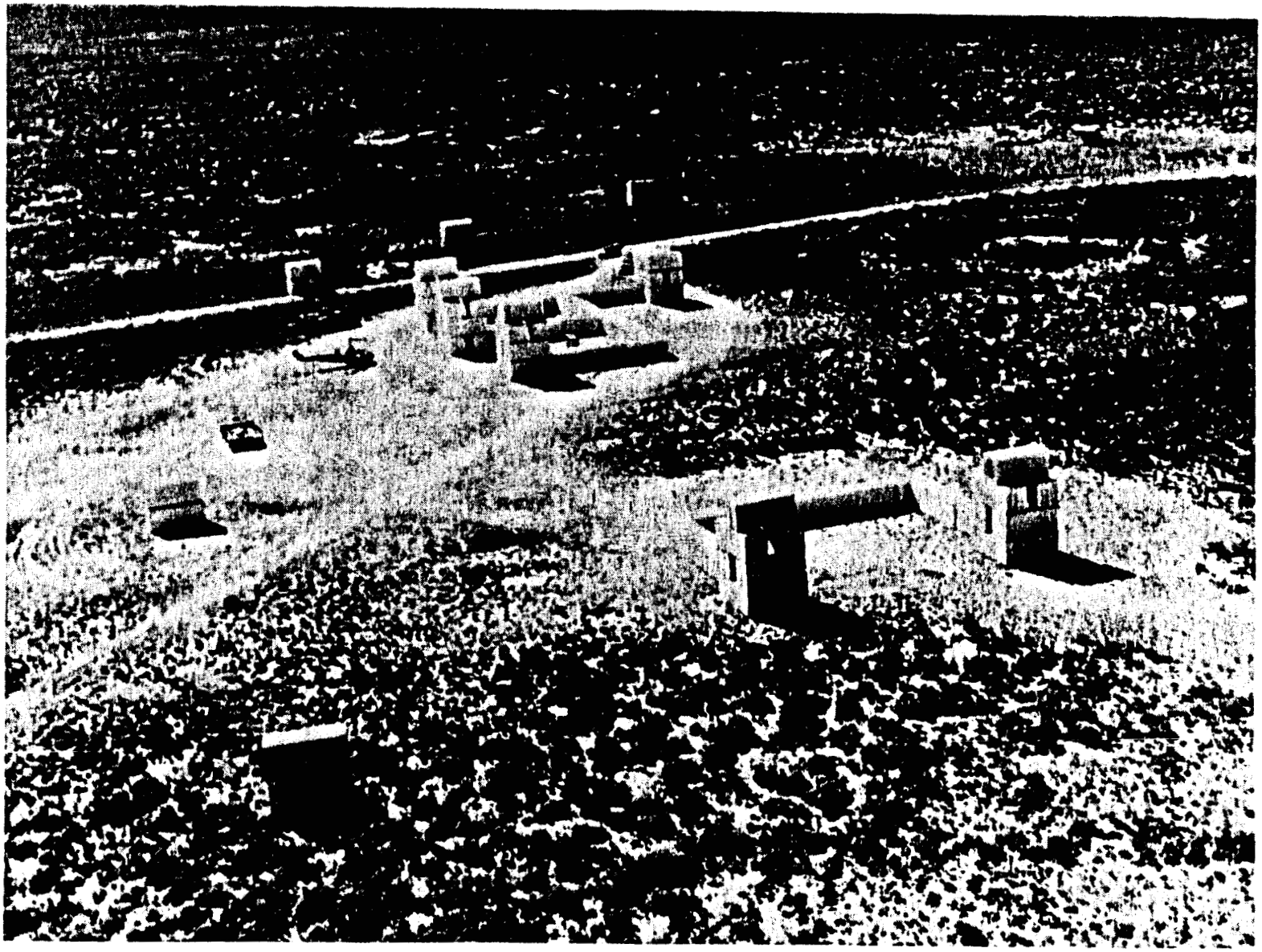


Desert

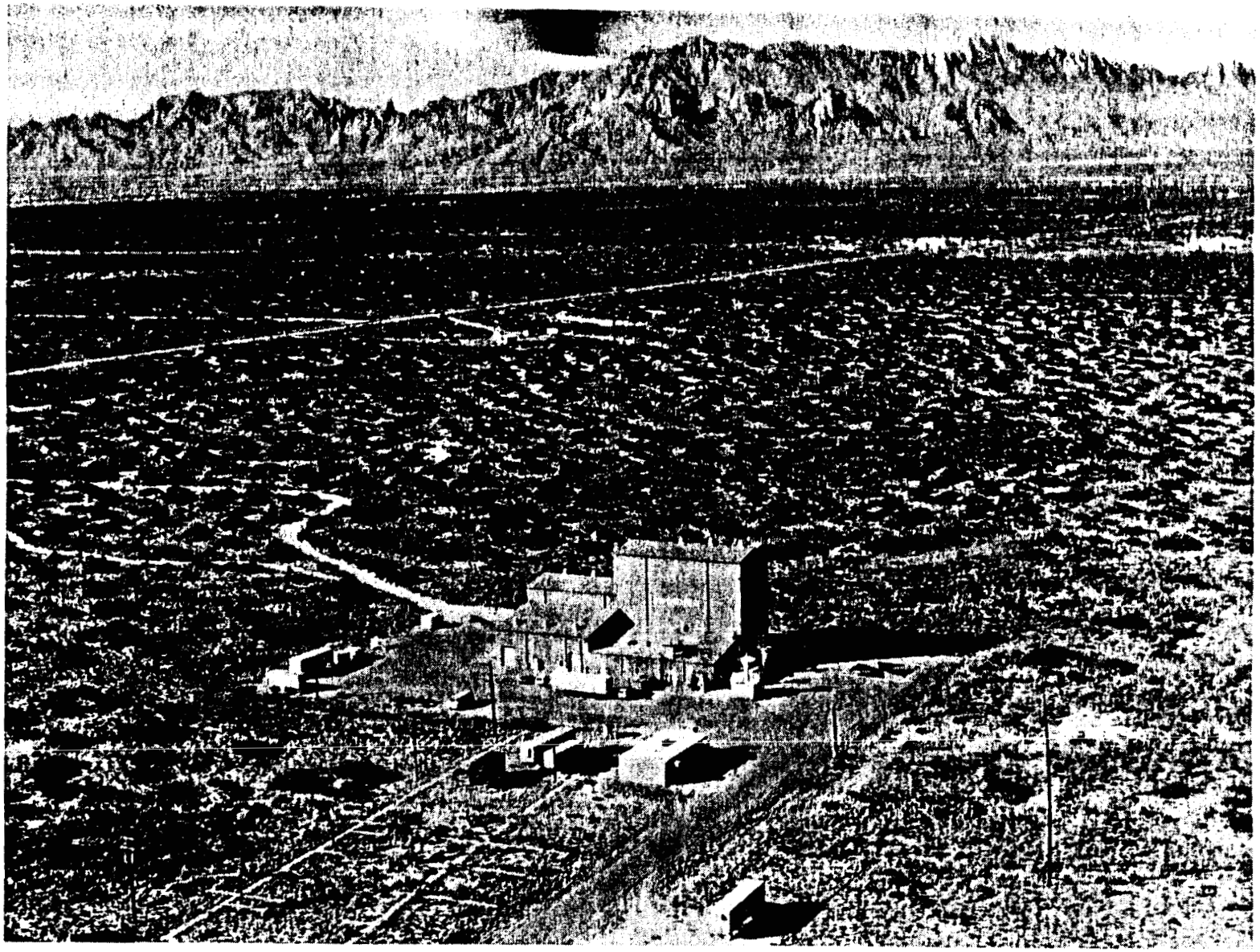
NAWCWPNS-White Sands, Standard Missile VLS Test Complex (Desert Ship)



0776



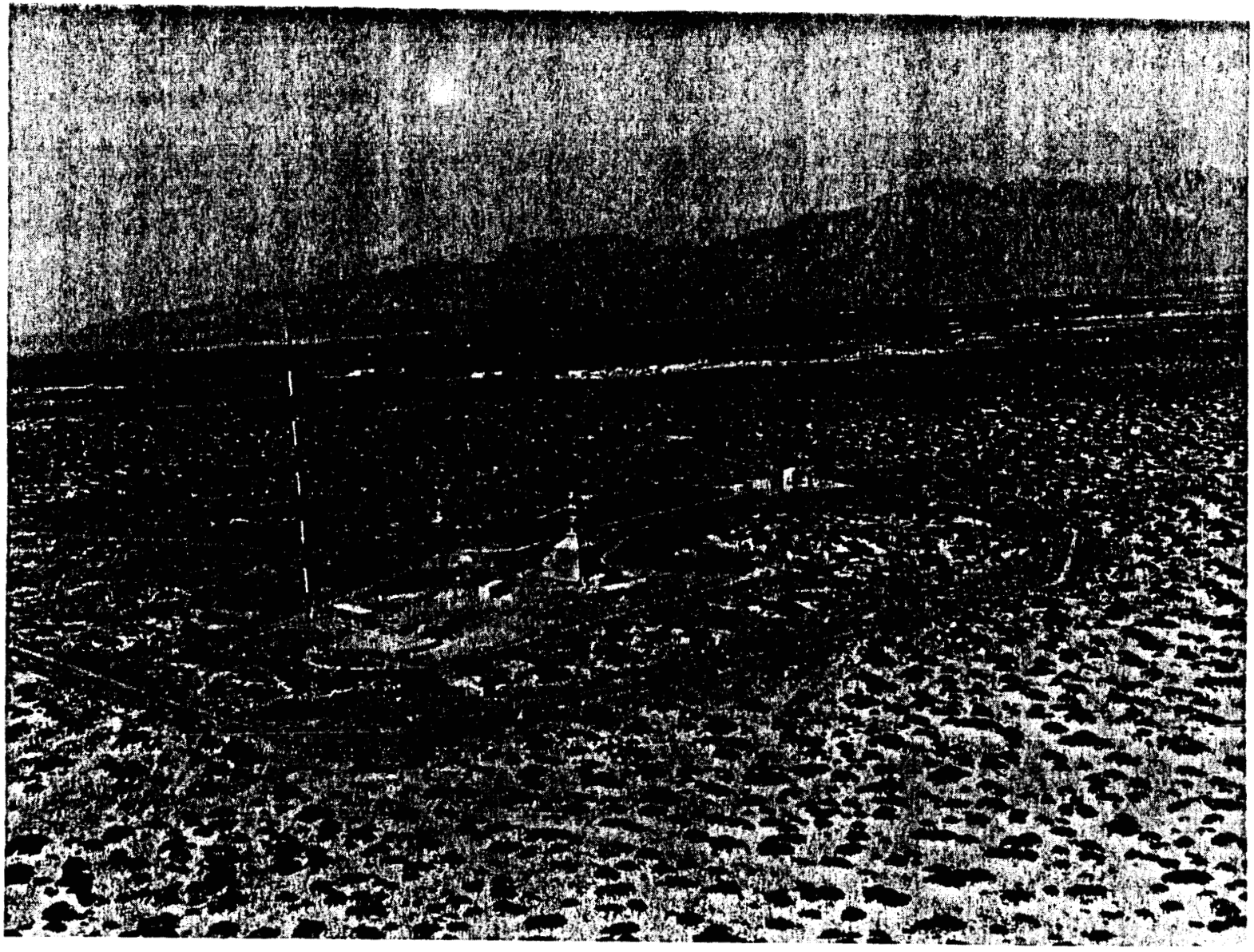
NAWCWPNS-White Sands, Standoff Land Attack Missile Target Complex



NAWCWPNS-White Sands, NASA Vertical Assembly Building



0228



NAWCWPNS-White Sands, Theater Missile Defense Launch Complex

BRAC 95
DATA CALL 13

CHINA LAKE SITE
NAWC WEAPONS DIVISION

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

NEXT ECHELON LEVEL (if applicable)

G. H. Strohsahl, RADM, USN
NAME (Please type or print)

Signature

Commander
Title

5/16/94
Date

Naval Air Warfare 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

W. C. Bowes, VADM, USN
NAME (please type or print)

Signature

Commander
Title

16 May 94
Date

Naval Air 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)

J. B. Greene, Jr
NAME (Please type or print)

Signature

Acting
Title

27 May 1994
Date

0780

DEPARTMENT OF THE NAVY
NAVAL AIR WARFARE CENTER
WEAPONS DIVISION
CHINA LAKE, CALIFORNIA 93555-6001

IN REPLY REFER TO:
11000
Ser C0014/4212
13 May 94

From: Commander, Naval Air Warfare Center Weapons Division
To: Commander, Naval Air Warfare Center

Subj: BASE REALIGNMENT AND CLOSURE (BRAC) DATA CALL #13

Ref: (a) CNO ltr 11000 Ser N441/4U594482 of 8 Apr 94

Encl: (1) BRAC '95 Data Call #13 for the China Lake Site
(2) BRAC '95 Data Call #13 for the Point Mugu Site
(3) COMNAWCWPNS Certification for BRAC '95 Data Call #13 for the China Lake Site
(4) COMNAWCWPNS Certification for BRAC '95 Data Call #13 for the Point Mugu Site

1. We have responded to the subject Data Call per reference (a). However, it is essential to understand that the Naval Air Warfare Center Weapons Division (NAWCWPNS) is a full-spectrum research, development, test, evaluation, and in-service engineering center for weapon systems associated with air warfare; missiles and missile subsystems, aircraft weapons integration, and assigned airborne electronic warfare systems. Naval Air Warfare Center Weapons Division as a total entity represents the work of more than 8,000 civilian employees and 1,300 military personnel. It is the Navy's complete repository of scientific and technical knowledge for air warfare systems, guided missiles, and aircraft/weapon integration and it is the host for the Navy's Air Weapons Operational Testing Squadrons. Naval Air Warfare Center Weapons Division constitutes the Department of Defense's largest weapons research and development laboratory and air, land and sea test range capability; a capability that has repeatedly and significantly furthered the Department of Defense's air weapons development function for both air and ship launched systems.

2. The primary sites of NAWCWPNS are at China Lake and Point Mugu, California. A major detachment is operated as a tenant at the White Sands Missile Range. These sites operate with a truly integrated structure. Many organizational entities are spread across both sites. This organizational integration across sites and functional areas recognizes that research, development, test, evaluation, and in-service engineering of weapon systems, is a seamless process that has proven to be most efficient with a critical mass of technical talent focused on all life cycle phases of this mission. Although BRAC '95 Data Call #12 and #13 are provided separately for China Lake and Point Mugu as requested, the capabilities of both NAWCWPNS sites must be considered as an integrated whole; and the commonality and synergy of the research

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and development with test and evaluation facilities and people had to be artifically split in order to respond to the separate data calls.

3. Enclosures (1) through (4) are submitted as the NAWCWPNS response to BRAC '95 Data Call #13.

4. If there are questions on this data submission, please contact Matt Anderson at DSN 469-1839 or commercial (619) 927-1839.

R. K. HULL

resulting in the most cost effective infrastructure. Although BRAC '95 Data Call #12 and #13 are provided separately for China Lake and Point Mugu as requested, the capabilities of both NAWCWPNS sites must be considered as an integrated whole; and the commonality and synergy of the research and development with test and evaluation facilities and people had to be artificially split in order to respond to the separate data calls.

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

ACTIVITY COMMANDER

Roger K. Hull, CAPT, USN
NAME (Please type or print)

Signature

Acting Commander
Title

13 May 1994
Date

Naval Air Warfare Center,
Weapons Division
Activity

BRAC 95
DATA CALL 13
NAWCHQ CHANGE 1

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

W.C. Bowes, VADM, USN
NAME (Please type or print)

Signature

Commander
Title

8 JUN 94
Date

Naval Air 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)

J.B. Greene, Jr
NAME (Please type or print)

Signature

Acting
Title

10 JUN 1994
Date

0784

For Corrected Pages

BRAC 95
DATA CALL 13
CHANGE 1 NAWCHQ

# 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

G.H. Strohsahl, RADM, USN
NAME (Please type or print)

Signature

Commander
Title

6/7/94
Date

Naval Air Warfare Center
Activity

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For Corrected Pages

# Document Separator

## T&E JCSG CLARIFICATION - FORM #3
## Armament/Weapons (MF)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Tactical Propulsion Test Facility

T&E Test Facility Category: Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | | √ |
| Safety T&E | | √ |
| Warhead Performance T&E | | √ |
| Fuze T&E | √ | |
| Seeker, sensor and guidance/control performance and target/background signature characterization | √ | |
| Propulsion Performance T&E | √ | |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | √ | |
| Gun Performance T&E | | √ |
| Electromagnetic Environmental Effects | | √ |
| Directed Energy | | √ |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

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## T&E JCSG CLARIFICATION - FORM #1
## Electronic Combat (MF, HITL, ISTF & OAR)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: VHF Anechoic Chamber

T&E Test Facility Category: MF
(MF, HITL, ISTF, or OAR)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | √ | |
| Electro-Optical (EO) | | √ |
| Infrared (IR) | | √ |
| Millimeter Wave (MMW) | √ | |
| Ultra Violet (UV) | | √ |
| Laser | | √ |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

G-34



13 September 1994

## T&E JCSG CLARIFICATION - FORM #3
### Armament/Weapons (MF)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: VHF Anechoic Chamber

T&E Test Facility Category: Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | √ | |
| Safety T&E | √ | |
| Warhead Performance T&E | | √ |
| Fuze T&E | √ | |
| Seeker, sensor and guidance/control performance and target/background signature characterization | √ | |
| Propulsion Performance T&E | | √ |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | | √ |
| Gun Performance T&E | | √ |
| Electromagnetic Environmental Effects | √ | |
| Directed Energy | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

6-35



13 September 1994

## T&E JCSG CLARIFICATION - FORM #1
## Electronic Combat (MF, HITL, ISTF & OAR)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Weapons Signal Processing Design Complex

T&E Test Facility Category: MF
(MF, HITL, ISTF, or OAR)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | √ | |
| Electro-Optical (EO) | √ | |
| Infrared (IR) | √ | |
| Millimeter Wave (MMW) | √ | |
| Ultra Violet (UV) | √ | |
| Laser | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

G-36

## T&E JCSG CLARIFICATION - FORM #3
### Armament/Weapons (MF)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Weapons Signal Processing and Design Complex

T&E Test Facility Category: Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | √ | |
| Safety T&E | √ | |
| Warhead Performance T&E | | √ |
| Fuze T&E | √ | |
| Seeker, sensor and guidance/control performance and target/background signature characterization | √ | |
| Propulsion Performance T&E | | √ |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | | √ |
| Gun Performance T&E | | √ |
| Electromagnetic Environmental Effects | √ | |
| Directed Energy | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

6-37



13 September 1994

## T&E JCSG CLARIFICATION - FORM #3
### Armament/Weapons (MF)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Weapons Survivability Laboratory (WSL)

T&E Test Facility Category: Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | | √ |
| Safety T&E | √ | |
| Warhead Performance T&E | √ | |
| Fuze T&E | √ | |
| Seeker, sensor and guidance/control performance and target/background signature characterization | √ | |
| Propulsion Performance T&E | √ | |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | √ | |
| Gun Performance T&E | √ | |
| Electromagnetic Environmental Effects | | √ |
| Directed Energy | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes____ No __√__

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## T&E JCSG CLARIFICATION - FORM #2
### Armament/Weapons (HITL, & ISTF)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Mk-45 TDD Engineering Development

T&E Test Facility Category: HITL/Test Laboratory
(HITL, or ISTF)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | √ | |
| Electro-Optical (EO) | | √ |
| Infrared (IR) | | √ |
| Millimeter Wave (MMW) | | √ |
| Ultra Violet (UV) | | √ |
| Laser | | √ |
| Midcourse Inertial/GPS (HITL only) | | √ |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes____ No __√__

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13 September 1994

## T&E JCSG CLARIFICATION - FORM #2
## Armament/Weapons (HITL, & ISTF)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Simulation Laboratory

T&E Test Facility Category: HITL
(HITL, or ISTF)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | √ | |
| Electro-Optical (EO) | √ | |
| Infrared (IR) | √ | |
| Millimeter Wave (MMW) | | √ |
| Ultra Violet (UV) | | √ |
| Laser | | √ |
| Midcourse Inertial/GPS (HITL only) | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

6-40

## T&E JCSG CLARIFICATION - FORM #2
## Armament/Weapons (HITL, & ISTF)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: TSSAM Hardware-in-the-Loop

T&E Test Facility Category: HITL
(HITL, or ISTF)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | | √ |
| Electro-Optical (EO) | | √ |
| Infrared (IR) | √ | |
| Millimeter Wave (MMW) | | √ |
| Ultra Violet (UV) | | √ |
| Laser | | √ |
| Midcourse Inertial/GPS (HITL only) | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

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## T&E JCSG CLARIFICATION - FORM #1
## Electronic Combat (MF, HITL, ISTF & OAR)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Air/Ground Range

T&E Test Facility Category: OAR
(MF, HITL, ISTF, or OAR)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | √ | |
| Electro-Optical (EO) | √ | |
| Infrared (IR) | √ | |
| Millimeter Wave (MMW) | | √ |
| Ultra Violet (UV) | | √ |
| Laser | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

6-42

## T&E JCSG CLARIFICATION - FORM #1
## Electronic Combat (MF, HITL, ISTF & OAR)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Electronic Combat Range

T&E Test Facility Category: OAR
(MF, HITL, ISTF, or OAR)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | √ | |
| Electro-Optical (EO) | √ | |
| Infrared (IR) | √ | |
| Millimeter Wave (MMW) | √ | |
| Ultra Violet (UV) | | √ |
| Laser | √ | |

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

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## T&E JCSG CLARIFICATION - FORM #1
## Electronic Combat (MF, HITL, ISTF & OAR)

Activity Title: NAWCWPNS-China Lake UIC: 60530

Facility/Capability Title: Flight Test Capability

T&E Test Facility Category: OAR
(MF, HITL, ISTF, or OAR)

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | | √ |
| Electro-Optical (EO) | | √ |
| Infrared (IR) | | √ |
| Millimeter Wave (MMW) | | √ |
| Ultra Violet (UV) | | √ |
| Laser | | √ |

NOTE: Most of these capabilities are provided through the Electronic Combat Range or the Air/Ground Range Complex at China Lake.

Is this Facility/Capability equipped to support Top Secret or Special Access required work?
Yes √ No ____

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DATA CALL #13
Revision Pages
China Lake

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

NEXT ECHELON LEVEL (if applicable)

W. E. NEWMAN, RADM, USN
NAME (Please type or print)

Signature

COMMANDER
Title

8/31/94
Date

NAVAL AIR WARFARE 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

W. C. BOWES, VADM, USN
NAME (Please type or print)

Signature

COMMANDER
Title

2 Sep 94
Date

NAVAL AIR 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

Title

9/6/94
Date

# BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

*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.*

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

ACTIVITY COMMANDER

D. B. McKinney, RADM, USN
Name (Please type or print)

Signature

Commander
Title

8/11/94
Date

Naval Air Warfare Center Weapons Division China Lake Site
Activity

Data Call #13 Revision of 11 August 1994

DATA CALL #13
REVISION OF 25 AUG 94
CHINA LAKE

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

NEXT ECHELON LEVEL (if applicable)

W. E. NEWMAN, RADM, USN
NAME (Please type or print)

Signature

COMMANDER
Title

8/31/94
Date

NAVAL AIR WARFARE 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

W. C. BOWES, VADM, USN
NAME (Please type or print)

Signature

COMMANDER
Title

2 Sep 94
Date

NAVAL AIR 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

Title

9/6/94
Date

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

ACTIVITY COMMANDER

D. B. McKinney, RADM, USN
Name (Please type or print)

Signature

Commander
Title

8/25/94
Date

Naval Air Warfare Center Weapons Division China Lake Site
Activity

Data Call #13 Revision of 25 August 1994

DEPARTMENT OF THE NAVY
NAVAL AIR WARFARE CENTER
WEAPONS DIVISION
CHINA LAKE, CALIFORNIA 93555-6001

IN REPLY REFER TO:

11000
Ser C0014(08E000D)/7327
13 Sept 94

94-09-30 13:25 RCVD

From: Commander, Naval Air Warfare Center Weapons Division
To: Commander, Naval Air Warfare Center

Subj: BASE REALIGNMENT AND CLOSURE (BRAC) DATA CALL #13

Ref: (a) CNO ltr 11000 Ser N441/4U594482 of 8 Apr 94
(b) Results of BRAC-95 Audit at NAWC China Lake of 27 Jul 94
(c) BSAT Request for Clarification # A/W-009 of 31 Aug 94
(d) BSAT Request for Clarification # A/W-010 of 19 Aug 94
(e) BSAT Request for Clarification # A/W-011 of 19 Aug 94
(f) BSAT Request for Clarification # A/W-015 of 2 Sep 94
(g) BSAT Request for Clarification # A/W-016 of 31 Aug 94
(h) BSAT Request for Clarification # A/W-019 of 31 Aug 94
(i) BSAT Request for Clarification # A/W-026 of 31 Aug 94
(j) BSAT Request for Clarification # A/W-029 of 31 Aug 94

Encl: (1) Revised Pages for BRAC '95 Data Call #13 as of 13 September 1994 for NAWCWPNS China Lake
(2) COMNAWCWPNS Certification for Revised Pages for BRAC '95 Data Call #13 for the China Lake site

1. We responded to the subject Data Call per reference (a) on 11 May 1994. Reference (b) is the results of the Naval Audit Service review of Naval Air Warfare Center Weapons Division (NAWCWPNS) China Lake BRAC '95 Data Call #13. References (c) through (j) are requests for correction or clarification of the subject Data Call which came from the Base Structure Analysis Team. Also, after further review of Data Call #13 by NAWCWPNS personnel, some additional changes were made, and are submitted herein.

2. Enclosures (1) and (2) are submitted as the NAWCWPNS China Lake revised response to BRAC '95 Data Call #13 as of 13 September 1994 as per requested in references (b) through (j) as well as additional changes by NAWCWPNS personnel.

3. If there are questions on this data submission, please contact Matt Anderson at DSN 469-1839 or (619) 927-1839.

D. B. McKINNEY

WC

DATA CALL #13
13 Sep 94 Revisions
China Lake

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

NEXT ECHELON LEVEL (if applicable)

W. E. NEWMAN, RADM, USN
NAME (Please type or print)

W E Newman
Signature

COMMANDER
Title

9/16/94
Date

NAVAL AIR WARFARE 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

W. C. BOWES, VADM, USN
NAME (Please type or print)

Signature

COMMANDER
Title

19 Sep 94
Date

NAVAL AIR 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

Title

9/23/94
Date

# BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

ACTIVITY COMMANDER

D. B. McKinney, RADM, USN
Name (Please type or print)

Signature

Commander
Title

9/13/94
Date

Naval Air Warfare Center Weapons Division China Lake Site
Activity

Data Call #13 Revision of 13 September 1994

CHINA LAKE
DATA CALL 13
REV 9/13/94

UIC 60530

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

NEXT ECHELON LEVEL (if applicable)

L. L. LUNDBERG
NAME (Please type or print)

Signature

ACTING COMMANDER
Title

9/20/94
Date

NAVAL AIR WARFARE 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

DONALD V. BOECKER, RADM USN
~~W. C. BOWES, VADM, USN~~
NAME (Please type or print)

Signature

COMMANDER (ACTING)
Title

20 Sep 94
Date

NAVAL AIR 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

Title

9/29/94
Date

Certification for RFC-EC-025
10/4/94

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

*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 you 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 the information contained herein is accurate and complete to the best of my knowledge and belief.

ACTIVITY COMMANDER

Roger K. Hull, CAPT, USN
Name (Please type or print)

Signature

Acting Commander
Title

16 Sept '94
Date

Naval Air Warfare Center Weapons Division China Lake Site
Activity

Data Call #13 Revision of 13 September 1994

CHINA LAKE
DATA CALL #13
REV 9/15/93

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

NEXT ECHELON LEVEL (if applicable)

L. L. LUNDBERG
NAME (Please type or print)

Signature

ACTING COMMANDER
Title

9/20/94
Date

NAVAL AIR WARFARE 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

DONALD V. BOECKER, RADM USN
~~W. C. BOWES, ADM, USN~~
NAME (Please type or print)

Signature

COMMANDER (ACTING)
Title

22 Sep 94
Date

NAVAL AIR 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

Title

9/29/94
Date

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

ACTIVITY COMMANDER

Roger K. Hull, CAPT, USN
Name (Please type or print)

Signature

Acting Commander
Title

16 Sept '94
Date

Naval Air Warfare Center Weapons Division China Lake Site
Activity

Data Call #13 Revision of 15 September 1994

Document Separator

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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

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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,



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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,



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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 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.

## 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.

**-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?

## 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.

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



PEs?



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## 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.
**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? **No**

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

**Yes, COMOPTEVFOR provides support (funding for automated data processing) for three air test and evaluation squadrons, VX-1, located at Patuxent River, VX-4 at Point Mugu and VX-9 at China Lake.**

**-2.3.B.2** On any other mission deemed critical to the operational effectiveness of the armed forces of the United States? **No**

## 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.

(Answer to 3.1.A.1)

**An average workload percentage of our separate warfare divisions (surface, underwater, air, etc.) is 15%. The modes of data exchange include facsimile (secure and non-secure), electronic mail, TECHNET, PROCOM and CC Mailer.**

**The external sites we exchange data with include: AIRTEVRON ONE (Patuxent River, MD), AIRTEVRON FOUR (Pt. Mugu, CA), AIRTEVRON NINE (China Lake, CA), N91 (WASH, D.C.), AIR-120 (WASH, D.C.), PMA (WASH, D.C.), N88 (WASH, D.C.), Sandia National Laboratories, NUWC DET (Hawaii), NWADIV (Corona, CA), David Taylor Research Center (Wash, D.C./Annapolis, MD) Navy Laboratories (Newport, RI; Keyport, WA; Wai Anae, HI), COMNAVSEASYSCOM (WASH, D.C.), US Special Operations Command (McDILL AFB), Naval Surface Warfare Center (WASH, D.C.), Naval Coastal Systems Center (Panama City, FL).**

**-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.** If yes, explain.

**The Navy's sole independent agent for operational test and evaluation would be eliminated. Title 10 USCS 2399 establishes a requirement for COMOPTEVFOR.**

**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.* **N/A**

**- 3.1.C.1** Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? **N/A**
Yes/no. If yes, explain.

**- 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?

**As discussed phoncon between OPTEVFOR/CAPT Beach and FSA/LT Avant OF 25 May 94, population figures not held at COMOPTEVFOR. COMOPTEVFOR located within Commander, Naval Base Norfolk complex, Norfolk, VA.**

**- 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.*

**-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. **N/A**

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

**-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.* **N/A**

**-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. **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. **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, 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. **No**



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**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. **No**

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

**-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. **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.* ***Note: COMOPTEVFOR CONTROLS NO TEST RANGES.***

**-3.1.G.1** How many square miles of air, land, and sea space are available to support test operations? **None**

**-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. **No/N/A**

**-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. **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.

Yes, all (100%) tests associated with COMOPTEVFOR's data collection and reports are completed at other locations.

**-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?

**41 days below 32 degrees; 306 days between 32 and 95 degrees; and 18 days above 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%?

**7 days below 30%; 252 days between 30 and 80%; and 106 days above 80%.**

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

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

**17 days less than 1 mile; 50 days between 1 and 3 miles; and 298 days greater than 3 miles.**

**-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? **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.

**NOTE:** COMOPTEVFOR does not own any airfield facilities or testing equipment involved in the testing of air vehicles. This section is considered not applicable.

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.

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

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

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

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

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

**-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,



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type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

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

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

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

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

**-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?

**-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)

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

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

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

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

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

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



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

## 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.

**NOTE:** COMOPTEVFOR does not own any facilities involved in the testing of electronic combat systems or electronic combat subsystems; this section is considered not applicable.

**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?

**-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?

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

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

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

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

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

- **-3.3.A.7.A** Threat lay down?
- **-3.3.A.7.B** Representative distance?



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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

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

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

**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.

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

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

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

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

## 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.

**NOTE:** COMOPTEVFOR does not own any weapon testing facilities involved in the testing of the weapons portion of a weapon system; this section is considered not applicable.

**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?

**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?

**-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.

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

**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?
---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.

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

**-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.

## 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).

(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.

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.

OPERATIONAL TEST & EVALUATION FORCE
NORFOLK, VA
N57023
COMOPTEVFOR
7 Feb 94

**DETERMINATION OF UNCONSTRAINED CAPACITY**

**Not Applicable to COMOPTEVFOR**

FACILITY/CAPABILITY TITLE: Commander, Operational Test and Evaluation Force/Navy's Independent Agent for Operational Test and Evaluation

ANNUAL HOURS OF DOWNTIME 1 _____
AVERAGE DOWNTIME PER DAY (LINE 1+ 365) 2 _____
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 _____

| TEST TYPES 4 | TESTS AT ONE TIME 5 | WORKLOAD PER TEST PER FACILITY HOUR 6 | WORKLOAD PER FACILITY HOUR 7 | UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ) 8 _____ |
|---|---|---|---|---|
| | | | | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | 9 _____ |
| | | | | |
| | | | | |
| "TYPICAL" | | | | |
| | | | TOTAL Σ | |

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BRAC-95 CERTIFICATION

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

Patricia A. Petty
NAME (Please type or print)

Patricia A. Petty
Signature

Comptroller
Title

26 May 94
Date

Comptroller, Code 014
Division

N/A
Department

COMOPTEVFOR
Activity

BRAC-95 CERTIFICATION

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

D. F. Beach
NAME (Please type or print)

Signature

Deputy Chief of Staff
for Administration
Title

26 May 94
Date

Administration, Code 10
Division

N/A
Department

COMOPTEVFOR
Activity

# 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

RADM J. J. ZERR
NAME (Please type or print)

Signature

Commander
Title

26 May 94
Date

COMOPTEVFOR
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.

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

CAPT. S. STERLING, III
NAME (Please type or print)

Signature

Acting Director
Title

6/1/94
Date

Field Support Activity
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

13 JUN 1994
Date

## GENERAL INFORMATION

Facility/Capability Title: Commander, Operational Test and Evaluation Force/Navy's Independent Agent for Operational Test and Evaluation

Origin Date: 26 May 94

Service: "N" Organization/Activity: Commander, Operational Test and Evaluation Force (COMOPTEVFOR) Location: Norfolk, VA

T&E Functional Area: Other

UIC = N57023
UIC = N31977

T&E Test Facility Category N/A

| | D&E | IE | T&D | T&E | S&T | Other | |
|---|---|---|---|---|---|---|---|
| PERCENTAGE USE: | | | | 80% | | 20% | = 100% |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/Weapons | | | | | | | |
| EC | | | | | | | |
| Other | | | | | | 100% | |

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

29

## TECHNICAL INFORMATION

Facility/Capability Title: Commander, Operational Test and Evaluation Force/Navy's Independent Agent for Operational Test and Evaluation

| |
|---|
| Facility Description; Including mission statement: COMOPTEVFOR has three administrative buildings to support its mission; to provide independent operational test and evaluation for weapons, ships, aircraft and equipment in the anticipated operational environment and against the anticipated threat. |
| Interconnectivity/Mulit-Use of T&E Facility: COMOPTEVFOR is connected via an electronic mail system to AIRTEVRON ONE, FOUR and NINE with secure data devices at 9.6 KBPS and linked with the Defense Secure Network. |
| Type of Test Supported: COMOPTEVFOR administratively supports operational test and evaluation of weapons, ships, aircraft and equipment. |
| Summary of Technical Capabilities: Not Applicable |
| Keywords: N/A |

## ADDITIONAL INFORMATION

Facility/Capability Title: Commander, Operational Test and Evaluation Force/Navy's Independent Agent for Operational Test and Evaluation

PERSONNEL

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | 149 | 148 | 147 | 147 | 147 | 147 | 147 |
| Enlisted | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| Civilian | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| Total | 337 | 336 | 335 | 335 | 335 | 335 | 335 |

Total Square Footage: 56,730 GSF

Test Area Square Footage: 0

Office Space Square Footage: 49,416 GSF

Tonnage of Equipment: 0

Volume of Equipment: 0

Annual Maintenance cost: 162,500

Estimated Moving cost: N/A

CAPITAL EQUIPMENT INVESTMENT:

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $1,154,477 | $911,800 | $900,000 | $1,800,000* | $725,000 | $725,000 | $725,000 |

* Collateral equipment for new building, MILCON Project P-061.

## FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Commander, Operational Test and Evaluation Force/Navy's Independent Agent for Operational Test and Evaluation

AGE: 52 years

REPLACEMENT VALUE: 1993 Current Present Value is $5.1 mil. Does not include equipment.

MAINTENANCE AND REPAIR BACKLOG: None, Building scheduled for demolition 1996.

DATE OF LAST UPGRADE: June-Sept 1991

NATURE OF LAST UPGRADE: Replace heating and Cooling system in building CA-7.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: N/A

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

## HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Commander, Operational Test and Evaluation Force/Navy's Independent Agent for Operational Test and Evaluation

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | | | |
| N/A | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| N/A | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | | | |
| N/A | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | 524,160 | 524,160 | 524,160 | 524,160 | 524,160 | 524,160 | 524,160 | 524,160 |
| | TEST HOURS | 216,720 | 216,720 | 216,720 | 216,720 | 216,720 | 216,720 | 216,720 | 216,720 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MISSIONS* | 26 | 35 | 41 | 40 | 59 | 48 | 73 | 62 |
| OTHER | DIRECT | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

* Projects that had a phase of testing that began during the FY, per information contained in the CNO Database. Information prior to 1989 is an estimate; it was not tracked before 1989.

# Document Separator

CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
(NAVSURFWARCENDIV)
CRANE, INDIANA

# Department of Defense

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

March 31, 1994



WC

0001

# T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS
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1.1.B Guidance for Military Department Data Collection
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0002

# 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.

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 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 sub-systems (e.g., avionics, engines, and sensors). This includes flight



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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.

NOTE: As reported in BRAC95, Data Call 1, the technical program at the Crane Division is managed in terms of seventeen Technical Capabilities (TCs) recognized by the Naval Surface Warfare Center. Response to this data call will be by the following three Technical Capabilities:

Electronic Warfare
Conventional Ammunition
Pyrotechnics

## 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.

Electronic Warfare Technical Capability. NA

**-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?

| | FY 92 | FY 93 |
|---|---|---|
| Electronic Combat | 5.0 | 4.5 |
| Armament/weapons | 141.0 | 134.0 |

## 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.

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

Unconstrained Capability is limited only by limited equipment and space.

## 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.

Electronic Warfare Technical Capability. Yes

Armaments/Weapons. No R

**-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?

Electronic Warfare Technical Capability. Yes, Electronic Countermeasures.

Armaments/Weapons. Yes R

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

Electronic Warfare Technical Capability. Yes

Armaments/Weapons. No R

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

Electronic Warfare Technical Capability. Yes

Armaments/Weapons. No R



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## 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.

Electronic Warfare Technical Capability. Yes

**-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?

Electronic Warfare Technical Capability. Yes, Electronic Countermeasures.

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

Electronic Warfare Technical Capability. Yes

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

Electronic Warfare Technical Capability. Yes



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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. None

**-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. No

**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? Yes/no. If yes, explain. 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.

Workload could be increased by over 100%

**- 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.

We are not currently operating under any type of temporary permits or voluntary agreement.

**- 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 population = | 546,700 |
| 100 mile radius population = | 4,098,700 |
| 150 mile radius population = | 9,388,400 |
| 200 mile radius population = | 15,118,700 |

**- 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

**- 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.

Electronic Warfare Technical Capability. The Crane Division creates a synergism by sharing of facilities and technology between various product areas. For example, the Crane Division is recognized by the Naval Surface Warfare Center as having special Technical Competencies (TCs) in Microwave Components, Radar, Night Vision, Electrochemical Power Systems, Microelectronics Technology, Pyrotechnics and Electronic Module Test and Repair. All of these TCs are extensively utilized in support of the various Electronic Warfare programs.

Costly test and repair facilities that are shared include corrosion control, RF test range, RF anechoic test chambers, solid state devices, microwave tubes and printed circuit card manufacture. Microwave tubes are today, and will continue to be for the foreseeable future, the source of high power microwave energy used in electronic warfare systems. The Crane Division is recognized as possessing the DOD microwave tube expertise, a basic technology which is vital in providing total support to electronic warfare systems.



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Armaments/Weapons. Specialized facilities associated with the Conventional Ammunition and Pyrotechnics Technical Capabilities include the Ordnance Test Area, the Ordnance Prototype Manufacturing Facility, the Transient Velocity Windstream Apparatus, the Automated Infrared Test Facility, the Ordnance Material Characterization Laboratory, the Ordnance Environmental Test and Radiographic Facility, the Missile Fuze Test Laboratory, the Ordnance Components Test Laboratory and the Lake Glendora Underwater Explosive Test Facility. The Environmental Test and Radiographic Facility also supports the Electrochemical Power Sources and Acoustic Sensors Technical Capabilities. Complete Technical descriptions are contained in Attachments B and C. R

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

Electronic Warfare Technical Capability. No

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

Electronic Warfare Technical Capability. NA

**-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.

Electronic Warfare Technical Capability. The Crane Division creates a synergism by sharing of facilities and technology between various product areas. For example, the Crane Division is recognized by the Naval Surface Warfare Center as having special Technical Competencies (TCs) in Microwave Components, Radar, Night Vision, Electrochemical Power Systems, Microelectronics Technology, Pyrotechnics and Electronic Module Test and Repair. All of these TCs are extensively utilized in support of the various Electronic Warfare programs.

Costly test and repair facilities that are shared include corrosion control, RF test range, RF anechoic test chambers, solid state devices, microwave tubes and printed circuit card manufacture. Microwave tubes are today, and will continue to be for the foreseeable future, the source of high power microwave energy used in electronic warfare systems. The Crane Division is recognized as possessing the DOD microwave tube expertise, a basic technology which is vital in providing total support to electronic warfare systems.

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

Electronic Warfare Technical Capability. No

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

Electronic Warfare Technical Capability. NA



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**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.*

Electronic Warfare Technical Capability. 20% additional workload could be accepted without additional facilities.

**-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.

Electronic Warfare Technical Capability. Yes, any electronics.

**-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.

The Crane site is located in the rolling hills of southwestern Indiana and has no encroachment issues now or in the foreseeable future. The Crane boundary has expansion potential of several thousand acres in all directions. The boundary is surrounded by forest, cropland, or pasture and is estimated to have a market value of approximately $250 per acre. There are only two small communities that are located adjacent to the Crane boundary. In addition to the expansion potential beyond the boundaries of the activity, Crane has approximately 7,500 acres of expansion potential within its boundaries. The following table provides a breakdown of these acres:

## Class 1 Resources of NAVSURFWARCENDIV CRANE (UIC:00164)
## Site Location: Crane, Indiana

| Land Use | Total Acres | Developed Acreage | Available for Development | |
|---|---|---|---|---|
| | | | Restricted | Unrestricted |
| Maintenance | 78.7 | 78.7 | 0 | 0 |
| Operational Non-ordnance | 722.5 | 305.0 | 10.6 | 406.9 |
| Operational Ordnance | 1266.7 | 768.2 | 0 | *498.5 |
| Training | 13.4 | 6.2 | 0 | *7.2 |
| R & D | 0 | 0 | 0 | 0 |
| Supply & Storage Ordnance | 23734.0 | 17485.6 | 0 | 6248.4 |
| Supply & Storage Non-ordnance | 1055.9 | 863.2 | 0 | 192.7 |
| Admin | 84.1 | 76.2 | 0 | *7.9 |
| Housing | 170.7 | 45.1 | 0 | 125.6 |
| Recreational | 675 | 257 | 0 | 418 |
| Navy Forestry Program | **48,563 | 0 | **44,723 | **3,840 |
| Navy Agricultural Outlease Program | 0 | 0 | 0 | 0 |

| Land Use | Total Acres | Developed Acreage | Available for Development | |
|---|---|---|---|---|
| | | | Restricted | Unrestricted |
| Navy Agricultural Outlease Program | 0 | 0 | 0 | 0 |
| Hunting/Fishing Programs | **56,290 | 0 | **52,450 | **3,840 |
| Other (Submerged) | 900 | 0 | 900 | 0 |
| Total: | ***62,467 | | | |

NOTE: All restrictions are due to ESQD arcs.
* Recommended "Best" use but could support all uses marked with an asterisk.
** Overlapping, concurrent land use.
*** Total actual acres. The sum of this column will be larger than the actual acres due to overlapping, concurrent land use.

Of the total Unrestricted Acres reported above, 7,500 acres have existing roads and/or utilities that could support expansion efforts.

**-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)?

Electronic Warfare Technical Capability. **Yes, Special Access Required.**

Armaments/Weapons. Yes, Secret.

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| Land Use | Total Acres | Developed Acreage | Available for Development | |
|---|---|---|---|---|
| | | | Restricted | Unrestricted |
| Hunting/Fishing Programs | **56,290 | 0 | **52,450 | **3,840 |
| Other (Submerged) | 900 | 0 | 900 | 0 |
| Total: | ***62,467 | | | |

NOTE: All restrictions are due to ESQD arcs.
* Recommended "Best" use but could support all uses marked with an asterisk.
** Overlapping, concurrent land use.
*** Total actual acres. The sum of this column will be larger than the actual acres due to overlapping, concurrent land use.

Of the total Unrestricted Acres reported above, 7,500 acres have existing roads and/or utilities that could support expansion efforts.

**-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)?

Electronic Warfare Technical Capability. Yes, Special Access Required.



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**-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.

Military Construction Project P-266, which was funded in FY 92, is currently under construction with an estimated completion of August 1995. This state-of-the-art, 72,000 square foot facility will accommodate functions associated with the reliability and performance testing, engineering life cycle support and analysis, repair, alignment , calibration, upgrade and logistic support of the AN/SLQ-32 (V) Electronic Countermeasures Weapon System. The facility will be a permanent, two-story, steel-frame structure with reinforced concrete floors and foundation and concrete tilt-up exterior walls. Interior functional areas are included for test, development, maintenance, repair and overhaul; an anechoic chamber; shipping, receiving, storage and staging areas; computer-aided drafting/design and automated data processing areas; technical library; secured strong room, receiving dock and bay. The cost of the facility is $7,465,000.

**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.

Electronic Warfare Technical Capability. DOD has electronic warfare capabilities throughout the Services. However, no one activity has the breadth of systems and technologies, equipment, facilities and corporate expertise as that contained within the Crane Division. Crane Division covers the spectrum of targeting and acquisition radars and communication systems. Only the Crane Division has the corporate expertise required to support Navy electronic warfare systems and their operating environments, e.g., high shock loads associated with landing and take-off for Navy airborne electronic warfare systems or the corrosive effects of a continuous salt atmosphere aboard ship.

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

**-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.

Electronic Warfare Technical Capability. 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?

Electronic Warfare Technical Capability and Armaments/Weapons. The Crane property is 100 square miles in rural southern Indiana, 88 acres (0.14 sq mi) are used for ordnance and pyro testing. The airspace is potentially available. R

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

Electronic Warfare Technical Capability and Armaments/Weapons. NA, the air space is not used. R

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

Electronic Warfare Technical Capability and Armaments/Weapons. NA, the air space is not used. R

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

**-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.

Electronic Warfare Technical Capability. 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?

Electronic Warfare Technical Capability. 100 square miles.

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

Electronic Warfare Technical Capability. NA, the air space is not used.

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

Electronic Warfare Technical Capability. NA

**-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.

Electronic Warfare Technical Capability. NA



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**-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.

Electronic Warfare Technical Capability and Armaments/Weapons. NA, the airspace is not used. R

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

Electronic Warfare Technical Capability and Armaments/Weapons. Although not used, the airspace is over 100 square miles of land. R

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

Electronic Warfare Technical Capability and Armaments/Weapons. None R

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

Electronic Warfare Technical Capability and Armaments/Weapons. Although the airspace is not used, the maximum straight line segment is 15 nautical miles. R

**-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.

Electronic Warfare Technical Capability and Armaments/Weapons. Not used. R

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

Electronic Warfare Technical Capability. NA

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

Electronic Warfare Technical Capability. NA

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

Electronic Warfare Technical Capability. NA

**-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.

Electronic Warfare Technical Capability. NA



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see pg. 20A

**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.

The Crane Division covers almost 100 square miles and has a predominantly rural landscape with few zoning requirements. Crane is situated within the Crawford Upland, the most rugged and highly dissected part of the State of Indiana. Deep drainage lines with steep, often rocky, walls are cut into every part of the upland, leaving divides with an average elevation of about 600 feet. Less than 15 percent of the region is in need of artificial drainage.

The upland varies greatly in form with many different geological formations exposed. For example, massive Mansfield sandstone is exposed throughout the central part of the region, soft shales of the "Coal Measures" cover the Mansfield sandstone in the western part of the area, and limestone outcrops occur in a few small areas.

Mineral exploration and production have been undertaken at various times in and around the Crane site. Crane is in an area of southwestern Indiana that has deposits of gypsum. The known deposits are at depths from 300 to 500 feet. No commercial gypsum deposits are known to exist within the boundaries of Crane.

Coal deposits have been mined in and around Crane. Twenty-two deposits one to two feet thick and ten deposits two to five feet thick are known at the Crane site. Several oil and gas fields have been discovered around the Crane site.

**-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. 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?

Crane Division is located in a temperate climate zone; temperatures usually range widely between summer and winter. Extremes of temperature from -30°F to 100°F are not uncommon. The average minimum temperature in January is 26°F; the average maximum temperature in July is 89°F.

**-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%?

Average humidity ranges from 40 to 90 percent in summer and from 60 to 90 percent in the winter.

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

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

**-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? NA

**-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. NA

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

## 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. NA

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

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

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

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

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

**-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. NA

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

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

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

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

**-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? NA

**-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) NA

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

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

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

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

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

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

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

## 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.

**GENERAL INFORMATION.** This section will describe the following capabilities:

Electronic Warfare Technical Capability.

| | |
|---|---|
| Facility/Capability: | AN/ULQ-13 Signal Simulator/Trainer Van |
| Origin Date: | 04/29/94 |
| Military Department: | N |
| Organization/Activity: | Crane Division, Naval Surface Warfare Center |
| Location (2): | Norfolk, VA; San Diego, CA |
| UIC: | 12255 |
| T&E Functional Area: | Electronic Combat |
| T&E Test Facility Category: | Open Air Range (OAR) |

| | |
|---|---|
| Facility/Capability: | AN/ULM-4 Electronic Countermeasures Test Set |
| Origin Date: | 04/29/94 |
| Military Department: | N |
| Organization/Activity: | Crane Division, Naval Surface Warfare Center |
| Location (6): | Norfolk, VA; San Diego, CA; Mayport, FL; Puget Sound, WA; Barbers Point, Hawaii; Yokosuka, Japan |
| UIC: | 12255 |
| T&E Functional Area: | Electronic Combat |
| T&E Test Facility Category: | Open Air Range (OAR) |

**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?

Electronic Warfare Technical Capability. The AN/ULQ-13 Signal Simulator/Trainer Portable Van is capable of simulating over 100 threats, including Surface Search Radars, and Anti-ship missiles launched from both Surface and Air platforms.

The AN/ULM-4 Electronic Countermeasures Test Set is capable of simulating over 100 threats, including Surface Search Radars, and Anti-ship missiles launched from both Surface and Air platforms.

**-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?

Electronic Warfare Technical Capability. The AN/ULQ-13 Signal Simulator/Trainer is capable of simulating 32 simultaneous threats. The available threat types are: Shipboard and land based Search Radars (Azimuth Scan, Spiral Scan, Conical Scan, Height Finder and Raster Scan) and both Surface and Air launched Anti-ship missiles. The signal density is 32 at a power level greater than 10 Kilowatts. The signals are C-Band, X-Band and Ku-Band. These signals are radiated (open air range).

The AN/ULM-4 Electronic Countermeasures Test Set is capable of simulating 2 simultaneous threats. The available threat types are: Shipboard and land based Search Radars (Azimuth Scan, Spiral Scan, Conical Scan, Height Finder and Raster Scan) and both Surface and Air launched Anti-ship missiles. The signal density is 2 at a power level greater than 100 Megawatts. The signals are in X-Band and Ku-Band. These signals are radiated (open air range).

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

Electronic Warfare Technical Capability. No, this hardware is made up of commercial equipment which the internal technical staff validate.

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

Electronic Warfare Technical Capability. All three types--open loop, reactive, and closed loop--of testing are conducted.

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

Electronic Warfare Technical Capability. Unknown.

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

Electronic Warfare Technical Capability. Capable of simulating all three types of threats. The available threat types are: Shipboard and land based Search Radars (Azimuth Scan, Spiral Scan, Conical Scan, Height Finder and Raster Scan) and both Surface and Air launched Anti-ship missiles.

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

None

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

Electronic Warfare Technical Capability. Unknown

**-3.3.A.7.B** Representative distance?

Electronic Warfare Technical Capability. 0 to 20 nautical miles.

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

Electronic Warfare Technical Capability. The ULM-4 sites are fixed, land based sites. The AN/ULQ-13 is a fully portable, reprogrammable, self-contained van.

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

Electronic Warfare Technical Capability. No.

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

Electronic Warfare Technical Capability. Yes

**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.

Electronic Warfare Technical Capability. No.

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

Electronic Warfare Technical Capability. The simultaneous Electronic Countermeasures engagements from deployed Surface Electronic Warfare Systems can be evaluated.

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

Electronic Warfare Technical Capability. The range is 6 to 18 Gigahertz (GHz).

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

Electronic Warfare Technical Capability. The available spectra is 0 Hertz (hz) to 33 Gigahertz (GHz).

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

Electronic Warfare Technical Capability. 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. 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? NA

**-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. NA

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

### 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: NA

- --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. NA

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

**-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. NA

Document Separator

# ATTACHMENT A

## ELECTRONIC WARFARE TECHNICAL CAPABILITY

### FACILITY CONDITION

**Includes all or portion of space in following buildings:**
**Buildings 2, 41, 121, 2068, 3168, 3224**

### HISTORICAL WORKLOAD

### DETERMINATION OF UNCONSTRAINED CAPACITY

### GENERAL INFORMATION

### TECHNICAL INFORMATION

### ADDITIONAL INFORMATION

Facility/Capability Title: Electronic Warfare Facility

Origin Date: 25 April 1994

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: N | | Organization/Activity: NSWCCD | | | Location: Crane Indiana | | |
| T&E Functional Area: Electronic Combat | | | | UIC = N00164 | | | |
| T&E Test Facility Category: MF | | | | | | | |
| | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| Percentage Use: | 70 | 0 | 5 | 15 | 10 | 0 | 100 |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/Weapons | | | | | | | |
| EC | 70 | 0 | 5 | 15 | 10 | 0 | 100 |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" On First Line | | | | | | | |

0034

# TECHNICAL INFORMATION

Facility/Capability Title: ELECTRONIC WARFARE FACILITY

| |
|---|
| Facility Description; Including mission statement:<br><br>Provides test and evaluation facilities for performing engineering and logistic support, maintenance, alteration, repair and fabrication of electronic warfare and surveillance systems, subsystems, and components. |
| Interconnectivity/Mulit-Use of T&E Facility:<br><br>NA |
| Type of Test Supported:<br>System capatibility testing and component acceptance testing. |
| Summary of Technical Capabilities: 1. Anechoic chamber for Electromagnetic Interference testing, Engineering, and antenna pattern measurements.<br>2. Electronic Countermeasures System for system improvement evaluation (ECPs) and failure analysis.<br>3. High power testing and evaluation of microwave components, e.g. TWTs.<br>4. RAM Air Turbine Generator (RAT GEN)Test and Evaluation (Wind Tunnel - 320 Knots) |
| Keywords: Anechoic Chamber, RAM Air Turbine Generator (Wind Tunnel), High Power TWT Tester, Failure Analysis, ECP Development and Review. |

035

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Electronic Warfare Facility

AGE: 20 years REPLACEMENT VALUE: $96 Million

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1994

NATURE OF LAST UPGRADE: Test Bed Installation
Purpose: Electronic Countermeasure Engineering Support
Capability: System Testing
Available: May 1994

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: MILCON P-266

   TOTAL PROGRAMMED AMOUNT: $8 Million
   SUMMARY DESCRIPTION: Electronic Warfare Facility

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0036

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2 - Microwave Systems & Components

AGE: 51 years REPLACEMENT VALUE: $190,400

MAINTENANCE AND REPAIR BACKLOG: $27,000

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0039

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 41 - Electronics T & E

AGE: 51 years REPLACEMENT VALUE: $1,702,500

MAINTENANCE AND REPAIR BACKLOG: $132,400

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Installed medium weight shock machine

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: MILCON P-266, Electronic Countermeasures Center

   TOTAL PROGRAMMED AMOUNT: $10,000,000
   SUMMARY DESCRIPTION: Construct 72,000 SF for SLQ-32 Test and evaluation.

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



00.36

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 121- Electronics T & E

AGE: 52 years REPLACEMENT VALUE: $578,300

MAINTENANCE AND REPAIR BACKLOG: $14,600

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:
MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0039

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2068 - Ram Air Turbine Generator

AGE: 38 years REPLACEMENT VALUE: $431,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1991

NATURE OF LAST UPGRADE: Installation of Ram Air Turbine Generator facility in the building. Electrical upgrade and air intake installed.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0040

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3168 - Fleet Microwave Support Center

AGE: 5 years REPLACEMENT VALUE: $85,200

MAINTENANCE AND REPAIR BACKLOG: $1,665

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Installation of data communications cable, installed water deionization unit, installed light weight shock machine, installed loading dock leveler and installed wall for isolation of file server.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



004

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3224 - Radar Components Building

AGE: 2 years REPLACEMENT VALUE: $186,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0042

ADDITIONAL INFORMATION

Facility/Capability Title: Electronic Warfare Center

PERSONNEL

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | 0 | 2 | 2 | 2 | 2 | 2 | 2 |
| Civilian | 12 | 11 | 8 | 8 | 8 | 8 | 8 |
| Contractor | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Total | 14 | 15 | 10 | 10 | 10 | 10 | 10 |

Total Square Footage: 49,500

Test Area Square Footage: 29,500

Office Space Square Footage: 20,000

Tonnage of Equipment: 665 Tons

Volume of Equipment: 219,000 cu. ft.

Annual Maintenance Cost: $205,000

Estimated Moving Cost: $1,000K

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $150K | $65K | $700K | $350K | $350K | $350K | $350K |
| | | | | | | |
| | | | | | | |

0043

## HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Warfare Facility

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | 8122 | 8122 | 12071 | 10537 | 11642 | 13177 | 18005 | 16471 |
| | TEST HOURS | 4061 | 4061 | 5235 | 5268 | 5821 | 6588 | 9002 | 8235 |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE: Direct Labor and Test hours are associated with T& E function only.

R

004400

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Electronic Warfare Facility

| T&E FUNCTIONAL AREA | | FISCAL YEAR 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
|---|---|---|---|---|---|---|---|---|---|
| AIR VEHICLES | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | 8122 | 8122 | 12,071 | 10,537 | 11,642 | 13,177 | 18,005 | 16,471 |
| | TEST HOURS | 4061 | 4061 | 5235 | 5268 | 5821 | 6588 | 9002 | 8235 |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

C044 see pg. 44A

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Electronic Warfare Facility

ANNUAL HOURS OF DOWNTIME 1 576

AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) 2 1.58

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 22.42

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR | UNCONSTRAINED ANNUAL CAPACITY PER DAY (LINE 3 X TOTAL Σ) | ANNUAL UNCONSTRAINED CAPACITY |
|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 |
| Compatibility | 1 | 4 | 4 | 515.7 | 188,230 |
| Verification | 1 | 2 | 2 | | |
| Failure Analysis | 1 | 2 | 2 | | |
| TWT | 2 | 2 | 4 | | |
| RAT GEN | 1 | 5 | 5 | | |
| Elect. Components | 1 | 2 | 2 | | |
| ATP | 1 | 2 | 2 | | |

0045

| | | | |
|---|---|---|---|
| "TYPICAL" | 1 | 2 | 2 |

TOTAL Σ 23

CC46

# Document Separator

## ATTACHMENT C

## PYROTECHNICS TECHNICAL CAPABILITY

### FACILITY CONDITION

**Includes all or portion of space in following buildings: Buildings 198, 633, 1029, 1043, 1163, 2084, 2670, 2693, 2995, 2707, 2888, 2923, 2925, 2945, 3079, 3080, 3081, 3086, 3107, 366, 3087**

### HISTORICAL WORKLOAD

### DETERMINATION OF UNCONSTRAINED CAPACITY

### GENERAL INFORMATION

### TECHNICAL INFORMATION

### ADDITIONAL INFORMATION

0047

# GENERAL INFORMATION

Facility/Capability Title: ORDNANCE TEST AREA

Origin Date: 04/30/94

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: Naval Surface Warfare Center Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Measurement Facility | | | | | | | |
| Percentage Use: | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| | 80 | 5 | 10 | 5 | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | 80 70 | | | | | |
| Armament/ Weapons | 80 80/100 | 5 | 10 | 5 | | | |
| EC | | | | | | | |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" on First Line | | | | | | | |

0048

# TECHNICAL INFORMATION

Facility/Capability Title: ORDNANCE TEST AREA

Facility Description; Including mission statement: The Ordnance Test Area provides ranges and facilities for first article, lot acceptance, surveillance, qualification and safety testing of pyrotechnic, demolition and conventional ammunition items. The test areas have a total of 88 unencumbered acres and are supported by eleven buildings (7800 sq.ft.). In addition to normal function testing the facility also supports Insensitive Munitions testing on All-Up-Rounds. Specialized equipment includes a Remote Ammunition Breakdown Facility, a Rockeye Bomblet Drop and Air Launch Facility, a Forty Foot Drop Tower, a Grenade Launch Range and 100 and 300 foot towers for suspension and testing of Aircraft Parachute Flares, Practice Bombs, Infrared Decoy Flares and Obscurants.

Interconnectivity/Mulit-Use of T&E Facility: NONE

Type of Test Supported: This facility is used for function testing of numerous types of pyrotechnics and explosives. Testing includes lot acceptance, quality assessment and insensitive munitions. Data recorded include burn times and output characteristics.

Summary of Technical Capabilities: See attached sheet.

Keywords: Ordnance Testing, Pyrotechnics, Ammunition



0049

Summary of Technical Capabilities

This facility has surveyed theodolite sites to allow the measurement of the altitude of aerial signals and flares. A full range of insensitive munitions testing can be done including fast and slow cookoff, bullet impact and sympathetic detonation. The facility has a launcher site for measuring the function of hand grenades. There is a 40 foot instrumented drop tower to evaluate the effects of a large drop on ordnance for safety information. There are 100 foot and 300 foot towers for suspending flares to allow the measurement of illumination on the surface and to provide a launch point for infrared decoys for temperature and area measurements. There are numerous firing chambers and test site setups with appropriate shielding to allow the testing of marine location markers, practice bomb signals, submarine signals, off-board ship decoys and Rockeye bomblets.

Attachment C Pg 25 of

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 198 - Pyrotechnic Operations

AGE: 50 years REPLACEMENT VALUE: $6,123,000

MAINTENANCE AND REPAIR BACKLOG: $47,250

DATE OF LA 'T UPGRADE: 1989

NATURE OF LAST UPGRADE: Construction of additional space for model shop operations, storage of inert materials and equipment.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0057

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 633 - Magazine

AGE: 52 years REPLACEMENT VALUE: $39,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0052

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 1029 - HI-X Magazine

AGE: 52 years REPLACEMENT VALUE: $109,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1984

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0053

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 1043 - HI-X Magazine

AGE: 52 years REPLACEMENT VALUE: $109,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0054

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 1163 - Magazine

AGE: 52 years REPLACEMENT VALUE: $39,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0055

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2084 - Inert Production/Storage

AGE: 48 years REPLACEMENT VALUE: $503,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Interior renovation for maintenance of missile fuzes.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0056

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2670 - Control Room

AGE: 42 years REPLACEMENT VALUE: $71,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0057

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2693 - Test & Evaluation Operations

AGE: 21 years REPLACEMENT VALUE: $31,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1983

NATURE OF LAST UPGRADE: Major alterations to the building for test upgrade.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0058

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2995 - Remote Breakdown Area

AGE: 19 years REPLACEMENT VALUE: $283,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1979

NATURE OF LAST UPGRADE: Installation of substantial dividing walls and operator cell.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0059

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2707 - Explosive Science Lab

AGE: 42 years REPLACEMENT VALUE: $809,000

MAINTENANCE AND REPAIR BACKLOG: $12,000

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Addition of space (1950 SF) for new test and evaluation equipment in the lab. Work included renovation to the existing spaces.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Construct loading dock.

   TOTAL PROGRAMMED AMOUNT: $70,000
   SUMMARY DESCRIPTION: Construct a new dock for loading and unloading.

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0060

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2888 - Operational Control Building

AGE: 27 years REPLACEMENT VALUE: $16,000

MAINTENANCE AND REPAIR BACKLOG: $778

DATE OF LAST UPGRADE: 1987

NATURE OF LAST UPGRADE: Installed new heating and air conditioning.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



1900

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2923 - OTA Annex Control Room

AGE: 23 years REPLACEMENT VALUE: $91,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0062

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2925 - OTA Annex Control Room

AGE: 23 years REPLACEMENT VALUE: $21,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0063

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2945 - Test & Evaluation Operations

AGE: 22 years REPLACEMENT VALUE: $45,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1991

NATURE OF LAST UPGRADE: Installed restroom facilities. Installed air compressor addition.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0064

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3079 - Magazine

AGE: 13 years REPLACEMENT VALUE: $15,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0665

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3080 - Ready Magazine

AGE: 13 years REPLACEMENT VALUE: $15,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0066

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3081 - Ready Magazine

AGE: 13 years REPLACEMENT VALUE: $15,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0067

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3086 - Test Tower

AGE: 13 years REPLACEMENT VALUE: $20,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1988

NATURE OF LAST UPGRADE: Renovated electrical system.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0068

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3107 - Hazardous Material Storage

AGE: 10 years REPLACEMENT VALUE: $23,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1991

NATURE OF LAST UPGRADE: Installed new heating system.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0069

## HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Ordnance Test Area

| 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 | 12000 | 12000 | 13000 | 13000 | 12000 | 12000 | 11000 | 11000 |
| | TEST HOURS | 1600 | 1600 | 1500 | 1400 | 1360 | 1360 | 1280 | 1280 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE: Direct Labor and Test hours are associated with all T& E functional areas (T&E, S&T, D&E, IE, T&D). R

0070A



AW-34

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: ORDNANCE TEST AREA

| 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 | 12000 | 12000 | 13000 | 13000 | 12000 | 12000 | 11000 | 11000 |
| | TEST HOURS | 1600 | 1600 | 1500 | 1400 | 1360 | 1360 | 1280 | 1280 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0070

see 0070A.

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: ORDNANCE TEST AREA

| | | |
|---|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 | 5618 |
| AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) | 2 | 15.4 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 | 8.6 |

| 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 67 |
| | | | | |
| Practice Bomb Signals | 1 | 2.3 | 2.3 | ANNUAL UNCONSTRAINED CAPACITY |
| Markers | 1 | 2.3 | 2.3 | 9 24455 |
| Insensitive Munitions | 1 | 3.2 | 3.2 | |
| | | | | |
| "TYPICAL" | | | | |
| | | TOTAL | 7.8 | |

0071

# Document Separator

GENERAL INFORMATION

Facility/Capability Title: AUTOMATED INFRARED TEST FACILITY

Origin Date: _____

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: NSWC Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Measurement Facility | | | | | | | |
| | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| Percentage Use: | 80% | 2% | 18% | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | ϕ | | | | | | |
| Armament/Weapons | 100 → 80% | | | | | | |
| EC | ϕ | | | | | | |
| Other | ϕ | | | | | | |
| Total in Breakout Must Equal "Percentage Use" On First Line | | | | | | | |

80

See note on p 75A

0072

Attachment K
Page 29 of 36

Facility/Capability Title: AUTOMATED INFRARED TEST FACILITY

Facility Description; The **Automated Infrared Test Facility** is identified as the Navy Standard for the measurement of infrared decoy flare intensity performance. The facility is contained in Building 366 and consists of a burning chamber capable of burning decoy flares up to 1000 grams, a 70 meter measurement tunnel with an environmentally controlled measurement room and several support rooms adjacent to the tunnel. The facility is used for development, first article, lot acceptance, surveillance and qualification testing of infrared decoy flares in both static and simulated air stream launch conditions. The facility also provides for robotic loading of the pyrotechnic devices - the most hazardous operation in the testing.

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

Type of Test Supported: This facility is used for measuring the radiant intensity and spectral radiant intensity from burning decoy flares under controlled conditions.

Summary of Technical Capabilities: Measurements in the facility are made using pyroelectric radiometers equipped with appropriate bandpass filters to select infrared band of interest. The radiometers are maintained in an environmentally controlled room. Radiometer calibrations are performed in place with NIST traceable blackbodies. Fourier transform interferometers and thermal imagers can be utilized in the facility during developmental testing to provide spectral and thermal mapping data. Data are collected and processed in real time to minimize time between tests.

Measurements in the facility have been correlated with actual air to air measurements of the intensity and effectiveness of infrared decoys thus providing a baseline for all future development efforts. This baseline allows us to be able to minimize the amount of costly air to air testing required during the development of new devices.

The facility provides a controllable air stream profile. In this facility we can change the air stream profile to simulate different flare launch conditions and different profiles for our more advanced flares.

In addition to providing operator safety during loading of the decoy flares in the test apparatus the robotic loading capability provides an extra measure of safety for the operator in that he/she is not exposed to the combustion products of the flare burnings.

Keywords: Infrared decoy measurements, flare measurement tunnel

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 366 - Infrared (IR) Test Facility

AGE: 52 years REPLACEMENT VALUE: $628,000

MAINTENANCE AND REPAIR BACKLOG: $14,500

DATE OF LAST UPGRADE: 1988

NATURE OF LAST UPGRADE: Modification and addition to the facility to the IR Flare Test Operations. Installed equipment for automated testing of flares.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0024

## HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Automated Infrared Test Facility

| 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 | | | | | | 3000 | 2400 | 1050 |
| | TEST HOURS | | | | | | 100 | 80 | 450 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE: Direct Labor and Test hours are associated with all T& E functional areas (T&E, S&T, D&E, IE, T&D). R

0075A



AW-34

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: AUTOMATED INFRARED TEST FACILITY

| 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 | | | | | | 3000 | 2400 | 1050 |
| | TEST HOURS | | | | | | 100 | 80 | 450 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

see pg. 0075A.

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: AUTOMATED INFRARED TEST FACILITY

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 768 |
| AVERAGE DOWNTIME PER DAY (LINE 1+ 365) | 2 2 1 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 21.9 |

| 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 | 850.4 |
| IR Measurement | 1 | 2.3 | 2.3 | |
| | | | | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | 9 18396 |
| | | | | |
| "TYPICAL" | | | | |
| | | | TOTAL Σ | |

0076

Attachment C
PG 29 of 36

# Document Separator

GENERA[illegible] [illegible]RMATION

Facility/Capability Title: Transient Velocity Windstream Apparatus

Origin Date: _____

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: NSWC Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Measurement Facility | | | | | | | |
| | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| Percentage Use: | 50% | 10% | 40% | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | 0 | | | | | | |
| Armament/Weapons | 100 → 50 | | | | | | |
| EC | 0 | | | | | | |
| Other | 0 | | | | | | |
| | 50 | | | | | | |
| Total in Breakout Must Equal "Percentage Use" On First Line | | | | | | | |

see note on 82A

0090

**TECHNICAL INFORMATION**

Facility/Capability Title: Transient Velocity Windstream Apparatus

| |
|---|
| Facility Description; Including mission statement: The **Transient Velocity Windstream Apparatus** is a free jet expansion windstream apparatus designed to provide adjustable air velocity versus time profiles to simulate the launch of decoy flares from a moving aircraft. The outdoor apparatus consists of several air compressors, a bank of air storage tanks, a computer controlled valve to control air flow and a nozzle and can produce air flows from 0.1 to 0.9 Mach at either a constant velocity or, under computer control, a variable velocity versus time profile to simulate the observed velocity versus time behavior experienced by a decoy flare when ejected from an aircraft. Radiant and spectral radiant intensity are measured at distances of 30, 80 and 500 meters and at angles from 10 - 300 degrees around the device. The facility is also equpped to measure thrust and drag from next generation flares which might have some kinematic or aerodynamic design properties. |
| Interconnectivity/Mulit-Use of T&E Facility: N/A |
| Type of Test Supported: This facility is used for measuring the radiant intensity and spectral radiant intensity from burning decoy flares under controlled conditions. The facility can simultaneously measure the thrust and drag on special flares as required. |



0098

Summary of Technical Capabilities: Measurements in the facility are made using pyroelectric radiometers equipped with appropriate bandpass filters to select infrared band of interest, Fourier transform spectrometers, visible radiometers and spectral radiometers, circular variable filter spectrometers and thermal imagers. Radiometer and spectrometer calibrations are performed with a selection of NIST traceable blackbodies.

Measurements in the facility have been correlated with actual air to air measurements of the intensity and effectiveness of infrared decoys thus providing a baseline for all future development efforts. This baseline allows us to be able to minimize the amount of costly air to air testing required during the development of new devices. The facility utilizes identical equipment for measuring in this controlled environment and in ground to air and air to air testing thus eliminating instrument variation in the measurements. The use of identical equipment requires a minimum measurement path length of 500 meters.

The facility provides a controllable air stream profile. In this facility we can change the air stream profile to simulate different flare launch conditions and different profiles for our more advanced flares. Launch conditions from 0.1 to 0.9 Mach can be simulated. It is also possible to produce constant velocity versus time profiles to simulate flares that have some propulsion mechanism during their operation.

The facility has sufficient ground area that flares producing plume lengths up to 30 meters can be safely tested and measured.

Keywords: Infrared decoy measurements, windstream measurements

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3087 - Windstream Test Facility

AGE: 11 years REPLACEMENT VALUE: $369,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1989

NATURE OF LAST UPGRADE: Installed new air compressor.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0080

## ADDITIONAL INFORMATION

Facility/Capability Title: TRANSIENT VELOCITY WINDSTREAM APPARATUS

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 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

Total Square Footage: 900

Test Area Square Footage: 900 Office Space Square Footage:

Tonnage of Equipment: 5000 pounds Volume of Equipment: 1200 cu. ft.

Annual Maintenance Cost: $6,000
Estimated Moving Cost: $200,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $20,000 | $20,000 | $20,000 | $20,000 | $20,000 | $20,000 | $20,000 |
| | | | | | | |
| | | | | | | |



188

## HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Transient Velocity Windstream Apparatus

| 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 | 120 | 240 | 240 | 1200 | 1200 | 1200 | 4000 | 3000 |
| | TEST HOURS | 40 | 60 | 60 | 400 | 400 | 300 | 800 | 600 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE: Direct Labor and Test hours are associated with all T& E functional areas (T&E, S&T, D&E, IE, T&D). R

0082A

AW-34

## HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Transient Velocity Windstream Apparatus

| 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 | 120 | 240 | 240 | 1200 | 1200 | 1200 | 4000 | 3000 |
| | TEST HOURS | 40 | 60 | 60 | 400 | 400 | 300 | 800 | 600 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



see pg. 0082A

0082

## DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Transient Velocity Windstream Apparatus

| | | |
|---|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 | 1968 |
| AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) | 2 | 5.4 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 | 18.6 |

| 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 93 |
| IR Measurement | 1 | 5.0 | 5.0 | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | 9 33945 |
| "TYPICAL" | | | | |
| | | | Σ TOTAL | |



0083

NSWC DAHLGREN



# Department of Defense

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

March 31, 1994

DAHLGREN SITE
DAHLGREN DIVISION
NAVAL SURFACE WARFARE CENTER

Submission for
UIC: N00178



WC

# 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

SECTION 2: CAPACITY & TECHNICAL RESOURCES
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

# 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.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1A. 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.

**1.2.E** Potential for internetting faciliti ./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 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.

**The complex of test facilities at the Dahlgren site consists of the following:**

- ✓ **A1. Potomac River Test Range (PRTR) (Open Air Range)**
- ✓ **A2. Explosive Experimental Area (EEA) (Measurement Facility)**
- ✓ **A3. Warheads Research Test Facility (WRTF) (Measurement Facility)**
- ✓ **A4. Electromagnetic Vulnerability Assessment Facility (EMVAF) (Measurement Facility)**
- ✓ **A5. Electromagnetic Pluse Test Facilities (EMP) (Measurement Facility)**
- ✓ **A6. Search and Track Sensor Test Site (STSTS) (Measur nent Facility)**

This complex of facilities was established at NSWCDD to allow us to conduct our mission of weapons systems research and development for the Navy. This complex of unique and interdependent facilities is used for testing weapons systems and components throughout their life cycle however the prime purpose of this complex is to fulfill our research and development mission.

As part of past T&E Reliance Studies, an MOU was signed by the Service Acquisition Executives declaring that all Naval Gun Testing was to be consolidated at Dahlgren. The finding of the most recent Reliance consolidation study found that the technical requirements for fuze and sensor testing as well as the spectrum of EMV testing could not be accomplished at any other DOD range. In addition, the study found that even if technical capabilities were not taken into account that the cost of moving would never be paid back by operational savings.

The majority of the Dahlgren test facilities are unique within the United States. The Potomac River Test Range is unique in that it combines the best aspects of land and sea ranges to provide a controlled maritime environment bounded by land allowing accurate measurements without on onboard instrumentation. There is no other range in the US capable of conducting the required scope of testing of Naval Guns.

The Electromagnetic Vulnerability Assessment Facility (EMVAF) is the only complete test facility able to simulate the high-power full-threat operational electromagnetic environment (EME) in which the DoD must operate. These multipurpose test facilities are designed to generate the complex, modulated, high-power, radiated environments required for far-field evaluation of medium to large scale electronic and weapon systems. NSWCDD is the only organization within DoD that currently maintains all of these facilities at one site.

The combination of the STSTS and PRTR provides an 80,000 yd land



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free horizon coupled with a littoral environment and extensive infrastructure and ground truth both at the STSTS and downrange. It is the only instrumented overwater range where routine operations involving inbound and outbound aircraft at any altitude and supersonic speed, drones, gun launched projectiles that emulate low altitude, low observable anti-ship cruise missiles and surface craft can track. The STSTS is the only overwater facility developed for large scale multi-sensor system testing.

Closing any one of these interdependent testing facilities would have a direct affect on the operation of the other facilities and in some cases would prevent the continued operation of others. All explosive operations are controlled through the Potomac River Test Range (PRTR), this includes all the measurement facilities. The Search and Track Sensor Test Site uses the same air space as the PRTR and depends on PRTR for target control and tracking. Real time data collection for the Explosive Experimental Area is passed over fiber optic link to PRTR. Also there are direct connections with two non range facilities,(the Warhead Development Facility and the Weapons Systems Safety Analysis and Evaluation Facility) and the Explosive Experimental Area which if closed would eliminate our capability to perform our weapons development mission. All of our test facilities are an essential part of our R&D mission and can not be moved without significantly affecting our research and development capability or in some cases eliminating that capability.

Section 2 is answered for each facility on the forms provided as a separate Appendix A1 - A6 at the end of this call. The questions in section 3 are answered only once. Answers to questions in section 3 address all the facilities where applicable.

## 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.

**-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?

## 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



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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?

## 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.

**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?

**Yes**

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

**Yes. All ammunition component testing is conducted for Army Single Service Ammunition Manager.**

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

**Yes. We have often served as a ready source of testing of special devices for Desert Storm and other ongoing encounters (eg) special warfare tactic development and testing.**

# SECTION 3: MEASURES OF MERIT

## 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 major facilities at the Dahlgren site are all interconnected and real time data exchange is involved in at least 50% percent of our testing.**

**All explosive operations are controlled through the Potomac River Test Range (PRTR). This includes all the measurement facilities. The Search and Track Sensor Test Site (STSTS) uses the same air space as the PRTR and depends on PRTR for target control and ground truth tracking. Real time data collection for the Explosive Experimental Area is passed over fiber optic link to PRTR. All these sites are internal.**

**-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 closing any one of the testing facilities would have a direct effect on the operation of the other facilities and in some cases would prevent the continued operation of others. The Search and Track Sensor Test Site could not operate without the range control provided by the Potomac River Test Range as an example. Also there are direct connections with two non range facilities, (the Warhead Development Facility and the Weapons Systems Safety Analysis and Evaluation Facility) and the Explosive Experimental Area which if closed would eliminate our capability to perform our weapons development mission. All of our test facilities are an essential part of our R&D mission and can not be moved without significantly depleting our research and development capability or in some cases eliminating that capability.**

**Facility Condition (MV II)** - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*
See 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 In maintaining good relationships with the communities on both sides of the Potomac River, we have a policy of not testing when atmospheric conditions intensify far field noise levels above certain levels.**

**- 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.

**Although this policy delays testing on occasions it very seldom cancels**



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**tests. The driver for increased workload is people; we could easily double the workload if the work force was increased.**

**- 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.

**Yes We have an interim Resource Conservation and Recovery Act (RCRA) permit for our open burn and open detonation facility. The State of Virginia has only granted interim permits to date.**

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

**Population:**

**within 50 mile radius - Approximately 3,912,221**

**Includes the Northern Virgina suburbs of Washington, DC and Richmond, VA.**

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**within 100 mile radius - Approximately 9,027,165**
**within 150 mile radius - Approximately 10,321,145**
**within 200 mile radius - Approximately 14,767,442**

**- 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.

**There are three restricted air space areas at the Dahlgren site, R6611 and R6613 over the Potomac River Test Range and R6612 over the Explosive Experimental Area. The two over the river are to 60,000 ft and the other is to 7,000 ft. They are controlled by the FAA and we relinquish when not in use.**



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**tests. The driver for increased workload is people; we could easily double the workload if the work force was increased.**

**- 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.

**Yes We have an interim Resource Conservation and Recovery Act (RCRA) permit for our open burn and open detonation facility. The State of Virginia has only granted interim permits to date.**

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

**Population:**

| | | |
|---|---|---|
| **within 50 mile radius -** | **Greater than 1 million.** | **Includes the Northern Virgina suburbs of Washington, DC and Richmond, VA.** |
| **within 100 mile radius -** | " | |
| **within 150 mile radius -** | " | |
| **within 200 mile radius -** | " | |

**- 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.

**There are three restricted air space areas at the Dahlgren site, R6611 and R6613 over the Potomac River Test Range and R6612 over the Explosive Experimental Area. The two over the river are to 60,000 ft and the other is to 7,000 ft. They are controlled by the FAA and we relinquish when not in use.**



Encl. 14.A

**The Potomac River Range is divided into three danger zones in the Federal Code of Regulations, upper, middle and lower. During normal working hours oyster, fishing and pleasure boats are restricted and commercial traffic can proceed with permission. The river is controlled by range patrol boats under authorization of Commander, Naval Surface Warfare Center.**

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

**There are no test missions canceled due to commercial or public use of either water or air space. There are sometime delays, usually of less than one half hour due to commercial river traffic.**

**- 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?

**Far field noise levels in most cases cause delays but do not cancel test programs. A total of five test programs were delayed due to potential noise levels in the last two years.**

**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 Ordnance shipping, receiving and storage; assembly and disassembly of bombs, missiles and projectiles; demil of ordnance devices; temperature conditioning of ordnance devices. Aviation support in terms of a lighted runway; hangar with limited maintenance and servicing capability:**

**fuel storage and refueling capability; ground handling and emergency equipment.**

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

**Yes Specially configured jet engines and propane burners are used as stationary targets for fuze testing. Remotely piloted vehicles, towed targets and projectiles are used for dynamic sensor tracking tests. Remotely operated boats are used for gunfire test targets.**

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

**No, but our targets, although not subject now to official certification, conform closely in all necessary aspects to valid threat characteristics.**

**3.1.E Expendability (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 expendability 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 NSWCDD at the Dahlgren site has a large complex of computers including a super computer as well as expertise in developing models in all disciplines of weapons development. These resources could easily be used in the Digital Modeling and Computer Simulation Area.**

**-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 Many of our measurement facilities could be converted into**

-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?

**No**

-3.1.E.3 Is the facility equipped to support secure operations?

| FACILITY | ROUTINE SECURE OPERATIONS LEVEL |
|---|---|
| POTOMAC RIVER TEST RANGE | SECRET |
| EXPLOSIVE EXPERIMENTAL AREA | SECRET[1] |
| ELECTROMAGNETIC VULNERABILITY ASSESSMENT FACILITY | SECRET[1] |
| ELECTROMAGNETIC PULSE TEST FACILITIES | SECRET[1] |
| SEARCH AND TRACK SENSOR TEST SITE | SECRET[1] |

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**[1] These facilities are capable of conducting secure operations at the Top Secret and Special Access levels by implementing special procedures and precautions.**

-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.

**No**

**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 Potomac River Test Range is unique in that it combines the best aspects of land and sea ranges to provide a controlled maritime environment bounded by land allowing accurate measurements without onboard instrumentation. There is no other range in the US capable of conducting the required scope of testing of Naval Guns. As part of past Reliance Studies, an MOU was signed by the Service Acquisition Executives declaring that all Naval Gun Testing was to be consolidated at Dahlgren. The finding of the most recent Reliance consolidation study found that the technical requirements for fuze and sensor testing could not be accomplished at any other DOD range. In addition, the study found that even if technical capabilities were not taken into account that the cost of moving would never be paid back by operational savings.**



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**integration facilities. For example, coupling the fire control system to the gun mount to do a systems test vis-a-vis component testing.**

**-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?

**No**

**-3.1.E.3** Is the facility equipped to support secure operations?

? facilities ?

**We have supported all levels of classification on our ranges, however not every function can be conducted at the highest levels at all times.**

**-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.

**No**

**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 Potomac River Test Range is unique in that it combines the best aspects of land and sea ranges to provide a controlled maritime environment bounded by land allowing accurate measurements without onboard instrumentation. There is no other range in the US capable of conducting the required scope of testing of Naval Guns. As part of past Reliance Studies, an MOU was signed by the Service Acquisition Executives declaring that all Naval Gun Testing was to be consolidated at Dahlgren. The finding of the most recent Reliance consolidation study found that the**

see pg. 17-A



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**technical requirements for fuze and sensor testing could not be accomplished at any other DOD range. In addition, the study found that even if technical capabilities were not taken into account that the cost of moving would never be paid back by operational savings.**

**The Electromagnetic Vulnerability Assessment Facility (EMVAF) is the only complete test facility able to simulate the high-power full-threat operational electromagnetic environment (EME) in which the DoD must operate. The EMVAF consists of ground plane test facilities, anechoic chamber, mode-stirred chamber, and state-of-the-art telemetry collection and data reduction laboratories. These multipurpose test facilities are designed to generate the complex, modulated, high-power, radiated environments required for far-field evaluation of medium to large scale electronic and weapon systems. NSWCDD is the only organization within DoD that currently maintains all of these facilities at one site.**

**The combination of the STSTS and PRTR provides an 80,000 yd land free horizon coupled with a littoral environment and extensive infrastructure and ground truth both at the STSTS and downrange. It is the only instrumented overwater range where routine operations involving inbound and outbound aircraft at any altitude and supersonic speed, drones, gun launched projectiles that emulate low altitude, low observable anti-ship cruse missiles and surface craft can be tracked. The STSTS is the only overwater facility developed for large scale multi-sensor system testing. It has a dedicated multi-sensor integration and staging room that allows overwater testing of brassboard systems while protected from the weather.**

**-3.1.F.1.A** Within the US Government?

**Yes See above.**

**-3.1.F.1.B** Within the US?

**Yes These facilities are unique within both government and private sectors and the construction of such facilities would not be cost effective for any private sector company in the future.**

**-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 For both FY 92 and FY93 approximately 24% of the workload was for the Army Single Service Manager for Ammunition and with the exception of another 1 to 2% each from the Army and Air force, the rest was from the Navy.**

**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?

**The Potomac River Test Range is approximately 3 nautical miles wide and 16 nautical miles long and 60,000 ft high over water and approximately four square miles over land.**

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

**All over land air space is owned by the Navy and the Potomac River is owned by the State of Maryland.**

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

**All of the range air space is restricted. All of the over water air space (R6611 and R6613) is restricted to 60,000 ft. The restricted air space over the Explosive Experimental area (R6612) is to 7,000 ft.**

**-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.

**The water range under restricted air space R6611 and R6613 is 48 square miles and the land area under restricted air space R6612 is 3 square miles.**

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

**There are no known air space problems.**

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

**16 nautical miles for gun firing and 80,000 yards clear over water tracking of air targets with 16 nautical miles of restricted air space.**

**-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.

**Have not used public air space.**

**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.

**Over water, 48 square miles.**

**-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 For tests that exceed PRTR's maximum range capability, testing has been performed at White Sands Missile Range, Yuma Proving Ground or NAWC, China Lake. Test requiring this capability have not exceeded 5% of total over the last eight years.**

**-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?

| | |
|---|---|
| **Average Temperature Below 32 degrees:** | **11** |
| **Average Temperature Between 32 & 95 degrees:** | **334** |
| **Average Temperature Above 95 degrees:** | **0** |

**Remaining days: no data**

**-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%?

| | |
|---|---|
| **Average Humidity Below 30%:** | **15** |
| **Average Humidity Between 30% and 80%:** | **271** |
| **Average Humidity Above 80%:** | **59** |

**Remaining days: no data**

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

**No aircraft missions were canceled due to weather.**

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

**Open air range testing is canceled on the average of 45 days a year.**

**-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?

**Visibility less than 1 mile: 27**
**Visibility between 1 and 3 miles: 21**
**Visibility greater than 3 miles: 196**

**Remaining days: no data**

**-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.

**The PRTR does not usually use aircraft in testing.**

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

**Test operations are restricted by weather approximately 3% of the time.**

## 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.

**The Site at Dahlgren is not used for testing Air Vehicles except for electromagnetic vulnerability tests on the ground plane at the EMVAF. Air vehicles are also used sometimes as targets for sensor testing at STSTS, but no air vehicle open air (air combat) tests are conducted at Dahlgren.**

**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.

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

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

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

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

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

**- 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.

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

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

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

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

**-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?

**-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)

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

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

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

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

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

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

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

## 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.

**The site at Dahlgren is not used for open air electronic combat testing.**

**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?

**-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?

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

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

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

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

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

**-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

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

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

**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.

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

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

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

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

## 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?

**48 square miles over water.**

**-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.

**One over water range 3X16 nautical miles with 43 permanent gun emplacements and launch sites available for other weapons. And, a 1641 acre site for ordnance safety and environmental tests and explosive dynamics testing.**

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

**Guns up to sixteen inch to 16 nautical 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:

--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

**None of the above.**

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

**No.**

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

**The Potomac River Test Range is a gun and ammunition test facility that does not possess sufficient real estate to conduct tests on guided missiles.**

**-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.

No.

## ATTACHMENT B

## CONVENTIONAL AMMUNITION TECHNICAL CAPABILITY

**FACILITY CONDITION**

**Includes all or portion of space in following buildings: Buildings 363, 364, 684, 881, 3115, 2986, 2987, 108, 142, 365, 3076, 3077, 99, 109, 143, 2418, 180, 2921, 2951, 2964, 3007, 3082**

**HISTORICAL WORKLOAD**

**DETERMINATION OF UNCONSTRAINED CAPACITY**

**GENERAL INFORMATION**

**TECHNICAL INFORMATION**

**ADDITIONAL INFORMATION**

# GENERAL INFORMATION

Facility/Capability Title: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

Origin Date: 04/30/94

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: Naval Surface Warfare Center Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Hardware-In-The-Loop | | | | | | | |
| Percentage Use: | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| | 100 | | | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/ Weapons | 100 | | | | | | |
| EC | | | | | | | |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" on First Line | | | | | | | |

0085

# TECHNICAL INFORMATION

Facility/Capability Title: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

| |
|---|
| Facility Description; Including mission statement: NSWC Crane Conventional Ammunition Test and Evaluation work is housed in 15 test buildings with a total of 100,000 square feet. In addition there are 78 explosive storage magazines (including CAT I & II) with 167,000 square feet of space. Crane also has 88 acres of unencumbered ordnance testing area with access to another 140 acres for ordnance disposal and reclamation efforts co-located with the Crane Army Ammunition Activity. These state of the art facilities are fully operational and designed to meet future projected needs. The mission is to provide life cycle test and evaluation capability for Navy conventional ammunition. |
| Interconnectivity/Multi-Use of T&E Facility: The Conventional Ammunition facilities are integral parts of many of the technical capabilities of the Division. In particular, the Ordnance Radiographic Facility and the Environmental Test facility are utilized by the Pyrotechnics, Electrochemical Power Sources and Acoustic Sensors T.C.'s as well as the Crane Army Ammunition Activity. The Conventional Ammunition TC also utilizes the facilities of other TC's, especially the Ordnance Test Area and the Ordnance Materials Analysis Laboratory. |
| Type of Test Supported: Lot Acceptance Testing; Surveillance Testing; Development Testing (limited); Failure Analysis and Special Tests |
| Summary of Technical Capabilities: See Attached Sheets |
| Keywords: Ordnance Testing; Fully Operational; Future Needs |



0036

SUMMARY OF TECHNICAL CAPABILITIES
CONVENTIONAL AMMUNITION FACILITY

The Ordnance Environmental Test and Radiographic facilities provide the capability for all required testing to certify ordnance items safe and reliable for Fleet use; vibration, shock, temperature, humidity, altitude, jolt, jumble, sunshine, rain, sand, dust, and salt spray testing are available in the facility. The radiographic facility provides up to 10 MEV beam strength and real time X-ray facilities. This is a dual use facility with the pyrotechnics technical capability.

The Missile Fuze Test Laboratory provides the necessary facilities for testing a wide variety of missile fuzing components (warhead section components). Equipment used includes centrifuge, burn rate/velocity tester, active optical test ranges, leak detectors and many specialized pieces of equipment. This test equipment supports production acceptance, surveillance, and maintenance of these fuzing components. Approximately 25 missiles are supported. This effort supports the Navy as well as joint programs with the Air Force, Army, Foreign Military Sales and private parties.

The Lake Glendora Underwater Explosive Test Facility is a Navy owned lake covering 330 acres, with a depth of 120 feet. This test facility is an extremely valuable addition to the other facilities used in the development and testing of special purpose munitions and demolition devices used by the EOD and Navy Seal Teams. It has demonstrated cost savings of 50% for the same type of efforts at other Government and contractor facilities. This site also offers the potential of training for the Navy Seal teams.

The Proximity Fuze Free Space Facility (10,000 ft reflectivity plane) is the certified Navy Standard used to establish the electronic values of Radio Frequency Fuze Standard Monitors. These Standard Monitors are used for correlation of systems used in production and testing of Proximity Fuzes by both the private and public sectors. Radio Frequency Proximity Fuzes are used on all the major caliber ammunition in the Navy stockpile.

The Ordnance Components Test Laboratory provides the facilities for lot acceptance and surveillance testing of numerous ordnance components and sub-assemblies as well as small explosives devices. The facility has test cells which provide capability for controlled and monitored function testing of components. Test cells are also equipped for failure analysis. Ordnance items tested in the facilities include demolition devices, fuzes, linear explosives, detonators and offboard countermeasures.

Fleet Ballistic Missile, Ordnance Components Test Laboratory provides support to the Fleet Ballistic Missile Strategic Weapons system ordnance evaluation programs throughout the life cycle of the Trident I and II Missiles. This is accomplished through the design manufacture of ordnance test systems and the test and evaluation of missile ordnance components utilized in the Launch, Missile Body and Reentry Systems. This facility is unique in respect to its design, construction and safety site approval which allows ordnance components and assemblies to be destructively tested safely. This building allows explosive operations and still meet the quantity-distance requirements of NAVSEA OP-5.

Ordnance Ready Magazine Storage in Support of Ordnance Engineering Directorate provides ordnance receiving, shipping, and storage for the various programs of the Directorate. The facilities are used to receive a wide variety of ammunition and explosives for the Directorate.

After receipt, the ordnance is either forwarded immediately to the user or placed in storage magazines temporarily until ready for evaluation. Total number of magazines is 37 with 57,400 sq ft of storage space.

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

AGE: _____ REPLACEMENT VALUE: _____

MAINTENANCE AND REPAIR BACKLOG: _____

DATE OF LAST UPGRADE: _____

NATURE OF LAST UPGRADE: _____

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

2. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

**NOTE:** Pages 1 - 8 of Attachment B describe the sum total of the Conventional Ammunition Facility Complex. This includes the Missile Fuze Test Facility, the Ordnance Radiographic Facility, the Ordnance and Component Evaluation Facility, the FBM Ordnance Components Test Facility and the Ordnance Environmental Test Facility. R



AW-35

# FACILITY CONDITION

Facility/Capability Title: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

AGE: _____ REPLACEMENT VALUE: _____

MAINTENANCE AND REPAIR BACKLOG: _____

DATE OF LAST UPGRADE: _____

NATURE OF LAST UPGRADE: _____

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

2. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

6300

pg. 0089 A

# ADDITIONAL INFORMATION

Facility/Capability Title: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

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 | 110 | 103 | 96 | 90 | 88 | 87 | 86 |
| Contractor | 5 | 6 | 4 | 4 | 4 | 4 | 4 |
| Total | 115 | 109 | 100 | 94 | 92 | 92 | 92 |

Total Square Footage: 100,788

Test Area Square Footage: 89,260 Office Space Square Footage: 11,528

Tonnage of Equipment: 267.1 Volume of Equipment: 151,636

Annual Maintenance Cost: $1,080,000 Estimated Moving Cost: $2,286,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $965,000 | $841,000 | $1,817,000 | $994,000 | $1,255,000 | $710,000 | $550,000 |
| | | | | | | |
| | | | | | | |

0090

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

| 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 | 205.5 | 205.6 | 220.6 | 213.7 | 218.3 | 226.0 | 230.4 | 220.3 |
| | TEST HOURS | 70.2 | 69.8 | 77.5 | 76.2 | 78.3 | 80.8 | 78.5 | 77.1 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE:DIRECT LABOR AND TEST HOURS ARE ASSOCIATED WITH T&E FUNCTION ONLY.

R



AW-34

0091A

# HISTORICAL WORKLOAD

Facility/Capability Title: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

| 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 | 205.5 | 205.6 | 220.6 | 213.7 | 218.3 | 226.0 | 230.4 | 220.3 |
| | TEST HOURS | 70.2 | 69.8 | 77.5 | 76.2 | 78.3 | 80.8 | 78.5 | 77.1 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



see pg. 91A

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: CONVENTIONAL AMMUNITION FACILITY (SUMMARY)

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 SEE INDIVIDUAL |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 FACILITY SHEETS AND |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 THE NOTE BELOW |

| TEST TYPES 4 | TESTS AT ONE TIME 5 | WORKLOAD PER TEST PER FACILITY HOUR 6 | WORKLOAD PER FACILITY HOUR 7 | UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ) 8 |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| "TYPICAL" | | | | |
| | | TOTAL Σ | | |

ANNUAL UNCONSTRAINED CAPACITY

9

NOTE: The Unconstrained Capacity of either the Ordnance Radiographic Facility or the Ordnance Environmental Test Facility limits the Unconstrained capacities of the other facilities.

0092

# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: Missile Fuze Test Facility

Origin Date: 04/29/94

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: Naval Surface Warfare Center Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Hardware-In-The-Loop | | | | | | | |
| Percentage Use: | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| | 100 | | | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/ Weapons | 100 | | | | | | |
| EC | | | | | | | |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" on First Line | | | | | | | |

0093

# TECHNICAL INFORMATION

Facility/Capability Title: Missile Fuze Test Facility

| |
|---|
| Facility Description; Including mission statement: Perform Acceptance Evaluation on new Production Missile Fuzes and Life Cycle Surveillance Evaluation on existing stockpile of Missile Fuzes to assure safe and highly reliable ordnance is available for use. The Missile Fuze Test Laboratory provides the necessary facilities for evaluating explosive and non-explosive Missile Fuzing components. Approximately 25 missile systems are supported. This effort supports the Navy as well as joint programs with the Air Force, Army, Foreign Military Sales and Private Parties. |
| Interconnectivity/Multi-Use of T&E Facility: This facility is supported by the resources of the Ordnance Environmental Test Facility, Ordnance Radiographic Facility and the Ordnance Materials Analysis Laboratory. The facility is also supported by the Ordnance Storage Capability. |
| Type of Test Supported: Production Lot Acceptance Testing; Life Cycle Surveillance Testing |
| Summary of Technical Capabilities: See Attached Sheet |
| Keywords: Acceptance Evaluation; Joint Programs; Private Parties; AOTD (Active Optical Target Detector) |

0094

SUMMARY OF TECHNICAL CAPABILITIES
MISSILE FUZE TEST FACILITY

The laboratory consists of two side by side (10,000 square foot each) masonry buildings and a 40' by 40' equipment enclosure which is located inside another building.

| TEST CAPABILITY | EQUIPMENT AVAILABLE |
|---|---|
| Leak Detection | 3 Leak Detectors |
| Electrical | Electrical Console |
| Thermal Transient | Test Console |
| Arming | Various Consoles & Centrifuge |
| Burn Rate/Velocity | Test Console and Chamber |
| Output Functioning | Chambers and various functioning boxes |
| Failure Analysis | Various |
| Solder/Desolder | Induction Solderer |
| AOTD Test Ranges | Test Consoles and Ranges |
| Painting | Spray booth |
| Dry Room for assembly | Dry Room |

The facility utilizes lightning protection and ordnance grounding to provide operators protection from accidental explosion of items under test. Facility meets OP-5 "Quantity Distance" requirements for explosive operations. One area meets requirements for leaving classified hardware out at all times (items under test).

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 363 - Guided Missile Fuse Components Test and Evaluation

AGE: 52 years REPLACEMENT VALUE: $780,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1992

NATURE OF LAST UPGRADE: Major interior renovation for testing operations. Installation of explosive test cells.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0096

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 364 - AO Life Cycle Maintenance

AGE: 52 years REPLACEMENT VALUE: $562,000

MAINTENANCE AND REPAIR BACKLOG: $1,311

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Major interior renovation for testing and evaluation operations and addition of restrooms.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0099

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 684 - HI-X Magazine

AGE: 52 years REPLACEMENT VALUE: $109,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:
MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0098

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 881 - HI-X Magazine

AGE: 52 years REPLACEMENT VALUE: $109,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:
MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



8049

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3115 - Branch Engineering Offices

AGE: 9 years REPLACEMENT VALUE: $147,000

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:
MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0108

# ADDITIONAL INFORMATION

Facility/Capability Title: Missile Fuze Test Facility

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 | 29 | 29 | 23 | 23 | 23 | 23 | 23 |
| Contractor | 4 | 4 | 2 | 2 | 2 | 2 | 2 |
| Total | 33 | 33 | 25 | 25 | 25 | 25 | 25 |

Total Square Footage: 23,600

Test Area Square Footage: 20,600 Office Space Square Footage: 3,000

Tonnage of Equipment: 32.9 Volume of Equipment: 48,405 cu ft

Annual Maintenance Cost: $125,000 Estimated Moving Cost: $364,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $611,000 | $85,000 | $505,000 | $190,000 | $80,000 | $200,000 | $150,000 |
| | | | | | | |
| | | | | | | |

010

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: MISSILE FUZE TEST FACILITY

| 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 | 35 | 42 | 49 | 52 | 49 | 56 | 56 | 57 |
| | TEST HOURS | 7 | 8.4 | 10 | 10 | 10 | 11 | 11 | 11 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE:DIRECT LABOR AND TEST HOURS ARE ASSOCIATED WITH T&E FUNCTION ONLY.

R

0/02A



AW-34

# HISTORICAL WORKLOAD

Facility/Capability Title: Missile Fuze Test Facility

| 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 | 35 | 42 | 49 | 52 | 49 | 56 | 56 | 57 |
| | TEST HOURS | 7 | 8.4 | 10 | 10 | 10 | 11 | 11 | 11 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0102

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Missile Fuze Test Facility

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 708 |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 1.94 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 22.06 |

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR | UNCONSTRAINED CAPACITY PER DAY |
|---|---|---|---|---|
| 4 | 5 | 6 | 7 | (LINE 3 X TOTAL Σ) 8 |

Missile Fuze Lot Acceptance tests are contract specific and vary significantly in the quantity of items tests, the tests performed, and the length of time required to complete the testing sequence (30 to 60 days). Surveillance projects are individually tailored (item specific) to evaluate performance parameters of concern. Additionally the type and number of tests at one time are dependent on the net explosive weight of the item(s) under test, the classification of the explosives, and the compatibility of the explosives. Therefore the annual unconstrained capacity was determined by comparison of the work efforts of a five day, one shift operation for FY 93:

ANNUAL UNCONSTRAINED CAPACITY

$$\frac{\text{number of days}}{\text{number of days}} \times \frac{\text{hours available/day}}{\text{8 hrs/shift}} \times \frac{1}{\text{FY93 Utilization rate}} =$$

$$\frac{7}{5} \times \frac{22.06}{8} \times \frac{1}{.55} = 7.02 \times \text{FY93 Workload}$$

FY93 Workload = 50 Lot Acceptance Tests and 8 Surveillance Projects

Unconstrained Capacity = 7.02 X 50 = 351 Lot Acceptance Tests and
7.02 X 8 = 56 Surveillance Projects

$\frac{351}{2008} = .1743$

$\frac{56}{2008} = .0278884$

$\boxed{.2021884}$

0103

# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: Ordnance Radiographic Facility

Origin Date: 4/29/94

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: Naval Surface Warfare Center Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Hardware-In-The-Loop | | | | | | | |
| Percentage Use: | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| | 100 | | | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/ Weapons | 100 | | | | | | |
| EC | | | | | | | |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" on First Line | | | | | | | |

0104

# TECHNICAL INFORMATION

Facility/Capability Title: Ordnance Radiographic Facility

| |
|---|
| Facility Description; Including mission statement: The radiography facility is a 7000 square foot reinforced concrete structure. It's remote location complies with quantity-distance requirements allowing the testing of explosive loaded ordnance systems and components. The mission of the facility is to perform X-ray of ordnance items and components, the majority of which contain explosives. The purpose is to assure that a safe, reliable and high quality product is available for use. Both lot acceptance of new products and life cycle surveillance items are subject to X-ray examination. This can be done independently or in conjunction with other test (such as Environmental testing) to establish a base line and to determine any change after test. |
| Interconnectivity/Multi-Use of T&E Facility: This facility is a dual use facility for both conventional ammunition and pyrotechnics. Additionally, support is provided to the Crane Army Ammunition Activity as requested. |
| Type of Test Supported: Lot Acceptance Tests; Life Cycle Surveillance; Special Tests |
| Summary of Technical Capabilities: See Attached Sheet |
| Keywords: X-Ray; Explosive Loaded Ordnance; Safe; Baseline |

0165

SUMMARY OF TECHNICAL CAPABILITIES
ORDNANCE RADIOGRAPHIC FACILITY

The Radiographic Facility utilizes the following systems to support its mission:

| EQUIPMENT AVAILABLE |
| --- |
| 1 Real Time System (75-160 kv) |
| 3 Mid Energy Systems (80-420 kv) |
| 1 High Energy Linatron 2000 accelerator with power ranges of 5.5, 8 and 10 mev. |
| Film Viewers, film processors, etc., cranes, hoist, etc. |

The equipment of the facility is shielded to provide operators protection from radiation. Siting 15 DDESB approved for net explosive weight stored and handled; Individual operations are isolated and separated by substantial dividing walls to reduce the potential for personal injury or death in an explosive incident. The building has a lightning protection system, a static ground system and an ordnance ground system.

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2986 - Sample Preparation Building

AGE: 20 years REPLACEMENT VALUE: $115,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Installation of fire protection and grounding.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0167

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2987 - X-ray Building

AGE: 19 years REPLACEMENT VALUE: $1,020,000

MAINTENANCE AND REPAIR BACKLOG: $81,000

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Installation of security fencing around the entire facility.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0108

# ADDITIONAL INFORMATION

Facility/Capability Title: Ordnance Radiographic Facility

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 | 5 | 6 | 5 | 5 | 5 | 5 | 5 |
| Contractor | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Total | 6 | 7 | 6 | 6 | 6 | 6 | 6 |

Total Square Footage: 7,000

Test Area Square Footage: 6,800 Office Space Square Footage: 200

Tonnage of Equipment: 13.5 Volume of Equipment: 10,500 cu ft

Annual Maintenance Cost: $160,000 Estimated Moving Cost: $190,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $145,000 | $342,000 | $895,000 | $115,000 | $100,000 | $55,000 | $85,000 |
| | | | | | | |
| | | | | | | |

0109

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: ORDANCE RADIOGRAPHIC FACILITY

| 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 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 10.6 |
| | TEST HOURS | 7 | 7 | 6.5 | 7 | 7 | 7.5 | 7.9 | 8.8 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE:DIRECT LABOR AND TEST HOURS ARE ASSOCIATED WITH T&E FUNCTION ONLY. R

0110A



AW-34

# HISTORICAL WORKLOAD

Facility/Capability Title: Ordnance Radiographic Facility

| 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 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 10.6 |
| | TEST HOURS | 7.0 | 7.0 | 6.5 | 7.0 | 7.0 | 7.5 | 7.9 | 8.8 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0110

see pg 110A

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Ordnance Radiographic Facility

| | | |
|---|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 488 | R |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 1.34 | R |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 22.66 | R |

| 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 |

Radiography tests are requestor specific and vary significantly in the quantity of exposures required. Additionally, the type and number of tests at one time are dependent on the net explosive weight of the item(s) under test, the classification of the explosives, and the compatibility of the explosives. Therefore the annual unconstrained capacity was determined by comparison of the work efforts of a five day, one shift operation for FY 93:

ANNUAL UNCONSTRAINED CAPACITY

$$\frac{\text{number of days}}{\text{number of days}} \times \frac{\text{hours available/day}}{8 \text{ hrs/shift}} \times \frac{1}{\text{FY93 Utilization rate}} =$$

$$\frac{7}{5} \times \frac{22.66}{8} \times \frac{1}{.95} = 4.17 \times \text{FY93 Workload}$$

FY93 Workload = 22679 Exposures

Unconstrained Capacity = 4.17 X 22679 = 94571 Exposures

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Ordnance Radiographic Facility

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 708 |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 1.94 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 22.06 |

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR | UNCONSTRAINED CAPACITY PER DAY |
|---|---|---|---|---|
| 4 | 5 | 6 | 7 | (LINE 3 X TOTAL Σ) 8 |
| | 11.5 | | | |

Radiography tests are requestor specific and vary significantly in the quantity of exposures required. Additionally, the type and number of tests at one time are dependent on the net explosive weight of the item(s) under test, the classification of the explosives, and the compatibility of the explosives. Therefore the annual unconstrained capacity was determined by comparison of the work efforts of a five day, one shift operation for FY 93:

ANNUAL UNCONSTRAINED CAPACITY

$$\frac{\text{number of days}}{\text{number of days}} \times \frac{\text{hours available/day}}{\text{8 hrs/shift}} \times \frac{1}{\text{FY93 Utilization rate}} =$$

$$\frac{7}{5} \times \frac{22.66}{8} \times \frac{1}{.95} = 4.17 \times \text{FY93 Workload}$$

FY93 Workload = 22679 Exposures

Unconstrained Capacity = 4.17 X 22679 = 94571 Exposures

$$\frac{22679}{.95} \div [52 \times 40] = 11.5$$

$$\frac{94571}{2008} = 47.097$$

0111

# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: Ordnance and Component Evaluation Facility (OCEF)

Origin Date: 04/30/94

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: Naval Surface Warfare Center Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Hardware-In-The-Loop | | | | | | | |
| Percentage Use: | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| | 100 | | | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/ Weapons | 100 | | | | | | |
| EC | | | | | | | |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" on First Line | | | | | | | |

0112

# TECHNICAL INFORMATION

Facility/Capability Title: Ordnance and Component Evaluation Facility (OCEF)

| |
|---|
| Facility Description; Including mission statement: The OCEF is comprised of two reinforced concrete buildings with 12 individual test cells, a Free Space Facility and an office area. The mission of the facility is to perform Acceptance Evaluation on new Production Ordnance and Life Cycle Surveillance Evaluation on existing stockpile ordnance to assure safe and highly reliable ordnance is available for use. The remote and isolated facility is used to evaluate and/or function explosive and non-explosive components for gun ammunition, small arms, demolition materials, munitions, bomb fuzes, mine fuzes (land), and offboard countermeasures. |
| Interconnectivity/Multi-Use of T&E Facility: This facility is dependent upon the resources of the Ordnance Environmental Test Facility, the Radiographic Facility, the Materials Analysis Facility, the Ordnance Test Area, and the Ordnance storage capability of the Division to perform its function. Additionally, each of the OCEF buildings (and equipment) is often used by other technical capabilities of the Division to perform appropriate functions. |
| Type of Test Supported: Lot Acceptance Tests; Surveillance Tests; Failure Analysis Tests |
| Summary of Technical Capabilities: See Attached Sheets |
| Keywords: Remote; Isolated; Explosive Test Cells; Navy Certified Standard |

0113

SUMMARY OF TECHNICAL CAPABILITIES
ORDNANCE AND COMPONENT EVALUATION FACILITY
(OCEF)

The OCEF technical capabilities include:

B-142

Examples of Test Systems

| TEST CAPABILITY | EQUIPMENT |
|---|---|
| Fuzes Test Systems | 2 Safe & Arming Spin System<br>1 Deboostering Machine<br>1 Optical Comparator |
| Function System: Gun Fuzes, Primers All Types, Demolition Items | 4 Function Test Chambers<br>3 Gun Fuze Arm/Spin function Systems<br>1 Delay function System<br>50 Caliber Blank System<br>MK 48 Test System<br>M1134 Test System<br>3 Primer Test System<br>MK 24 Test System<br>MK 22 Test System<br>1 MT Fuze Torque Machine<br>1 MK 339 Test System<br>1 Aux. Det. Drilling Machine<br>6 Test Cells |
| Temperature Chambers | 5 Chambers |
| Pressure (under water) for all types of Small Ordnance | 2 Pressure Pots |
| Leak Test System | 1 Vacuum Test System |
| Proximity/Variable Time | 2 IR Test System<br>2 O.A. Test System<br>2 Battery Test System<br>3 Rear Fitting Test System |
| Miscellaneous Electronic and Mechanical Support Test Equipment | |

ee Space Test Facility B-2985 and B-2989

The Free Space Test Facility is a certified Navy standard used for the testing of Solid State VT Fuze Monitors. Transfer Standards are created at the beginning of VT Fuze new acquisition contracts, shipped to Crane and tested at the Free Space Test Facility. The Transfer Standards and the data obtained are used to correlate the Contractor's and Crane's VT Fuze test chambers.

| TEST CAPABILITY | EQUIPMENT AVAILABLE |
|---|---|
| Solid State VT Fuze Monitors | Electronic Console, special design |
| Tube Type VT Fuze Monitors | |

Facility Description: The ground plane is 100 ft by 100 ft. It consists of three inches of crushed stone under six inches of concrete. The pad is covered with steel panels electrically connected at the corners. There are three wooden poles 100 ft long each, 10 ft of which is buried in the ground. A metal building approx 12 ft by 12 ft houses the electronic equipment.

B-365

Examples of Test Systems

| TEST CAPABILITY | EQUIPMENT AVAILABLE |
|---|---|
| Function Test: Components From Fuzes, Safe Arming Devices Primers, Detonation, etc. | 6 Test Cells<br>2 Function Chambers<br>1 Close Bomb Test System<br>2 Hi-Speed Video Systems |
| Temperature Component Evaluation | 2 Temperature Chambers<br>1 Optical Comparator<br>1 Coordinate measuring machine |
| Leak Test | 1 Water Immersion |
| Miscellaneous Electronic and Mechanical Support Equipment | |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 108 - Operations Building

AGE: 52 years REPLACEMENT VALUE: $704,000

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: 1983

NATURE OF LAST UPGRADE: Interior renovations for the upgrade of operations within the building.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0116

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 142 - Test and Evaluation Building

AGE: 51 years REPLACEMENT VALUE: $1,539,400

MAINTENANCE AND REPAIR BACKLOG: $29,420

DATE OF LAST UPGRADE: 1989

NATURE OF LAST UPGRADE: Addition to building for shipping and receiving test materials. Initial inspection of incoming materials. Installation of fire detection system.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0119

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 365 - Countermeasures/Gun Ammo T & E

AGE: 52 years REPLACEMENT VALUE: $556,000

MAINTENANCE AND REPAIR BACKLOG: $20,000

DATE OF LAST UPGRADE: 1990

NATURE OF LAST UPGRADE: Major renovations of building for testing operations. Installatin of explosive test cells.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0118

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3076 - Ready Magazine

AGE: 13 years REPLACEMENT VALUE: $15,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:
MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0119

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3077 - Ready Magazine

AGE: 13 years REPLACEMENT VALUE: $15,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:
MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0120

# ADDITIONAL INFORMATION

Facility/Capability Title: Ordnance and Component Evaluation Facility (OCEF)

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 | 27 | 24 | 26 | 20 | 19 | 19 | 19 |
| Contractor | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Total | 27 | 25 | 27 | 21 | 20 | 20 | 20 |

Total Square Footage: 29,260

Test Area Square Footage: 26,144 Office Space Square Footage: 3,116

Tonnage of Equipment: 39.5 Volume of Equipment: 37,700 cu ft

Annual Maintenance Cost: $153,000 Estimated Moving Cost: $863,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $169,000 | $271,000 | $132,000 | $155,000 | $276,000 | $45,000 | $100,000 |
| | | | | | | |
| | | | | | | |

0121

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: ORDANCE AND COMPONENT EVALUATION FACILITY (OCEF)

| 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 | 37.0 | 38.7 | 37.0 | 37.8 | 47.0 | 48.6 | 51.9 | 47.5 |
| | TEST HOURS | 17.6 | 17.6 | 17.6 | 17.6 | 21.1 | 22.9 | 24.6 | 22.9 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE:DIRECT LABOR AND TEST HOURS ARE ASSOCIATED WITH T&E FUNCTION ONLY.

R

0122A



AW-34

# HISTORICAL WORKLOAD

Facility/Capability Title: Ordnance and Component Evaluation Facility (OCEF)

| | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T&E FUNCTIONAL AREA | | 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 | 37.0 | 38.7 | 37.0 | 37.8 | 47.0 | 48.6 | 51.9 | 47.5 |
| | TEST HOURS | 17.6 | 17.6 | 17.6 | 17.6 | 21.1 | 22.9 | 24.6 | 22.9 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



0122 see pg. 0122A

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Ordnance and Component Evaluation Facility (OCEF)

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 708 |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 1.94 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 22.06 |

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR | UNCONSTRAINED CAPACITY PER DAY |
|---|---|---|---|---|
| 4 | 5 | 6 | 7 | (LINE 3 X TOTAL Σ) 8 |
| | 17.3 | | | |

Conventional Ammunition Lot Acceptance tests are contract specific and vary significantly in the quantity of items tests, the tests performed, and the length of time required to complete the testing sequence (30 to 60 days). Surveillance projects are individually tailored (item specific) to evaluate performance parameters of concern. Additionally the type and number of tests at one time are dependent on the net explosive weight of the item(s) under test, the classification of the explosives, and the compatibility of the explosives. Therefore the annual unconstrained capacity was determined by comparison of the work efforts of a five day, one shift operation for FY 93:

ANNUAL UNCONSTRAINED CAPACITY

$$\frac{(64+16)}{.8} \times \frac{45}{[52 \times 5]} = 17.3$$

$$\frac{\text{number of days}}{\text{number of days}} \times \frac{\text{hours available/day}}{\text{8 hrs/shift}} \times \frac{1}{\text{FY93 Utilization rate}} =$$

$$\frac{7}{5} \times \frac{22.06}{8} \times \frac{1}{.80} = 4.83 \times \text{FY93 Workload}$$

FY93 Workload = 64 Lot Acceptance Tests and 16 Surveillance Projects

Unconstrained Capacity = 4.83 X 64 = 309 Lot Acceptance Tests and
4.83 X 16 = 77 Surveillance Projects

$\frac{309}{2008} = .1538$

$\frac{77}{2008} = .0383$

.1921

0/23

Document Separator

# GENERAL INFORMATION

Facility/Capability Title: FLEET BALLISTIC MISSILE ORDNANCE COMPONENTS TEST FACILITY

Origin Date: 04/29/94

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: Naval Surface Warfare Center Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Hardware-In-The-Loop | | | | | | | |
| Percentage Use: | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| | 100 | | | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/ Weapons | 100 | | | | | | |
| EC | | | | | | | |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" on First Line | | | | | | | |



0124

# TECHNICAL INFORMATION

Facility/Capability Title: FLEET BALLISTIC MISSILE ORDNANCE COMPONENTS TEST FACILITY

| |
|---|
| Facility Description; Including mission statement: Provide support to the Fleet Ballistic Missile Strategic Weapons System ordnance evaluation programs throughout the life cycle of the Trident I and II Missiles. This is accomplished through the design and manufacture of ordnance test systems and the test and evaluation of missile ordnance components utilized in the Launch, Missile Body and Reentry Systems. |
| Interconnectivity/Multi-Use of T&E Facility: This facility is supported by the personnel, equipment and facilities of the Ordnance Environmental Test Facility, Ordnance Radiographic Facility, and the Ordnance Materials Analysis Laboratory. The facility is also reliant on an Ordnance Storage Capability (magazines). |
| Type of Test Supported: The facility performs functional tests of ordnance components throughout the life cycle of Trident I and Trident II Missiles including development tests, lot acceptance tests, and surveillance testing of components in the inventory. |
| Summary of Technical Capabilities: The FBM facility is unique in respect to its design, construction and safety site approval which allows ordnance components and assemblies to be destructively tested safely. This facility allows explosive operations and still meets the quantity-distance requirements of NAVSEA OP-5. (Continued on attached sheet). |
| Keywords: Fleet Ballistic Missile; Trident; Strategic Weapon System |



0125

## SUMMARY OF TECHNICAL CAPABILITIES

Additionally, the facility requires both a static grounding system and a lightning protection ground system. Facility siting is Department of Defense Explosive Safety Board approved.

Representative Test Systems Include:

| |
|---|
| Trident II High Voltage Detonator Test Systems |
| Trident II Reentry Body Test Systems |
| Trident II Linear Ordnance Test Systems |
| Trident I Detonator Test Systems |
| Trident I Linear Ordnance Test System |

This facility also designed, developed and maintains equipment configuration control for the test systems listed above.

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 99 - Ready Magazine

AGE: 51 years REPLACEMENT VALUE: $33,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1984

NATURE OF LAST UPGRADE: Replaced roof or load dock.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0129

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 109 - Shipping and Receiving

AGE: 52 years REPLACEMENT VALUE: $573,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1984

NATURE OF LAST UPGRADE: Interior renovations for the modifications of the structure for small quantity ordnance shipping and receiving. Installed new intrusion detection system.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0128

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 143 - Ordnance Test Operations

AGE: 51 years REPLACEMENT VALUE: $5,873,000

MAINTENANCE AND REPAIR BACKLOG: $25,950

DATE OF LAST UPGRADE: 1987

NATURE OF LAST UPGRADE: Addition of 3,500 SF for engineering offices. Contract No. 90-7042.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0129

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2418 - Classified Composition Storage

AGE: 48 years REPLACEMENT VALUE: $222,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0135

# ADDITIONAL INFORMATION

Facility/Capability Title: FLEET BALLISTIC MISSILE ORDNANCE COMPONENTS TEST FACILITY

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 | 29 | 25 | 23 | 23 | 22R | 21 | 20 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 29 | 25 | 23 | 23 | 22 | 21 | 20 |

R

Total Square Footage: 23,928

Test Area Square Footage: 20,616 Office Space Square Footage: 3,312

Tonnage of Equipment: 95 Volume of Equipment: 11,243 cu. ft.

Annual Maintenance Cost: $310,000 Estimated Moving Cost: $469,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $40,000 | $40,000 | $40,000 | $45,000 | $45,000 | $50,000 | $50,000 |
| | | | | | | |



A1610

# ADDITIONAL INFORMATION

Facility/Capability Title: FLEET BALLISTIC MISSILE ORDNANCE COMPONENTS TEST FACILITY

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 | 29 | 25 | 23 | 23 | 2 | 21 | 20 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 29 | 25 | 23 | 23 | 22 | 21 | 20 |

Total Square Footage: 23,928

Test Area Square Footage: 20,616 Office Space Square Footage: 3,312

Tonnage of Equipment: 95 Volume of Equipment: 11,243 cu. ft.

Annual Maintenance Cost: $310,000 Estimated Moving Cost: $469,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $40,000 | $40,000 | $40,000 | $45,000 | $45,000 | $50,000 | $50,000 |
| | | | | | | |
| | | | | | | |

0131

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: FLEET BALLISTIC MISSILE ORDNANCE COMPONENTS TEST FACILTY

| 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 | 87.8 | 79.2 | 87.1 | 76.4 | 74.8 | 73.9 | 75.0 | 70.0 |
| | TEST HOURS | 17.6 | 15.8 | 17.4 | 15.3 | 15.0 | 14.8 | 15.0 | 14.0 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE:DIRECT LABOR AND TEST HOURS ARE ASSOCIATED WITH T&E FUNCTION ONLY.

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0132A



AW-34

# HISTORICAL KLOAD

Facility/Capability Title: FLEET BALLISTIC MISSILE ORDNANCE COMPONENTS TEST FACILITY

| 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 | 87.8 | 79.2 | 87.1 | 76.4 | 74.8 | 73.9 | 75.0 | 70.0 |
| | TEST HOURS | 17.6 | 15.8 | 17.4 | 15.3 | 15.0 | 14.8 | 15.0 | 14.0 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0132 see pg. 0132A

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: FLEET BALLISTIC MISSILE ORDNANCE COMPONENTS TEST FACILITY

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 708 |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 1.94 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 22.06 |

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR | UNCONSTRAINED CAPACITY PER DAY |
|---|---|---|---|---|
| 4 | 5 | 6 | 7 | (LINE 3 X TOTAL Σ) 8 |
| | 23.4 | | | |

FBM Ordnance Components Lot Acceptance tests are contract specific and vary significantly in the quantity of items tests, the tests performed, and the length of time required to complete the testing sequence (30 to 60 days). Engineering investigations are individually tailored (item specific) to evaluate performance parameters of concern. Additionally the type and number of tests at one time are dependent on the net explosive weight of the item(s) under test, the classification of the explosives, and the compatibility of the explosives. Therefore the annual unconstrained capacity was determined by comparison of the work efforts of a five day, one shift operation for FY 93:

number of days X hours available/day X 1 =
number of days 8 hrs/shift FY93 Utilization rate

$\frac{7}{5}$ X $\frac{22.06}{8}$ X $\frac{1}{.85}$ = 4.54 X FY93 Workload

FY93 Workload = 51 Lot Acceptance Tests and 64 Engineering Investigations

Unconstrained Capacity = 4.54 X 51 = 232 Lot Acceptance Tests and
4.54 X 64 = 291 Engineering Investigations

ANNUAL UNCONSTRAINED CAPACITY

$\frac{(51+64)}{.85} \times \frac{45}{[52 \times 5]}$

= 23.4

$\frac{232}{2008}$ = .1155

$\frac{291}{2008}$ = .1449

.2604

0133

# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: Ordnance Environmental Test Facility

Origin Date: 04/29/94

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service: Navy | | Organization/Activity: Naval Surface Warfare Center Crane Division | | | Location: Crane, IN | | |
| T&E Functional Area: Armament/Weapons | | | | UIC = N00164 | | | |
| T&E Test Facility Category: Hardware-In-The-Loop | | | | | | | |
| Percentage Use: | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
| | 100 | | | | | | |
| Breakout by T&E Functional Area (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/ Weapons | 100 | | | | | | |
| EC | | | | | | | |
| Other | | | | | | | |
| Total in Breakout Must Equal "Percentage Use" on First Line | | | | | | | |



0134

# TECHNICAL INFORMATION

Facility/Capability Title: Ordnance Environmental Test Facility

| |
|---|
| Facility Description; Including mission statement: This facility provides equipment to simulate the environmental conditions armament/weapons may encounter during the life cycle of the item. Environmental testing is conducted for lot acceptance testing of new products as well as life cycle surveillance items. Engineering support services are provided for fixture design and fabrication. The remote and isolated facilities are used to test and condition explosive, pyrotechnic and other hazardous materials as well as inert items. |
| Interconnectivity/Multi-Use of T&E Facility: This facility provides support to many technical capabilities at NSWC Crane including conventional ammunition and pyrotechnics. |
| Type of Test Supported: Production Lot Acceptance Testing; Surveillance Testing; Development Testing (limited); Special Tests to replicate failure events. |
| Summary of Technical Capabilities: See Attached Sheet |
| Keywords: Simulation; Isolated Facilities; Explosive |

0135

SUMMARY OF TECHNICAL CAPABILITIES
ORDNANCE ENVIRONMENTAL TEST FACILITY

The Ordnance Environmental Test Facility utilizes 17,000 sq. ft. of space in four buildings including two reinforced concrete structures. The facility is protected by an intrusion detection system for unattended storage (e.g., overnight); siting is DDESB approved for net explosive weight stored and handled; Individual operations are isolated and separated by substantial dividing walls to reduce the potential for personal injury or death in the event of an explosive incident.

The facility is outfitted with a wide range of special utilities that provide flexibility and adaptability for the test scenarios required. The utilities include: Cooling tower(s) with a capacity of 350 tons; Electrical power 440 3PH, 220 3PH, 220 1PH, 477/208 3PH, 208/120 3PH; Lightning protection system; Ordnance and static ground systems; Low pressure dry air; CO2 piped to each test cell.

| TEST CAPABILITY | EQUIPMENT AVAILABLE |
|---|---|
| Vibration<br>Sine, Random<br>SRS | 7 Electrodynamic Vib systems from 7500 to 40000 force pounds |
| Shock<br>Impact<br>Classical | 3 Impact shock<br>1 Lightweight ship shock |
| Temperature Humidity-Altitude<br>Simultaneously or separately | 30 T & H Chambers<br>2 TH & A Chambers |
| Sunshine and Rain | 1 Chamber |
| Sand and Dust | 1 Chamber |
| Salt Spray | 2 Chambers |
| Jolt | 2 Machines |
| Jumble | 2 Machines |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 180 - Environmental Test/Engineering Branch

AGE: 50 years REPLACEMENT VALUE: $324,300

MAINTENANCE AND REPAIR BACKLOG: $8,000

DATE OF LAST UPGRADE: 1986

NATURE OF LAST UPGRADE: Interior renovations for improved operations. Renovated restrooms, installed seperation walls, and general cleanup. Installed new windows.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0137

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2921 - Environmental Test Facility

AGE: 23 years REPLACEMENT VALUE: $574,000

MAINTENANCE AND REPAIR BACKLOG: $2,500

DATE OF LAST UPGRADE: 1991

NATURE OF LAST UPGRADE: Addition for the installation of new air compressor.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: MILCON P-278, Ordnance Environmental Test Facility

TOTAL PROGRAMMED AMOUNT: $9,600,000
SUMMARY DESCRIPTION: P-278 will construct a 29,389 SF, three structure comples for the test and evaluation of various ordnance items. Building 2921 will be vacated upon completion of P-278

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:



0138

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2951 - Environmental Test Facility

AGE: 20 years REPLACEMENT VALUE: $160,000

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: MILCON P-278, Ordnance Environmental Test Facility

   TOTAL PROGRAMMED AMOUNT: $9,600,000
   SUMMARY DESCRIPTION: P-278 will construct a 29,389 SF, three structure comples for the test and evaluation of various ordnance items. Building 2951 will be vacated upon completion of P-278

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0139

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 2964 - Environmental Test Facility

AGE: 20 years REPLACEMENT VALUE: $632,000

MAINTENANCE AND REPAIR BACKLOG: $15,000

DATE OF LAST UPGRADE: 1980

NATURE OF LAST UPGRADE: Renovation to test cells.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: MILCON P-278, Ordnance Environmental Test Facility

TOTAL PROGRAMMED AMOUNT: $9,600,000
SUMMARY DESCRIPTION: P-278 will construct a 29,389 SF, three structure comples for the test and evaluation of various ordnance items. Building 2964 will be vacated upon completion of P-278

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:



0140

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3007 - Environmental Test Facility

AGE: 16 years REPLACEMENT VALUE: $64,000

MAINTENANCE AND REPAIR BACKLOG: $15,000

DATE OF LAST UPGRADE: 1979

NATURE OF LAST UPGRADE: Installed new insulation and heating.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: MILCON P-278, Ordnance Environmental Test Facility

TOTAL PROGRAMMED AMOUNT: $9,600,000
SUMMARY DESCRIPTION: P-278 will construct a 29,389 SF, three structure comples for the test and evaluation of various ordnance items. Building 3007 will be vacated upon completion of P-278

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:



0141

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Building 3082 - Ready Magazine

AGE: 14 years REPLACEMENT VALUE: $12,000

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: None

NATURE OF LAST UPGRADE:

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:



0142

# ADDITIONAL INFORMATION

Facility/Capability Title: Ordnance Environmental Test Facility

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 | 20 | 19 | 19 | 19 | 19 | 19 | 19 |
| Contractor | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 20 | 19 | 19 | 19 | 19 | 19 | 19 |

Total Square Footage: 17,000

Test Area Square Footage: 15,100 Office Space Square Footage: 1,900

Tonnage of Equipment: 86.2 Volume of Equipment: 43,787 cu. ft.

Annual Maintenance Cost: $340,000 Estimated Moving Cost: $400,000

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| 0 | $103,000 | $245,000 | $489,000 | $754,000 | $360,000 | $165,000 |
| | | | | | | |
| | | | | | | |

0143

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: ORDANCE ENVIRONMENTAL TEST FACILITY

| 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 | 36.9 | 36.9 | 38.7 | 38.7 | 38.7 | 38.7 | 38.7 | 35.2 |
| | TEST HOURS | 21.0 | 21.0 | 26.0 | 26.3 | 25.2 | 24.6 | 20.0 | 20.4 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

NOTE:DIRECT LABOR AND TEST HOURS ARE ASSOCIATED WITH T&E FUNCTION ONLY.

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0144A



AW-34

# HISTORICAL WORKLOAD

Facility/Capability Title: Ordnance Environmental Test Facility

| 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 | 36.9 | 36.9 | 38.7 | 38.7 | 38.7 | 38.7 | 38.7 | 35.2 |
| | TEST HOURS | 21.0 | 21.0 | 26.0 | 26.3 | 25.2 | 24.6 | 20.0 | 20.4 |
| | MISSIONS | NA | NA | NA | NA | NA | NA | NA | NA |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

0144 see pg 0144A

Per Capt Cooper in Contr.

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Ordnance Environmental Test Facility

| | | |
|---|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 1008 | R |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 2.76 | R |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 21.24 | R |

| 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 |

Ordnance Environmental Tests are requestor specific and vary significantly in the quantity of items tests, the tests performed, and the length of time required to complete the testing sequence (30 to 60 days). Additionally, the type and number of tests at one time are dependent on the net explosive weight of the item(s) under test, the classification of the explosives, and the compatibility of the explosives. Therefore the annual unconstrained capacity was determined by comparison of the work efforts of a five day, one shift operation for FY 93:

ANNUAL UNCONSTRAINED CAPACITY

$$\frac{\text{number of days}}{\text{number of days}} \times \frac{\text{hours available/day}}{\text{8 hrs/shift}} \times \frac{1}{\text{FY93 Utilization rate}} =$$

$$\frac{7}{5} \times \frac{21.24}{8} \times \frac{1}{.75} = 4.96 \times \text{FY93 Workload}$$

FY93 Workload = 795 Test Requests

Unconstrained Capacity = 4.96 X 795 = 3943 Test Requests

0145

# DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Ordnance Environmental Test Facility

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 708 |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 1.94 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 22.06 |

| TEST TYPES | TESTS AT ONE TIME | WORKLOAD PER TEST PER FACILITY HOUR | WORKLOAD PER FACILITY HOUR | UNCONSTRAINED CAPACITY PER DAY |
|---|---|---|---|---|
| 4 | 5 | 6 | 7 | (LINE 3 X TOTAL Σ) 8 |
| | 0.53 | | | |

Ordnance Environmental Tests are requestor specific and vary significantly in the quantity of items tests, the tests performed, and the length of time required to complete the testing sequence (30 to 60 days). Additionally, the type and number of tests at one time are dependent on the net explosive weight of the item(s) under test, the classification of the explosives, and the compatibility of the explosives. Therefore the annual unconstrained capacity was determined by comparison of the work efforts of a five day, one shift operation for FY 93:

ANNUAL UNCONSTRAINED CAPACITY

$\frac{\text{number of days}}{\text{number of days}}$ X $\frac{\text{hours available/day}}{\text{8 hrs/shift}}$ X $\frac{1}{\text{FY93 Utilization rate}}$ =

$\frac{795}{.75} / 2008 = 0.53$

$\frac{7}{5}$ X $\frac{21.24}{8}$ X $\frac{1}{.75}$ = 4.96 X FY93 Workload

FY93 Workload = 795 Test Requests

Unconstrained Capacity = 4.96 X 795 = 3943 Test Requests

$\frac{3943}{2008} = 1.96$

0145

NDWC CRANE DIV

DATA CALL #13

JL
SEA09X
5/12/94

~~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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type of print

Signature

Commander
Title

5/11/94
Date

Naval Surface Warfare Center
Activity

In certify that the information 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

Title

5-13-94
Date

Commander
Naval Sea Systems Command
Activity

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

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

J.B. Greene, Jr.
NAME (Please type of print

Signature

Acting
Title

27 May 1994
Date

0146

# BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

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

ACTIVITY COMMANDER

S. HOWARD
NAME (Please type or print)

Signature

COMMANDER
Title

6 May 94
Date

CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
Activity

014D

NSWC Crane Division
Crane Site
Data Call 13

# BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

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ACTIVITY COMMANDER

S. HOWARD
NAME (Please type or print)

Signature

COMMANDER
Title

6/1/94
Date

CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
Activity

Revision to the Crane Division, Crane Site BRAC 95 Data Call 13, Attachment C, page 30a,

Additional details of changes described on attached sheets.

~~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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type of print

Signature

Commander
Title

6/3/94
Date

Naval Surface Warfare Center
Activity

In certify that the information 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

Title

7-1-94
Date

Activity

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

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

J. B. GREENE, JR.
NAME (Please type of print

Signature

ACTING
Title

08 JUL 1994
Date

Document Separator

202

FOR OFFICIAL USE ONLY

# T&E JCSG CLARIFICATION - FORM #1
## Electronic Combat (MF, HITL, ISTF & OAR)

**Activity Title:** NAVSURFWARCEN CRANE, CRANE SITE **UIC:** N00164

**Facility/Capability Title:** Electronic Warfare

**T&E Test Facility Category:** MF
**(MF, HITL, ISTF, or OAR)**

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | X | |
| Electro-Optical (EO) | | X |
| Infrared (IR) | X | |
| Millimeter Wave (MMW) | X | |
| Ultra Violet (UV) | | X |
| Laser | | X |

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes ___ No X.

FOR OFFICIAL USE ONLY

WC

G-1

**FOR OFFICIAL USE ONLY**

# T&E JCSG CLARIFICATION - FORM #2
## Armament/Weapons (HITL & ISTF)

**Activity Title:** NAVSURFWARCEN CRANE, CRANE SITE **UIC:** N00164

**Facility/Capability Title:** Conventional Ammunition

**T&E Test Facility Category:** HITL
**(HITL or ISTF)**

Utilize the following table to indicate which of the indicated spectra are available to test against with this Facility/Capability.

| Spectra | Yes | No |
|---|---|---|
| Radio Frequency (RF) | X | |
| Electro-Optical (EO) | X | |
| Infrared (IR) | X | |
| Millimeter Wave (MMW) | | X |
| Ultra Violet (UV) | X | |
| Laser | X | |
| Midcourse Inertial /GPS (HITL only) | | X |

MLP NSWC 033 9/13/94

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes X No ___.

**FOR OFFICIAL USE ONLY**

**FOR OFFICIAL USE ONLY**

# T&E JCSG CLARIFICATION - FORM #3
## Armament/Weapons (MF)

**Activity Title:** NAVSURFWARCEN CRANE DIV, CRANE SITE **UIC:** N00164

**Facility/Capability Title:** Pyrotechnics

**T&E Test Facility Category:** Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | X | |
| Safety T&E | X | |
| Warhead Performance T&E | X | |
| Fuze T&E | X | |
| Seeker, sensor and guidance/control performance and target/background signature characterization | | X |
| Propulsion Performance T&E | | X |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | | X |
| Gun Performance T&E | | X |
| Electromagnetic Environmental Effects | | X |
| Directed Energy | | X |

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes X No ___.

**FOR OFFICIAL USE ONLY**

DUPLICATE

# BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

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

ACTIVITY COMMANDER

S. HOWARD
NAME (Please type or print)

Signature

COMMANDER
Title

6 May 94
Date

CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
Activity

REPRODUCED AT GOVERNMENT EXPENSE

DUPLICATE

NSWC CRANE DIV

DATA CALL #13

JL
SEA09X
5/12/94

~~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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type of print

Signature

Commander
Title

5/11/94
Date

Naval Surface Warfare Center
Activity

In certify that the information 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

Title
Commander
Naval Sea Systems Command
Activity

5-13-94
Date

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

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

J.B. Greene, Jr.
NAME (Please type of print

Signature

Acting
Title

27 May 1994
Date

**********

**BRAC-95 DATA CALL SUBMISSION TO BSAT CHECKLIST**
**(THIS DOCUMENT IS A MANAGEMENT TOOL ONLY)**

**********

Data Call # 14

MC NAVSEA

OPNAV _____

| DATE | SIGNATURE | CODE | |
|---|---|---|---|
| 19 May 94 | Susan Waldron | N441 | 1. ✓ Certification complete up to Major Claimant. |
| | | | 2. ✓ Certification complete by Major Claimant. |
| | | | 3. No missing pages. |
| | | | 4. All questions answered (or explained if not). |
| NA | | | 5. Copy of data call reviewed by N44E, if applicable (logged out of N44. Due back to N44: _____). |
| 19 May 94 | Susan Waldron | N441 | 6. Copy of data call delivered to OPNAV Sponsor POC/logged out of N44. Due back to N44: COB 20MAY94. |
| | | | 7. Review by OPNAV Sponsor POC completed/logged back to N44. |

☐ Package reviewed, no omissions or errors noted.

☐ Package reviewed, omissions/errors provided to Major Claimant (annotate/flag data call copy with brief description and details of error).

_____
(OPNAV Sponsor POC

Signature/Code/Date)

| | | | |
|---|---|---|---|
| | | | 8. N4 Certification complete. |
| | | | 9. Copy filed in _____ (box/safe number). |

202 DATA CALL #13
CRANE SITE

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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type of print

Signature

Commander
Title

8/17/94
Date

Naval Surface Warfare Center
Activity

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

MAJOR CLAIMANT LEVEL

E. S. McGINLEY, II
Rear Admiral, U.S. Navy
NAME (Please type or print

Signature

ACTING
Title Commander

8/21/94
Date

Naval Sea Systems Command
Activity

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

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

W. A. EARNER
NAME (Please type of print

Signature

Title

8/25/94
Date

WC

CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
DATA CALL #13

# BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

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

ACTIVITY COMMANDER

S. HOWARD
NAME (Please type or print)

Signature

COMMANDER
Title

8/12/94
Date

CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
Activity

1. Attachment B - Page 23 of 61 - (line 1) 708 should be 488, (line 2) 1.94 should be 1.34, (line 3) 22.06 should be 22.66.

2. Attachment B - Page 57 of 61 - (line 1) 708 should be 1008, (line 2) 1.94 should be 2.76, (line 3) 22.06 should be 21.24.

DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
2531 JEFFERSON DAVIS HIGHWAY
ARLINGTON VA 22242-5160

IN REPLY REFER TO

11000
Ser 09X/074
9 September 1994

From: Commander, Naval Sea Systems Command (SEA 09X)
To: Chief of Naval Operations (N44)

Subj: BASE REALIGNMENT AND CLOSURE (BRAC) '95 - REVISIONS TO NAVSEA DATA CALLS

Encl: (1) List of Data Call Revisions
(2) Data Call Revisions

1. Enclosure (1) is a list of NAVSEA Data Call Revisions provided at enclosure (2).

LARRY FREEMAN

WC

NAVSEA REVISIONS (LTR SER 74 OF 9/9/94)

| ACTIVITY | DATA CALL | ACTIVITY CERT DATE | NAVSEA CERT DATE |
|---|---|---|---|
| NSWC CRANE, CRANE 202 | 13 | 9/2/94 | 9/8/94 |
| NSWC CRANE, CRANE 202 | 14 | 9/6/94 | 9/8/94 |
| ~~NSWC CRANE~~, LOUISVILLE 203 | 4 | 9/1/94 | 9/8/94 |
| NSWC DAHLGREN, DAHLGREN 202 | 13 | 9/6/94 | 9/8/94 |
| NSWC DAHLGREN, PANAMA CITY 202 | 5 | 9/1/94 | 9/8/94 |
| NSWC INDIAN HEAD, INDIAN HEAD 202 | 13 | 9/6/94 | 9/8/94 |
| NUWC KEYPORT 209 | 5 | 8/26/94 | 9/6/94 |

CRANE SITE

202

~~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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type of print

Signature

Commander
Title

9/7/94
Date

Naval Surface Warfare Center
Activity

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

MAJOR CLAIMANT LEVEL

NAME (Please type or print
G. R. STERNER
Commander
Naval Sea Systems Command

Signature

9-9-94
Date

Activity

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

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

J.B. GREENE, JR.
NAME (Please type of print

Signature

ACTING
Title

14 SEP 1994
Date

NAVAL SURFACE WARFARE CENTER
CRANE DIVISION
DATA CALL #13

## BRAC-95 CERTIFICATION

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

ACTIVITY COMMANDER

| | |
|---|---|
| J. M. CARNEY | J M Carney |
| NAME (Please type or print) | Signature |
| COMMANDER | 9/2/94 |
| Title | Date |
| CRANE DIVISION, NSWC | |
| Activity | |

The following is additional information submitted in response to the BSAT request for clarification dated 1 Sept. 94.

1. BSAT Control Number: A/W 030 - Information is provided on page 9 for the Armaments/Weapons functional area.

2. BSAT Control Number: A/W 031 - Information is provided on page 13 for facilities utilized in the Armaments/Weapons functional area.

3. BSAT Control Number: A/W 032 - Information is provided on page 16 for facilities utilized in the Armaments/Weapons functional area.

4. BSAT Control Number: A/W 033 - The questions on page 18/19 are answered for the Armaments/Weapons functional area.

5. BSAT Control Number: A/W 034 - The information in the Historal Workload tables of Attachments A, B and C is clarified.

6. BSAT Control Number: A/W 035 - The information on the Conventional Ammunition Facility (Summary) is a sum total of all facilities within this complex as clarified on page 1 of Attachment B.

~~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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type of print

Signature

Commander
Title

9/14/94
Date

Naval Surface Warfare Center
Activity

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

MAJOR CLAIMANT LEVEL

NAME (Please type or print

Signature

G. R. STERNER
Commander
Naval Sea Systems Command

9-22-94
Date

Activity

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

DEPUTY CHIEF OF NAVAL OPERATIONS (LOGISTICS)
DEPUTY CHIEF OF STAFF (INSTALLATIONS & LOGISTICS)
W. A. EARNER

NAME (Please type of print

Signature

Title

9/29/94
Date

Cert for p. 49R of 61 9/12/94

NAVAL SURFACE WARFARE CENTER
CRANE DIVISION
DATA CALL #13

## BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

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

ACTIVITY COMMANDER

| | |
|---|---|
| J. M. CARNEY | JM Carney |
| NAME (Please type or print) | Signature |
| COMMANDER | 9/12/94 |
| Title | Date |
| CRANE DIVISION, NSWC | |
| Activity | |

Attachment B, Page 49R. The number of civilian personnel for FY97 corrected.

CRANE SITE

~~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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type of print

Signature

Commander
Title

9/14/94
Date

Naval Surface Warfare Center
Activity

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

MAJOR CLAIMANT LEVEL

NAME (Please type or print

Signature

9-22-94
Date

Title

Activity

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

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

W. A. EARNER

NAME (Please type of print

Signature

9/29/94
Date

Title

Certification for RFC EC-024
10/4/94

NAVAL SURFACE WARFARE CENTER
CRANE DIVISION
DATA CALL #13

**BRAC-95 CERTIFICATION**

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ACTIVITY COMMANDER

J. M. CARNEY
NAME (Please type or print)

Signature

COMMANDER
Title

9/8/94
Date

CRANE DIVISION, NSWC
Activity

1. In regards to the BSAT request for clarification dated 8 September 94, additional information is provided to indicate the capabilities of the Electronics Combat and Armaments/Weapons facilities previously reported in BRAC95 data call #13.

# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: ELECTROMAGNETIC PULSE TEST FACILITIES

Origin Date: 04/21/94

Service: NAVY Organization/Activity: NSWCDD Location: DAHLGREN, VA

T&E Functional Area: ARMAMENT/WEAPONS UIC = 60921

T&E Test Facility Category: MF

| | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
|---|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 25 | | 75 | | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/Weapons | 10 | | 25 | | | | |
| EC | | | | | | | |
| Other | 15 | | 50 | | | | |

Total in Breakout Must Equal Percentage Use on First Line

44A

# TECHNICAL INFORMATION

Facility/Capability Title: ELECTROMAGNETIC PULSE TEST FACILITIES

Facility Description; Including mission statement:

**This is a free-field electromagnetic pulse (EMP) facility that simulates the waveform of MIL-STD-461D RS-105. It is used to conduct research to determine the effects of EMP to fleet electronic systems and assess system survivability. Also includes an 8 channel data acquisition and processing system (DAAPS).**

Interconnectivity/Multi-Use of T&E Facility: **None**

Type of Test Supported: **EMP Survivability**

Summary of Technical Capabilities:

**Simulates MIL-STD-461D RS-105 EMP free-field waveform. DAAPS - transient data acquisition, recording, and processing.**

Keywords: **Electromagnetic Pulse (EMP), Data Acquisition and Processing System (DAAPS).**

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: ELECTROMAGNETIC PULSE TEST FACILITIES

AGE: 22 YEARS REPLACEMENT VALUE: $3M

MAINTENANCE AND REPAIR BACKLOG: 0

DATE OF LAST UPGRADE: 1994

NATURE OF LAST UPGARDE: CONVERT FROM RADIATING EMPRESS I ANTENNA AND PULSES TO NOTES BONDED WAVE TRANSMISSION LINE AND PULSES.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: NONE

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

2. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

Submission for
UIC: N00178

FOR OFFICIAL USE ONLY

# ADDITIONAL INFORMATION

Facility/Capability Title: ELECTROMAGNETIC PULSE TEST FACILITIES

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Contractor | 6 | | | | | | |
| Total | 11 | 3 | 3 | 3 | 3 | 3 | 3 |

Total Square Footage: 120,000

Test Area Square Footage: 39,927 Office Space Square Footage: 200

Tonnage of Equipment: 15 TON Volume of Equipment: 3000 CUBIC FEET
Annual Maintenance Cost: $20K Estimated Moving Cost: $300K

**CAPITAL EQUIPMENT INVESTMENT**

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $70K | $60K | | | | | |
| | | | | | | |
| | | | | | | |

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: ELECTROMAGNETIC PULSE TEST FACILITIES

| | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T&E FUNCTIONAL | | 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 | 800 | 800 | 0 | 0 | 0 | 400 | 1,600 | 800 |
| | TEST HOURS | 100 | 100 | 0 | 0 | 0 | 50 | 200 | 100 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT | 1,000 | 3,500 | 0 | 0 | 0 | 1,100 | 4,400 | 3,700 |
| | TEST HOURS | 125 | 375 | 0 | 0 | 0 | 150 | 600 | 400 |
| | MISSIONS | | | | | | | | |

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: ELECTROMAGNETIC PULSE TEST FACILITIES

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 6132 |
| AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) | 2 16.8 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 7.2 |

| TEST TYPES | TEST 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 59 |
| EMP | 1 | | | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | 9 21,535 |
| "TYPICAL" | 1 | 8.2 | 8.2 | |
| | | TOTAL | 8.2 | |

Submission for
UIC: N00178

FOR OFFICIAL USE ONLY



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# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: ELECTROMAGNETIC VULNERABILITY ASSESSMENT FACILITY (EMVAF)

Origin Date: 04/21/94

Service: NAVY Organization/Activity: NSWCDD Location: DAHLGREN, VA

T&E Functional Area: ARMAMENT/WEAPONS UIC = 60921

T&E Test Facility Category: MF

| | T&E | S&T | D&E | IE | T&D | OTHER | = 100% |
|---|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 59 | 2 | 6 | 33 | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | | |
| Air Vehicles | 35 | | 1.2 | | | | |
| Armament/Weapons | 24 | 2 | 4.8 | 33 | | | |
| EC | | | | | | | |
| Other | | | | | | | |

Total in Breakout Must Equal Percentage Use on First Line

24 / 63.8 = 38%



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# TECHNICAL INFORMATION

Facility/Capability Title: **ELECTROMAGNETIC VULNERABILITY ASSESSMENT FACILITY (EMVAF)**

| |
|---|
| Facility Description; Including mission statement: **Complete electromagnetic test facility used to simulate the high-power full-threat operational electromagnetic environment (EME) in which the Armed Forces must operate. Evaluation of the effects of a joint U.S. Armed Forces tactical EME upon electro-explosive, electronic, electrical, and electro-mechanical systems.**<br>Mission Statement (Partial): **Plan, initiate, and conduct research, development, test, and evaluation to determine and prevent Hazards of Electromagnetic Radiation to Ordnance (HERO). Also address Electromagnetic Vulnerability (EMV) of aircraft, missiles, missile launchers, ground support equipment, gun mounts, and other shipboard/shorebased equipments. Recommend procedures for safe handling of ordnance systems in electromagnetic environments.** |
| Interconnectivity/Multi-Use of T&E Facility: **Facility used to evaluate U.S. Navy, Army, and Air Force aircraft and weapon systems. Also used to evaluate NASA and commerical aviation aircraft.** |
| Type of Test Supported: **Hazards of Electromagnetic Radiation to Ordnance (HERO); Electromagnetic Vulnerability (EMV); Shielding Effectiveness; Antenna Measurements; and Radiated Emissions (RE).** |
| Summary of Technical Capabilities: **Evaluation of the effects of joint U.S. Armed Forces tactical electromagnetic environment (EME) upon electro-explosive, electronic, electrical, and electro-mechanical systems. Perform electromagnetic (EM) susceptibility and Hazards of Electromagnetic Radiation to Ordnance (HERO) in a simulated "real world" near-field environment. Conduct missile electromagnetic vulnerability (EMV) to the intended launch-to-target operational (friendly and hostile) EME.** |
| Keywords: **Hazards of Electromagnetic Radiation to Ordnance (HERO); Electromagnetic Vulnerability (EMV); Radiated Emissions (RE); Electromagnetic Environment (EME); Mode-Stirred Chamber, Anechoic Chamber, Ground Plane.** |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: ELECTROMAGNETIC VULNERABILITY ASSESSMENT FACILITY (EMVAF)

AGE: 35 YEARS REPLACEMENT VALUE: $20.6M (equipment only, does not include building)

MAINTENANCE AND REPAIR BACKLOG: $200K

DATE OF LAST UPGRADE: 1984

NATURE OF LAST UPGARDE: CONSTRUCTION OF MODE-STIRRED CHAMBER

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: EMVAF RENOVATION

TOTAL PROGRAMMED AMOUNT: $250K
SUMMARY DESCRIPTION: MODIFICATION OF TELEPHONES; COMMUNICATIONS; DATA PROCESSING; LIBRARY (ELECTRONIC AND PAPER); AND DATA ACCESS AND PROCESSING TO STATE-OF-THE-ART CAPABILITIES.

2. UPGRADE TITLE: N/A

TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

# ADDITIONAL INFORMATION

Facility/Capability Title: ELECTROMAGNETIC VULNERABILITY ASSESSMENT FACILITY (EMVAF)

**PERSONNEL**

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| Contractor | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| Total | 71 | 71 | 71 | 71 | 71 | 71 | 71 |

Total Square Footage: 129,096

Test Area Square Footage: 119,096 Office Space Square Footage: 10,000

Tonnage of Equipment: 360 TON Volume of Equipment: 173K CUBIC FEET
Annual Maintenance Cost: $200K Estimated Moving Cost: $2M

**CAPITAL EQUIPMENT INVESTMENT**

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| $600K | $600K | $600K | $600K | $600K | $600K | $600K |
| | | | | | | |

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: ELECTROMAGNETIC VULNERABILITY ASSESSMENT FACILITY (EMVAF)

| | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T&E FUNCTIONAL | | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| AIR VEHICLES | DIRECT LABOR | 148K | 174K | 148.4K | 131.3KK | 103.2K | 86K | 64.8K | 42.6K |
| | TEST HOURS | 3080 | 3450 | 3080 | 2795 | 2400 | 2000 | 1560 | 1140 |
| | MISSIONS | | | | | | | | |
| EC | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| ARMAMENT/WEAPONS | DIRECT LABOR | 63.6K | 58K | 63.6K | 70.7K | 68.8K | 86K | 97.2K | 99.4K |
| | TEST HOURS | 1320 | 1150 | 1320 | 1505 | 1600 | 2000 | 2340 | 2660 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |



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# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: ELECTROMAGNETIC VULNERABILITY ASSESSMENT FACILITY (EMVAF)

| | |
|---|---|
| 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 | TEST 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 1200 |
| HERO | 3 | 10 | 30 | |
| EMV | 2 | 10 | 20 | ANNUAL UNCONSTRAINED CAPACITY |
| SHIELDING EFFECTIVENESS | 1 | 5 | — | |
| ANTENNA MEASUREMENTS | 1 | 4 | — | 9 438,000 |
| RADIATED EMISSIONS | 1 | 3 | — | |
| "TYPICAL" | — | — | — | |
| | | TOTAL | 50 | |

# GENERAL INFORMATION

Facility/Capability Title: **Explosive Experimental Area**

Origin Date: **4/20/94**

Service: **Navy** Organization/Activity: **NSWCDD** Location: **Dahlgren, Va**

T&E Functional Area: **Armaments/Weapons** UIC = **00178**

T&E Test Facility Category **S&T** ?

| | T&E | S&T | D&E | IE | T&D | OTHER | =100% |
|---|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 15 | 50 | 30 | | | 5 | |

BREAKOUT BY T&E FUNCTIONAL AREA (%)

| | | | | | | |
|---|---|---|---|---|---|---|
| Air Vehicles | | | | | | |
| Armanent/Weapons | 15 | 50 | 30 | | | 5 |
| EC | | | | | | |
| Other | | | | | | |

15/100 = 15%

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

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Explosive Experimental Area (EEA)

AGE: **46 Years** REPLACEMENT VALUE: **Approx $25M**

MAINTENANCE AND REPAIR BACKLOG: **Minimal - less than $500K**

DATE OF LAST UPGRADE: **FY90**

NATURE OF LAST UPGRADE: **Upgraded vibration analysis capability cost - approximately $242.6K**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Installation of new shaker system.**

   TOTAL PROGRAMMED AMOUNT: **Approximately $500K**
   SUMMARY DESCRIPTION: **Replace existing shaker (approx 16 years old) with a new shaker. Cost for equipment has been ordered and paid. Replacement/installation is all that is necessary.**

2. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Explosive Experimental Area (EEA)**

| 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 | N/A | 58,700 | 53,300 | 54,900 | 69,800 | 63,100 | 52,600 | 42,300 |
| | TEST HOURS | N/A | 3,100 | 2,700 | 2,800 | 3,600 | 3,300 | 2,800 | 2,200 |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

**N/A - Not Available**

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Explosive Experimental Area (Destructive Testing)

| | | |
|---|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 | 6771 |
| AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) | 2 | 18.5 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 | 5.5 |

| 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 70.4 |
| | | | | |
| | | | | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | 9 25,696 |
| | | | | |
| "TYPICAL" | 1 | 12.8* | 12.8 | |
| | | | TOTAL 12.8 | |

*Based on a typical cost estimate to perform actual fast cook tests. Testing only. Test set up & prep: 32 hrs; firing officer: 8 hrs; instrumentation: 16 hrs; cleanup: 16 hrs; fab high temperature TCs: 24 hrs; Misc: .8 hr.

# TECHNICAL INFORMATION

Facility/Capability Title: Explosive Experimental Area Test Facility NSWCDD #2

| |
|---|
| Facility Description; Including mission statement: **The Naval Surface Warfare Center, Dahlgren Division maintains an Explosive Experimental Area (EEA) which consists of 1640 acres. The site includes an extensively instrumented site for conducting explosive tests as blast measurements, target lethality testing, arena testing, and live fire tests. Instrumentation includes high speed photography, pressure gages, flash X-ray, data reduction (optical and computer) facilities. In addition, the site is capable of various safety testing such as: bullet and fragment impact, slow cook-off, and sympathetic detonation testing. Also conducted in this area are environmental tests such as: temperature and humidity, salt, fog, and MIL-STD-901C vibration and shock testing. These facilities are capable of testing full-up missiles including the Navy STANDARD missile. The facility possesses unique equipment to conduct near miss shipboard shock tests on full-up missile systems.** |
| Interconnectivity/Mulit-Use of T&E Facility: **The EEA is data linked with the Potomac River Test Range (PRTR) via fiber optics. Restricted air space is also shared with the PRTR and all daily operations are controlled through a central Range Control Center. Under construction in the EEA is the Naval Ordnance Transient Electromatic Simulator (NOTES). This facility will consist of a bounded wave electromagnetic pulse (EMP) generator that will be operated in the EEA. The simulator will be used to assess the susceptibility of Navy electronics and ordnance to EMP exposure.** |
| Type of Test Supported: **Explosive Airblast Testing and Analysis: pressure-time histories and determination of blast parameters. Explosive Warhead Performance characterization: fragment spatial distribution, fragment masses, fragment velocity, and presented areas/shape factors. Safety testing: vibration, shock, sympathetic detonation, temperature and humidity, fast cook-off, bullet impact fragment impact, salt, fog, and static firing.** |
| Summary of Technical Capabilities: **The testing facility has a central control complex that is connected via fiber optic link. The static fire blast arena is fully instrumented with camera coverage located at 22.5 degree intervals around the perimeter. High speed camera coverage (20K images/sec.) is provided. Complete instrumentation is provided (pressure, velocity, etc.) A UD4000 vibration system provides sine random, sine on random, sine on sine, and random on random testing capabilities. Five temperature and humidity chambers are available for testing between the limits of minus 65 to plus or minus 65 degrees F.** |
| Keywords: |

# ADDITIONAL INFORMATION

Facility/Capability Title: **Explosive Experimental Area**

| PERSONNEL | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| Contractor | | | | | | | |
| Total | 32 | 32 | 32 | 32 | 32 | 32 | 32 |

Total Square Footage: **32,037 (buildings)**

Test Area Square Footage: **(1640 acres)** Office Space Square Footage: **2,666**
Tonnage of Equipment: **850 tons** Volume of Equipment: **100,000 cu ft**

Annual Maintenance Cost: **$550K** Estimated Moving Cost: **$6M**

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | **$180K** | | | | | |

# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: Potomac River Test Range

Origin Date: 4/22/94

Service: Navy Organization/Activity: NSWCDD Location: Dahlgren, VA

T&E Functional Area: Armament/Weapons UIC = 00178

T&E Test Facility Category Open Air Range

| | T&E | S&T | D&E | IE | T&D | OTHER = 100 % |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 40 | 20 | 40 | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armament/Weapons | 40 | 20 | 40 | | | |
| EC | | | | | | |
| Other | | | | | | |

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

# TECHNICAL INFORMATION

Facility/Capability Title: Potomac River Test Range

| |
|---|
| Facility Description; Including mission statement: **Naval Surface Warfare Center, Dahlgren Division maintains a complex of land and water ranges at the Dahlgren site known as the Potomac River Test Range (PRTR) for the test and evaluation of live or inert ordnance, weapon systems, and weapons system components. The water range is approximately three nautical miles wide and sixteen nautical miles long. Restricted air space over the test range can be obtained to an altitude of 60,000 feet. A gunnery complex facing down the river has 42 gun emplacements for firing all types of Naval guns up to and including 16 inch caliber. Included is a small caliber indoor range with multiple test bays.** |
| Interconnectivity/Multi-Use of T&E Facility: **The PRTR also supports the Search and Track Sensor Test Site (STSTS) which supports developmental sensors, multisensor integration, and sensor integration to gun systems. Current test capabilities at the STSTS are centered around Radio Frequency (RF) and Electro-Optical (EO) sensors offering horizon limited water background. The over water range provides tracker and sensor testing with low over water targets with background clutter, reflectivity, multipath conditions, and wave height conditions.** |
| Type of Test Supported: **Gun interior and exterior ballistics (pressure, velocity, range, action time, acceleration, fuze, function over water, etc.). Gun system accuracy. Smart munitions integration. Fire control integration.** |
| Summary of Technical Capabilities: **The PRTR has a comprehensive instrumentation system, both fixed and mobile. A telemetry receiving system is available as well as a wide band multi-fiber data communications system at numerous test ranges and instrumentation sites. This system can pass simultaneous video and data. The Range Control and Analysis Center is the hub of this system allowing data to be passed from remote sites to a central location or from site to site. Six down-river sites to 21K yards are connected in to this link. Survey land stations along the PRTR provide for accurate instrumentation sites to support range table testing, fuze function (burst height), target miss distance over water, and over water targets.** |
| Keywords: **Integration, Range Table, Vulnerability, Sensor Test, Tracking, Fire Control** |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Potomac River Test Range**

AGE: **76 years** REPLACEMENT VALUE: **$250M**

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: **Began FY85, completed FY90**

NATURE OF LAST UPGRADE: **A wide-band multi-fiber data communication system was installed which links remote test sites to a central location. Additional upgrades in areas of tracking and range surveillance systems as well as general instrumentation.**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Overhaul of Automatic Gun Mounts**

   TOTAL PROGRAMMED AMOUNT: **$3.66M**

   SUMMARY DESCRIPTION: **Overhaul of 5"/54 MK 45 and MK 42 plus MK 75 76mm gun mounts**

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:



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# ADDITIONAL INFORMATION

Facility/Capability Title: Potomac River Test Range

PERSONNEL

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Enlisted | 32 | 32 | 4 | 4 | 4 | 4 | 4 |
| Civilian | 94 | 89 | 85 | 85 | 85 | 85 | 85 |
| Contractor | 0 | 0 | 9 | 9 | 9 | 9 | 9 |
| Total | 128 | 123 | 99 | 99 | 99 | 99 | 99 |

Total Square Footage: 267,000 sq ft

Test Area Square Footage: 246,000 sq ft

Tonnage of Equipment: 4,670 tons

Annual Maintenance Cost: $1,390,500

Office Space Square Footage: 21,000 sq ft

Volume of Equipment: 1,012,000 cu ft

Estimated Moving Cost: $52M

CAPITAL EQUIPMENT INVESTMENT NONE

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Potomac River Test Range**

| | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T&E FUNCTIONAL AREA | | 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 | **Data** | **Not** | **Avail** | **153K** | **136K** | **139K** | **111K** | **126K** |
| | TEST HOURS | | | | **1264** | **1048** | **1112** | **1080** | **968** |
| | MISSIONS | | | | | | | | |
| OTHER T&E | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Potomac River Test Range**

| | |
|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 6960 |
| AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) | 2 19 |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 5 |

| 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 | 8 270 |
| Gun | 1 | 18 | 18 | |
| Ammo | 1 | 18 | 18 | ANNUAL UNCONSTRAINED CAPACITY |
| | | | | 9 98,550 |
| | | | | |
| | | | | |
| "TYPICAL" | 1 | 18 | 18 | |
| | | | TOTAL ∑ 54 | |



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# Document Separator

# GENERAL INFORMATION

Facility/Capability Title: Search and Track Sensor Test Site (STSTS)

Origin Date: 21 April 1994

Service: Navy Organization/Activity: NSWCDD Location: Dahlgren, VA

T&E Functional Area: Electronic Combat Systems UIC = N00178

T&E Test Facility Category OAR

| | T&E | S&T | D&E | IE | T&D | OTHER | =100% |
|---|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 5 | 35 | 60 | | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armament/Weapons | 5 | 35 | 60 | | | | |
| Other | | | | | | | |

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

# TECHNICAL INFORMATION

Facility/Capability Title: Search and Track Sensor Test Site (STSTS)

| |
|---|
| Facility Description; Including mission statement: **The Search and Track Sensor Test Site (STSTS) located on the Potomac River Test Range (PRTR) at the Naval Surface Warfare Center Dahlgren Division (NSWCDD), Dahlgren, Virginia, allows over water testing of individual Radio Frequency (RF) and Electro-Optical (EO) sensors or complex sensor systems during and/or at the completion of their development. This facility, used in conjunction with the PRTR facilities, can provide an 80,000 yard over water, instrumental range capability. The STSTS provides the ability to fly subsonic manned and towed targets at altitudes down to the surface for sensor performance evaluations.** |
| Interconnectivity/Multi-Use of T&E Facility: **The STSTS, due to its unique location, can support test and evaluation for, in addition to RF/EO sensors, gun systems, security surveillance systems, special warfare systems, above-on-below-surface sensors/weapons and other specialty sensor/weapon related equipments. The EO ground truth sensors at the STSTS are interconnected with ground truth radars/theodolites of the PRTR, providing a unique high accuracy capability.** |
| Type of Test Supported: **Target detection and track range; sensor sensitivities, in clutter performance, low elevation/low altitude target detection and track; multisensor integration.** |
| Summary of Technical Capabilities: **The STSTS is fully instrumented including a wideband RF/EO LAN which provides for the distribution of sensor data including analog and digital video through the test site. Instrumentation assets includes: VHS, PAL, and other video format recorders, digital data recording system, differential GPS, meteorological stations and IRIG time distribution. Data reduction capabilities are available via a VAX computer.** |
| Keyword: **over water, low elevation, low observable, multi-sensor, integration, radar, RF, infrared, IR, EO** |



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# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Search and Track Sensor Test Site (STSTS)

AGE: **19 Years** REPLACEMENT VALUE: **$23.2M**

MAINTENANCE AND REPAIR BACKLOG: **$570K (space/refurb elect power/refurb pavement/refurb & paint towers.**

DATE OF LAST UPGRADE: **August 1992**

NATURE OF LAST UPGRADE: **Adjacent unused building (originally used as an ordnance magazine mockup) was refurbished and added to the STSTS. Addition of this building added capability to install/operate sensor integration and combat system equipment in the proximity of supporting sensors and weapons.**

MAJOR UPGRADES PROGRAMMED: **None**

1. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

2. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

# ADDITIONAL INFORMATION

Facility/Capability Title: Search and Track Sensor Test Site (STSTS)

PERSONNEL

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | 10 | 7 | 8 | 8 | 7 | 7 | 7 |
| Contractor | | | | | | | |
| Total | 10 | 7 | 8 | 8 | 7 | 7 | 7 |

Total Square Footage: 307,800

Test Area Square Footage: 21,780 Office Space Sq Footage: 0

Tonnage of Equipment: 96 tons (includes vans) Volume of Equipment: 4,800 cu ft.

Annual Maintenance Cost: $ 115K Estimated Moving Cost: $920K

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |

**Note: estimates on this page DO NOT include project-related equipment.**

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Search and Track Sensor Test Site (STSTS)

| 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 (Sensors) | DIRECT LABOR | 7.6K | 14.7K | 14.7K | 14.7K | 16.3K | 17.3K | 19.2K | 19.2K |
| | TEST HOURS | 640 | 1400 | 1700 | 1400 | 1800 | 2000 | 2200 | 2200 |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT | | | | | | | | |

Submission for
UIC: N00178

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TEST HOURS | | | | | | | | |
| MISSIONS | | | | | | | | |

# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Search and Track Sensor Test Site (STSTS)**

| | | |
|---|---|---|
| ANNUAL HOURS OF DOWNTIME | 1 | **2900** |
| AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) | 2 | **8** |
| AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) | 3 | **16** |

| 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 **416** |
| Sensor/System Field Test | **1** | **10** | **10** | |
| Sensor/System R&D Development Testing | **4** | **4** | **16** | ANNUAL UNCONSTRAINED CAPACITY 9 **151,840** |
| | | | | |
| | | | | |
| | | | | |
| "TYPICAL" | | | | |
| | | | TOTAL ∑ **26** | |

**Submission for UIC: N00178**

**FOR OFFICIAL USE ONLY**

**APPENDIX A6**

NSWC DAHLGREN, DAHLGREN

SEA 09X
5/13/94

DATA CALL #13

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

NEXT ECHELON LEVEL (if applicable)

N. S. SCOTT, CAPT, USN
NAME (Please type or print)

Signature

COMMANDER
Title

10 May 94
Date

NAVAL SURFACE WARFARE CENTER

DAHLGREN DIVISION

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)

RADM (SEL) D. P. SARGENT, JR.
NAME (Please type or print)

Signature

COMMANDER
Title

5/11/94
Date

NAVAL SURFACE WARFARE CENTER
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

Commander
Title
Naval Sea Systems Command

5-13-94
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

20 MAY 1994
Date

68

SEA 09X
5/13/94

DATA CALL #13

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

N. S. SCOTT, CAPT, USN
NAME (Please type or print)

Signature

COMMANDER
Title

10 May 94
Date

NAVAL SURFACE WARFARE CENTER
DAHLGREN DIVISION
Activity

**NAVAL SURFACE WARFARE CENTER, DAHLGREN DIVISION, DAHLGREN VA, 1992**

NAVAL SURFACE WARFARE CENTER
DAHLGREN DIVISION
DAHLGREN, BA
0178

# Document Separator

**DEPARTMENT OF THE NAVY**
NAVAL SEA SYSTEMS COMMAND
2531 JEFFERSON DAVIS HIGHWAY
ARLINGTON VA 22242-5160

IN REPLY REFER TO

11000
Ser 09X/074
9 September 1994

From: Commander, Naval Sea Systems Command (SEA 09X)
To: Chief of Naval Operations (N44)

Subj: BASE REALIGNMENT AND CLOSURE (BRAC) '95 - REVISIONS TO NAVSEA DATA CALLS

Encl: (1) List of Data Call Revisions
(2) Data Call Revisions

1. Enclosure (1) is a list of NAVSEA Data Call Revisions provided at enclosure (2).

LARRY FREEMAN

WC

NAVSEA REVISIONS (LTR SER 74 OF 9/9/94)

| ACTIVITY | DATA CALL | ACTIVITY CERT DATE | NAVSEA CERT DATE |
|---|---|---|---|
| NSWC CRANE, CRANE 202 | 13 | 9/2/94 | 9/8/94 |
| NSWC CRANE, CRANE 202 | 14 | 9/6/94 | 9/8/94 |
| ~~NSWC CRANE, LOUISVILLE 203~~ | ~~4~~ | 9/1/94 | 9/8/94 |
| NSWC DAHLGREN, DAHLGREN 20[illegible] | 13 | 9/6/94 | 9/8/94 |
| ~~NSWC DAHLGREN, PANAMA CITY~~ 203 | 5 | 9/1/94 | 9/8/94 |
| NSWC INDIAN HEAD, ~~INDIAN HEAD~~ 205 | 13 | 9/6/94 | 9/8/94 |
| NUWC KEYPORT 205 | 5 | 8/26/94 | 9/6/94 |

**Submission of revised page, Data Call #13, Naval Surface Warfare Center, Dahlgren Division, Dahlgren Site**

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

NEXT ECHELON LEVEL (if applicable)

J. C. OVERTON, CAPT, USN
NAME (Please type or print)

Signature

COMMANDER
Title

9/6/94
Date

NAVAL SURFACE WARFARE CENTER

DAHLGREN DIVISION

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)

RADM (SEL) D. P. SARGENT, JR.
NAME (Please type or print)

Signature

COMMANDER
Title

9/7/94
Date

NAVAL SURFACE WARFARE CENTER
Activity

I certify 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

G. R. STERNER
Commander
Naval Sea Systems Command
Title

9-9-94
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

14 SEP 1994
Date

BRAC-95 CERTIFICATION

**Submission of revised page, Data Call #13, Naval Surface Warfare Center, Dahlgren Division, Dahlgren Site**

Reference: SECNAVNOTE 11000 of 08 December 1993

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

ACTIVITY COMMANDER

J. C. OVERTON, CAPT, USN
NAME (Please type or print)

Signature

COMMANDER
Title

9/6/94
Date

NAVAL SURFACE WARFARE CENTER
DAHLGREN DIVISION
Activity

Footnote:

This is the revised page of Data Call #13 in response to the further guidance provided by the BSAT facsimile of 1 September 1994.

**Submission of revised page, Data Call #13, Naval Surface Warfare Center, Dahlgren Division, Dahlgren Site**

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

NEXT ECHELON LEVEL (if applicable)

J. C. OVERTON, CAPT, USN
NAME (Please type or print)

Signature

COMMANDER
Title

25 Aug 94
Date

NAVAL SURFACE WARFARE CENTER

DAHLGREN DIVISION

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)

RADM (SEL) D. P. SARGENT, JR.
NAME (Please type or print)

Signature

COMMANDER
Title

8/26/94
Date

NAVAL SURFACE WARFARE CENTER
Activity

I certify 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

G. R. STERNER
Title Commander

8/29/94
Date

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

Title

9/1/94
Date

WC

# BRAC-95 CERTIFICATION

**Submission of revised page, Data Call #13, Naval Surface Warfare Center, Dahlgren Division, Dahlgren Site**

Reference: SECNAVNOTE 11000 of 08 December 1993

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

ACTIVITY COMMANDER

J. C. OVERTON, CAPT, USN
NAME (Please type or print)

J C Overton
Signature

COMMANDER
Title

25 Aug 94
Date

NAVAL SURFACE WARFARE CENTER
DAHLGREN DIVISION
Activity

Footnote:

This is the revised page of Data Call #13 in response to the further guidance provided by the BSAT facsimile of 22 August 1994.

Au-036

BRAC-95 CERTIFICATION

**Submission of revised page and clarification pages for Data Call #13, Naval Surface Warfare Center, Dahlgren Division, Dahlgren Site**

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."

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

ACTIVITY COMMANDER

J. C. OVERTON, CAPT, USN
NAME (Please type or print)

Signature

COMMANDER
Title

9/9/94
Date

NAVAL SURFACE WARFARE CENTER
DAHLGREN DIVISION
Activity

Footnote:

This is the revised page and clarifications for Data Call #13 in response to the further guidance provided by the BSAT facsimile of 8 September 1994.

**Submission of revised page and clarification, Data Call #13, Naval Surface Warfare Center, Dahlgren Division, Dahlgren Site**

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

NEXT ECHELON LEVEL (if applicable)

J. C. OVERTON, CAPT, USN
NAME (Please type or print)

Signature

COMMANDER
Title

9/9/94
Date

NAVAL SURFACE WARFARE CENTER

DAHLGREN DIVISION

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)

RADM (SEL) D. P. SARGENT, JR.
NAME (Please type or print)

Signature

COMMANDER
Title

9/14/94
Date

NAVAL SURFACE WARFARE CENTER
Activity

I certify 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

Commander
~~Naval Sea Systems Command~~
Title

9-22-94
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)

W. A. EARNER
NAME (Please type or print)

Signature

Title

9/29/94
Date

Certifications for RFC EC-024
10/4/94

Answers to Clarification Questions

1. Control Number A/W 036:

The information requested for question 3.1.C.4 was supplied in our 25 August 1994 response to the same question. Please see that response (Data Call #13 page 13-R (8/25/94)) for the information.

2. Control Number A/W 037 and A/W 039:

These two clarifications questions asked for the same information - are the hours shown under Armament/Weapons in the Historical Workload Table ( page [illegible] 2) all T&E or should the hours be multiplied by the percentage shown under Armament/Weapons - T&E on the General Information page (A2-5 and A4-5)?

The " test hours" on the Historical Workload table are hours spent in testing no matter the funding source or program phase. The instructions for Data Call # 13 were specific concerning the definition of "T&E", "S&T", "D&E", "IE", and "T&D" on the General Information page. "T&E" here is defined as specified on page 23 of the original instructions as:

"(1) Test and Evaluation (T&E) - Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment [illegible] are typically funded from 6.5 or procurement program elements. Facilities [illegible] 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."

Thus, for the T&E category, you multiply the test hours by the ratio of the T&E percentage divided by the sum of the Armament/Weapons line percentages

**Note:** While the above calculation provides the T&E test hours, the T&E usage versus other usage (S&T, D&E, etc.) of a facility is not readily separable. The same workforce and equipment are used for all testing regardless of whether the tests support T&E, S&T, D&E, etc.

3. Control Number A/W 038:

All the facilities identified in data call #13 for the Dahlgren site routinely do classified work to the Secret level. With special precautions, all the facilities, except for the Potomac River Test Range, can conduct tests to the Top Secret and Special Access levels. A revision page indicating the above information is being supplied as a separate enclosure.

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# T&E JCSG CLARIFICATION - FORM #3

**Armament/Weapons (MF)**

**Activity Title:** Dahlgren Site, NSWCDD **UIC:** N00178

**Facility/Capability Title:** Explosive Experimental Area (EEA)

**T&E Test Facility Category:** Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | X | |
| Safety T&E | X | |
| Warhead Performance T&E | X | |
| Fuze T&E | X | |
| Seeker, sensor and guidance/control performance and target/background signature characterization | | X |
| Propulsion Performance T&E | X | |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | | X |
| Gun Performance T&E | X | |
| Electromagnetic Environmental Effects | X | |
| Directed Energy | | X |

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes_X__ No ____.



WC

G-1

# T&E JCSG CLARIFICATION - FORM #3
## Armament/Weapons (MF)

**Activity Title:** Dahlgren Site, NSWCDD **UIC:** N00178

**Facility/Capability Title:** Warheads Research Test Facility

**T&E Test Facility Category:** Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | | X |
| Safety T&E | X | |
| Warhead Performance T&E | X | |
| Fuze T&E | | X |
| Seeker, sensor and guidance/control performance and target/background signature characterization | | X |
| Propulsion Performance T&E | | X |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | | X |
| Gun Performance T&E | | X |
| Electromagnetic Environmental Effects | | X |
| Directed Energy | | X |

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes___ No __X__.

# T&E JCSG CLARIFICATION - FORM #3

**Armament/Weapons (MF)**

**Activity Title:** Dahlgren Site, NSWCDD **UIC:** N00178

**Facility/Capability Title:** Electromagnetic Vulnerability Assessment Facility (EMVA)

**T&E Test Facility Category:** Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | X | |
| Safety T&E | X | |
| Warhead Performance T&E | | X |
| Fuze T&E | | X |
| Seeker, sensor and guidance/control performance and target/background signature characterization | | X |
| Propulsion Performance T&E | | X |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | | X |
| Gun Performance T&E | | X |
| Electromagnetic Environmental Effects | X | |
| Directed Energy | | X |

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes_X__ No ____.

**T&E JCSG CLARIFICATION - FORM #3**
**Armament/Weapons (MF)**

**Activity Title:** Dahlgren Site, NSWCDD **UIC:** N00178

**Facility/Capability Title:** Electromagnetic Pulse Facilities

**T&E Test Facility Category:** Measurement Facility (MF)

Utilize the following table to indicate which of the indicated T&E testing can be conducted by this Measurement Facility.

| Spectra | Yes | No |
|---|---|---|
| Environmental T&E | X | |
| Safety T&E | X | |
| Warhead Performance T&E | | X |
| Fuze T&E | | X |
| Seeker, sensor and guidance/control performance and target/background signature characterization | | X |
| Propulsion Performance T&E | | X |
| Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes | | X |
| Gun Performance T&E | | X |
| Electromagnetic Environmental Effects | X | |
| Directed Energy | | X |

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes_X__ No ____.

# GENERAL INFORMATION

Facility/Capability Title: **Explosive Experimental Area**

Origin Date: **4/20/94**

Service: **Navy** Organization/Activity: **NSWCDD** Location: **Dahlgren, Va**

T&E Functional Area: **Armaments/Weapons** UIC = **00178**

T&E Test Facility Category **Measurement Facility (MF)** | R

| | T&E | S&T | D&E | IE | T&D | OTHER | =100% |
|---|---|---|---|---|---|---|---|
| PERCENTAGE USE: | 15 | 50 | 30 | | | 5 | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | | |
| Air Vehicles | | | | | | | |
| Armanent/Weapons | 15 | 50 | 30 | | | 5 | |
| EC | | | | | | | |
| Other | | | | | | | |

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

G-5

**Submission for**
**UIC: N00178**

# Document Separator

NSWC CARDEROCK



# Department of Defense

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

March 31, 1994



WC

# 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

SECTION 2: CAPACITY & TECHNICAL RESOURCES
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



2

## 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.

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



4

### 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.

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 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.

## 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.

–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?

## 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.

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

Not applicable because the Carderock Division has no facilities within the scope of this data call.

## 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.

Not applicable because the Carderock Division has no facilities within the scope of this data call.

–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?

Not applicable because the Carderock Division has no facilities within the scope of this data call.

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

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

## 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. NOT APPLICABLE BECAUSE THE CARDEROCK DIVISION HAS NO FACILITIES WITHIN THE SCOPE OF THIS DATA CALL. MLP 5/11/94

-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.
NOT APPLICABLE BECAUSE THE CARDEROCK DIVISION HAS NO FACILITIES WITHIN THE SCOPE OF THIS DATA CALL. MLP 5/11/94

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.*

Not applicable because the Carderock Division has no facilities within the scope of this data call.

- 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.

- 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.

- 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.

- 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.

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

– 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?

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.*

Not applicable because the Carderock Division has no facilities within the scope of this data call.

–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.

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

–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.*

Not applicable because the Carderock Division has no

facilities within the scope of this data call.

-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.

-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.

-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.

-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)?

-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.

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

Not applicable because the Carderock Division has no facilities within the scope of this data call.

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

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

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

–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.

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.*

Not applicable because the Carderock Division has no facilities within the scope of this data call.

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

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

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

–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.

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

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

–3.1.G.7 What is the maximum straight line segment in your airspace in 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.

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

Not applicable because the Carderock Division has no facilities within the scope of this data call.

–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.

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

–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.

–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?

–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%?

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

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

–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?

–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.

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

## 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.*

Not applicable because the Carderock Division has no facilities within the scope of this data call.

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

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

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

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

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

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

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

Not applicable because the Carderock Division has no facilities within the scope of this data call.

–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.

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

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

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

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

–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?

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

Not applicable because the Carderock Division has no facilities within the scope of this data call.



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-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)

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

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

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

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

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

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

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

## 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.*

Not applicable because the Carderock Division has no facilities within the scope of this data call.

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

–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?

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

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

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

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

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

–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

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

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

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

Not applicable because the Carderock Division has no facilities within the scope of this data call.

–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.

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

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

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

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

## 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.

Not applicable because the Carderock Division has no facilities within the scope of this data call.

–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?

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.

Not applicable because the Carderock Division has no facilities within the scope of this data call.

–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?

–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.

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

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?
---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.

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

-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.

# 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).

(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.

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.

# GENERAL INFORMATION

Facility/Capability Title: Not Applicable

Origin Date: _____

Service: _____ Organization/Activity: _____ Location: _____

T&E Functional Area: _____ UIC = _____

T&E Test Facility Category _____

| | T&E | S&T | D&E | IE | T&D | OTHER=100% |
|---|---|---|---|---|---|---|
| PERCENTAGE USE: | | | | | | |
| BREAKOUT BY T&E FUNCTIONAL AREA (%) | | | | | | |
| Air Vehicles | | | | | | |
| Armanent/Weapons | | | | | | |
| EC | | | | | | |
| Other | | | | | | |

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

# TECHNICAL INFORMATION

Facility/Capability Title: Not Applicable

| |
|---|
| Facility Description; Including mission statement: |
| Interconnectivity/Mulit-Use of T&E Facility: |
| Type of Test Supported: |
| Summary of Technical Capabilities: |
| Keywords: |

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# ADDITIONAL INFORMATION

Facility/Capability Title: Not Applicable

PERSONNEL

| | FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|---|
| Officer | | | | | | | |
| Enlisted | | | | | | | |
| Civilian | | | | | | | |
| Contractor | | | | | | | |
| Total | | | | | | | |

Total Square Footage: _____

Test Area Square Footage: _____ Office Space Square Footage: _____

Tonnage of Equipment: _____ Volume of Equipment: _____

Annual Maintenance Cost: _____ Estimated Moving Cost: _____

CAPITAL EQUIPMENT INVESTMENT

| FY93 | FY94 | FY95 | FY96 | FY97 | FY98 | FY99 |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

# FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Not Applicable

AGE: _____ REPLACEMENT VALUE: _____

MAINTENANCE AND REPAIR BACKLOG: _____

DATE OF LAST UPGRADE: _____

NATURE OF LAST UPGRADE: _____

_____

_____

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

2. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____
   SUMMARY DESCRIPTION: _____

# HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Not Applicable

| | | FISCAL YEAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T&E FUNCTIONAL AREA | | 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 | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |
| OTHER | DIRECT LABOR | | | | | | | | |
| | TEST HOURS | | | | | | | | |
| | MISSIONS | | | | | | | | |

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# DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Not Applicable

ANNUAL HOURS OF DOWNTIME 1 _____
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365) 2 _____
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 _____

| 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_____ |
| _____ | _____ | _____ | _____ | |
| _____ | _____ | _____ | _____ | ANNUAL UNCONSTRAINED CAPACITY |
| _____ | _____ | _____ | _____ | 9 _____ |
| _____ | _____ | _____ | _____ | |
| _____ | _____ | _____ | _____ | |
| "TYPICAL" | _____ | _____ | _____ | |

TOTAL Σ _____

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NSWC CARDEROCK, BETHESDA

JL
SEA 09X
5/13/94

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

NEXT ECHELON LEVEL (if applicable)

D. K. Kruse; Captain, USN
NAME (Please type or print)

Signature

Commander
Title

5-10-94
Date

Carderock Division, USN
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)

RADM (Sel) D. P. Sargent, Jr.
NAME (Please type or print)

Signature

Commander
Title

5/11/94
Date

Naval Surface Warfare Center
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

Commander
Title

5-13-94
Date

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)

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

Signature

ACTING
Title

Date

OPNAV
Activity

NSWC CARDEROCK, BETHESDA

JL
SEA 09X
5/13/94

## 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."

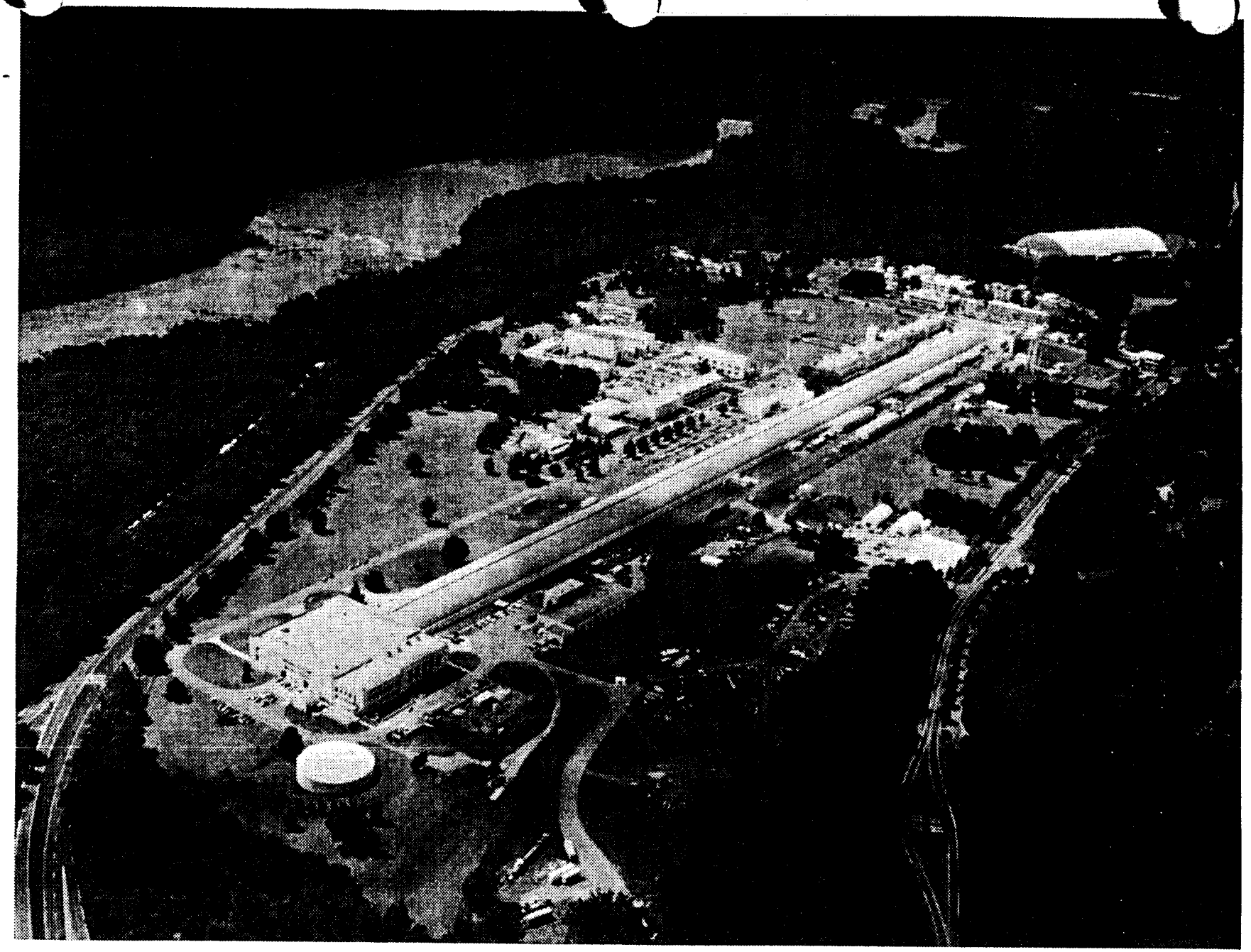
The signing of this certification constitutes a representation that the certifying official has reviewed the information and either (1) personally vouches for its accuracy and completeness or (2) has possession of, and is relying upon, a certification executed by a competent subordinate.

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.

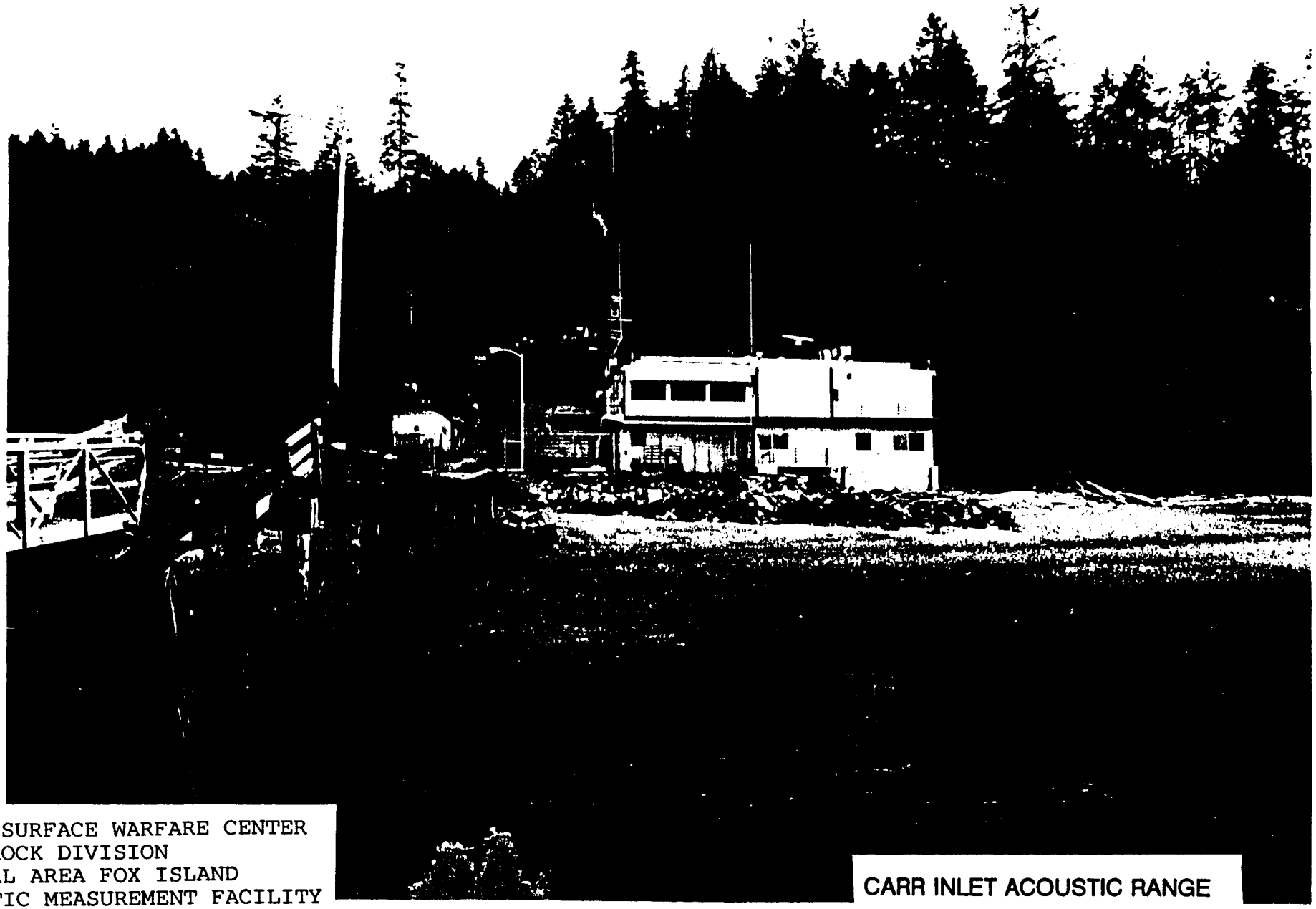
I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.

ACTIVITY COMMANDER

| | |
|---|---|
| D.K. Kruse; Captain, USN | DKKruse |
| NAME (Please type or print) | Signature |
| Commander | 5-10-94 |
| Title | Date |
| Carderock Division; NSWC | |
| Activity | |



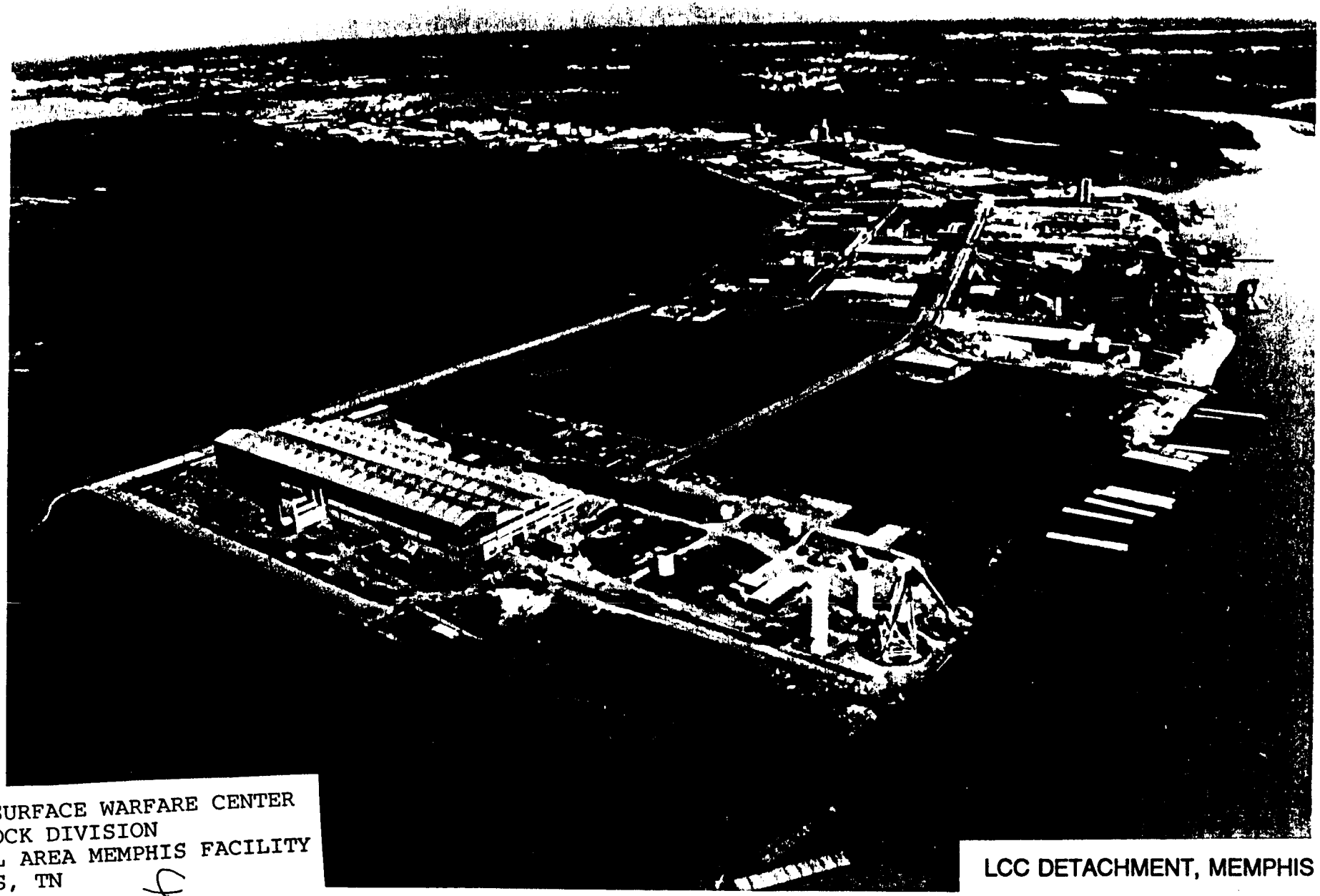
**14. Facility Maps**
**c.1. Aerial Photo—David Taylor Model Basin (1992)**



CARR INLET ACOUSTIC RANGE

NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION
SPECIAL AREA FOX ISLAND
ACOUSTIC MEASUREMENT FACILITY
FOX ISLAND, WA
N00167

42



NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION
SPECIAL AREA MEMPHIS FACILITY
MEMPHIS, TN

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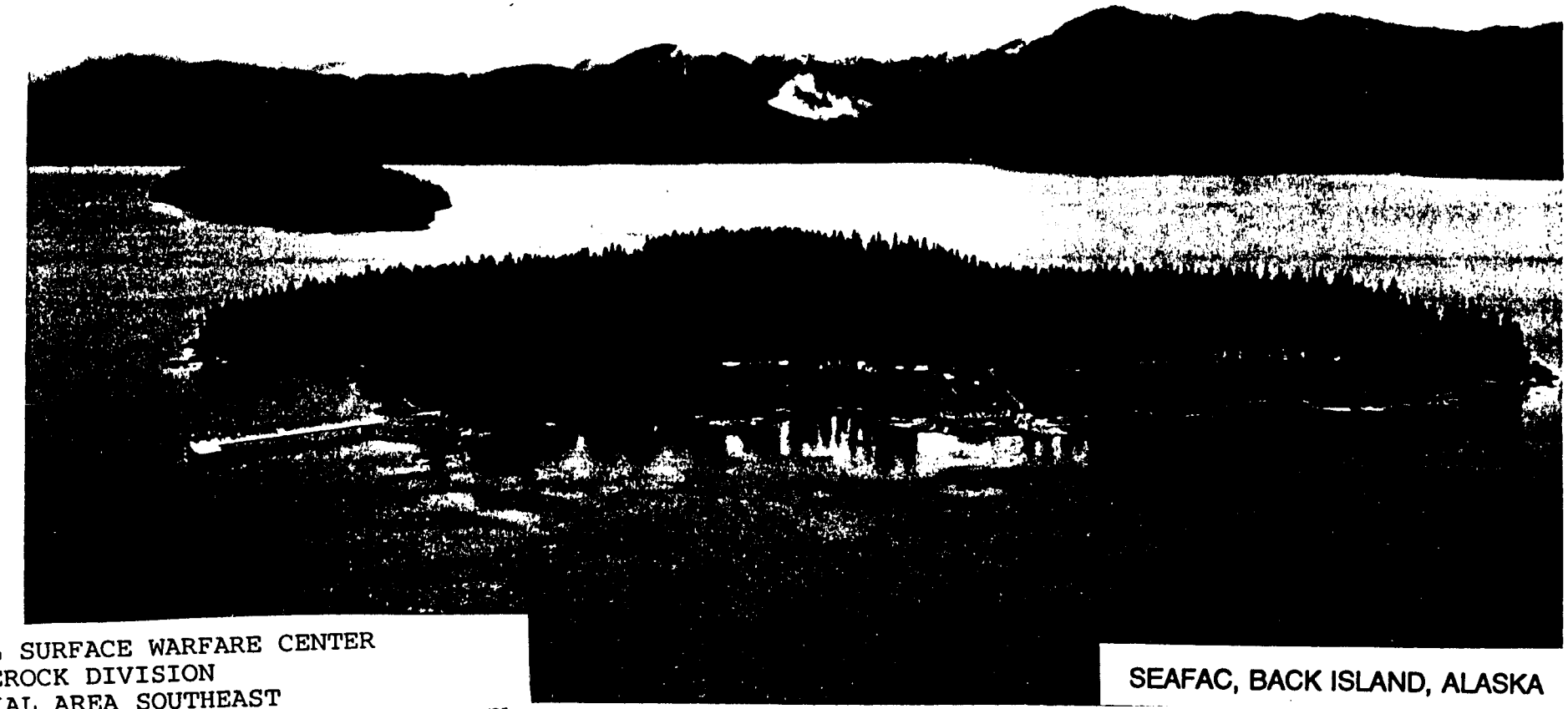
LCC DETACHMENT, MEMPHIS



SEAFAC, BACK ISLAND, ALASKA

NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION
SPECIAL AREA SOUTHEAST
ALASKA ACOUSTIC MEASUREMENT FACILITY
KETCHIKAN, AK
0167