DCN 1395

FOR OFFICIAL USE ONLY

Department of Defense

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

March 31, 1994

SUBMITTED BY:
INDIAN HEAD DIVISION
NAVAL SURFACE WARFARE CENTER
101 STRAUSS AVENUE
INDIAN HEAD, MD 20640

ACTIVITY UIC: 00174

FOR OFFICIAL USE ONLY

WC

0001

T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS 2
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 5
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 12
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

0002

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 Essentially. 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.

See historical workload tables at Appendix A

2.1.B Forecasted Workload

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

FUNCTIONAL AREA - WEAPONS/ARMAMENT FY92

APPROP	BUDGET ACTIVITY	PROGRAM ELEMENT CODE/NAME*
O&MN	1-Strategic Forces	1T
	2-General Purpose Forces	2T, 2K
	8-Training and Other General Personnel Activities	8T
APN	1-Combat Aircraft	AV,CA,CC,A6,AN
	3-Trainer Aircraft	GH
OPN	1-Ships Support Equipment	HZ
	3-Aviation Support Equip	Q9
	4-Ordnance Support Equip	U4,UH
	8-Personnel and Command Support	JC
WPN	2-Other Missiles	FE,G8,F6
	3-Torpedoes and Related Equipment	F8,DQ
	5-Other Weapons	AC,Q3
RDT&E	4-Tactical Programs	ER-Joint Service EOD Development
	6-Defense wide Mission Support	79-International RDT&E, ZZ-Defense wide Mission Support

*some program element names not available

Note: We also provide T&E support to the Army,Air Force, Marine Corp, Private Industry, and Other Government (e.g., DOE, NASA) as part of our energetics mission.

FUNCTIONAL AREA - WEAPONS/ARMAMENT FY 93

Approp	Budget Activity	Program Element Code/Name*
O&MN	General Purpose Forces	not applicable
APN	1-Combat Aircraft	A6,CA
	3-Trainer	CH
	5-Modification of Aircraft	BN
OPN	3-Aviation Support Equip	Q9
	4-Ordnance Support Equip	JC,UH
	8-Spares and Repair Parts	JC
SCN	2-Other Warships	24
WPN	2-Other Missiles	EL,EM,FE
	5-Other Ordnance	AJ
RDT&EN	4-Tactical Programs	04-Unguided Conventional Air-Launched Weapons 14-Marine Corps Combat Services Support NV-Surface Mine Counter-measures
	6-Defense wide Mission Support	57-Target Systems Development

*some program element names not available.

NOTE: We also provide T&E support to the Army, Air Force, Marine Corp, Private Industry, and Other Government (e.g. DOE, NASA) as part of our energetics mission.

0009

FUNCTION AREA - WEAPONS/ARMAMENT FY 94 - 97

APPROP	BUDGET ACTIVITY	PROGRAM ELEMENT CODE/NAME *
O&MN	1-Strategic Forces	Not applicable
	2-General Purpose Forces	Not applicable
	4-Airlift and Sealift	Not applicable
	8-Training & General Personnel	Not applicable
APN	1-Combat Aircraft	AV,CK
	4-Other Aircraft	WT
OPN	3-Aviation Support Equip	Q4,A9
	4-Ordnance Support Equip	VM
	2-Other Missiles	FK,EM,EL
	3-Torpedoes and Related Equip	DQ
RDT&EN	4-Tactical Programs	NV-Surface Mine Counter-measures
	6-Defense wide Mission Support	ZZ-Other

*some program element names not available.

NOTE: We also provide T&E support to the Army, Air Force, Marine Corp, Private Industry, and Other Government (e.g. DOE, NASA) as part of our energetics mission.

-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?

FY92	FY93
136	122

Direct workyears performed in the armament/weapons functional area.

implies all Arm/Wpn not just A/W T&E

0010

2.2 UNCONSTRAINED CAPACITY

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

See unconstrained capacity tables at 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?

The capacity of IHDIV test facilities is limited by the physical characteristics of the facility itself.

2.3 TECHNICAL RESOURCES

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

YES - The Indian Head Division's primary wartime mission is to provide energetic material and technical support for assigned weapon systems, weapons or components. As directed by NAVSEA logistics support and mobilization plan, Memorandum of Agreement with the Army, and other DD1519's, Indian Head Division is the assigned emergency producer for such items as: MK23, MK25 and MK 117 JATO Rocket Motors, M43 LOVA propellant, MK90 Rocket Motor Grain, M55 Ignition Element, JAU-13A Initiator Cartridge, and JAU-14A Initiator Cartridge. The test & evaluation function is integral to accomplish these assignments.

-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 - Our in-house capability enables IHDIV to provide reliable products to the fleet by performing Test and Evaluation for energetic materials, ordnance devices and components, to include chemicals, propellants and their propulsion systems, explosives, pyrotechnics, and warheads.

A multitude of Test & Evaluation functions are performed that are integral to the IHDIV mission:

-static fire rocket motors in support of development, qualification, type life, lot acceptance, quality evaluation, and malfunction investigation programs;

-perform environmental test on new ordnance items (contractor and in-house).

-inspect ordnance items and metal parts for flaws, improper assembly, and any other anomalies which may have occurred during manufacture, storage, or service use;

-test and analyze properties of propellant, explosive, pyrotechnics, and chemical materials used for in-house research, development, manufacturing process, and acceptance testing of contractor supplied materials.

-Development, qualification, lot acceptance, quality evaluation, and malfunction investigation testing of more than 700 cartridge and cartridge actuated devices, man-rated percussion primers, rocket catapults, and underseat rocket motors.

The performance of these test & evaluation functions on the energetic materials processed at Indian Head cannot be separated from our research, development, and fleet support operations. Without on-site capability, it would be impossible to perform the other work in a safe and reliable manner; nor would it be possible to ensure the safety of the ordnance loaded for delivery to the fleet. This capability is an inherent part of operating a facility where energetic materials are processed. The ability to obtain quick response feedback from our test organization enables IHDIV to efficiently provide high quality and cost effective products to our customers. The fact that we do contractor acceptance and type life testing requires organic capability.

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

NO - We don't directly impact other Activities "test" mission.

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

YES - IHDIV's test capability extends beyond serving the needs of the Navy to those of Department of Defense and the private sector.

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.

If IHDIV's P&E functions were removed, there would be severe impacts on our ability to accomplish our mission.

-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.

N/A

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 Encroachment Limitations - Although Indian Head is within reasonable access to Washington, D.C. It is located on peninsula. The surrounding water and adjacent government owned land, which is restricted to development, provides good isolation. The code of Federal Regulations gives the Commander complete authority over the adjacent waterway. This location provides natural isolation. Consequently, there is no threat of encroachment caused by high density residential or industrial development.

No Environmental Limitations - With the implementation of the Clean Air and Water Act, all facilities processing and testing hazardous materials must have the appropriate environmental permits. IHDIV is well recognized as a leader in this area and is fully compliant.

- **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.

We could operate our test facilities at full capacity and would remain within the limits of all environmental requirements.

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

See 3.1.C.1 above

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

The following are approximate numbers: 3 million, 9 million, 19 million, and 31 million.

- 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.

We perform specialized energetic test and evaluation functions, therefore almost all our facilities are considered specialized.

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

NO

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

N/A

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

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

YES - We are not a Test and Evaluation Activity, however, we can increase the volume of output approximately 15% in some of the facilities described at Appendix A; others continue to operate at 100% capacity.

-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 - Our test facilities are specialized to our energetics mission.

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

YES - IHDIV has undeveloped land we could use to expand our test capability. We operate an annex across the creek which does have undeveloped land that could be made available.

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

YES - Secret

-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 - See Below

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

YES - Our Chemical/Physical Characterization facility possesses a high-rate tester which is used to determine the characteristics of propellant and other energetic materials in the event of a detonation.

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

YES - Our motor test facility includes a multi-axis rocket motor test stand which is capable of measuring 40 plus channels of information at multiple axes compared to the typical stand that only monitors a single axis.

Our motor test facility also possesses a one of a kind rocket catapult test stand for functioning Air Force and Navy aircrew escape system catapults. This is the only state-of-art multi-component test system for testing rocket catapults which are man-rated units.

Our environmental test facility has an electrostatic discharge (ESD) capability which is one of four in the united states and is entirely unique because of its analytical capability to constantly measure/monitor voltage and current during testing of ordnance. This facility also has the capability to control temperature conditions of the test items.

-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.

SERVICE	% - FY 92	% - FY 93
ARMY	22%	11%
AIR FORCE	6%	5%
MARINE CORP	2%	2%

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

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

N/A

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

N/A

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

N/A

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

NO

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

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

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?

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 - To share facilities with Army and other Navy activities for operational testing of live explosives. We went to other geographic locations for only 1-2% of our test requirements in the last three years. Prior to this there was no need.

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

N/A - Temperature conditions do not affect IHDIV test operations.

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

N/A - Humidity does not affect IHDIV test operations.

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

NONE

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

NONE

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

N/A - Visibility does not impact IHDIV test operations.

-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?

Negligible - The only weather restriction for our test operations is severe lightening situations. In the rare instance that this happens, test are delayed; not cancelled.

3.2 AIR VEHICLES

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

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

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

0020

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

3.3 ELECTRONIC COMBAT

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

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

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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

-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

N/A

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

N/A

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

N/A

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

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

N/A

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

N/A

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

N/A

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

N/A

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

N/A

3.4 ARMAMENTS / WEAPONS

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

N/A

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

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

-3.4.B.1 Ground Space

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

N/A - Our testing is at the subsystem/component level.

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

N/A

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

N/A

3.4.B.2 Test Operations

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

--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

N/A - We do not conduct this type of testing.

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

N/A

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

N/A - We do not conduct this type of testing

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

N/A

APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

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

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

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

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

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

Unit Identification Code (UIC): Enter the UIC.

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

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

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

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

(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.

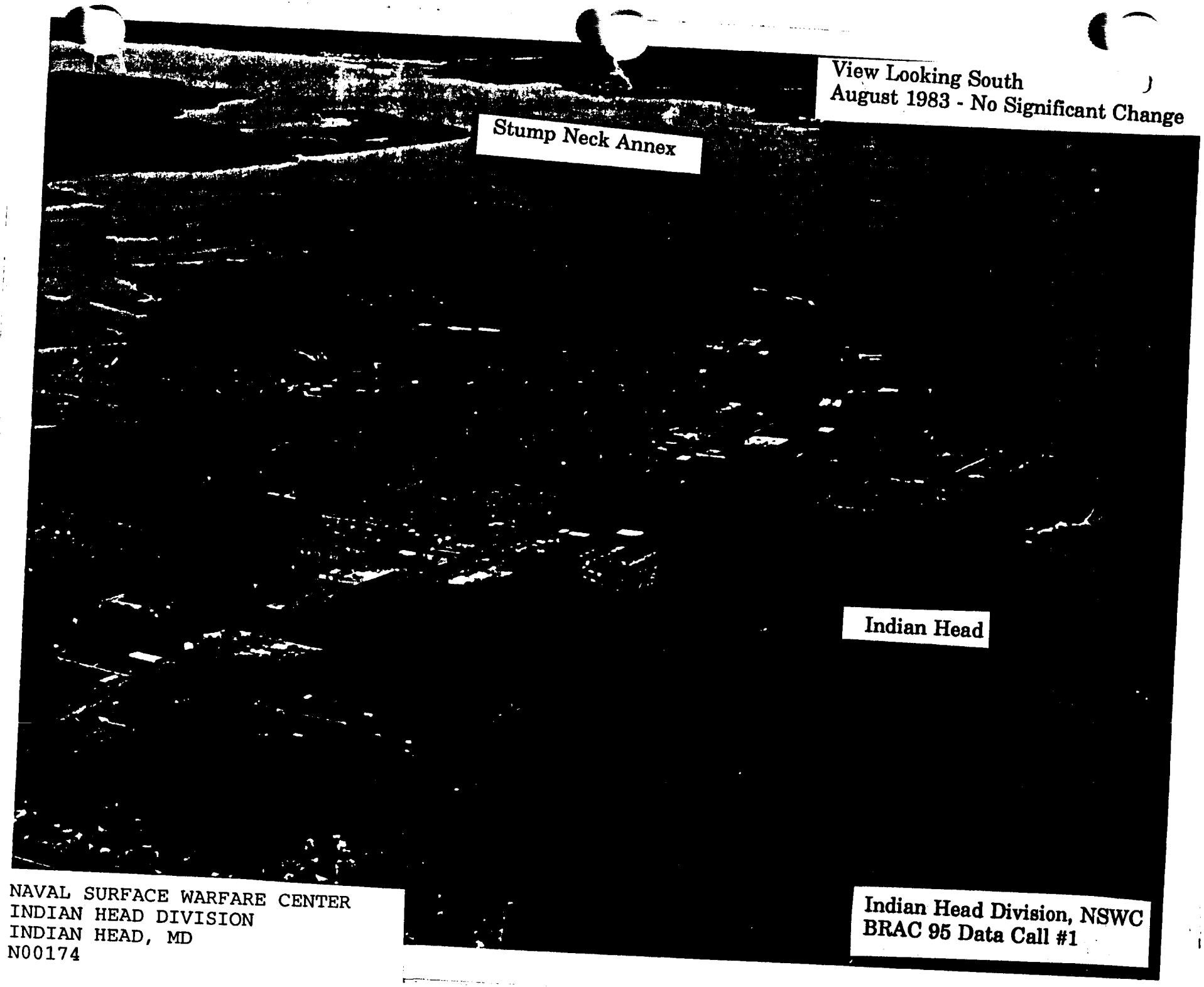
Workload Per Test Per Facility Hour, 6: List the workload (reported in units as follows: For open air range flight testing, report workload in flight hours and numbers of missions. For all other test facility categories, including open air range other than flight testing, report workload in direct labor 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.



NAVAL SURFACE WARFARE CENTER
INDIAN HEAD DIVISION
INDIAN HEAD, MD
N00174

APPENDIX A

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

INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER

CONTENTS: Page

Non-Destructive Test (NDT) Facility	A-1
Propulsion/Component Test Facility	A-9
Environmental Test Facility	A-18
Cartridge Actuated Device (CAD) Test Facility	A-25
Chemical/Physical Characterization Facility	A-32

GENERAL INFORMATION

Facility/Capability Title: Non Destructive Test (NDT) Facility

Origin Date: 05/05/94

Service: "N" Organization/Activity: Indian Head Division, NSWC (IHDIV)

Location: Indian Head, Maryland

T&E Functional Area: Armament/Weapons

UIC = 00174

T&E Test Facility Category Measurement Facilities (MF)

	T&E	S&T	D&E	IE	T&D	OTHER = 100%
PERCENTAGE USE:			60%	05%	20%	15%

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles		-				
Armament/Weapons	60%	05%	20%	15%		
EC						
Other						

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

0035

TECHNICAL INFORMATION

Facility/Capability Title: NDT Facilities

Facility Des. iption; Including mission statement:
The Non-Destructive Test (NDT) facility provides testing services in the areas of the five classical NDT techniques (Radiography, Dye Penetrant, Magnetic Particle, Eddy Current and Ultrasonic), and metals and non-propellants mechanical testing. The testing services can be used in the analysis, design, development, procurement, verification and surveillance processes associated with modern weapon components and systems. The NDT facility has three basic functional areas: two fully functioning X-Ray sites for radiography, an NDT Laboratory for the other four NDT techniques, and a metals and non-propellant mechanical properties test laboratory.

The radiographic facility at Indian Head maintains a variety of radiologic capabilities to support research and development, product improvement programs, ballistic testing and production processes. Eight separate radiographic units are available: one uses a microfocus source, three use high-energy Linatrons, and the other four use a standard low-energy source. Conventional film radiography is used routinely in all exposure bays. Additionally, there is a Level III Radiographer available for interpretation and method development. The capabilities are flexible: analysis can use the same source to produce a video screen image or a film image in either conventional or microfocus format.

The primary purpose for the radiographic portion of the facility is to non-destructively inspect energetic and non-energetic materials for flaw detections, signs of aging, improper assembly, foreign materials in the raw material and manufactured propellants, or any other anomalies that might occur. Items can be up to 5 feet in diameter and up to 18 feet in length with a maximum explosive weight of 4,000 pounds of Class 1.1 or 10,000 pounds of Class 1.3. All items that are ballistically tested are supported by this facility.

The facility supports pilot, development, qualification, production programs in inspecting the raw material, in-process and the final item. The facility also supports malfunction investigations such as the JAU-8 and HARM incidents. The JAU-8 is a propellant Actuated Initiator used in several Air Force Aircraft as part of an aircrew escape system and is manufactured in private industry. Recently an aircraft experienced a catastrophic failure requiring the pilot to eject. One JAU-8 failed while the redundant feature saved the pilot's life. IHDIV worked with the Air Force to determine how to correct the process used to inspect and accept these components which must work every time they are used. HARM is a high-speed anti-radiation rocket

0036

motor which is produced in private industry for the Army. Recently a HARM motor failed catastrophically during acceptance testing. IHDIV worked with Letterkenny Army Dept to develop a cost effective method to inspect these motors for defects and help with certification of 2,000 units. The independent facility is used to validate the NDT processes of private sector companies. The facility also helps to develop new x-ray techniques for IHDiv and vendor items. The facility performs audits of vendors and interpretations of vendor film as part of the acceptance process for vendor manufactured items (i.e. Cartridge Actuated Devices (CAD)/Propellant Actuated Devices (PAD) items used in aircrew escape systems, bomb release mechanisms, and mine clearance systems).

The Non-Destructive Test (NDT) facilities at Indian Head have state-of-the-art equipment available to perform a variety of tests and evaluations on almost any product. The equipment is used to perform receipt, in-process, and final inspections as well as discontinuity evaluations, vendor over-inspections and failure investigations. The Command has the facilities and personnel capable of training, testing, and qualifying NDT inspectors to a I, II, or III skill level in accordance with MIL-STD-410.

The radiographic/NDT facility makes recommendations to vendors on techniques for proper NDT inspections.

Without this capability, the Indian Head Division could not perform its daily mission.

Interconnectivity/Multi-Use of T&E Facility:

As defined by Data Call 13, this para is N/A.

Type of Test Supported:
The Non-Destructive Test (NDT) facility provides testing services in the areas of the five classical NDT techniques (Radiography, Dye Penetrant, Magnetic Particle, Eddy Current and Ultrasonic), and metals and non-propellants mechanical testing.

The radiographic facility at Indian Head maintains a variety of radiologic capabilities to support research and development, product improvement programs, ballistic testing and production processes.

State-of-the-art magnetic particle equipment.

0037

Summary of Technical Capabilities:

a. High Energy Real-Time Radiographic Inspection System: The high energy real-time radiographic inspection system is composed of four different x-ray sources up to 4 million-electron-volts (4 MeV), including a 200kVP microfocus source, and three manipulator systems located in two different buildings. The primary purpose for this equipment is to non-destructively inspect energetic and non-energetic materials for flaw detection, signs of aging, improper assembly, foreign materials in the raw materials or manufactured propellants, or any other anomalies that might occur. These energetic materials can be up to 5 feet in diameter and up to 18 feet in length with a maximum explosive weight of 4,000 pounds of Class 1.1 or 10,000 pounds of Class 1.3. This asset is movable with a replacement value of $3,300,000. This equipment occupies approximately 5,000 cubic feet of space and weighs an estimated 25,000 pounds.

This equipment would be difficult, but not impossible, to relocate unless a suitable facility is designated. This inspection capability is replicated at a few select DOD and commercial sites around the continental US, primarily in the Southeast and the West Coast, but it would be impractical in some cases and impossible in others to have the work we do accomplished by them. The impact due to the loss of this equipment upon production programs within and outside the Department of the Navy would be significant. Factors about relocation to be considered are:

a) Availability of radiation shielding.
b) Availability of energetic event shielding or protection.
c) Impact due to non-availability of the in-process inspection for production items at NSWC/IHD (would shut down most production programs).
d) Security aspects of some classified programs that require inspection.
e) Unnecessary public exposure to energetic materials during transportation.
f) Additional costs incurred due to transportation.
g) Non-availability of a quality inspection process for all major programs at NSWC/IHD would have a significant negative effect on the quality of the units that are shipped out for fleet use.

Keywords:
Non-Destructive Test (NDT)

0038

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Non Destructive Test (NDT) Facility

AGE: 47 years REPLACEMENT VALUE: $4.36M

MAINTENANCE AND REPAIR BACKLOG: $4,000

DATE OF LAST UPGRADE: 1984

NATURE OF LAST UPGRADE: Installation of 2-MEU Linatration X-Ray Machine in Bldg 1140

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0039

ADDITIONAL INFORMATION

Facility/Capability Title: Non-Destructive Test (NDT) 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	18	15	15	15	12	12	12
Contractor	0	0	0	0	0	0	0
Total	18	15	15	15	12	12	12

Total Square Footage: 7,205 GSF

Test Area Square Footage: 7,205 GSF

Office Space Square Footage: None

Tonnage of Equipment: Unavailable

Volume of Equipment: Unavailable

Annual Maintenance Cost: 65,360

Estimated Moving Cost: Unavailable

CAPITAL EQUIPMENT INVESTMENT

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

0040

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Non Destructive Test (NDT) Facility

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	34,475	34,475	34,475	34,475	34,475	34,475	34,475	31,028
	TEST HOURS	14,000	14,000	14,000	14,000	14,000	14,000	14,000	12,600 R
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

0541

23 September 1994
RFC # AW-092

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Non Destructive Test (NDT) Facility

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	34,475	34,475	34,475	34,475	34,475	34,475	34,475	31,028
	TEST HOURS	32,338	32,338	32,338	32,338	32,338	32,338	32,338	29,104
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

0041

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Non-Destructive Test (NDT) Facility

ANNUAL HOURS OF DOWNTIME	1 528 Hrs
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	2 1.45
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 22.55

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) 8 338.25
*	7	2.14	15	
				ANNUAL UNCONSTRAINED CAPACITY 9 123,461.3
"Typical"	0	0		
			TOTAL Σ 15	

* Conventional X-ray, Micro Focus/Real Time, Ultrasonic, Eddy Current, Liquid Penetrant, Magnetic Particle, Non Energetic Materials Mechanical Properties.

GENERAL INFORMATION

Facility/Capability Title: Propulsion Component Test Facility

Origin Date: 05/05/94

Service: "N" Organization/Activity: Indian Head Division, NSWC (IHDIV)

Location: Indian Head, Maryland

T&E Functional Area: Armament/Weapons

UIC = 00174

T&E Test Facility Category Measurement Facilities (MF)

	T&E	S&T	D&E	IE	T&D	OTHER = 100%
PERCENTAGE USE:	50%	10%	30%	10&	—	—
BREAKOUT BY T&E FUNCTIONAL AREA (%)						
Air Vehicles	—	50%	—	—	—	—
Armament/Weapons	50% 50/100 =	10%	30%	10%	—	—
EC	—	—	—	—	—	—
Other	—	—	—	—	—	—

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

8043

TECHNICAL INFORMATION

Facility/Capability Title: Propulsion Component Test Facility

Facility Description; Including mission statement:
The static firing facilities are used to test rocket motors for the Navy and other services during all phases of their life cycle at temperatures the rockets are likely to experience during fleet use. The static firing facilities are also used to test Navy and Air Force rocket catapults for aircrew escape from aircraft. This facility has a very high usage rate as compared to other static firing facilities elsewhere. Conducting approximately 5,040 static firings a year makes our operation very economically advantageous. The motor size that can be tested is up to 3 feet in diameter, 10 feet long and up to 500,000 pounds of thrust. The test results are compared against acceptance or performance specifications to assure that, when called upon, these motors will perform as required. If the rockets should fail to perform as designed, the data is available to provide a baseline for failure analysis. This capability serves the Indian Head Division during its research, development and scale up of new rocket motors. Additionally this capability is used to verify and establish test procedures from the private sector.

Motors are environmentally conditioned and static fired to simulate the real environments they will experience in the fleet. Test items are fired within a short time after being removed from the temperature conditioning chambers. Large conditioning chambers (31 ft in length) can condition to temperatures from -75 degrees F to 175 degrees F. Other capabilities include real-time data analysis and reduction, video coverage of the firings and high speed photography.

Static testing capabilities includes lot acceptance testing (LAT), quality evaluation/type-life for fleet returns, engineer investigation, product improvement programs (PIP), R&D, qualification and system level tests.

Functional Ground Test (FGT) is a system level approach to validating a missile's operational reliability and quality. It is a simulated flight which includes: rocket motor firing and separation; separation of all jettisoned items; deployment of fins, inlet ducts and wings; operation of TVC tabs, fins, engine, and guidance system. FGT used modified Operational Flight Software (OFS). The navigation and function in the OFS is replaced by a time & event table which provides the control logic in all phases of flight.

Tomahawk Missile-In-The-Loop (TMIL) is an enhancement to the FGT testing conducted at the motor test facility. TMIL uses a real-time vehicle/environment model with guidance direct memory access to functionally test a missile processing the real OFS (with a mission) in the ground test environment. TMIL simulates a complete mission, from missile power-up through test termination. Real OFS/missions are utilized to realistically test all missile hardware and the interfaces between missile

0044

hardware and software. TMIL is the first test to combine closed-loop guidance testing with a propulsion test.

Interconnectivity/Multi-Use of T&E Facility:

As defined by Data Call 13, this para is N/A

Type of Test Supported:
Static testing capabilities includes lot acceptance testing (LAT), quality evaluation/type-life for fleet returns, engineer investigation, product improvement programs (PIP), research and development (R&D, qualification and system level tests. The following are examples of items that are tested at the facility:

-LAT testing - MK 90, MK 22 line throwing rockets (IHDIV programs); UPCO CKU-5/A, Martin Baker Navy Aircrew Common Ejection Seat (NACES) Parachute Deployment Rocket Motor (PDRM) and Underseat motors (private sector).
-Qualification evaluation - Sidewinder, Phoenix, Underseat Rocket Catapults and various Jet Assisted Take-Off (JATO) Rocket Motors.
-Engineering investigations - MK 104 Bulb Tip Crack investigation, USS Princeton incident (rocket motor damage due to ship collision with a mine), HARM motor, advanced medium range air-to-air motor (AMRAAM), and the MK 1 Rocket Assisted Pilot Ejection Catapult (RAPEC) investigation.
-PIP programs - Lead-free propellants for MK 66 and MK 16 (environmental PIPs); MK 128, MK 91, MK 23, MK 7.
-R&D programs - mine countermeasures programs (i.e. MK 22 Mod 4, Distributed Explosive Mine Neutralization System (DEMNS), Distributed Explosive Technology (DET).
-Qualification programs - MK 104 Standard Missile, Sidewinder, Javelin, Harm and NACES rocket motors.
-System level testing - Tomahawk Cruise Missile Functional Ground Test.

Functional Ground Test (FGT) is a system level approach to validating a missile's operational reliability and quality. It is a simulated flight which includes: rocket motor firing and separation; separation of all jettisoned items; deployment of fins, inlet ducts and wings; operation of TVC tabs, fins, engine, and guidance system. FGT used modified Operational Flight Software (OFS). The navigation and function in the OFS is replaced by a time & event table which provides the control logic in all phases of flight.

Tomahawk Missile-In-The-Loop (TMIL) is an enhancement to the FGT testing conducted at the motor test facility. TMIL uses a real-time vehicle/environment model with guidance direct memory access to functionally test a missile processing the real OFS (with a mission) in the ground test environment. TMIL simulates a complete mission, from missile power-up through test termination. Real OFS/missions are utilized to realistically test all missile hardware and the interfaces between missile

0045

hardware and software. TMIL is the first test to combine closed-loop guidance testing with a propulsion test.

An elevated rocket motor stand is available for special secure (classified) static testing of rocket motors that need to be rotated on the stand.

There is a one of a kind Rocket Motor Thrust Vector Control test stand manufactured by Ormond Inc. used to determine serviceability of the MK 106 and MK 111 Tomahawk booster.

Summary of Technical Capabilities:

a. Tomahawk Functional Ground Test (FGT) System: The primary purpose of this equipment is to interface and gather data during Tomahawk Missile FGT. This asset is moveable with a replacement value of $6-7 million. It weighs approximately 12-15 tons. This is the only government owned Tomahawk FGT capability. If this capability is lost the Navy could not perform special test on the Tomahawk and would have to rely on expensive flight tests for data (greater than 30 times more expensive).

b. Rocket Motor Thrust Vector Control Test Stand (Ormond Inc.): A multi-component test stand with six-degree-of-freedom capability is employed to measure thrust vector components of total rocket thrust during static fire tests. This is a one of a kind test stand and is unique to the United States. This is a fixed asset with a replacement value of $750,000 - $1,000,000. It weighs approximately 20,000 lbs.

This is the only government owned multi-component test stand for evaluating the Tomahawk Booster (MK 106 and MK 111). If this capability were lost, the Navy could not perform quality evaluation (service life evaluation) on the Tomahawk Booster. To replicate or relocate this test stand the receiving activity must have a sophisticated data acquisition system (40 plus channel capability), Temperature conditioning chambers for the boosters (-20°F to 110°F), facility to perform remote explosive operations (1000 foot explosive arc) and a control room to house the fire control/servo controller/data acquisition system (20' x 20' building).

c. Multi-Component ROCAT Thrust Stand: This equipment is used to test Navy and Air Force rocket catapults for aircrew escape from aircraft. This is a fixed asset with a replacement value of $700,000. It weighs 8,000 lbs, and takes up 750 cubic feet. This is a one of a kind test stand. If this capability is lost the Navy will lose it's only state-of-the-art multi-component test system for testing rocket catapults which are man rated unit.

d. Large Motor Test Digital Data Acquisition System (HP-1000): This equipment is used to acquire digital data from

0046

rocket motor static-fire operations. It supports lot acceptance testing of production items, quality evaluation for fleet returns and special tests. This asset is moveable with a replacement value of $2,000,000. It weighs 2,000 lbs, and takes up 144 cubic feet.
Without this equipment the Navy would lose the capability of testing a wide range of rocket motors (sidewinder, Tomahawk, Phoenix, JATOs, MK 70, MK 104 MK 66, Harm and etc.). This equipment would be difficult to replicate since it is configured for specific firing operations at the present location.

e. Small Motor Test Digital Data Acquisition System (HP-1000): This equipment is used to acquire digital data from rocket motor static-fire operations. It supports lot acceptance testing of production items, quality evaluation for fleet returns and special tests. This asset is moveable with a replacement value of $2,000,000. It weighs 2,000 lbs, and take up 144 cubic feet of space.
Without this equipment the Navy would lose the capability of testing a wide range of ordnance (rocket catapults, Underseat rocket motors, Gas Generators, and other propellant actuated devices). This equipment would be difficult to replicate since it is configured for specific firing operations at the present location.

f. Large Motor Test Automatic Data Acquisition Equipment: This equipment is used to acquire digital data from rocket motor static-fire operations. It supports lot acceptance testing of production items, quality evaluation for fleet returns and special tests. This asset is moveable with a replacement value of $1,200,000. It weighs 2,000 lbs, and take up 384 cubic feet of space.
Without this equipment the Navy would lose the capability of testing a wide range of rocket motors (sidewinder, Tomahawk, Phoenix, JATOs, MK 70, MK 104 MK 66, Harm and etc.). This equipment would be difficult to replicate since it is configured for specific firing operations at the present location.

g. Small Motor Test Automatic Data Recording Equipment: This equipment is used to acquire digital data from rocket motor static-fire operations. It supports lot acceptance testing of production items, quality evaluation for fleet returns and special tests. This asset is moveable with a replacement value of $1,000,000. It weighs 6,000 lbs, and take up 336 cubic feet of space.
Without this equipment the Navy would lose the capability of testing a wide range of ordnance (rocket catapults, Underseat rocket motors, Gas Generators, and other propellant actuated devices). This equipment would be difficult to replicate since it is configured for specific firing operations at the present location.

Keywords:
Static Testing, Static Firing
Rocket Motors , Rocket Catapults

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Propulsion Component Test Facility

AGE: 41 years

REPLACEMENT VALUE: $8.75M

MAINTENANCE AND REPAIR BACKLOG: $6,000

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Upgrade of Firing Bay, Bldg 750, which includes a new test stand, data communication lines and electrical service.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0048

ADDITIONAL INFORMATION

Facility/Capability Title: Propulsion Component 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	28	22	22	22	20	20	20
Contractor	0	0	0	0	0	0	0
Total	28	22	22	22	20	20	20

Total Square Footage: 25,993 GSF

Test Area Square Footage: 25,993 GSF

Office Space Square Footage: None

Tonnage of Equipment: Unavailable

Volume of Equipment: Unavailable

Annual Maintenance Cost: $131,190

Estimated Moving Cost: Unavailable

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
0	$205,000	$200,000	0	0	0	0

00A9

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Propulsion Component Test Facility

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	68,950	68,950	65,503	65,503	60,331	60,331	51,713	48,265
	TEST HOURS	4,000	4,000	3,800	3,800	3,496	3,496	3,006	2,796
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

R

0050

23 September 1994
RFC # AW-092

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Propulsion Component Test Facility

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	68,950	68,950	65,503	65,503	60,331	60,331	51,713	48,265
	TEST HOURS	65,296	65,296	62,031	62,031	57,133	57,133	48,972	45,707
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

0050

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Propulsion Component Test Facility

ANNUAL HOURS OF DOWNTIME	1	468
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2	1.28
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	22.72

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
*	2	11	22	499.8
"Typical"	0	0		
			TOTAL Σ 22	

ANNUAL UNCONSTRAINED CAPACITY

9 182,441.6

* Standard Static Fire, Functional Ground Test, Thrust Vector Control, ROCAT

GENERAL INFORMATION

Facility/Capability Title: Environmental Test Facility

Origin Date: 05/05/94

Service: "N" Organization/Activity: Indian Head Division, NSWC (IHDIV)

Location: Indian Head, Maryland

T&E Functional Area: Armament/Weapons

UIC = 00174

T&E Test Facility Category Measurement Facilities (MF)

	T&E	S&T	D&E	IE	T&D	OTHER = 100%
PERCENTAGE USE:	10%	20%	50%	20&	—	—
BREAKOUT BY T&E FUNCTIONAL AREA (%)						
Air Vehicles	—	— 10%	—	—	—	—
Armament/Weapons	10% 10/100	20%	50%	20%	—	—
EC	—	—	—	—	—	—
Other	—	—	—	—	—	—

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

0052

TECHNICAL INFORMATION

Facility/Capability Title: Environmental Test Facility

Facility Description; Including mission statement:
The Environmental facilities at Indian Head simulates the adverse environments to which ordnance is subject during its normal life cycle. The types of testing performed fall into two general categories: mechanical testing and climatic testing.

- Mechanical testing includes shock, drop, vibration, leak, hydro (pressurized water), and acceleration testing.
- Climatic testing includes altitude, temperature, humidity, thermal shock, salt-fog, wind and rain, sand, and dust.

Environmental testing conducted at IHDIV is different from what is conducted routinely at other sites in that our tests are performed on explosive/propulsion components that necessitate special handling and safety precautions.

All facilities are set up for remote control and data acquisition. The Environmental testing capabilities includes lot acceptance testing (LAT), quality evaluation/type-life for fleet returns, engineer investigation, product improvement programs (PIP), and qualification tests.

The Environmental Test Facility also supports briefings to IHDIV and Coast Guard personnel on what to look for during an investigation of vendor environmental testing. This facility also offers technical expertise to other vendor test laboratories.

Additionally, the Electrostatic Discharge (ESD) facility at Indian Head is capable of conducting 300,000 volt discharge testing as required by MIL-STD-331. This test is to evaluate the effects of electrostatic discharges generated principally by helicopters which may affect ordnance. The ordnance may be part of helicopter weapons system, being carried on-board by troops, or being transported by helicopter. This capability supports the Navy Explosives Safety Program. In addition, this facility is only one of four the United States and is entirely unique because of its analytical capability to constantly measure/monitor voltage and current during testing of the ordnance. This facility also has the capability to control the temperature conditions of the test items.

Interconnectivity/Multi-Use of T&E Facility:

As defined by Data Call 13, this para N/A.

0053

Type of Test Supported:
The types of testing performed fall into two general categories: mechanical testing and climatic testing.

- Mechanical testing includes shock, drop, vibration, leak, hydro, and acceleration testing.
- Climatic testing includes altitude, temperature, humidity, thermal shock, salt-fog, wind and rain, and sand and dust.

The following are examples of items that are tested at the facility:
-Lot Acceptance Testing - Cartridge Actuated Devices (CADs)/Propellant Actuated Devices (PADs) items (IHDIV and private sector programs).
-Qualification evaluation - Harpoon program (U.S. & U.K. program).
-Engineering investigations - MK 104 Bulb Tip Crack investigation, HARM motor, and MK 66 investigation.
Product Improvement Programs (PIPs) - Lead-free propellant for MK 66 (environmental PIP).
Research and Development (R&D) programs - mine countermeasures programs (i.e. MK 22 Mod 4,and MK 47).
Qualification programs - Sidewinder, various JATOs, Harm and NACES rocket motors.

-The Electrostatic Discharge (ESD) facility is capable of conducting 300,000 volt discharge testing as required by MIL-STD-331. This test is to evaluate the effects of electrostatic discharges generated principally by helicopters on ordnance. The ordnance may be part of helicopter weapons system or ordnance being transported or carried by troops being transported. This capability supports the Navy Explosives Safety Program.

Summary of Technical Capabilities:

a. Digital/Analog Vibration Control System includes 20,000 lb-f Electromagnetic Shaker: The vibration system is used to conduct environmental vibration tests on a wide array of ordnance and inert items to simulate adverse environmental conditions that the item will be exposed to during its normal service life. The equipment is moveable with a replacement value of $575,000.00

Keywords:
Electrostatic Discharge (ESD)
Mechanical Testing
Climatic Testing

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Environmental Test Facility

AGE: 33 years

REPLACEMENT VALUE: $2.43M

MAINTENANCE AND REPAIR BACKLOG: $5,000

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Construction of Electro-Static Discharge Facility

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0056

ADDITIONAL INFORMATION

Facility/Capability Title: 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	10	10	10	10	10	10	10
Contractor	0	0	0	0	0	0	0
Total	10	10	10	10	10	10	10

Total Square Footage: 8,830 GSF

Test Area Square Footage: 8,830 GSF

Office Space Square Footage: None

Tonnage of Equipment: Unavailable

Volume of Equipment: Unavailable

Annual Maintenance Cost: $36,500

Estimated Moving Cost: Unavailable

CAPITAL EQUIPMENT INVESTMENT

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

0059

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Environmental Test Facility

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	17,238	17,238	17,238	17,238	17,238	17,238	17,238	17,238
	TEST HOURS	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

R

0058

23 September 1994
RFC # AW-092

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Environmental Test Facility

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	17,238	17,238	17,238	17,238	17,238	17,238	17,238	17,238
	TEST HOURS	15,583	15,583	15,538	15,583	15,583	15,583	15,583	15,583
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

0058

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Environmental Test Facility

ANNUAL HOURS OF DOWNTIME — 1 842 Hrs
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365) — 2 2.31
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) — 3 21.69

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	8 216.9
*	8	1.25	10	
				ANNUAL UNCONSTRAINED CAPACITY
				9 79,168.5
"Typical"	0	0		
			TOTAL Σ 10	

* Drop Test, Shock, Vibration, Leak, Acceleration, Climatic, Altitutde, ESD

0059

GENERAL INFORMATION

Facility/Capability Title: Cartridge Actuated Devices (CAD) Test Facility

Origin Date: 05/05/94

Service: "N" Organization/Activity: Indian Head Division, NSWC (IHDIV)

Location: Indian Head, Maryland

T&E Functional Area: Armament/Weapons

UIC = 00174

T&E Test Facility Category Measurement Facilities (MF)

	T&E	S&T	D&E	IE	T&D	OTHER = 100%
PERCENTAGE USE:	60%	05%	20%	25%	—	—
BREAKOUT BY T&E FUNCTIONAL AREA (%)						
Air Vehicles	—	—	—	—	—	—
Armament/Weapons	60%	05%	20%	25%	—	—
EC	—	—	—	—	—	—
Other	—	—	—	—	—	—

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

0060

TECHNICAL INFORMATION

Facility/Capability Title: Cartridge Actuated Devices (CAD) Test Facility

Facility Description; Including mission statement:
The Cartridge Actuated Devices (CADs) facility at Indian Head supports the IHDIV's TRI-SERVICE responsibility for Cartridges, CADs, and Aircrew Escape System (AEPS) components. Cartridges are installed in mechanisms or devices to convert the explosive energy into useful types of work. Examples are initiators, detonators, ignitors, delays, and cartridges for bomb release mechanisms. A CAD uses the ballistic energy produced by an explosive or propellant charge to perform some type of work, provide heat, provide pressure, and/or initiate another device. Typically a CAD will retain the explosive or propellant output. A Propellant Actuated Device (PAD) uses a propellant charge to perform some type of work by controlling the hot gases which are vented. Examples are aircraft canopy removing thrusters, ejection seat catapults, ejection seat rocket motors, and emergency door/hatch removers. The facilities simulate environments from 2,000 feet deep in the ocean to upper atmosphere with temperature ranges in excess of 65°F to +350°F. Procedures have been developed to test approximately 700 different cartridges and CADs in numbers sufficient to ensure reliability while minimizing the cost and time of testing. The capability supports the research, development and scale-up and production of CADs/PADs/AEPS at Indian Head, as well as, the testing of private contractors. Government acceptance and surveillance testing of these man-rated systems are both performed here.

Interconnectivity/Multi-Use of T&E Facility:

As defined by Data Call 13, this para is N/A.

Type of Test Supported:
The capability supports the research, development and scale-up and production of CADs/PADs/AEPS at Indian Head, as well as, the testing private contractors' components. Government acceptance and surveillance testing of these man-rated systems are both performed here. The different types of test conducted include functional testing of CADs/PADs/AEPS in simulated environments, high temperature exposure testing, altitude simulation testing, deep sea submergence testing, and ignition primer testing.

The following are examples of the various items and tests performed at the facility:
-Lot Acceptance Testing (LAT) - Energy Transfer Lines (Teledyne, E.T.), CCU-90 Fire Extinguisher Cartridge (ESD), JAU-53 Initiator (IHDIV), and M91 Impulse Cartridge (IHDIV).

0061

-Quality Evaluation/Type-Life - CCU-73 Delay Cartridge (IHDIV and private contractor).
-Engineering Investigations - Malfunction Investigations of M162 Fire Extinguisher Cartridge and M193 Fire Extinguisher Cartridge.
-PIP - M178 Impulse Cartridge and CCU-107 Impulse Cartridge (Storage Release Cartridges).
-R&D programs - Laser initiated CADS, M55 Ignition Element, and various Storage Release Cartridges.
-Qualification Programs - CEEDS (Cats Eyes Emergency Detachment System) and SH60 (Flotation Device Actuator).

Summary of Technical Capabilities:
Production cartridge actuated devices are proof-tested against performance specifications - Closed bomb test equipment: Many sized and ratings, including more than 500 different test fixtures.

Parachute spreader gun equipped with high speed video recorder and custom-designed velocity measurement system.

Stores ejection device - two dedicated test bays, stores ejection rank, bomb release racks, simulated bombs ranging from 25 lb. to 2,000 lb., and simulated missile stores.

Customer designed altitude chamber.

Catapult test facility.

IHDIV designed fixtures and instrumentation.

Keywords:
Cartridge Actuated Device (CAD)
Propellant Actuated Device (PAD)
Aircrew Escape Propulsion Systems (AEPS)

0062

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Cartridge Actuated Devices (CAD) Test Facility

AGE: 23 years REPLACEMENT VALUE: $1.88M

MAINTENANCE AND REPAIR BACKLOG: $8,000

DATE OF LAST UPGRADE: 1989

NATURE OF LAST UPGRADE: Replacement of Environmental Control in Bldg 889

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0063

ADDITIONAL INFORMATION

Facility/Capability Title: Cartridge Actuated Device (CAD) 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	18	13	13	13	13	13	13
Contractor	0	0	0	0	0	0	0
Total	18	13	13	13	13	13	13

Total Square Footage: 8,436 GSF

Test Area Square Footage: 8,436 GSF

Office Space Square Footage: None

Tonnage of Equipment: Unavailable

Volume of Equipment: Unavailable

Annual Maintenance Cost: $28,160

Estimated Moving Cost: Unavailable

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$147,726	0	0	0	0	0	0

0064

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Cartridge Actuated Devices (CAD) Test Facility

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	48,265	48,265	48,265	48,265	43,094	43,094	43,094	31,028
	TEST HOURS	10,000	10,000	10,000	10,000	8,900	8,900	8,900	6,408
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

R

0065

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Cartridge Actuated Devices (CAD) Test Facility

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	48,265	48,265	48,265	48,265	43,094	43,094	43,094	31,028
	TEST HOURS	46,190	46,190	46,190	46,190	41,241	41,241	41,241	29,694
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

0065

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Cartridge Actuated Devices (CAD) Test Facility

ANNUAL HOURS OF DOWNTIME	1	378 Hrs
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2	1.04
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	22.96

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8 298.5
*	5	2.6	13	
				ANNUAL UNCONSTRAINED CAPACITY
				9 108,945.2
"Typical"	0	0		
			TOTAL Σ 13	

* Closed bomb, Track, Water Resistence "Moby Dick", Bomb Rack, JAU 8 Type, Altitude, Cook-off, Non Firing, Shielded Detonator Cord, Blasting Cap, Primer, ESD, Drogue Release, Visible Cries

0066

GENERAL INFORMATION

Facility/Capability Title: Chemical/Physical Test Facility

Origin Date: 05/05/94

Service: "N" Organization/Activity: Indian Head Division, NSWC (IHDIV)

Location: Indian Head, Maryland

T&E Functional Area: Armament/Weapons

UIC = 00174

T&E Test Facility Category Measurement Facilities (MF)

	T&E	S&T	D&E	IE	T&D	OTHER = 100%
PERCENTAGE USE:	05%	30%	30%	35%	—	—
BREAKOUT BY T&E FUNCTIONAL AREA (%)						
Air Vehicles	—	—	—	—	—	—
Armament/Weapons	05%	30%	30%	35%	—	—
EC	—	—	—	—		
Other	—	-	—	—	—	—

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

0067

TECHNICAL INFORMATION

Facility/Capability Title: Chemical/Physical Characterization Facility

Facility Description; Including mission statement:
The state-of-the-art Chemical/Physical (ChemPhys) Characterization facilities at Indian Head contain all of the different equipments to offer a broad spectrum of services including metallurgical analysis, nuclear magnetic resonance spectrometry, fourier transform infrared spectroscopy, gas and liquid chromatography, ion chromatography, gel permeation chromatography, gas chromatography/mass spectrometry, ultraviolet/visible/near-infrared spectroscopy, atomic absorption and atomic emission spectroscopy, x-ray diffraction, scanning electron microscopy, thermal analysis, calorimetry (heat of explosion), particle size testing, physical measurement capabilities, and vacuum stability/Taliani testing. Analysts have broad knowledge and experience with explosives, propellants, and other energetic materials both known and unknown. A large component of the ChemPhys facilities is all the in-process type testing on command wherein the customer takes a sample and then suspends processing or does not start the manufacturing of propellants, motors, warhead and energetic materials. The facility provides all ballistic and physical properties data needed to support manufacturing, formulation and R&D.

State-of-the-art propellant properties test and evaluation require an integrated approach that reflects the interrelated phenomena that affects ballistic, mechanical, plume, and hazard properties. Modern solid propellants must meet an ever-increasing number of stringent performance requirements. Unlike the past, in which the motor designer specified primarily ballistic and mechanical property requirements, today's tactical propellants must conform to insensitive munitions, low smoke, plume signature, ballistic performance, and mechanical properties criteria. This trend will continue as future missile systems will must meet an increasingly complex set of mission requirements.

The material characterization facility also includes the explosive machining capability which has a complete spectrum of capabilities to machine bulk propellant or grain specimens for specialized requirements. The propellants are machined for the following reasons:

- For final fit into motor cases
- To create special grain shapes that cannot be cast or extruded
- To create test samples
- To excise propellant from motor cases.

The ChemPhys facility also includes the gun test facility at Rum Point. The gun test facility is mainly used to test projectiles and gun propellants for development and production programs.

0068

Interconnectivity/Multi-Use of T&E Facility:

Ad defined by Data Call 13, this para is N/A.

Type of Test Supported:
The following are examples of the various items and tests performed at the facility:

- In-process 24 hour support of the nitrated ester production at the Biazzi Plant.
- In-process pot life measurement to determine cure time for Standard Missile Warhead including SR121, LOVA, Javelin, and MK 50 Torpedo.
- All in house JATO, rocket motor and warhead ballistic and mechanical properties including SR121, MK 128, 2.75 Rocket Motor program, and Cartridge Actuated Device (CAD)/Propellant Actuated Device (PAD) Underseat Rocket Motors.
- In-process support of RDX Lova gun propellant manufacturing.
- In-process surveillance mechanical properties testing and analysis for Standard Missile.
- In-process support for the Trident surveillance aging plan.
- All in house, in-process warhead mechanical properties testing including Standard Missile plastic-bonded explosives.
- In-process support of the R&D development of new air bag propellant.
- In-process DOT hazards classification testing necessary to classify and transport products for all programs.
- Whole spectrum support (i.e. in-process, engineering investigation, failure investigation, and production) of the Tri-Service CAD/PAD programs.
- Support of the Tomahawk engineering investigation.
- Safety surveillance of gun propellant and explosives.
- Classified foreign ordnance identification and characterization.
- Failure analysis on squibs, HMS DET Cord, MK 66, Sidewinder, Phoenix, and Underseat Rocket Catapult.
- Characterization of the lead-free propellant MK 66, AA7 and KU formulations. Wrote specifications and test procedures.
- New materials characterization for Pilot Plant including ADN and CL20.
- Developed analytical methods for replacement fuel for Otto Fuel.
- Responsible for conducting tests for IHDIV's Environmental Protection Agency (EPA) requirements.

Summary of Technical Capabilities:

a. Boring Mill: The boring mill is a machine used to cut propellants and explosives from a remote location. This machine is specially designed to accommodate larger propellant samples and rocket motors. The mill is completely versatile and its capabilities are almost unlimited. The equipment is fixed. The machine is set on a special foundation and machine

0069

parts are trued and leveled with respect to each other. Remote control circuitry is run with conduit to the two remote control rooms at the machining facility. The cost to replace the boring mill is $900,000. The boring mill weighs approximately 40,000 pounds. and takes up 2,400 cubic feet.

The boring mill completes our capabilities as a propellant and explosive machining facility. This machine was designed and installed concurrently with the building design that houses it. To remove or relocate would require possible machine redesign and/or facility modifications.

b. High-Rate Tester: The test system is used to perform static tests (tensile, compression) on propellant and other energetic materials to define the mechanical behavior of the materials. The machine was specially designed to simulate the stresses and strains propellants would encounter upon ignition or detonation. This is a fixed asset with many facility support systems that are very difficult to move and relocate. The effort would require extensive facility modifications. Support systems include: hydraulic pump system, compressed gas delivery system, liquid nitrogen delivery system, and video monitoring system. The replacement value of the equipment is $850,000. The equipment's gross weight is approximately 5,000 pounds and it takes up 3,000 cubic feet of space. We receive outside contracts from private industry and other military operations requesting the tests this equipment performs.

Keywords:
Chemical/Physical (ChemPhys)

0070

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Chemical/Physical Characterization Facility

AGE: 30 years

REPLACEMENT VALUE: $12.07M

MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 1993

NATURE OF LAST UPGRADE: Construction of new Chemical Laboratory

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: None

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

ADDITIONAL INFORMATION

Facility/Capability Title: Chemical/Physical Characterization 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	50	47	47	47	47	47	47
Contractor	0	0	0	0	0	0	0
Total	50	47	47	47	47	47	47

Total Square Footage: 48,054 GSF

Test Area Square Footage: 48,054 GSF

Office Space Square Footage: None

Tonnage of Equipment: Unavailable

Volume of Equipment: Unavailable

Annual Maintenance Cost: $181,020

Estimated Moving Cost: Unavailable

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$178,000	99,000	0	0	0	0	0

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Chemical//Physical Characterization Facility

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	77,568	77,568	77,568	77,568	77,568	86,188	86,188	86,188
	TEST HOURS	71,130	71,130	71,130	71,130	71,130	79,034	79,034	79,034
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

0073

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Chemical//Physical Characterization Facility

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	77,568	77,568	77,568	77,568	77,568	86,188	86,188	86,188
	TEST HOURS	42,000	42,000	42,000	42,000	42,000	46,667	46,667	46,667
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

R

8073

23 September 1994
RFC # AW-092

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Chemical/Physical Characterization Facility

ANNUAL HOURS OF DOWNTIME	1	726 Hrs
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2	1.99
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	22.01

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
*	21	2.24	47	1,034.5
				ANNUAL UNCONSTRAINED CAPACITY 9 377,592.5
"Typical"	0	0	0	
			TOTAL Σ 47	

* Metallurgical Analysis, Nuclear Magnetic Resonance Spectrometry (Fourier Transform), Fourier Transform Infrared Spectroscopy, Gas and Liquid Chromatography, Ion Chromatography, Gel Permeation Chromatography, Gas Chromatography/Mass Spectrometry, Ultraviolet/Visible/Near-Infrared Spectroscopy, Atomic Absorption and Atomic Emission Spectroscopy, X-Ray Diffraction, Scanning Electron Microscopy, Thermal Analysis, Calorimetry (Heat of Explosion), Particle Size Testing, Physical Measurement Capabilities, Vacuum Stability/Taliani Testing, Ballistic Evaluation Motor, Strand Burning, Closed Bomb, Mechanical Properties, Energetic Materials Machining, Gun Test

0074

DATA CALL #13

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

CAPT David G. Maxwell
NAME (Please type or print)

Signature

Commander
Title

8 May 94
Date

Indian Head Division, NSWC
Activity

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)

CAPT David G. Maxwell
NAME (Please type or print)

Signature

Commander
Title

8 May 94
Date

Indian Head Division, NSWC
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

20 MAY 1994
Date

205

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION NAVAL SURFACE WARFARE CENTER **UIC:** 00174

Facility/Capability Title: N/A - IH DIV REPORTED NO TEST FACILITIES IN THE ELECTRONIC COMBAT CATEGORY

T&E Test Facility Category: N/A
(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 X.

FOR OFFICIAL USE ONLY

WC

G-01

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION NAVAL SURFACE WARFARE CENTER **UIC:** 00174

Facility/Capability Title: NON-DESTRUCTIVE TEST (NDT) FACILITY

T&E Test Facility Category: (HITL or ISTF) INDIV'S TEST CAPABILITY DOES NOT MEET THE HITL OR ISTF DEFINITION

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)	N/A	
Electro-Optical (EO)	N/A	
Infrared (IR)	N/A	
Millimeter Wave (MMW)	N/A	
Ultra Violet (UV)	N/A	
Laser	N/A	
MIDCOURSE INERTIAL/GPS (HITL)	N/A	

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes ___ No X.

FOR OFFICIAL USE ONLY

G-02

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174
NAVAL SURFACE WARFARE CENTER
Facility/Capability Title: PROPULSION/COMPONENT TEST FACILITY

T&E Test Facility Category: INDIV'S TEST CAPABILITY DOES NOT
(HITL or ISTF) MEET THE HTL OR ISTF DEFINITION

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)	N/A	
Electro-Optical (EO)	N/A	
Infrared (IR)	N/A	
Millimeter Wave (MMW)	N/A	
Ultra Violet (UV)	N/A	
Laser	N/A	
Mid Course Inertial/GPS (HITL)	N/A	

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes ___ No X.

FOR OFFICIAL USE ONLY

G-03

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174
NAVAL SURFACE WARFARE CENTER
Facility/Capability Title: ENVIRONMENTAL TEST FACILITY

T&E Test Facility Category: INDIV'S TEST CAPABILITY DOES NOT
(HITL or ISTF) MEET THE HITL OR ISTF DEFINITION

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)	N/A	
Electro-Optical (EO)	N/A	
Infrared (IR)	N/A	
Millimeter Wave (MMW)	N/A	
Ultra Violet (UV)	N/A	
Laser	N/A	
Mid Course Inertial/GPS (HITL)	N/A	

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes ___ No X.

FOR OFFICIAL USE ONLY

G-04

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION NAVAL SURFACE WARFARE CENTER **UIC:** 00174

Facility/Capability Title: CARTRIDGE ACTUATED DEVICE (CAD) TEST FACILI

T&E Test Facility Category: INDIV'S TEST CAPABILITY DOES NOT MEET THE HTL OR ISTF DEFINITION
(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)	N	/A
Electro-Optical (EO)	N	/A
Infrared (IR)	N	/A
Millimeter Wave (MMW)	N	/A
Ultra Violet (UV)	N	/A
Laser	N	/A
Mid Course Inertial/GPS (HITL)	N	/A

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes ___ No X.

FOR OFFICIAL USE ONLY

G-05

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174
NAVAL SURFACE WARFARE CENTER

Facility/Capability Title: CHEMICAL/PHYSICAL CHARACTERIZATION FACIL

T&E Test Facility Category: INDIV'S TEST CAPABILITY DOES NOT
(HITL or ISTF) MEET THE HTL OR ISTF DEFINITION

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)	N/A	
Electro-Optical (EO)	N/A	
Infrared (IR)	N/A	
Millimeter Wave (MMW)	N/A	
Ultra Violet (UV)	N/A	
Laser	N/A	
Mid Course Inertial/GPS (HITL)	N/A	

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes ___ No X.

FOR OFFICIAL USE ONLY

G-06

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174

Facility/Capability Title: PROPULSION/COMPONENT 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.

* SEE NOTE

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.

* INDIV'S TEST CAPABILITIES ARE FOR PROPULSION COMPONENTS OF A WEAPON SYSTEM. WE DO NOT DO PLATFORM INTEGRATIONAL TESTING.

FOR OFFICIAL USE ONLY

6-05

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174

Facility/Capability Title: CHEMICAL/PHYSICAL CHARACTERIZATION 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.

* SEE NOTE

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.

* INDIV'S TEST CAPABILITIES ARE FOR PROPULSION COMPONENTS OF A WEAPON SYSTEM. WE DO NOT DO PLATFORM INTEGRATIONAL TESTING.

FOR OFFICIAL USE ONLY

G-08

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174

Facility/Capability Title: ENVIRONMENTAL 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.

* SEE NOTE

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.

* INDIV'S TEST CAPABILITIES ARE FOR PROPULSION COMPONENTS OF A WEAPON SYSTEM. WE DO NOT DO PLATFORM INTEGRATIONAL TESTING.

FOR OFFICIAL USE ONLY

G-09

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174

Facility/Capability Title: CARTRIDGE ACTUATED DEVICE (CAD) 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.

* SEE NOTE

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.

* INDIV'S TEST CAPABILITIES ARE FOR PROPULSION COMPONENTS OF A WEAPON SYSTEM. WE DO NOT DO PLATFORM INTEGRATIONAL TESTING.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

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

Activity Title: INDIAN HEAD DIVISION **UIC:** 00174

Facility/Capability Title: NON-DESTRUCTIVE TEST (NDT) 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.

* SEE NOTE

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.

* INDIV'S TEST CAPABILITIES ARE FOR PROPULSION COMPONENTS OF A WEAPON SYSTEM. WE DO NOT DO PLATFORM INTEGRATIONAL TESTING.

FOR OFFICIAL USE ONLY

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

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 205	13	9/6/94	9/8/94
NUWC KEYPORT 209	5	8/26/94	9/6/94

Revision

DC #13 Clarification

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

NEXT ECHELON LEVEL (if applicable)

CAPT. W. J. NEWTON
NAME (Please type or print)

W. J. Newton
Signature

COMMANDER
Title

6 Sept 94
Date

INDIAN HEAD DIVISION, NSWC
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

G. R. STERNER
NAME (Please type or print)

Signature

Commander
Title

9-9-94
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

14 SEP 1994
Date

DC #13 Clarification
Control #: EC-02A

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

NEXT ECHELON LEVEL (if applicable)

CAPT. W. J. NEWTON
NAME (Please type or print)

W. J. Newton
Signature

COMMANDER
Title

12 Sept 1994
Date

INDIAN HEAD DIVISION, NSWC
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)

D P Sargent
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)

G. R. Sterner
Signature

G. R. STERNER
Title 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 and belief.

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

W. A. EARNER
NAME (Please type or print)

W A Earner
Signature

Title

9/29/94
Date

Certifications for EC-024
10/21/94

DC #13 Clarification
Control #: EC-02A

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

CAPT. W. J. NEWTON
NAME (Please type or print)

W. J. Newton
Signature

COMMANDER
Title

12 Sept 1994
Date

INDIAN HEAD DIVISION, NSWC
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

CAPT. W. J. NEWTON
NAME (Please type or print)

W. J. Newton
Signature

COMMANDER
Title

6 Sept 1994
Date

INDIAN HEAD DIVISION, NSWC
Activity

GENERAL INFORMATION

Facility/Capability Title: **Warheads Research Test Facility**

Origin Date: 4/22/94

Service: Navy Organization/Activity: NSWCDD Location: Dahlgren, VA

T&E Functional Area: Armament/Weapons UIC = N00178

T&E Test Facility Category Measurement Facility (MF)

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

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

32

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Warheads Research Test Facility

AGE: 35 years

REPLACEMENT VALUE: $5M

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: FY93

NATURE OF LAST UPGRADE: **Added 150 KV rod anode x-ray system. Added prototype tangential digital x-ray scanning system. Upgrade improved capability for radiographic inspection of ordnance items.**

MAJOR UPGRADES PROGRAMMED - **None**

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

33

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Warhead Research 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	**11,180**	**10,485**	**10,600**	**7,680**	**9,920**	**7,296**	**6,208**	**3,096**
	TEST HOURS	**2,236**	**2,097**	**2,121**	**1,536**	**1,984**	**1,824**	**1,552**	**1,032**
	MISSIONS								
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Warhead Research Test Facility

ANNUAL HOURS OF DOWNTIME	1	300
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	2	0.82
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	23.18

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	8 231
Explosive Detonation	1	4	4	
Ordnance Radiograph	1	2	2	ANNUAL UNCONSTRAINED CAPACITY
				9 84,607
"TYPICAL"	1	4	4	
			TOTAL ∑ 10	

TECHNICAL INFORMATION

Facility/Capability Title: Warheads Research Test Facility

Facility Description; Including mission statement: **The warheads research test facility includes areas for testing explosive devices up to 100 pounds of net explosive weight. Unique instrumentation includes flash x-ray and ultra high speed framing cameras . A nationally unique steel barbette test fixture allows the in strumentation to operate within the blast radius of the explosive device. The facility also has an installation for radiographic inspection of ordnance items.**
Interconnectivity/Multi-Use of T&E Facility: **The ordnance radiography facility is operated as part of the warhead research test facility. Ordnance radiography conducts pre-test and post-test radiographic inspections of ordnance. This capability is critical to all explosive and weapons development operations at NSWCDD.**
Type of Test Supported: **Detonations of explosive devices up to 100 pounds net explosive weight. Measurement of fragment velocity and dispersion via flash x-ray. Measurement of detonation properties of explosives. Photography of explosive devices during detonations. Radiographic inspection of ordnance and inert hardware.**
Summary of Technical Capabilities: **The warheads research test facility operates ultra high speed framing cameras capable of providing 2.5 million frames per second. The facility has over twenty channels of flash x-ray equipment with energy levels up to 1000 KV. The ordnance radiography facility has constant potential x-ray machines in 150 KV, 320 KV and 4 MeV energy levels. The facility also has a prototype digital tangential x-ray scanning system.**
Keyword: **Ordnance radiography, flash x-ray, ultra high speed photography**

ADDITIONAL INFORMATION

Facility/Capability Title: WARHEADS RESEARCH TEST FACILITY

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	5	4	3	3	3	3	3
Contractor							
Total	5	4	3	3	3	3	3

Total Square Footage: 5,100

Test Area Square Footage: 4,400

Office Space Square Footage: 700

Tonnage of Equipment: 660

Volume of Equipment: 25,000 CU FT

Annual Maintenance Cost: $10K

Estimated Moving Cost: $660K

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
55K	35K	20K	15K	15K	15K	15K

37

SITE: Naval Surface Warfare Center (Dahlgren, VA)											
		% T2P						Capacity			
Facility/Capability Title	TFC	Over All	A/V	A/W	EC	Test @ OT		Over All	A/V	A/W	EC
Warheads Research Test Fac	MF	0	0	0	0	2		0	0	0	0
ElectroMag Vulnerability Fac	MF	59	35	24	0	8		9477.76	5622	3855.4	0
ElectroMag Pulse Test Fac	MF	25	0	10	0	1		502	0	200.8	0
Explosive Experimental Area	MF	15	0	15	0	1		301.2	0	301.2	0
						Total MFCAP:		9979.76	5622	4357.4	0
Facility/Capability Title	TFC	Over All	A/V	A/W	EC	Test @ OT		Over All	A/V	A/W	EC
Potomac River Test Range	OAR	40	0	40	0	54		43372.8	0	43373	0
Search & Track Sensor Test	~~OAR~~ MF	5	0	5	0	5		502	0	502	0
						Total OAR CAP:		43874.8	0	43875	0

Book 207

Department of Defense

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

Naval Air Warfare Center Aircraft Division, Indianapolis, IN, Data

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.).

Naval Air Warfare Center (NAWC) Aircraft Division Indianapolis is not a T&E facility as traditionally interpreted by the industry. Classical T&E products and services are not principal elements of work supplied or performed by this site.

The NAWC Indianapolis mission is to: "Conduct research, development, engineering, material acquisition, pilot and limited manufacturing, technical evaluation, depot maintenance and integrated logistics support on assigned airborne electronics (avionics) ,missile, spaceborne, undersea, and surface weapon system, and related equipment. To perform such other functions and tasks as directed by the Commander, Naval Air Warfare Center." As part of this mission, NAWC Indianapolis only performs limited testing and evaluation at the component level in support of its engineering/manufacturing processes for avionic and electronic systems.

NAWC Indianapolis has the capability, facilities, and knowledge-base to provide support over the full acquisition life cycle for avionics, electronics systems, and selected equipment. NAWC Indianapolis is a totally integrated avionics and electronic systems engineering acquisition, manufacturing, and supportability activity. Testing is performed in support of providing products and services in compliance with that function and is a minor part (less than 10%) of the direct workload.

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, C41, 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.).

The NAWC Indianapolis facilities and laboratories that are used for limited testing are listed in Table 1 and are grouped under one of the test facility categories: Digital Modeling and Simulation (DMS); Integration Laboratories/Hardware-in the Loop Facilities (IL/HITLF); and Measurement Facilities (MF).

Note that digital modeling and simulation is used in all the other test facility categories. The categories of integration laboratories and hardware-in-the-loop facilities were joined together since the laboratories and facilities listed are multi-functional and are used for both purposes. It should be noted that for most of these laboratories and facilities testing is not their primary function.

Test Facility Category	NAWCAD INDIANAPOLIS Facility Name
Digital Models and Computer Simulation (DSM) Facilities	Central Computing Facility
	Electronic Warfare Facility
Integration Laboratories/ Hardware in the Loop Facilities	ALQ-170 Lab
	Avionics/Electronics Development Labs
	Digital Scene Matching Area Correlator (DSMAC) Lab
	Integrated Avionics Laboratory
	EP-3/ES-3 CILOP and Integrated Test Facility
	Secure Compartmented Integrated Facility
	TACAIR Pod Lab
Measurement Facilities	Industrial Facilities
	Product Quality Assurance and Evaluation Facilities

1.1.B Guidance for Military Department Data Collection

The Military Departments willuse 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

See Tab A for requested facility information.

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.

0007

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).

C008

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.

Testing at NAWC Indianapolis is focused mainly on development testing of avionics and electronic systems hardware and software. Typically formal operational testing and evaluation occurs at locations other than NAWC Indianapolis.

Most of the physical and measurement testing performed at NAWC Indianapolis in the industrial facilities and the product quality assurance and evaluation facilities is not related to the functional areas listed above but rather related to the engineering/manufacturing processes used and the type of hardware (electronics, cabling, and wiring which includes printed wiring boards, surface mount, microelectronics, etc.) being developed and produced. The one exception IS the Walleye Weapon All Up Round (AUR) testing using the DSM-96 test stand which is part of the industrial facilities and could fall under the Armament/Weapons category.

Functional testing which is typically done in the Digital Models and Computer Simulation (DMS) Facilities, in the Integration Laboratories and the Hardware in the Loop Facilities would be categorized under Air Vehicles with the notable exception of the hardware/software and integration testing being done in the EW and the ALQ-170 Labs which would fall under Electronic Combat Systems.

0009

Test Facility Category	NAWCAD INDIANAPOLIS Facility Name	T&E Functional Area
Digital Models and Computer Simulation (DMS) Facilities	Electronic Warfare Facility	Electronic Combat
	ALQ-170 Lab	Electronic Combat
Integration Laboratories/ Hardware in the Loop Facilities	Avionics/Electronics Development Labs	Air Vehicles
	Digital Scene Matching Area Correlator (DSMAC) Lab	Air Vehicles
	EP-3/ES-3 CILOP and Integrated Test Facility	Air Vehicles
	Integrated Avionics Labs	Air Vehicles
	Secure Compartmented Integrated Facility	All
	TACAIR Pod Lab	Air Vehicles
Measurement Facilities	Industrial Facilities	Air Vehicles
	Product Quality Assurance and Evaluation Facilities	All

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

C'O'C

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.

See Tab A for requested facility information

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.

0011

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.

	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93
Total Work Years *	1754	1721	1718	1844	1890	1911	1885	1821
T&E Work Years	147	144	144	154	158	160	158	152

***excludes overtime**

T&E Work Years by facility are shown in Tab A

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional means 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.

0012

Functional Area	Appropriation	FY92 Total $ K	FY93 Total $ K	FY94 Total $ K	FY95 Total $ K	FY96 Total $ K	FY97 Total $ K	FY98 Total $ K	FY99 Total $ K
Air Vehicles	AP1	150	175	132	159	172	180	186	194
	AP5	111	129	98	118	127	132	138	143
	AP7	100	117	88	107	115	120	125	130
	APN	2384	2793	2107	2548	2743	2853	2967	3086
	DBO	33	38	29	35	37	39	40	42
	FMS	432	506	382	461	497	516	537	559
	MCP	7	8	6	7	7	8	8	8
	OMN	1902	2228	1681	2033	2188	2276	2367	2462
	OPN	8	9	7		9	9	10	10
	OSD	226	265	200	242	260	271	282	293
	RDT&E 6.3A	7	8	6	7	7	8	8	8
	RDT&E 6.3B	130	152	115	139	150	156	162	168
	RDT&E 6.4	2713	3178	2398	2900	3122	3247	3377	3512
	RDT&E 6.6	133	155	117	142	153	159	165	172
	WPN	139	163	123	149	160	166	173	180
Electronic Combat (EC)	AFR	112	130	98	11	127	132	138	143
	APN	99	116	88	106	114	118	123	128
	DBO	189	221	167	20	217	226	235	244
	MCN	9	11	8	10	10	11	11	12
	OMN	254	297	224	271	292	303	315	328
	RDT&E 6.3A	70	82	62	75	81	84	87	91
	RDT&E 6.3B	40	47	36	43	46	48	50	52
	RDT&E 6.4	480	562	424	513	552	574	597	621
	RDT&E 6.4	4	5	3	4	4	5	5	5
Armaments/ Weapons	AP1	148	174	131	158	171	177	184	192
	APN	5	6	4	6	6	6	6	7
	DBO	181	212	160	193	208	216	225	234
	FMS	186	218	164	199	214	222	231	241
	OMN	177	207	156	189	203	212	220	229
	RDT&E 6.3B	59	69	52	63	67	70	73	76
	RDT&E 6.4	21	24	18	22	24	25	26	27
	WPN	803	94	710	859	924	961	1000	1040

0013

Functional Area	Appropriation	FY92 Total $ K	FY93 Total $ K	FY94 Total $ K	FY95 Total $ K	FY96 Total $ K	FY97 Total $ K	FY98 Total $ K	FY99 Total $ K
Other	AFR	26	30	23	28	30	31	32	34
	AP1	166	195	147	178	191	199	207	215
	AP5	130	152	115	139	150	156	162	168
	AP6	61	72	54	65	70	73	76	79
	AP7	159	186	140	170	182	18	097	205
	APN	1278	1497	1130	1366	1470	1529	1590	1654
	ARM	86	101	76	92	99	103	107	111
	DBO	1322	1549	1169	1413	1521	1582	1645	1171
	FAA	394	461	348	421	453	471	490	510
	FMS	52	61	46	56	60	62	65	67
	MCP	849	994	751	907	977	1016	1056	1099
	MIS	20	23	17	21	22	23	24	25
	OMN	332	388	293	354	381	397	413	429
	OPN	2250	2636	1989	2405	2589	2693	2801	2913
	OSD	65	76	57	69	75	78	81	84
	PPP	31	37	28	33	36	37	39	40
	RDT&E 6.3A	426	500	377	456	491	510	531	552
	RDT&E 6.3B	246	287	217	263	283	294	306	318
	RDT&E 6.4	294	344	260	314	338	352	366	380
	RDT&E 6.5	12	14	10	13	13	14	15	15
	RDT&E 6.6	164	192	145	175	188	196	204	212
	SCN	35	41	31	38	40	42	44	45
	WPN	113	132	100	121	130	135	141	146

-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

FUNCTIONAL AREA	TEST WORKLOAD	
	FY92	FY93
Air Vehicle	**67**	**65**
Electronic Combat	**10**	**10**
Armament/Weapons	**13**	**12**
Other Tests	**68**	**65**
Other	**0**	**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.

See Tab A for requested facility information.

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

Assuming unlimited manpower and consumable supplies, the only limitation to capacity is the need to maintain and repair the equipment used.

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?

None of the NAWC Indianapolis facilities have an official T&E Mission. Facilities that are used to perform some test activities are primarily used for other purposes as discussed previously. These facilities are critical to the performance of the NAWC Indianapolis mission of integrated electronic system development, design and prototyping.

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

NAWC Indianapolis provides hardware and software products to other activities on which official T&E functions are performed. Any reduction in the facilities needed to provide these products at an acceptable and mature design and performance level, would require additional testing be performed by other activities to validate hardware and software designs. Not only would this impact the workload at other sites, it could create the need for the establishment for additional testing resources and will additionally increase cycle time in meeting fleet needs.

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

The ability to respond quickly to Fleet urgent requirements for avionics/ electronic systems is an essential element of the NAWC Indianapolis mission. Any impact on this requirement has a direct coupling to activities performed by other sites and subsequently the effectiveness of the armed forces. This impact has been evident in every conflict that has occurred. Urgently needed special equipment was supplied to support events in the Gulf War, Bosnia, post Gulf war international incidents and anticipated action elsewhere in the world.

The loss or non-availability of essential facilities, used primarily for the purpose of avionics/electronics system development, prototyping, and limited emergency manufacturing, could have a critical impact on the armed services.

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.*

0017

-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.

See Tab A

-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.

NAWC Indianapolis is not involved with real test or near real time exchange of data with external sites for purposes of conducting tests.

-3.1.B Facility Condition (MV 11) - 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

There are no limiting environmental or encroachment characteristics associated with this installation.

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

Not Applicable

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

The following describes all current environmental permits. None of these are temporary.

Air Permits - City of Indianapolis

0100-01	**Nebraska Boiler 1 }**	**Required for heating of the main building**
0100-02	**Nebraska Boiler 2 }**	**complex and to provide steam for humidity**
0100-03	**Nebraska Boiler 3 }**	**control and some industrial processes.**
0100-04	**Production Paint Booths (4) Required for ventilation of production painting processes.**	
0100-05	**Public Works Paint Booth - Required for general support of all operations.**	
0100-06	**Deburring - Required for ventilation of production deburring processes.**	
0100-07	**Misc. Solvent Use - Required for most industrial operations and some labs (where prototype hardware is developed).**	

Wastewater Permit - City of Indianapolis

36620101 **Covers metal finishing wastewater to the sanitary sewer. Currently effluent from the treatment plant (weekly samples) plus semi-annual samples from ancillary metal finishing processes not connected to the treatment plant: 1) water jet cutter, and 2) wave solder. Required for industrial operations which generate waste water that would be considered hazardous if drained to the sewer untreated.**

Underground Storage Tank Registration
Indiana Dept. of Envirn. Mgmt.

011237 **Tank 16 Gasoline, Tank 18 Diesel fuel - Required for operation of motor pool vehicles in general support of all operations.**

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

Population: 50 Mile radius is 1,789,736
100 mile radius is 4,385,199
140 mile radius is 11,521,607
200 mile radius is 18,230,277

-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.

Commercial air/land/sea traffic routes do not effect accomplishment of our mission.

-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; paratroops support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

No

Facilities needed to conduct test operations are contained within the main facility (site). No special support operations of an external nature are needed.

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

No

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

Not Applicable

-3.1.E Expandability (MV 111) - Measure of Merit: *Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.*

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

Yes

The main building complex has adequate interior height to accommodate construction of mezzanines, which would allow relocation of offices to provide additional ground floor space for labs. Approximately 93,000 square feet of net floor area could be added in this manner at an approximate cost of $5.6 million.

Provision of the additional mezzanine space would provide the capacity to absorb an additional 400 to 500 workyears depending upon the type of workload.

-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

No

0021

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

No

NAWC Indianapolis is located in a major metropolitan area and surrounded by residential and commercial/light industrial developments.

-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

Facility	Level of Classification
DSMAC Lab	Top Secret
ALQ-170 Lab	Secret
EP-3/ES-3 Facilities	Top Secret, Special Access Required
TACAIR Pod Lab	Secret
EW Lab	Secret
SCIFs	Top Secret, Special Access Required

The entire main facility of approximately 1 million square feet is a secure facility and can operate at the secret level.

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

Yes. Military Construction project P-028, Chemical Processes Facility, will provide approximately 25,000 square feet of additional floor space inside the main building complex. P-028 is presently programmed for FY-97 funding.

-3.1.F Uniqueness (MV 1) - Measure of Merit: *Extent to which the facility is one of-a kind.*

Unique Within

Facility	DoD	U.S.	Description
Integrated Avionics Lab			
DSMAC Lab	X		(1)
ALQ-170 Lab	X		(1)
EP-3/ES-3 Facilities		X	(1)
TACAIR Pod Lab	X		(1)
EW Lab			
Central Computer Facility			
SCIFs			
Engineering/Development Labs			
Product QA & Eval Facilities	X		(2)
Industrial Facilities	X		(2)

(1) Each of these labs is specially designed and outfitted for the specific program requirements of the system they support. The EP-3/ES-3 facilities are one-of-a-kind.

(2) This combination of comprehensive electronic/avionic production facilities (including over 30,000 square feet of clean rooms, microelectronic fabrication capabilities, printed wiring board fabrication capabilities, etc.) and specialized quality assurance/evaluation capabilities is unique to the DoD.

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

Yes - See Table Above

-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.

Yes - See Table above.

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

Yes

The workload over FY92 and FY93 was relatively stable. NAWC Indianapolis provides 3-4% of its total workload (approximately 60 direct work years) in supportof other DoD users. Of this support, less than 10% was associated with test and evaluation of avionic/electronic systems.

Agency	% of Total Workload
Air Force	.6%
Army	1.1%
Other (FAA, NASA)	1.4%

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?

There are 163 acres of land in Indianapolis and 22.5 acres on the island of St. Croix, U.S. V.I. NAWC Indianapolis has no air or sea range. The St. Croix complex is in the process of being transferred to another government agency.

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

Not Applicable

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

Not Applicable

002A

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.

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

3.1.G.8 What public airspace have you used for over flight 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.

Not Applicable

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

Sonobuoy testing at NAWC Indianapolis is limited to simple bench testing to verify basic operating parameters prior to Quality Assurance testing at the range described in section 3.1.H.3.

-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/river, desert, and sea. State the area of each in square miles.

None

-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.

The Naval Air Warfare Center Indianapolis, is responsible for the procurement and quality assurance testing of all sonobuoys. From 1986 through 1993 the Sonobuoy Quality Assurance Test Site (SQATS) located at St. Croix, U.S. Virgin Islands was used for R&D and Quality Assurance testing. Testing at St. Croix was terminated in FY-93.

The T&E workload at SQATS from 1986 through 1993 was less than 1% of the total workload of NAWC Indianapolis for each year.

In addition to the St. Croix test facility, NAWC Indianapolis also utilizes the Navy deep water test sites off the Alaskan coast. Approximately 1 man-year of support per year was required from 1986 through 1994.

-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?

Data in these boundaries is not available from National Weather Service. For daily Maximum temperature: An average of 34.2 days per year have 32 degrees as a maximum temperature, an average of 17.3 days per year have a maximum temperature of over 90 degrees. No other temperature data is available.

-3.1.H.5 What is the number of days per year the average relative humidity is

0026

below 30%? Between 30 and 80%? Above 80%?

Data in these boundaries not available from National Weather Service. Year-round averages by time of day are: 1:00 am 80%, 7:00 am 84%, 1:00 pm 62%, 7:00 pm 66%. No other humidity data is available.

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

None

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

None

-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?

Data in these boundaries not available from National Weather Service or Midwestern Climate Center. An average of 19.7 days per year have a visibility of one-quarter mile or less. No other visibility data is available

-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.

No data is available from any sources. This site does not have an airport or runway to perform flight tests.

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

Not Applicable

3.2 AIR VEHICLES

This functional area includes facilities involved in the testing of all air

OC27

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 11) - Measure of Merit: *Extent of range size to support weapon system requirements.*

Not Applicable

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

No

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

No

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

-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.

NAWC Indianapolis does not have an airfield

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

-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?

Not Applicable

-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)

NAWC Indianapolis does not have an airfield and does not conduct air vehicle testing.

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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.*

NAWC Indianapolis does not have a facility that simulates operation threats related to electronic combat. NAWC Indianapolis has designed, evaluated, fabricated and delivered equipment to the fleet which in and of itself is a threat simulator (i.e. AN/ALQ-170 simulator set, countermeasures). Testing and evaluation of these types of systems at NAWC Indianapolis is done to a limited extent by radiating to an external object and measuring reflected signals. Formal test and evaluation of the AN/ALQ-170 is performed by the Fleet.

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

Not Applicable

-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?

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

-3.3.A.7.B Representative distance?

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

NAWC Indianapolis performs design, development, and prototype efforts on electronic/Avionics systems, subsystems, and components for various Navy Weapon Systems. These efforts are generally in the area of electronics/avionics systems and the transition to production functions. In performance of these task, a limited level of test and evaluation is required. This test and evaluation is conducted in general engineering laboratories and facilities. The NAWC Indianapolis site does not own or control air/ground space or ranges to conduct test and evaluation for Armaments/Weapons.

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

No. This facility has no special limitations in its ability to test and evaluate aviation and shipboard electronic systems.

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

Not Applicable

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

None

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

None

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

Yes

NAWC Indianapolis has the capability to generate digital scene reference maps for use in Tomahawk/Digital Scene matching Area Correlator (DSMAC) flight hardware tests, flight software testing and development, and mission planning algorithm development, and verification.

3.4 ARMAMENTS / WEAPONS

The 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 11) - 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.

NAWC Indianapolis has no work in the area of Directed Energy Weapons and therefore does not perform test and evaluation in this area.

-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?

Not Applicable

-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.

NAWC Indianapolis performs design, development, and prototype efforts on systems, subsystems, and components for various Rocket/Missile/Bomb Systems. These efforts are generally in the area of electronics/avionics systems and the transition to production functions. In performance of these tasks, a limited level of test and evaluation is required. This test and evaluation is conducted in general engineering laboratories and facilities. The NAWC

Indianapolis site does not own or control air/ground space or ranges to conduct test and evaluation for Armaments/Weapons.

-3.4.B.1 Ground Space

Not Applicable

-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?

Not Applicable

-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.

Not Applicable

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

Not Applicable

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., GBU24 class)
---live?
---inert?
--Stand-off weapon (e.g., AGM-130 class) ---live?
---inert?
--Short-range missile (e.g., AEVI-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

Not Applicable

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

Not Applicable

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

Not Applicable

-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.

Not Applicable

0037

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 chive 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

(2) Measurement Facilities (MF)- Those facilities used to provide a specialized test environment and/or data collection capability. IVIFs 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). HIEs 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.

0040

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.

CC41

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, 17E, 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)).

CC42

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: **Central Computing Facility (CCF)**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = **N00163**

All

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

0046

TECHNICAL INFORMATION

Facility/Capability Title: **Central Computing Facility (CCF)**

Facility Description; Including mission statement:

The CCF is a secure site for the location of the central computers that serve as the main computational capability for all business computer functions and processing. This facility also houses the communication control devices. The CCF houses the DEC VAX computer cluster that processes all business systems including; financial, material, engineering, and various other support systems. This facility holds all current business data on storage devices for immediate user access.

The CCF includes a Satellite Computer Facility which provides electronic mail, business application software and engineering and manufacturing software. This facility houses the computer used as the gateway to the Defense Data Network (DDN) and provides some backup to the CCF. The CCF includes an Office Automation Computer Facility which provides a single platform for electronic mail, word processing, spreadsheets, data tables, and calendar with automated scheduling. The CCF also includes the Network Control Center/Material Information Tracking System (MITS) which houses supply storage space, magnetic tape storage, local area network control, outside access dialback control, high volume laser printer and MITS Tandem computer.

The CCF is a critical computing resource needed by the Integrated Avionics Lab to host its environmental and platform simulations. The CCF also supplies software development environments for the Avionics/Electronics Development Lab.

Interconnectivity/Multi-Use of T&E Facility:

This facility supports the Integrated Avionics Laboratory, the Avionics/Electronics Development Laboratory and the aircraft vibration data reduction efforts performed by NAWCAD Indianapolis. This facility supplies much of the computing power required by the Integrated Avionics Lab for its environmental and platform simulations.

0047

FOR OFFICIAL USE ONLY

Facility/Capability Title: **Central Computing Facility (CCF)**

Type of Test Supported: **All testing done in this facility is done in conjunction with the Integrated Avionics Laboratory and the Avionics/Electronics Development Laboratory.**
Summary of Technical Capabilities: **DEC VAX computer cluster including the communication control devices.** **VAX 8824 CPUs** **VAX 6510 CPUs** **65 Disk Drives VAX 8550s** **8 Magnetic Tape Units**
Keywords: **Computers, Simulation, Modeling, Data Reduction**

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **Central Computing Facility (CCF)**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	8	8	8	8	8	8	8
Contractor							
Total	8	8	8	8	8	8	8

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for an insignificant amount of their workload.

Total Square Footage: **8,403**

Test Area Square Footage: **8,403**

Office Space Square Footage: **0**

Tonnage of Equipment: **32,000 lbs**

Volume of Equipment: **135k cu. ft.**

Annual Maintenance Cost: **$29,500**

Estimated Moving Cost: **$2,790,785**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$195,000	$341,000	$378,000	$421,000	$421,000	$421,000	$421,000

0049

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Central Computing Facility (CCF)**

AGE: **7 years** REPLACEMENT VALUE: **$2,200,000**

MAINTENANCE AND REPAIR BACKLOG: **$50k**

DATE OF LAST UPGRADE: **1987**

NATURE OF LAST UPGRADE: **Establishment**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Central Computing Facility (CCF)**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

Personnel associated with this facility are funded with general overhead funds. The T & E workload associated with this facility are represented in the Integrated Avionics Lab and the Avionics/Electronics Development Lab.

FOR OFFICIAL USE ONLY

0051

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Central Computing Facility (CCF)**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **930.93**
Software Functionality	**39**	**1**	**39**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **339,789**
		TOTAL	**39**	

FOR OFFICIAL USE ONLY

0052

Central Computing Facilities

UIC 00163
NAWCAD Indianapolis

0053

GENERAL INFORMATION

Facility/Capability Title: **AN/ALQ-170 Laboratory**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = **N00163**

EC

T&E Test Facility Category OMS PER PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	25	0	40	20	15	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	0	0	0	0	0	0	
Armament/ Weapons	0	0	0	0	0	0	
EC	25	0	40	20	15	0	
Other	0	0	0	0	0	0	

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

0054

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **AN/ALQ-170 Laboratory**

Facility Description; Including mission statement:

The Naval Air Warfare Center, Aircraft Division, Indianapolis is the lead field activity for the design, manufacturing and Fleet support of the AN/ALQ-170(V) Simulator Set, Countermeasures, The AN/ALQ-170(V) systems have the capability to functionally simulate all enemy and free world anti-ship missiles. This system is currently flown on A-6E, EP-3J and NKC-135A aircraft. The AN/ALQ-170(V) Development Laboratory provides capability to verify the operational status of each simulation with respect to the simulation hardware and software. Final testing of each system is verified prior to shipment to the designated Navy operational squadron. As upgrades to the V(3), 4 and 5 variants are incorporated into the design, this laboratory is used to verify the operation.

All ALQ-170 systems use this lab to radiate RF signals into free space through the laboratory window. This is done to track targets prior to system shipment. All ALQ-170(V) WRA's are integrated into the system in this laboratory.

This laboratory is used for a variety of ALQ-170 system evaluations. New hardware and software modifications are also evaluated with radiations, through the window. It is unique because of a special design window which allows RF radiation through it. The window must contain no-lead glass. It must also be angled outward to deflect radiation. There must be a clear field of view with no physical obstruction. It must be elevated a minimum of 35 feet above the ground to permit an adequate field of view. The window is four feet high and 12 feet long.

The equipment consists of a large pod mounted radar system which is 17 feet long and 30 inches wide. The system, with cart, weighs 2500 pounds. There must also be a freight elevator available for access to the laboratory which will accommodate this size and weight.

FOR OFFICIAL USE ONLY

Facility/Capability Title: **AN/ALQ-170 Laboratory**

Common support equipment, WRA test benches, and Depot WRA test sets are used for the testing and integration of ALQ-170(V) WRAs. Depot support and maintenance personnel also use this facility. This laboratory is a secured area. The laboratory must accommodate the following equipment:

1) **AN/ALQ-170(V) Test Bed Installation**
2) **AN/ALQ-170(V) System Test Sets**
3) **All AN/ALQ-170(V) WRA Depot Test Sets**
4) **Various common support equipment**
5) **RF/microwave Test Bench**
6) **High voltage transmitter test bench**

Interconnectivity/Multi-Use of T&E Facility:

No physical interconnections with any other lab internal or external. If this lab would be closed there would be no way to do functional testing of the ALQ-170 software developed in the EW lab.

The sole purpose of this Laboratory is to support the development and test of the hardware and software prior to delivery of the equipment to the fleet, where formal T & E is conducted.

Type of Test Supported:

This facility is used to trouble-shoot hardware failures as related to target tracking using high power radio frequency (RF) frequencies and for simulation software debugging. Test and evaluation is limited to developmental testing required prior to Fleet operation. No Fleet T&E is accomplished in this laboratory. Approximately 5% of the total time required to develop and test an AN/ALQ-170(V) system is accomplished in this facility. This equates to approximately 300 man hours for each system delivered or reworked.

0056

FOR OFFICIAL USE ONLY

Facility/Capability Title: **AN/ALQ-170 Laboratory**

Summary of Technical Capabilities:

The AN/ALQ-170(V) Development Laboratory provides the only location that permits the radiation of high power RF (Effective Radiated Power in excess of 1M watt) and thus the ability to search, acquire and track real targets. The laboratory is located approximately 40' above ground level and has special glass windows to reduce RF reflections. This laboratory has been in constant use for the AN/ALQ-170(V) program since 1980.

AN/ALQ-170(V) Test Bed Installation
AN/ALQ-170(V) System Test Sets
AN/ALQ-170(V) WRA Depot Test Sets
Various common support equipment
RF/microwave test bench
High voltage transmitter test bench

Keywords: **AN/ALQ-170(V), RF radiation, Anti-ship Missile (ASM) simulations**

0057

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **AN/ALQ-170 Laboratory**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	8	8	8	8	8	8	8
Contractor							
Total	8	8	8	8	8	8	8

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 25% of their workload.

Total Square Footage: **3,163**

Test Area Square Footage: **3,163**

Office Space Square Footage: **0**

Tonnage of Equipment: **8,400 lbs**

Volume of Equipment: **47k cu. ft.**

Annual Maintenance Cost: **$11,000**

Estimated Moving Cost: **$64,842**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **AN/ALQ-170 Laboratory**

AGE: **14 years** REPLACEMENT VALUE: **$900,000**

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1990**

NATURE OF LAST UPGRADE: **Upgrade equipment for latest version of ALQ-170.**

MAJOR UPGRADES PROGRAMMED

None.

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **AN/ALQ-170 Laboratory**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR	2	2	2	2	2	2	2	2
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

0060

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

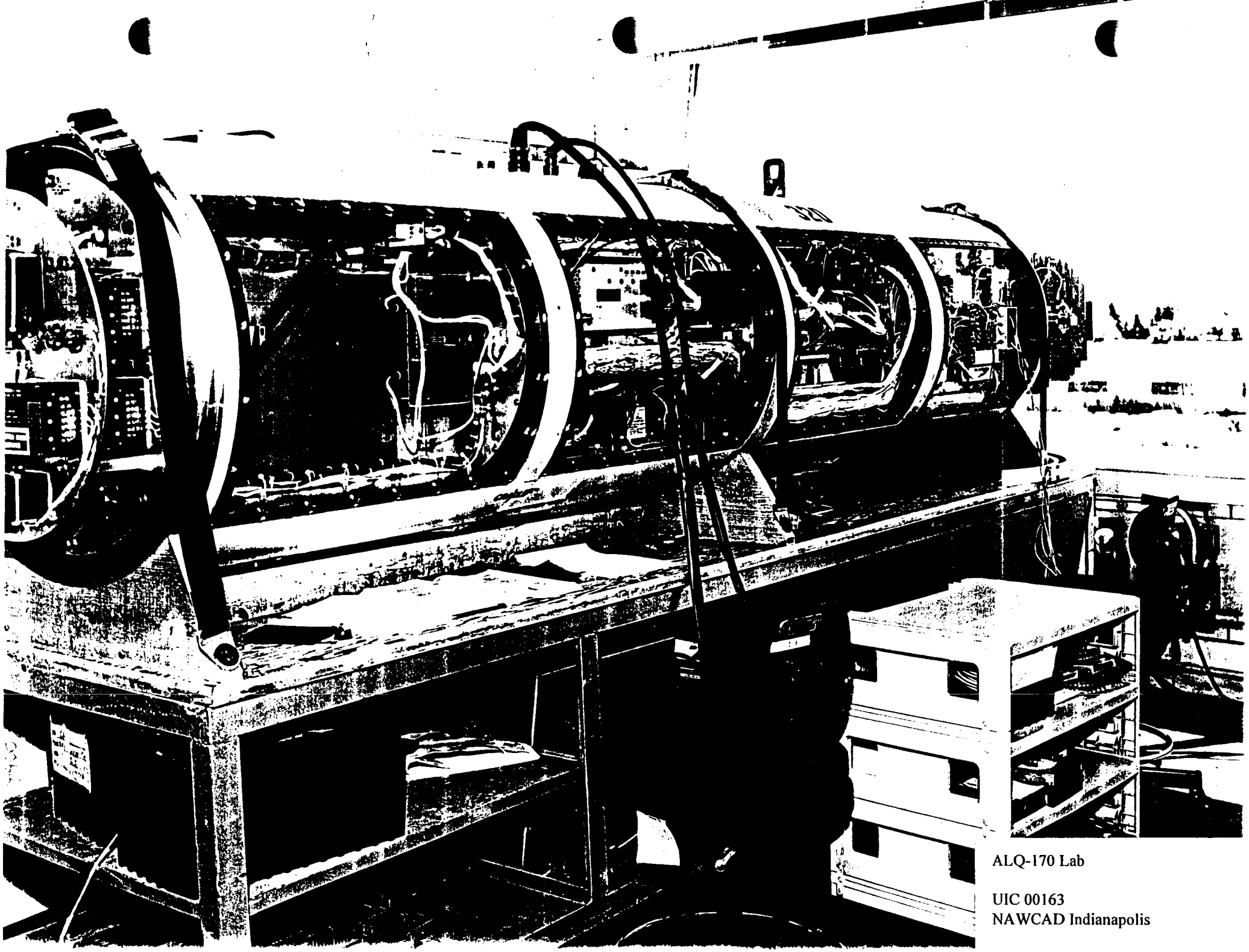
FACILITY/CAPABILITY TITLE: **AN/ALQ-170 Laboratory**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **358.05**
Software Functionality	3	1	3	
WRA Functionality	3	1	3	ANNUAL UNCONSTRAINED CAPACITY 9 **130,688**
System Functionality	3	3	9	
		TOTAL	15	

0061

FOR OFFICIAL USE ONLY



ALQ-170 Lab

UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

Facility/Capability Title: **Electronic Warfare Facility**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = **N00163**

EC

T&E Test Facility Category

OMS ALL PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	16	0	84	0	0	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	0	0	0	0	0	0	
Armament/ Weapons	0	0	0	0	0	0	
EC	16	0	84	0	0	0	
Other	0	0	0	0	0	0	

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

0063

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Electronic Warfare Facility**

Facility Description; Including mission statement:
The EW Facility provides the capabilities of: Bayesian radar identification algorithm development for Radar Warning Receivers (RWRs), jammers and ESM sets; and threat library maintenance for the ALR-76 RWR. **This facility is used to develop advanced missile threat simulations for the ALQ-170 Set which simulates missile threats against ship-board Electronic Counter Measures (ECM). Housed in this facility are all the computer resources necessary to code and burn programs into Read-Only Memory (ROM). Each workstation has removable hard drives for storing classified information and is set up in an environment where specific tasks are automated and Software Configuration Management is implemented with the aid of a EW Laboratory area network.**
Interconnectivity/Multi-Use of T&E Facility:
No physical interconnectivity but highly dependent on the ALQ-170 Laboratory for ALQ-170 software and integration testing. Develop ALQ-170 software in this lab but checkout, debug and testing is done in the ALQ-170 Laboratory. This facility is also used by the ALR-76 program which need threat library support that is developed in this lab. The AN/ALR-76 Programmable Interface Unit (PIU) is located in the EP-3/ES-3 CILOP and Integrated Test Facility. The PIU is a computer controlled device which allows the software programmers to debug and troubleshoot and change the code within the AN/ALR-76.
Type of Test Supported:
ALQ-170 software initial checkout; Bayesian radar identification algorithm validation and threat library development and validation.

0064

FOR OFFICIAL USE ONLY

Facility/Capability Title: **Electronic Warfare Facility**

Summary of Technical Capabilities:
The EW laboratory is a secured facility that contains several computer systems and software development stations used to support threat library development and ALQ-170 software development. **Desktop computing resources on a local area network.** **Secured facility.** **VAX 11/780**
Keywords:
AN/ALQ-170 Software, Bayesian Radar Identification Algorithm, Threat Libraries

0065

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **Electronic Warfare Facility**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	11	11	11	11	11	11	11
Contractor							
Total	11	11	11	11	11	11	11

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 16% of their workload.

Total Square Footage: **1,081**

Test Area Square Footage: **1,081**

Office Space Square Footage: **0**

Tonnage of Equipment: **2,400 lbs**

Volume of Equipment: **122k cu. ft.**

Annual Maintenance Cost: **$4,000**

Estimated Moving Cost: **$52,645**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$18,000	$18,000	$18,000	$18,000	$18,000	$18,000	$18,000

0066

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Electronic Warfare Facility**

AGE: **12 years** REPLACEMENT VALUE: **$400,000**

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1991**

NATURE OF LAST UPGRADE: **Addition of micro-VAX computer to upgrade ability to evaluate algorithms.**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

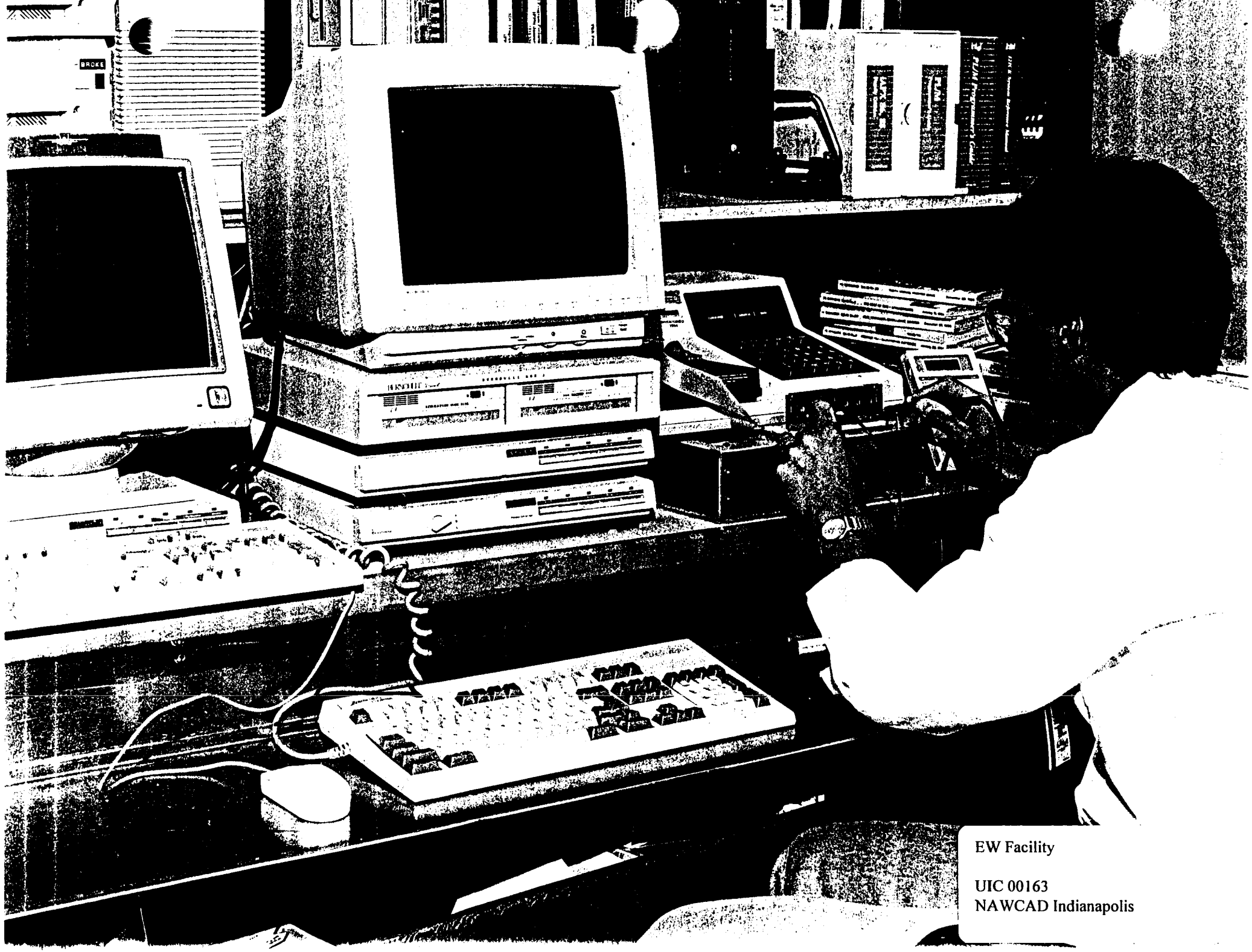
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0067

FOR OFFICIAL USE ONLY



EW Facility

UIC 00163
NAWCAD Indianapolis

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	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR	2	2	2	2	2	2	2	2
	TEST HOURS	2	2	2	2	2	2	2	2
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

0068

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Electronic Warfare Facility**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **143.22**
Software Functionality	**6**	**1**	**6**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **52,275**
		TOTAL	**6**	

FOR OFFICIAL USE ONLY

0069

FACILITIES

GENERAL INFORMATION

Facility/Capability Title: **Product Quality Assurance and Evaluation Facilities**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = **N00163**

All

T&E Test Facility Category

MF PER PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	54	0	15	16	0	15	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	20	0	5.6	6	0	5.6	
Armament/ Weapons	4	0	1.1	1.2	0	1.1	
EC	5.1	0	1.4	1.5	0	1.4	
Other	24.9	0	6.9	7.3	0	6.9	

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Product Quality Assurance and Evaluation Facilities**

Facility Description; Including mission statement:

The Environmental Test Facility includes a Climatic Test Laboratory and a Dynamic Test & Data Acquisition/Analysis Laboratory. The primary purpose of this facility is to conduct design development and manufacturing dynamic environmental tests on electronic equipment and systems including aircraft instrumentations and wiring. This facility also provides extensive climatic environmental test capability for first article and qualification testing of electronic equipment and systems

The Climatic Test Laboratory portion of the Environmental Test Facility includes; three temperature chambers, one thermal shock chamber, six temperature/humidity chambers, five altitude chambers, one altitude chamber, one accelerated weathering chamber, two salt spray chambers and one explosion chamber. 20

The Dynamic Test & Data Acquisition/Analysis Laboratory portion of the Environmental Test Facility includes ten vibration and four shock machines. This lab has the capabilities to perform; tests that duplicate gunfire vibration, aircraft propeller frequencies and other environments where distinct sinusoidal frequencies are injected over a random vibration spectrum; tests to verify the ability of shipboard installations to withstand shock loadings which may occur during wartime service; and simulations involving aircraft landings, catapult takeoffs and arrested landings. 14

The Lighting/Night Vision Laboratory provides testing and evaluation of aircraft crew station and exterior lighting systems including night vision compatible lighting. This lab is used for qualification, first article, acceptance test and sample plan approval on any aircraft lighting including night vision compatible lighting. The SMQ-11 receiving inspection testing for single line CRTs is conducted in this lighting lab. 1

The Lighting/Night Vision Laboratory has the capability to be used in creating NVIS standards for calibration of the spectroradiometer system which is a required test system for all certified night vision compatible lighting test labs. 1

FOR OFFICIAL USE ONLY

Facility/Capability Title: **Product Quality Assurance and Evaluation Facilities**

The Failure Analysis Facility is used to determine the failure mechanisms and causes of failed electrical and electronics component parts and subassemblies in order to recommend corrective actions to prevent the recurrence of system failures.

This facility performs; Destructive Physical Analysis (DPA) and Failure Analysis (FA), houses the only government-owned Scanning Auger Multiprobe (SAM), has the combined functions of Auger Electron Spectroscopy (AES) and Secondary Ion Mass Spectroscopy (SIMS), holds two Scanning Electron Microscopes (SEMs), and houses an Energy Dispersive x-ray Analysis System (EDXA).

The EMI Facility conducts design, development and first article qualification tests used to assess the conducted and radiated electromagnetic profiles of airborne and shipboard electronic systems. Measurements are performed at all levels of product development, from brassboard to production phase systems. In addition to EMI testing, this facility can perform the following testing: bonding; interference control; insertion loss, attenuation of enclosures; radio frequency spectrum characteristics; radar engineering design requirements; aircraft power characteristics; electrical connectors; and connector and cable shielding.

This facility consisted of three shielded enclosures: one anechoic shielded enclosure, one partially anechoic enclosure, and one Mode-Stirred Chamber. Enclosure 1 is a free standing dual chamber of welded construction which allows one side to be used as a test cell and the other to be used as an instrumentation cell. Enclosure 2 is a free standing modular chamber of bolted construction with several movable absorber panels used to make the chamber semi-anechoic over its usable frequency range. Shielded Enclosure 3 is a free standing modular chamber of bolted construction and made from highly reflective zinc clad steel panels.

The Audio Laboratory provides test and evaluation of audio communication components. This lab is used for qualification, first article, production lot and component verification/evaluation testing. The lab has the capability of low and very high level noise testing. Some of the items that can be tested in the Audio Laboratory include: earphones, microphones, cable assemblies, handsets, Active Noise Reduction (ANR) units and microphone preamplifiers.

FOR OFFICIAL USE ONLY

Facility/Capability Title: **Product Quality Assurance and Evaluation Facilities**

The Audio Laboratory consists of a doubled walled sound chamber and an audio room control center. The sound chamber is a dual purpose semi-reverberant chamber and a sound absorbent chamber. The sound chamber will also allow the reproduction of the noise existing in and around the rotary wing and fixed wing aircraft.

The Centrifuge - Acceleration Test Facility has the capability to conduct design, development, and manufacturing acceleration tests on electronic equipment and systems. This facility is a dedicated building which includes two centrifuge systems: one with a fifteen foot radius arm and one with a two foot radius arm.

The fifteen foot Centrifuge is used for qualification and production testing. This system is used for larger assemblies requiring acceleration testing. Some of the unique capabilities include: 148 slip rings that allows for equipment to be monitored during acceleration tests; 3 rotary coaxial joints for signals requiring shielding; rotary glands which allow cooling or other liquids as well as vacuum and pressure to be utilized by the unit under test during acceleration; a video camera mounted under the arm and another stationary camera in the arm room for monitoring the tests; and the ability to be configured with a rotating table attached to the end of the arm for more specialized tests. The two foot Centrifuge is used for smaller units requiring acceleration testing. This system is used for aircraft instruments and accelerometer. Some of the unique capabilities include: 16 slip rings used to operate the equipment during acceleration tests; a rotary joint for applying pressure or vacuum to the unit under test; and a video camera mounted on the centrifuge arm for monitoring the performance of the unit under test.

The Material Laboratory consists of an Metals/Composite Laboratory, an Organic Materials Laboratory and an Inorganic Material Laboratory which provide analysis and consultation on metals, composites, organic and inorganic chemistry.

The Metals/Composite Laboratory provides test and evaluation of materials and composite material prototype manufacturing and repairing. This lab performs: failure analysis of metals, composites and other materials; inspection and evaluation of the mechanical properties of materials; metallography, x-ray radiography, and optical microscopy; photographic documentation; chaff evaluation; composite prototypes and lay ups; and evaluation of adhesives and potting.

FOR OFFICIAL USE ONLY

Facility/Capability Title: **Product Quality Assurance and Evaluation Facilities**

The Organic Materials Laboratory performs analysis on organic chemicals and material of all types. This lab has the ability to perform: shelf life determinations; monitoring of waste streams for environmental compliance; analysis on hazardous material; tests on failure analysis and manufacturing process problems; Surface Insulation Resistance (SIR) testing on electronic boards; and electronic discharge and other types of electrical testing.

The Inorganic Materials Laboratory performs all the analytical testing required to: analyze plating baths used in Printed Wiring Board (PWB) fabrication and metal finishing; monitor waste streams leaving wastewater treatment systems; verify proper corrosion control of powerhouse boiler and cooling waters; analyze all metallic materials that require receiving inspection; verify proper quality and identify contaminant levels in Class 100 clean room water distribution; perform acceptance testing on optical components for night vision, walleye, and DSMAC applications, perform alloy identification for failure investigations; and monitor contaminant levels in manufacturing solder pots.

Interconnectivity/Multi-Use of T&E Facility:

No physical interconnections with any other lab internal or external to NAWC Indianapolis.

Type of Test Supported:

See Technical capabilities below.

Summary of Technical Capabilities:

Audio, acceleration, EMI, shock, temperature, altitude, temperature/humidity, accelerated weathering, salt spray, explosion, vibration, and night vision compatibility testing. The full spectrum of material evaluation and component failure analysis capabilities.

Keywords:

Audio, EMI, Shock, Temperature, Humidity, Salt Spray, Explosion, Vibration, Night Vision

00155

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **Product Quality Assurance and Evaluation Facilities**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	73	73	73	73	73	73	73
Contractor							
Total	73	73	73	73	73	73	73

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 54% of their workload.

Total Square Footage: **45,883**

Test Area Square Footage: **45,883**

Office Space Square Footage: **0**

Tonnage of Equipment: **624,714 lbs**

Volume of Equipment: **1,056k cu. ft.**

Annual Maintenance Cost: **$160,600**

Estimated Moving Cost: **$2,294,150**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$225,000	$393,000	$436,000	$485,000	$485,000	$485,000	$485,000

0096

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Product Quality Assurance and Evaluation Facilities**

AGE: **38 years** REPLACEMENT VALUE: **$14,931k**

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1993**

NATURE OF LAST UPGRADE: **Upgraded and expanded Night Vision Laboratory.**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Product Quality Assurance and Evaluation Facilities**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	14	14	14	15	15	15	15	15
	TEST HOURS	12	12	12	13	13	13	13	13
	MISSIONS								
EC	DIRECT LABOR	3	3	3	3	3	3	3	3
	TEST HOURS	3	2	2	3	3	3	3	3
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	4	4	4	4	4	4	4	4
	TEST HOURS	3	3	3	3	3	3	3	3
	MISSIONS								
OTHER T&E	DIRECT LABOR	17	17	17	18	19	19	19	18
	TEST HOURS	15	15	15	16	16	16	16	16
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

3603

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Product Quality Assurance and Evaluation Facilities**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **1,169.63**
Audio Component	**1**	**1**	**1**	
Acceleration	**2**	**1**	**2**	ANNUAL UNCONSTRAINED CAPACITY 9 **426,915**
EMI	**3**	**2**	**6**	
Temperature	**3**	**1**	**3**	
Thermal Shock	**1**	**1**	**1**	
Temperature/ Humidity	**6**	**1**	**6**	
Altitude	**5**	**1**	**5**	
Accelerated Weathering	**1**	**1**	**1**	
Salt Spray	**2**	**1**	**2**	
Explosion	**1**	**1**	**1**	
Vibration	**10**	**1**	**10**	
Shock	**4**	**1**	**4**	
Failure Analysis	**3**	**2**	**6**	
Night Vision Compatibility	**1**	**1**	**1**	
		TOTAL	**49**	

FOR OFFICIAL USE ONLY

GENERAL INFORMATION

Facility/Capability Title: **Industrial Facilities**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = **N00163**

All

T&E Test Facility Category

MF PER PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	4	0	10	10	0	76	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	0.98	0	2.2	2.2	0	16.1	
Armament/ Weapons	0.02	0	0.2	0.2	0	1.6	
EC	0.8	0	2.0	2.0	0	15.2	
Other	2.2	0	5.6	5.6	0	43.1	

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Industrial Facilities**

Facility Description; Including mission statement: **These facilities are utilized for hardware fabrication and concurrent engineering processes to protytype, modify, or manufacture avionics and electronic products resulting in design verification, quality hardware, manufacturing technology transfer, and a supportable data package available for competitive procurement. This includes extensive electronic assembly, microelectronics, machining, sheetmetal, model shop and manufacturing services, equipment and facilities. Essentially, all processes involved in producing avionic/electronic hardware.**
Interconnectivity/Multi-Use of T&E Facility: **No physical interconnections with any other lab internal or external.**
Type of Test Supported: **System acceptance, System reliability**
Summary of Technical Capabilities: **Fabrication of printed wiring boards, microcircuits, sheet metal enclosures and parts, machined parts, wire wrap plates, RF and semi-rigid cables, cables, harnesses, transformers, and power supplies. Heat treating, welding, painting, plating and encapsulation. Design and fabrication of program specific test equipment. Full spectrum calibration, measurement and inspection capabilities. Assembly of circuit boards, sub-assemblies, WRAs, full up electronic/avionic systems, ground support equipment and mechanical assemblies. Functional and reliability testing of all products.**
Keywords: **Plating, Painting, PWB, Assembly, Machining, Cables, Sheet Metal, Production, Fabrication, Calibration, Inspection, Reliability**

FOR OFFICIAL USE ONLY

2081

ADDITIONAL INFORMATION

Facility/Capability Title: **Industrial Facilities**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	935	935	935	935	935	935	935
Contractor							
Total	935	935	935	935	935	935	935

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 4% of their workload.

Total Square Footage: **330,159**

Test Area Square Footage: **330,159**

Office Space Square Footage: **0**

Tonnage of Equipment: **5,341,050 lbs**

Volume of Equipment: **14,097k cu. ft.**

Annual Maintenance Cost: **$1,155,600**

Estimated Moving Cost: **$9,904,770**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$1,468,000	$2,570,000	$2,851,000	$3,174,000	$3,174,000	$3,174,000	$3,174,000

FOR OFFICIAL USE ONLY

0082

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Industrial Facilities**

AGE: **52 years** REPLACEMENT VALUE: **$49,600,000**

MAINTENANCE AND REPAIR BACKLOG: **$2,356k**

DATE OF LAST UPGRADE: **1993-1994**

NATURE OF LAST UPGRADE: **Rearranged and modernized facilities to improve work flow and streamline processes, installed new equipment and added clean room facilities for PWB fabrication.**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Chemical Processes Building**

TOTAL PROGRAMMED AMOUNT: **$14.7M**
SUMMARY DESCRIPTION: **Provide 39,500 sq. ft. electrochemical plating and printed wiring board fabrication facility, with wastewater treatment, utility pit and air pollution abatement equipment.**

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

0083

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Industrial Facilities**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	7	7	7	8	8	8	8	8
	TEST HOURS	5	5	5	5	5	5	5	5
	MISSIONS								
EC	DIRECT LABOR	1	1	1	1	1	1	1	1
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	7	7	7	7	7	7	7	7
	TEST HOURS	5	4	4	5	5	5	5	5
	MISSIONS								
OTHER T&E	DIRECT LABOR	20	20	20	21	22	22	22	21
	TEST HOURS	13	13	13	14	14	15	14	14
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

0084

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Industrial Facilities**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **811.58**
System Acceptance	**8**	**2**	**16**	
System Reliability	**18**	**1**	**18**	ANNUAL UNCONSTRAINED CAPACITY 9 **296,227**
		TOTAL	**34**	

FOR OFFICIAL USE ONLY

3335

LABORATORIES

GENERAL INFORMATION

Facility/Capability Title: **TACAIR Pod Laboratory**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division, (NAWCAD)

T&E Functional Area: UIC = **N00163**

Air Vehicles

T&E Test Facility Category: **Integration Laboratory** **R**

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	10	0	90	0	0	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	10	0	90	0	0	0	
Armament/ Weapons	0	0	0	0	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

0086A

GENERAL INFORMATION

Facility/Capability Title: **TACAIR Pod Laboratory**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division, (NAWCAD)

T&E Functional Area: UIC = **N00163**

Air Vehicles

T&E Test Facility Category IL & HITL PLR PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	10	0	90	0	0	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	10	0	90	0	0	0	
Armament/ Weapons	0	0	0	0	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

see pg. 0086A

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **TACAIR Pod Laboratory**

Facility Description; Including mission statement: **The TACAIR Pod Laboratory has the capability to develop and maintain test pods for Tomahawk Cruise Missile sensors and guidance system testing including current and next generation systems.** **This lab is used to develop and maintain test pods deployed on UH-1 helicopters and military jet aircraft. All support equipment necessary to keep pods operational is maintained in the lab. Evaluations and enhancements for the current guidance systems employed in the Tomahawk and development of next generation down looking and forward looking sensors and guidance devices for future cruise missile applications are some of the capabilities of the TACAIR Pod Laboratory.**
Interconnectivity/Multi-Use of T&E Facility: **No physical interconnections with any other lab internal or external. If this lab would be closed there would be no way to support the equipment that actually performs the functional testing of the DSMAC software developed in the DSMAC lab, functional testing of the hardware and integration testing.**
Type of Test Supported: **Functional testing of the DSMAC software developed in the DSMAC lab, functional testing of the hardware and integration testing.**

0089

FOR OFFICIAL USE ONLY

Facility/Capability Title: **TACAIR Pod Laboratory**

Summary of Technical Capabilities:
Hardware support equipment (logic analyzers, power supplies, oscilloscopes) **Ruggedized PC computers** **Video equipment for sensor data review** **Pods with Tomahawk avionics, general purpose Attitude Heading Reference Systems, and other supporting equipment such as power and control boxes.**
Keywords:
Digital Scene Matching Area Correlator (DSMAC), Imaging, Pod Development

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **TACAIR Pod Laboratory**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	8	8	8	8	8	8	8
Contractor							
Total	8	8	8	8	8	8	8

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 10% of their workload.

Total Square Footage: **2,668**

Test Area Square Footage: **2,668**

Office Space Square Footage: **0**

Tonnage of Equipment: **7,600 lbs**

Volume of Equipment: **16k cu. ft.**

Annual Maintenance Cost: **$9,500**

Estimated Moving Cost: **$54,694**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$28,000	$28,000	$28,000	$28,000	$28,000	$28,000	$28,000

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **TACAIR Pod Laboratory**

AGE: **1 year** REPLACEMENT VALUE: **$600,000**

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1993**

NATURE OF LAST UPGRADE: **Establishment**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0090

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **TACAIR Pod Laboratory**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	1	1	1	1	1	1	1	1
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

AW-59

C0911

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

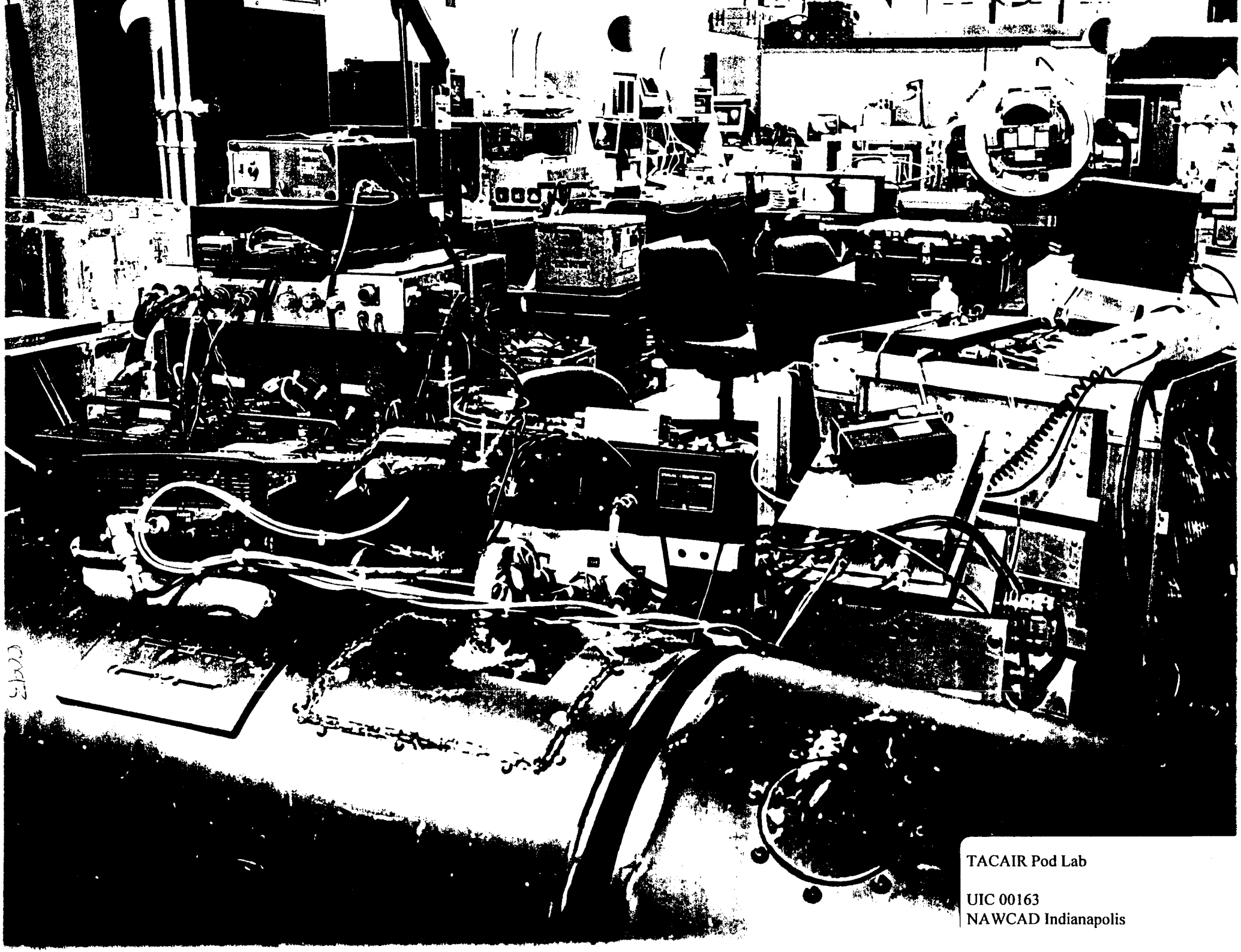
FACILITY/CAPABILITY TITLE: **TACAIR Pod Laboratory**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **381.92**
Software Functionality	**2**	**2**	**4**	
Hardware Functionality	**3**	**2**	**6**	ANNUAL UNCONSTRAINED CAPACITY 9 **139,401**
Integration Testing	**3**	**2**	**6**	
		TOTAL	**16**	

0092

FOR OFFICIAL USE ONLY



TACAIR Pod Lab

UIC 00163
NAWCAD Indianapolis

ADDITIONAL INFORMATION

Facility/Capability Title: **Secure Compartmented Integrated Facility**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	40	40	40	40	40	40	40
Contractor							
Total	40	40	40	40	40	40	40

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 1% of their workload.

Total Square Footage: **6,095**

Test Area Square Footage: **6,095**

Office Space Square Footage: **0**

Tonnage of Equipment: **3,200 lbs**

Volume of Equipment: **68k cu. ft.**

Annual Maintenance Cost: **$21,500**

Estimated Moving Cost: **$1,523,750**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$22,000	$22,000	$22,000	22,000	$22,000	$22,000	$22,000

FOR OFFICIAL USE ONLY

0096

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Secure Compartmented Integrated Facility**

AGE: **10 years** REPLACEMENT VALUE: **$2,000,000**

MAINTENANCE AND REPAIR BACKLOG: **$40k**

DATE OF LAST UPGRADE: **1992**

NATURE OF LAST UPGRADE: **Expansion. Added two rooms that met the acoustical and physical security requirements of DIAM 50-3.**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Advanced Avionics Systems**

   TOTAL PROGRAMMED AMOUNT: **$220k**
   SUMMARY DESCRIPTION: **Provide additional room meeting acoustical and physical security requirements of DIAM 50-3.**

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Secure Compartmented Integrated Facility**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	1	1	1	1	1	1	1	1
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

*** This information is not available for publication.**

FOR OFFICIAL USE ONLY

0058

DETERMINATION OF UNCONSTRAINED CAPACITY

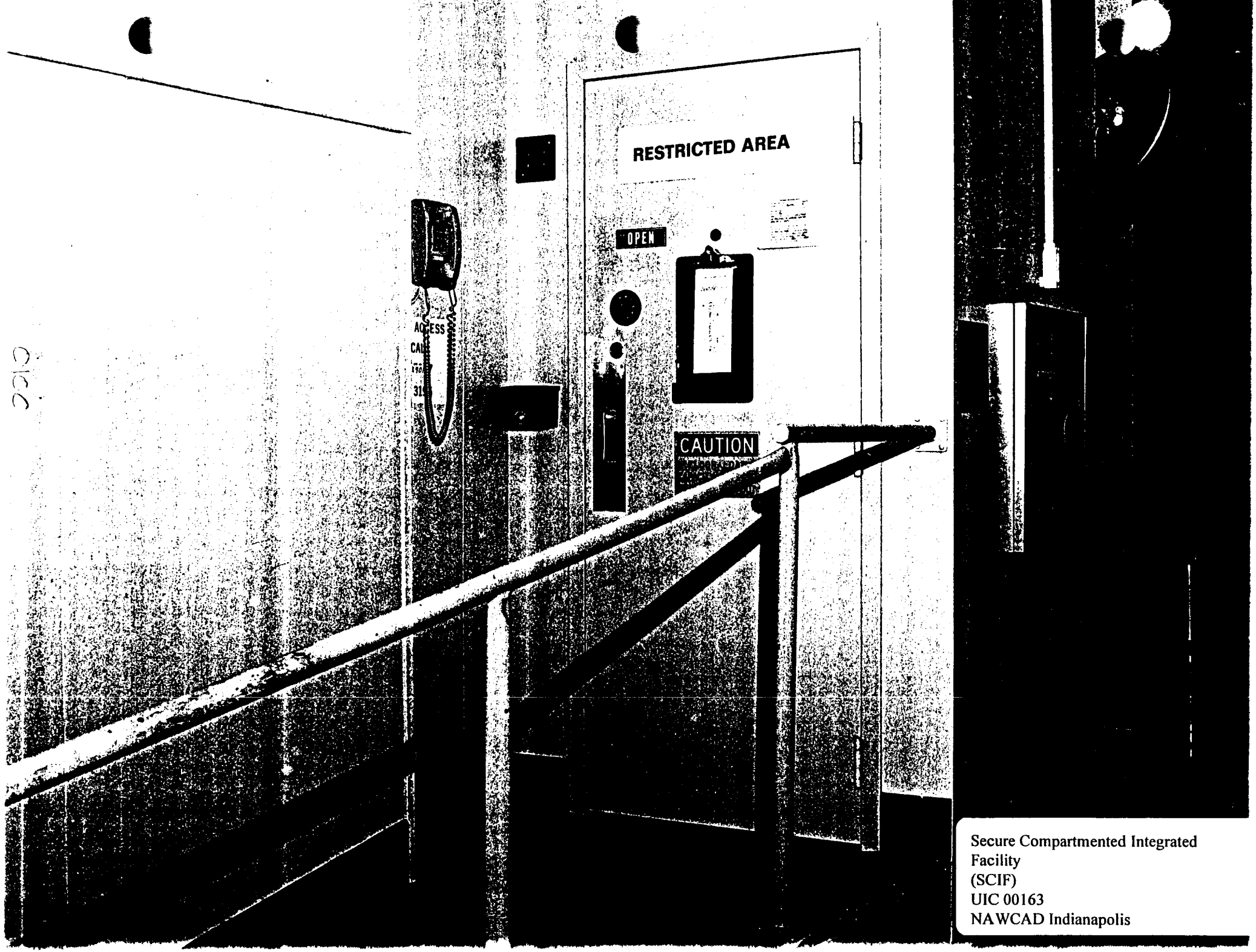
FACILITY/CAPABILITY TITLE: **Secure Compartmented Integrated Facility**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 *
*	*	*	*	
				ANNUAL UNCONSTRAINED CAPACITY 9 *
		TOTAL	*	

* **This information is not available for publication.**

FOR OFFICIAL USE ONLY



Secure Compartmented Integrated Facility
(SCIF)
UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

Facility/Capability Title: **Secure Compartmented Integrated Facility**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = **N00163**

T&E Test Facility Category IL & HIL PER PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	1	10	50	0	0	39	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	0	10	15	0	0	10	
Armament/ Weapons	0	0	15	0	0	10	
EC	0	0	15	0	0	10	
Other	1	0	5	0	0	9	

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

0094

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Secure Compartmented Integrated Facility**

Facility Description; Including mission statement: **The Secure Compartmented Integrated Facilities (SCIF) are used for all projects that require access to sensitive information and special security and intelligence support. These secure facilities enable engineers, technicians and physicists to conduct classified work and store classified material. Attributes of the facilities include motion detectors, alarmed doors, fiber optic telephone/transmission lines, paper shredder, TV monitors and cameras, separate air conditioner units for each lab, two sound cover systems, STU-IIIs on all data lines, cipher locks and control system and back up power system for cipher locks.**
Interconnectivity/Multi-Use of T&E Facility: **The SCIFs are self-contained and are not interconnected to other facilities.**
Type of Test Supported: **These facilities do not perform test functions. They do, however, store special hardware, software and data needed for support of NAWC Indianapolis' principle functions that include limited testing as described in other portions of Tab A.**
Summary of Technical Capabilities: **See above description.**
Keywords: **Special security, Tempest, Intelligence, Special Access**

FOR OFFICIAL USE ONLY

0095

GENERAL INFORMATION

Facility/Capability Title: **Avionics/Electronics Development Laboratories**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division

T&E Functional Area: UIC = **N00163**

Air Vehicles

T&E Test Facility Category IL + HITL PER PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	10	0	50	20	0	20	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	4.6	0	22.8	9	0	9	
Armament/ Weapons	0.2	0	0.9	0.4	0	0.4	
EC	0.3	0	1.3	0.5	0	0.5	
Other	4.9	0	25	10.1	0	10.1	

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

010

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Avionics/Electronics Development Laboratories**

Facility Description, Including mission statement:

The Avionics/Electronics Development Laboratory is used during the design, development, and prototyping phases of electronic equipment. The lab includes an electronic model shop that provides prototyping support such as breadboarding, modifications, fabrication, troubleshooting and repairs.

This lab is comprised of a variety of specifically designated areas and supports many programs including: the AWW-13 integrated support area; the DSM-96 area; the Beartrap lab and the Optics lab which supports the following programs: Advanced Avionics Subsystems & Technology (AAS&T); Standard hardware Acquisition & Reliability Program (SHARP); Advanced Optical Sonobouy; Advanced Gun Weapons Systems Technology Program (AGWSTP); Compass Attitude Heading Reference System (AHRS) Fiber Optic Gyroscope; Optical Backplane Interconnect System (OBIS); and Night Vision.

Interconnectivity/Multi-Use of T&E Facility:

Is interconnected with Central Computing Facilities to do real time exchange of data and control for simulations and data modeling need to do software testing and hardware-in-the-loop functions.

Type of Test Supported:

Avionics and electronics systems hardware and software development checkout, functionality testing and hardware/software integration testing.

0102

FOR OFFICIAL USE ONLY

Facility/Capability Title: **Avionics/Electronics Development Laboratories**

Summary of Technical Capabilities:

AWW-13 lab
Antenna/radar range
Engineering development labs
DSM-96 lab
Electronics model shop
Microwave integrated circuit lab
Mobile communication lab
Mobile navigation lab
Non-magnetic test facility
Optics lab
SHARP development lab
Sonobouy lab
Stores suspension and release equipment
Telemetry lab
Weapons support equipment

Keywords:

Engineering Development Labs, DSM-96, AWW-13, Optics, Telemetry

0163

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **Avionics/Electronics Development Laboratories**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	450	450	450	450	450	450	450
Contractor							
Total	450	450	450	450	450	450	450

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 10% of their workload.

Total Square Footage: **31,531**

Test Area Square Footage: **31,531**

Office Space Square Footage: **0**

Tonnage of Equipment: **66,133 lbs**

Volume of Equipment: **160k cu. ft.**

Annual Maintenance Cost: **$110,500**

Estimated Moving Cost: **$1,261,240**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$250,000	$428,000	$486,000	$541,000	$541,000	$541,000	$541,000

0104

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Avionics/Electronics Development Laboratories**

AGE: **11 Years** REPLACEMENT VALUE: **$6,306,000**

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1990**

NATURE OF LAST UPGRADE: **Addition of equipment and benches to support increased activity levels.**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0195

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Avionics/Electronics Development Laboratories**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	23	23	23	24	25	25	25	24
	TEST HOURS	12	11	11	12	13	13	13	12
	MISSIONS								
EC	DIRECT LABOR	1	1	1	1	1	1	1	1
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	1	1	1	1	1	1	1	1
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS								
OTHER T&E	DIRECT LABOR	25	24	24	26	27	27	27	26
	TEST HOURS	12	12	12	13	13	14	13	13
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

0106

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Avionics/Electronics Development Laboratories**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **3,628.24**
Software Functionality	**16**	**1**	**16**	
System Functionality	**10**	**3**	**30**	ANNUAL UNCONSTRAINED CAPACITY 9 **1,324,308**
WRA Functionality	**53**	**2**	**106**	
		TOTAL	**152**	

010

FOR OFFICIAL USE ONLY

Avionics/Electronics
Development Lab
UIC 00163
NAWCAD Indianapo

GENERAL INFORMATION

Facility/Capability Title: **Integrated Avionics Laboratory**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**
Naval Air Warfare Center, Aircraft Division (NAWCAD)
T&E Functional Area: UIC = **N00163**
Air Vehicles

T&E Test Facility Category: **Integration Laboratory** R

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	18	0	82	0	0	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	18	0	82	0	0	0	
Armament/ Weapons	0	0	0	0	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

0109A

FOR OFFICIAL USE ONLY

GENERAL INFORMATION

Facility/Capability Title: **Integrated Avionics Laboratory**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = **N00163**

Air Vehicles

T&E Test Facility Category IL + HITL PER PAGE 10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	18	0	82	0	0	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	18	0	82	0	0	0	
Armament/ Weapons	0			0	0	0	
EC	0			0	0	0	
Other	0			0	0	0	

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

NOTE
AV-20: Identified as an IL

0109A

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Integrated Avionics Laboratory**

Facility Description; Including mission statement:

The Integrated Avionics Laboratory provides hardware and software tools for avionics integration during design, development, and support phases of acquisition for avionics systems and sub-systems via 1553, fiber optics and other data buses.

This laboratory supports avionics integration including hardware-in-the-loop real-time testing to validate connectivity and software functionality. Resources from several technology areas including inertial navigation, GPS satellites, mission computers, radio communication, displays, and interface units are flexibly allocated for specific testing. Connectivity includes 1553, fiber optics, discrete digital and analog signals. Real-time computer simulators tied together with Ethernet and high speed shared memory provide a realistic and dynamic environment to evaluate avionics functionality.

Projects supported include GPS, CAINS I, CAINS II, CRS, NGCR, AYK-14, NSIU, DSDC, AAS&T, SHARP, MDPS, VAMPS, GPWS, V-22 avionics suite, MH-53E avionics suite, and ES-3A navigation sub-system.

This lab is unique in the NAWC Aircraft Division for supporting avionics integration at the hardware/software interface level.

Interconnectivity/Multi-Use of T&E Facility:

Is interconnected with the Central Computing Facility to do real time exchange of data and control for simulations and data modeling needed to do avionics software testing and hardware-in-the-loop functions. The two facilities are connected full-time.

FOR OFFICIAL USE ONLY

Facility/Capability Title: **Integrated Avionics Laboratory**

Summary of Technical Capabilities:

Three Axis Rate Table
VAX computers -- 8550s, 4000s, 3800s
Workstations (X-terminals, PC)
GPS Satellite simulator
Inertial Navigation Rotary table
Real-time shared memory networks
Silcon Graphics computers for visual analysis
Helicopter cockpit for real-time input and control
Mil-Std 1553 test equipment
Stimulation computer system for avionic signals
GPS integrated test facility
Carrier Aircraft Inertial Navigation Systems
V-22 Avionics Integration Laboratory
V-22 Mission Planning Systems
Flirs
MH-53 Mission Planning System
Maintanence Data Processing Systems

Keywords:

Avionics Integration, Satellite simulation, Fixed Wing and Rotor Wing simulation, Inertial Navigation Systems, Carrier Aircraft Inertial Navigation Systems (CAINS), Global Positioning System (GPS), V-22, ES-3A Navigation Suite, Mission Planning.

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **Integrated Avionics Laboratory**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer							
Enlisted							
Civilian	38	38	38	38	38	38	38
Contractor							
Total	38	38	38	38	38	38	38

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 18% of their workload.

Total Square Footage: **12,800**

Test Area Square Footage: **12,800**

Office Space Square Footage: **0**

Tonnage of Equipment: **38,000**

Volume of Equipment: **125k cu. ft.**

Annual Maintenance Cost: **$44,800**

Estimated Moving Cost: **$15,923,200***

*** Includes replacement of all shared equipment since facility cannot be shut down during transition. Program dedicated equipment would be moved when the workload is transitioned.**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Integrated Avionics Laboratory**

AGE: **2 years** REPLACEMENT VALUE: **$3,200,000**

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1992**

NATURE OF LAST UPGRADE: **Establishment**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Integrated Avionics Laboratory**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	7	7	7	7	7	7	7	7
	TEST HOURS	7	7	7	7	7	7	7	7
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

014

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Integrated Avionics Laboratory**

ANNUAL HOURS OF DOWNTIME	1	**48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	**0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	**23.87**

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 ·) 8 **1288.98**
Connectivity	**4**	**1**	**4**	
Software Functionality	**25**	**1**	**25**	ANNUAL UNCONSTRAINED CAPACITY 9 **470,478**
Hardware in the Loop	**25**	**1**	**25**	
		TOTAL	**54**	

FOR OFFICIAL USE ONLY

Integrated Avionics Lab

UIC 00163
NAWCAD Indianapolis

0116

See Me

GENERAL INFORMATION

Facility/Capability Title: **Digital Scene Matching Area Correlator (DSMAC) Laboratory**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division, (NAWCAD)

T&E Functional Area: UIC = **N00163**

Air Vehicles

T&E Test Facility Category IL & HITL PER PAGE #10

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	1	0	91	0	8	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	1	0	91	0	8	0	
Armament/ Weapons	0	0	0	0	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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Digital Scene Matching Area Correlator (DSMAC) Laboratory**

Facility Description; Including mission statement:

The laboratory is used by electronics engineers, software engineers, and scientists to evaluate, and predict the performance of sensors, detection algorithms, and navigation update processes for Cruise Missiles and UAV's.

NAWC Indianapolis has performed a key role in the development and production of the Navy sea launched conventional Tomahawk Land Attack Cruise Missile (TLAM-C). The focus of the NAWC Indianapolis Tomahawk effort has been the design, development, and production support of the Digital Scent Matching Area Correlator (DSMAC) and related support equipment, mission planning systems, training, database development, and management. The DSMAC Conventional Strike Support Center (DCSSC) contains the image processing equipment and support data required to evaluate existing DSMAC maps, and to develop new algorithms designed to improve performance of the DSMAC system. The capability also exists within the DCSSC to test and evaluate different sensor platforms and algorithms proposed as adjuncts or replacements to DSMAC.

Current production processes are monitored and evaluated, operational flight software is developed and tested, and mission planning performance prediction algorithms are researched. Feasibility studies of the impact of proposed changes to the operational mission planning process are also performed.

Additionally, Fleet requests for guidance concerning difficult operational areas are addressed using both current and archived performance data. Training is also developed to keep operational mission planners and DSMAC analysts informed about any changes in the configuration of the mission planning process.

FOR OFFICIAL USE ONLY

0113

Facility/Capability Title: **Digital Scene Matching Area Correlator (DSMAC) Laboratory**

The DCSSC was designed and built for the purpose of development and evaluation of DSMAC and similar navigation sensor systems. As such, the DCSSC represents an unique combination of equipment and information that exists nowhere else in the Fleet. The facility, with its simulation equipment and 50 Gbyte archival database, can be used to develop and test numerous existing and future types of sensor platforms. These sensors include Infra-Red (IR) Near-Infra red (NIR), and Electro-Optical (EO) devices, as well as machine vision systems.
Interconnectivity/Multi-Use of T&E Facility: **No physical interconnectivity but highly dependent on the TACAIR Pod Laboratory for software and integration testing. This lab is used to develop software. Limited testing is done in the TACAIR Pod Laboratory.**
Type of Test Supported: **Software and algorithm test. Also some sensor performance testing.**
Summary of Technical Capabilities: **DEC VAX 8550 and 11/780 with associated peripherals.** **Image process equipment.** **PC workstations.** **TAMPs system and related support equipment.** **DSMAC Scene Simulator** **Tektronix 1750A software development system and emulator.**
Keywords: **Imaging, Sensors, Tomahawk, Scene Matching**

C117

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **Digital Scene Matching Area Correlator (DSMAC) Laboratory**

PERSONNEL

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

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 1% of their workload.

Total Square Footage: **1,725**

Test Area Square Footage: **1,725**

Office Space Square Footage: **0**

Tonnage of Equipment: **7,299 lbs**

Volume of Equipment: **27k cu. ft.**

Annual Maintenance Cost: **$6,500**

Estimated Moving Cost: **$426,075**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$60,000	$60,000	60,000	$60,000	$60,000	$60,000	$60,000

0120

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Digital Scene Matching Area Correlator (DSMAC) Laboratory**

AGE: **12 years** REPLACEMENT VALUE: **$600,000**

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1993**

NATURE OF LAST UPGRADE: **Upgrade of computer displays and computational capability to improve algorithm development and evaluation.**

MAJOR UPGRADES PROGRAMMED

None.

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

0121

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Digital Scene Matching Area Correlator (DSMAC) Laboratory**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	TEST HOURS	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

0122

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

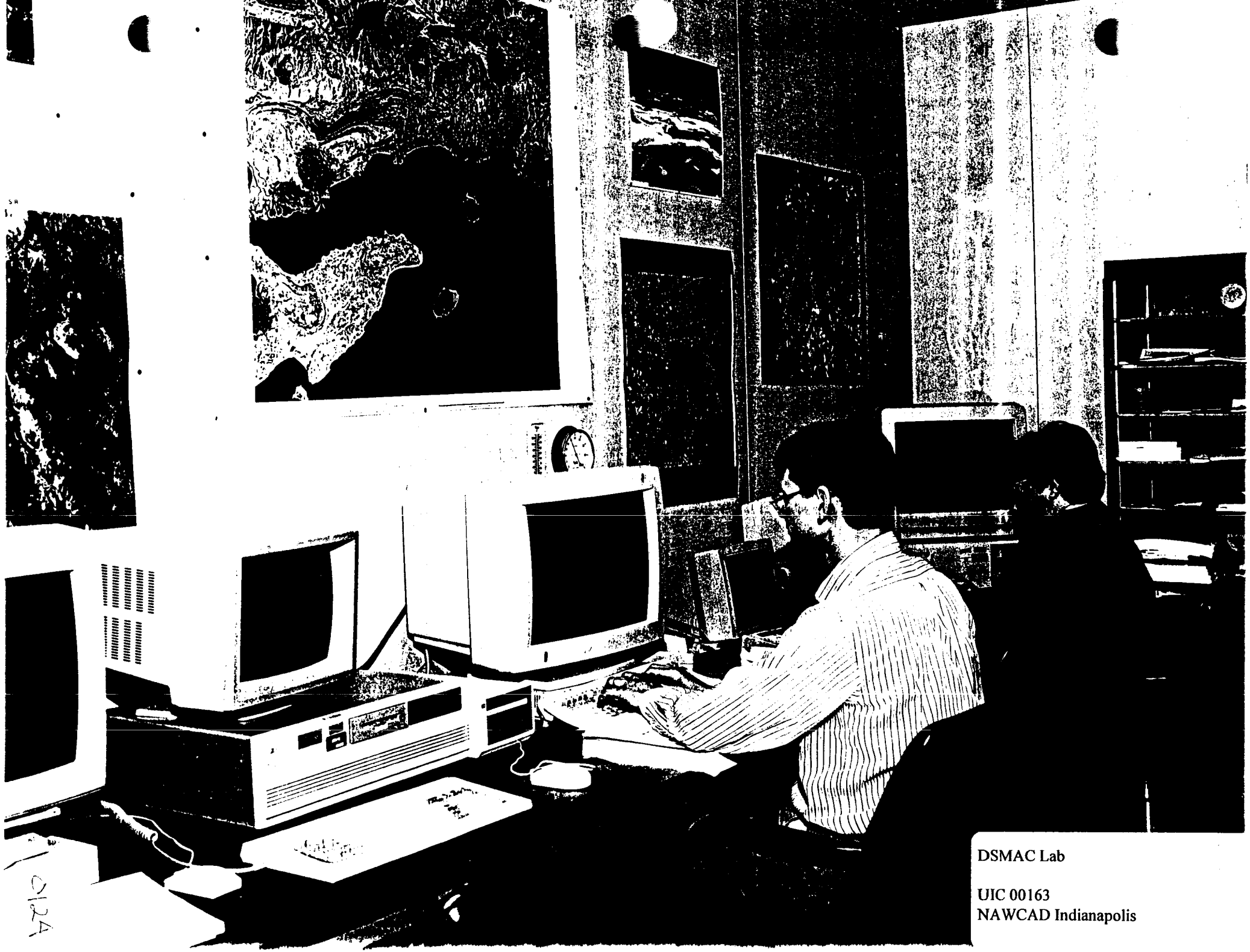
FACILITY/CAPABILITY TITLE: **Digital Scene Matching Area Correlator (DSMAC) Laboratory**

ANNUAL HOURS OF DOWNTIME	1 **48**
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2 **0.13**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **23.87**

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 ·) 8 **190.96**
Software Functionality	**8**	**1**	**8**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **69,700**
		TOTAL	**8**	

FOR OFFICIAL USE ONLY

0123



DSMAC Lab

UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

Facility/Capability Title: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**
Naval Air Warfare Center, Aircraft Division (NAWCAD)
T&E Functional Area: UIC = **N00163**

Air Vehicles

T&E Test Facility Category: **Integration Lab** **R**

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	20	0	40	20	20	0	
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	19	0	40	20	20	0	
Armament/ Weapons	0	0	0	0	0	0	
EC	0	0	0	0	0	0	
Other	1	0	0	0	0	0	

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

0125A

AV-18

FOR OFFICIAL USE ONLY

GENERAL INFORMATION

Facility/Capability Title: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

Service: NAVY Organization/Activity: Location: **Indianapolis, IN**

Naval Air Warfare Center, Aircraft Division (NAWCAD)

T&E Functional Area: UIC = N00163

Air Vehicles

T&E Test Facility Category IL & HITL AIR AREA #10

TEST INFO SOUND LIKE AN ISTF

	T&E	S&T	D&E	IE	T&D	
PERCENTAGE USE:	20	0	40	20	20	
BREAKOUT BY T&E FUNCTIONAL AREA (%)						
Air Vehicles	19	0	40	20	20	0
Armament/ Weapons	0	0	0	0	0	0
EC	0	0	0	0	0	0
Other	1	0	0	0	0	0

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

Facility Description; Including mission statement:

The EP-3/ES-3 CILOP and ITF support the EP-3E and ES-3A Software Support Activities (SSAs) and other related VQ Projects such as Storyteller, Viper, VQ Trainer, Classic Aerie, Classic Nidus, ASUW, VPU, Story Classic, PGPU, GSS, Ripsaw, WIXS, and others. This facility contains full-scale mockups of EP-3E and ES-3A aircraft for software development, integration, test, training, and engineering support.

This facility houses the EP-3E and ES-3A SSA software development hot benches containing the core data processing avionics boxes from the aircraft as well as the subsystems which are the most software intensive on the aircraft, i.e. MSP, ARR-81, GPS, Cubic Receivers. The benches have simulation and stimulation equipment and software debugging and analysis tools and are directly linked to the VAX complex resident in the building. The EP-3E and ES-3A SSA's share a series of VAX's which are networked together along with 30 networked user terminals. This shared software environment is crucial to both SSAs.

The EP-3E and the ES-3A benches are used for: fixing Software Trouble Reports (STRs) in the mission software and system maintenance software; coding and sub-system level testing of each STR fix; system integration testing of fixes in conjunction with the entire OFP software; full blown regression testing of all software deliverables prior to their delivery to the fleet; configuration software source code, STRs, changes to the software and tapes of the software to be delivered to the fleet and elsewhere; troubleshooting all engineering problems found in the fleet and make appropriate corrections. Also vendors use the benches to validate new firmware and hardware changes and troubleshoot. The Navy Fleet Introduction Team (FIT) personnel uses them to validate their training manuals and train Fleet personnel. They are also used for the design of new sub-systems for the EP-3E and ES-3A Programs and the integration of their new software and hardware packages; and all validation testing for the Fleet since there is no "test aircraft" for the EP-3E and ES-3A.

FOR OFFICIAL USE ONLY

0126

Facility/Capability Title: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

Interconnectivity/Multi-Use of T&E Facility: **No physical interconnections with any other lab internal or external to NAWC Indianapolis.**
Type of Test Supported: **Software and Hardware change testing, systems integration testing, validation testing.**
Summary of Technical Capabilities: **EP-3E and ES-3A full scale mock-ups of the Mission Avionics Suite (MAS)** **VAX 11/780's, VAX 4000/200, PDP 11/60** **Enhanced Tactical Electronic Warfare Environmental Simulator** **Light Electronic Warfare Trainer** **Communication Simulator** **LTN-72 Simulator** **ES-3A Navigation Simulator** **Microprogrammable Bus Terminal** **APS-137 Radar Simulator** **ALD-9 Line of Bearing Simulators** **MSP Stimulation Equipment** **PEACE Simulators** **Link-11 Stimulation** **ETU-106 Demodulator Test Set** **Six Megahertz Data Capture Unit** **AN/ALR-76 Programmable Interface Unit (PIU)** **GPS Satellite Simulator** **AN/USH 26 Simulation PC** **MSP Stimulation Box** **USH-26 Ground Support Station** **Electronic Warfare Environmental Simulator**
Keywords: **Mission Avionics Suite, Navigation, Electronic Warfare**

FOR OFFICIAL USE ONLY

0127

ADDITIONAL INFORMATION

Facility/Capability Title: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	1	1	1	1	1	1
Enlisted	12	12	12	12	12	12	12
Civilian	103	103	103	103	103	103	103
Contractor							
Total	116	116	116	116	116	116	116

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 20% of their workload.

Total Square Footage: **11,040**

Test Area Square Footage: **11,040**

Office Space Square Footage: **0**

Tonnage of Equipment: **34,500 lbs**

Volume of Equipment: **190k cu. ft.**

Annual Maintenance Cost: **$38,650**

Estimated Moving Cost: **$15,875,520 ***

*** Includes replacement of EP-3 and ES-3 since existing facility must remain in operation during transition.**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$180,000	$180,000	$180,000	180,000	$180,000	$180,000	$180,000

FOR OFFICIAL USE ONLY

0126

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

AGE: **8 years** REPLACEMENT VALUE: **$3,600,000**

MAINTENANCE AND REPAIR BACKLOG: **$80k**

DATE OF LAST UPGRADE: **1990**

NATURE OF LAST UPGRADE: **Provided a 5000 sq. ft. facility to support the VQ Software Support Activity**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

0129

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	11	11	11	12	12	12	12	12
	TEST HOURS	5	5	5	5	5	5	5	5
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	1	1	1	1	1	1	1	1
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

013C

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

ANNUAL HOURS OF DOWNTIME	1	48
AVERAGE DOWNTIME PER DAY (LINE 1 % 365)	2	0.13
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	23.87

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 ·) 8 1002.54
Software Functionality	30	1	30	
WRA Functionality	2	2	4	ANNUAL UNCONSTRAINED CAPACITY 9 365,927
System Functionality	2	4	8	
		TOTAL	42	

FOR OFFICIAL USE ONLY

C131

EP-3/ES-3 ITF/CILOP

UIC 00163
NAWCAD Indianapolis

DATA CALL 15
NAWCAD
INDIANAPOLIS

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

NEXT ECHELON LEVEL (if applicable)

BARTON D. STRONG
NAME (Please type or print)

Signature

COMMANDER
Title

6 July 1994
Date

NAVAL AIR WARFARE CENTER, AIRCRAFT 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)

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

Signature

COMMANDER
Title

7 July 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.

MAJOR CLAIMANT LEVEL

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

Signature

COMMANDER
Title

18 JUL 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

7/25/94
Date

BRAC-95 CERTIFICATION

DATA CALL 13

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

T. R. DARNELL
NAME (Please type or print)

T. Darnell
Signature

Commanding Officer
Title

7 JUL 94
Date

Naval Air Warfare Center, Aircraft Division, Indianapolis
Activity

0134
LAST

KPCS

#EC-025

DATA CALL #13 - REQUESTS FOR CLARIFICATION
CONTROL #EC-025
BRAC-95 CERTIFICATION

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

NEXT ECHELON LEVEL (if applicable)

CAPTAIN JOHN B. PATTERSON
NAME (Please type or print)

Signature

1994-09-30 13:25 RCVD

SEP 30 1994

ACTING COMMANDER
Title

Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER, MD
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)

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

Signature

ACTING COMMANDER
Title

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.

MAJOR CLAIMANT LEVEL

WILLIAM C. BOWES
NAME (Please type or print)

Signature

COMMANDER
Title

25 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

9/26/94
Date

WC

DEPARTMENT OF THE NAVY
NAVAL AIR WARFARE CENTER
NAVAL AIR WARFARE CENTER HEADQUARTERS
1421 JEFFERSON DAVIS HWY
ARLINGTON VA 22243

IN REPLY REFER TO
1000
Ser NAWC-21C/

SEP 16 1994

From: Commander, Naval Air Warfare Center
To: Distribution

Subj: RELEASE OF BASE REALIGNMENT AND CLOSURE DATA CALL IN THE ABSENCE OF THE COMMANDER

1. During the period 19-21 September I will be on travel.

2. Mr. Lewis L. Lundberg, Technical Director, Naval Air Warfare Center, is designated as acting as Acting Commander during this period. As such, he is authorized to release completed Base Realignment and Closure Data Calls and to provide certification for the data calls.

W. E. Newman

W. E. NEWMAN

Distribution:
COMNAVAIRWARCENWPNDIV
COMNAVAIRWARCENACDIV
NAVAIRWARTRASYSDIV

DATA CALL #13 - REQUESTS FOR CLARIFICATION UIC 00163
Control # EC-025

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

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

14 September 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity

* 41^^0163

REQUESTS FOR CLARIFICATION

From the Base Structure Analysis Team (BSAT)

Control #: EC-025

Date sent: 8 September 1994

To: CAPT Doug Cook

Voice: (703) 604-1857
Fax: (703) 604-1859

Service: Navy
Site: Naval Air Warfare Centers
Facility/Capability: Various
Page: Various

CLARIFICATION/CORRECTION REQUESTED for Data Call #13. Various Questions

Further clarification is required on reported facilities/capabilities for Electronic Combat (Measurement Facilities, Hardware-In-The-Loop, Installed-Systems-Test Facilities, and Open Air Ranges) and for Armament/Weapons (Measurement Facilities, Hardware-In-The-Loop, and installed-Systems-Test-Facilities) Please direct each of your subordinate activities to fill out and submit the attached forms (Forms #1, #2, and/or #3) for each facility/capability that they reported in their response to Data Call #13 (e.g. a separate Form #1 should be completed for each Measurement Facility reported that performed work in the Electronic Combat functional area, a separate Form #2 should be completed for each Hardware-In-The-Loop facility that performed work in the Armament/Weapons functional area, etc.) Provide a YES or NO response for each question on each form.

CDR Mark B. Samuels, CEC, US
(703) 681-0481, or (703) 578-5750

NOTE: This information is needed urgently, Request you respond with clarification comments (below) or corrected page(s) by 12 September 1994. FAX a preliminary response directly to the T&E Joint Cross-Service Working Group @(703)578-6592. Then, send your official response, properly certified, through your chain of command for certification and further forwarding to the BSAT.

Reply: NAWC AD Indianapolis (UIC 00163) has two facilities identified in support of the Electronic Combat T&E Functional Area. Form #1's are attached. This site has no Armament/Weapons T&E Functional Area Facilities.
Attachments: ALQ-170 Laboratory; Electronic Warfare Facility

Robert R. Butcher	03A	(317) 353-7801	9/12/94
Name	Code	Commercial Phone #	Date

Enclosure (3)

* NAWCHQ Change
ONS NAWC-21
9/19/94.

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

Activity Title: NAWC AD INDIANAPOLIS **UIC:** 00163

Facility/Capability Title: Electronic Warfare Facility

T&E Test Facility Category: Digital Models & Computer Simulation (DMS)

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.

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

Activity Title: NAWC AD INDIANAPOLIS **UIC:** 00163

Facility/Capability Title: ALQ-170 Lab

T&E Test Facility Category: Digital Models & Computer Simulation (DMS)

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.

Document Separator

United States General Accounting Office

GAO

Supplement to a Report to the Congress and the Chairman, Defense Base Closure and Realignment Commission

May 1995

MILITARY BASES

Letters and Requests Received on Proposed Closures and Realignments

GAO/NSIAD-95-133S

GAO

United States
General Accounting Office
Washington, D.C. 20548

Comptroller General
of the United States

B-261174

May 9, 1995

To the President of the Senate and the
Speaker of the House of Representatives

The Honorable Alan J. Dixon
Chairman, Defense Base Closure and
Realignment Commission

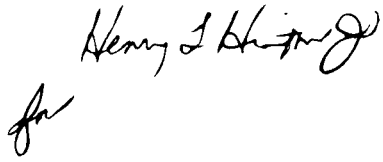
This is a supplement to our report entitled Military Bases: Analysis of DOD's 1995 Process and Recommendations for Closure and Realignment (GAO/NSIAD-95-133, Apr. 14, 1995).

Many interested parties, including Members of Congress, have sent us correspondence on base closures. Several of these letters were from multiple requesters and included attachments of data, analyses, and/or evaluations.

In some instances, the letters and material provided useful leads. In other cases, the material added support to issues we were actively pursuing. We could not follow up on many of the issues or points because of the limited time available to us. However, we believe that the letters and materials may be helpful to the Commission as it considers the proposed closures and realignments. Consequently, we are providing all of the letters and materials to the Commission for consideration. Appendix I contains copies of the letters and some of the materials we received.

We are sending copies of this supplement to the Chairmen, Senate Committee on Appropriations, Subcommittee on Defense; Senate Committee on Armed Services; House Committee on Appropriations, Subcommittee on National Security; House Committee on National Security; individual Members of Congress; the Secretaries of Defense, the Army, the Navy, and the Air Force; and the Directors of the Defense Logistics Agency and the Defense Investigative Service. We will make copies available to others on request.

This supplement was prepared under the direction of David R. Warren, Director of Defense Management and NASA Issues, who may be reached on (202) 512-8412 if you or your staff have any questions concerning its contents.



Charles A. Bowsher
Comptroller General
of the United States

Contents

Letter 1

Appendix I Letter and Other Material Received on Proposed Base Closures and Realignments

Letter from the Honorable Harold E. Ford, the Honorable Bill Frist, the Honorable Fred Thompson, the Honorable Blanche Lincoln, the Honorable Ed Bryant, and the Honorable John Tanner, Members of Congress, dated February 28, 1995, regarding the Defense Distribution Depot Memphis, Tennessee 8

Letter from the Honorable Wendell Ford, the Honorable Lee Hamilton, the Honorable Mike Ward, the Honorable Mitch McConnell, and the Honorable Ron Lewis, Members of Congress, dated March 7, 1995, regarding the Navy's handling of data call responses pertaining to the Naval Ordnance Station, Louisville, Kentucky 10

Letter from the Honorable Harold Ford, Member of Congress, dated March 7, 1995, regarding the impact on minorities at depots the Defense Logistics Agency considered for closure 12

Letter from the Honorable Edward J. Markey, Member of Congress, dated March 20, 1995, regarding the Army's decision pertaining to the U.S. Army Research, Development, and Engineering Center in Natick, Massachusetts 13

Letter from the Honorable Harold E. Ford, Member of Congress, dated March 22, 1995, regarding the Defense Logistics Agency's process for scoring military value on the Defense Distribution Depot, Memphis, Tennessee 14

FAX letter received from a representative of the Federal Managers Association, on March 24, 1995, regarding the Defense Logistics Agency's decision to disestablish the Defense Industrial Supply Center, Philadelphia, Pennsylvania 16

Letter from the Honorable Ted Stevens, Member of Congress, dated March 29, 1995, regarding the proposed realignment of Fort Greely, Alaska 19

Letter from the Honorable Robert A. Borski, Member of Congress, dated March 30, 1995, regarding the Defense Logistics Agency's decision to disestablish the Defense Industrial Supply Center, Philadelphia, Pennsylvania 20

Letter from the Honorable Robert A. Borski, Member of Congress, dated April 4, 1995, regarding the Navy's decision to close the Naval Air Technical Services Facility, Philadelphia, Pennsylvania 22

Letter from the Honorable Robert A. Borski, Member of Congress, dated April 5, 1995, regarding the Navy's recommendation to close the Naval Aviation Engineering Service Unit Headquarters in Philadelphia, Pennsylvania, and relocate the activity to Naval Aviation Depot, North Island, California 25

Letter from Timothy R. Rupli, President, Defense Realignment Advisors, dated April 6, 1995, regarding the Army Depot Systems Command's methodology for Army maintenance depot downsizing 27

Letter from the Honorable Conrad R. Burns, Chairman, Military Construction Subcommittee, Senate Committee on Appropriations, dated April 7, 1995, regarding the proposed realignment of Malmstrom Air Force Base, Montana 28

Letter from the Honorable James V. Hansen, Member of Congress, dated April 7, 1995, regarding the consolidation of tactical missile maintenance 29

Letter from Mr. J.W. Wheeler, Hudson Institute, dated April 9, 1995, regarding the proposed closure of the Naval Air Warfare Center Aircraft Division, Indianapolis, Indiana 30

Letter from the Honorable Christopher H. Smith, the Honorable H. James Saxton, the Honorable Bill Bradley, and the Honorable Frank Lautenberg, Members of Congress, dated April 10, 1995, regarding the Naval Air Warfare Center Aircraft Division, Lakehurst, New Jersey, and the Naval Air Engineering Station, Lakehurst, New Jersey 31

Letter from the Honorable Fred Thompson and the Honorable Bill Frist, Members of Congress, dated April 10, 1995, regarding the recommended closure of the Defense Distribution Depot, Memphis, Tennessee 34

Letter from the Honorable Richard Gephardt, the Honorable William Clay, the Honorable Harold L. Volkmer, the Honorable Christopher S. Bond, and the Honorable John Ashcroft, Members of Congress, dated April 11, 1995, regarding the Army's recommendation to disestablish the Aviation and Troop Command, St. Louis, Missouri. 36

Letter from the Honorable Dianne Feinstein and the Honorable Barbara Boxer, Members of Congress, dated April 11, 1995, regarding the realignment of Onizuka Air Station, California 42

Letter from the Honorable Anna G. Eshoo and the Honorable Norman Y. Mineta, Members of Congress, dated April 12, 1995, regarding the realignment of the 750th Space Group from Onizuka Air Force Station, California, and the 129th Rescue Group from Moffett Federal Airfield, California 45

Letter from the Honorable David L. Hobson, Member of Congress, dated April 14, 1995, regarding GAO's April 14, 1995, report on the base closure and realignment process and the Springfield-Beckley Air National Base, Ohio 48

Letter from the Honorable Dan Burton, the Honorable Andy Jacobs, and the Honorable David McIntosh, Members of Congress, dated April 25, 1995, regarding the closure recommendation pertaining to the Naval Air Warfare Center, Indianapolis, Indiana 49

Letters and Other Material Received on Proposed Base Closures and Realignments

HAROLD E. FORD
9TH DISTRICT, TENNESSEE
COMMITTEES:
WAYS AND MEANS
SUBCOMMITTEE ON HUMAN RESOURCES

OFFICES:
2111 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-4209
(202) 225-3265
FAX (202) 225-9215

167 NORTH MAIN STREET
FEDERAL OFFICE BUILDING, SUITE 369
MEMPHIS, TN 38103
(901) 544-4131
FAX: (901) 544-4329

Congress of the United States
House Of Representatives
Washington, DC 20515–4209

February 28, 1995

Mr. Charles A. Bowsher
Comptroller General of the
United States
General Accounting Office
441 G Street, NW
Room 7100
Washington, D.C. 20548

Dear Mr. Bowsher:

We are jointly writing you this letter to request the General Accounting Office provide a detailed analysis and investigation of the Secretary of Defense's recommendation to disestablish the Defense Distribution Depot Memphis (DDMT).

If approved by the Base Closure and Realignment Commission, the closure of Defense Distribution Depot Memphis will have a devastating impact on the Memphis community. The depot currently employs approximately 1,300 people. Its economic impact is approximately $140 million and it increases to $500 million when an economic multiplier is used.

Historically, the depot has played an essential role in important military missions, including Operation Desert Shield/Desert Storm and subsequent humanitarian relief missions in hot spots around the globe.

Mr. Bowsher, the Defense Distribution Depot Memphis is critical not only to the community but to the ability of the Department of Defense to provide critical support in times of war and peace. Therefore the criteria and methodology used by the Defense Logistics Agency must be sound.

To that end, we are asking that you please provide answers to the following questions:

Did the Office of the Secretary of Defense exercise strong oversight over the Defense Logistics Agency during the process? If not, why? If so, what type of oversight did it provide?

Mr. Charles A. Bowsher
Page Two

Please analyze the method the DLA used to determine military value ranking to the DDMT? Was this method sound and accurate?

Please analyze the method the DLA used to determine DDMT's ability to meet current and future mission requirements.

If the DLA deviated from the COBRA model, what other criteria were used?

Did the DLA take into consideration the unique functions, such as transportation capability performed at the Defense Distribution Depot Memphis?

Did the DLA accurately estimate the one-time cost to implement the closure of Defense Distribution Depot Memphis?

Throughput capacity and workload was given by DLA as one of the primary reasons DDMT was recommended for closure. Did DLA intentionally reduce the workload and throughput capacity of DDMT with the intention of recommending closure?

Thank you very much for your assistance in this matter.

Sincerely,

Harold Ford

Ed Bryant

Rick Lazio

Don Sherman

Fred Morrison

Blanche Lincoln

Congress of the United States
House of Representatives
Washington, D.C. 20515-1703

Mike Ward
Member of Congress
Third District Kentucky

March 7, 1995

Charles B. Mattingly
Chief of Staff

The Honorable Charles Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW, Room 7125
Washington, D.C. 20548

Dear Mr. Bowsher:

We have received reports that the Naval Sea Systems Command (NAVSEA) Inspector General has requested the Naval Audit Service to investigate both the process and the accuracy of data submitted by, and for, the Naval Ordnance Station, Louisville in response to BRAC 95 scenario data calls. We are advised that this NAVSEA Inspector General investigation is assigned Case Number 1493C.

The investigation was apparently initiated following a complaint to the Inspector General regarding the handling of scenario data call responses pertaining to the Naval Ordnance Station, Louisville.

We request that your agency review this investigation, as well as all scenario data call responses submitted with regard to the Naval Ordnance Station, Louisville. We particularly request that you determine whether modifications to data responses, and the direction of scenario data call responses by higher authorities, were handled in accordance with appropriate policy guidance to assure the accuracy of certified data which was presented to the Secretary of the Navy and the Navy's Base Structures Evaluation Committee (BSEC).

The Department of the Navy BRAC 95 Analyses and Recommendations, dated March, 1995, indicates that the COBRA analysis produced a configuration model "best solution" which did not include closure of the Naval Ordnance Station, Louisville. We are concerned by reports that initial Naval Ordnance Station, Louisville scenario data call responses were altered, or in other cases directed by higher authorities, in ways which led to inaccurate data. This data may have substantially understated the cost to relocate work now performed at the Naval Ordnance Station.

In addition, the Individual Category COBRA Results reported in the March, 1995 Recommendations are considerably lower (more than 70 percent) and inconsistent with previously reported results from BRAC 91 and BRAC 93 studies.

1032 Longworth Building
Washington, D.C. 20515-1703
(202) 225-5401
internet: mward2@hr.house.gov

Committee on National Security
Committee on Science

Printed on Recycled Paper

Room 216, Federal Building
600 Dr. Martin Luther King, Jr. Place
Louisville, Kentucky 40202-2267
(502) 582-5129

Letter to The Honorable Charles Bowsher
March 7, 1995
Page 2

The March, 1995 Recommendations apparently combine Naval Ordnance Station, Louisville cost calculations with those of NAWC, Indianapolis (see the attached data sheet regarding "Tech Centers/ Laboratories"). This appears inconsistent with Department of the Navy and BRAC policy that each facility be considered on a site-specific basis. We are concerned that this may have been done to make it more difficult to identify the cost of closing Naval Ordnance Station, Louisville.

Because of time constraints on the Defense Base Closure and Realignment Commission, we request that you act expeditiously to review this investigation, and to review the scenario data call responses regarding the Louisville facility and the handling of those responses by Department of the Navy officials as the data went through the chain of command. Please report your findings to us by April 1, 1995 or as soon thereafter as feasible.

Thank you for your prompt attention to this urgent matter.

Sincerely,

Wendell Ford

Mitch McConnell

Lee Hamilton

Ron Lewis

Mike Ward

Enclosure

HAROLD E. FORD
9TH DISTRICT, TENNESSEE

COMMITTEES:
WAYS AND MEANS
SUBCOMMITTEE ON HUMAN RESOURCES

OFFICES:
2111 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-4209
(202) 225-3265
FAX (202) 225-9215

167 NORTH MAIN STREET
FEDERAL OFFICE BUILDING, SUITE 308
MEMPHIS, TN 38103
(901) 544-4131
FAX: (901) 544-4329

Congress of the United States
House Of Representatives
Washington, DC 20515-4209

March 7, 1995

Mr. Charles A. Bowsher
Comptroller General of the
United States
General Accounting Office
441 G Street, NW
Room 7100
Washington, D.C. 20548

Dear Mr. Bowsher:

I am writing this letter to request the General Accounting Office provide a comparative analysis of the impact the closing of each of the distribution depots that the Defense Logistics Agency considered for closure, would have on minorities.

I am requesting that this analysis contain the breakdown of employees at each depot, by race, age and gender, as well as a detailed analysis of the impact on minorities in the communities directly affected by the possible closures.

In their report, the DLA estimates that only .6% of the Memphis area's economic base will be negatively impacted. I contend that the economic impact of removing 1,300 jobs, over 70% of which are held by minorities, from the heart of the city with the highest unemployment rate in the State of Tennessee, will be far greater than .6%. The jobs eliminated by the closure of DDMT translates to approximately, 1,040 African-American depot employees unemployed; and the economic impact of this closure on minorities was never investigated.

As I am sure you are aware, time is of the essence in this matter, so I would appreciate this information as soon as possible. Thank you for your assistance.

Sincerely,

Harold Ford

HAROLD FORD
Member of Congress

EDWARD J. MARKEY
7TH DISTRICT, MASSACHUSETTS

COMMITTEES:
COMMERCE
RANKING MEMBER
SUBCOMMITTEE ON
TELECOMMUNICATIONS AND
FINANCE
RESOURCES
(ON LEAVE)
COMMISSION ON SECURITY AND
COOPERATION IN EUROPE

Congress of the United States
House of Representatives
Washington, DC 20515–2107

2133 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–2107
(202) 225–2836

DISTRICT OFFICES:
5 HIGH STREET, SUITE 101
MEDFORD, MA 02155
(617) 396–2900
188 CONCORD STREET, SUITE 102
FRAMINGHAM, MA 01701
(508) 875–2900

March 20, 1995

Mr. Rich Roscoe
Office of Congresssional Relations, Room 7125
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Roscoe:

I am enclosing materials on the U.S. Army Research, Development, and Engineering Center in Natick, Massachusetts. As you probably know, the Defense Department has recommended that the Natick Center, which recently was named the headquarters for a new Soldiers Systems Command, receive additional personnel as part of the 1995 BRAC process.

I strongly agree with the Defense Department's analysis of Natick's key role in developing advanced technologies which our soldiers will need on the battlefields of the 21st century. I hope this information is useful as GAO evaluates the 1995 BRAC process.

If you have any questions about the materials, please contact Mr. Mark Bayer of my staff at (202) 225-2836.

Thank you.

Sincerely,

Edward J. Markey

Edward J. Markey
Member of Congress

PRINTED ON RECYCLED PAPER

HAROLD E. FORD
9TH DISTRICT, TENNESSEE

COMMITTEES:
WAYS AND MEANS
SUBCOMMITTEE ON HUMAN RESOURCES

OFFICES:
2111 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-4209
(202) 225-3265
FAX (202) 225-0216

167 NORTH MAIN STREET
FEDERAL OFFICE BUILDING, SUITE 369
MEMPHIS, TN 38103
(901) 544-4131
FAX (901) 544-4329

Congress of the United States
House Of Representatives
Washington, DC 20515-4209

March 22, 1995

The Honorable Charles Bowsher
Comptroller General
General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

As you move forward with your analysis of the Department of Defense recommendations on BRAC 1995, several questions have come to my attention regarding the DoD/DLA process for scoring military value on the Defense Distribution Depot Memphis. They relate to the intended role of the military value analysis and COBRA as tools to rank bases versus the actual scoring of the bases under the DLA process.

I would appreciate your review of these issues as you prepare the GAO report for the Base Closure and Realignment Commission. My questions are as follows:

1. The purpose of the military value analysis is to determine the relative value of the installations themselves within a category, not the value of the missions or activities on the installation. In its analysis, the DLA created measures of merit as components of its military value criteria. One measure of merit was "mission scope." Why does the DLA military value analysis incorporate "mission scope" in its installation analysis?

It appears that the category which DLA has selected is meaningless for use as a comparative tool since these installations are evaluated on a series of different missions. Alternatively, does it make sense to score an installation's military value on the scope of the mission, which is portable and which has been changed by DLA since the last BRAC analysis?

2. The COBRA model employs the concept of "Base X" as a device to account for the movement of residual installation mission, personnel, and equipment to a base as yet to be identified. The Base X concept helps to improve the model's relevance by helping to account for small amounts of these costs difficult to specify in terms of a real location.

The Honorable Charles Bowsher
page two

The COBRA model run for the closure of Defense Distribution Depot Memphis assumes the realignment of 50 percent plus to Base X, which means that DLA does not have a destination for that mission. This assumption calls into question the relevance and accuracy of the COBRA model as employed by the DLA in this case.

3. I would like to understand why, although the maximum surge capacity of the Defense Distribution Depot Memphis was reported in the data call as 46,000 throughput items, the DLA final analysis rates the capacity as only 23,000.

Thank you for your attention to these issues.

Sincerely,

HAROLD FORD
Member of Congress

HF:mjs

Federal Managers Association

CHAPTER 208
DEFENSE INDUSTRIAL SUPPLY CENTER
700 ROBBINS AVENUE
PHILADELPHIA, PA. 19111

Mr. Barry Holman
General Accounting Office

Dear Mr. Holman:

Representing the Defense Industrial Supply Center Federal Managers Association, it was a pleasure speaking to you Tuesday, 22 March 95. Having read your report GAO/NSIAD-95-60 Cost Growth and Other Factors Affect Closure and Privatization, combined with our experience with your analysis in BRAC 93, we felt that your objective, analytical assessment of the DLA proposal would provide a much needed sanity check to their recommendation.

Similar to the findings in subject report, we believe the current DLA BRAC analysis is suspect for a variety of reasons.

The justification to close DISC is not clear while the implementation scenario grossly understates the cost and readiness impact of such an action. In BRAC 93 DLA concluded that mass migration of items was too risky and imprudent (see attached), yet two years later the implementation scenario recommends moving approximately 2.4 million items among DLA Centers. Add to that volume of movement a Consumable Item Transfer (CIT II) of approximately 280K items from the Military Services to DLA, we would find ourselves with a logistics transfer of almost 2.7 million stock numbers (See attached chart). Moving items is not simply an electronic process. Physical labor is required of the losing activity to package historical hard copy data, technical drawings and ancillary records. The receiving activities will also incur costs to re-establish the management records and build technical expertise. Continued human communication and interaction between functional experts in all disciplines, will still be required even after the transfer. This continued dialogue is a mandatory element to come up to full operational capability. This post transfer effort we believe, is not included in the cost estimates.

Based on actual service ICP cost data, the cost of migrating items using the total number of items placed in motion under the plan, could exceed $313 (excluding Consumable Item Transfer from services). This migration process cost does not include the negative impact on material availability and readiness incurred in such a mass migration even if it is spread out over several years. Our previous history with CIT Phase I and migrating Federal Stock Classes 1560/1680 to Defense General shows a degradation in service support.

We concur with DLA's 1993 position that this is simply a bad idea!

Another cost discrepancy apparently overlooked is the fact that under this plan DLA will maintain the Defense Personnel Supply Center compound for a period of 2 years to offset military construction costs to move DPSC to the DISC facility as decided in BRAC 93. The cost of keeping DPSC open for an additional 2 years seems not to have been included in the cost evaluation. The estimated cost of extending the facility over this period is approximately $154M (FY-94 dollars).

The major factor in the DOD decision for closure and realignment is military value. The primary criteria for evaluating such decisions is what impact they have on operational readiness of DoD's total force. Based on BRAC disclosure documents, DLA ran their proposed realignment model on three separate occasions: 5 Dec 94, 29 Dec 94 and 5 Jan 95. In the DLA spreadsheet analysis of military value (attached) some interesting observations are evident.

In the 5 Dec 94 computation, DISC scored second to DCSC in total points. In the 29 Dec 94 computation, once again DISC scored second but with significant changes to the scores of DGSC, the largest being a 29 point increase in the category of additional mission but without taking into consideration additional personnel. The 5 January computation saw a substantial increase in scores for both DGSC and DCSC but a scoring decrease to DISC. The big change occurred in the area of base operating costs and personnel costs. Under the revised computations, DISC's score, however, decreased from 171 to 162 points. This change resulted in a 25 point deficit placing DISC with the lowest military value rating.

Aside from the point changes, however, significant dollar changes were also obvious. As an example, DGSC's total operational costs decreased $94M between 15 Dec and 30 Dec. The cause was not explained. An interesting audit trail exists which documents at least seven letters and phone calls to DGSC requesting additional data to reach this final conclusion. DISC, on the other hand, was apparently never provided the same opportunity. In looking at the comparative center data now, DISC questions the calculation of the % of non-DoD paid equivalents. How did the other centers come up with their numbers? DISC may have misinterpreted what was being asked. There is also an indication that the number of people forecasted to accept an additional 1.068 million items to DGSC is grossly understated.

Another major area not addressed is comparative center performance relative to readiness. Although DISC manages the largest percentage of weapons systems items, provides the single largest source of supply for major industrial customers, provides the highest level of support to those military sensitive items and gains weapons management synergy by being collocated with a Navy secondary spares manager (ASO), none of these elements appears in the computation of military value. Some relevant data is enclosed. This appears to be in direct conflict with DoD readiness criteria cited above. This synergy

between DISC and ASO was highlighted in BRAC 93 and is pivotal in our customer support. For example we currently have joint contracts in place with ASO covering more than 200 items and $30M dollars. Proximity and a similar weapons orientation between ASO and DISC has accrued savings in both readiness and investment dollars and is prominently cited in attachment of the BRAC 95 Navy analysis yet omitted from DLA considerations. This type of synergy between a Service ICP and a DLA ICP does not occur between a DLA ICP and a Distribution Depot. The real logistics savings are in integrated acquisition and planning between ICP's. In fact, both DLA's Corporate Strategic Plan and performance plan emphasize a decrease in depot inventory and cost due to Buy Response Vice Inventory efforts, obviating any special synergy between ICP and Depot,

Overall, there appears to be numerous discrepancies that are evident in the analysis, both quantitative and qualitative. Under military value criteria the bottom line to any BRAC movement is the impact to total force readiness. The scenario created by DLA is highly susceptible to negative readiness impacts. DLA itself recognized this in BRAC 93 and wisely chose to avoid this radical movement of items. The net result of risking this potential support impact is a suspect MILCON savings and 408 jobs that are taken as benefit to this scenario. It is unclear however, how these 408 savings occur since the majority come from Columbus and may be commingled with BRAC 93 savings of the DCSC/DESC merger. We hope you can add a rational, objective assessment to a recommendation which in our opinion was a poor business solution to an economic problem which can be solved with a much less destabilizing process not the least of which is sustaining the BRAC 93 scenario with some minor adjustments.

A. COSENZA
Federal Managers Association

TED STEVENS, ALASKA
THAD COCHRAN, MISSISSIPPI
ARLEN SPECTER, PENNSYLVANIA
PETE V. DOMENICI, NEW MEXICO
PHIL GRAMM, TEXAS
CHRISTOPHER S. BOND, MISSOURI
SLADE GORTON, WASHINGTON
MITCH McCONNELL, KENTUCKY
CONNIE MACK, FLORIDA
CONRAD BURNS, MONTANA
RICHARD C. SHELBY, ALABAMA
JAMES M. JEFFORDS, VERMONT
JUDD GREGG, NEW HAMPSHIRE
ROBERT F. BENNETT, UTAH

ROBERT C. BYRD, WEST VIRGINIA
DANIEL K. INOUYE, HAWAII
ERNEST F. HOLLINGS, SOUTH CAROLINA
J. BENNETT JOHNSTON, LOUISIANA
PATRICK J. LEAHY, VERMONT
DALE BUMPERS, ARKANSAS
FRANK R. LAUTENBERG, NEW JERSEY
TOM HARKIN, IOWA
BARBARA A. MIKULSKI, MARYLAND
HARRY REID, NEVADA
J. ROBERT KERREY, NEBRASKA
HERB KOHL, WISCONSIN
PATTY MURRAY, WASHINGTON

J. KEITH KENNEDY, STAFF DIRECTOR
JAMES H. ENGLISH, MINORITY STAFF DIRECTOR

United States Senate

COMMITTEE ON APPROPRIATIONS

WASHINGTON, DC 20510-6025

March 29, 1995

Mr. Charles A. Bowsher
Comptroller General of the U.S.
Room 7125
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Bowsher:

As part of your review of the Department of Defense's 1995 recommendations to the Base Closure and Realignment Commission (BRAC), I ask that you evaluate the Army's proposed realignment of Fort Greely, Alaska.

During a recent visit to the Fort Greely/Delta Junction Alaska area, It came to my attention that the Department of the Army significantly understated the costs associated with the proposed realignment of Fort Greely and restationing of organizations and personnel to Fort Wainwright, Alaska.

I appreciate your assistance in ensuring that an accurate and complete assessment of the total costs, savings and return on investment of this proposal is known. Ms. Sid Ashworth of my staff is available to provide further information on this issue.

I look forward to working with you on this matter.

With best wishes,

Cordially,

TED STEVENS

ROBERT A. BORSKI
3D DISTRICT, PENNSYLVANIA

COMMITTEES:
TRANSPORTATION
AND INFRASTRUCTURE
RANKING DEMOCRAT—SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT

STEERING COMMITTEE

REGIONAL WHIP

Congress of the United States
House of Representatives
Washington, DC 20515

WASHINGTON OFFICE:
ROOM 2182
RAYBURN HOUSE OFFICE BLDG.
(202) 225-6251
FAX: (202) 225-4628

DISTRICT OFFICES:
7141 FRANKFORD AVE.
PHILADELPHIA, PA 19135
(215) 335-3355
FAX: (215) 333-4508

2830 MEMPHIS ST.
PHILADELPHIA, PA 19125
(215) 426-4616

March 30, 1995

Mr. Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Comptroller:

I am writing to bring to your attention several issues relating to the Defense Logistics Agency's (DLA) recommendation to disestablish the Defense Industrial Supply Center (DISC) located in Philadelphia. I believe these issues must be addressed by the General Accounting Office (GAO) in its April 15 report to Congress analyzing the 1995 base closure recommendations.

As you may know, the DLA has recommended the "disestablishment" of DISC as a part of its 1995 base closure recommendations. After numerous meetings with DISC employees and the DLA base closure executive group (BRACEG), I believe DLA's recommendation is suspect for the following reasons:

Military Value

* DLA did not adequately assess the risk to military readiness associated with the large amount of items transferred.

* Inventory Control Point (ICP) performance and its impact on readiness is not included in the military value analysis.

* The multi-service ICP synergy that exists between DISC and the Navy's Aviation Supply Office (ASO) was not included in the military value analysis. Additional compound synergy is also achieved by DISC partnering with the Defense Printing Service (DPS) in pioneering development of critical procurement applications.

* DLA instead overemphasized a non-essential synergy between ICPs and distribution depots.

* The DLA did not adequately assess the value and available capacity of the ASO compound in its "installation military value analysis."

* Unexplained discrepancies exist among three separate computations of the military value of the ICPs.

PRINTED ON RECYCLED PAPER

March 30, 1995
Page 2

Costs

* The significant cost of transferring items was not included in the COBRA analysis.

* The cost of delaying the BRAC93 realignment of the Defense Personnel Support Center (DPSC) to the ASO compound was not included in the COBRA analysis.

* DLA used a flawed methodology to determine the amount of positions that would be eliminated under each scenario.

The bottom line is that DLA is risking the loss of a critical, highly-skilled workforce -- all for savings which are highly suspect.

I have provided a full explanation of each of these major flaws in DLA's recommendation to disestablish DISC. I hope you can add a rational, objective assessment to a recommendation which in my opinion is highly flawed. I believe DLA can achieve higher efficiencies by building on the recommendations accepted by the Base Closure Commission in BRAC93.

Thank you for your expeditious consideration of this extremely important matter. Please do not hesitate to contact me for any additional information.

Sincerely,

ROBERT A. BORSKI
Member of Congress

RAB/mdv
Enclosure

cc: Mr. Barry Holman
General Accounting Office

ROBERT A. BORSKI
3D DISTRICT PENNSYLVANIA

COMMITTEES:
TRANSPORTATION
AND INFRASTRUCTURE
RANKING DEMOCRAT—SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT

STEERING COMMITTEE

REGIONAL WHIP

Congress of the United States
House of Representatives
Washington, DC 20515

WASHINGTON OFFICE:
ROOM 2182
RAYBURN HOUSE OFFICE BLDG.
(202) 225-8251
FAX: (202) 225-4628

DISTRICT OFFICES:
7141 FRANKFORD AVE.
PHILADELPHIA, PA 19135
(215) 335-3355
FAX: (215) 333-4508
2630 MEMPHIS ST.
PHILADELPHIA, PA 19125
(215) 426-4616

April 4, 1995

Mr. Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Comptroller:

I am writing to bring to your attention several issues relating to the Navy's recommendation to close the Naval Air Technical Services Facility (NATSF) located in Philadelphia. I believe these issues must be addressed by the General Accounting Office (GAO) in its April 15 report to Congress analyzing the 1995 base closure recommendations.

I have enclosed a list of several questions that should be answered before any action can be taken with respect to NATSF. While I realize you are operating under severe time constraints, I would greatly appreciate your efforts to investigate these matters to the fullest extent possible.

As always, I am available to discuss these matters further. Please do not hesitate to contact me.

Sincerely,

ROBERT A. BORSKI
Member of Congress

RAB/mdv
Enclosure

cc: Honorable Alan Dixon
Defense Base Closure and Realignment Commission

Questions for the General Accounting Office to investigate relating to the proposed closure of the Naval Air Technical Services Facility under the 1995 BRAC recommendation

1. Three scenarios were presented to the Navy BSEC team by Naval Air Systems Command concerning NATSF they all related to its closure and absorption in one of three existing Navy facilities: NADEP North Island, SPCC Mechanicsburg and Naval Air Systems Command Patuxent River Md. Why was there no scenario for staying in place as the Aviation Supply Office was to remain open? This fact was noted by the BSEC when they voted to close NATSF in their minutes of 10 January 95.

2. How credible can the figures submitted by Naval Air Systems Command be for the three scenarios when they all show the same number of people will relocate in moves of 100, 200 and 2700 miles? Actual numbers of employees accepting relocation in the BRAC process is reported to be in the 12-16% range. Why is a much higher percentage, 64.7 % (or 112 out of 173 employees), used here?

3. Related to question 2 how can all three scenarios have the same one-time unique moving costs of $110,000.00 for breakdown, packing, reinstallation and troubleshooting of the JEDMICS at each of three different sites? Why are moving costs the same for three possible moves of varying distances?

4. NATSF as the Naval Air Systems Command logistics element manager for technical manuals expends any work days in travel status at headquarters in Arlington, Va. Most of this travel can be conducted in one day with the largest expense being a Metroliner round-trip ticket between Philadelphia and Washington. This will not change dramatically when NAVAIR headquarters moves to Patuxent River, Md. in 1997 except to become cheaper due to need for only a rental car. If NATSF is relocated to San Diego travel expenses will increase precipitously. Many of the current one day trips will become at least three days in duration when travel time is factored in. This, of course, will have a deleterious impact on NATSF's productivity. Why was this not addressed in the decision to relocate NATSF and the associated costs?

5. In the cover sheet to the proposed North Island scenario it states that "Aviation Supply Office...a customer that consumes only 13% of [NATSF's] workload." This is contrary to all information available at NATSF which shows that ASO receives over 40% of support provided to their customers.

6. NATSF is currently a beta site for the new JEDMICS (Joint Engineering Data Management Information Systems) the state-of-the-art system for handling engineering drawings. The Navy has no plan to place a JEDMICS terminal at ASO reasoning that the JEDMICS site at NATSF would service their neighbor across the street. If NATSF is moved to San Diego this will not be possible. Why aren't the costs associated with buying a JEDMICS site for ASO addressed in the real costs of a NATSF move?

7. NATSF data management department is currently closely related to the Defense Printing Service office on the ASO compound in the creation of a paperless stock system to supply users with technical manuals as needed. This system is TMPODS (Technical Manual Print on Demand System). How will TMPODS be kept operational if NATSF is not co-located with DPS? What will be the effect on fleet maintenance readiness if there are extensive delays in obtaining technical manuals?

8. With the decline in new aircraft procurements by the Department of the Navy foreign military sales (FMS) cases are of increasing importance to both the Department of Defense and to the American economy. Currently NATSF is co-located with the Navy International Logistics Control Office (NAVILCO) with their large number of foreign liaison officers which allows for immediate attention to foreign customers' data needs. How will this important function be handled when the immediate access of NATSF manager and NAVILCO case manager is no longer available?

9. In 1992 Naval Air Systems Command conducted a study of their Expense Operating Budget field activities and concluded that two of these, NATSF and NAESU, should be merged on the ASO compound. What happened to this study and why was it not implemented?

10. NATSF produces the work unit code manuals for the Navy's aircraft uses the data base maintained by Aviation Supply Office on provisioning data. How will the integrity of this synergy be maintained when these two activities are no longer across the street from each other?

11. The closure of NATSF and its incorporation into NADEP North Island is proposed under the heading of the Navy's consolidation of its technical centers. While "technical" is NATSF's middle name; there are no scientists or engineers employed in a working capacity there. All NATSF's activities are related to logistics and fleet support and so are much closer in nature to the supply function performed by ASO. Why is NATSF classified as a technical center in this BRAC when it is clear from its Military Value Data Call, pgs. 8-10, that its employees do not fit that definition?

12. During the 1993 BRAC there was guidance that unique operations should be left open. NATSF is unique in the Department of Defense in that there exists no other agency whose mission centers completely around the management of technical manuals and engineering drawings. The success of this mission is found in the 95% availability rates for NAVAIR manuals in response to user demand. The BRAC commission in 1993 found this argument compelling. How well can this management function be maintained when NATSF is absorbed into an agency whose primary function is overhaul of aircraft? Why is this unique function being destroyed?

ROBERT A. BORSKI
3D DISTRICT, PENNSYLVANIA

COMMITTEES:
TRANSPORTATION
AND INFRASTRUCTURE
RANKING DEMOCRAT—SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT

STEERING COMMITTEE

REGIONAL WHIP

Congress of the United States
House of Representatives
Washington, DC 20515

WASHINGTON OFFICE:
ROOM 2182
RAYBURN HOUSE OFFICE BLDG.
(202) 225-8251
FAX: (202) 225-4628

DISTRICT OFFICES:
7141 FRANKFORD AVE.
PHILADELPHIA, PA 19135
(215) 335-3355
FAX: (215) 333-4508
2630 MEMPHIS ST.
PHILADELPHIA, PA 19125
(215) 426-4616

April 5, 1995

Mr. Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Comptroller:

I am writing to bring to your attention several issues relating to the Navy's recommendation to close the Naval Aviation Engineering Service Unit (NAESU) Headquarters located in Philadelphia and relocate the activity to NADEP North Island. I believe these issues must be addressed by the General Accounting Office (GAO) in its April 15 report to Congress analyzing the 1995 base closure recommendations.

I have been working with representatives of NAESU to analyze the Navy's recommendation. We believe the recommendation is flawed for the following reasons:

* While the recommendation claims NAESU Headquarters in Philadelphia is a technical center, it failed to score NAESU for technical functions.

* The recommendation incorrectly claims NAESU Headquarters performs similar functions to NADEP North Island.

* The Navy failed to consider absorbing NAESU functions within ASO, even though it has already spent $712,000 of BRAC 91 funds to move NAESU to the ASO compound. Absorbing NAESU within ASO would be more beneficial to the fleet and the taxpayer, saving $8 million more than the relocating NAESU to NADEP North Island.

* The recommendation incorrectly assumes that a majority of NAESU's current workforce will move to NADEP North Island. In fact, 93 percent will not make the move. The loss of this critical expertise will significantly impair fleet readiness.

* The recommendation states that 14 people from NAESU's California Detachments/Regional Offices will be able to fill the Headquarters billets, without giving an explanation of how this can be achieved. The individuals working in this office are military, clerical and technical personnel with no training or experience in the headquarters functions of ETS management and contracting.

April 5, 1995
Page 2

While I realize you are operating under severe time constraints, I would greatly appreciate your efforts to investigate these matters to the fullest extent possible.

As always, I am available to discuss these matters further. Please do not hesitate to contact me.

Sincerely,

ROBERT A. BORSKI
Member of Congress

RAB/mdv

cc: Honorable Alan Dixon
Defense Base Closure and Realignment Commission

DEFENSE REALIGNMENT ADVISORS
THE HOMER BUILDING
SUITE 410 SOUTH
601 THIRTEENTH STREET, N.W.
WASHINGTON, D.C. 20005
(202) 879-9460

6 April 1995

Mr. Barry Holman
U.S. General Accounting Office
NSIAD/Assistant Director - Military Ops. & Capabilities Issues
441 G St., NW
Washington, D.C. 20548

RE: DESCOM methodology for Army maintenance depot downsizing

Dear Mr. Holman:

Reference is made to our meeting of 5 April 1995, at GAO.

Enclosed please find the methodology used by the Army's Depot Systems Command for "downsizing" its maintenance capacity. Anniston Army Depot was used as the model. As you can see from the briefing, the DESCOM intent paralleled that of the Air Force -- to retain all of the depots, but to streamline them for efficiency.

In his 12 April 1994 testimony to the House Armed Services Committee, General Salomon, Commander of the Army Materiel Command, drew attention to the increasing backlog of depot maintenance and the readiness costs associated with that backlog. He also elaborated on his concept of how to "downsize" the Army depot base -- indicating AMC's intent to retain all of its depots. Copies of both the prepared and actual testimony are enclosed for your review. As the Army's top logistician, General Salomon's recommendations make good sense. It appears that at some point in the process, the Army's top leaders overrode the considered advice and recommendations of its senior logistician.

Also enclosed is a depot comparison briefing slide developed with certified data from both Army and DLA collocated depots. The study considered the depots as a single "depot complex", rather than splitting the depots into separate elements for comparison purposes.

We appreciate your continued efforts in this regard. Please call me if you have any questions, or if I can provide any additional information.

Sincerely,

TIMOTHY R. RUPLI
President

enclosures

A DIVISION OF R. DUFFY WALL & ASSOCIATES, INC.

MARK O. HATFIELD, OREGON, CHAIRMAN

TED STEVENS, ALASKA
THAD COCHRAN, MISSISSIPPI
ARLEN SPECTER, PENNSYLVANIA
PETE V. DOMENICI, NEW MEXICO
PHIL GRAMM, TEXAS
CHRISTOPHER S. BOND, MISSOURI
SLADE GORTON, WASHINGTON
MITCH McCONNELL, KENTUCKY
CONNIE MACK, FLORIDA
CONRAD BURNS, MONTANA
RICHARD C. SHELBY, ALABAMA
JAMES M. JEFFORDS, VERMONT
JUDD GREGG, NEW HAMPSHIRE
ROBERT F. BENNETT, UTAH

ROBERT C. BYRD, WEST VIRGINIA
DANIEL K. INOUYE, HAWAII
ERNEST F. HOLLINGS, SOUTH CAROLINA
J. BENNETT JOHNSTON, LOUISIANA
PATRICK J. LEAHY, VERMONT
DALE BUMPERS, ARKANSAS
FRANK R. LAUTENBERG, NEW JERSEY
TOM HARKIN, IOWA
BARBARA A. MIKULSKI, MARYLAND
HARRY REID, NEVADA
J. ROBERT KERREY, NEBRASKA
HERB KOHL, WISCONSIN
PATTY MURRAY, WASHINGTON

J. KEITH KENNEDY, STAFF DIRECTOR
JAMES H. ENGLISH, MINORITY STAFF DIRECTOR

United States Senate
COMMITTEE ON APPROPRIATIONS
WASHINGTON, DC 20510-6025

April 7, 1995

Mr. Charles A. Bowsher
Comptroller General of the U.S.
Room 7125
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Bowsher:

As a part of your review of the Department of Defense's 1995 recommendations to the Base Closure and Realignment Commission (BRAC), I ask that you evaluate the Air Force's proposed realignment of Malmstrom Air Force Base, Montana.

During the recent BRAC hearing in Great Falls, it was stated that the savings from realigning Malmstrom AFB would be generated from the savings in lease costs at MacDill AFB. It appears that these savings would occur regardless of where the KC-135s originate. The attached document discusses this issue.

I appreciate your assistance in ensuring that an accurate and complete assessment of the total costs, savings and return on investment of this proposal is known. Mr. Jim Morhard of my staff is available to provide further information on this issue.

I look forward to working with you on this matter.

With best wishes.

Sincerely,

Conrad R. Burns
Chairman of the
Military Construction
Subcommittee

JAMES V. HANSEN
1ST DISTRICT, UTAH

COMMITTEES
NATIONAL SECURITY
RESOURCES
SELECT COMMITTEE ON
INTELLIGENCE

WASHINGTON OFFICE:
ROOM 2466
RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-4401
(202) 225-0453

Congress of the United States
House of Representatives
Washington, DC 20515-4401

DISTRICT OFFICES
1017 FEDERAL BUILDING
324 25TH STREET
OGDEN, UT 84401
(801) 393-8362
(801) 625-5677
(801) 451-3622

436 EAST TABERNACLE
SUITE 301
ST. GEORGE, UT 84770
(801) 628-1071

April 7, 1995

The Honorable Charles Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street NW
Washington, DC 20548

Dear Mr. Bowsher,

I am writing to you to request your assistance in a matter of great interest to myself and the people of Utah.

During the 1993 BRAC, a decision was made to consolidate tactical missile work at Letterkenny Army Depot (LEAD). In its 1995 recommendations for base closure, the Department of Defense recommends closing LEAD. While I cannot comment on the merits of this recommendation, I am concerned about the future of consolidation in the tactical missile workload. I believe consolidation and cross-servicing of depot-level maintenance provides considerable cost savings to the American taxpayer, as well as significant efficiencies to the Department of Defense. I would appreciate your response to the questions I have provided in the attached recommendation. I believe continued consolidation of this workload at the Ogden Air Logistics Center can provide tremendous economic advantages and should be considered.

Your assistance in this matter, and the professional work done by your staff, is greatly appreciated.

Sincerely,

James V. Hansen
Member of Congress

JVH:bj

Attachment (1)

Hudson Institute

J.W. Wheeler
Private Sector Chair,
City of Indianapolis NAWC Task Force
Hudson Institute
P.O. Box 26-919
Indianapolis, IN 46226

April 9, 1995

Mr. David R. Warren
Director, Defense Management and NASA Issues
Mr. Barry W. Holman
Assistant Director, National Security and
International Affairs Division
Mr. Richard P Roscoe
Office of Congressional Relations
U.S. General Accounting Office
441 G. St. NW, Room 7025
Washington, DC 20548

CELEBRATING
10 YEARS IN
INDIANAPOLIS

HERMAN
KAHN
CENTER
P.O. BOX 26-919
INDIANAPOLIS
INDIANA
46226
317-545-1000
317-545-9639
(FAX)

INDIANAPOLIS
WASHINGTON
MONTREAL
BRUSSELS

Dear Sirs:

Thank you for joining us in the conference call from Congressman Burton's office. Your comments were most helpful in our deliberations.

Enclosed is the promised paper that outlines the major concerns that we have with both the Military Value and the COBRA analyses upon which the closure decision was based for Naval Air Warfare Center – Aircraft Division, Indianapolis (NAWCADI). As we discussed on the telephone, our initial review had found serious flaws in the scoring of our site in the Military Value analysis, as well as several important discrepancies between the data call submissions and the values used in the final COBRA closure scenario. What we did not expect to find was several fundamental flaws in the analysis.

We realize that you are under serious deadline pressures, but the errors found are so serious as to require your attention. The team members who helped put this assessment together are available to discuss our concerns and re-estimates at any time. My direct line at Hudson Institute is (317) 549-4135. Under the time constraints, please feel free to contact me at home, (317) 841-0651. You can also contact Larry Gigerich in Mayor Goldsmith's office at (317) 327-3637.

Thanking you in advance, I remain

Sincerely,

Attachment

SHAPING THE FUTURE

Congress of the United States
Washington, DC 20515

April 10, 1995

Mr. Barry W. Holman, Assistant Director
National Security and International Affairs Division
U.S. General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Holman:

We are taking this opportunity to express our serious concerns with the process, data integrity and final recommendations of the U.S. Navy that led to the proposed realignment in missions at Naval Air Warfare Center Aircraft Division Lakehurst and the possible closure of the Naval Air Engineering Station in Lakehurst, New Jersey. We strongly urge you to include these data inaccuracies and flawed procedures in the General Accounting Office's April 15, 1995 report to the Base Closure and Realignment Commission (BRAC).

While we are pleased that the Navy abandoned its initial scenario to completely close Lakehurst and has conceded that it cannot safely and cost-effectively move the critical missions of the catapult testing and launch recovery system at Lakehurst, we remain perplexed by the Navy's decision to strip and move operations which support and work synergistically with these two core functions. To divide, splice and relocate interrelated aspects of Lakehurst's mission jeopardizes the operations, productivity and performance of our fleet.

Well-documented information provided to us indicates the data used in reaching the decision to partially close the base was at best flawed and at worst manipulated by the Navy's Base Structure Evaluation Committee (BSEC). We have raised these issues with the Secretary of the Navy and are awaiting an Inspector General's report. To date, the ongoing investigation has done little to alleviate our concerns. Indeed the Navy's initial response to our inquiry raises more questions than it answers.

Our evidence, shared openly with the Navy and made available to the General Accounting Office, clearly demonstrates two areas of significant irregularities in the Navy's process in regard to the Lakehurst scenario. First, the Navy's BSEC repeatedly reduced, or ignored the *certified data* submitted by the Commander, Naval Air Systems Command (NAVAIR). Second, the Navy's BSEC knowingly eliminated and denied the necessity of including the costs of relocating Lakehurst's tenants as a result of the closure action.

Mr. Barry W. Holman
April 10, 1995
Page Two

We recognize the Navy BSEC's authority to challenge the data provided by its most senior military commanders, in the effort to determine the most correct estimate for each proposed closure or realignment action. However, we believe the BSEC exercised poor judgment and overstepped its authority by drastically reducing (in some cases zeroizing) the data without factual justification. For your convenience, we have included excerpts from a comparison of the data reported by the Navy BSEC and the actual certified data provided by NAVAIR for the Lakehurst scenario:

Estimated Costs for Lakehurst Scenario #123:	Reported by Navy BSEC:	Certified by NAVAIR:
▸ One-Time Cost estimate:	$ 96,943,000	$ 162,274,000
▸ Annual Recurring Costs:	$ 4,622,000	$ 12,630,000
▸ Return on Investment:	2002 (3 Years)	2029 (30 Years)

Regarding our second concern, it is best to simply quote the Navy's BSEC during its deliberations of December 19, 1994:

> ***"Since it is not DoN's responsibility to build new facilities for these personnel, the BSEC directed that MILCON*** (for Lakehurst's tenants) ***be eliminated."***

We believe that assessment is wrong and that costs to move tenant personnel should be a part of the total costs to realign Navy Lakehurst. These military tenants include the Army Airborne Engineering Evaluation Support Branch (AAEESB); the Defense Logistics Agency's Defense Reutilization and Marketing Office (DRMO); and the Naval Mobile Construction Battalion Twenty One (NMCB-21). Even the costs for relocating its one-of-a-kind training devices, as well as the costs for necessary construction for the Navy's own Naval Air Technical Training Center (NATTC) were eliminated. The actual estimates for the Lakehurst scenario are provided below:

One-Time Costs for Lakehurst Scenario #123:	Reported by Navy BSEC:	Certified by Tenant:
▸ Army's Office of the Chief of Staff for AAEESB:	$ 0	$ 11,525,000
▸ Chief of Naval Education & Training for NATTC:	$ 199,000	$ 33,210,000
▸ Defense Logistics Agency for DRMO:	$ 0	$ 16,925,500
▸ Commander, NMCB-21:	$ 0	$ 867,250

Mr. Barry W. Holman
April 10, 1995
Page Three

We believe that the process used by the Navy's BSEC is flawed and has violated the intent of the Navy's public policy on fair and open procedures. We are concerned that the process may have been misused to justify a predetermined decision to bolster operations at NAS Patuxent River and to save the Naval Aviation Depot (NADEP) at Jacksonville, Florida. We quote the BSEC from its January 13, 1995 deliberations:

> ***"NADEP Jacksonville was identified as a receiving site that enabled the closure of a major technical center."***

Note the BSEC's projected savings in the realignment scenario for Lakehurst estimates annual savings of $37,200,000. This savings is nearly identical to the real savings of $37,300,000 which would be achieved if a proposal by the Joint Cross-Service Group to close NADEP Jacksonville and create a Regional Maintenance Activity were adopted by the BRAC.

These inconsistencies and numerical anomalies cast serious doubts on the Navy's process for determining military value, initial costs, and potential return on investment in the closure and realignment scenarios for Navy Lakehurst. We believe that the process followed throughout the Lakehurst scenarios was compromised and the final decisions, based on incorrect assumptions and erroneous data, are flawed. Again, we strongly encourage the GAO to include these data inaccuracies and flawed procedures in its April report and would appreciate any additional insights you may provide as we present this case to the BRAC Commission.

Sincerely,

CHRISTOPHER H. SMITH

H. JAMES SAXTON

BILL BRADLEY

FRANK LAUTENBERG

United States Senate
WASHINGTON, DC 20510

April 10, 1995

The Honorable Charles A. Bowsher
Comptroller General
United States General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Bowsher:

We are writing regarding the detailed analysis of the Department of Defense (DOD) 1995 base closure and realignment recommendations that the General Accounting Office (GAO) is required to submit (under Section 2903 (d) of Public Law 101-510, as amended) to the Congress and to the Defense Base Closure and Realignment Commission by April 15, 1995. We would like to reiterate to you our concern over the Defense Logistics Agency's (DLA) recommendation to close the Defense Distribution Depot Memphis, Tennessee (DDMT).

In the DOD 1995 Annual Report (page 146), Secretary William Perry states that there "are three guiding principles to the Department's BRAC process: improve military effectiveness, save money by reducing overhead, and conduct a fair and objective selection process." The Policy Guidance the secretary issued on January 7, 1994, also states that the Service and Defense Agency BRAC studies "must be based on analyses of the base structure by like categories of bases using: objective measures for the selection criteria, where possible..." It is clear to us and to the Memphis and DDMT communities that the process DLA used to reach the decision to close DDMT did not follow the secretary's instructions to be fair and objective while comparing like categories of bases.

An example of our concern is the Installation Military Value Analysis, where DLA defined Mission Scope as being largely dependent on portable functions and tenant activities. Four aspects of this decision disturb us. First, this practice resulted in an under-valuing of DDMT's permanent physical assets and such factors as operating costs.

Second, it seems to us that DLA established a BRAC study process which evaluated its depots based on the number of tenant functions located at each installation. In effect, DLA judged its facilities based not on the underlying military value of the installations themselves, but on how good of a host they were.

Third, the practice violated the DOD direction to objectively compare installations in like categories. Finally, the portability of the measured functions and tenant activities meant that DLA could influence the BRAC study outcome by using unilateral, non-BRAC actions.

We trust that your April 15 report will not only address the issue of whether DLA's recommendations are consistent with its own BRAC guidelines, but whether DLA's BRAC guidelines themselves were appropriate reflections of the letter and spirit of P.L. 101-510 and the DOD Policy Memoranda establishing the overall procedures and responsibilities for selecting realignment and closure candidates.

We appreciate your attention to our concern and look forward to receiving your analysis of DLA's BRAC recommendations and decision making process.

Sincerely,

Fred Thompson
United States Senator

Bill Frist
United States Senator

Congress of the United States
House of Representatives
Washington, DC 20515

April 11, 1995

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Bowsher:

We are writing to urge that the General Accounting Office (GAO) review the manner in which the U.S. Army prepared its recommendation to disestablish the Aviation and Troop Command (ATCOM) as part of the 1995 base closure process, and discuss the results of this review in your report to the Defense Base Closure and Realignment (BRAC) Commission

Established in 1991, ATCOM has sole responsibility for the research, development, engineering and logistical support for the Army's airborne systems and for field and troop support equipment. As the Army Public Affairs office noted in April 1994, ATCOM "is the only command in the Army that affects every soldier, every day." It operates from leased space at the St. Louis Federal Center, a facility owned by the General Services Administration.

As you know, the Army has recommended that ATCOM be disestablished and that its aviation functions be transferred to Redstone Arsenal; its soldier systems functions be transferred to Natick Research, Development and Engineering Center (RDEC); its communications and electronics functions be transferred to Fort Monmouth; and its automotive functions be transferred to Detroit Arsenal. We believe that this proposal is severely flawed based on our findings that in recommending ATCOM for closure, the Army:

(1) failed to comply with the base closure law's requirement that all closure recommendations be based on the final selection criteria;

(2) overestimated the cost savings to the government, which are much lower than represented;

(3) failed to comply with the objectives of its own Stationing Strategy; and,

(4) failed to consider more cost-effective alternatives.

These findings have led us to conclude that the Army deviated substantially from final criteria 1, 2, 3, 4 and 5 in recommending that ATCOM be closed.

We understand that by April 15 you must submit to the BRAC Commission an analysis of the Defense Department's recommendations and selection process. We would like to take this opportunity to present our findings regarding ATCOM that are of particular relevance to your analysis. We urge you to include these findings in your report to the BRAC Commission due to the serious errors made by the Army in recommending that ATCOM be closed.

FAILURE TO COMPLY WITH THE BASE CLOSURE LAW

As you know, the base closure law requires that the Defense Department make recommendations to close or realign military installations, including leased facilities, "on the basis of the force structure plan and the final criteria." In keeping with this requirement, the Defense Department delineated eight final criteria and instructed each Service to give priority consideration to the first four, which measure military value.

We have found that the Army failed to consider any of the military value criteria when selecting leased facilities for closure, despite the law's requirement that these facilities be evaluated in the same manner as other military installations. The Army's Management Control Plan for the 1995 base closure process indicates that the Army evaluated installations on the basis of the military value criteria during its "Installation Assessment" phase. It states that during this phase, "each category of installations is compared using a set of attributes," and that "each attribute is linked to one of the four DOD selection criteria that measure Military Value." This was the only phase of the Army's base closure selection process in which the first four criteria were used as the basis for developing closure recommendations.

The Army's Management Control Plan clearly shows that leased facilities were excluded from this phase of the process. These facilities were reviewed by the Army only after all other facilities had been evaluated on the basis of the first four criteria and had received military value rankings (see Attachment A).

In response to a question by the BRAC Commission regarding this apparent failure to analyze leased facilities based on the military value criteria, the Army stated that it "concluded that leased facilities in general, not necessarily the operations they house, have low military value." We question the validity of this statement, since we have found no evidence of such a determination having been made during the Army's base closure selection process. Furthermore, this statement could conceivably apply to facilities housing operations in every category of installations. In assigning weights to the final criteria, the Army gave Criteria 2 -- the availability and condition of land and facilities -- only 225 out of 1000 points. At the same time, the Army gave Criteria 1 -- mission requirements and operational readiness -- 450 out of 1000 points. It is evident, therefore, that the Army determined that facilities have low military value relative to the operations they house regardless of the installation category in which they were evaluated.

In the same response to the BRAC Commission, the Army stated that "the Army's leaders considered the military value of ATCOM in its deliberations." However, the minutes of the Army's deliberative meetings indicate that no such consideration occurred. In fact, the briefing slide proposing the closure of ATCOM that was presented to the Army's leaders on 20 December

2

1994 contained no military value rating by which to determine whether closure was appropriate. In contrast, the briefing slides for facilities in other installation categories did include military value ratings by which to determine whether closure was appropriate (see Attachment B). It appears from the Army's own documents, therefore, that its leadership based the decision to close ATCOM not on the basis of the eight final criteria as required by the law, but solely on the basis of a cost/savings analysis (which itself was flawed -- see below).

We believe the Army also violated the base closure law by attempting to realign the Systems Integration and Management Activity (SIMA) as part of its recommendation to close ATCOM. As you know, the base closure law applies to installations having at least 300 authorized civilian personnel. SIMA employs approximately 409 civilian personnel and is located in leased space in downtown St. Louis. It is functionally distinct from ATCOM and geographically distinct from the St. Louis Federal Center. Despite these facts, the Army included the transfer of SIMA to Redstone Arsenal within its proposal to disestablish ATCOM. The Army failed to perform an independent analysis of SIMA, including any consideration of the military value or other selection criteria in recommending that it be transferred. These errors constitute a violation of the base closure law.

In light of the above, it is evident that the Army did not simply deviate substantially from the four military value criteria in recommending ATCOM and other leased facilities for closure. It deviated entirely from these criteria by excluding leased facilities from its military value analysis of installations.

The Army's analysis of leased facilities for the 1995 base closure process differed from the manner in which these facilities were considered in 1993. During that base closure round, the Army considered leased facilities within categories associated with their individual missions, which enabled each to be evaluated on the basis of the military value criteria. It appears that the Army considered leased facilities differently in 1995 in order to address the 1993 BRAC Commission's suggestion that the Services include a separate category for leased facilities during the 1995 process. While the Army succeeded in addressing this suggestion, it clearly violated the requirements of the base closure law by failing to evaluate leased facilities on the basis of the military value criteria. It should be noted that the Army was the only Service to make this error; both the Navy and the Air Force performed military value analyses of their leased facilities.

OVERESTIMATION OF COST SAVINGS TO THE GOVERNMENT

We have found that in recommending that ATCOM be closed, the Army greatly overestimated the savings associated with this proposal. It made this error in large part by ignoring the GAO's determination that overall costs to the government must be considered in order to obtain an accurate understanding of the financial implications of an installation closure.

As you know, in prior base closure rounds the GAO recommended that the Defense Department consider the governmentwide costs and savings associated with base closure recommendations. The GAO stated in its report on the 1993 base closure process that

3

> DOD counts the reductions in rent as savings even when the buildings are federally owned facilities. In some cases, the moves require construction of new DOD facilities and the rental savings are used to offset and justify the construction costs. In actuality, this may not represent an overall savings to the government.

In preparing its analysis of installations for possible closure, the Army concurred with GAO's views as they pertain to leased facilities. The Army Basing Study's BRAC 95 COBRA Input Procedures and Assumptions states that

> Lease costs present a specific case where the COBRA model is not designed to provide accurate modelling of the actual cost incurred by the government....Only by terminating the lease contract does the government receive a savings.

Despite this acknowledgment, the Army defied the GAO's determination when calculating the costs and savings associated with the closure of ATCOM. As noted above, ATCOM operates from leased space at the St. Louis Federal Center, which is owned by the General Services Administration (GSA). Consequently, the Army's departure from this space will not result in savings to the government because the GSA will continue to own the facility.

We were disturbed to learn that when challenged with the fact that departure from the St. Louis Federal Center would not generate the savings claimed, the Army continued to ignore the reality of the situation. In response to a question by the 1995 BRAC Commission about the efficiencies gained by moving ATCOM, the Army stated that "it is evident the restructuring of ATCOM provides both a financially and operationally sound opportunity to relocate from lease space to government-owned facilities." ATCOM is already in government-owned facilities; therefore, the Army's estimate of $7.6 million in annual savings generated by vacating leased space at the St. Louis Federal Center cannot be considered a net savings to the government. Furthermore, the GSA has reported that ATCOM's closure would impose additional costs on the government.

We believe that the Army's interest in vacating ATCOM's leased space, taken in the context of the costs associated with moving ATCOM's functions to other facilities, is financially indefensible. The Army's own data indicates that the transfer of ATCOM's functions to the bases scheduled to receive them will result in higher overhead costs than currently paid at the St. Louis Federal Center. As Attachment C shows, the transfer of ATCOM's functions to the proposed receiving bases would increase the Army's annual overhead costs by 46 percent -- from $7.6 million to $11.1 million.

To these recurring overhead costs must be added the one-time costs associated with moving ATCOM's functions and necessary personnel to the proposed receiving bases. The Army itself estimates moving costs to be $61 million and military construction costs to total $59 million. These expenditures, combined with other one-time costs of approximately $24 million, would result in total one-time costs of $144 million solely to move ATCOM's activities and accommodate them at other installations. It is inconceivable to us that the Army would be willing to spend $144 million, plus $3.5 million annually in additional overhead costs, simply to vacate a GSA-owned facility in St. Louis.

4

While acknowledging these costs, the Army has justified the closure of ATCOM by asserting that it would generate $47 million in savings annually due to the elimination of 1,022 civilian personnel.

We have found that the Army's personnel reduction expectations are seriously exaggerated. First of all, prior to the Defense Department's 1995 base closure announcement, ATCOM had in place plans to reduce civilian personnel by at least 445 positions through fiscal year 1999, in keeping with the Army's own projections of future personnel levels. Consequently, the Army's expectation that 1,022 personnel would be eliminated by this closure must be reduced by the number of positions that would have been eliminated regardless of any base closure actions. Secondly, the Army failed to account for the transfer of any support personnel from ATCOM to the proposed receiving bases. ATCOM officials have calculated that, based on Army guidance regarding the consolidation of units, 287 support positions must be added to the number of personnel expected to transfer with ATCOM's functions to the receiving bases.

In light of the above, the total number of civilian positions the Army can legitimately claim to eliminate by closing ATCOM is 290. These cuts would generate $ 13 million in savings annually -- 72 percent lower than the civilian personnel savings expected by the Army. These reduced savings, combined with $144 million in one-time costs and $11 million in recurring costs, would not result in a return on investment for at least half a century.

Alternatively, retaining ATCOM would allow the government to save $144 million in one-time costs and $11 million in annual overhead costs associated with performing ATCOM's functions at other bases. It would also generate at least $20 million in savings annually through ATCOM's 1995-99 downsizing efforts and generate an immediate return on investment.

The Army understood the inadvisability of closing ATCOM during the last base closure round. In 1993, the Army acted on a recommendation by the 1991 BRAC Commission and evaluated the possibility of moving ATCOM's functions to Army-owned facilities. In its report to the 1993 BRAC Commission, the Army stated that "the high relocation costs make realignment or closure impractical and prohibitively expensive." We believe the information presented above confirms that this statement remains true today.

* * * * *

We hope you will give the above information full consideration as you prepare your report on the Defense Department's base closure recommendations and selection process. Based on our analysis, it appears that by failing to consider ATCOM and other leased facilities on the basis of the four military value criteria and by overestimating the savings associated with ATCOM's closure, the Army deviated substantially from final criteria 1, 2, 3, 4 and 5. We believe that these facts merit discussion in the GAO report to the BRAC Commission and the removal of ATCOM from the Defense Department's base closure and realignment list.

5

We appreciate you attention to this matter, which is of critical importance to our nation's defense capabilities and the citizens of the St. Louis area.

Sincerely,

Richard A. Gephardt
Member of Congress

William Clay
Member of Congress

Harold L. Volkmer
Member of Congress

Christopher S. Bond
U.S. Senator

John Ashcroft
U.S. Senator

6

United States Senate
WASHINGTON, DC 20510

April 11, 1995

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accouting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

We are writing to request that the General Accounting Office review several issues relating to the realignment of Onizuka Air Station as part of the 1995 Base Realignment and Closure (BRAC) process.

As you know, Onizuka Air Station was recommended for major realignment by the Secretary of Defense, with much of its workload and personnel transferring to Falcon Air Force Base in Colorado. We question the military and fiscal justification for this realignment and believe it could have negative implications on U.S. national security, particularly with regard to the nation's satellite control network. In addition, the proposed realignment of Onizuka Air Station will have an adverse economic impact on California (a state disproportionately hard hit by military base closures), causing the loss of several thousand military, civilian and contractor jobs in the region.

As part of GAO's analysis into BRAC 95, we would like you to review the following issues relating to the recommended realignment of Onizuka Air Station:

1. Apparently, as a result of suggestions following BRAC 93, the Air Force adopted a mathematical approach for evaluating bases in BRAC 95. However, despite the objective "green/yellow/red" grades assigned to various categories for different bases, the final rating of bases was made via a subjective tiering process. In this process, each member of the Air Force Base Closure Executive Group voted on the tiering of a particularly base. This subjective ballot process makes the analytical and objective analysis more difficult to audit the outcome of the decision process. **What evidence is available to determine that the Air Force closure and realignment process selected bases in an accurate and fair manner? What is the GAO basis for making this determination?**

2. Despite the continued presence of Air Force and tenant activities and personnel at Onizuka Air Station following any BRAC action, the Air Force cost estimates predict an annual saving of more than $10 million in Real Property Maintenance Activities (RPMA) and Base Operating Support (BOS) costs. **Are these high savings estimates accurate?**

The Honorable Charles A. Bowsher
April 11, 1995
Page 2

3. According to the base questionnaire for Onizuka Air Station, there is a 75 percent decrease in mission requirements expected over the next ten years. This statement greatly impacted Onizuka Air Station's rating in the "satellite control operations" subcategory and may have impacted the base's overall tiering status. **What is the basis for such a reduction in mission requirements? Does this statement reflect Air Force or other tenant activities? If reflective of other tenant and not Air Force activities, is it fair to penalize Onizuka Air Station in the "satellite control operations" subcategory?**

4. The Air Force claims that only one satellite control node is needed and there is excess capacity in the satellite control bases category. However, the analysis of excess mission capacity is not revealed in any detail in any of the BRAC documents. We believe that national security may dictate that two nodes are needed to ensure that there are back-up and redundant capabilities in the event of war, natural disaster, sabotage, etc. Apparently, there have been instances in the past -- such as the "backhoe" incident -- where satellite control and/or communication functions have been disrupted at Falcon AFB. **Did the GAO review the Air Force's analysis that only one satellite control node is required? What are the implications to U.S. national security of Onizuka Air Station's realignment?**

5. The base questionnaires state that figures on operational capacities and core requirements for the satellite control bases are maintained separately and are classified. **Was this classified material given appropriate weight in the "green/yellow/red" analysis and the final tiering process? Was this classified material taken into consideration in making the determination that there are no unique facilities at Onizuka Air Station?**

6. According to responses provided to Senator Feinstein, there were discussions between the Air Force and tenants at Onizuka Air Station concerning the BRAC 95 process and future mission projections. However, these discission were held on a working level and no record of this communication was kept. **Why were no records kept of integral discussions impacting the BRAC 95 process and the decision to recommend Onizuka Air Station for realignment? Can GAO investigate this matter and determine if these discussions where held in accordance with BRAC policy and guidelines?**

7. The base questionnaire for Onizuka Air Station states that the base has sufficient capacity to accomplish all core operations for <u>both</u> satellite control nodes. The base questionnaire for Falcon AFB states that the base does <u>not</u> have

The Honorable Charles A. Bowsher
April 11, 1995
Page 3

sufficient capacity to accomplish all core operations for both satellite control nodes. Nevertheless, the Air Force recommended realigning Onizuka Air Station and transferring much of its workload to Falcon AFB. **What is the justification for these statements? What is the estimated cost of upgrading Falcon AFB to accommodate the task now performed by Onizuka Air Station?**

8. Under the Air Force's BRAC process, the one time cost to close Falcon AFB and move its functions to Onizuka Air Station are estimated at $575 million. However, we understand that most of these costs relate to one facility, the National Test Facility. **Did the Air Force consider a scenario of realigning Falcon AFB, leaving the National Test Facility as a stand-alone facility, thereby reducing substantially the one-time implementation cost? If so, what where the results? If not, why?**

9. The Onizuka Air Station base questionnaire states that there are no unique or one-of-a-kind Air Force facilities at the base. However, officials at Onizuka Air Station have compiled a list of numerous unique facilities, equipment and missions at the base. **Why is there a discrepancy between the base questionnaire for Onizuka Air Station and the information supplied by the base regarding unique facilities? Did the base questionnaire take into account unique non-Air Force facilities that are an integral part of Onizuka Air Station's mission?**

Thank you, in advance, for reviewing these important issues. As the BRAC 95 process is already underway and the Onizuka Air Station base visit and regional hearing are at the end of the month, we would appreciate your prompt attention to this time-sensitive matter.

Sincerely,

Dianne Feinstein
United States Senator

Barbara Boxer
United States Senator

Congress of the United States
House of Representatives
Washington, DC 20515

April 12, 1995

The Honorable Charles A. Bowsher, Comptroller General
U.S. General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Comptroller Bowsher:

As part of your analysis of the selection process used by the Department of Defense in preparing recommendations to restructure our nation's military bases, we request that you consider the following questions relating to the realignment of the 750th Space Group from Onizuka Air Force Station and the 129th Rescue Group from Moffett Federal Airfield in California.

750th Space Group, Onizuka Air Force Station

1. The Base Closure and Realignment Commission (BRAC) process is designed to provide open and independent review of the decision process within the Military Services and the Department of Defense to ensure DOD recommendations are both fair and accurate. For the 1995 decision round, the Air Force implemented a mathematical approach for determining the relative grades of base restructuring options. This was done to improve the decisionmaking process by establishing clear, objective criteria under which different options would be graded. Despite the analytical process put in place by the Air Force, the final decision to select bases for closure and realignment appears to have been done by secret ballot within the BRAC Executive Group at the Pentagon. Such an action would reject the notion of objective decisionmaking and make the earlier transparent steps irrelevant and useless for auditing the outcome of the decisionmaking process. What evidence is available to determine that the closure and realignment process selected restructuring or closure options in an accurate and fair manner? What is GAO's basis for attempting to make this determination?

2. The Air Force analysis of excess mission capacity is not revealed in any detail in the documents provided to the BRAC Commission, yet we have reason to believe that the history of Falcon Air Force Base (AFB) would suggest there is a need for functional backup for our nation's military satellite control activities. Specifically, we believe that a recent incident with a "backhoe" tractor caused the Falcon system to fail for several hours making Onizuka the only control node available. Please review the excess capacity analysis conducted by the Air Force and provide us all information regarding the "backhoe" incident and any others which have induced system failures.

3. The Cost of Base Realignment Actions (COBRA) analyses performed by the Air Force predict an annual savings of over $10 million dollars in Real Property Maintenance Account (RPMA) and Base Operation Support (BOS) costs. We believe GAO should review these very high savings estimates.

4. Records provided to Congress indicate that between December 19, 1994 and February 21, 1995, the COBRA figures for the 750th's move to Falcon AFB were revised at least five times, each time producing figures improving the economic case for the move. For example, COBRA estimates for the "1-time total cost" for the move decreased from $290.6 million on December 6, 1995 to $124 million on February 21, 1995. What were the factors and variables which can account for such a decline in the time period discussed?

5. In response to the question of future workload, the Onizuka staff predicted a level workload requirement and responded to the Air Force questionnaires accordingly, yet the data provided to the BRAC Commission on this point indicates a reduction of 75 percent in Onizuka workload. What is the basis for such a reduction?

6. What is the estimated cost of upgrading Falcon AFB to accommodate all tasks now performed by Onizuka? Please answer in light of the Falcon questionnaire response indicating that "this installation does not have sufficient capacity to accomplish all core operations."

7. The Air Force analysis comparing Onizuka to Falcon makes no reference to a classified annex that was submitted with the questionnaire. Was this classified annex taken into consideration in making the determination that there are no unique facilities at Onizuka? Was the classified annex given appropriate weight in the "red, yellow, green" analysis and the final decisionmaking process?

129th Rescue Group, Moffett Federal Airfield Air Guard Station

1. The relocation of the 129th from Moffett Federal Airfield appears to be an unusual proposal to be included in the BRAC process inasmuch as the number of civilian employees falls under the BRAC threshold of 300 civilian employees. The usual BRAC analysis has not been conducted for these realignments, at least not according to the limited documentation available at the Commission. What is the basis for this realignment? Who initiated the action?

2. The study of the cost of the 129th's realignment has just recently been initiated by the Air Force and is not yet complete, so we believe that there is no foundation for the costs provided in the Air Force recommendations. We would like your analysis of the source of the reported cost figures as well as their accuracy.

3. The Base Closure Executive Group directed several adjustments to the Air Force site survey. The adjustments include deletions of $6.4 million for the HQ/Flying SQD OPS; $260,000 for a Vehicle Maintenance Canopy; $1.4 million for Unit Supply Warehouse; and $1.4 million for other buildings. These adjustments lower the initial cost of the realignment by half and appear arbitrary. This is particularly relevant inasmuch as there will be a shortage of 220,000 square feet of space at McClellan relative to the 129th's current occupancy at Moffett. Please provide your analysis of these adjustments and whether they were properly justified.

Comptroller Bowsher, we believe careful consideration of these questions is essential to ensuring GAO's informed reporting of the details about the current BRAC to the BRAC Commission. While the benefits of defense downsizing are important, we believe it is our responsibility to point out inconsistencies in the BRAC process which may circumvent fair and open procedures, increase the cost of military downsizing, and undermine our national defense.

We thank you for your attention to these matters and ask for responses to our inquiries be completed before April 17, 1995. If you have questions or require additional information, please contact John Flaherty (Rep. Eshoo) at 225-8104 or Frank Paganelli (Rep. Mineta) at 225-2632.

Sincerely,

Anna G. Eshoo, M.C.

Norman Y. Mineta, M.C.

AGE:las

DAVID L. HOBSON
7TH DISTRICT, OHIO

WASHINGTON OFFICE
1514 Longworth HOB
Washington, D.C. 20515

(202) 225-4324

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES

APPROPRIATIONS COMMITTEE
NATIONAL SECURITY
VA, HUD, AND INDEPENDENT AGENCIES
BUDGET COMMITTEE
SPEAKER'S DESIGNEE
STANDARDS OF OFFICIAL CONDUCT
REPUBLICAN WHIP ORGANIZATION

April 14, 1995

faxed to Office of Congressional
Affairs. 14 Ap 95

The Honorable Charles A. Bowsher
Comptroller General
U.S. General Accounting Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Bowsher:

I am writing in regard to Military Bases: Analysis of DOD's 1995 Process and Recommendations for Closure and Realignment (GAO/NSIAD-95-133, April 1995). This GAO review is required by the Defense Base Closure and Realignment Act of 1990 (PL 101-510), as amended.

In the Air Force section, you comment in general on many deficiencies in the way the process was run by that branch of the Armed Services. However, at the bottom of page 58 you state "While we have some concerns about the Air Force's process, we found no information that would lead us to question 15 of the 23 decisions."

Although apparently one of the 15 decisions with which GAO found no problem, the Springfield-Beckley Air National Base should have been questioned by the GAO. The Air Force, itself, has already repudiated their estimates which you blithely reproduce--giving them a credibility they do not deserve--on page 65. In light of this, I want to know why GAO does not question the Springfield decision.

Please furnish me with copies of all of the data used by the GAO to draw this conclusion, and the times of any site visits to Springfield.

As a member of both the Appropriations Committee and the Budget Committee, I know the regard given GAO reports and also know that GAO officials would not want to leave an incorrect impression.

Thank you.

Sincerely,

Dave Hobson

DAVID L. HOBSON
Member of Congress

DLH/kak

SPRINGFIELD OFFICE
Room 220 Post Office
150 N. Limestone St.
Springfield, OH 45501-1121

(513) 325-0474

THIS STATIONERY PRINTED ON PAPER MADE OF RECYCLED FIBERS

LANCASTER OFFICE
212 S. Broad St.
Room 55
Lancaster, OH 43130-4389

(614) 654-5149

Congress of the United States
House of Representatives
Washington, DC 20515

April 25, 1995

Mr. Barry W. Holman
Assistant Director, National Security and
International Affairs Division
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Holman:

The City of Indianapolis NAWC task force prepared an assessment of the Military Value and COBRA analyses performed by the Navy upon which the closure recommendation was based for the Naval Air Warfare Center, Indianapolis. The task force's review found serious scoring flaws in the military value analysis. It also found important discrepancies between the data call submissions and the values used in the final COBRA closure scenario, as well as several fundamental flaws in the analysis itself. A copy of the task force's assessment was provided to the GAO by the city.

We were quite disturbed that your report, issued April 14, did not discuss the major scoring errors in the military value assessment, and only briefly noted concerns about the accuracy of the COBRA analysis. During a March 30 meeting with Kevin Long, of Congressman Burton's staff, and a teleconference with several people on the city's task force, you, David Warren, Richard Roscoe, and another gentleman indicated that even though the GAO would not have completed an entire review of the serious scoring errors in the COBRA and military value scenarios run by the Navy on NAWC, Indy, that the GAO would follow up with a subsequent, in depth, review after your lengthy legally required report had been submitted to Congress. To date we have heard nothing, and it was our understanding that it was the GAO's intention to complete this review, or at the very least express concern to the BRAC commission about the questionable validity of the Navy's results.

We realize the GAO was under serious deadline pressures, but the errors found are so serious as to require special attention. It is imperative that you work closely with the BRAC staff to clear up these problems. Only a thorough review and correction of the flawed results will provide the BRAC commission with an accurate evaluation of

Mr. Barry Holman
4/25/95
pg. 2

the importance of NAWC Indianapolis to the future of the Navy, and specifically to DOD acquisitions. The Indianapolis task force, which helped prepare the city's assessment, as well as our staffs are available to discuss our concerns and ready to provide any assistance you might need.

We appreciate your prompt attention to our request, as it is imperative that this situation be taken care of prior to the BRAC decision-making process next month.

Sincerely,

Dan Burton
Member of Congress

Andy Jacobs
Member of Congress

David McIntosh
Member of Congress

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

Orders by mail:

U.S. General Accounting Office
P.O. Box 6015
Gaithersburg, MD 20884-6015

or visit:

Room 1100
700 4th St. NW (corner of 4th and G Sts. NW)
U.S. General Accounting Office
Washington, DC

Orders may also be placed by calling (202) 512-6000 or by using fax number (301) 258-4066, or TDD (301) 413-0006.

Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (301) 258-4097 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.

PRINTED ON RECYCLED PAPER

United States
General Accounting Office
Washington, D.C. 20548-0001

Bulk Mail
Postage & Fees Paid
GAO
Permit No. G100

Official Business
Penalty for Private Use $300

Address Correction Requested

Document Separator

162

Department of Defense

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

March 31, 1994

WC

162

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 ASSUMPTION 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.

3

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.).

4

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.

5

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.

6

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).

7

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

8

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.

9

INTRODUCTION

A. Test and Evaluation Responsibility

NAWCAD Lakehurst is responsible for the life cycle support of what we call the Aircraft Platform Interface (API). To put this data call in perspective however, please note that only a small part of that responsibility relates to Test and Evaluation. The following chart, reproduced from Data Call no. 4, shows that our T&E funding for FY 93 comprised only 0.35% of our total RDT&E funding and 0.043% of our total funding. The projections for FY 94 and the outyears are the same order of magnitude. **It is clear that Test and Evaluation is not a significant part of our mission.**

That said however, NAWCAD Lakehurst, by virtue of its related expertise, its facilities and its geography can support, if required, an expanded T&E mission.

FY 1993 BREAKOUT OF FUNDS BUDGETED for NAWCADLKE (UIC N68335)

SPONSOR	RDT&E(N)							Other RDT&E	Other Appropriation						
	6.1	6.2	6.3a	6.3b	6.4	6.5	6.6		OMN	APN	OPN	WPN	SCN	Other Navy	All Other
NAVAIR	0	3112	0	9139	7577	95	3127	0	49830	68099	18228	615	7054	6745	9418
SPAWAR	0	0	0	0	-2	0	0	0	31	0	0	0	0	0	0
NAVSEA	0	0	0	0	864	0	0	0	-3	0	420	0	4	0	26
NAVSUP	0	0	0	0	0	0	0	0	410	0	0	0	0	200	0
OCNR	0	0	0	0	3307	0	0	0	8399	275	0	0	0	0	795
OTHER NAVY	0	0	0	0	0	0	0	0	0	0	0	0	0	12844	0
ARMY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	479
AIR FORCE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6453
OTHER DOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1528
OTHER GOV'T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
PRI PARTY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
TOTAL	0	3112	0	9139	11746	95	3127	0	58667	68374	18648	615	7058	19789	18777

This table reflects FY93 actual funds received Received without Direct Site.

B. Mission.

The mission of NAWCAD Lakehurst is to assure that all rotary and fixed wing aircraft, including V/STOL aircraft can operate safely and effectively from their designated platforms including aircraft carriers, air-capable ships and forward expeditionary sites. Mission product responsibility includes Aircraft Launch and Recovery Equipment (ALRE) and Support Equipment (SE). It can be further subdivided into the following principal areas:

Terminal Guidance

Recovery

Handling

Propulsion Support

Avionics Support

Servicing and Maintenance

Aircraft/Weapon/Ship Compatibility

Takeoff

Functional responsibilities include:

Systems and Design Engineering - assuring that new equipment or equipment upgrades are operationally compatible with the aircraft and the platform

Integrated Logistics Support - up-front analysis to influence supportability and cost of the design

Manufacturing Support - including engineering prototypes, equipment overhaul (eg catapult launch valves) and limited production of fleet essential items (eg, cross-deck pendants for arresting gear systems)

Product Evaluation and Verification - at the catapult site, runway arrested landing site, jet car track site, jet blast deflector site, and elevated fixed platform

12

In-Service Engineering - to support installation, operation, maintenance and overhaul of ALRE on carriers, support and certification of aviation facilities on air-capable ships and support of forward expeditionary sites

In support of the stated mission, this activity was recently highlighted (February 1994) in the Federal Quality Management Handbook, Lessons Learned From High-Performing Organizations In the Federal Government. Lakehurst was noted as one of eight government organizations (two from the Navy) "which have been determined to be performing at a high level by an independent panel of private and public quality management experts."

C. Examples of Mission Responsibility and Products

NAWCADLKE is the only activity in DOD with the expertise, experience and physical resources to design, develop, acquire and provide life cycle management for Aircraft Launch And Recovery Equipment (ALRE). This equipment includes:

Catapults for aircraft carriers

Arresting gear and barricades for carriers

Recovery gear for air capable ships (helicopter landing system)

Recovery gear for landbased expeditionary airfields

Guidance systems for shipboard and landbased and for conventional and V/STOL aircraft

Critical functions associated with the above are:

13

Systems and design engineering includes translating fleet requirements into new equipment or equipment upgrades that interface with shipboard or landbased platforms.

Examples: Improved Carrier Optical Landing System

Mk 7 Mod 3 arresting gear upgrade

Electromagnetic Aircraft Launch System (EMALS)

Wind measurement systems

Design agent for LSO HUD and pri-fly

Logistics support provides for life cycle logistics management.

Examples: Logistics support planning

Maintenance planning

Tech. manual preparation

Supply support provisioning

Training plan preparation

Manufacturing includes prototyping, overhaul and limited production of fleet essential items.

Examples: Production of cross-deck pendants

Production of barricades

Manufacture of JBD panels

Overhaul of the catapult Low Loss Launch Valve

Product evaluation and verification at DOD unique facilities.

Examples:

Catapult complex including the only in-ground TC13 Mod 2 low pressure catapult to evaluate catapult mods

The 12,000 ft. Runway Arrested Landing Site that permits fly-in or roll-in arrestments to the installed Mk 7 Mods 1, 2 and 3 arresting engines

The jet car track site with 3 operating tracks

The Elevated Fixed Platform with an installed Recovery Assist Securing and Traversing System

In-service Engineering to provide direct support to the fleet.

Examples:

Support of installation, operation, maintenance and overhaul of ALRE equipment on carriers

Support and certification of air capable ship's aviation facilities

Support of expeditionary airfields

Direct fleet liaison

NAWCADLKE is also responsible for the acquisition and logistics support of common airframe, propulsion and avionic support equipment and peculiar support equipment for U.S. Navy and Foreign Military Sales platforms. This equipment includes:

Aircraft handling equipment

Propulsion support equipment

Avionic support equipment

Servicing and maintenance equipment

Critical functions associated with the above are:

15

Acquisition includes systems engineering, design, specification development, procurement and prototyping.

Examples: Acquired the Standard Engine Test System (SETS) with an estimated life cycle cost savings of $ 862M over 20 years

Systems and P3I integrator for hardware and software for the Consolidated Automated Support System (CASS)

Acquired the Universal Jet Air Start Unit (UNIJASU) with an estimated life cycle savings of $ 857M over 20 years.

Integrated logistics support provides life cycle logistics management.

examples: Logistics support planning

Maintenance planning

Tech. manual preparation

Supply support provisioning

Training plan preparation

Staging and delivery

D. Geographical considerations

NAWCAD Lakehurst is protected from commercial encroachment by the Pinelands Protection Act of 1979. The perimeter lands to the north and south are in the Pinelands Preservation and Forest areas. Virtually all land uses except agricultural, limited recreation, and forestry programs are prohibited in the preservation area. On the eastern boundary, light commercial, industrial and residential uses are allowed.

The 7400 acre activity forms part of a larger DOD complex with the 31000 acres at Fort Dix and McGuire Air Force Base, on the western boundary.

The activity is located in the center of the Boston - Washington corridor, approximately 45 miles east of Philadelphia, 50 miles south of New York City and 10 miles west of the Atlantic Ocean.

16

The activity possesses the only military parachute drop zone in the north east region.

The activity experiences a low density air traffic environment. Conflict with commercial and private air traffic is minimal.

The topography of the surrounding area is flat with sparse development and few obstructions to air navigation. This provides an abundance of Visual Flight Rules operating areas and easy access to Instrument Flight Rules route structure.

The near sea-level elevation (100 feet) is essential to simulate at-sea catapult and recovery operations.

The Air Installation Compatible Use Zone study indicates that the airfield safety and noise abatement zones have not been encroached by off-base development.

17

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 Capacityon page 28.

2.1.A Historical Workload

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

See attached chart on Page 17A.

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.A.1 HISTORICAL WORKLOAD

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	1230	792	1733	8309	6983	10406	8855	20862
	TEST HOURS	40	16	40	112	184	391	216	415
	MISSIONS	21	11	77	290	794	703	397	536
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								

2.1.B.1

Functional Area	Appropri-ation	FY92 Total $ K	FY93 Total $ K	FY94 Total $ K	FY95 Total $ K	FY96 Total $ K	FY97 Total $ K	FY98 Total $ K	FY99 Total $ K
Air Vehicles									
6.1	R&D			227				0	0
6.2	R&D	2416	3112	1445	1710	2140	2105	2042	2001
6.3A	R&D			1353	913	945	986	956	937
6.3B	R&D	9483	9139	6012	10495	4728	4651	4511	4421
6.4	R&D	6115	11746	11835	8742	21519	15626	15157	14854
6.5	R&D	636	95	141	155	122	25	24	24
6.6	R&D	1619	3127	4021	4761	7283		0	0
OTHER	O&MN	55098	58667	57687	69024	61878	63997	62077	60836
	APN	47003	68374	63780	52797	50891	58442	56689	55555
	OPN	16699	18648	8728	11622	8983	8817	8552	8381
	WPN	373	615	645	700	690		0	0
	SCN	7346	7058	9819	18462	12906	7976	7737	7582
	OTHER NAV	11032	19789	8785	10849	8753	8722	8460	8291
	ALL OTHER	9516	18777	15778	16643	13180	13751	13338	13072

20

-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?

T&E FUNCTIONAL AREA:	FY92:	FY93:
Air Vehicles	4.3 WY	10.0 WY

2.2 UNCONSTRAINED CAPACITY

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

See Appendix A, TABS 1 through 14, Unconstrained Capacity form.

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

UTILITY AVAILABILITY - This is not seen as a constraint. This is seen in information reported in DATA CALL # 4, TABLE # 5.1, Base Infrastructure which lists On Base Capacity, Off Base Long term contracts, and normal steady loads for Utilities. This information supports the conclusion that there is no constraints from utilities if capacity is increased.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
Yes. Laboratory capacity is limited by the shortage of unique test equipment in the Catapult & Component Analysis Facilities, unavailability of additional electrical capacity in the Environmental Test Lab, and the physical size of the various facilities.

[Landing Guidance Development Facility - Appendix A, TAB 11]
Yes. Limited by physical characteristics of the facility.

2.3 TECHNICAL RESOURCES

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

Yes. As per OPNAVINST 5306.1D (1988) Navy Capabilities Mobilization Plan, Annex B.

The NAWCAD Lakehurst mobilization responsibilities consist of:

Base support to the reserve activation of NMCB-21.

Base support to PERSUPPDET Lakehurst for activation of multiple reserve units now relocating to Fort Dix.

Base support to tenant activities.

Acceleration/expansion of industrial capacity, including sole source manufacturing facilities for selected Aircraft Launch and Recovery Equipment (ALRE) such as arresting gear cross deck pendants and barricades for emergency shipboard arrestment.

22

-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?

[Steam Catapult Complex - Appendix A, TAB 1]
Yes. The TC13 steam catapults are primarily to evaluate improvements to shipboard launcher systems. Modifications to the mechanical, electrical, or control systems are designed, prototyped, installed, and evaluated in a simulated shipboard environment at the TC13 complex as a primary mission of the host installation. Additionally, technical documentation including installation instructions, manual changes and maintenance actions are evaluated for the approved changes using the TC13 catapult complex. The TC13 complex is also used for government final adjustment and acceptance of several critical catapult components. The use of the steam catapult is required to insure that these parts, when installed and operated on a fleet catapult will function properly when subjected to the high temperatures (in excess of 480° F) with extremely high steam flow rates. A secondary mission of the TC13 steam catapults involves a T&E service. The TC13 Mod 0 and TC13 Mod 2 steam catapults are used to demonstrate the compatibility of the fleet aircraft to the catapult. This includes the interface between the aircraft and the catapult system, both static and dynamic.

[Runway Arrested Landing Site - Appendix A, TAB 2]
Yes. The Runway Arrested Landing Site (RALS) is used primarily for development and evaluation of aircraft recovery equipment. This site is used to evaluate all changes to shipboard arresting gear prior to introduction into the fleet. At this site all data necessary for developing recovery bulletins that enable aircraft to land aboard aircraft carriers is generated through the use of its unique capability of making both high-speed ground roll-in arrestments and fly-in arrestments. RALS is also used for initial aircraft testing of shorebased arresting gear and development of applicable recovery bulletins. A secondary mission of this facility involves a T&E service. This mission is to conduct aircraft compatibility evaluations

[Jet Blast Deflector Site - Appendix A, TAB 3]

Yes. The Jet Blast Deflector (JBD) site is used for the development and evaluation of JBD components which include module design and coatings, and the cooling system. It is also used to demonstrate aircraft compatibility with the JBD, which is a contractual requirement for all Navy aircraft that operate from aircraft carriers.

[Dedicated Runway - Appendix A, TAB 4]

Yes. This 12,000 foot runway is dedicated to evaluation of Aircraft Landing and Recovery Equipment (ALRE) programs. The runway forms the nucleus of all fixed-wing capable test sites at the Center. There are steam catapults at the approach end of runway 30; shipboard arresting gear at the steel mid-section; shorebased arresting gear at various locations; and a Mark 8 Mod 0 Fresnel Lens Optical Landing System which can be set up for either runway 30 or 12. The runway is equipped with landing aids and a runway lighting system.

[Jet Car Track Site - Appendix A, TAB 5]

Yes. The Jet Car Track Sites are used to support the development and evaluation of Aircraft Platform Interface (API) mission unique hardware. The three active tracks, ranging in length from one mile to 1-1/2 miles, are primarily used to: develop shipboard and shorebased arresting gear; qualify manufacturers of wire rope used for arresting gear cross deck pendants (CDPs); conduct dynamic load quality acceptance (lot sampling) tasks on CDPs; and demonstrate airframe compatibility with barricades.

[Elevated Fixed Platform - Appendix A, TAB 6]

Yes. The Elevated Fixed Platform (EFP) is primarily used for development and evaluation of the Recovery Assist Securing and Traversing (RAST) System, and its components. It is also used to evaluate other helicopter and Vertical Takeoff and Landing (VTOL) recovery and securing equipment and procedures. The simulated hangar face enables evaluation of Air Capable Ship Visual Landing Aids (VLA) and Night Vision Goggle (NVG) compatibility with VLA systems.

[Universal Landing Pad - Appendix A, TAB 7]

No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
No.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

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

[Steam Catapult Complex - Appendix A, TAB 1]
Yes. The TC13 Mod 2 steam catapult is the only shorebased catapult of this length and tow load profile. It is used by NAWCAD Patuxent River to determine that new or modified aircraft, or aircraft subsystems are compatible with this launch profile. The unavailability of the shorebased TC13 Mod 2 catapult will result in decreases in the safety of test operations (initial operations from shipboard catapult in lieu of shorebased site) and increases in program costs.

[Runway Arrested Landing Site - Appendix A, TAB 2]
No.

[Jet Blast Deflector Site - Appendix A, TAB 3]
Yes. This facility provides the only location used to demonstrate aircraft compatibility with the Jet Blast Deflector, which is a contractual requirement for all Navy aircraft.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
Yes. This facility provides the only location where Navy aircraft compatibility with shipboard emergency nylon barricades can be demonstrated. Successful demonstration of compatibility with the emergency barricade is required before aircraft models can be deployed aboard aircraft carriers.

[Elevated Fixed Platform - Appendix A, TAB 6]
Yes. This is the only shorebased facility in the world capable of evaluating the Recovery, Assist, Securing and Traversing (RAST) system prior to fleet introduction.

[Universal Landing Pad - Appendix A, TAB 7]
No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
No.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

26

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

[Steam Catapult Complex - Appendix A, TAB 1]
Yes. These facilities are essential for the development of improvements and in-service engineering support for shipboard steam catapults. This facility is required for the Navy to safely operate steam catapults aboard aircraft carriers.

[Runway Arrested Landing Site - Appendix A, TAB 2]
Yes. These facilities are essential for the development of improvements, establishing recovery bulletins, and for resolving Fleet problems resulting from unusual circumstances. This facility is required for the Navy to safely operate aircraft aboard aircraft carriers.

[Jet Blast Deflector Site - Appendix A, TAB 3]
Yes. This facility is required for development of improvements to the Jet Blast Deflector systems installed on aircraft carriers, and for the acceptance of new or redesigned models of carrier-based aircraft.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
Yes. This facility is required for the development of both shipboard and shorebased aircraft recovery systems used by Navy and Marine aircraft. Without this facility new or redesigned carrier-based aircraft models would not be able to safely deploy.

[Elevated Fixed Platform - Appendix A, TAB 6]
Yes. There are no other shorebased DoD facilities that can be used for evaluating Recovery Assist Securing and Traversing System equipment and procedures.

[Universal Landing Pad - Appendix A, TAB 7]
No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
No.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

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.

[Steam Catapult Complex - Appendix A, TAB 1]
Aircraft, deadload, no-load, and component testing and evaluations conducted at the Steam Catapult Complex utilize the Data Acquisition Retrieval and Transmit (DART) system for near real-time data extraction on 100% of the missions. Aircraft tests that use either the TC13 Mod 0 or TC13 Mod 2 catapult often use a portable telemetry system to provide real-time or near real-time data acquisition and analysis. All real-time and near real-time exchange of data are internal to NAWCAD Lakehurst.

[Runway Arrested Landing Site - Appendix A, TAB 2]
Aircraft, and component testing and evaluations conducted at the Runway Arrested Landing Site utilize the Data Acquisition Retrieval and Transmit (DART) system for near real-time data extraction on 100% of the missions. Aircraft tests conducted at this site often require use of a portable telemetry system to provide real-time or near real-time data acquisition and analysis. All real-time and near real-time exchange of data are internal to NAWCAD Lakehurst.

[Jet Blast Deflector Site - Appendix A, TAB 3]
Aircraft, and component testing and evaluations conducted at the Jet Blast Deflector Site utilize the Data Acquisition Retrieval and Transmit (DART) system for real-time or near real-time data extraction for 100% of the events. All real-time and near real-time exchange of data are internal to NAWCAD Lakehurst.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
Jet Car Track Site events are conducted to develop arresting gear, qualify manufacturers of wire rope, conduct dynamic load quality acceptance of cross deck pendants, and to demonstrate airframe compatibility with barricades. The Data Aquisition Retrieval and Transmit (DART) system is utilized for near real-time data extraction on 100% of the events. All real-time and near real-time exchange of data are internal to NAWCAD Lakehurst.

[Elevated Fixed Platform - Appendix A, TAB 6]
Helicopter and Air Capable Ship recovery systems or visual landing aids evaluations conducted at the Elevated Fixed Platform utilize the Data Acquisition Retrieval and Transmit (DART) system for near real-time data extraction on 70% of the events. All real-time and near real-time exchange of data are internal to NAWCAD Lakehurst.

[Universal Landing Pad - Appendix A, TAB 7]
Helicopter evaluations and Air Capable Ship recovery systems or visual landing aids evaluations conducted at the Elevated Fixed Platform utilize the Data Acquisition Retrieval and Transmit (DART) system for near real-time data extraction on 70% of the events. All real-time and near real-time exchange of data are internal to NAWCAD Lakehurst.

[Support Equipment Mobility Site - Appendix A, TAB 8]
Support equipment evaluations conducted at the Support Equipment Mobility Site utilize the Data Acquisition Retrieval and Transmit (DART) system for near real-time data extraction on 20% of the events. All near real-time exchange of data are internal to NAWCAD Lakehurst.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
No.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

-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.

[Steam Catapult Complex - Appendix A, TAB 1]
Yes. Since the TC13 Mod 2 steam catapult is the only shorebased catapult of this length and tow load profile, and it is required to perform its development and in-service evaluation missions, closure of this facility would require relocation of the catapult complex to another location. Closure of the TC13 Mod 0 would require extensive modification to the NAWCAD Patuxent River TC7 catapult facility to enable it to perform the current development and in-service evaluation missions. The modifications will include addition of a deadload capacity and full instrumentation of the steam catapult. Use of the TC7 assumes sufficient excess capacity exists at the TC7.

[Runway Arrested Landing Site - Appendix A, TAB 2]
Yes. Some work could be transferred to the NAWCAD Patuxent River facility after their Mark 7 Mod 3 arresting gear is fully instrumented. Work that requires high-speed ground taxi-in distances in excess of 1000 feet to completely map arresting gear performance or develop recovery bulletins can not be conducted at the NAWCAD Patuxent River facility. Also, since NAWCAD Lakehurst is the only shorebased site with a Mark 7 Mod 2 arresting

gear installation, this would have to be relocated in support of the potential fleet in-service evaluations.

[Jet Blast Deflector Site - Appendix A, TAB 3]
Yes. This site would have to be relocated to another facility.

[Dedicated Runway - Appendix A, TAB 4]
None.

[Jet Car Track Site - Appendix A, TAB 5]
Yes. This facility is required for the development of both shipboard and shorebased aircraft recovery systems used by Navy and Marine aircraft. This facility would have to be relocated to a suitable location.

[Elevated Fixed Platform - Appendix A, TAB 6]
Yes. This site would have to be relocated to another facility.

[Universal Landing Pad - Appendix A, TAB 7]
None.

[Support Equipment Mobility Site - Appendix A, TAB 8]
None.

[Articulated Motion Platform - Appendix A, TAB 9]
None.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
None.

[Landing Guidance Development Facility - Appendix A, TAB 11]
None.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

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.
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.

The NAWCADLKE has various New Jersey Department of Environmental Protection and Energy air and water discharge permits. NAWCADLKE is on the National Priorities List and entered into a Federal Facility Agreement with the Environmental Protection Agency. This agreement is in force until all contaminated sites are remediated to the satisfaction of the regulators and the public. The agreement is expected to continue for the next 25 years. NAWCADLKE has entered into a Memorandum of Understanding with the United States Geological Survey (USGS) which will last for the next five years.

- **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	**6,481,500**
100 mile radius	**14,703,600**
150 mile radius	**26,430,300**
200 mile radius	**31,246,400**

- **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.

COMMERCIAL LAND TRAFFIC ROUTES - **The NAWCADLKE is serviced by a major state highway, which provides easy access and it can be expected to continue in the future providing good access.**

PUBLIC USE OF LAND - **The NAWCADLKE is surrounded by mainly state of New Jersey or federal government (Fort Dix) owned land, or privately held undeveloped land which is mostly in the Pinelands. The remaining land is scatted residential and industrial with some high density residential developments in the Borough of Lakehurst, which is the same area where the Military Housing is located. Due to present zoning of local jurisdictions, there does not appear to be a encroachment problem from outside the base boundary.**

- **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.

35

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

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

No.

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

No.

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

N/A.

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

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

NO

-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.

Steam Catapult Complex - Appendix A, TAB 1]

Yes. The TC13 steam catapults with the use of the deadloads can be used to simulate accelerations and decelerations up to 15 gs to evaluate the effects of high g loading on DoD equipment and cargo loadings.

[Runway Arrested Landing Site - Appendix A, TAB 2] No.

[Jet Blast Deflector Site - Appendix A, TAB 3]
No.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
Yes.

[Elevated Fixed Platform - Appendix A, TAB 6]
No.

[Universal Landing Pad - Appendix A, TAB 7]
No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
Yes. This facility can be used to evaluate short range Unmanned Aerial Vehicle (UAV) deck landing capability and to develop procedures to recover the UAV. It can be used to determine the effects of ship motion on equipment that will be required to operate aboard Navy ships.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
No.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

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

Yes. NAWCAD Lakehurst is located on 7430 acres in Central New Jersey in the Pinelands National Reserve. Of the 7430 acres, 1574 acres are currently developed, 2025 acres are available for restricted development and 941 acres are available for unrestricted development. All of this land is protected from commercial encroachment by the Pinelands Protection Act of 1979. Virtually all land uses except agricultural, limited recreation, and forestry programs are prohibited in the preservation area. Military installations within the Pinelands are required to submit their Master Plan for approval by the

Pinelands Commission. Proposed development must be consistent with the plan to the extent that the plan's requirements are not incompatible with the installation's mission, safety, or other national defense requirements.

NAWCAD Lakehurst abuts the 31,065 Fort Dix/McGuire Air Force Base complex to the west. It also abuts the New Jersey Wildlife and Game Refuge to the north and the Manchester Fish and Wildlife Area to the south.
(See Fig. 1)

-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)?

[Steam Catapult Complex - Appendix A, TAB 1]
No.

[Runway Arrested Landing Site - Appendix A, TAB 2]
No.

[Jet Blast Deflector Site - Appendix A, TAB 3]
No.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
No.

[Elevated Fixed Platform - Appendix A, TAB 6]
No.

[Universal Landing Pad - Appendix A, TAB 7]
No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
No.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

-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.

A project to co-locate and/or improve laboratories currently exists. This project will provide modern and efficient facilities in order to accomodate increased capacity.

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.

[Steam Catapult Complex - Appendix A, TAB 1]
Yes. The Catapult Complex is made up of the TC13 Mod 0 and TC13 Mod 2 catapults and a high pressure steam plant. The TC13 Mod 2 is the only shorebased catapult of this cylinder diameter, length, and tow load profile.

A unique feature of both the TC13 Mod 0 and Mod 2 is the deadload launch capability. Recessed guide slots are used to maintain longitudinal stability of the four-wheeled deadload vehicles, and a friction brake system of approximately 100 million foot-pound capacity brings the deadloads to a stop approximately 100 to 500 feet ahead of the catapult. Although used primarily for testing the catapult performance prior to actual aircraft launch, this deadload capability affords a programmed linear acceleration force platform that has been used also in testing (at loads up to 15G) aircraft drop tanks, cargo tie-downs, and aircraft pylons.

This is the <u>only facility in the world</u> with this capability.

[Runway Arrested Landing Site - Appendix A, TAB 2]
Yes. The RALS site is the only area in the world capable of making both high-speed ground roll-in arrestments and fly-in arrestments on all types of arresting engines used by the Fleet. The over 3,000-foot runway available to build up speed while the aircraft remains on the runway, plus the 8,000-foot runway remaining after the arresting equipment, provide a large margin of safety should the new equipment not perform as expected.

[Jet Blast Deflector Site - Appendix A, TAB 3]
Yes. This is the only shorebased site in the world that has an installed Mark 7 JBD. It is the only site available to evaluate Mark 7 JBD modifications and to demonstrate aircraft compatibility with the JBD.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
Yes. The installed Mark 7 Mod 1 and a Mark 7 Mod 3 arresting engines make this site unique within DoD. The arresting engines enable evaluation of arresting cable and shipboard aircraft barricades. These evaluations are conducted using weighted deadloads to simulate various aircraft landing conditions, or an unmanned airframe.

[Elevated Fixed Platform - Appendix A, TAB 6]
Yes. This is the only shorebased facility in the world capable of evaluating Recovery, Assist, Securing, and Traversing equipment.

[Universal Landing Pad - Appendix A, TAB 7]
No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
Yes. This is the only man and hardware in the loop landing guidance development facility in the world.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

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

[Steam Catapult Complex - Appendix A, TAB 1]
Yes. The TC13 Mod 2 is the only shorebased catapult of this cylinder diameter, length, and tow load profile. These are the only steam catapults in the US Government that have full instrumentation and deadload launch capability.

[Runway Arrested Landing Site - Appendix A, TAB 2]
Yes. The RALS site is the <u>only area in the world</u> capable of making both high-speed ground roll-in arrestments and fly-in arrestments on all types of arresting engines used by the fleet.

[Jet Blast Deflector Site - Appendix A, TAB 3]
Yes. This is the only shorebased site in the world that has an installed Mark 7 JBD. It is the only site available to evaluate Mark 7 JBD modifications and to demonstrate aircraft compatibility with the JBD.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
Yes. The installed Mark 7 Mod 1 and a Mark 7 Mod 3 arresting engines make this site unique within the US. The arresting engines enable evaluation of arresting cable and shipboard aircraft barricades. These evaluations are conducted using weighted deadloads to simulate various aircraft landing conditions, or an unmanned airframe.

[Elevated Fixed Platform - Appendix A, TAB 6]
Yes. This is the only shorebased facility in the world capable of evaluating Recovery, Assist, Securing, and Traversing equipment.

[Universal Landing Pad - Appendix A, TAB 7]
No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
Yes. This is the only man and hardware in the loop landing guidance development facility in the world.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

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

[Steam Catapult Complex - Appendix A, TAB 1]
Yes. The TC13 Mod 2 is the only shorebased catapult of this cylinder diameter, length, and tow load profile. These are the only steam catapults in the US Government that have full instrumentation and deadload launch capability.

[Runway Arrested Landing Site - Appendix A, TAB 2]
Yes. The RALS site is the <u>only area in the world</u> capable of making both high-speed ground roll-in arrestments and fly-in arrestments on all types of arresting engines used by the Fleet.

[Jet Blast Deflector Site - Appendix A, TAB 3]
Yes. This is the only shorebased site in the world that has an installed Mark 7 JBD. It is the only site available to evaluate Mark 7 JBD modifications and to demonstrate aircraft compatibility with the JBD.

[Dedicated Runway - Appendix A, TAB 4]
No.

[Jet Car Track Site - Appendix A, TAB 5]
Yes. The installed Mark 7 Mod 1 and a Mark 7 Mod 3 arresting engines make this site unique within the US. The arresting engines enable evaluation of arresting cable and shipboard aircraft barricades. These evaluations are conducted using weighted deadloads to simulate various aircraft landing conditions, or an unmanned airframe.

[Elevated Fixed Platform - Appendix A, TAB 6]
Yes. This is the only shorebased facility in the world capable of evaluating Recovery, Assist, Securing, and Traversing equipment.

[Universal Landing Pad - Appendix A, TAB 7]
No.

[Support Equipment Mobility Site - Appendix A, TAB 8]
No.

[Articulated Motion Platform - Appendix A, TAB 9]
No.

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]
No.

[Landing Guidance Development Facility - Appendix A, TAB 11]
Yes. This is the only man and hardware in the loop landing guidance development facility in the world.

[Data Handling Center - Appendix A, TAB 12]
N/A.

[Metrology and Calibration Laboratory - Appendix A, TAB 13]
N/A.

[Air Operations - Appendix A, TAB 14]
N/A.

-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.

FY	Department	Percentage of Workload
92	ARMY	.003
92	DOD	.001
93	ARMY	.002
93	DOD	.002

-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.*

THIS SECTION DOES NOT APPLY TO NAWCAD LAKEHURST

-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.*

-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 NAWCADLKE lies within the Outer Coastal Plain characterized by gently rolling lands. The southwest portion is hilliest due to its close proximity to the Inner Coastal Plain. The elevation of the base ranges from 70 feet to 150 feet above sea level, with slopes of 5 percent or less in north and southwesterly direction.

The NAWCADLKE is located in the northernmost portion of the NJ Pine Barrens, the most extensive wildlife tract of the middle atlantic seaboard. The region is heavily forested, having few and widely spaced settlements and lacking substantial industrialization. In sharp contrast to the surrounding region, vegetation of this area is primarily coniferous. The forest at the Station is dominated by pine, white cedar, oak and red maple.

The NAWCADLKE is surrounded by and contains many acres of wetlands.

-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?

Temperature	<32 degrees	32-95 degrees	Weather Office Closed
1985	50	307	8
1986	38	326	1
1987	45	319	1
1988	45	297	24
1989	43	259	63
1990	09	240	116
1991	23	314	28
1992	22	250	94
1993	21	197	133

There were no days with the average temperatures over 95 degrees.

From 1988-1993 the Weather Office suffered from manning shortages which impacted weather data records. These shortages have now been resolved.

50

-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%?

Relative Humidity	<30%	30% - 80%	>80%
Jun - Dec 1992	0	116	16
Jan - Dec 1993	11	189	32

Relative humidity data are subject to weather office operational days and available observation data.

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?
None.

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?
None.

-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	<1 mile	1 - 3 miles	>3 miles
Jun - Dec 1992	4	7	120
Jan - Dec 1993	2	20	210

Visibility data are based on the visibility for the majority of the day.

Visibility data are subject to the weather office's operational days and avialable data.

51

-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.

235 days per year.

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

Less than 5%.

3.2 AIR VEHICLES

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

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

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

-3.2.A.2 Where are they located relative to your airfield?
Not applicable.

-3.2.A.3 At what altitude (upper and lower altitude)?
Not applicable.

-3.2.A.4 Over land or water? What size and shape (length and width)?
Not applicable.

52

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.
Not applicable.

-3.2.A.6 What is the maximum number of simultaneous users?
Not applicable.

-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.

Rwy #	Elevation	Length	Overrun	Arresting Gear
6/24 062.6/242.6	91/90	5000 Asphalt	100/250	E28
15/33 152.6/332.6	99/90	5001 Asphalt	250/50	None
12/30 120/300	137/100	13,417 Asphalt	No/150	E28/E5 MK7 MOD 3 MK7 MOD 2

	S/F	Construction	Load Cap	Hangar Space
Apron 1	264,000	ASP/C	178,000	307: 241X130 S/F: 31,460
Apron 2	1,326,200	ASP	76,000	5: 1000X231 S/F: 232,880 6: 100X231 S/F: 231,000
Apron 3	115,100	ASP	69,000	1: 808X262 S/F: 77,583 75,199 6,276 26,707 3,253

NAVAID	Description/Location
TACAN CH55	Maxfield Field, NAES Lakehurst
NDB LF/UHF 396KHZ/274.8MHZ	Maxfield Field, NAES Lakehurst
VORTAC	12 NM North, Robbinsville, NJ
VOR/DME	17.5 NM East, Coltsneck, NJ

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

McGuire Air Force Base is located 12 miles west.

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

The airspace historically used to support test operations at NAWCAD Lakehurst is the same airspace used to support routine aircraft operations: Class "D" airspace.

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

The 12,000 foot runway forms the nucleus for all fixed-wing capable evaluation sites at the NAWCADLKE. Steam catapults are located at the approach end of Runway 30; shipboard arresting gear at the steel mid-section; and shorebased arresting gear at various locations along the runway. Immediately adjacent to the runway, approximately mid-field, is the Jet Blast Deflector (JBD) Site that depends on the runway for landing aircraft used during JBD evaluations. The runway is equipped with landing aids and a runway lighting system.

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).
None known.

-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?

Aircraft dimensions:

F-14 (33X62)*	**Ramp space (add 40 feet)**	**73X102**
	Hangar space (add 5 feet)	**38X67**
C-130 (132X97)*	**Ramp space (add 70 feet)**	**202X167**
	Hangar space (add 5 feet)	**137X102**

55

H-60	(54X65)*	Ramp space (add 40 feet)	94X105
		Hangar space (add 5 feet)	59X70

Actual formula used to determine required parking space is estimated based on criteria contained in NAVFAC P-80.

Total ramp dimensions: 1,705,300 S/F
Total hangar dimensions: 684,358 S/F

Total ramp space divided by aircraft area:

Aircraft	Aircraft area	Total aircraft on ramp
F-14	7,446 S/F	229
C-130	33,734 S/F	50
H-60	9,870 S/F	172

Total hangar space divided by aircraft area:

Aircraft	Aircraft area	Total aircraft in hangar
F-14	2,546 S/F	268
C-130	13,974 S/F	48
H-60	4,130 S/F	165

***Aircraft dimensions obtained from "JANE'S All The World Aircraft" manual**

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

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

Fixed wing, rotary wing, and Unmanned Aerial Vehicles (UAV) can be accommodated at this facility. The air vehicle testing that can best be performed at NAWCAD Lakehurst are those tests that assure that the aircraft can operate safely and effectively from their designated platforms including aircraft carriers, air-capable ships and forward expeditionary sites. The utilization of the sites described in this data

56

call can be increased.

The facilities described in this Data Call specialize in the rapid transfer of large amounts of energy to accelerate or decelerate vehicles up to 100,000 pounds. The steam catapults can impart as much as 88 million foot pounds of energy into a 100,000 pound deadload in less than 4 seconds. Decelerations as high as 15 Gs can be achieved while stopping the deadload. Energy absorption using the arresting gear at the Runway Arrested Landing Site and the Jet Car Track Site can reach 47.5 million foot pounds. These facilities could be used to evaluate DoD equipment that require controlled acceleration or deceleration of mass.

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

Yes. Conference rooms are available.

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

Based on parking availability, approximately 8-10 aircraft could be supported simultaneously.

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

No.

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

The only missions that have been historically flown are aircraft in the local pattern to the test runway for arrestments or catapult shots. This mission is able to be conducted within the local airspace.

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

Not applicable.

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

Two missions: aircraft operations to the test runway which contain shipboard catapults and arresting gear; also the elevated fixed platform used to support shipboard type helicopter operations.

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

Service/ Agency/ Custodian	# of Aircraft (PAA)	Aircraft (T/M/S)	FY 94	FY 95	FY 97	FY 1999	FY 2001
Army/AEESA	**21**	**BN-2T/88-0196 AH-64/86-8945 AH-64/90-0312 MAH-1S/70-16018 YEH-60B/76-23013 RC-12D/78-23141 RC-12D/80-23371 SD3/85-25342 SD3/85-25343 SD3/85-25245 JUH-IH/6617020 JUH-1H/6915000 JUH-1H/7120000 JUH-1H/7321684 JUH-1H/7321685 JUH-1H/7321793 JUH-1H/7322900 UH-60A/77-22717 UH-60A/8123611 UH-60A/8323910 C-23/840464**	**21**	**21**	**21**	**21**	**21**
Flying Club	**2**	**T34, C172**	**2**	**2**	**2**	**2**	**2**
USCG	**6**	**HH65A**	**0**	**0**	**6**	**6**	**6**

59

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.

THIS SECTION DOES NOT APPLY TO NAWCADLKE.

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.

60

-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.

6)

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.

THIS SECTION DOES NOT APPLY TO NAWCADLKE

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.)

CK

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.

[Steam Catapult Complex - Appendix A, TAB 1]

[Runway Arrested Landing Site - Appendix A, TAB 2]

[Jet Blast Deflector Site - Appendix A, TAB 3]

[Dedicated Runway - Appendix A, TAB 4]

[Jet Car Track Site - Appendix A, TAB 5]

[Elevated Fixed Platform - Appendix A, TAB 6]

[Universal Landing Pad - Appendix A, TAB 7]

[Support Equipment Mobility Site - Appendix A, TAB 8]

[Articulated Motion Platform - Appendix A, TAB 9]

[Aircraft Platform Interface Laboratory - Appendix A, TAB 10]

[Landing Guidance Development Faciltiy - Appendix A, TAB 11]

[Data Handling Center - Appendix A, TAB 12]

[Metrology and Calibration Laboratory - Appendix A, TAB 13]

[Air Operations - Appendix A, TAB 14]

Complex

GENERAL INFORMATION

Facility/Capability Title: **Steam Catapult Complex**

Origin Date: **24 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Air Vehicle** UIC = **N68335**

T&E Test Facility Category **Measurement Facility**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	5.0%		93.0%	2.0%			
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	5.0%		93.0%	2.0%			
Armanent/Weapons							
EC							
Other							

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

24

TECHNICAL INFORMATION

Facility/Capability Title: **Steam catapult Complex**

Facility Description; Including mission statement:

This steam catapult complex is the only facility in the world with the ability to launch both aircraft and deadloads.

Two shipboard-type catapults located at the eastern end of the test runway are configured to the latest shipboard style to provide for the development and evaluation of shipboard catapult systems. The TC13 Mod 2 Catapult is configured to the new Low Pressure Catapult (C13 MOD 2) System being installed on the USS ABRAHAM LINCOLN (CVN 72). The TC13 Mod 0 Catapult is located adjacent to the TC13 Mod 2 and is its predecessor in the history of shipboard catapults. Approximately 60 feet shorter and capable of generating less energy, it is otherwise very similar to the Mod 2 except for the power cylinders,

The TC13 steam catapults are used to develop and evaluate improvements to the launcher system. Modifications to the mechanical, electrical, or control systems are designed, prototyped, installed, and evaluated in a simulated shipboard environment at the TC13 complex. The TC13 is also used to demonstrate the compatibility of the fleet aircraft to the catapult. This includes the interface between the aircraft and the catapult system, both static and dynamic. Additionally, technical documentation including installation instructions, manual changes and maintenance actions are evaluated for the approved changes using the TC13 catapult complex. The TC13 complex is also used for government final adjustment and acceptance of several critical catapult components. The use of the steam catapult is required to insure that these parts, when installed and operated on a fleet catapult will function properly when subjected to the high temperatures (in excess of 480° F) with extremely high steam flow rates.

A unique feature of both the TC13 Mod 0 and Mod 2 is the deadload launch capability. Recessed guide slots are used to maintain longitudinal stability of the four-wheeled deadload vehicles, and a friction brake system of approximately 100 million foot-pound capacity brings the deadloads to a stop 100 to 500 feet ahead of the catapult. The deadloads are used primarily for testing the catapult performance prior to actual aircraft launch.

The Catapult Complex is made up of the TC13 Mod 0 and TC13 Mod 2 Catapults and a high pressure steam plant. Both catapults are capable of launching deadloads or aircraft weighing up to 90,000 pounds and producing end speeds up to 185 knots under normal conditions and up to 300 knots for special catapult tests. The steam plant is capable of producing steam at up to 138,000 pounds per hour with or without superheat.

Interconnectivity/Mulit-Use of T&E Facility: This has supported foreign military sales development and evaluation, including use of take-off assist ramps (Ski Jump) with conventional aircraft. The facility is fully cabable of and has conducted numerous T&E work in support of NAWCADPAX aircraft test programs.
Type of Test Supported: Catapult component development, acceptance, and servcie change evaluations. Deadload and aircraft launch aircraft structural, functional, flying quality, compatability tests with shipboard aircraft launch and recovery equipment and catapult "wet" steam accumulator performance testing.
Summary of Technical Capabilities: All current shipbord systems are represented with these two catapults. The C13 MOD 2 also represents the latest style shipboard systems on CVN72 class carriers. Both catapults are fully instrumented with near-real time capability and both are capable of deadload and aircraft launch programs. The complex is fully capable of telemetry to support deadload and aircraft programs.
Keywords: Catapult, Launch, Deadload, Aircraft, Steam Catapult.

ADDITIONAL INFORMATION

Facility/Capability Title: **Steam Catapult Complex**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	1	1	1	1	1	1
Enlisted	14	14	14	14	14	14	14
Civilian	17	17	17	17	17	17	17
Contractor	0	0	0	0	0	0	0
Total	32	32	32	32	32	32	32

Total Square Footage: 21,100

Test Area Square Footage: 19,200

Office Space Square Footage: 900

Tonnage of Equipment: 612

Volume of Equipment: 14,930 cú ft

Annual Maintenance Cost: $1,011,000

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Steam Catapult Complex**

AGE: **36 years** REPLACEMENT VALUE: **$120,500,000**

MAINTENANCE AND REPAIR BACKLOG: **$2,103,600**

DATE OF LAST UPGRADE: **1985**

NATURE OF LAST UPGRADE: **Conversion from C13 Mod 1 to C113 Mod 2 type catapult in order to represent the latest and most updated fleet configuration on CVN72 class aircraft carriers. Major upgrade inclued 21 inch versus 18 inch diameter power cylinders, track covers, launching engine system and steam exhaust system.**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Primary Flight Facility**

   TOTAL PROGRAMMED AMOUNT: **$240,000**

   SUMMARY DESCRIPTION: **Provides the capability to simulate shipboard conditions.**

2 UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

28

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Steam Catapult Complex**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	1230	492	0	0	246	2952	492	5412
	TEST HOURS	40	16	0	0	8	95	16	175
	MISSIONS	21	11	0	0	3	77	15	62
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								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Steam Catapult Complex

ANNUAL HOURS OF DOWNTIME 1 1320

AVERAGE DOWNTIME PER DAY (LINE 1Π 365) 2 4

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 20

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	8 620
Cyclic Events	2	31*/24*	31*	

Annual Unconstrained Capacity 226,300

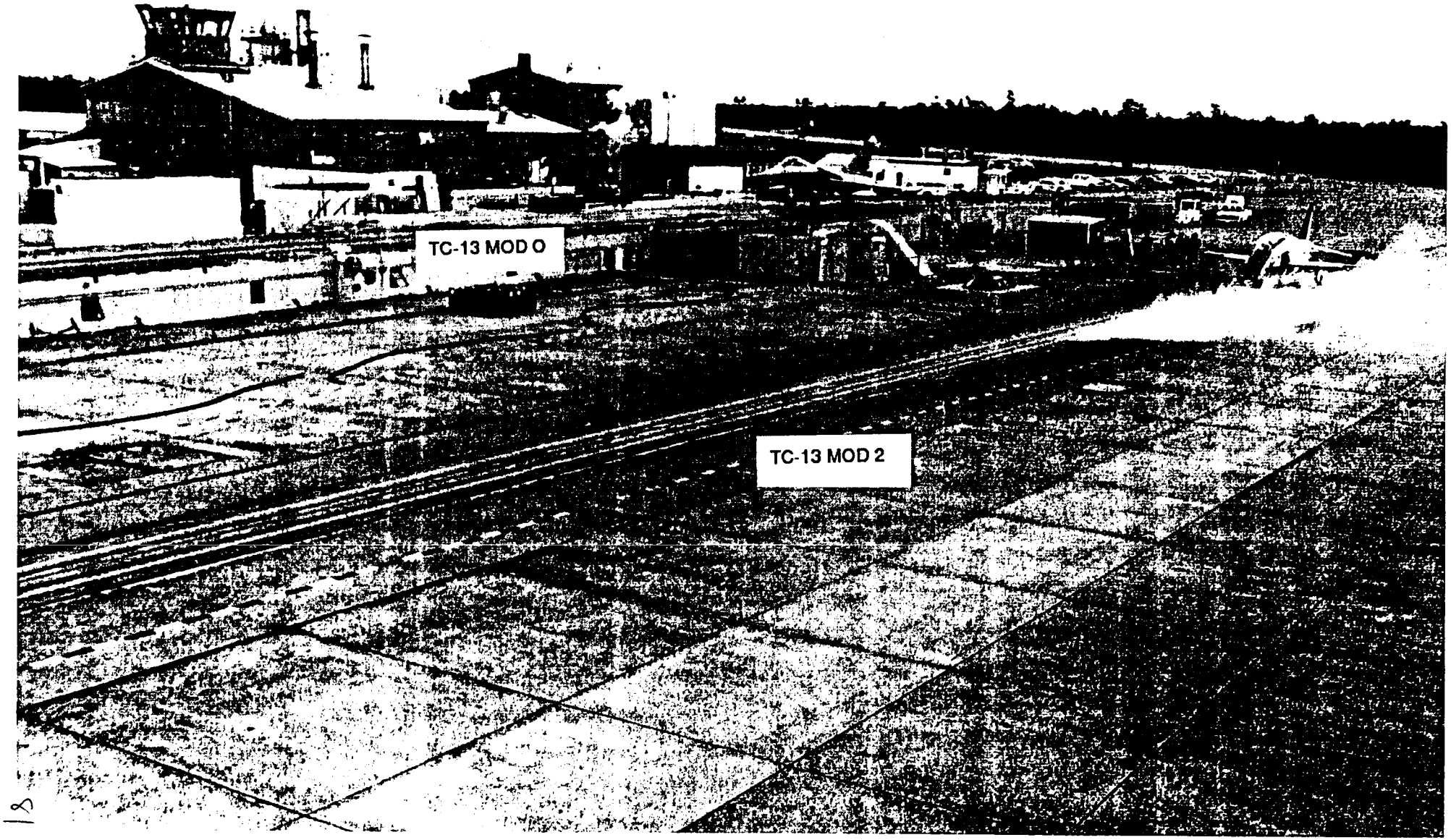
"TYPICAL" TOTAL 31

* Complex consists of 2 catapults 31 people to operate both, 24 people to operate one. Due to manpower sharing 2 test can be conducted with a total of 31 direct labor houses per facility test hour.

28

STEAM CATAPULT COMPLEX

High Pressure Steam Plant



LANDING SITE.

GENERAL INFORMATION

Facility/Capability Title: **Runway Arrested Landing Site**

Origin Date: 16 June 94

Service: N Organization/Activity: NAWCADLKE Location: Lakehurst, NJ

T&E Functional Area: Air Vehicle UIC = N68335

T&E Test Facility Category **Measurement Facility**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	79%		6%	15%			

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	79%	6%	15%
Armanent/Weapons			
EC			
Other			

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

28

TECHNICAL INFORMATION

Facility/Capability Title: Runway Arrested Landing Site (RALS)

Facility Description; Including mission statement: The RALS site is capable of making shipboard type arrestments of all Navy Aircraft. Located under the runway are Mark 7 Mod 1, Mod 2, and Mod 3 arresting engines installed to accurately simulate an aircraft carrier installation. The site is capable of recording data such as aircraft engaging velocity, aircraft hookload, arresting engine cylinder pressure, arresting cable tension, and numerous other arresting gear parameters as required. A movable control tower and recessed arresting gear retract station complete the shipboard arresting gear site. The RALS site is located on a dedicated 12,000 foot runway with over 3,000 feet of runway available to buildup speed while the aircraft remains on the runway, plus 8,000 foot of runway remaining after the arresting equipment which provides a large margin of safety should the new equipment not perform as expected. This provides the unique capability of making both high-speed ground roll-in arrestments and fly-in arrestments.
Interconnectivity/Multi-Use of T&E Facility: These facilities have been used to support NAWCAD Patuxent River tests as well as a few Foreign Military Sales Cases. This facility is the only facility in the world capable of making both high-speed ground roll-in arrestments and fly-in arrestments on all types of arresting engines used by the Fleet.
Type of Test Supported: The Runway Arrested Landing Site is used for development and evaluation of aircraft recovery equipment and aircraft compatibility. This site is used to evaluate all changes to shipboard arresting gear prior to introduction into the Fleet. At this site all data necessary for developing recovery bulletins that enable aircraft to land aboard aircraft carriers is generated through the use of its unique capability of making both high-speed ground roll-in arrestments and fly-in arrestments.
Summary of Technical Capabilities: Installed under the runway at the RALS are Mark 7 Mod 3, and Mod 2 shipboard arresting engines. These engines are installed to simulate shipboard installations. The Mark 7 Mod 3 arresting gear, which is the primary arresting engine used on all but one active aircraft carrier, has the capability to absorb 47.5 million foot pounds of energy as the aircraft comes to a stop in 345 feet. The Mark 7 Mod 2 arresting gear absorbs up to 38 million foot pounds of energy with a 320 foot aircraft stopping distance.
Keywords: Arresting Gear, recovery bulletin development, Mark 7 Mod 3, Mark 7 Mod 2, Mark 7 Mod 1

ADDITIONAL INFORMATION

Facility/Capability Title: **Runway Arrested Landing Site (RALS)**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	1	1	1	1	1	1
Enlisted	10	10	10	10	10	10	10
Civilian	11	11	11	11	11	11	11
Contractor	0	0	0	0	0	0	0
Total	22	22	22	22	22	22	22

Total Square Footage: **10,000**

Test Area Square Footage: **Outdoor Test Area**

Office Space Square Footage: **630**

Tonnage of Equipment: **157.2**

Volume of Equipment: **4,676 cu ft**

Annual Maintenance Cost: **237,600**

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Runway Arrested Landing Site (RALS)**

AGE: **36 years** REPLACEMENT VALUE: **$28,544,000**

MAINTENANCE AND REPAIR BACKLOG: **$75,600**

DATE OF LAST UPGRADE: **1966**

NATURE OF LAST UPGRADE: **Minor Upgrades**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Closed loop cooling system**

   TOTAL PROGRAMMED AMOUNT: **$105,000**

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: **Inflow prevention and Containment**

   TOTAL PROGRAMMED AMOUNT: **$170,000**

   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Runway Arrested Landing Site (RALS)**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	N/A	N/A	1693	6205	6609	3269	3878	8141
	TEST HOURS	N/A	N/A	40	104	168	152	112	168
	MISSIONS	N/A	N/A	77	276	790	428	223	216
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								

Test Hours Estimated from missions

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **RUNWAY ARRESTED LANDING SITE**

ANNUAL HOURS OF DOWNTIME	1 **3431**
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2 **9**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **15**

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 **330 MH**
ARRESTMENTS	**3**	**7.3 MH**	**22 MH**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **120,450 MH**
"TYPICAL"				
			TOTAL **22 MH**	

Note: No additional tests can be run at maximum capacity.

UNCONSTRAINED CAPACITY IS NOT APPLICABLE TO THE SECURITY FACILITY

RUNWAY ARRESTED LANDING SITE

Jet Blast
Deflector

GENERAL INFORMATION

Facility/Capability Title: **Jet Blast Deflector**

Origin Date: **24 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Air Vehicle** UIC = **N68335**

T&E Test Facility Category **Measurement Facility**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	91%			9%			

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	91%			9%			
Armanent/Weapons							
EC							
Other							

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

TECHNICAL INFORMATION

Facility/Capability Title: Jet Blast Deflector Site

Facility Description; Including mission statement: The JBD site includes a Mark 7 Mod 0 JBD, hydraulic system to raise and lower the JBD panels, a 30,000 gallon in-ground tank to store the cooling water, a 1200 gallon per minute pump that circulates the cooling water through the JBD modules, and a pole field used to collect air velocity, temperature and acoustical data. The Mark 7 Mod 0 JBD is 36 feet wide by 14 feet high. It is made up of 6 panels each of which is 6 feet wide by 14 feet high. The site can be reconfigured by disconnecting the two outboard panels to simulate the Mark 7 Mod 1 JBD (24 feet wide by 14 feet high) when required. A pole field for collecting temperature, air speed and direction, and acoustical data is located behind the JBD. A data acquisition site records and displays the JBD cooling water, flow, and panel temperatures along with the data collected in the pole field.
Interconnectivity/Multi-Use of T&E Facility: These facilities have been used to support contractor demonstration of aircraft with Mark 7 Jet Blast Deflectors. The site has also been used through an Foreign Military Sales Case. This facility is the only shorebased facility in the world capable of demonstrating aircraft compatibility with a Mark 7 Jet Blast Deflector.
Type of Test Supported: The Jet Blast Deflector (JBD) site is used for the development and evaluation of JBD components which include module design and coatings, and the cooling system. It is also used to demonstrate aircraft compatibility with the JBD, which is a contractual requirement for all Navy aircraft.
Summary of Technical Capabilities: The site has a Mark 7 Mod 0 Jet Blast Deflector installed. The Mark 7 Mod 0 JBD is 36 feet wide, 14 feet high and uses 1200 gpm of water to cool its surface. The site contains a 30,000 gallon in ground tank to store the cooling water , a 1200 gpm pump and a self contained hydraulic system to raise and lower the JBD. The site can also be configured to simulate a Mark 7 Mod 1 JBD which is similar to the Mark 7 Mod 0 except it is only 24 feet wide.
Keywords: Jet Blast Deflector, JBD

ADDITIONAL INFORMATION

Facility/Capability Title: **Jet Blast Deflector Site**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	0 *	1	1	1	1	1
Enlisted	1	0 *	1	1	1	1	1
Civilian	10	0 *	10	10	10	10	10
Contractor	0	0 *	0	0	0	0	0
Total	12	0 *	12	12	12	12	12

*** No tests planned for FY94**

Total Square Footage: **1,104**

Test Area Square Footage: **Outdoor Test Area**

Office Space Square Footage: **1,280**

Tonnage of Equipment: **26.2**

Volume of Equipment: **640 cu ft**

Annual Maintenance Cost: **44,300**

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Jet Blast Deflector Site (JBD Site)**

AGE: **19 years** REPLACEMENT VALUE: **$3,334,000**

MAINTENANCE AND REPAIR BACKLOG: **NONE**

DATE OF LAST UPGRADE: **NONE**

NATURE OF LAST UPGRADE: **NONE**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Pave JBD Site**

   TOTAL PROGRAMMED AMOUNT: **$140,000**

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **JET BLAST DEFLECTOR**

ANNUAL HOURS OF DOWNTIME	1 **5719**
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2 **16**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **8**

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 **96 MH**
JET EXHAUST BLAST	**1**	**12 MH**	**12 MH**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **35,040 MH**
"TYPICAL"				
			TOTAL **12 MH**	

Note: No additional tests can be run at maximum capacity.

UNCONSTRAINED CAPACITY IS NOT APPLICABLE TO THE SECURITY FACILITY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Jet Blast Deflector Site**

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	N/A	N/A	0	2004	0	1206	N/A	974
	TEST HOURS	N/A	N/A	0	8	0	16	8	8
	MISSIONS	N/A	44	0	14	0	25	27	48
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								

Test hours estimated from missions

JET BLAST DEFLECTOR SITE

SITES

GENERAL INFORMATION

Facility/Capability Title: **Jet Car Track Sites**

Origin Date: **24 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Air Vehicle** UIC = **N68335**

T&E Test Facility Category **Measurement Facility**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	11%		15%	74%			
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	11%		15%	74%			
Armanent/Weapons							
EC							
Other							

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

TECHNICAL INFORMATION

Facility/Capability Title: Jet Car Track Site (JCTS)

Facility Description; Including mission statement: The Jet Car Track Site consists of five jet car tracks (3 currently operational) ranging in length from 7,500 feet to 9,150 feet. Tests may be conducted using weighted deadloads to simulate various aircraft landing conditions, or they may use the airframe itself as in the nylon barricade tests conducted to qualify fleet aircraft. The deadloads can weigh up to 100,000 pounds. The maximum speed for the deadloads and jet cars is 250 knots. Tests are conducted with minimum risk to aircraft and personnel and at a much lower cost than similar runway tests using manned aircraft. A four wheeled jet car, powered with J57 engines, is currently used to propel the deadloads or airframes for the test programs. This car develops 42,000 pounds of thrust and attains energy levels in excess of 140 million foot-pounds. Automatic speed control capability can be accommodated for the jet car by use of the jet car speed control. A data acquisition site is located adjacent to each major track site capable of recording by ground wires or telemetry onto digital recording equipment, or by use of high-speed motion picture or closed circuit television.
Interconnectivity/Multi-Use of T&E Facility: The Jet Car Track Sites have been used by NAWCAD Warminster, the Air Force, and the Federal Aviation Administration to evaluate various items under development. This site has also been used through an Foreign Military Sales Case to evaluate potential arresting gear wire rope for use by a foreign government. This is the only facility in the US with the capability of evaluating shipboard arresting cable and aircraft barricades.
Type of Test Supported: Jet Car Track Sites are used to support the development and evaluation of Aircraft Platform Interface (API) mission unique hardware. The Jet Car Track Sites are primarily used to: develop shipboard and shorebased arresting gear; qualify manufacturers of wire rope used for arresting gear cross deck pendants (CDPs); conduct dynamic load quality acceptance (lot sampling) tasks on CDPs; and demonstrate airframe compatibility with barricades.

Summary of Technical Capabilities:
The Jet Car Track Sites have tracks that range in length from 7,500 feet to 9,150 feet. Jet cars powered with four J57 engines develop 42,000 pounds of thrust and attain energy levels in excess of 140 million foot-pounds. The jet cars propel deadloads that vary in weight from 6,000 pounds to 100,000 pounds or actual airframes. The maximum speed for the jet cars is 250 knots. Installed at the Jet Car Track Sites are Mark 7 Mod 3 and Mark 7 Mod 1 shipboard arresting gear. Also installed at these sites are several other shorebased arresting gear used as backup arresting system required for deadload since energy capability of equipment or component under evaluation may be reached earlier than expected. These sites are located in a remote area due to the unpredictable operation of equipment undergoing initial developmental evaluation.

Keywords:
Jet Car Track Site, Airframe Compatibility with Barricade, Arresting Gear Wire Rope Qualification, CDP Acceptance

ADDITIONAL INFORMATION

Facility/Capability Title: **Jet Car Track Site**

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	14	14	14	14	14	14	14
Contractor	0	0	0	0	0	0	0
Total	14	14	14	14	14	14	14

Total Square Footage: 10,432

Test Area Square Footage: Outdoor Test Area

Office Space Square Footage: 1,660

Tonnage of Equipment: 247.6

Volume of Equipment: 27,088 cu ft

Annual Maintenance Cost: $304,700

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Jet Car Track Site**

AGE: **36 years** REPLACEMENT VALUE: **$24,537,000**

MAINTENANCE AND REPAIR BACKLOG: **$766,900**

DATE OF LAST UPGRADE: **NONE**

NATURE OF LAST UPGRADE: **NONE**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **None**

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

20

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Jet Car Track Site**

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	N/A	N/A	0	0	88	2696	3032	2615
	TEST HOURS	N/A	N/A	0	0	8	80	56	32
	MISSIONS	N/A	N/A	0	0	1	31	40	24
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								

Test hours estimated from missions

(2)

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **JET CAR TRACK SITE**

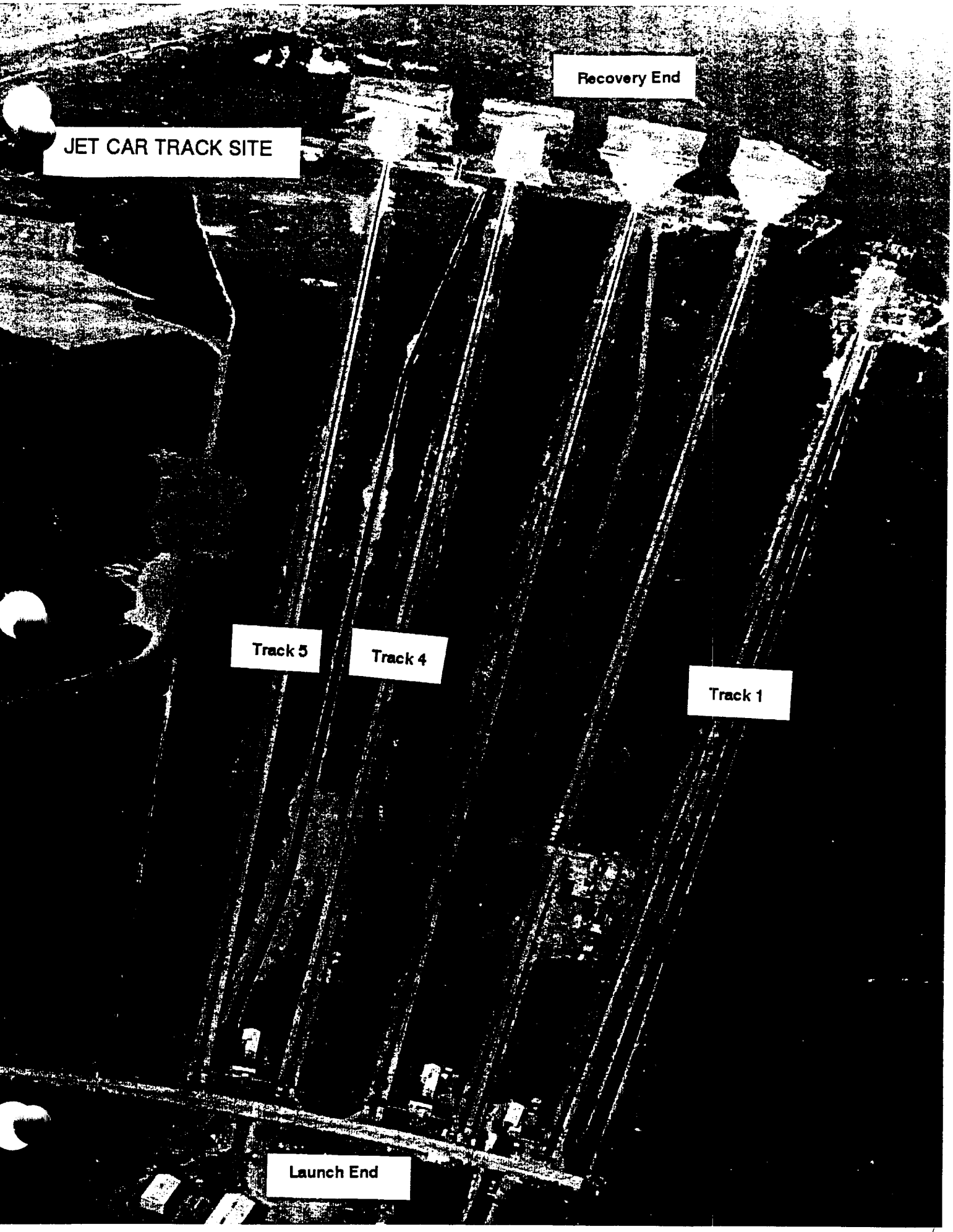
ANNUAL HOURS OF DOWNTIME	1 **3167**
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2 **9**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **15**

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 **840 MH**
ARRESTMENTS	**4**	**14 MH**	**56 MH**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **306,600 MH**
"TYPICAL"				
			TOTAL **56 MH**	

Note: No additional tests can be run at maximum capacity.

UNCONSTRAINED CAPACITY IS NOT APPLICABLE TO THE SECURITY FACILITY

20


JET CAR TRACK SITE
Recovery End
Track 5
Track 4
Track 1
Launch End

platform

GENERAL INFORMATION

Facility/Capability Title: **Elevated Fixed Platform**

Origin Date: **24 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Air Vehicle** UIC = **N68335**

T&E Test Facility Category **Measurement Facility**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	12%		42%	46%			

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	12%		42%	46%			
Armanent/Weapons							
EC							
Other							

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

104

TECHNICAL INFORMATION

Facility/Capability Title: Elevated Fixed Platform

Facility Description; Including mission statement: The Elevated Fixed Platform (EFP) is a 60 foot by 85 foot steel and concrete deck built atop a 25 foot high building which contains a Recovery Assist, Securing and Traversing (RAST) system. A hangar face with Visual Landing Air (VLA) lighting package and deck markings present the pilot with a realistic shipboard landing environment. The height of the platform provides a change in ground effect as the aircraft transitions over the platform, resulting in true flight characteristics. Aircraft having gross weights of up to 90,000 pounds can be landed at up to 2.67 Gs.
Interconnectivity/Multi-Use of T&E Facility: These facilities have been used to support NAWCAD Patuxent River work ups prior to shipboard studies. This facility is the only shorebased facility in the world with a Recovery Assist Securing and Traversing system capable of landing helicopters.
Type of Test Supported: Elevated Fixed Platform (EFP) is used for development and evaluation of the Recovery Assist Securing and Traversing (RAST) System, and its components. It is also used to evaluate other helicopter and Vertical Takeoff and Landing (VTOL) recovery and securing equipment and procedures. The simulated hangar face enables evaluation of Air Capable Ship Visual Landing Aids (VLA) and Night Vision Goggle (NVG) compatibility with VLA systems.
Summary of Technical Capabilities: The Elevated Fixed Platform is a 60 foot by 85 foot steel and concrete deck built atop a 25 foot high building. The deck strength is sufficient to land a 90,000 pound aircraft at up to 2.57 Gs. A movable hangar face with a visual landing aids lighting package and deck markings is available. The Recovery Assist Securing and Traversing System is installed to simulate an installation on a LAMPS MK III Air Capable Ship.
Keywords: Recovery Assist Securing And Traversing System, RAST, Air Capable Ship

ADDITIONAL INFORMATION

Facility/Capability Title: **Elevated Fixed Platform**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	1	1	1	1	1	1
Enlisted	2	2	2	2	2	2	2
Civilian	4	4	4	4	4	4	4
Contractor	0	0	0	0	0	0	0
Total	7	7	7	7	7	7	7

Total Square Footage: 5,100

Test Area Square Footage: **Outdoor Test Area** Office Space Square Footage: 750

Tonnage of Equipment: 14.1 Volume of Equipment: 811 cu ft

Annual Maintenance Cost: $55,000 Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Elevated Fixed Platform**

AGE: **23 years** REPLACEMENT VALUE: **$4,160,000**

MAINTENANCE AND REPAIR BACKLOG: **$9,800**

DATE OF LAST UPGRADE: **1991**

NATURE OF LAST UPGRADE: **Miscellaneous Alterations**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **None**

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Elevated Fixed Platform**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	N/A	N/A	0	0	0	233	151	340
	TEST HOURS	N/A	N/A	0	0	0	48	24	32
	MISSIONS	N/A	N/A	0	0	0	248	132	186
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								

Test hours estimated from missions

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **ELEVATED FIXED PLATFORM**

ANNUAL HOURS OF DOWNTIME	1 **3850**
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2 **11**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **13**

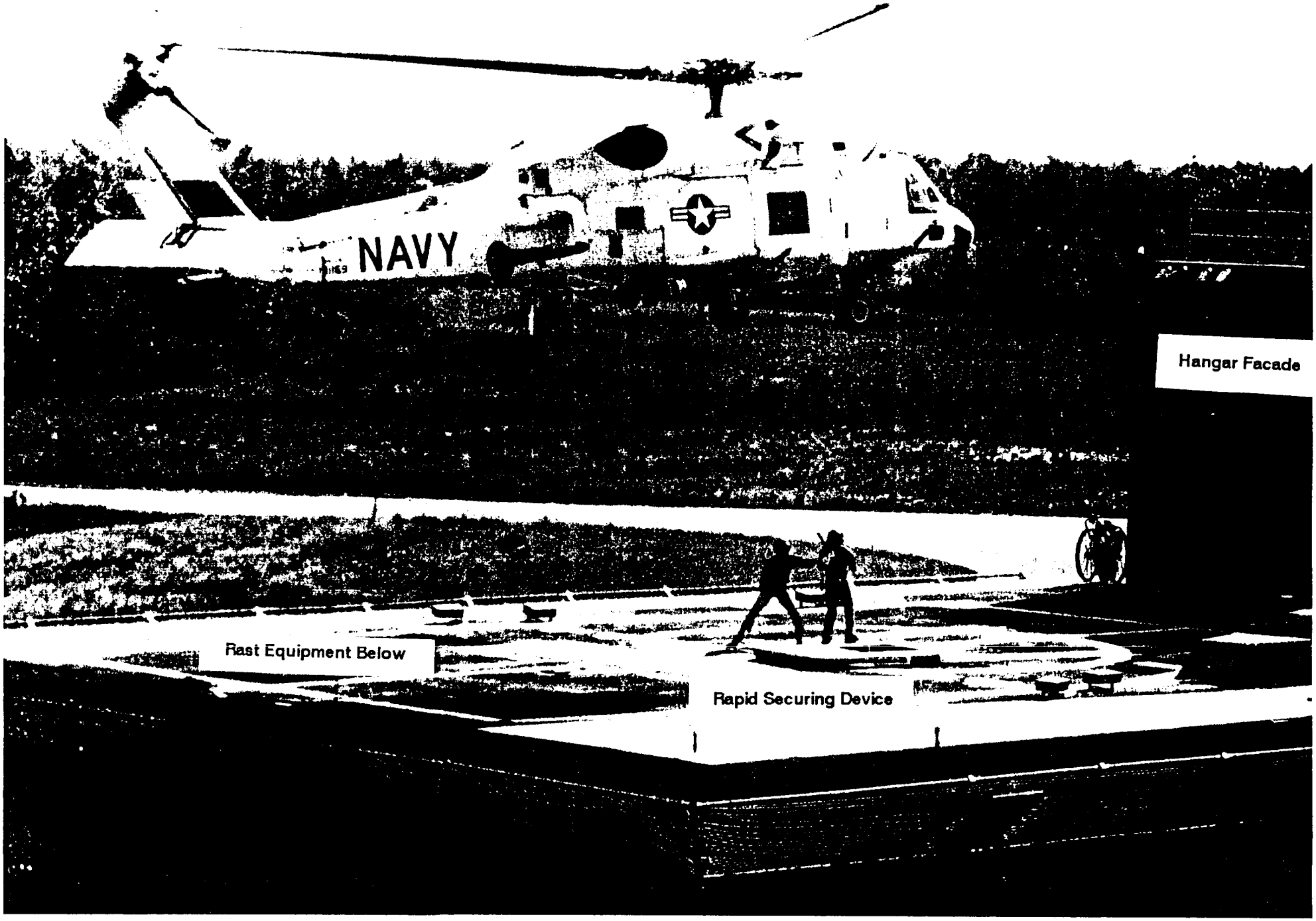
TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ) 8 **91 MH**
LANDINGS	**2**	**3.5 MH**	**7 MH**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **33,215 MH**
"TYPICAL"				
			TOTAL **7MH**	

Note: No additional tests can be run at maximum capacity.

UNCONSTRAINED CAPACITY IS NOT APPLICABLE TO THE SECURITY FACILITY

60

ELEVATED FIXED PLATFORM



GENERAL INFORMATION

Facility/Capability Title: Universal Landing Pad

Origin Date: 24 June 94

Service: N

Organization/Activity: NAWCADLKE

Location: Lakehurst, NJ

T&E Functional Area: Air Vehicle

UIC = N68335

T&E Test Facility Category Measurement Facility

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:			55%	45%			
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles			55%	45%			
Armanent/Weapons							
EC							
Other							

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

TECHNICAL INFORMATION

Facility/Capability Title: Universal Landing Pad

Facility Description; Including mission statement: The Universal Landing Pad consists of a 150 foot by 250 foot concrete pad at approximately ground level. It has a 50 foot square steel center section to facilitate the installation of various layouts of Visual Landing Aids (VLA) and is capable of handling helicopters up to 100,000 pounds gross weight at a load factor of 2.67 G. The installation of a representative pattern of mooring eyes permits tests of equipment (such as aircraft tie-downs and helicopter securing and traversing systems) for which mooring eye placement is a parameter.
Interconnectivity/Multi-Use of T&E Facility: N/A
Type of Test Supported: This site is used to evaluate Visual Landing Aids arrangement of any ship from destroyer size to amphibious transport dock ships (LPH).
Summary of Technical Capabilities: A landing pad 150 foot by 250 foot with a 50 foot square steel section in the center. The deck strength is sufficient to land a 100,000 pound helicopter at a load factor of 2.67 Gs.
Keywords: Visual Landing Aids

ADDITIONAL INFORMATION

Facility/Capability Title: **Universal Landing Pad**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	0	0	1	1	1	1	1
Enlisted	0	0	2	2	2	2	2
Civilian	2	0	2	2	2	2	2
Contractor	0	0	0	0	0	0	0
Total	2	0	5	5	5	5	5

Total Square Footage: **Outdoor Site**

Test Area Square Footage: **Outdoor Test Area**

Office Space Square Footage: **None**

Tonnage of Equipment: **None**

Volume of Equipment: **None**

Annual Maintenance Cost: **None**

Estimated Moving Cost: **Fixed Site**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **UNIVERSAL LANDING PAD**

		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								
	OVERHEAD HOURS								

NOTE: OVERHEAD FUNCTION NOT APPLICABLE

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Universal Landing Pad**

AGE: **22 years** REPLACEMENT VALUE: **$1,180,000**

MAINTENANCE AND REPAIR BACKLOG: **None**

DATE OF LAST UPGRADE: **August 1990**

NATURE OF LAST UPGRADE: **Fabrication of silhouette hanagar face, smoke stack and helicopter control station similiar to that on LPD-4 class ship**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **NONE**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

15

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **UNIVERSAL LANDING PAD**

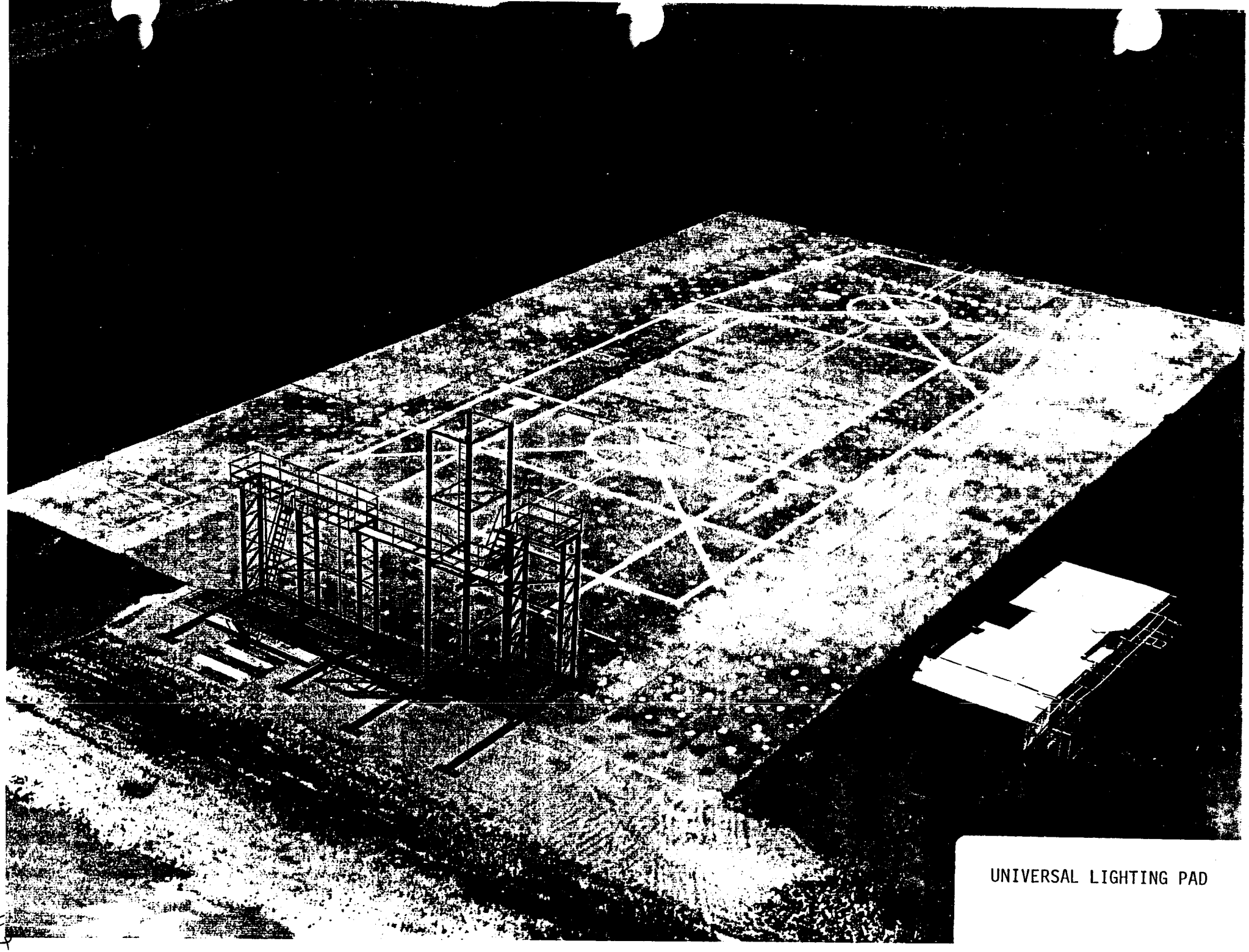
ANNUAL HOURS OF DOWNTIME	1 **3850**
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2 **11**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **13**

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 **65 MH**
LANDINGS	**1**	**5 MH**	**5 MH**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **23,725 MH**
"TYPICAL"				
			TOTAL **5MH**	

Note: No additional tests can be run at maximum capacity.

UNCONSTRAINED CAPACITY IS NOT APPLICABLE TO THE SECURITY FACILITY

116



UNIVERSAL LIGHTING PAD

GENERAL INFORMATION

Facility/Capability Title: **ARTICULATED MOTION PLATFORM**
Origin Date: **JUNE 24, 1994**

Service: **NAVY** Organization/Activity: **NAWCAD LAKEHURST** Location: **LAKEHURST, NJ**

T&E Functional Area: **AIR VEHICLES** UIC = **N68335**

T&E Test Facility Category **MEASUREMENT FACILITIES**

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

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	**90%**	**10%**
Armanent/Weapons		
EC		
Other	100	

THIS FACILITY IS FUNDED BY OVERHEAD DOLLARS

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

TECHNICAL INFORMATION

Facility/Capability Title: Articulated Motion Platform

Facility Description; Including mission statement: The Articulated Motion Platform (AMP) is a 13 foot by 17 foot platform that can support 17,500 pounds of equipment while performing the necessary angular rotations and horizontal translations to simulate the motion of certain ships up to sea state 5. The platform can be positioned in six independent ways which, taken separately, have the following ranges: pitch, -24° to +26°; roll, -22° to +22°; yaw -29° to +29°; vertical translation -23 inches to +32 inches; lateral translation -42 inches to +42 inches; and longitudinal translation -48 inches to +48 inches. The control system feeds motion information derived from a mathematical model of sea motion to the platform to simulate sea states. The AMP is used to evaluate ship equipment suspected to be susceptible to ship motion.
Interconnectivity/Multi-Use of T&E Facility: N/A
Type of Test Supported: The Articulated Motion Platform can be used to evaluate short range Unmanned Aerial Vehicle (UAV) deck landing capability and to develop procedures to recover the UAV. It can be used to determine the effects of ship motion on equipment that will be required to operate aboard Navy ships.
Summary of Technical Capabilities: The platform is 13 foot by 17 foot and can support 17,500 pounds of equipment. The control system can be positioned in six independent ways. The platform can simulate motion of certain ships up to sea state 5.
Keywords: Unmanned Aerial Vehicle, UAV, Ship Motion

ADDITIONAL INFORMATION

Facility/Capability Title: **Articulated Motion Platform**

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	3	0	5	5	5	5	5
Contractor	0	0	0	0	0	0	0
Total	3	0	5	5	5	5	5

Total Square Footage: **2,350**

Test Area Square Footage: **220**

Office Space Square Footage: **None**

Tonnage of Equipment: **None**

Volume of Equipment: **None**

Annual Maintenance Cost: **TBD**

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
308,000	0	0	0	0	0	0

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Articulated Motion Platform**

AGE: **New Facility to be completed in 1994** REPLACEMENT VALUE: **$350,000**

MAINTENANCE AND REPAIR BACKLOG: **None**

DATE OF LAST UPGRADE: **1994**

NATURE OF LAST UPGRADE: **Reassemled Platform at new site**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

12

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **ARTICULATED MOTION PLATFORM**

				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								
	OVERHEAD HOURS								

NOTE: OVERHEAD FUNCTION NOT APPLICABLE

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **ARTICULATED MOTION PLATFORM**

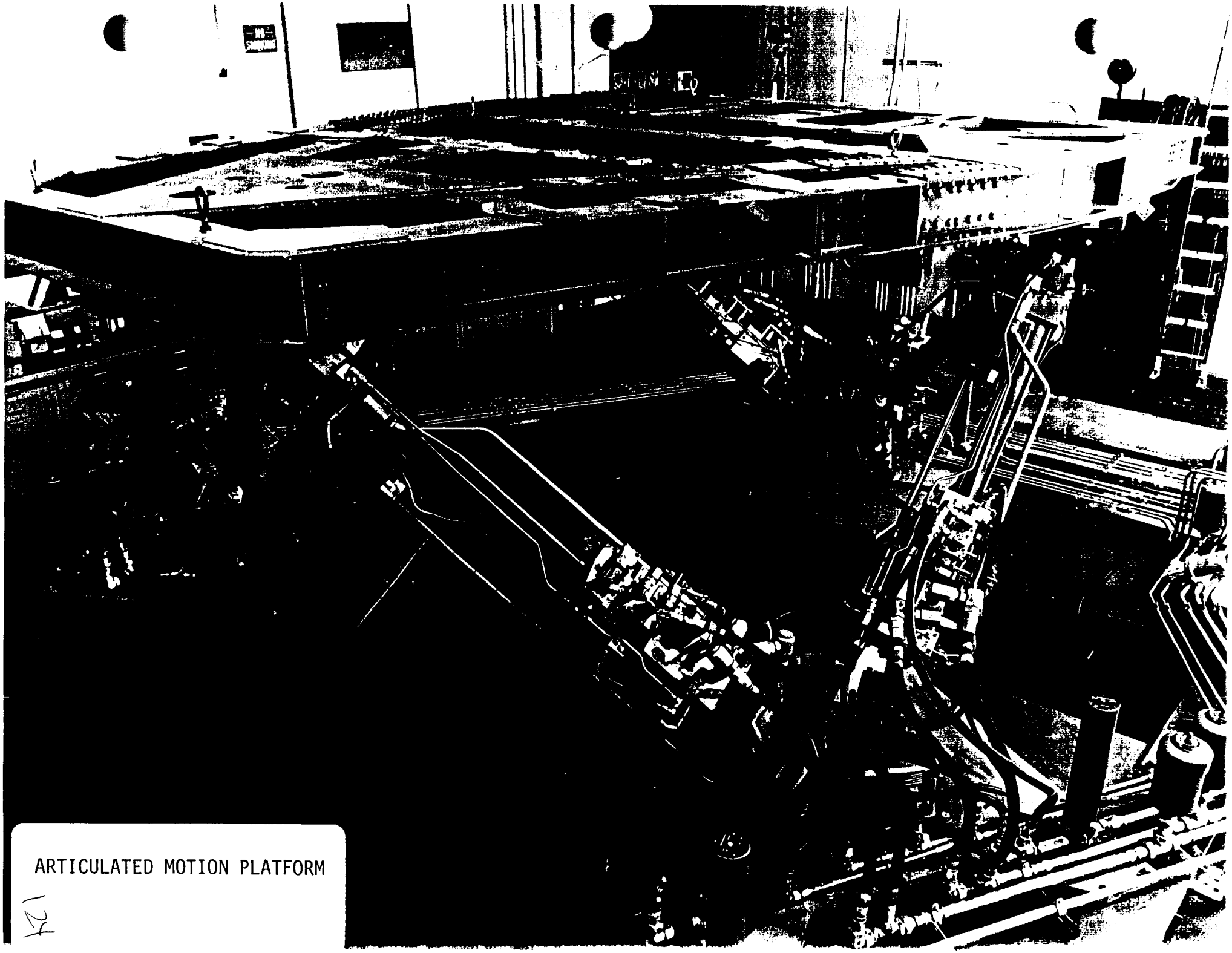
ANNUAL HOURS OF DOWNTIME	1 **5087**
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2 **14**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **10**

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 **50MH**
RPV	**1**	**5 MH**	**5 MH**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **18,250 MH**
"TYPICAL"				
			TOTAL **5MH**	

Note: No additional tests can be run at maximum capacity.

UNCONSTRAINED CAPACITY IS NOT APPLICABLE TO THE SECURITY FACILITY

123



ARTICULATED MOTION PLATFORM

GENERAL INFORMATION

Facility/Capability Title: **Metrology & Calibration Section**

Origin Date: **21 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Air Vehicle** UIC = **N68335**

T&E Test Facility Category **Measurement Facility**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:						**100%**	

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	**100%**
Armanent/Weapons	
EC	
Other	

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

25

TECHNICAL INFORMATION

Facility/Capability Title: METROLOGY & CALIBRATION SECTION

Facility Description; Including mission statement: Laboratories facilities equiped to calibrate sensor, gauges, cells and tools, to support the API Group and its mission. These calibrations include electronic, physical, thermal and gases.
Interconnectivity/Mulit-Use of T&E Facility:
Type of Test Supported: Calibration of all types of sensors to support any instrumentation effort.
Summary of Technical Capabilities: Electronic calibration: Voltage 1 microvolt to 1000 VDC Frequence = DC = 40 GHZ Physical = 0 = 400,000 lbs force, optical, theromal, dimentional, as applies to a Navy Type III Lab
Keywords: Aircraft Platform Interface

ADDITIONAL INFORMATION

Facility/Capability Title: **Metrology & Calibration Section**

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	14	14	14	14	14	14	14
Contractor	0	0	0	0	0	0	0
Total	14	14	14	14	14	14	14

Total Square Footage: 6,703

Test Area Square Footage: 3,147

Office Space Square Footage: 450

Tonnage of Equipment: 14,663

Volume of Equipment: 3,159.5 cu ft

Annual Maintenance Cost: $30,000

Estimated Moving Cost: $50,000

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
10,000	10,000	5,000	5,000	5,000	5,000	5,000

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Metrology and Calibration Laboratory**

AGE: **33 years** REPLACEMENT VALUE: **$3,443,251**

MAINTENANCE AND REPAIR BACKLOG: **$15,400**

DATE OF LAST UPGRADE: **1990**

NATURE OF LAST UPGRADE: **Addition to Building**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **None**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **METROLOGY AND CALIBRATION LABORATORY**

		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								
	OVERHEAD HOURS								

NOTE: OVERHEAD FUNCTION NOT APPLICABLE

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Metrology & Calibration Section

ANNUAL HOURS OF DOWNTIME — 1 280

AVERAGE DOWNTIME PER DAY (LINE 1Π 365) — 2 .767

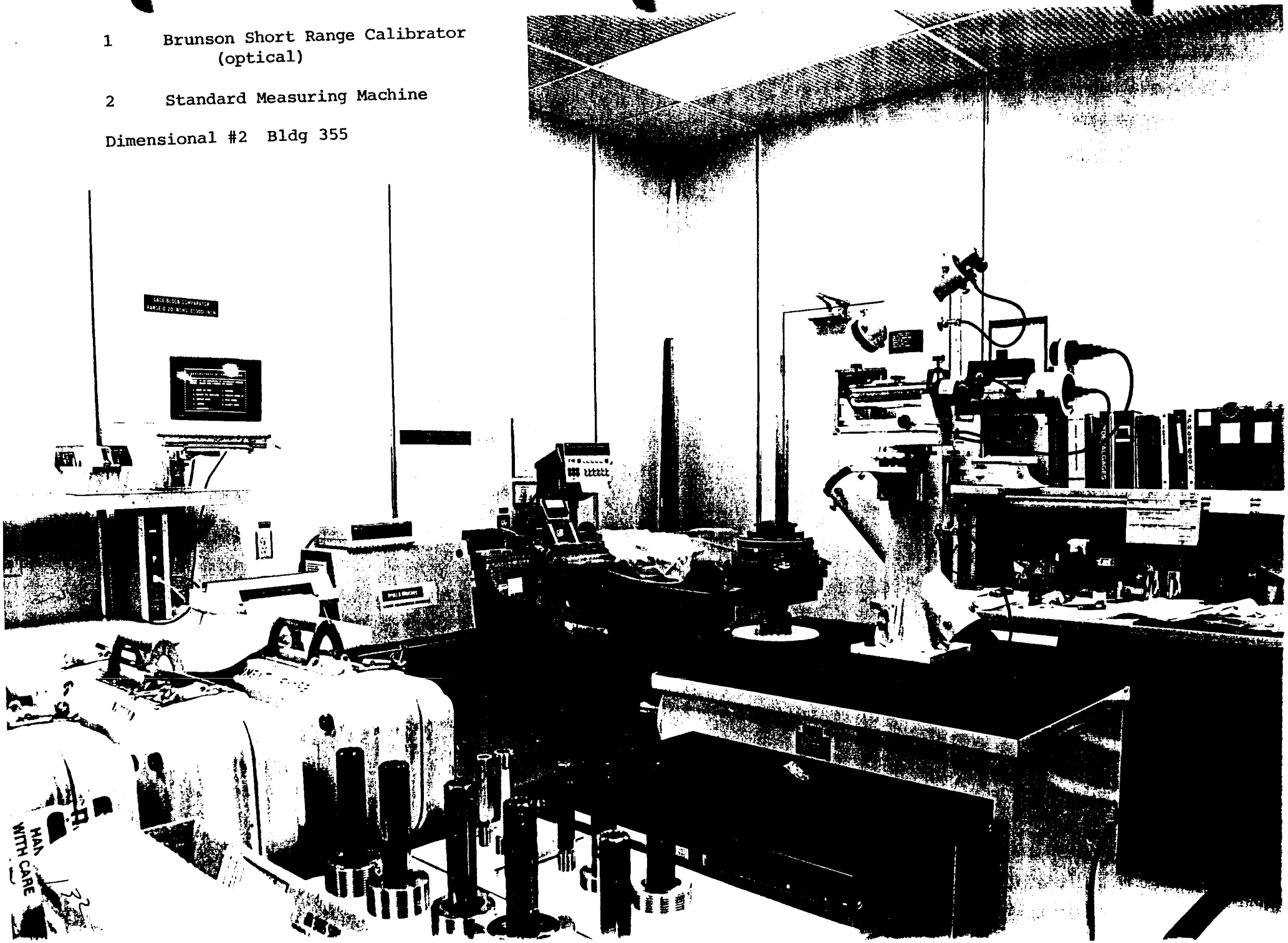
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) — 3 23.23

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) 8 418.19
Physical Cal	4	1	4	
Dimentional Cal	5	1	5	Annual Unconstrained Capacity 152,640
Optional Cal	2	1	2	
Temperature Cal	3	1	3	
ABO Testing	4	1	4	
"TYPICAL"		TOTAL	18	

1 Brunson Short Range Calibrator (optical)

2 Standard Measuring Machine

Dimensional #2 Bldg 355



CENTER

GENERAL INFORMATION

Facility/Capability Title: **Data Handling Center**

Origin Date: **21 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Air Vehicle** UIC = **N68335**

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

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	5%	5%		80%		10%	

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	5%					
Armanent/Weapons						
EC						
Other		5%		80%		10%

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

132

TECHNICAL INFORMATION

Facility/Capability Title: Data Handling Center

Facility Description; Including mission statement: The Data Handling Center (DHC) is a PEVD facility for manipulating and archiving recorded ground-base and telemetry data. Its mission has remained relatively constant since the early 60's; to house long-term archive data and conduct off-line processing.
Interconnectivity/Mulit-Use of T&E Facility: None
Type of Test Supported: Aircraft, ground support equipment performance, launch and recovery equipment performance.
Summary of Technical Capabilities: The Data Handling Center (DHC) houses off-line signal processing and reproduction equipment as well as the project data archive equipment. The off-line processing equipment includes instrumentation tape recorders, demodulation equipment for 64 channels of ground based data, telemetry demodulation equipment reproduce vehicular data, display devices, signal plotters, analog to digital conversion systems and three signal processors. Archive support equipment includes 1700 analog and 800 digital data tapes, tape library logs, tape maintenance equipment. All this equipment is used in support of evaluation projects of API products.
Keywords: Aircraft Launch/Recovery Equipment (ALRE), Aircraft Platform Interface (API), CATAPULT, Ground Support Equipment (GSE)

ADDITIONAL INFORMATION

Facility/Capability Title: **Data Handling Center**

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	1	1	1	1	1	1	1
Contractor	0	0	0	0	0	0	0
Total	1	1	1	1	1	1	1

Total Square Footage: 2,000

Test Area Square Footage: 0

Office Space Square Footage: 450

Tonnage of Equipment: 2.25

Volume of Equipment: 300 cu ft

Annual Maintenance Cost: $18,000

Estimated Moving Cost: $25,000

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
10,000	10,000	80,000	10,000	25,000	25,000	25,000

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Data Handling Center**

AGE: **10 years** REPLACEMENT VALUE: **$996,428**
$115,428 Facility Only

MAINTENANCE AND REPAIR BACKLOG: **None**

DATE OF LAST UPGRADE: **1989**

NATURE OF LAST UPGRADE: **Complete renovation, installation of security devices (e.g. white noice generators, alarm systems, security fencing) to make facility secure.**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **None**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Data Handling Center**

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	300	40	100	40	50	150	500
	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								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Data Handling Center

ANNUAL HOURS OF DOWNTIME 1 511

AVERAGE DOWNTIME PER DAY (LINE 1Π 365) 2 1.1

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 22.6

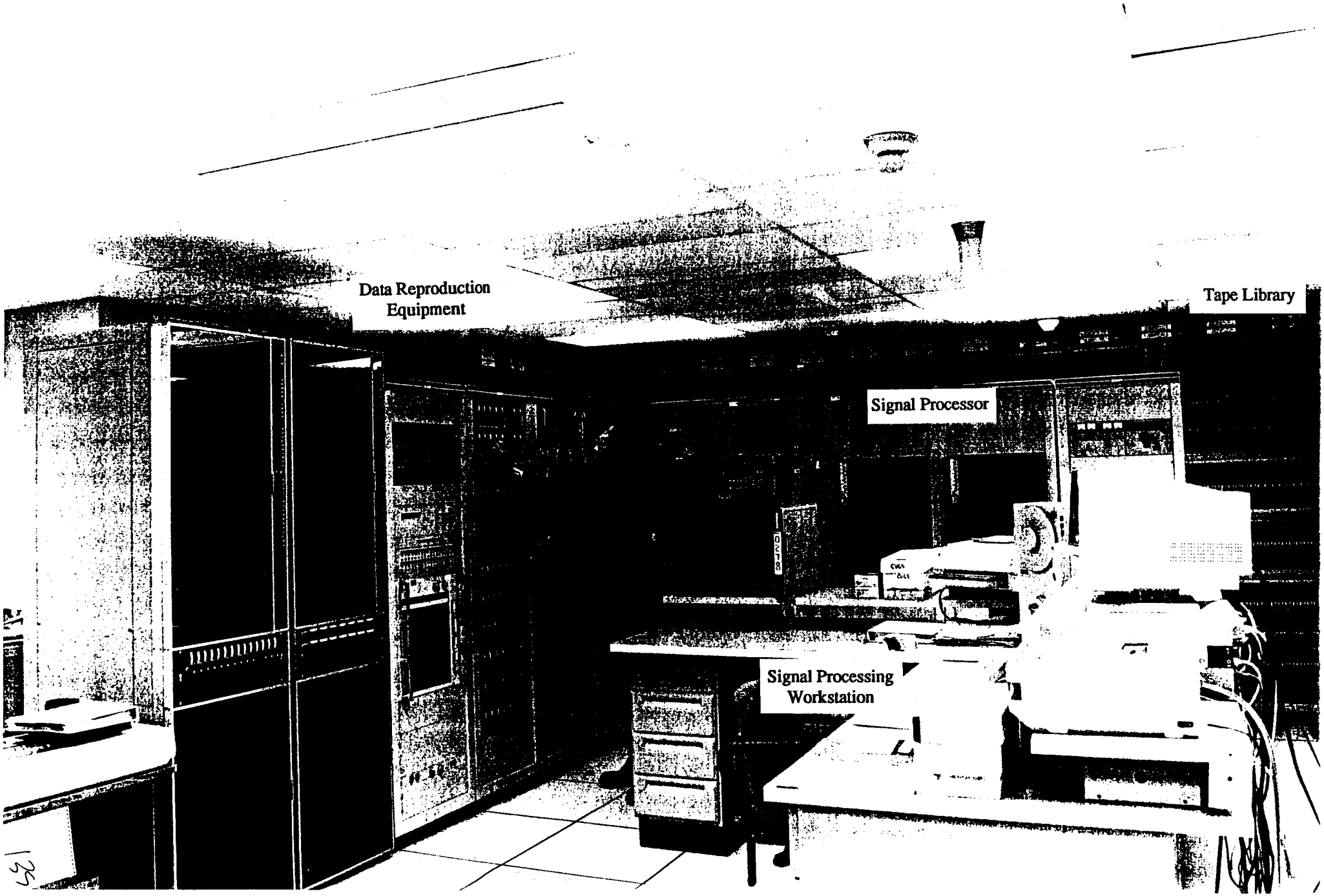
TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL)
4	5	6	7	8 135.6
Support	3	2	6	

Annual Unconstrained Capacity
9 49,494

"TYPICAL"

Total 6

DATA HANDLING CENTER



LABORATORY

INTERFACE LABORATORY

GENERAL INFORMATION

Facility/Capability Title: Aircraft Platform Interface Laboratory

Origin Date: 21 June 94

Service: N

Organization/Activity: NAWCADLKE

Location: Lakehurst, NJ

T&E Functional Area: Other (Aircraft Platform Interface

UIC = N68335

T&E Test Facility Category Integration Laboratory (IL)

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:		20.8%	41.8%	37.4%			
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles			3.3%	2.0%			
Armanent/Weapons				1.0%			
EC							
Other		20.8%	38.5%	34.4%			

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

TECHNICAL INFORMATION

Facility/Capability Title: AIRCRAFT PLATFORM INTERFACE (API) LABORATORY

Facility Description; Including mission statement:
The Aircraft Platform Interface Laboratory consists of 13 different facilities occupying 36248 square feet of space in 5 different buildings which are geographically dispursed throughout the activity. The laboratory's mission is to execute/support programs that are vital to the safe and effective operation of naval aircraft to, from, and on aviation platforms by conducting programs of technology development, engineering analyses, system integration, developmental evaluation and fleet engineering support for aircraft platform interface products.

Interconnectivity/Mulit-Use of T&E Facility:
Providing life cycle support for the Fleet API assets foster interconnectivity between the various API Laboratory facilities at Lakehurst. This integration of functions facilitates a much valued synergy among in-house design development and support personnel.

Type of Test Supported:
The API Laboratory performs a wide range of developmental, prototype, first article performance, functional, qualification and production testing, system integration and failure analyses in support of Fleet ALRE and SE products.

These tests consist of optical/photometric measurements; analysis of audio/video/electrical signals; Network capacity/loading and man-machine interface evaluations; NDI and dynamic interface studies/signature analysis and advanced computer technology investigations; metallographic, metallurgical failure analysis; metallic chemical composition; environmental testing; metal sorting; fluid/lubrication properties and coating analysis; EMI; EMP; barrier material/RF gasket attenuation.

Summary of Technical Capabilities:
The API Laboratory maintains specific components/assets representative of current ALRE equipments/systems and specialized instrumentation in order to support on-going Fleet operations. Capability is maintained to simulate problems, analyze failed equipment and to develop Service Changes as required. The facility has physical mock-ups of designated ship spaces, which support the develoment/integration and evaluation of new shipboard ALRE Information Systems. A Sensitive Compartmented Information Facility (SCIF) is maintained to perform Computer-Aided Spotting and Handling Analysis for carrier Aircraft. The lab maintains scientific and engineering capability to support the development and production efforts associated with the integration of emerging technologies into new Fleet equipment. Typical technologies in which capability is maintained are: Photometrics, Optics; Electrical/Electronics; Artificial Intelligence/Fuzzy Logic/Neural Network; Chemical, Metallurgical, Mechanical, Software Development, Environment/Climatic Testing; Spotting and Handling Analysis; NDI; Dynamic Interface/Wind Sensor and EMI/EMP testing to MIL-STD-461. The EMI facility is NVLAP certified.

Keywords:
Aircraft Launch and Recovery Equipment, Aircraft Platform Interface, Sensitive Compartmented Information Facility, National Voluntary Laboratory, Accrediation Program, Electromagnetic Interference, Electromagnetic Pulse, Environmental, Climatic, Electrical, Product Develompent, System Integration, Visual Landing Aids, Dynamic Interface, Non-Destructive Investigation, Artificial Intelligence, Fuzzy Logic, Neural Networks

ADDITIONAL INFORMATION

Facility/Capability Title: Aircraft Platform Interface 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	36.25	39.55	41.05	44.75	45.85	46.85	45.20
Contractor	3	6	7	6	6	6	6
Total	39.25	45.55	48.05	50.75	51.85	52.85	51.2

Total Square Footage: 36,248

Test Area Square Footage: 30,574 (1)

Office Space Square Footage: 5,674

Tonnage of Equipment: 311.34

Volume of Equipment: 103,338 cu ft

Annual Maintenance Cost: $277,300

Estimated Moving Cost: 2,014,900

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
1,043,800	4,735,100	1,895,000	1,120,000	1,344,000	807,000	1,354,900

(1) The Aircraft/Weapons Compatibility Lab has no laboratory equipment and uses only office type space (3,300 sq ft) to accomplish its mission of computer-sided spotting and handling analysis for carrier aircraft. No test area square footage was included for this facility.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **AIRCRAFT PLATFORM INTERFACE LABORATORY**

AGE: **58** REPLACEMENT VALUE: **$19,170,000**

MAINTENANCE AND REPAIR BACKLOG: **$380,300**

DATE OF LAST UPGRADE: **7/93**

NATURE OF LAST UPGRADE: **Constructed addition to building 355 Electromagnetic Pulse Laboratory.**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Consolidate de-centralized lab facilities.**

Laboratory Title	Project #
NDI/Electronics	CR1-94
Fiber Optic	CR2-94
Information Technology	CR3-94
Product Development	CR4-94
Photometric	RC5-94
Catapult	CR6-94
Component Analysis	CR7-94
Mock-Up	CR8-94
EMI	C34-94
ETL	Not Required

2. UPGRADE TITLE: **Laboratory Facilities Improvement**

TOTAL PROGRAMMED AMOUNT: **$2,344,000**
SUMMARY DESCRIPTION: **Consolidate de-centralized laboratory facilities, construct Electromagnetic Pulse Laboratory and refurbish Environmental Test Laboratory.**

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **AIRCRAFT PLATFORM INTERFACE LABORATORY**

				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								
	OVERHEAD HOURS								

NOTE: OVERHEAD FUNCTION NOT APPLICABLE

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Aircraft Platform Interface

ANNUAL HOURS OF DOWNTIME	1 401.5
AVERAGE DOWNTIME PER DAY (LINE 1Π 365)	2 1.1
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 22.9

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) 8 2176
Photometrics	2	2	4	
Radiometric	1	1	1	794.272
MTF	1	2	2	
ANVIS+	1	1/2	1/2	
Laser Power	3	4	12	
Video	1	1	1	
"TYPICAL"			TOTAL 95	

15

DETERMINATION OF UNCONSTRAINED CAPACITY (CONT'D)

TEST TYPES	TESTS @ ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR
DIGITAL DATA	2	2	4
ELECTRICAL	7	4	28
CSV FUNCTIONAL	1	2	2
DESI FUNCTIONAL	1	2	2
J/A OES	1	1	1
SEM/EDS/XRAY	1	1	1
HARDNESS	2	6	12
MISC CHEM	2	1	2
MICROSCOPES	2	1	2
MIL-STD-461	2	2	4
EMP TESTING	1	2	2
GASKET ATTEN	1	1	1
BAG ATTEN	1	1	1
CLIMATIC	6	0.83	0.5
MECHANICAL	5	1	5
ELECTRICAL	2	1	2
CAT COMPONENT	1	3	3
CUSTOM ETL	2	1	2

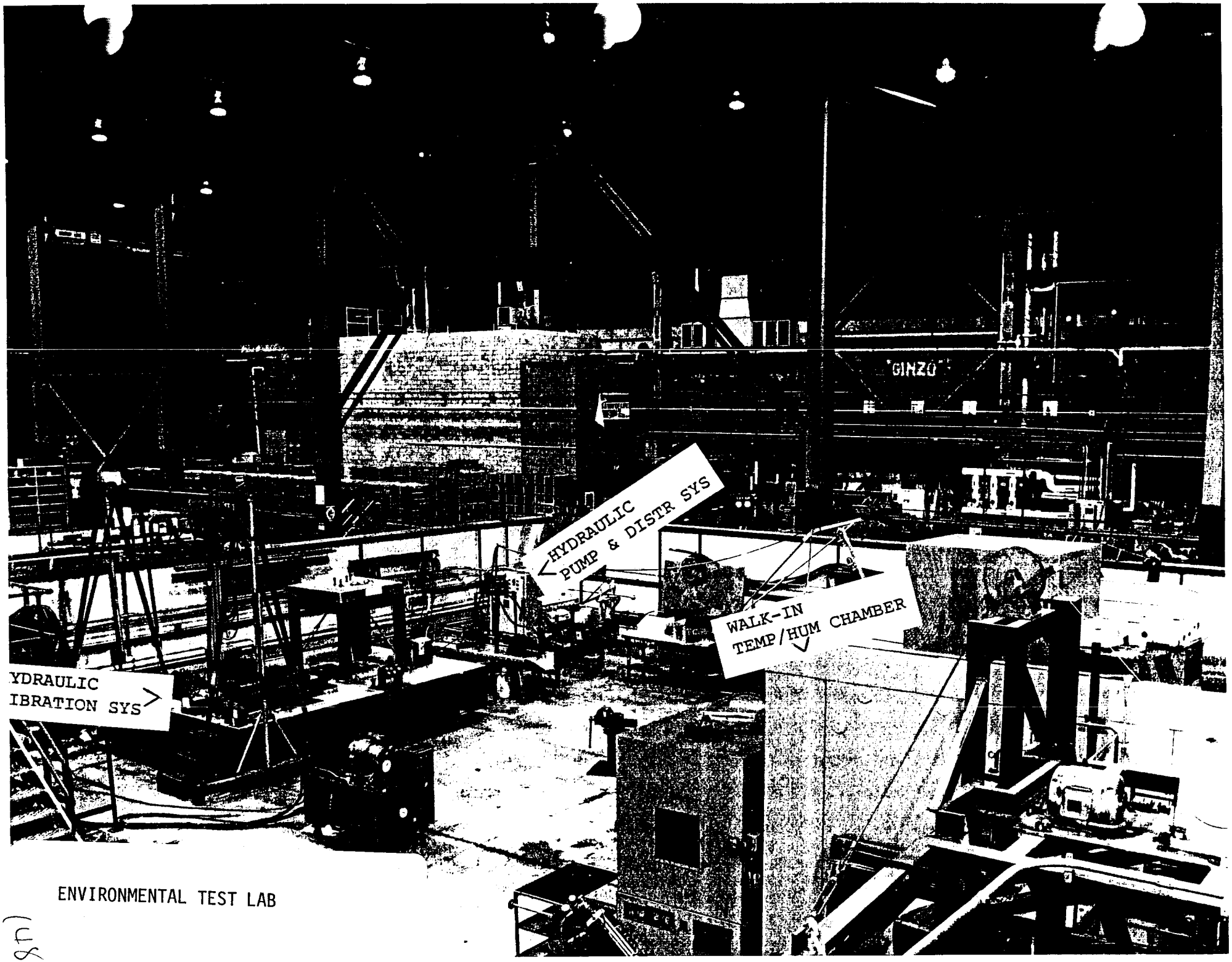
NOTES:
+ ANVIS = Aviation Night Vision Imaging System
. MTF = Modulation Transfer Function

1. The API Laboratory is comprised of a number of separate facilities, each performing different types of tests. Since the annual Hours of Downtime vary from facility to facility the total Annual Unconstrained Capacity was determined by calculating each facility's Annual Unconstrained Test Capability and then summing these values. Columns 4 & 5 list each type of test and the number of tests that are performed regardless of the facility that they are performed in. Columns 6 & 7 also list test data irregardless of the conducting facility. The value of Σ is the sum of all the tests conducted by each of the facilities and represents the Laboratory's total workload per facility hour. Line 9

as previously stated is the sum total of each of the individual facilities annual unconstrained capacity. Line 8 was calculated by dividing line 9 by 365. Line 3 was calculated by dividing line 8 by the Σ. Line 2 was calculated by subtracting Line 3 from 24. Line 1 was calculated by multiplying Line 2 x 365.

2. Some facilities of the API Laboratory conduct lengthy programs or projects. These efforts do not fit the typical definition of a test and are not included in the Laboratory's Unconstrained Capacity Calculations.

3. Laboratory capacity is limited by the shortage of unique test equipment in the Catapult & Component Analysis Facilities, unavailability of additional electrical capacity in the ETL, and the physical size of the various facilities.

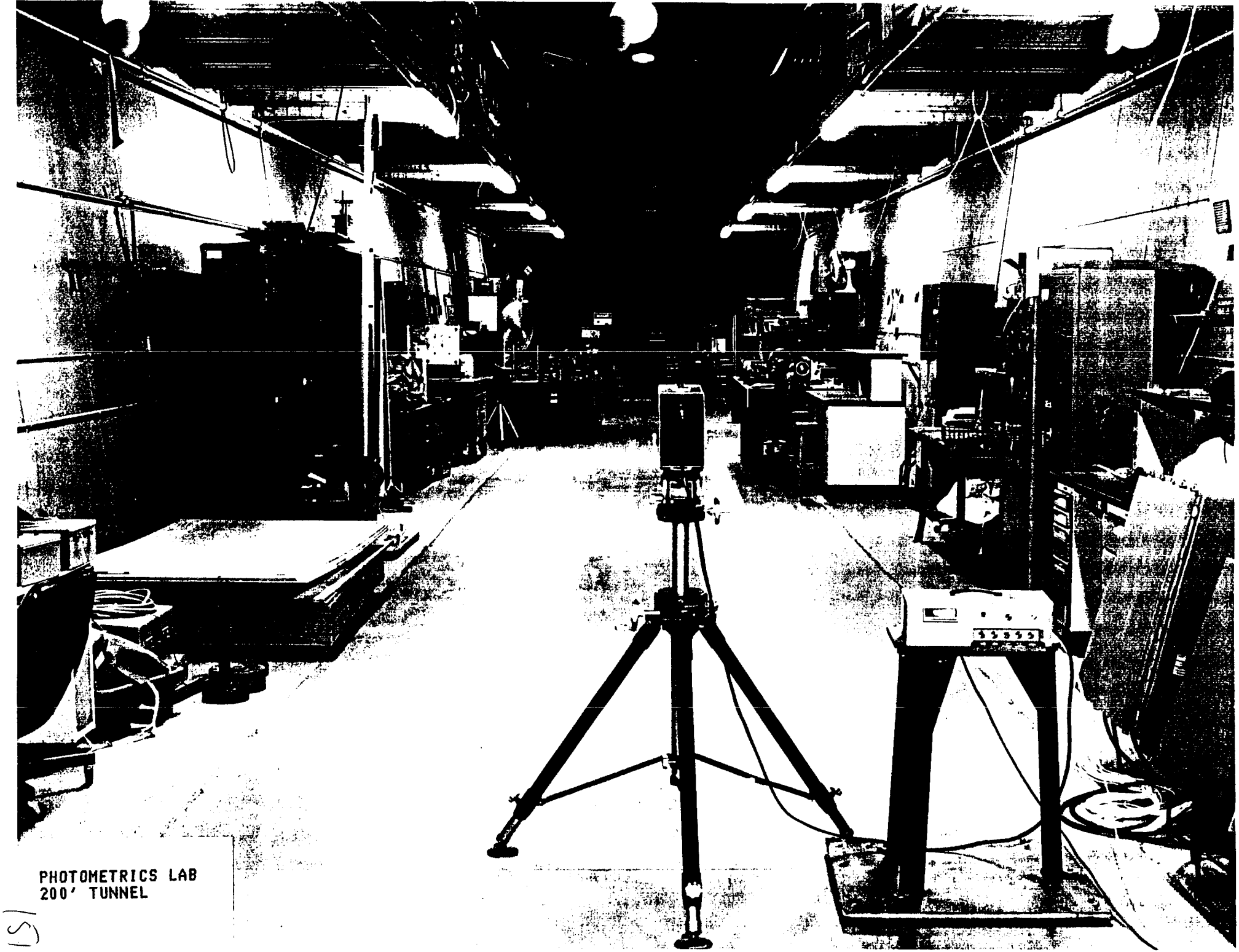


ENVIRONMENTAL TEST LAB

38

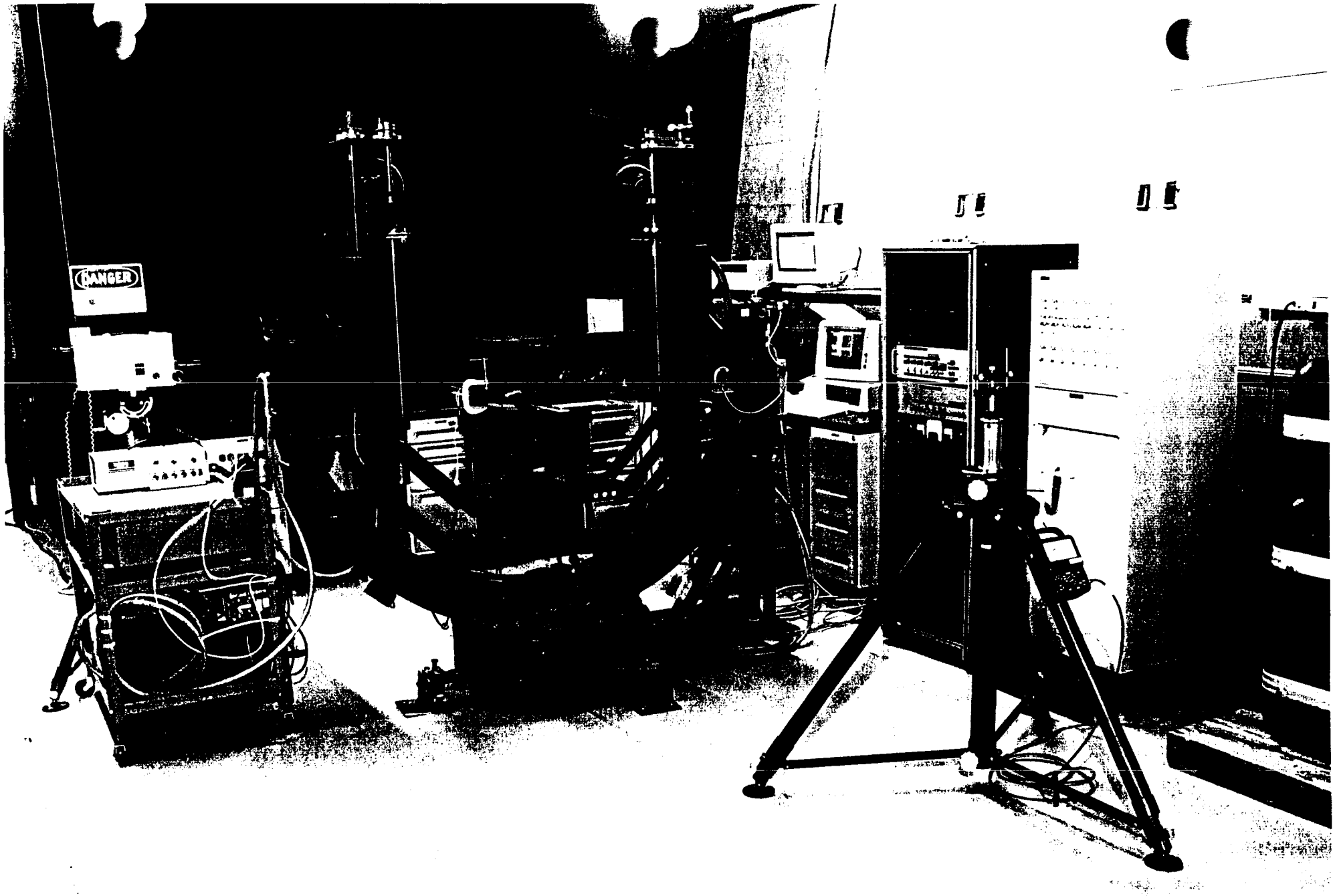
ELECTROMAGNETIC INTERFERENCE LAB

PHOTOMETRICS LAB
MTF AREA



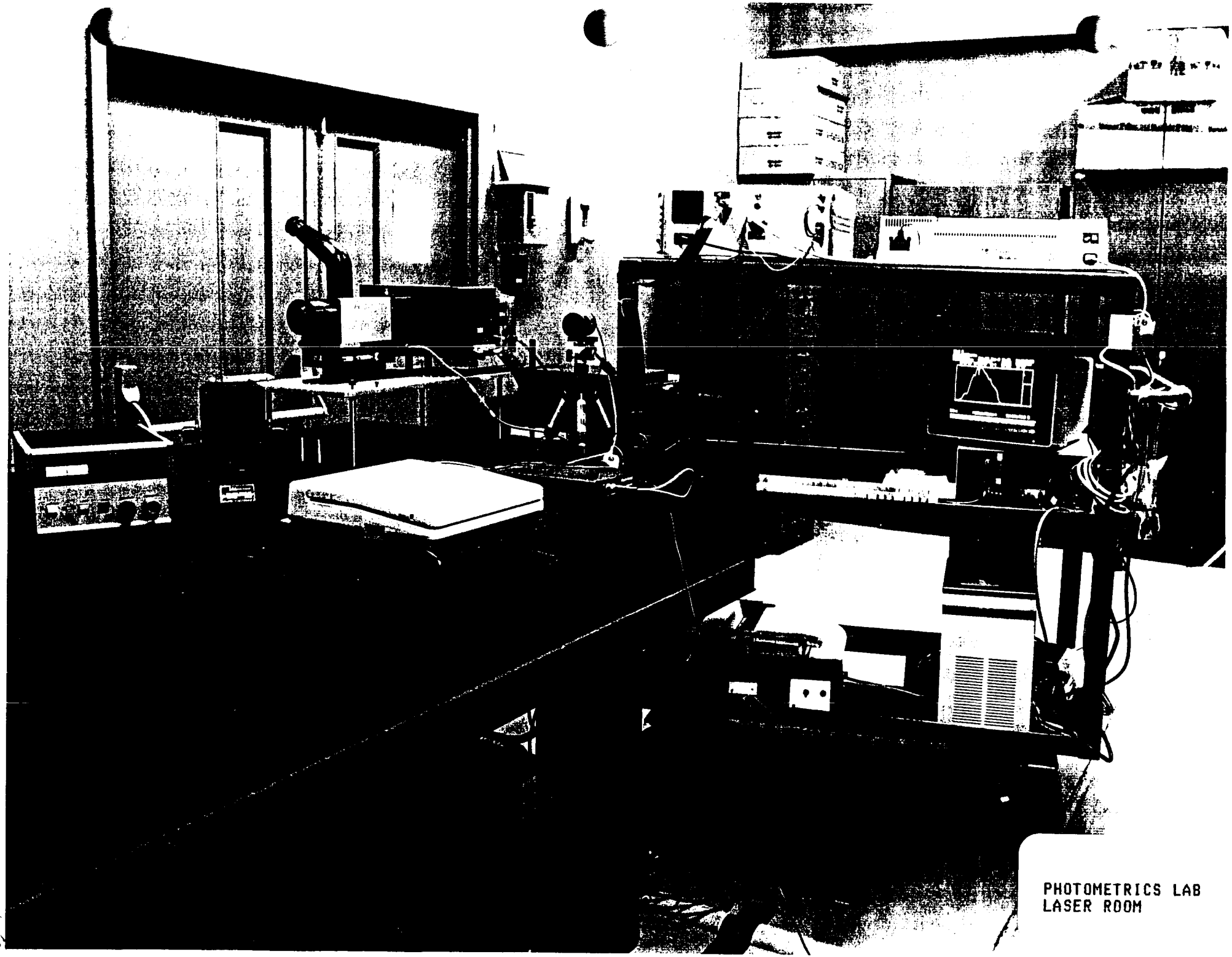
PHOTOMETRICS LAB
200' TUNNEL

(5)

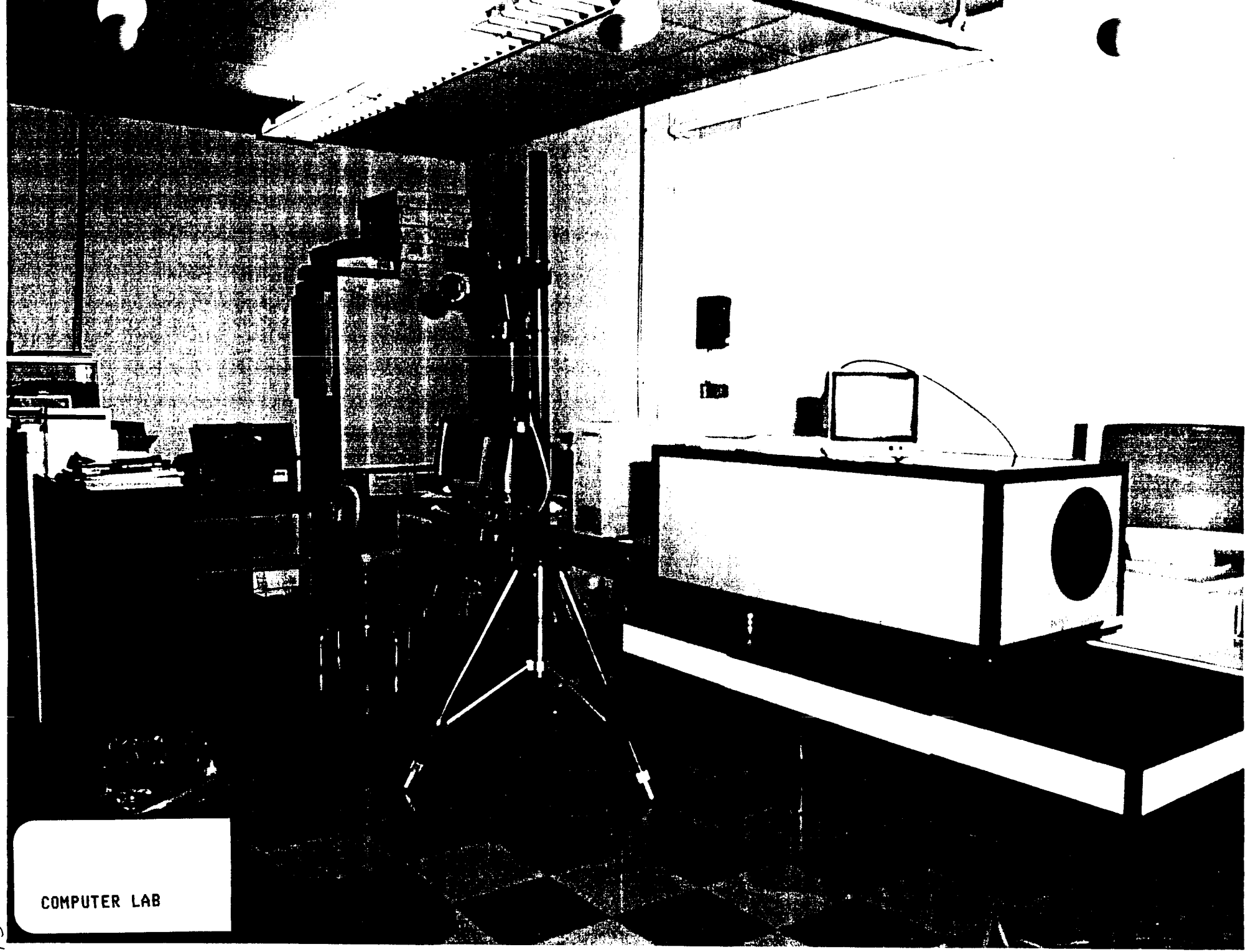


PHOTOMETRICS LAB
GONIOMETER

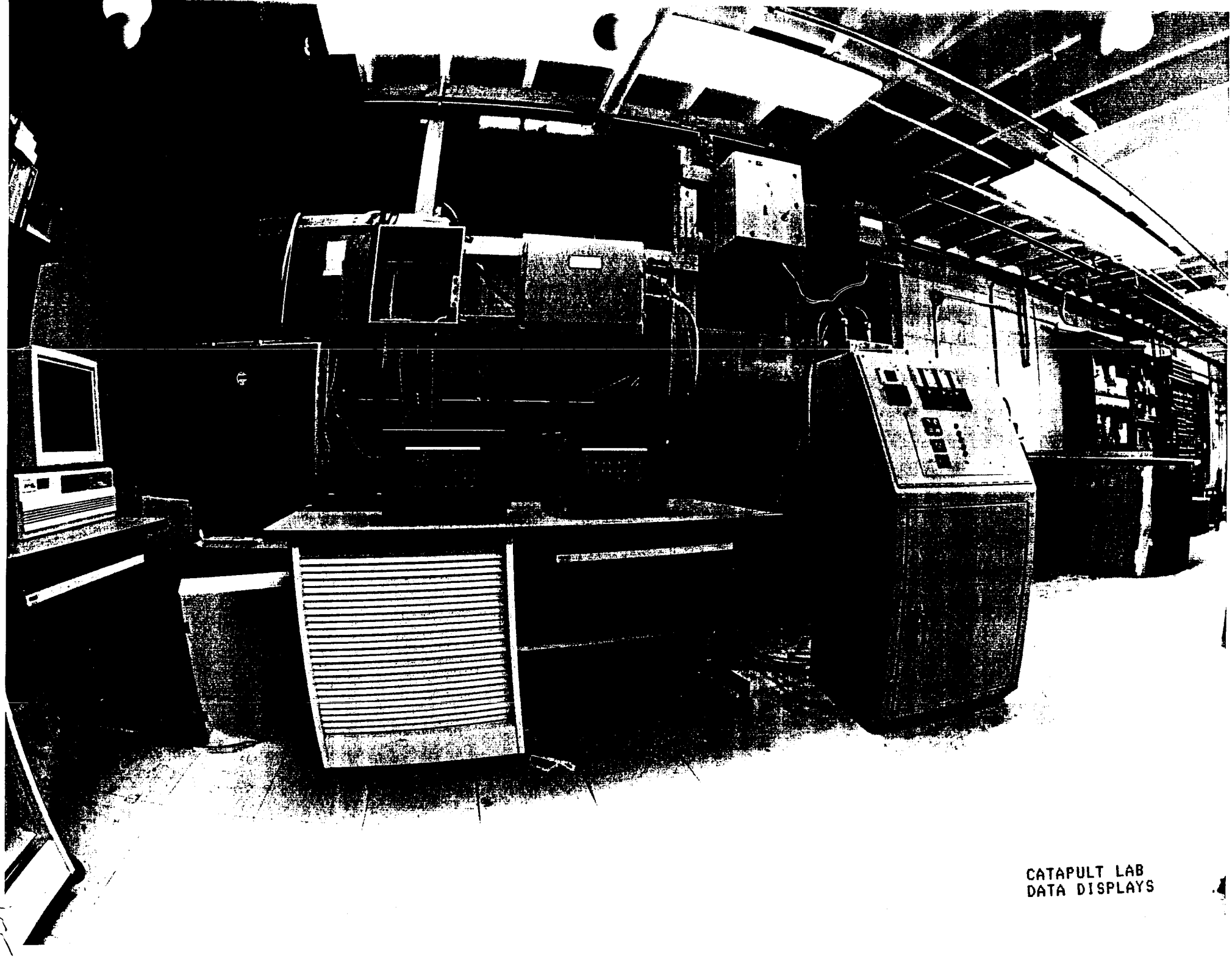
152



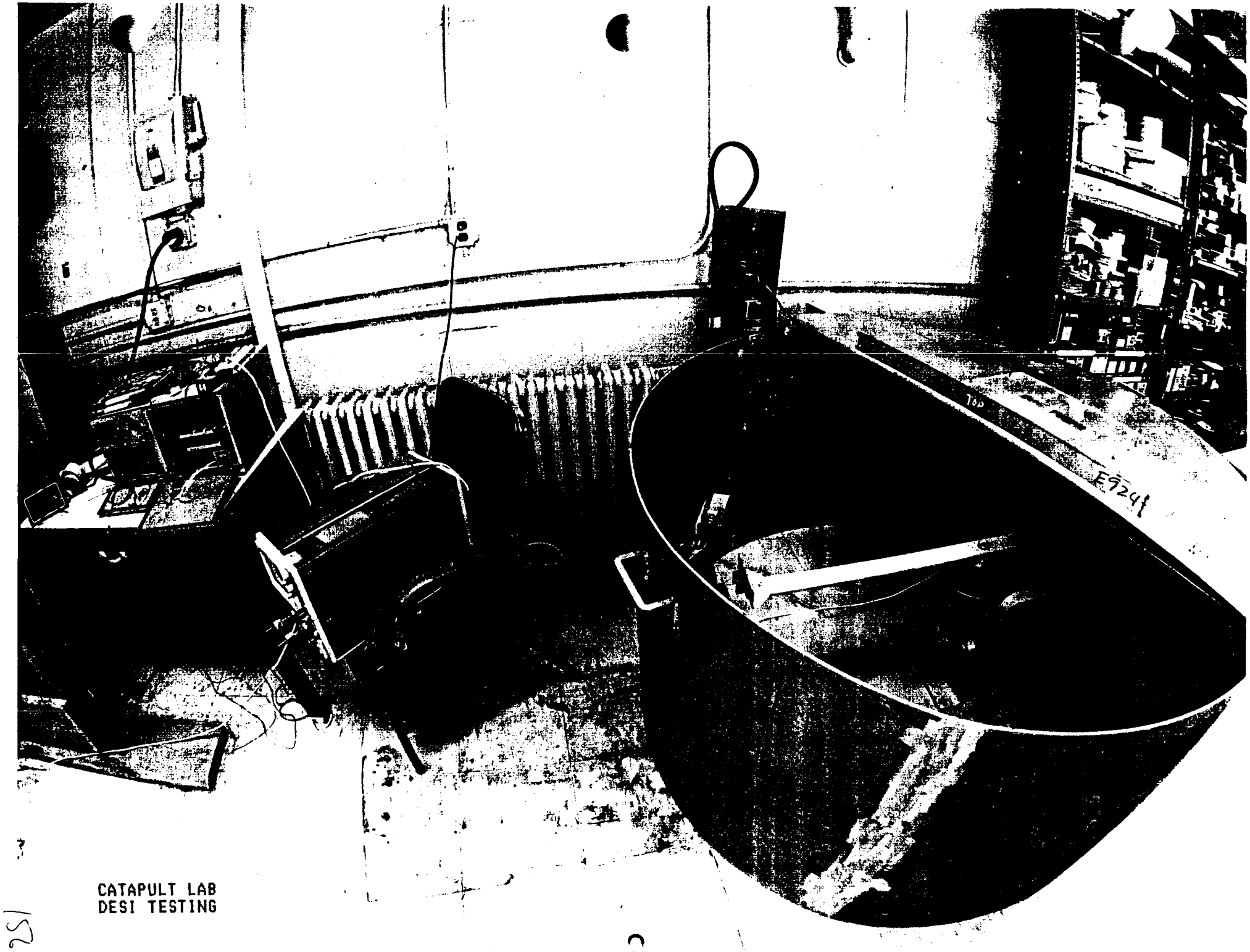
PHOTOMETRICS LAB
LASER ROOM



COMPUTER LAB



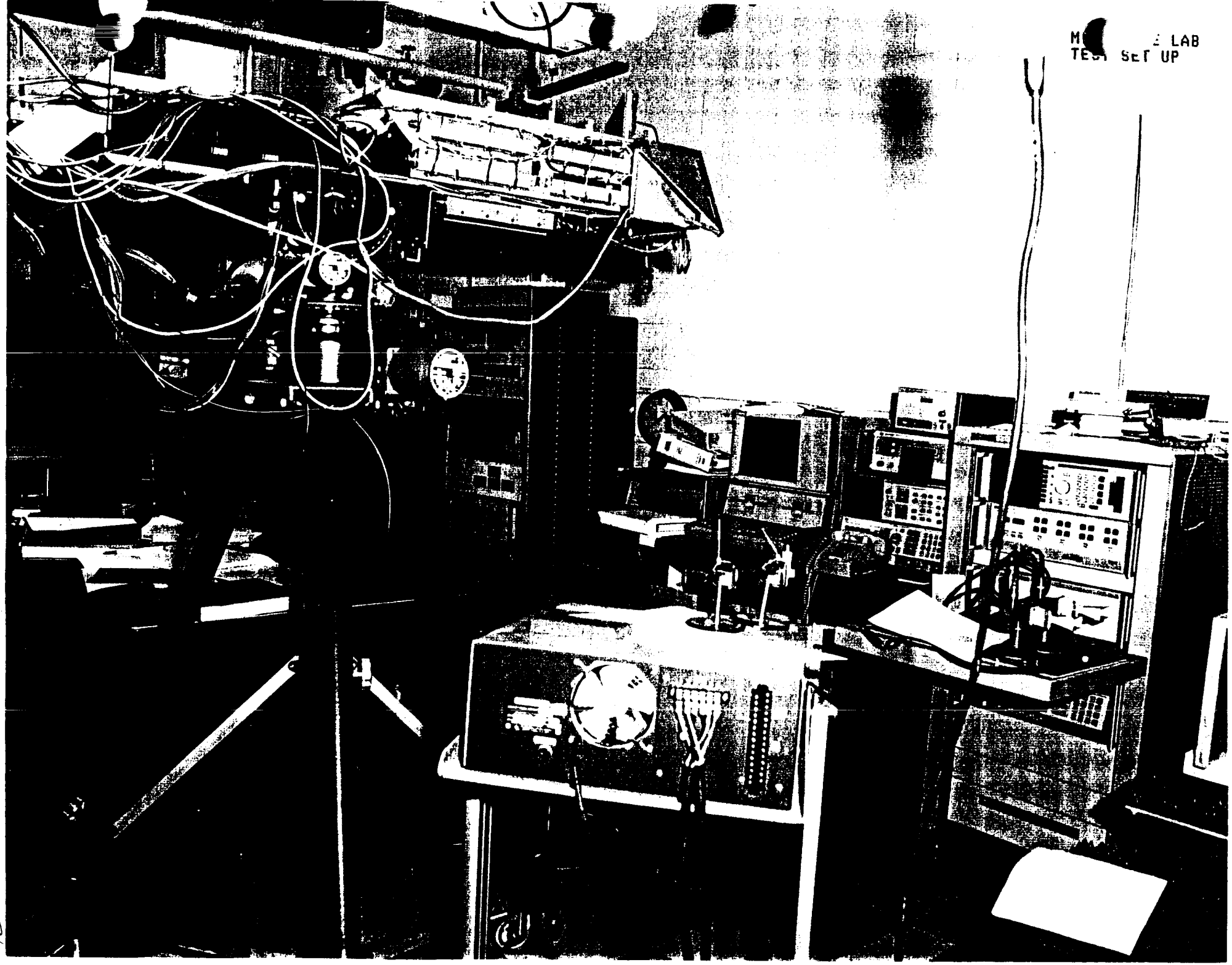
CATAPULT LAB
DATA DISPLAYS



CATAPULT LAB
DESI TESTING

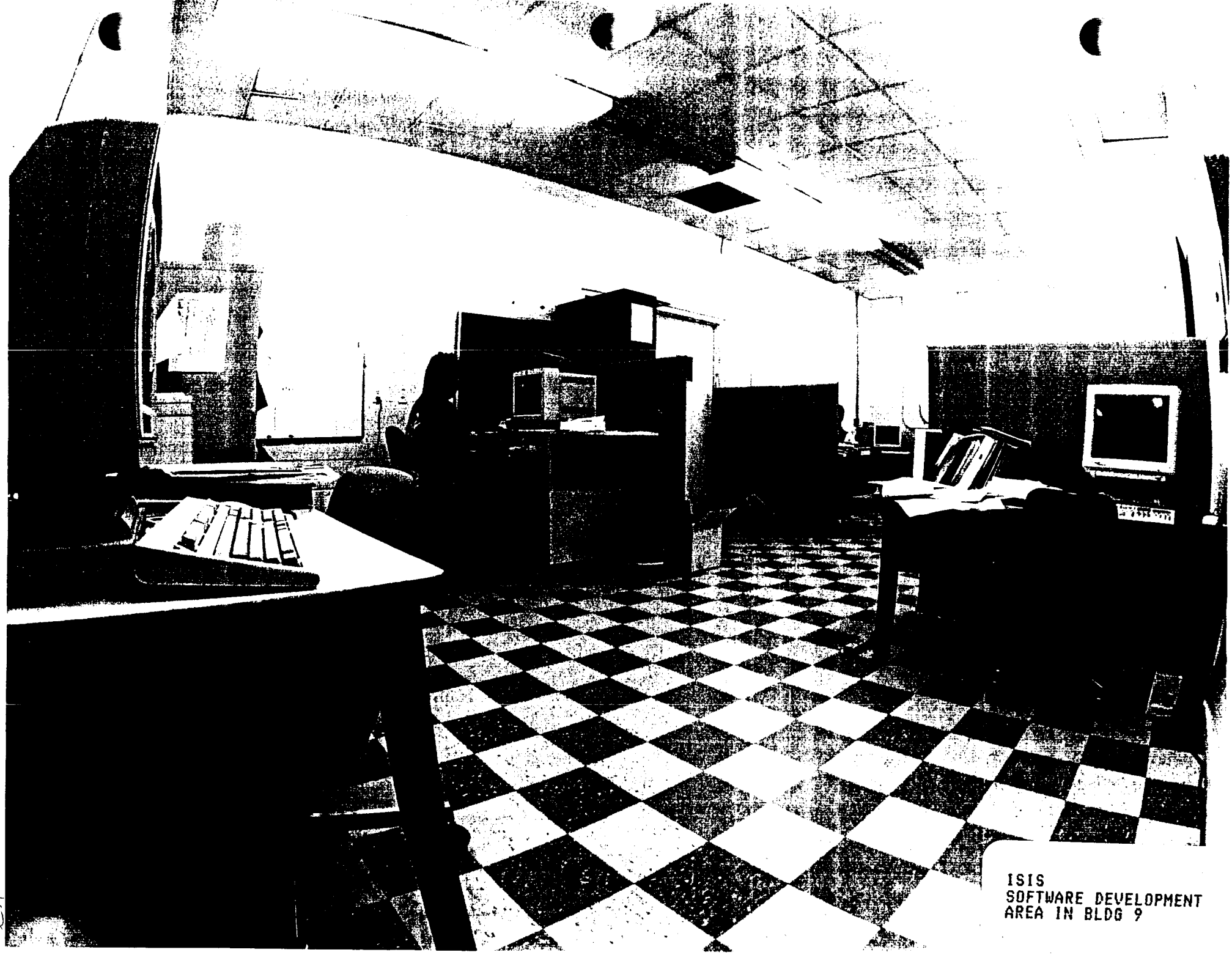
MICROWAVE LAB

(54)



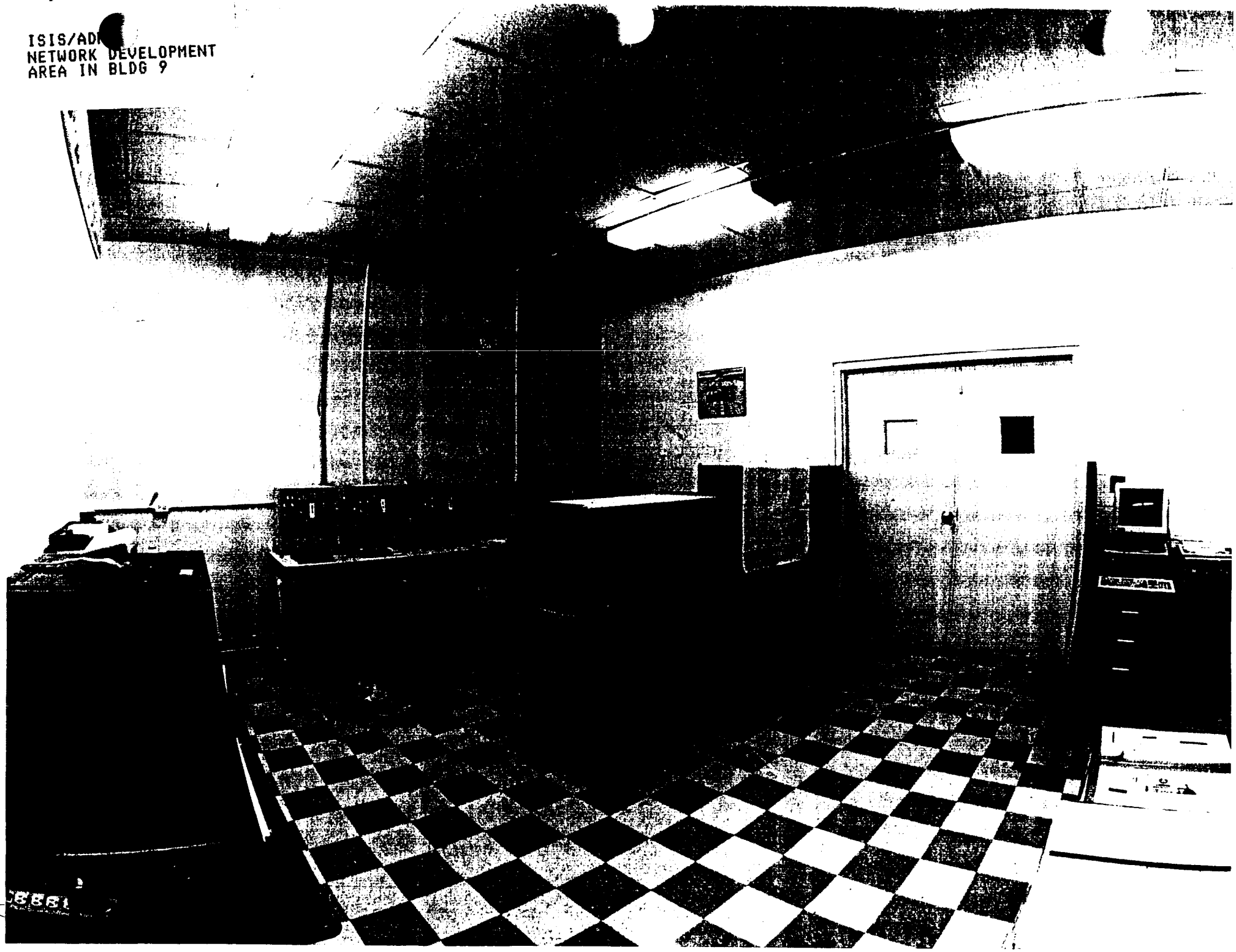
M[illegible] LAB
TE[illegible] SET UP

158

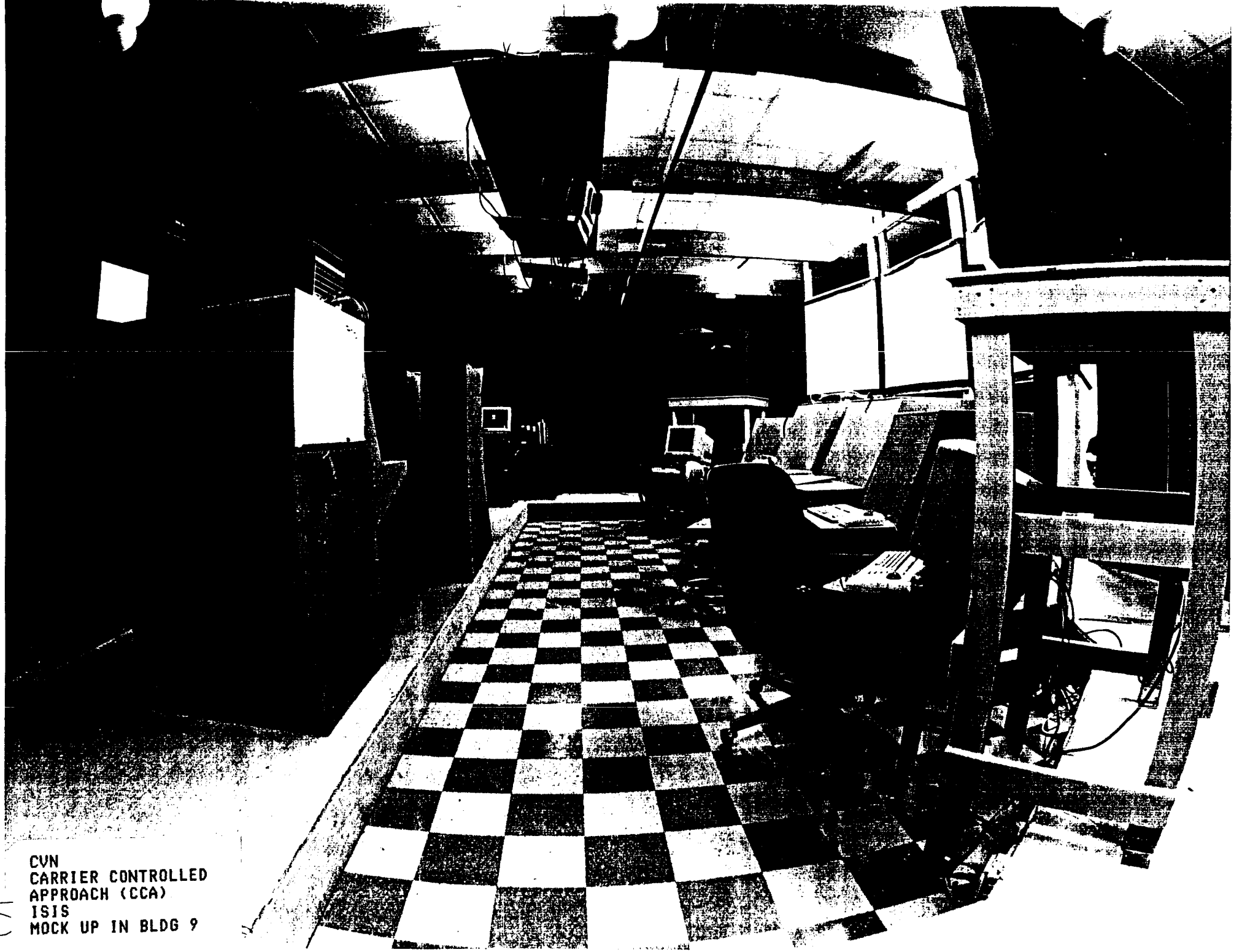


ISIS
SOFTWARE DEVELOPMENT
AREA IN BLDG 9

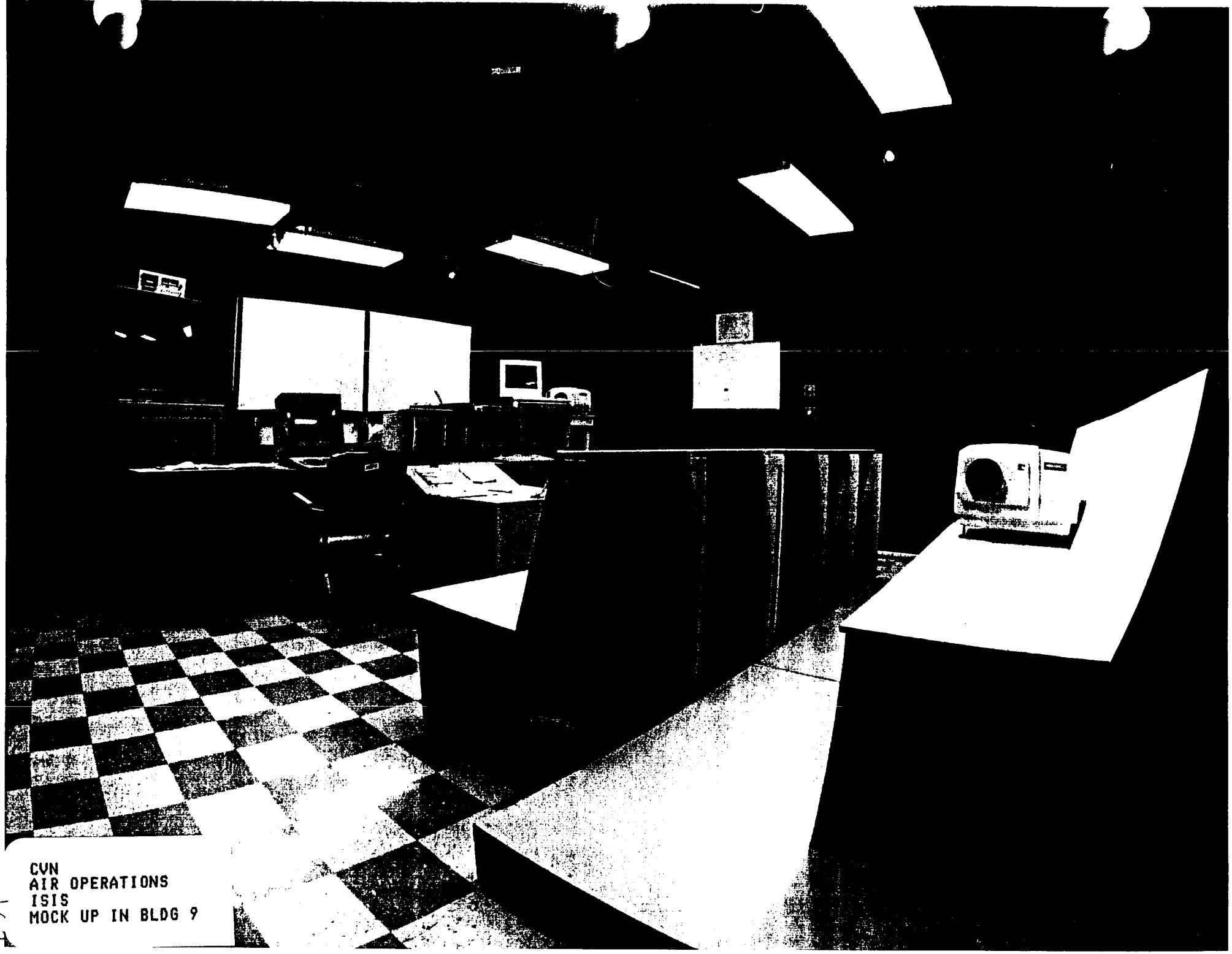
ISIS/ADP
NETWORK DEVELOPMENT
AREA IN BLDG 9



160



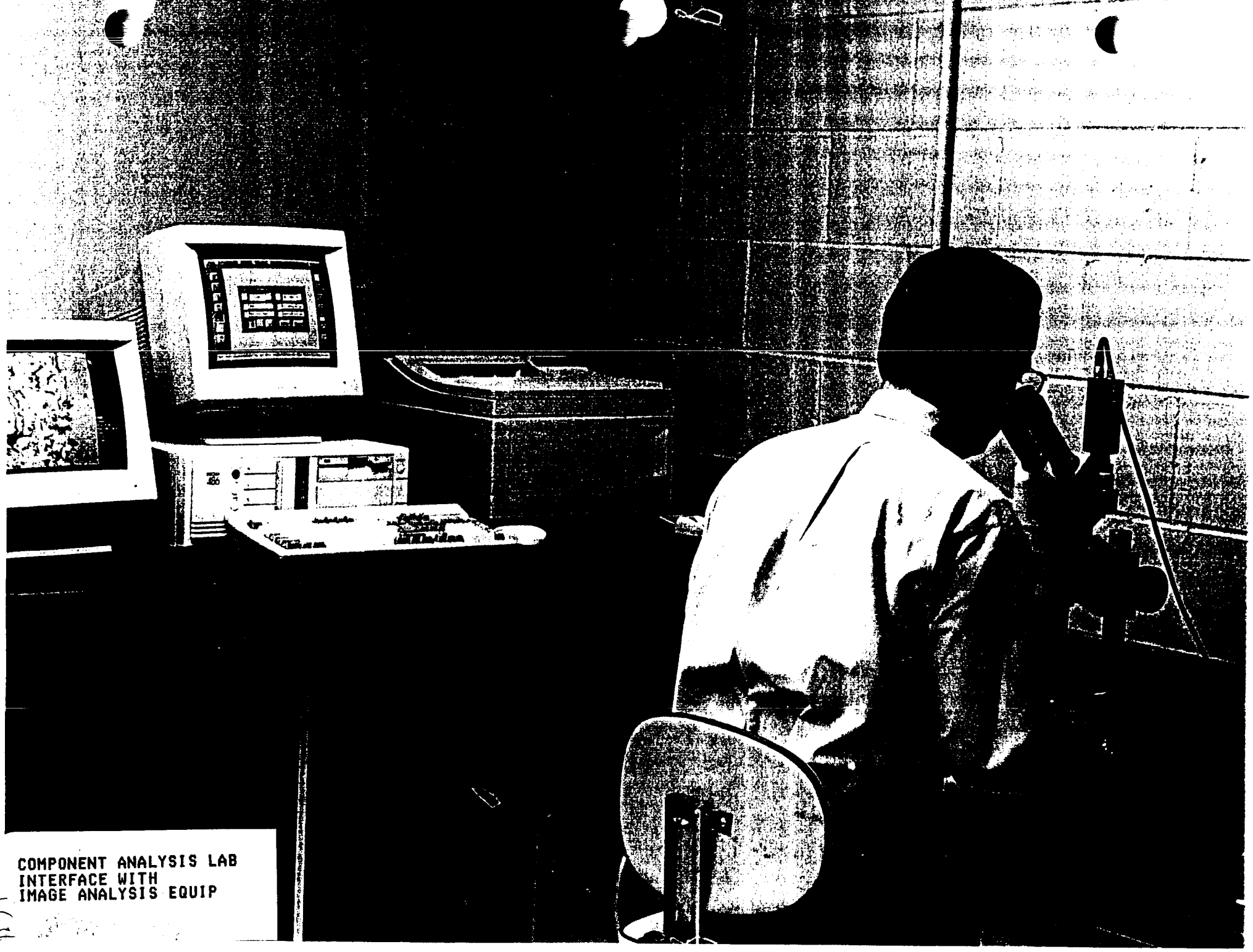
CVN
CARRIER CONTROLLED
APPROACH (CCA)
ISIS
MOCK UP IN BLDG 9



CVN
AIR OPERATIONS
ISIS
MOCK UP IN BLDG 9

162

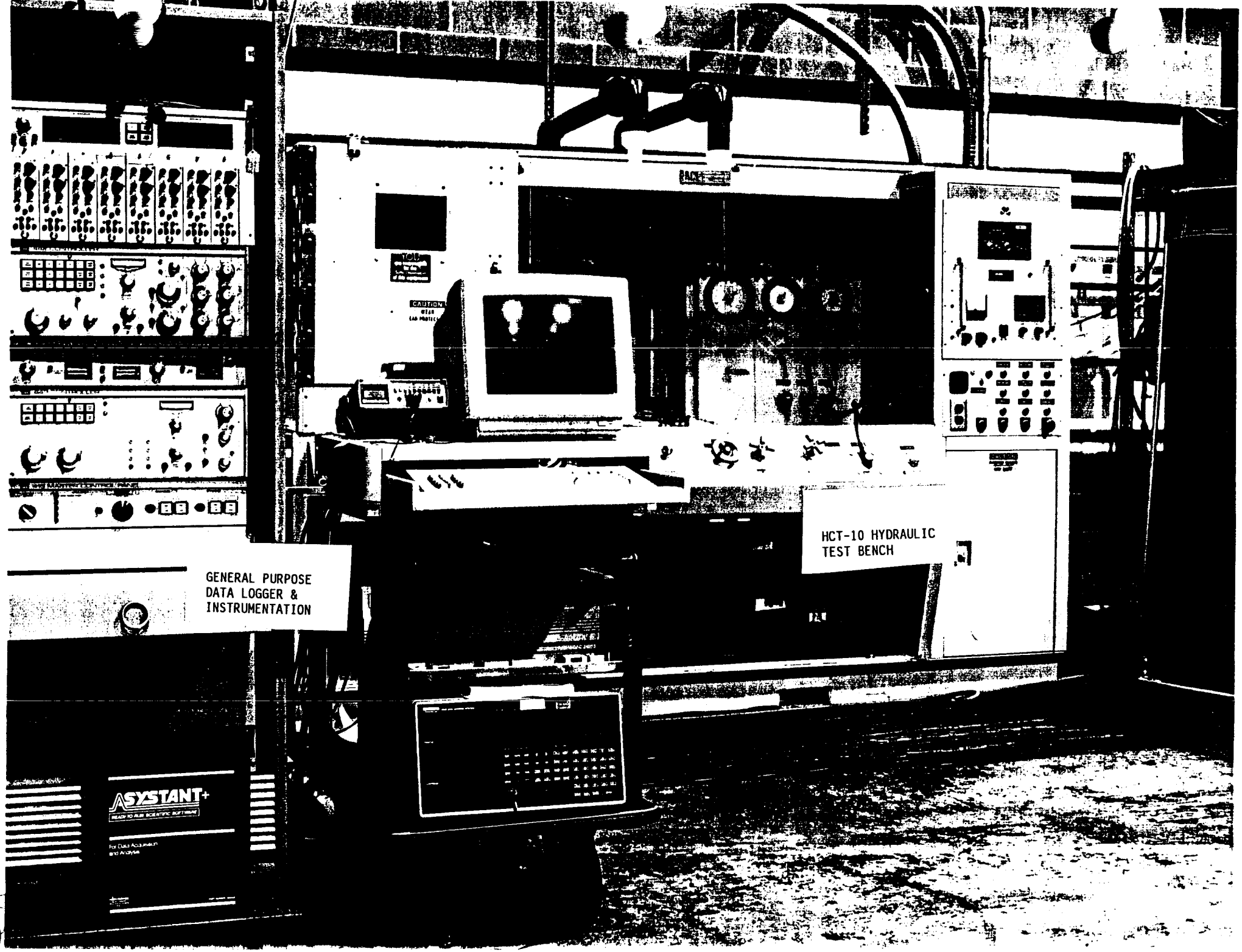
COMPONENT ANALYSIS LAB
USE OF SCANNING
ELECTRON MICROSCOPE

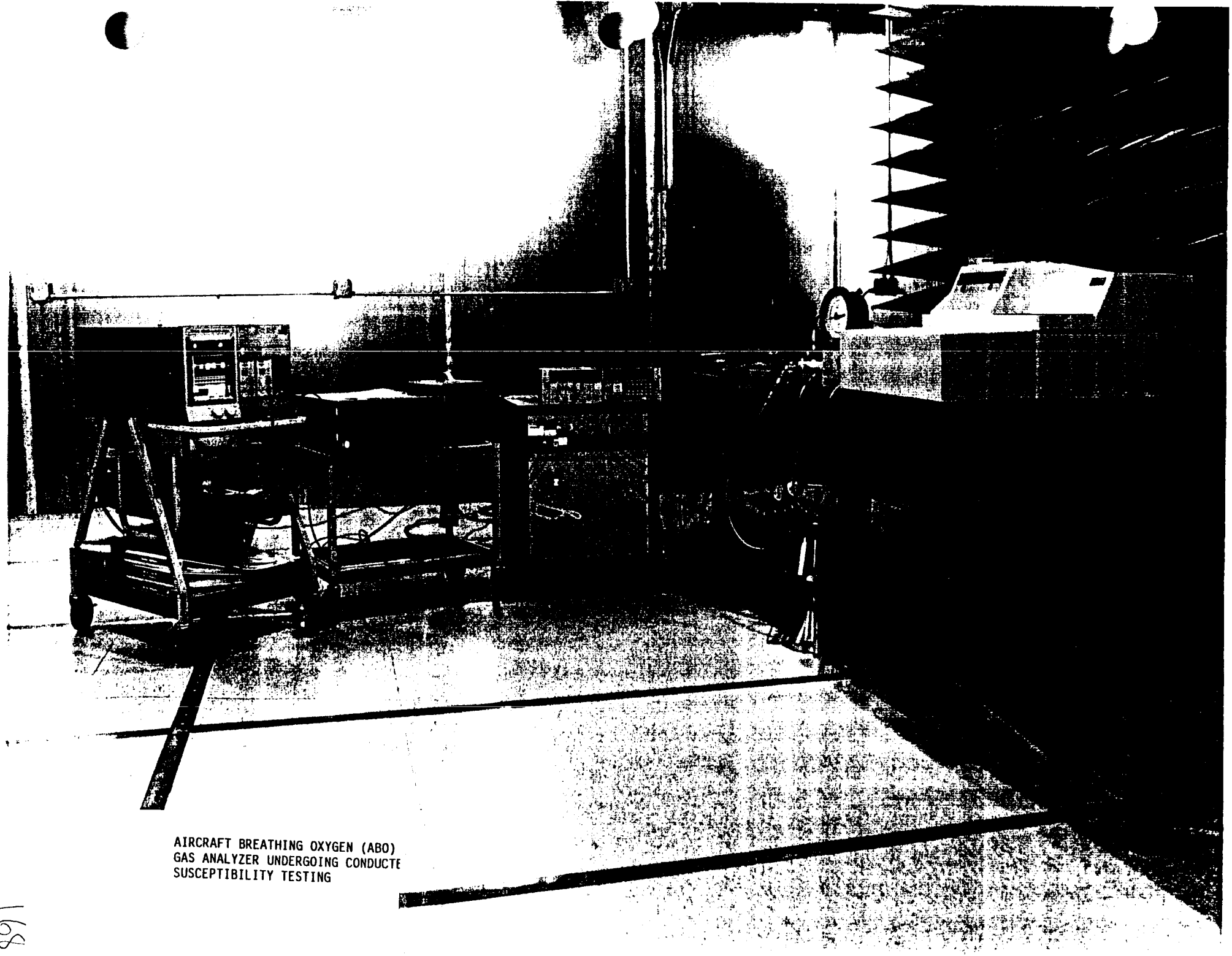


COMPONENT ANALYSIS LAB
INTERFACE WITH
IMAGE ANALYSIS EQUIP

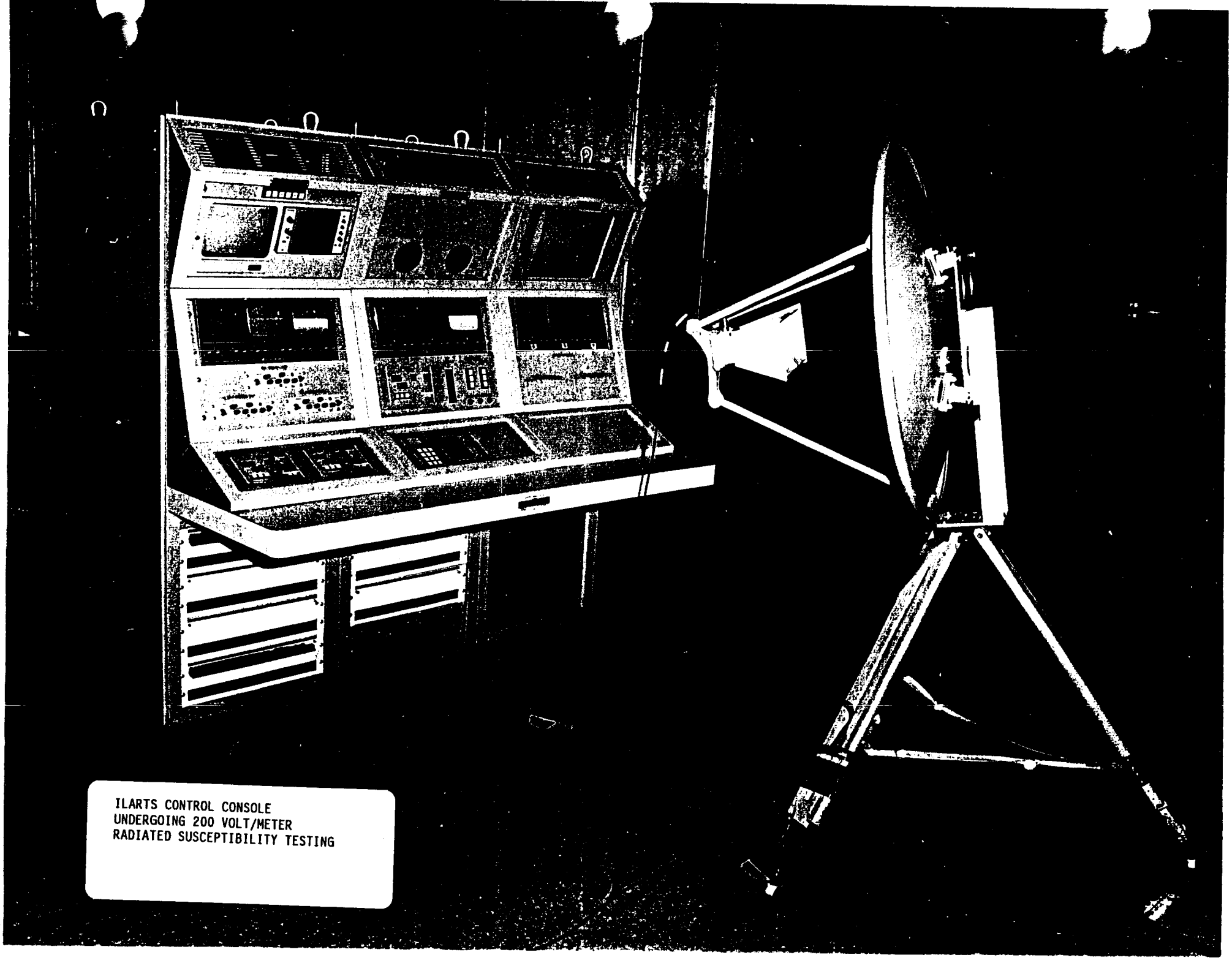
COMPONENT ANALYSIS LAB
THERMAL SPRAY COATING
EVALUATION USING IMAGE
ANALYSIS SOFTWARE

SINE/RANDOM,
MECHANICAL
VIBRATION SYSTEM

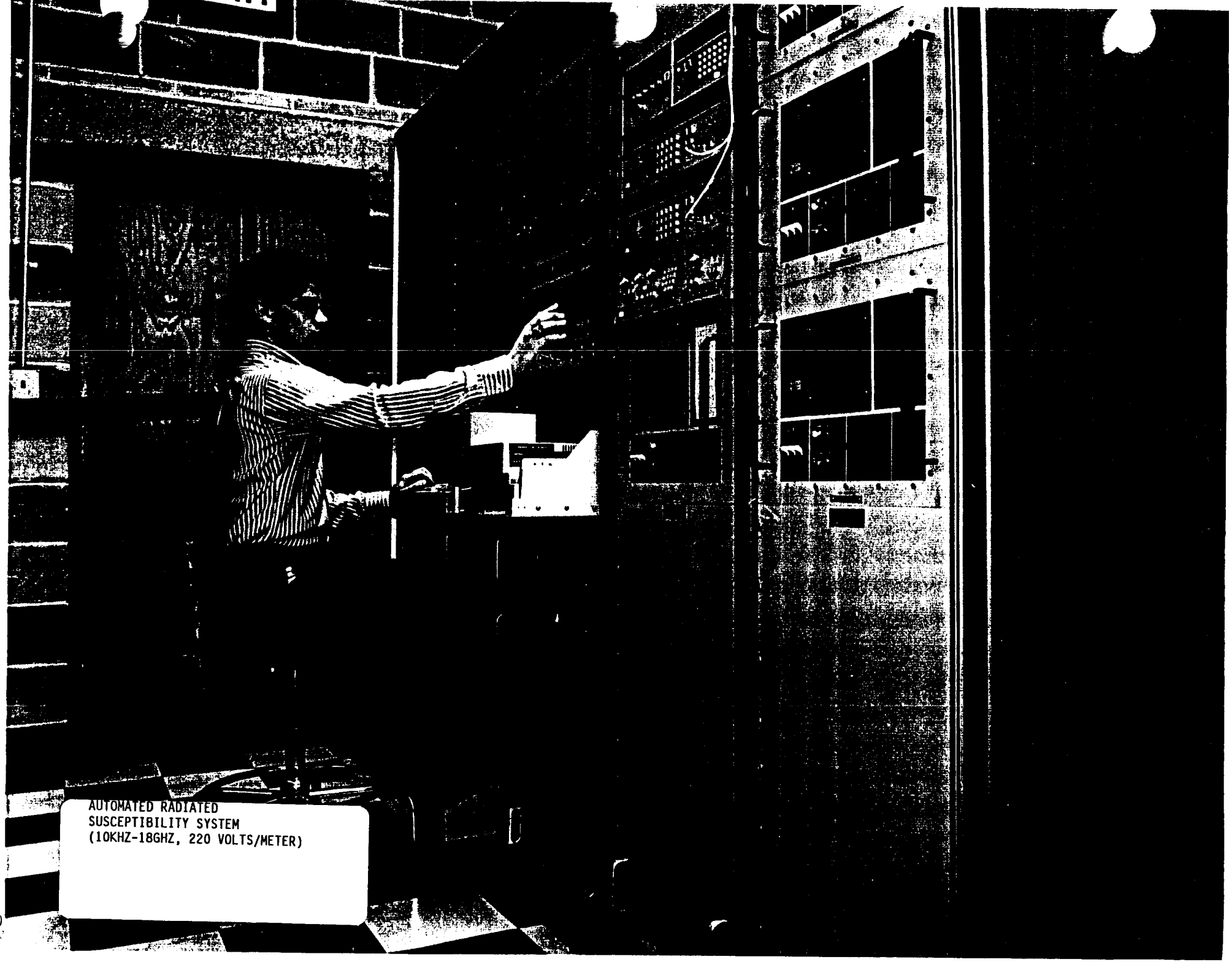

GENERAL PURPOSE
DATA LOGGER &
INSTRUMENTATION
HCT-10 HYDRAULIC
TEST BENCH
SYSTANT+



AIRCRAFT BREATHING OXYGEN (ABO)
GAS ANALYZER UNDERGOING CONDUCTE
SUSCEPTIBILITY TESTING

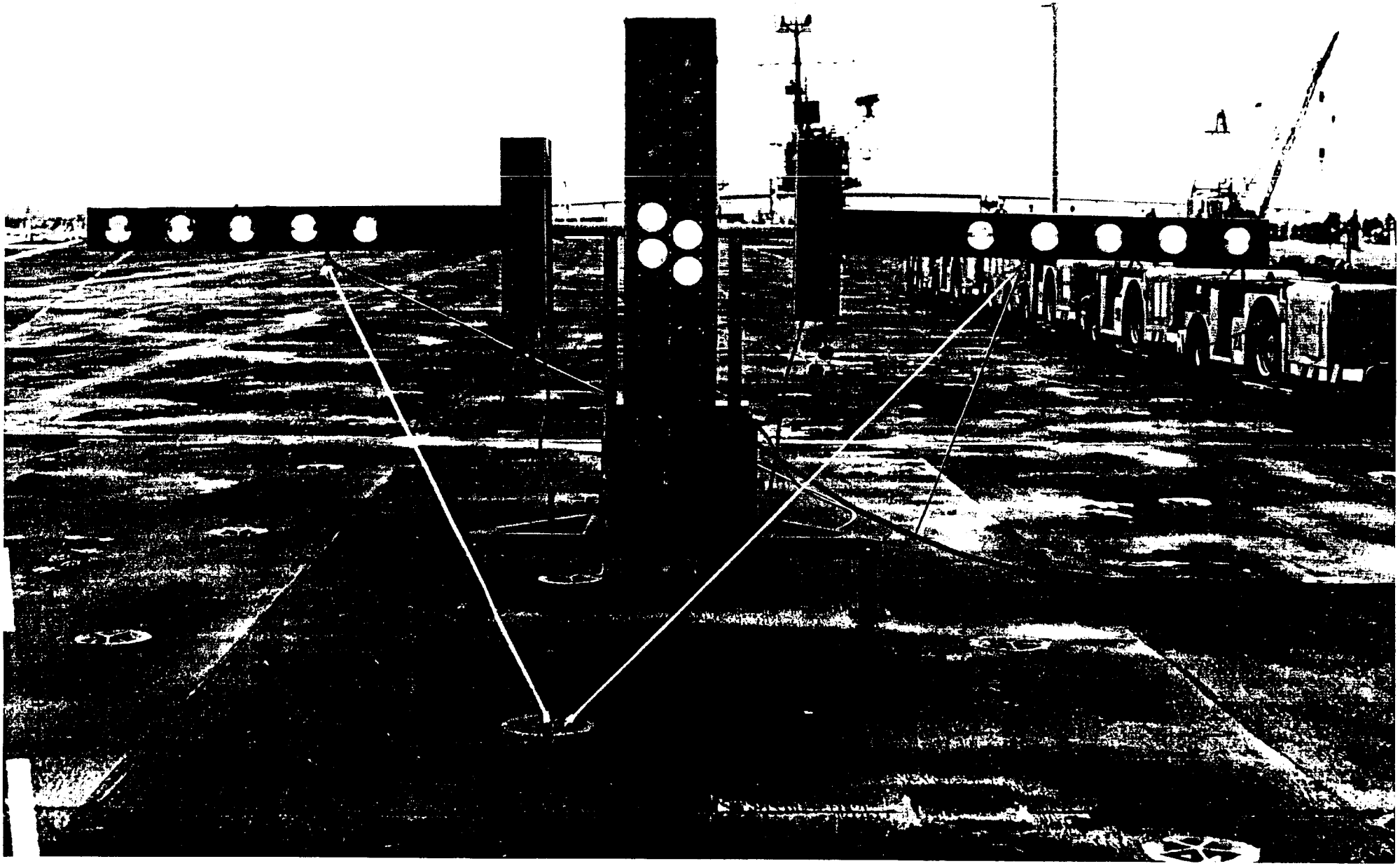


ILARTS CONTROL CONSOLE
UNDERGOING 200 VOLT/METER
RADIATED SUSCEPTIBILITY TESTING



AUTOMATED RADIATED
SUSCEPTIBILITY SYSTEM
(10KHZ-18GHZ, 220 VOLTS/METER)

171



LOOP

DEVELOPMENT FACILITY

GENERAL INFORMATION

Facility/Capability Title: Landing Guidance Development Facility

Origin Date: 16 June 94

Service: N

Organization/Activity: NAWCADLKE

Location: Lakehurst, NJ

T&E Functional Area: Air Vehicle

UIC = N68335

T&E Test Facility Category Hardware in the Loop (HITL)

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:		20%	70%	10%			
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles		20%	70%	10%			
Armanent/Weapons							
EC							
Other							

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

TECHNICAL INFORMATION

Facility/Capability Title: Landing Guidance Development Facility

Facility Description; Including mission statement: This facility consists of a fully simulated Landing Signal Officer (LSO) workstation complete with simulated aircraft approach and recovery performance (i.e., images and sound). Hardware includes, in addition to LSO shipboard equipment, full aircraft and background image generator and display system, and an operator (input/output) station. This facility is used to develop advanced landing guidance systems and simulate performance with advanced hardware and man in the loop. It would also be used to evaluate shipboard equipment modifications.
Interconnectivity/Mulit-Use of T&E Facility: Future plans include interconnectivity with the manned flight simulator at NAWCAD Pax River. This would entirely close the loop between aircraft, pilot, LSO and shipboard landing guidance systems.
Type of Test Supported: Subsystem integration, precision landing guidance, human factors evaluation.
Summary of Technical Capabilities: Full man machine interface instrumentation, (pilot and LSO).
Keywords: Landing Signal Officer (LSO), Manned Flight Simulator (MFS).

ADDITIONAL INFORMATION

Facility/Capability Title: **Landing Guidance Development Facility**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	-	-	-	-	-	-	-
Enlisted	-	-	-	-	-	-	-
Civilian	-	2	2	3	3	2	2
Contractor	-	-	-	-	-	-	-
Total	-	2	2	3	3	2	2

Total Square Footage: 3000

Test Area Square Footage: 2000

Office Space Square Footage: 200

Tonnage of Equipment: 37.5

Volume of Equipment: 3000 cu ft

Annual Maintenance Cost: $50,000

Estimated Moving Cost: $290,000

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$300,000	$20,000	$10,000	$10,000	$10,000	$10,000	$10,000

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **LANDING GUIDANCE DEVELOPMENT FACILITY**

AGE: **1 YEAR** REPLACEMENT VALUE: **$5,300,000 (INCLUDING EQUIPMENT)**

MAINTENANCE AND REPAIR BACKLOG: **0**

DATE OF LAST UPGRADE: **NONE**

NATURE OF LAST UPGRADE: **NONE**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **BACKGROUND AND TARGET PROJECTION SYSTEM UPGRADE**

   TOTAL PROGRAMMED AMOUNT: **$1,000,000**
   SUMMARY DESCRIPTION: **REPLACE UNMAINTAINABLE PROJECTION SYSTEMS**

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: LANDING GUIDANCE DEVELOPMENT FACILITY
(NEW FACILITY)

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								
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								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **LANDING GUIDANCE DEVELOPMENT FACILITY**

ANNUAL HOURS OF DOWNTIME 1 896

AVERAGE DOWNTIME PER DAY (LINE 1Π 365) 2 2.45 {PROJECTED

AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 21.55

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	8 258.6
SUB SYS INTEGRATION	2	2	4	
PRECISION LANDING GUIDANCE	1	4	4	ANNUAL UNCONSTRAINED CAPACITY 9 94389
HUMAN FACTORS EVAL	2	2	4	

"TYPICAL" NEW FACILITY

TOTAL 12

LANDING GUIDANCE D OPMENTAL FACILITY

AIRCRAFT CONTROLS AND SHIP INPUT STATION

REPRESENTATIVE SHIPBOARD LANDING SIGNAL OFFICER WORKSTATION

RANGE

KUNWAY

GENERAL INFORMATION

Facility/Capability Title: **DEDICATED RUNWAY**

Origin Date: **JUNE 24, 1994**

Service: **NAVY** Organization/Activity: **NAWCAD LAKEHURST** Location: **LAKEHURST, NJ**

T&E Functional Area: **AIR VEHICLES** UIC = **N68335**

T&E Test Facility Category **N/A**

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	N / A						

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles **N / A**

Armanent/Weapons

EC

Other 100

THIS FACILITY IS FUNDED BY OVERHEAD DOLLARS

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

180

TECHNICAL INFORMATION

Facility/Capability Title: Test Runway

Facility Description; Including mission statement: This 12,000 foot runway, dedicated to evaluation of Aircraft Launch and Recovery Equipment (ALRE) programs, forms the nucleus for all fixed-wing capable test sites at the Center. Steam catapults are located at the approach end of runway 30; shipboard arresting gear at the steel mid-section; shorebased arresting gear at various locations along the runway; and a Mark 8 Mod 0 Fresnel Lens Optical Landing System which can be set up for either runway 30 or 12. Without this runway, aircraft launches at the steam catapults, evaluation of arresting equipment installed at the Runway Arrested Landing Site, and Visual Landing Aid equipment development programs could not be conducted with aircraft. Immediately adjacent to the runway, approximately mid-field, is the Jet Blast Deflector (JBD) Site that depends on the runway for landing aircraft used during JBD evaluations. The runway is equipped with landing aids and a runway lighting system.
Interconnectivity/Multi-Use of T&E Facility: N/A
Type of Test Supported: The dedicated runway is the nucleus for the fixed wing capable sites at NAWCAD Lakehurst. It provides for safe operations of the catapult launches including degraded modes. It provides for controlled high-speed ground taxi-in and abort capability for arresting gear evaluations. It also provides an installation platform and allows for safe evaluations of visual landing systems.
Summary of Technical Capabilities: The runway is 200 feet wide with the steam catapults located at the approach end of runway 30; shipboard arresting gear at the steel mid-section; shorebased arresting gear at various locations along the runway; and a Mark 8 Mod 0 Fresnel Lens Optical Landing System which can be set up for either runway 30 or 12. The runway is equipped with landing aids and a runway lighting system.
Keywords: Runway

ADDITIONAL INFORMATION

Facility/Capability Title: **DEDICATED RUNWAY**

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	3	3	3	3	3	3	3
Contractor	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5

Total Square Footage: **OUTDOOR FACILITY**

Test Area Square Footage: **OUTDOOR TEST AREA** Office Space Square Footage: **NONE**

Tonnage of Equipment: **NOT APPLICABLE** Volume of Equipment: **NOT APPLICABLE**

Annual Maintenance Cost: **$237.6K** Estimated Moving Cost: **FIXED SITE**

CAPITAL EQUIPMENT INVESTMENT

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

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Test Runway**

AGE: **37 years** REPLACEMENT VALUE: **$17,720,000**

MAINTENANCE AND REPAIR BACKLOG: **$392,000.00**

DATE OF LAST UPGRADE: **NONE**

NATURE OF LAST UPGRADE: **NONE**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **Replace Control Tower**

   TOTAL PROGRAMMED AMOUNT: **$240,000**

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **DEDICATED RUNWAY**

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

NOTE: OVERHEAD FUNCTION NOT APPLICABLE

DETERMINATION OF UNCONSTRAINED CAPACITY

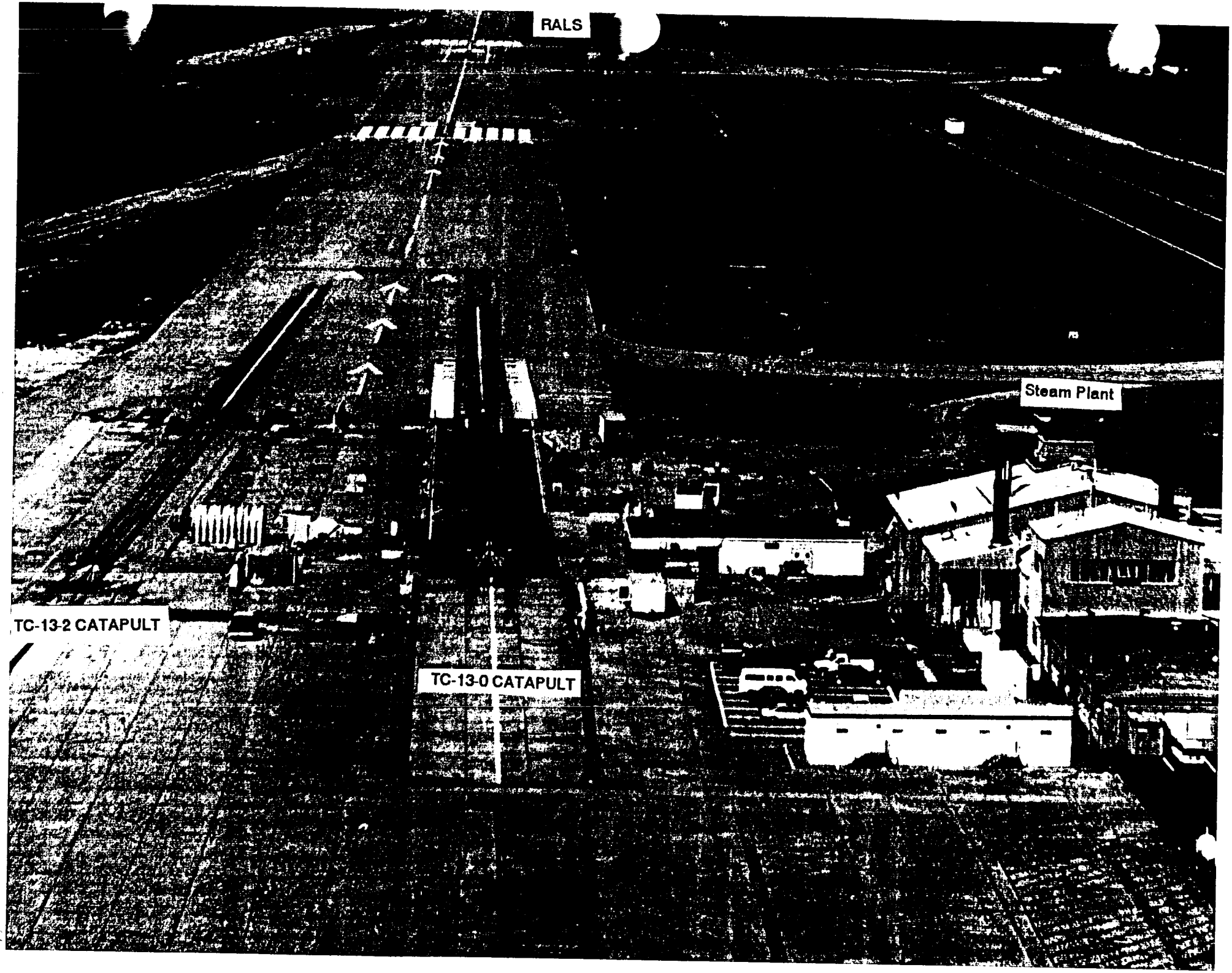
FACILITY/CAPABILITY TITLE: **DEDICATED RUNWAY**

ANNUAL HOURS OF DOWNTIME	1 **N/A**
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2 **N/A**
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3 **N/A**

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 **N/A**
N/A	**N/A**	**N/A**	**N/A**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **N/A**
"TYPICAL"				
			TOTAL **N/A**	

Note: Overhead function not applicable.

UNCONSTRAINED CAPACITY IS NOT APPLICABLE TO THE SECURITY FACILITY



186

GENERAL INFORMATION

Facility/Capability Title: **Air Operations**

Origin Date: **22 Jun 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Other** UIC = **N68335**

T&E Test Facility Category **Mission Support**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:						100%	

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles

Armanent/Weapons

EC

Other 100%

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

127

TECHNICAL INFORMATION

Facility/Capability Title: Air Operations

Facility Description; Including mission statement: The mission is to provide full range of aviation and support services to NAWCADLKE.
Interconnectivity/Mulit-Use of T&E Facility: N/A
Type of Test Supported: Catapults and arrestments.
Summary of Technical Capabilities: Air traffic control, firefighting, aircraft parking, storage and limited service.
Keywords:

ADDITIONAL INFORMATION

Facility/Capability Title: **Air Operations**

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	2	1					
Enlisted	78	70					
Civilian	3	3					
Contractor							
Total	83	74					

Total Square Footage: **264,000**

Test Area Square Footage: **N/A**

Office Space Square Footage: **17,500**

Tonnage of Equipment: **Unknown**

Volume of Equipment: **Unknown**

Annual Maintenance Cost: **70,000**

Estimated Moving Cost: **Unknown**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Air Operations**

AGE: **Various** REPLACEMENT VALUE: **$23,444,000**

MAINTENANCE AND REPAIR BACKLOG: **$2,239,100**

DATE OF LAST UPGRADE: **May 93**

NATURE OF LAST UPGRADE: **Construction of maintenance facility**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **None**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Air Operations

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	MISSION SUPPORT LABOR							1152	2880
	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								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Air Operations

ANNUAL HOURS OF DOWNTIME 1 730

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

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

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) 8
Cat Shots/ Arrestments	2	Unknown	Unknown	
Elevated Fixed Platform				

ANNUAL UNCONSTRAINED CAPACITY 9

"TYPICAL"

TOTAL

GENERAL INFORMATION

Facility/Capability Title: **Support Equipment Mobility Site**

Origin Date: **16 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

T&E Functional Area: **Other** UIC = **N68335**

T&E Test Facility Category **Mission Support**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:			86%	14%			
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles			86%	14%			
Armanent/Weapons							
EC							
Other							

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

173

TECHNICAL INFORMATION

Facility/Capability Title: Support Equipment Mobility Site

Facility Description; Including mission statement: The site includes a 30-foot wide ramp that has a slope of 5 degrees, a vibration test bed consisting of four 1-1/2 inch high obstructions spaced 20 feet apart. There are interconnecting roadways consisting of gravel, asphalt and concrete. The primary mission of the site is to provide for performance, reliability and first article testing of wheeled ground support equipment.
Interconnectivity/Mulit-Use of T&E Facility: Since the site's construction in 1982, it has only been used to evaluate ground support equipment.
Type of Test Supported: Performance, reliability and first article testing have been performed at the site.
Summary of Technical Capabilities: Ground support equipment that lift and transport various types of armaments, tow and spot aircraft, transport firefighting equipment, etc., can be towed through or driven over the course. Test data from accelerometers or strain gauges can be telemetered to an on-site instrumentation van to provide instantaneous test results.
Keywords: Mobility test; vibration course; slope test; tow test, GSE; support equipment; SE.

ADDITIONAL INFORMATION

Facility/Capability Title: **Support Equipment Mobility Site**

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	4	4	4	4	4	4
Contractor	0	0	0	0	0	0	0
Total	4	4	4	4	4	4	4

Total Square Footage: 27,000

Test Area Square Footage: 27,000

Office Space Square Footage: 0

Tonnage of Equipment: 0

Volume of Equipment: 0

Annual Maintenance Cost: 0

Estimated Moving Cost: $138,500

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

195

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Support Equipment Mobility Site**

AGE: **12 years** REPLACEMENT VALUE: **$138,000**

MAINTENANCE AND REPAIR BACKLOG: **None**

DATE OF LAST UPGRADE: **September 1993**

NATURE OF LAST UPGRADE: **Installed 120V 40 amp electrical service.**

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: **None**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **SUPPORT EQUIPMENT MOBILITY SITE**

				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								
	OVERHEAD HOURS								

NOTE: OVERHEAD FUNCTION NOT APPLICABLE

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Support Equipment Mobilty Site

ANNUAL HOURS OF DOWNTIME 1 40

AVERAGE DOWNTIME PER DAY (LINE 1Π 365) 2 .11

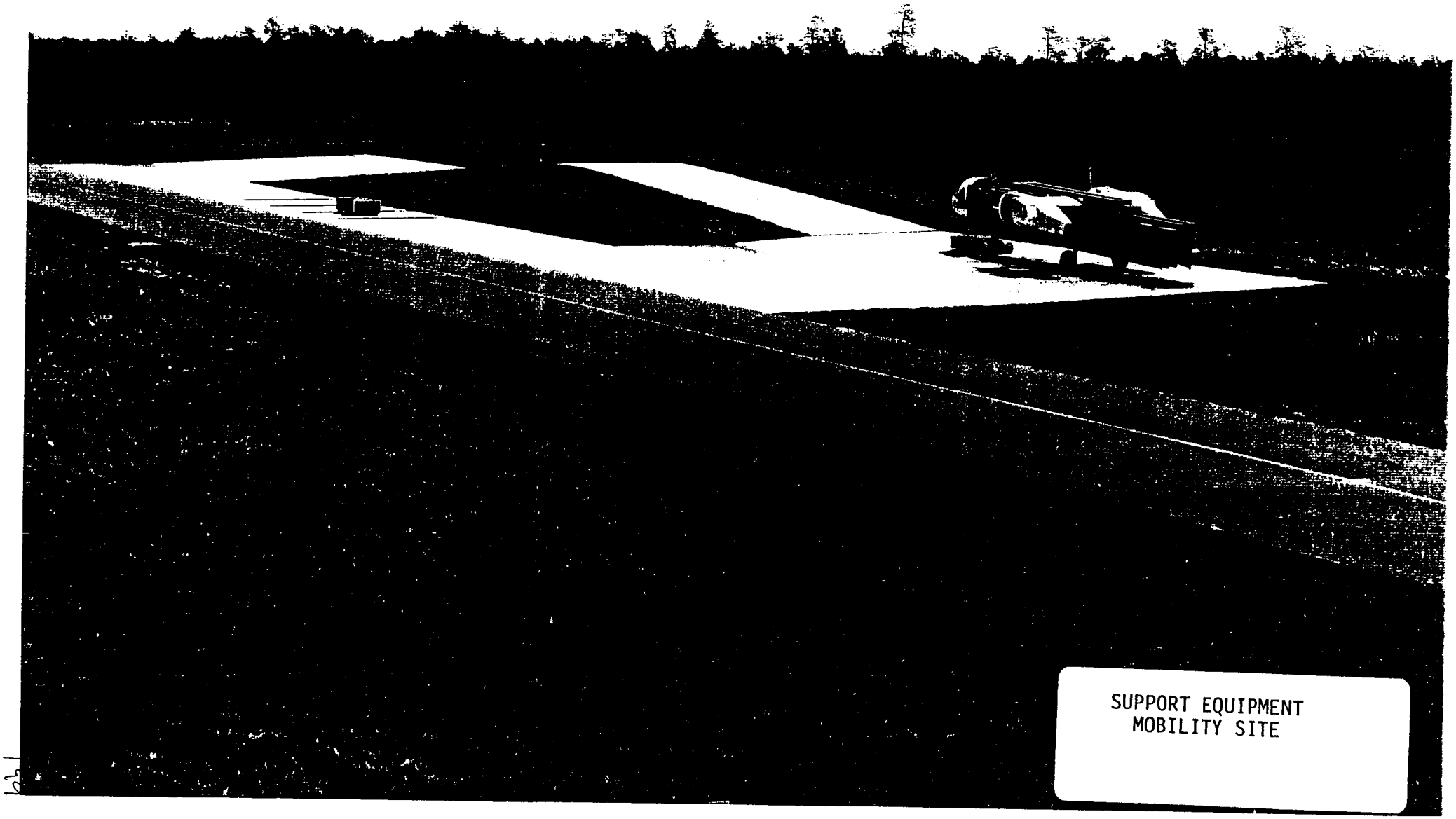
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2) 3 23.9

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) 8
Towing	1	4	4	95.6

Annual Unconstrained Capacity 9 34.894

"TYPICAL"

Total 4



SUPPORT EQUIPMENT
MOBILITY SITE

DATA CALL 13
NAWCAD
LAKEHURST

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

7 July 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

18 JUL 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)

[redacted]A. EARNER
NAME (Please type or print)

Signature

Title

7/25/94
Date

200

DATA CALL 13
BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 8 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

BARTON D. STRONG
NAME (Please type or print)

Barton D. Strong
Signature

COMMANDER
Title

JUN 29 1994
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION ~~PATUXENT RIVER, MD~~ Lakehurst (Site Commander)
Activity

KC 7/18/94
NAVAIR-09B3

~~*NAVAIR did not provide data for inclusion in this package.~~
Above statement not applicable

MODELLING STAGE