DCN 1244

162

Department of Defense

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

March 31, 1994

T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

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

1.1 GUIDANCE

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

1.1.A.1 Scope

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

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

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

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

1.1.A.2 T&E Facilities / Capabilities

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

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

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

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

1.1.B Guidance for Military Department Data Collection

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

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

1.1.C Guidance for Military Department Data Analysis

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

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

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

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

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

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

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

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

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

1.3 FUNCTIONAL AREAS

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

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

1.3.A Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major sub-systems (e.g., avionics, engines, and sensors). This includes flight 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.

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

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:

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:

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.

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.

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

		FISCAL YEAR							
T&E FUNCTIONAL AREA		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

-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.

-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 sub-systems 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.

-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.

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 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.

[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 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.

[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.

-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.

-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.

-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**

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

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**

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

-3.3.A.7.A Threat lay down?
-3.3.A.7.B Representative distance?

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

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

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

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

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

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

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

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

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

3.3 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.

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.)

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).

<u>T&E Functional Area:</u> 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

<u>Annual Hours of Downtime, 1:</u> 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.

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

<u>Average Hours Available Per Day, 3:</u> 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]

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

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 cu 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:

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 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) 8 620
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.

STEAM CATAPULT COMPLEX

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

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

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

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

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

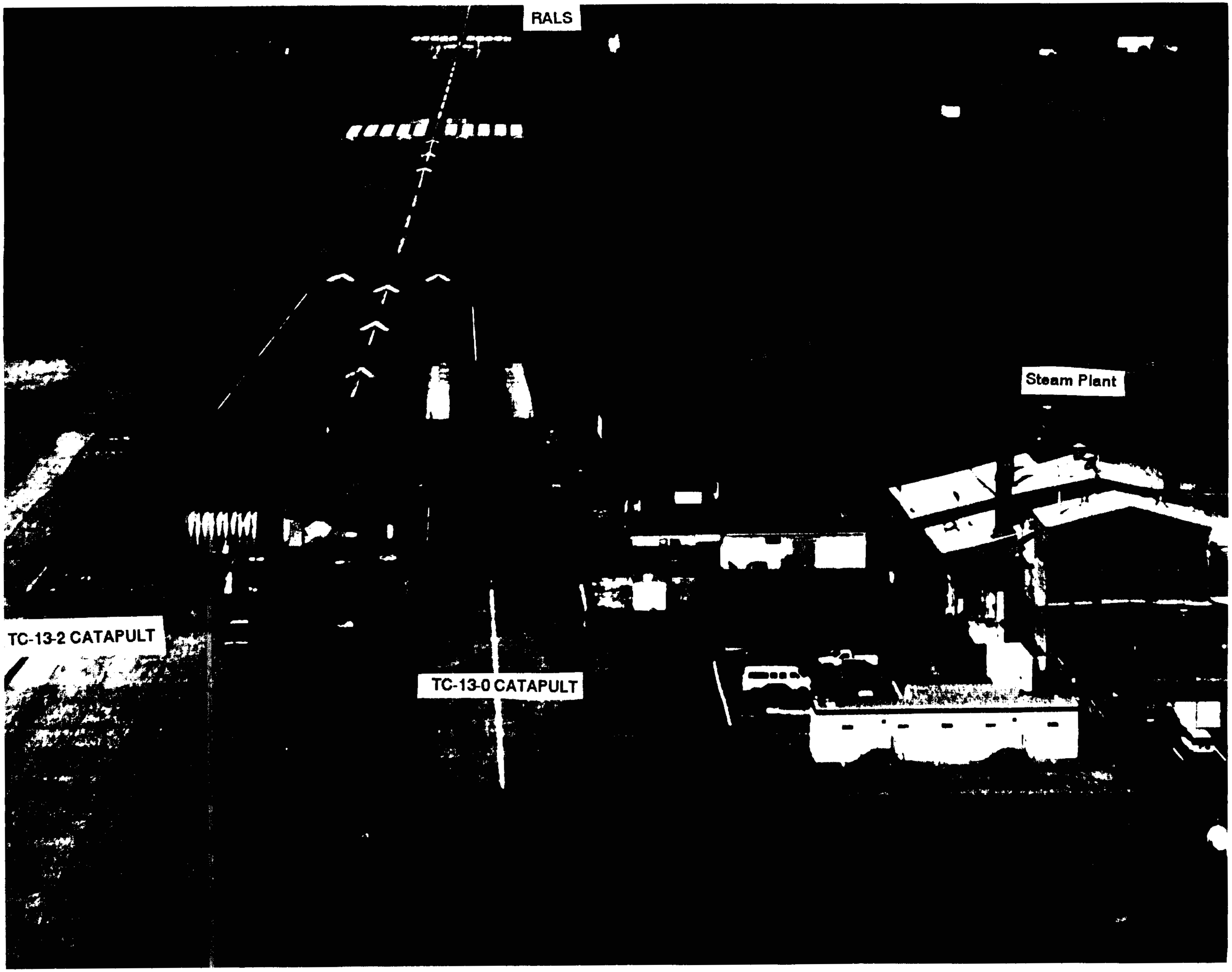
FACILITY/CAPABILITY TITLE: **DEDICATED RUNWAY**

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


RALS
Steam Plant
TC-13-2 CATAPULT
TC-13-0 CATAPULT

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:

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

DETERMINATION OF UNCONSTRAINED CAPACITY

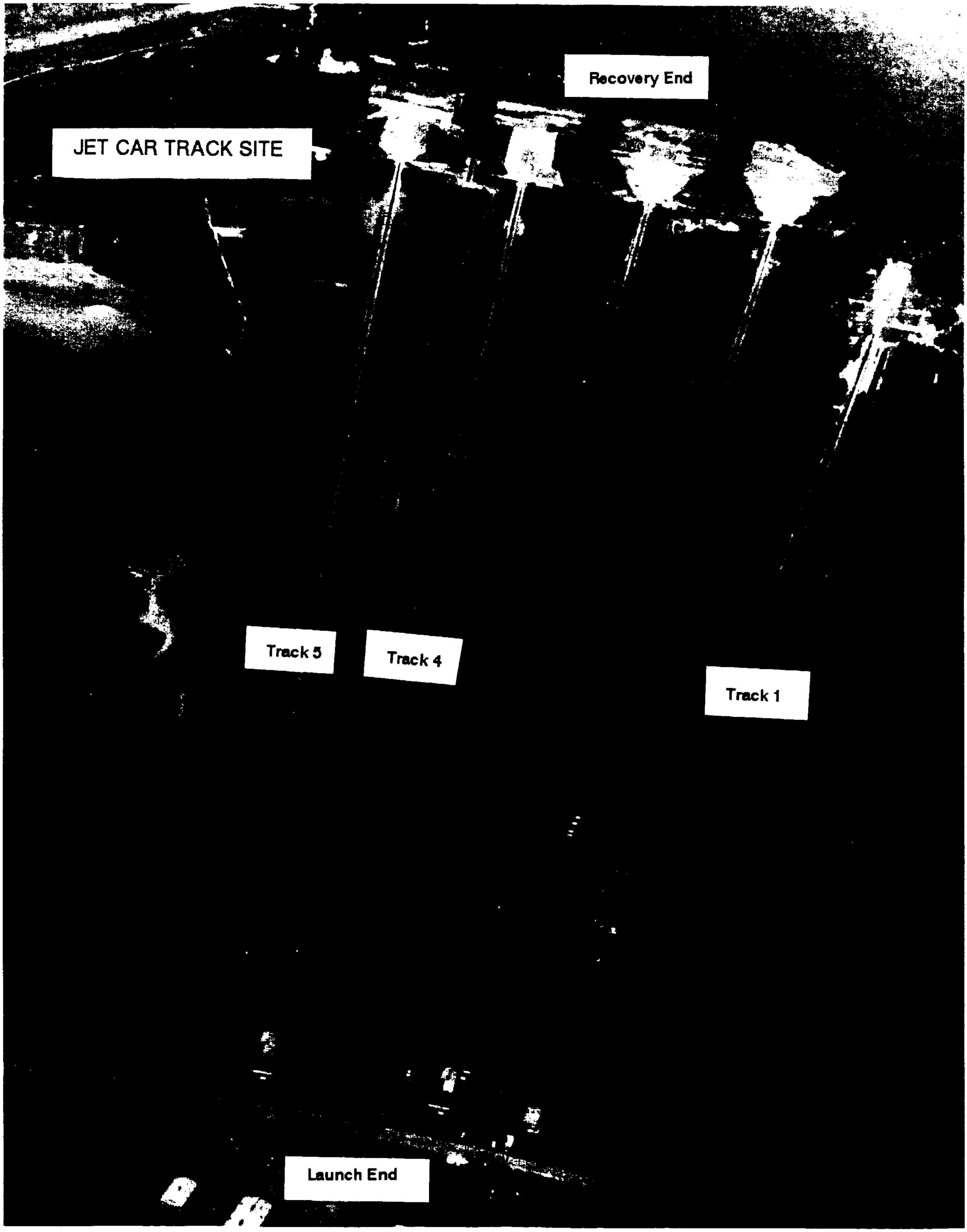
FACILITY/CAPABILITY TITLE: **JET CAR TRACK SITE**

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


Recovery End
JET CAR TRACK SITE
Track 5
Track 4
Track 1
Launch End

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

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**

T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
		FISCAL YEAR							
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

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:

DETERMINATION OF UNCONSTRAINED CAPACITY

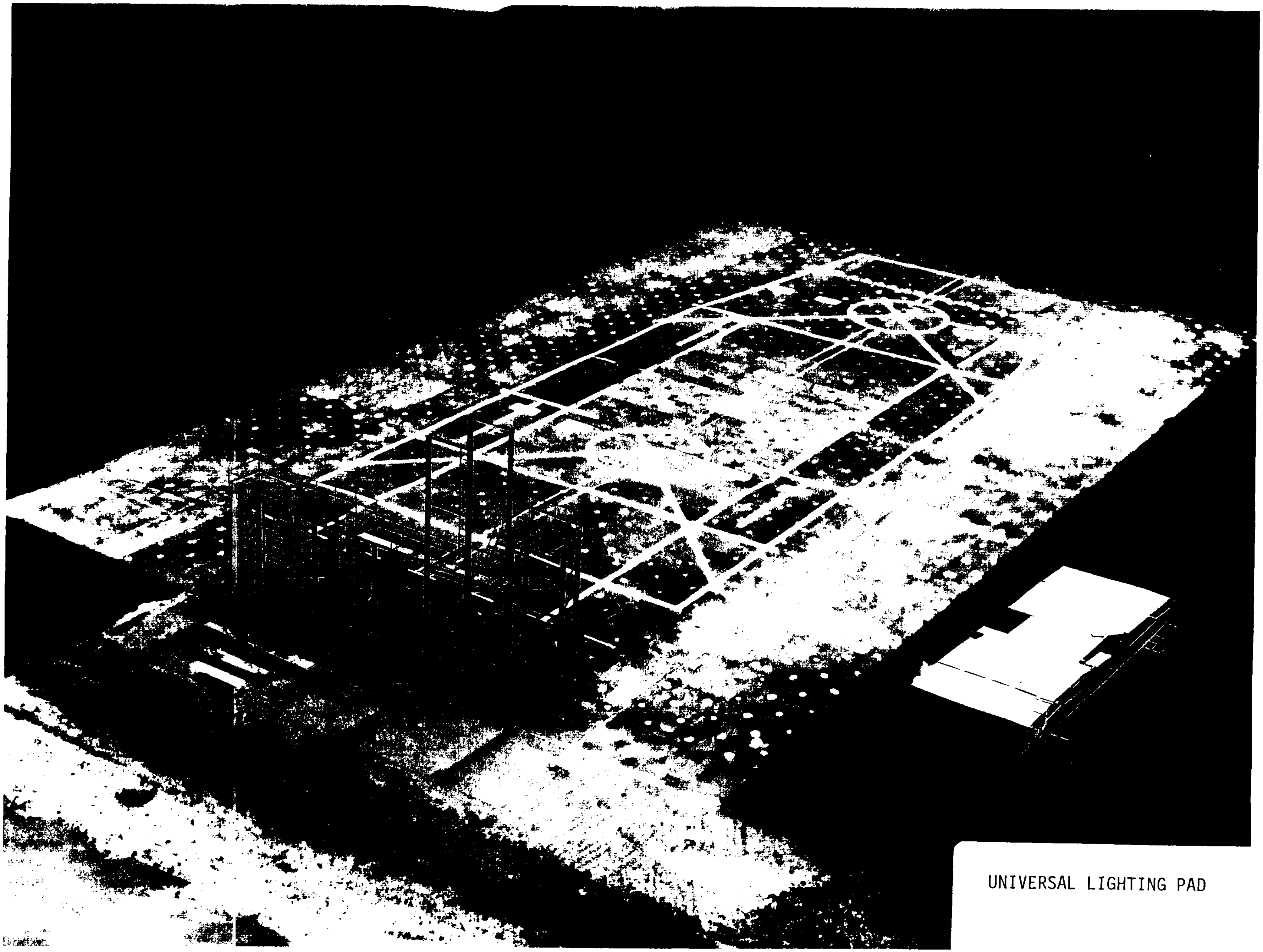
FACILITY/CAPABILITY TITLE: <u>**UNIVERSAL LANDING PAD**</u>

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



UNIVERSAL LIGHTING PAD

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

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

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	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 95.6
Towing	1	4	4	

Annual Unconstrained Capacity
9 34,894

"TYPICAL"

Total 4

SUPPORT EQUIPMENT
MOBILITY SITE

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:

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

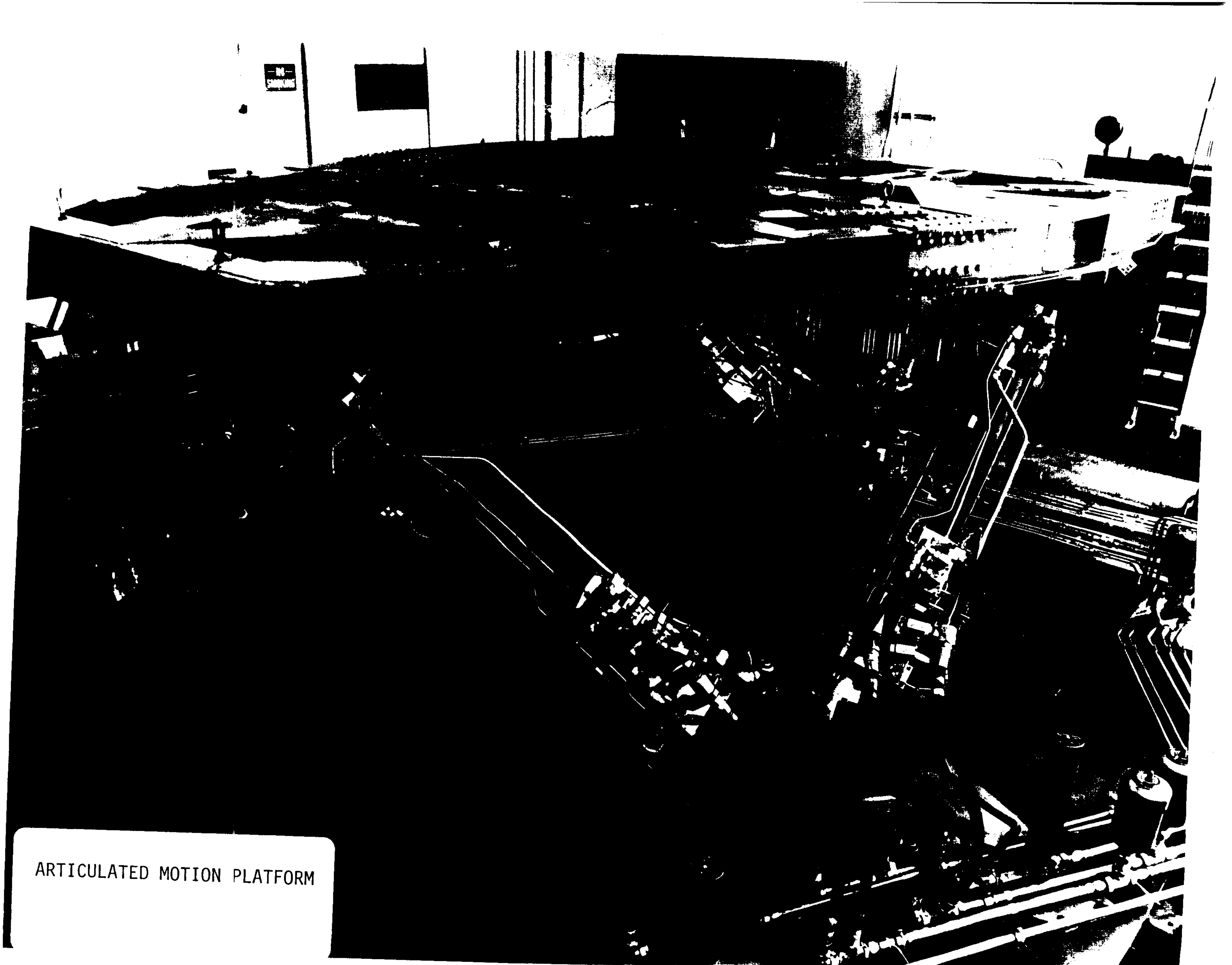
FACILITY/CAPABILITY TITLE: **ARTICULATED MOTION PLATFORM**

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



ARTICULATED MOTION PLATFORM

GENERAL INFORMATION

Facility/Capability Title: <u>Aircraft Platform Interface Laboratory</u>

Origin Date: <u>21 June 94</u>

Service: <u>N</u> Organization/Activity: <u>NAWCADLKE</u> Location: <u>Lakehurst, NJ</u>

T&E Functional Area: <u>Other (Aircraft Platform Interface</u> UIC = <u>N68335</u>

T&E Test Facility Category <u>Integration Laboratory (IL)</u>

	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	

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:

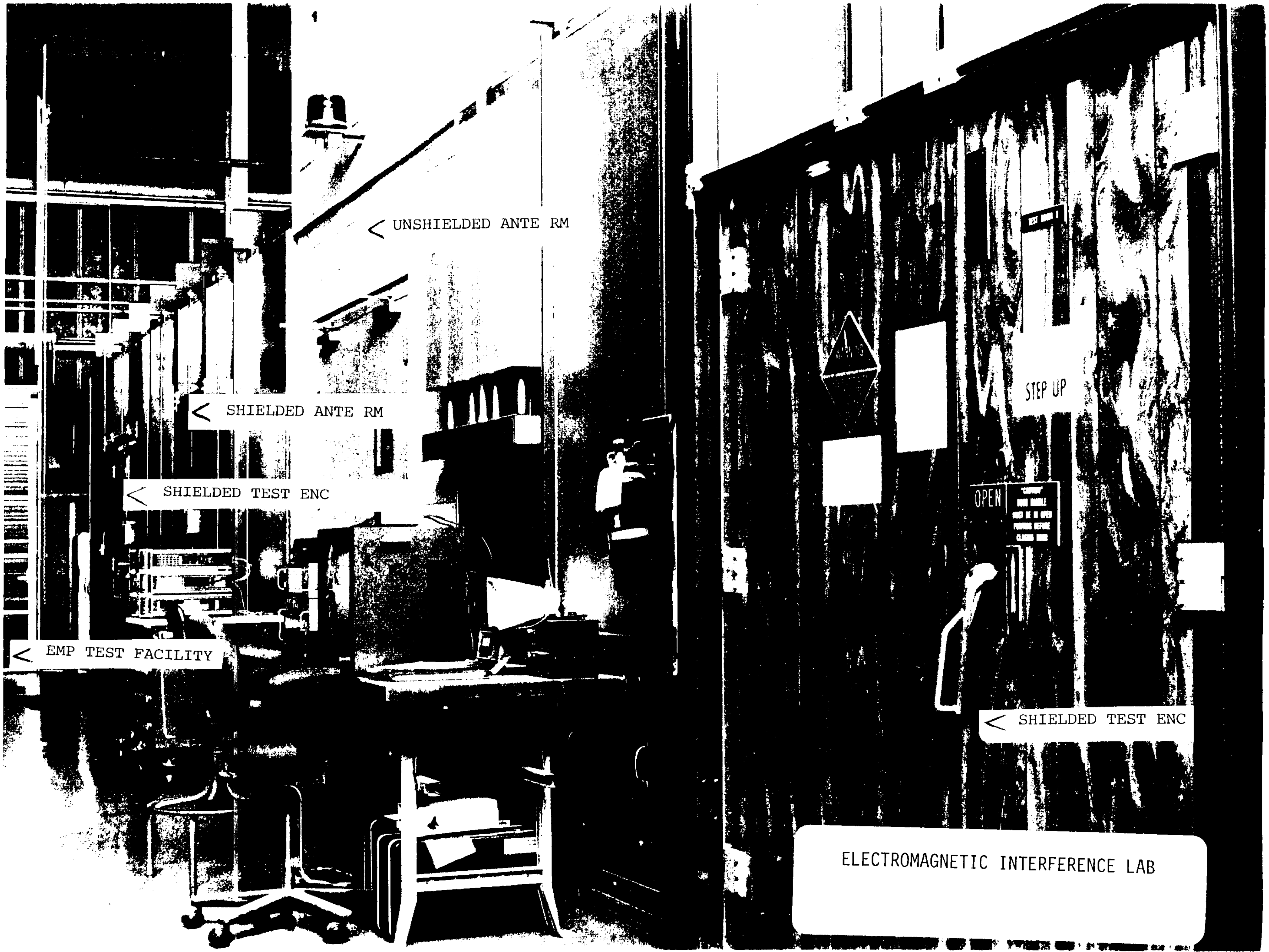
+ ANVIS = Aviation Night Vision Imaging System
. MTF = Modulation Transfer Function

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.

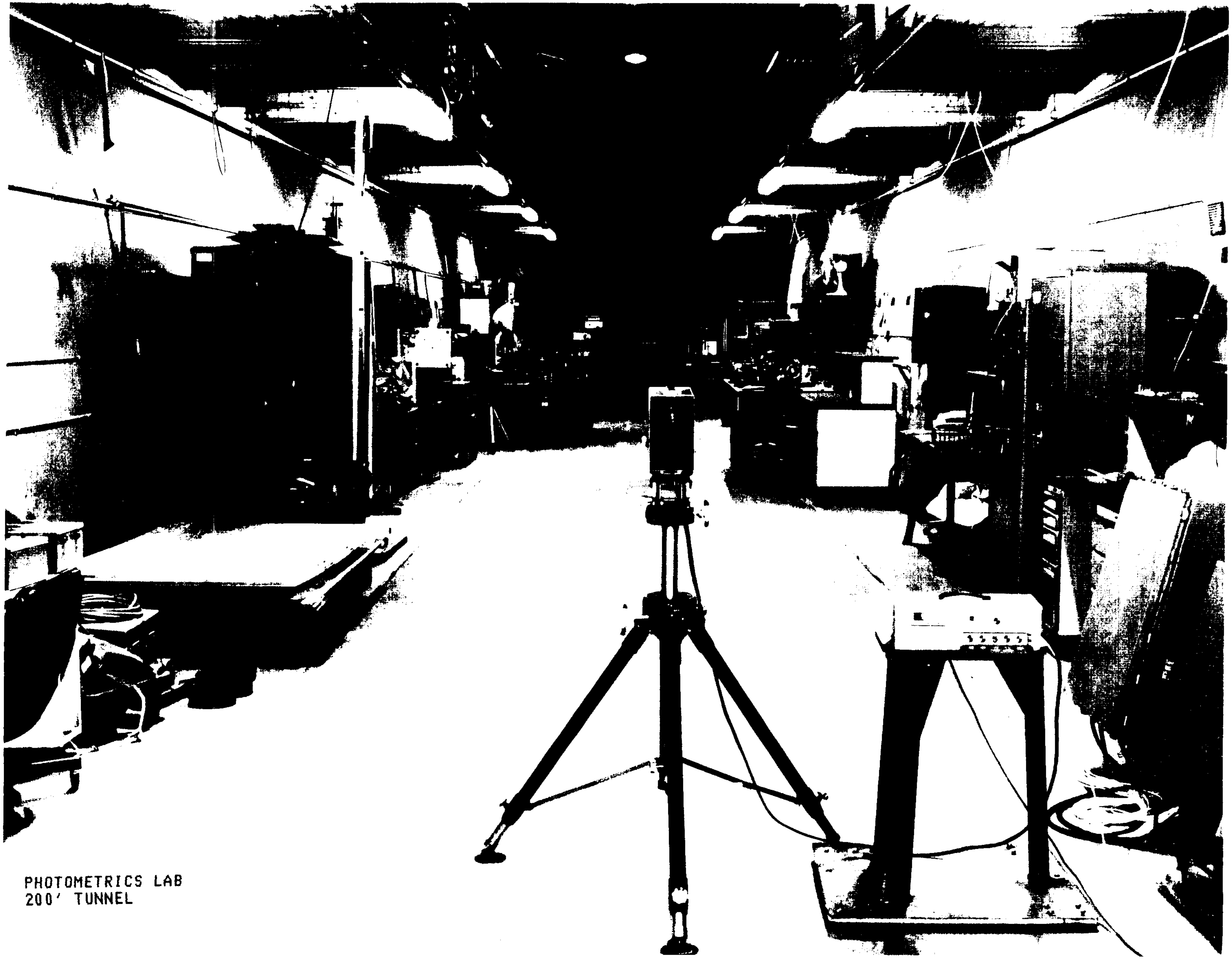
2. Some facilities of the API Laboratory conduct lengthy programs or projects. These efforts do not fit the typical definition of a test and are not included in the Laboratory's Unconstrained Capacity Calculations.

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.

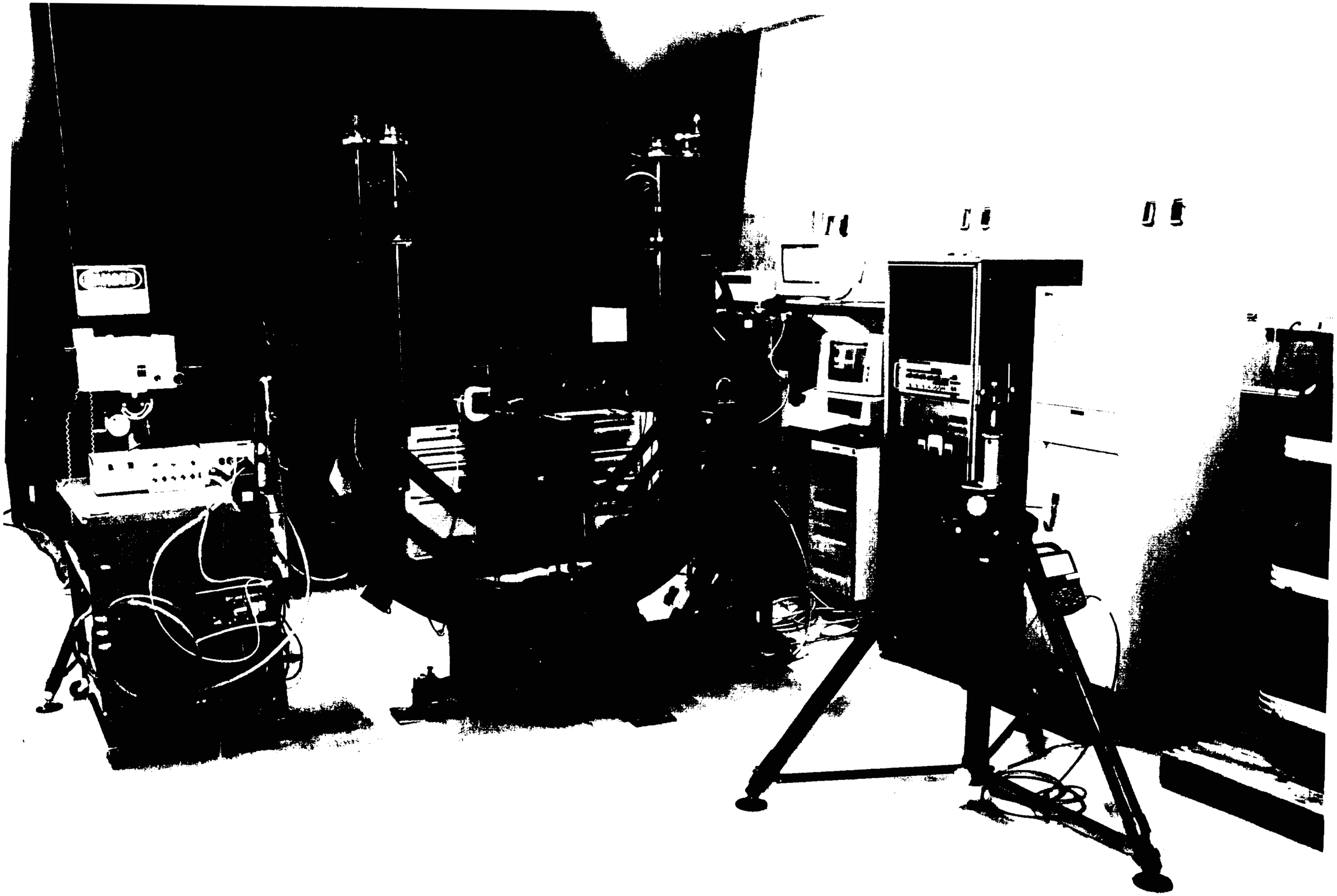


ELECTROMAGNETIC INTERFERENCE LAB

PHOTOMETRICS LAB
MTF AREA

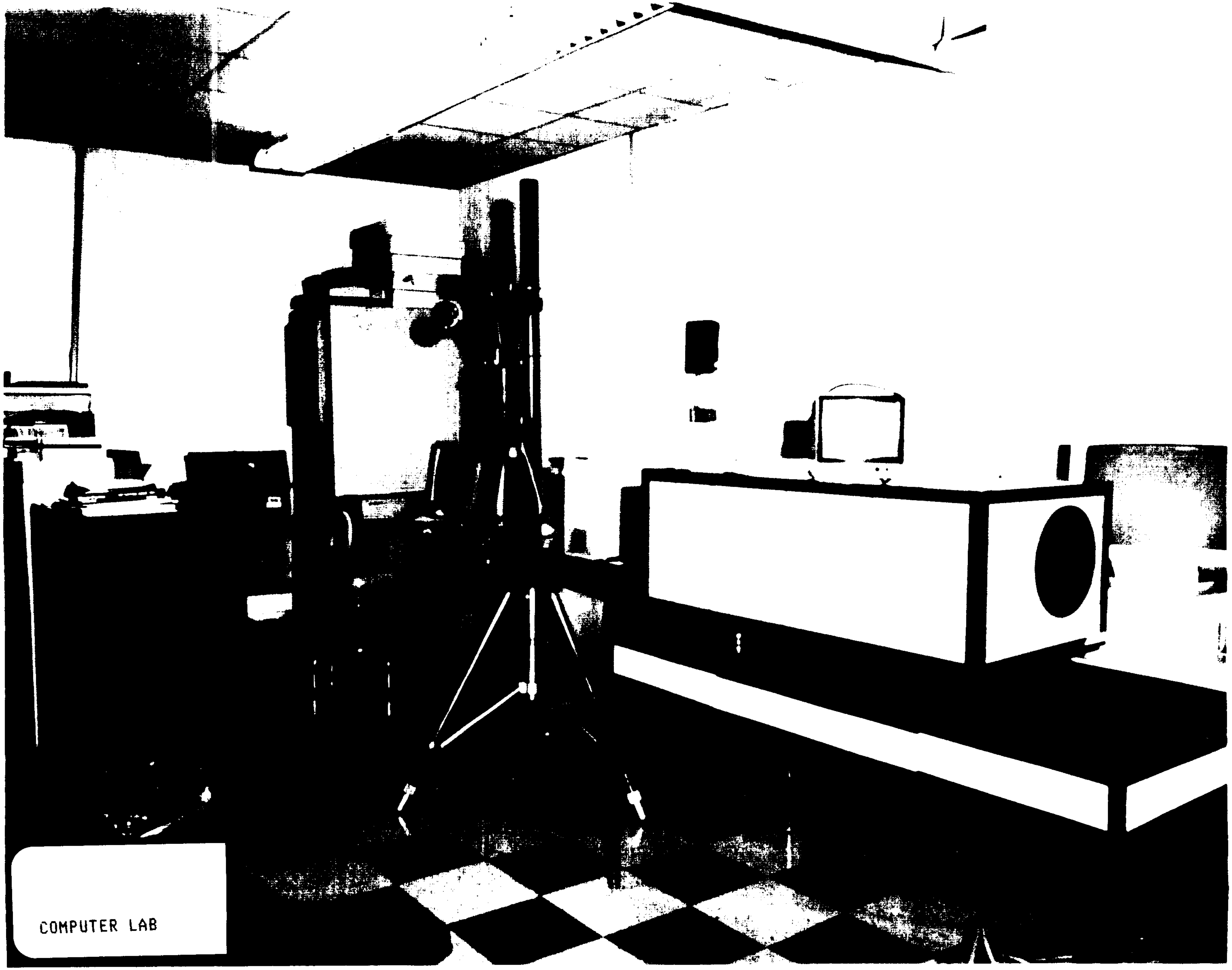


PHOTOMETRICS LAB
200' TUNNEL

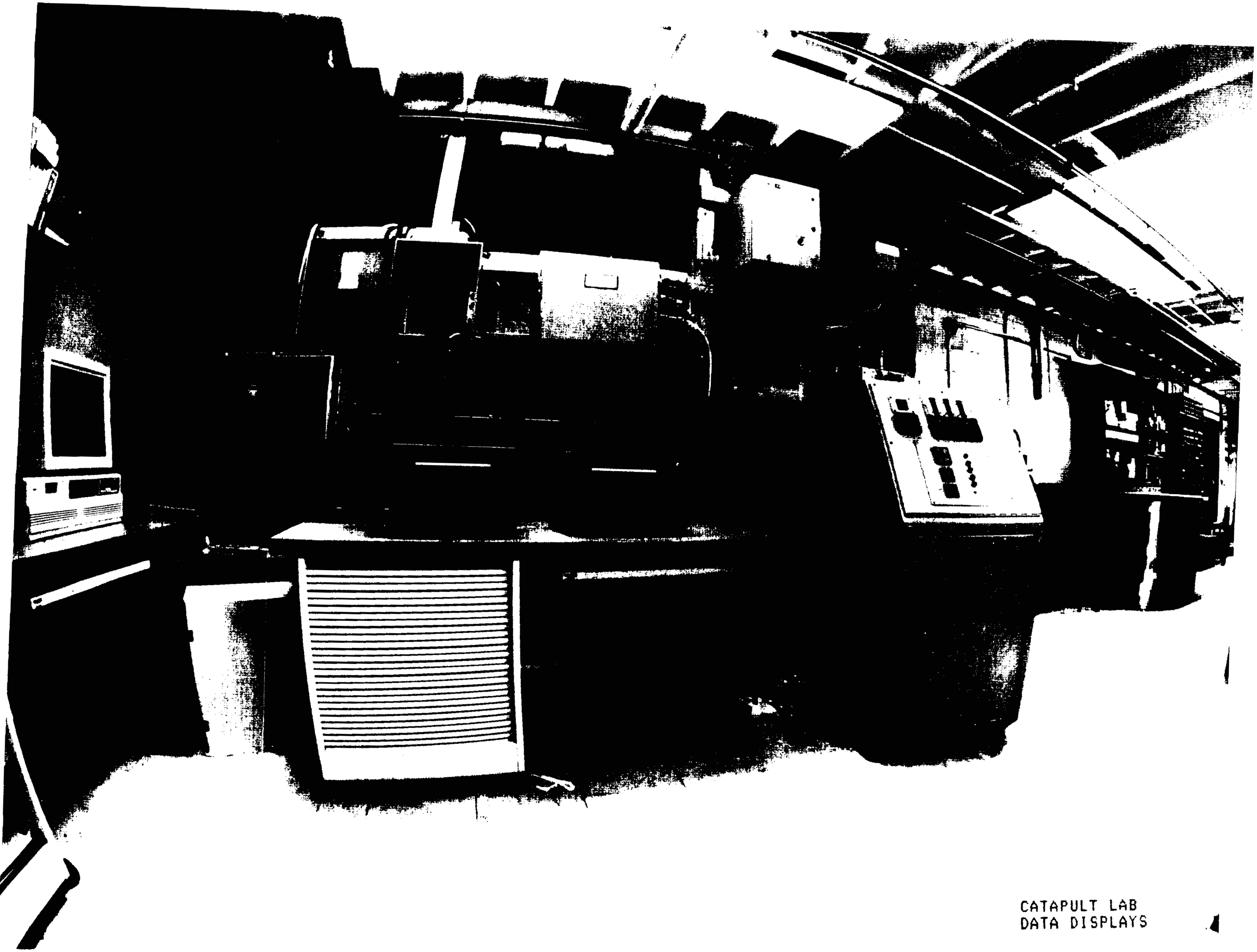


PHOTOMETRICS LAB
GONIOMETER

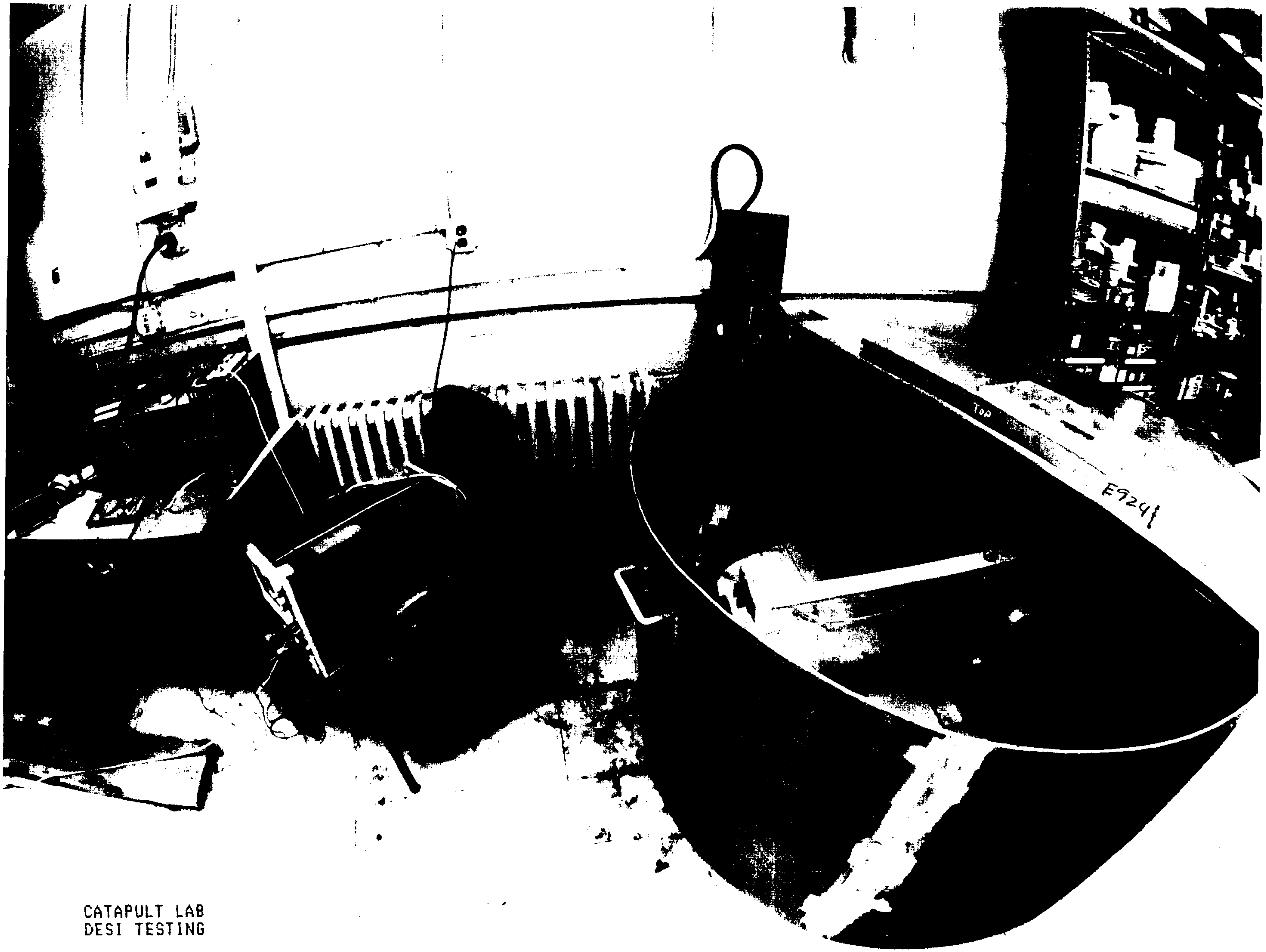
PHOTOMETRICS LAB
LASER ROOM



COMPUTER LAB



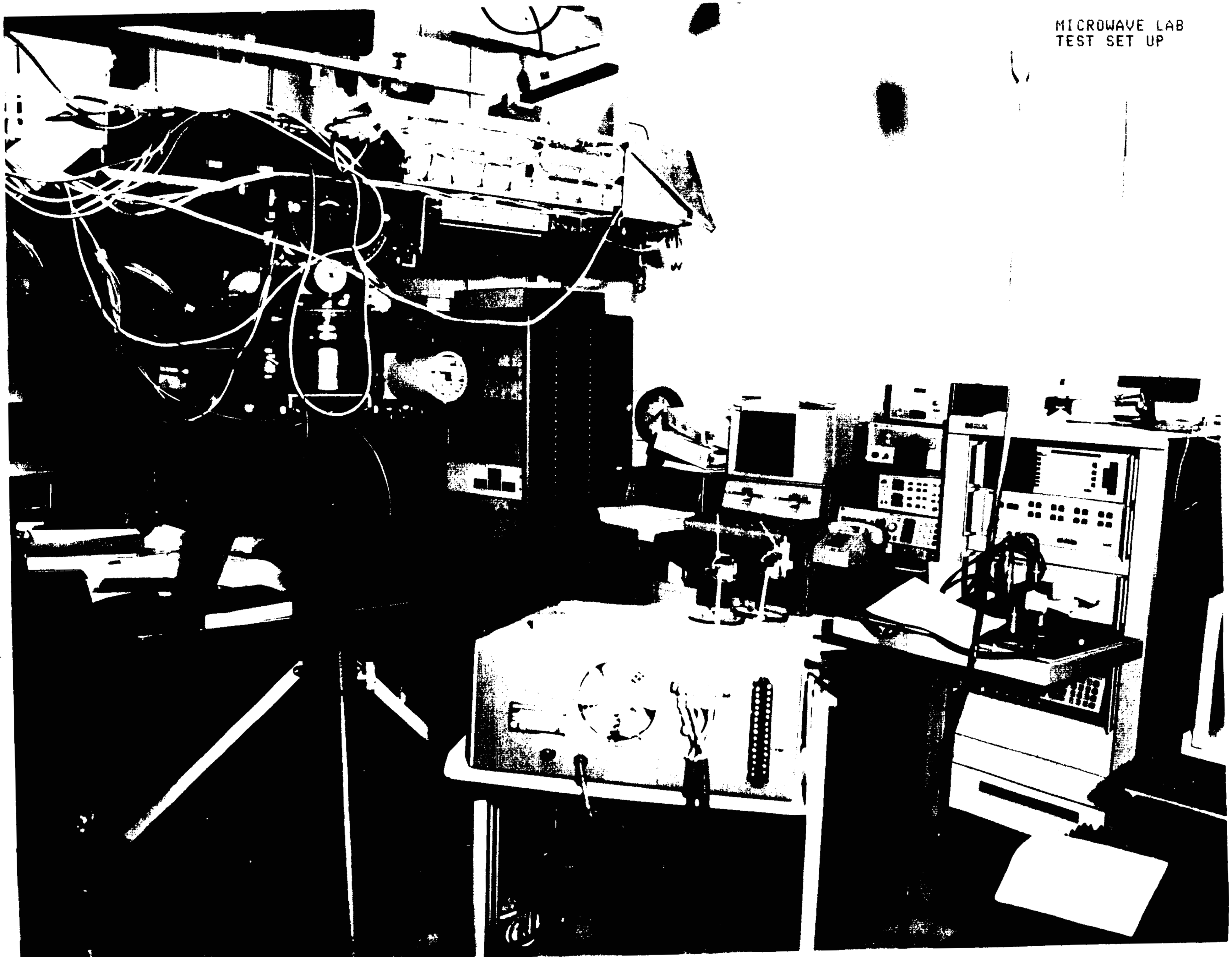
CATAPULT LAB
DATA DISPLAYS



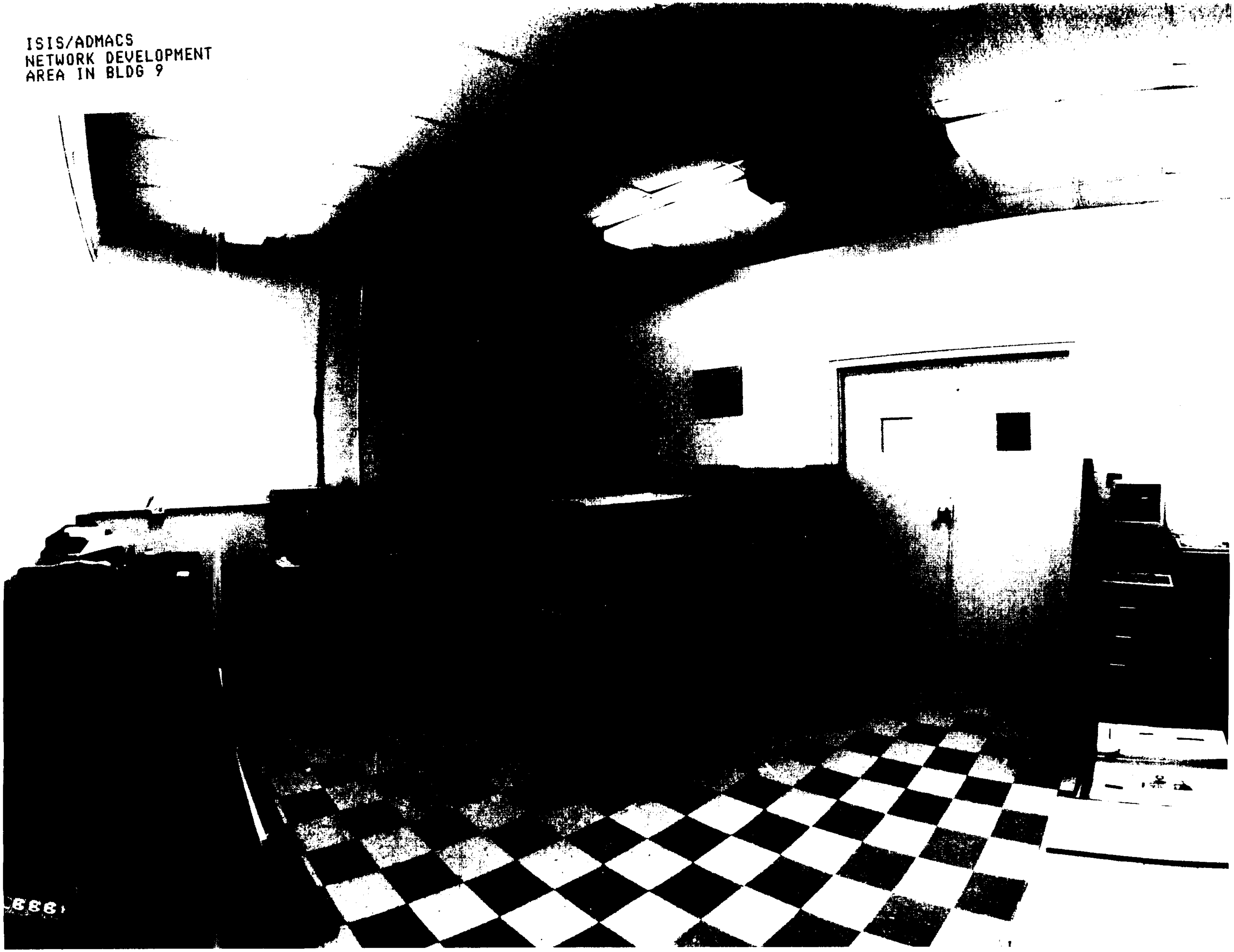
CATAPULT LAB
DESI TESTING

MICROWAVE LAB

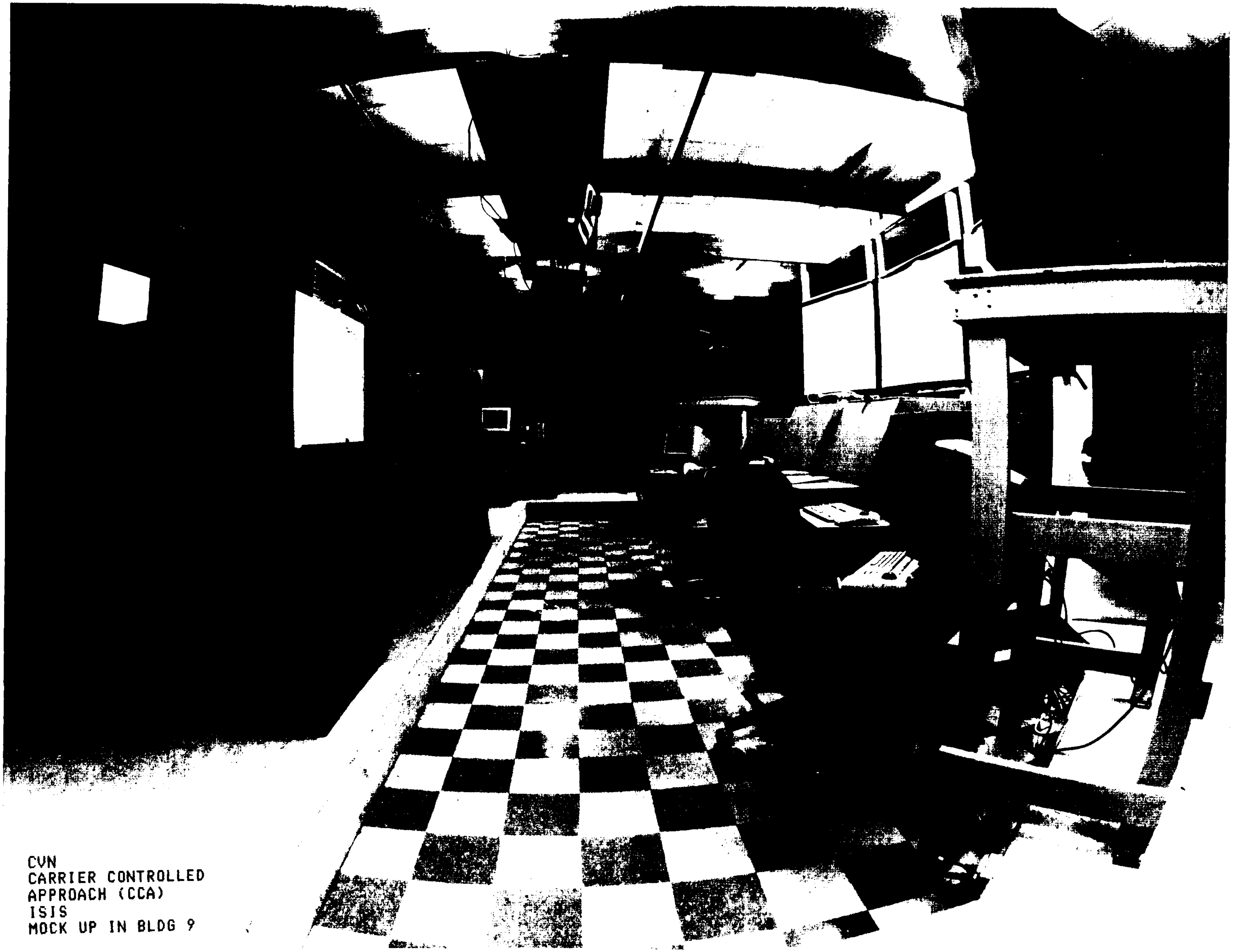
MICROWAVE LAB
TEST SET UP



ISIS
SOFTWARE DEVELOPMENT
AREA IN BLDG 9



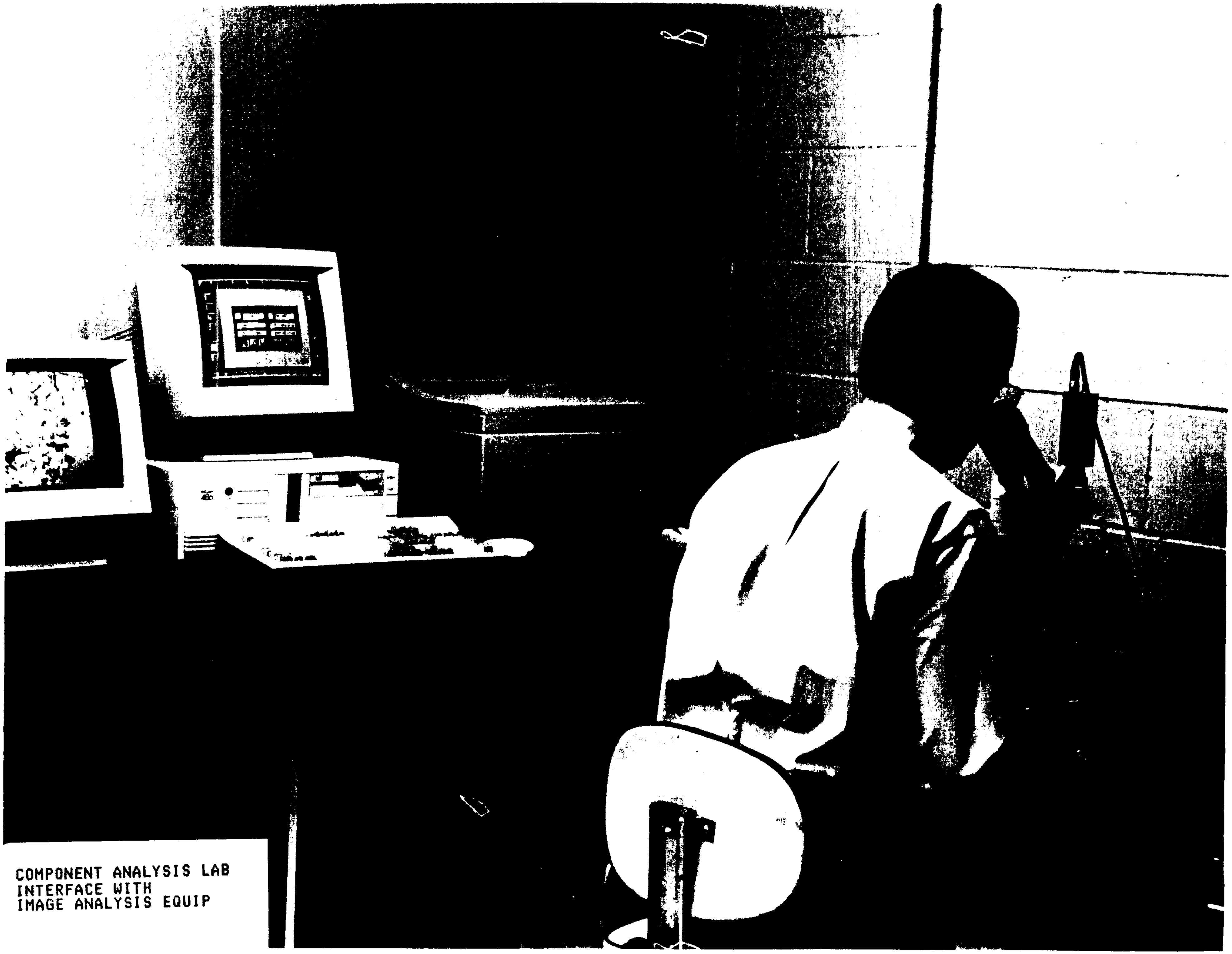
ISIS/ADMACS
NETWORK DEVELOPMENT
AREA IN BLDG 9



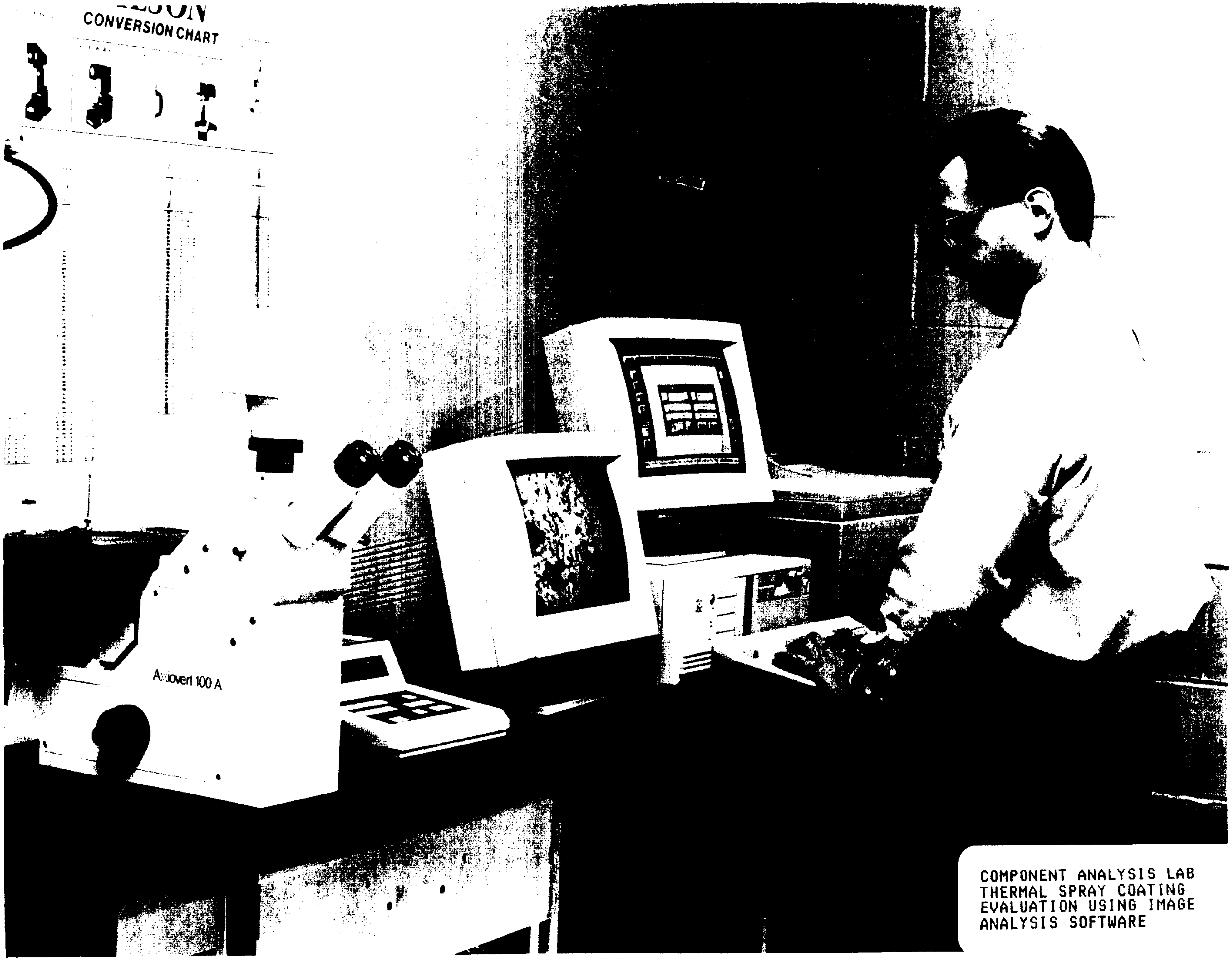
CVN
CARRIER CONTROLLED
APPROACH (CCA)
ISIS
MOCK UP IN BLDG 9

CVN
AIR OPERATIONS
ISIS
MOCK UP IN BLDG 9

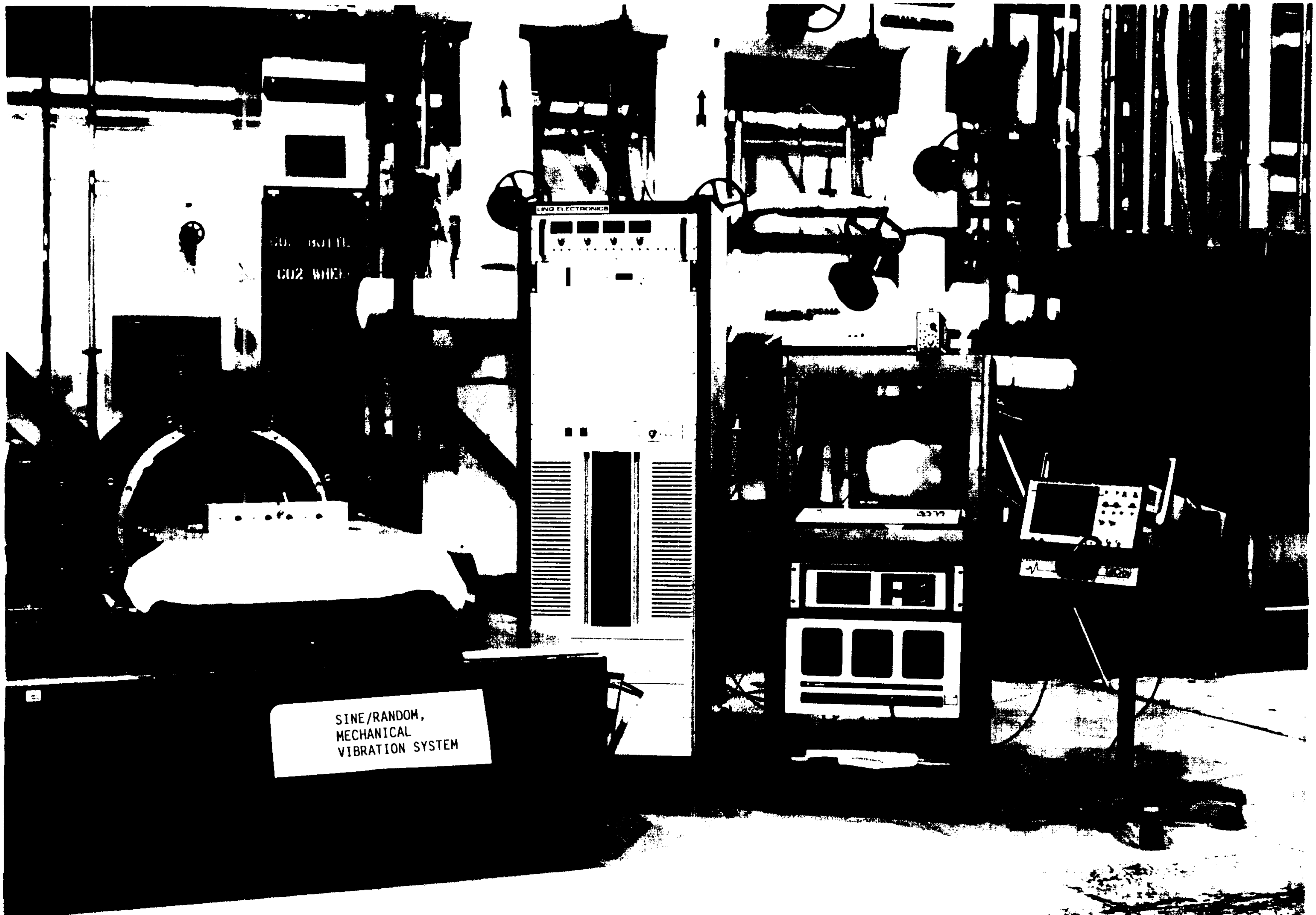
COMPONENT ANALYSIS LAB
USE OF SCANNING
ELECTRON MICROSCOPE

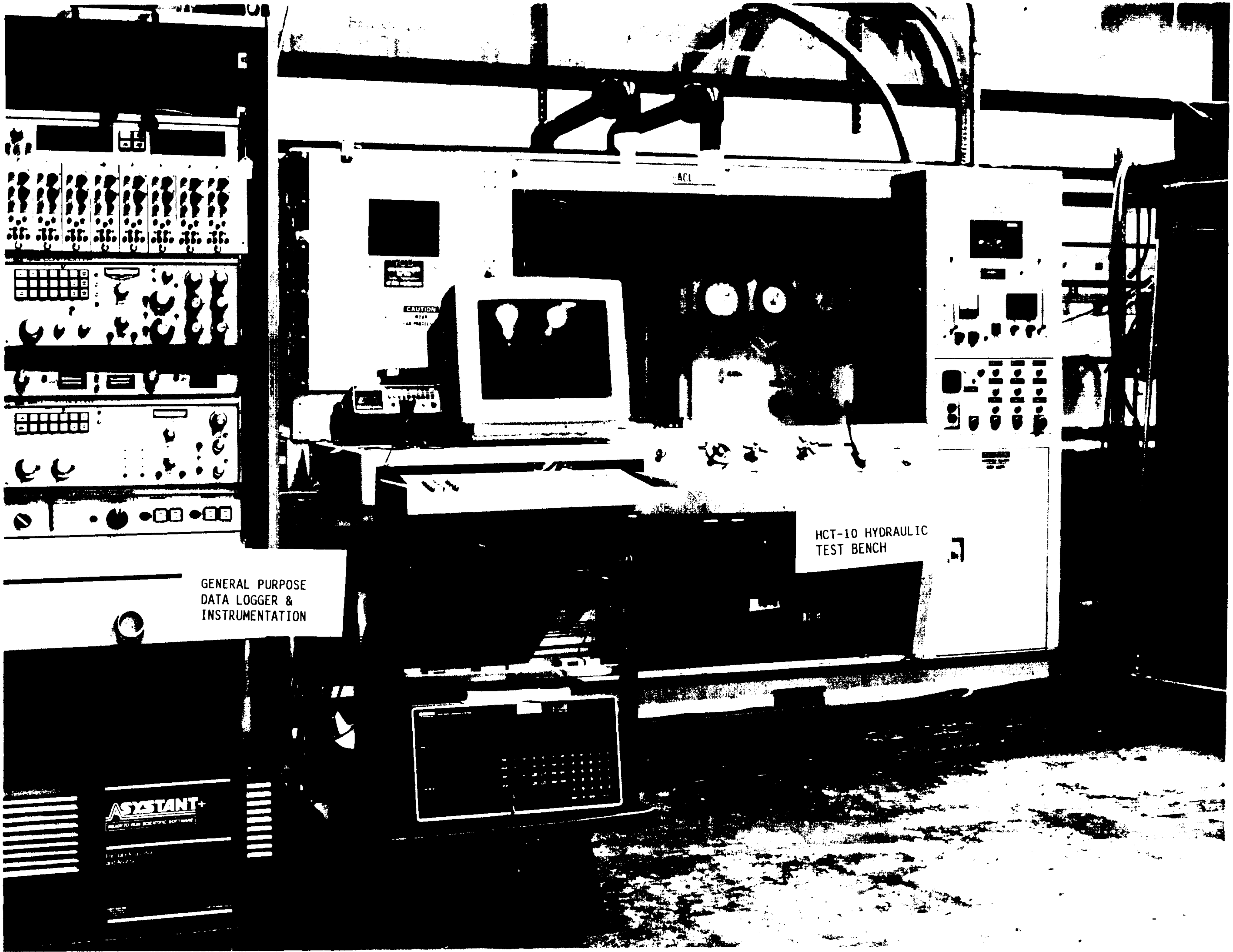


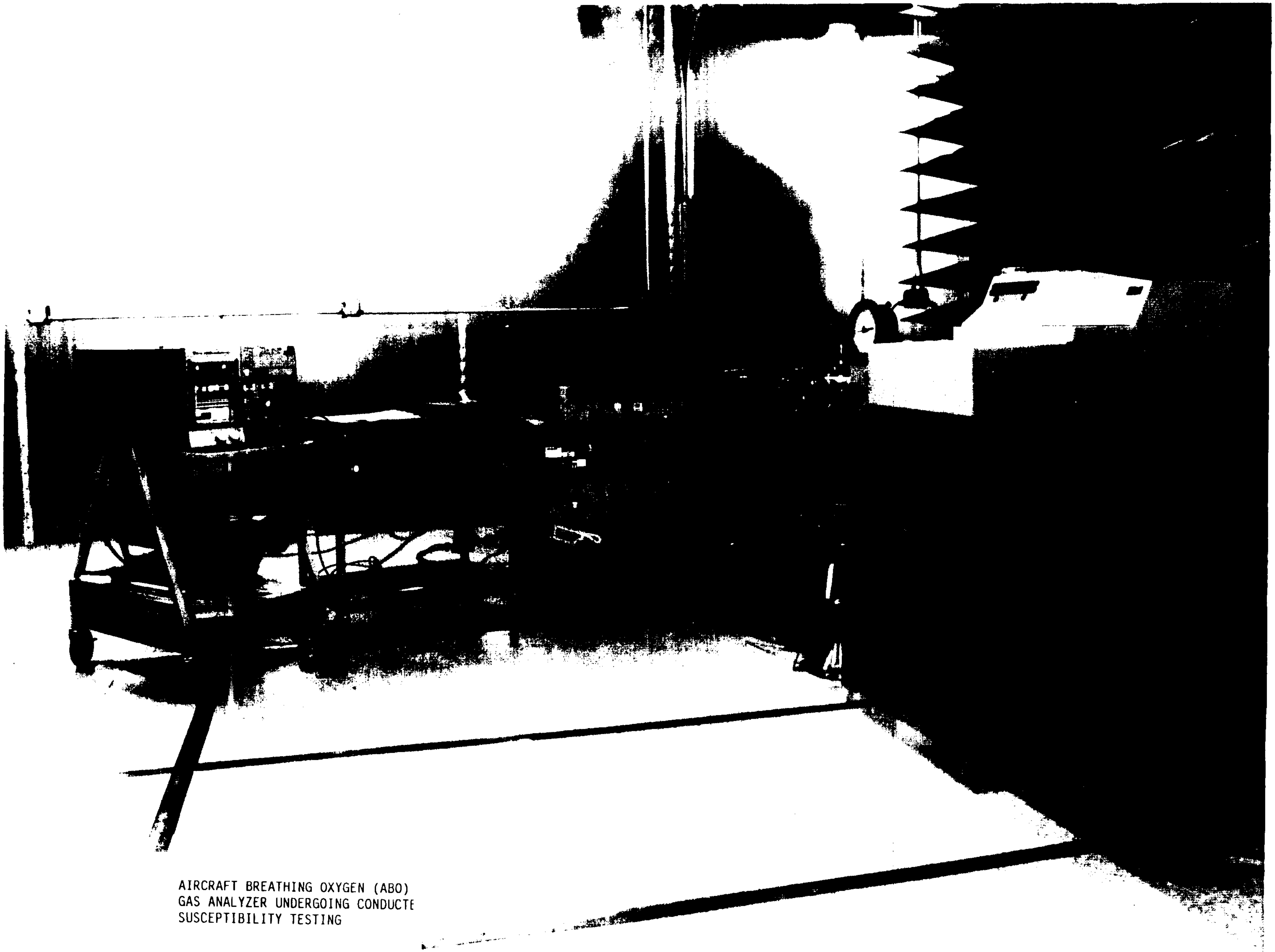
COMPONENT ANALYSIS LAB
INTERFACE WITH
IMAGE ANALYSIS EQUIP



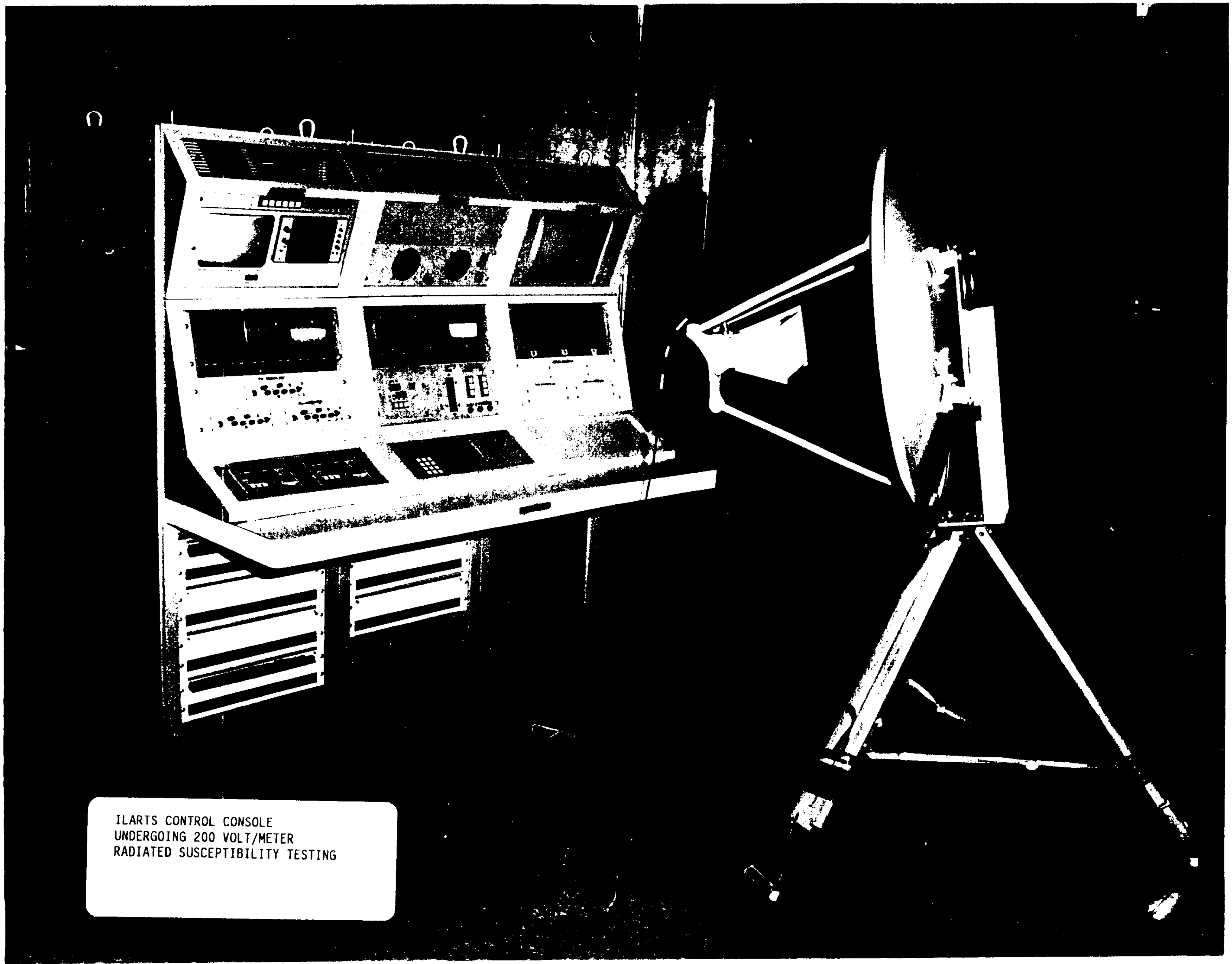
COMPONENT ANALYSIS LAB
THERMAL SPRAY COATING
EVALUATION USING IMAGE
ANALYSIS SOFTWARE

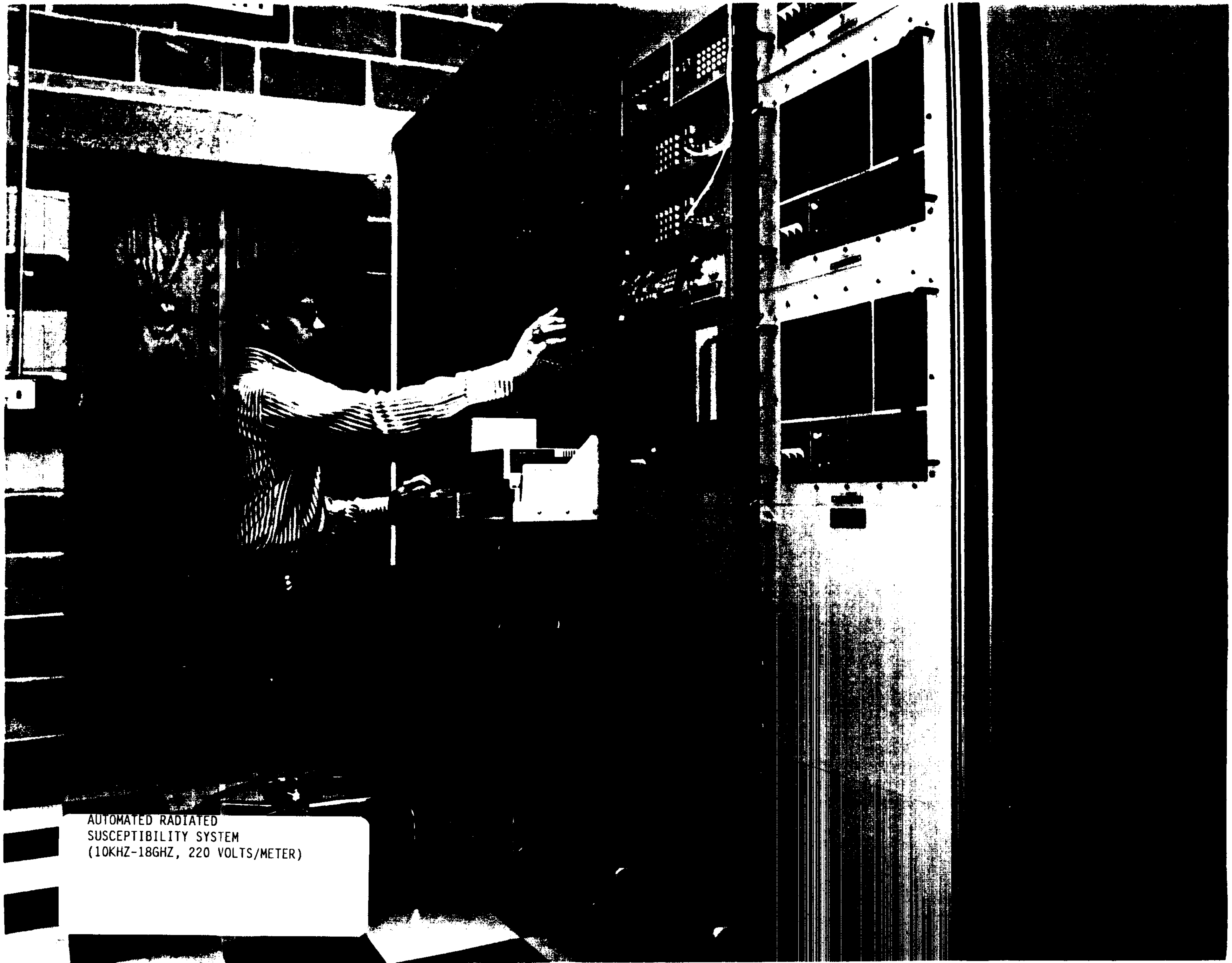

SINE/RANDOM,
MECHANICAL
VIBRATION SYSTEM
CO2 WHEEL
LING ELECTRONICS


HCT-10 HYDRAULIC
TEST BENCH
GENERAL PURPOSE
DATA LOGGER &
INSTRUMENTATION
CAUTION
ASYSTANT+



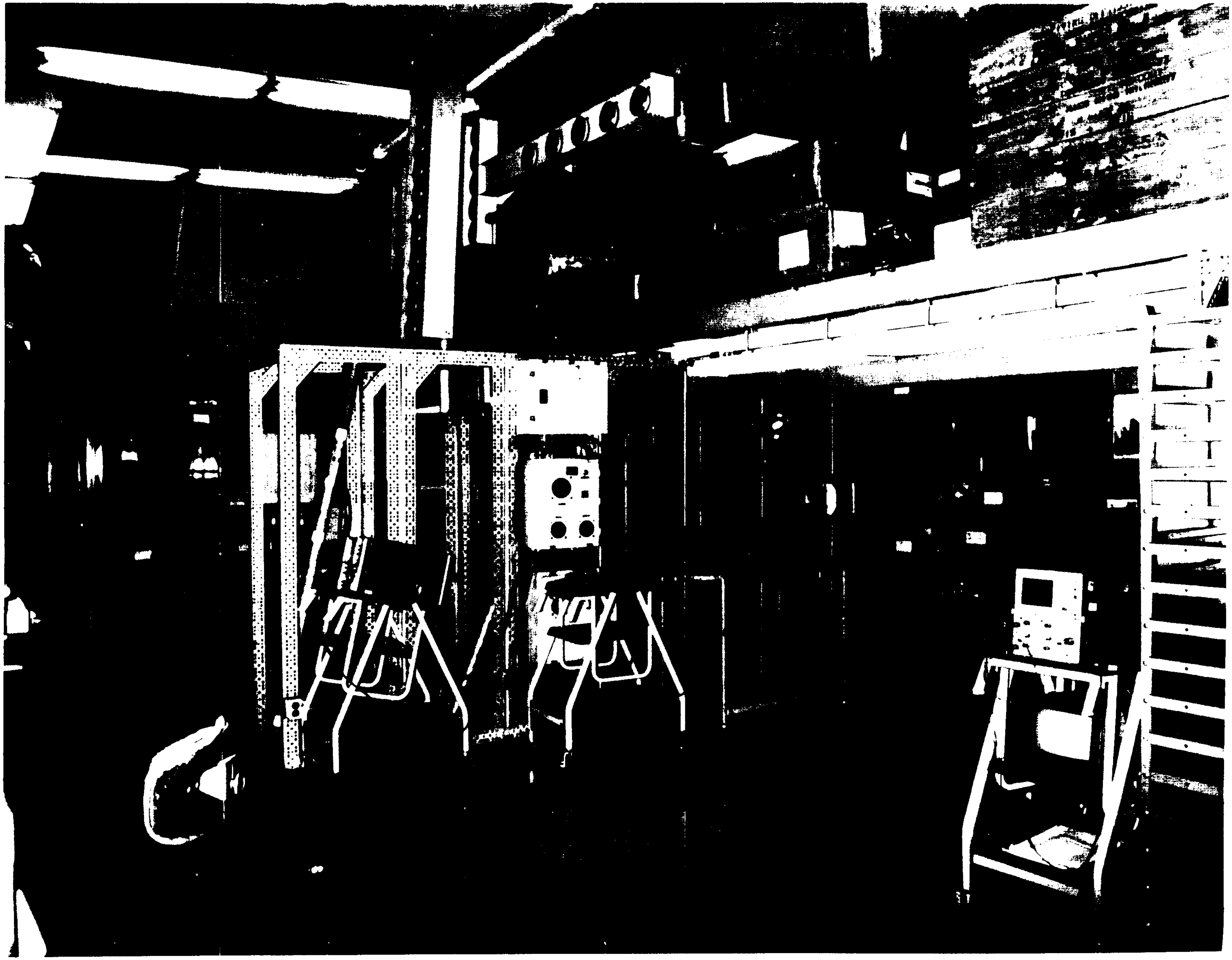
AIRCRAFT BREATHING OXYGEN (ABO)
GAS ANALYZER UNDERGOING CONDUCTE
SUSCEPTIBILITY TESTING


ILARTS CONTROL CONSOLE
UNDERGOING 200 VOLT/METER
RADIATED SUSCEPTIBILITY TESTING

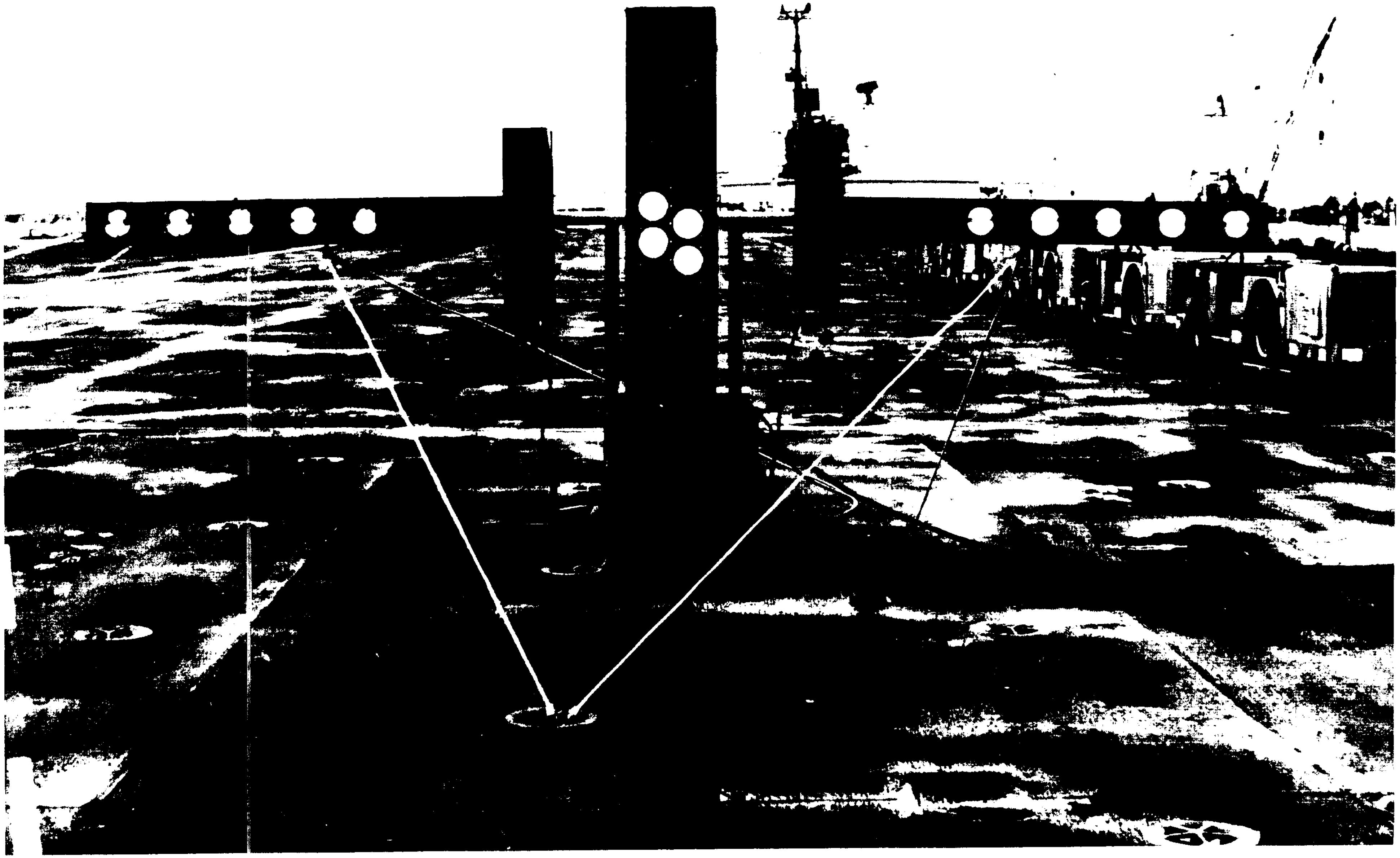


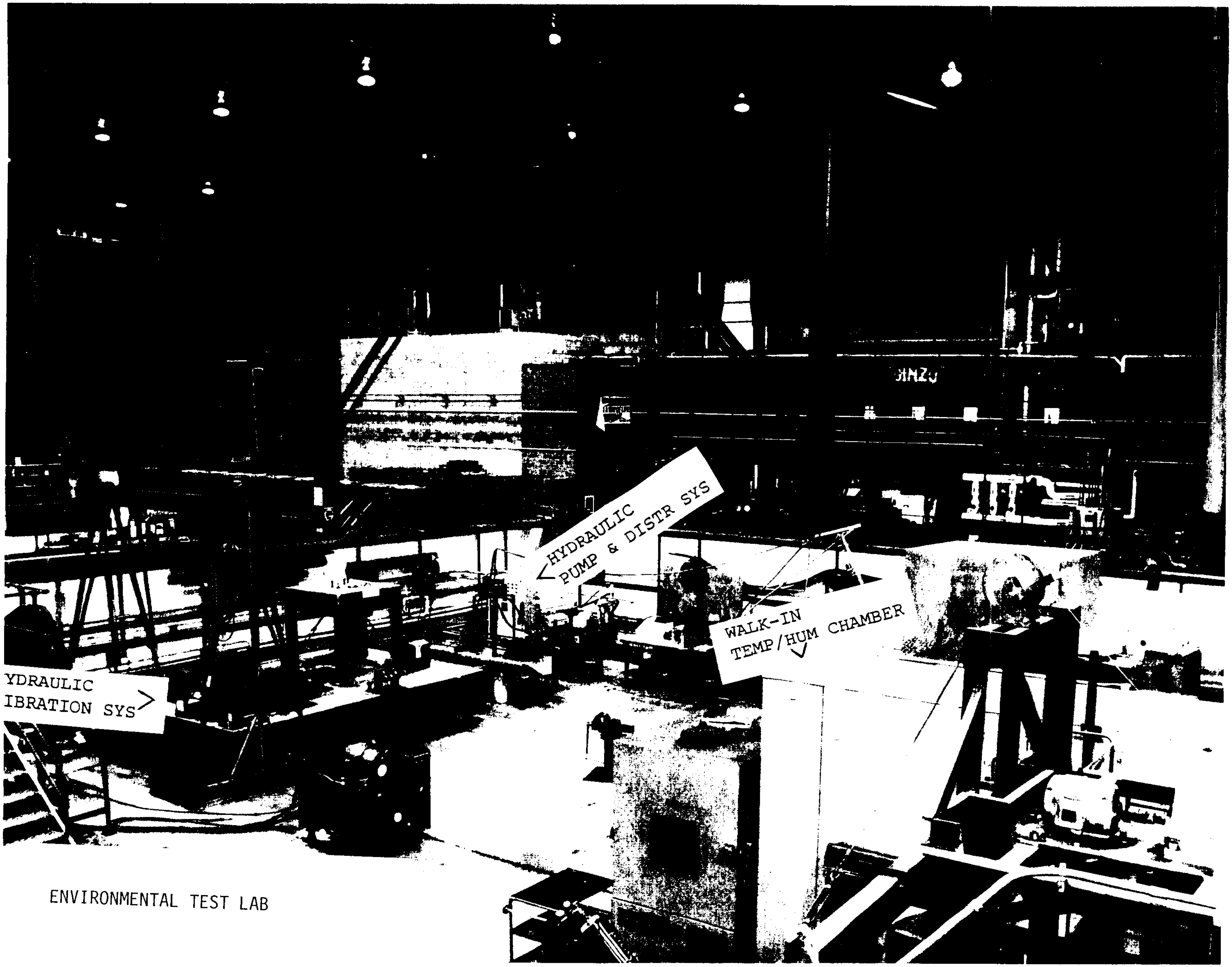
AUTOMATED RADIATED
SUSCEPTIBILITY SYSTEM
(10KHZ-18GHZ, 220 VOLTS/METER)

VLA LAB



MOVLAS VLA LAB





ENVIRONMENTAL TEST LAB

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

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	

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **METROLOGY AND CALIBRATION LABORATORY**

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

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:

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

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

GENERAL INFORMATION

Facility/Capability Title: **Metrology & Calibration Section**

Origin Date: **21 June 94**

Service: **N** Organization/Activity: **NAWCADLKE** Location: **Lakehurst, NJ**

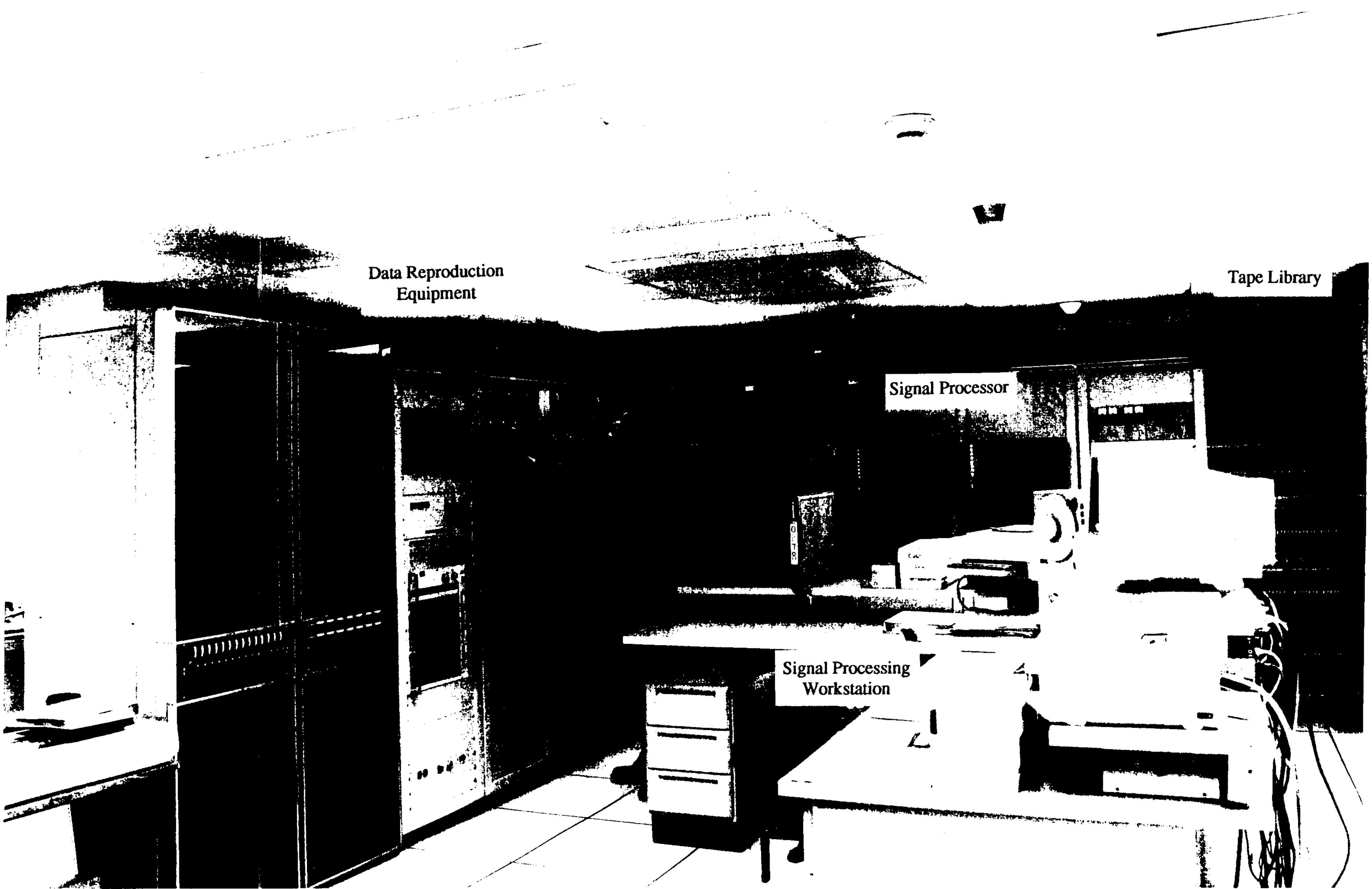
T&E Functional Area: **Air Vehicle** UIC = **N68335**

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

DATA HANDLING CENTER



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

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								

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:

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**

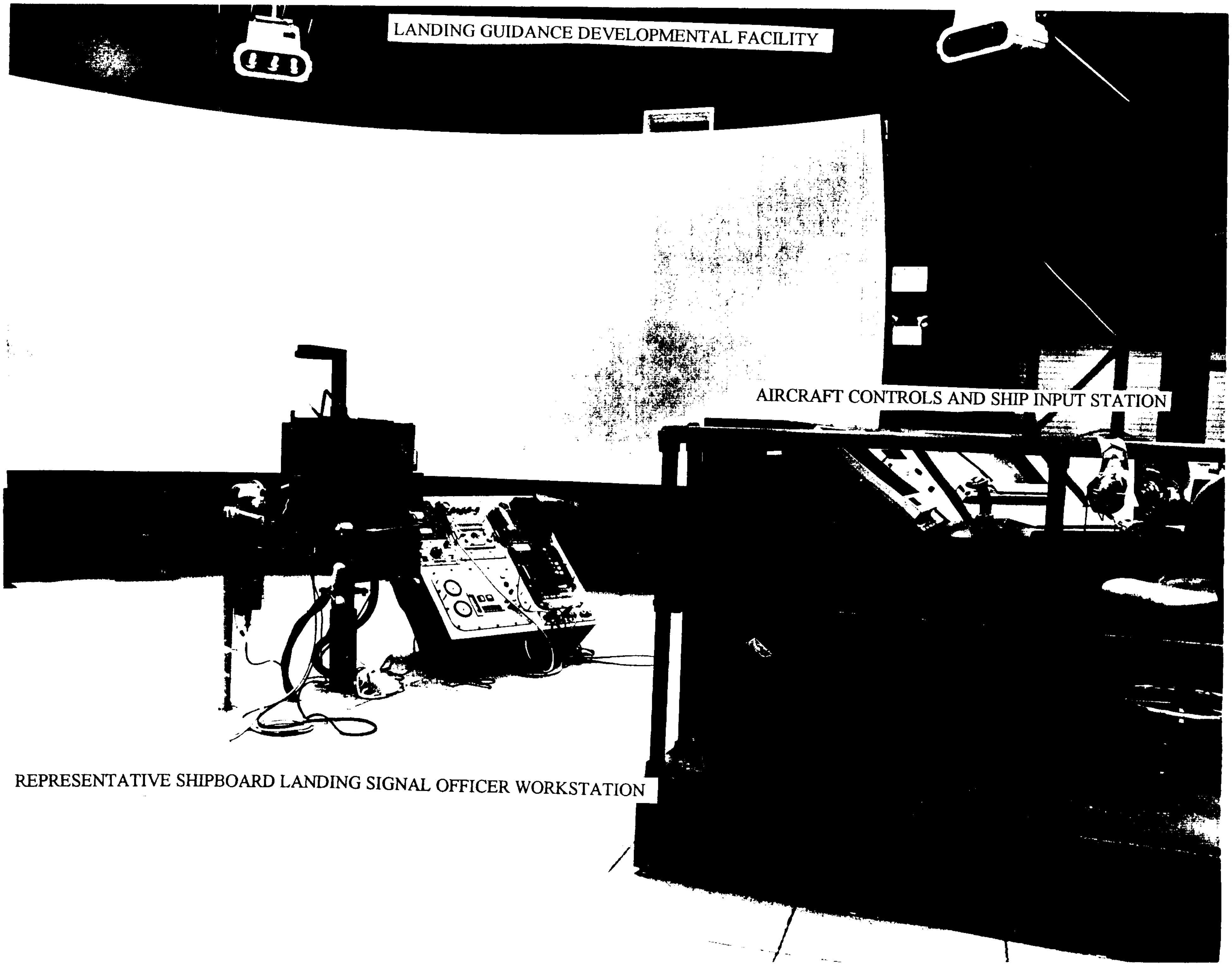
T&E Test Facility Category **Measurement Facility (MF)**

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	5%	5%		80%		10%	

BREAKOUT BY T&E FUNCTIONAL AREA (%)

	T&E	S&T	DE	IE	T&D	OTHER
Air Vehicles	5%					
Armanent/Weapons						
EC						
Other		5%		80%		10%

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


LANDING GUIDANCE DEVELOPMENTAL FACILITY
AIRCRAFT CONTROLS AND SHIP INPUT STATION
REPRESENTATIVE SHIPBOARD LANDING SIGNAL OFFICER WORKSTATION

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 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) 8 258.6
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	

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	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
Cat Shots/ Arrestments	2	Unknown	Unknown	
Elevated Fixed Platform				ANNUAL UNCONSTRAINED CAPACITY 9
"TYPICAL"			TOTAL	

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**

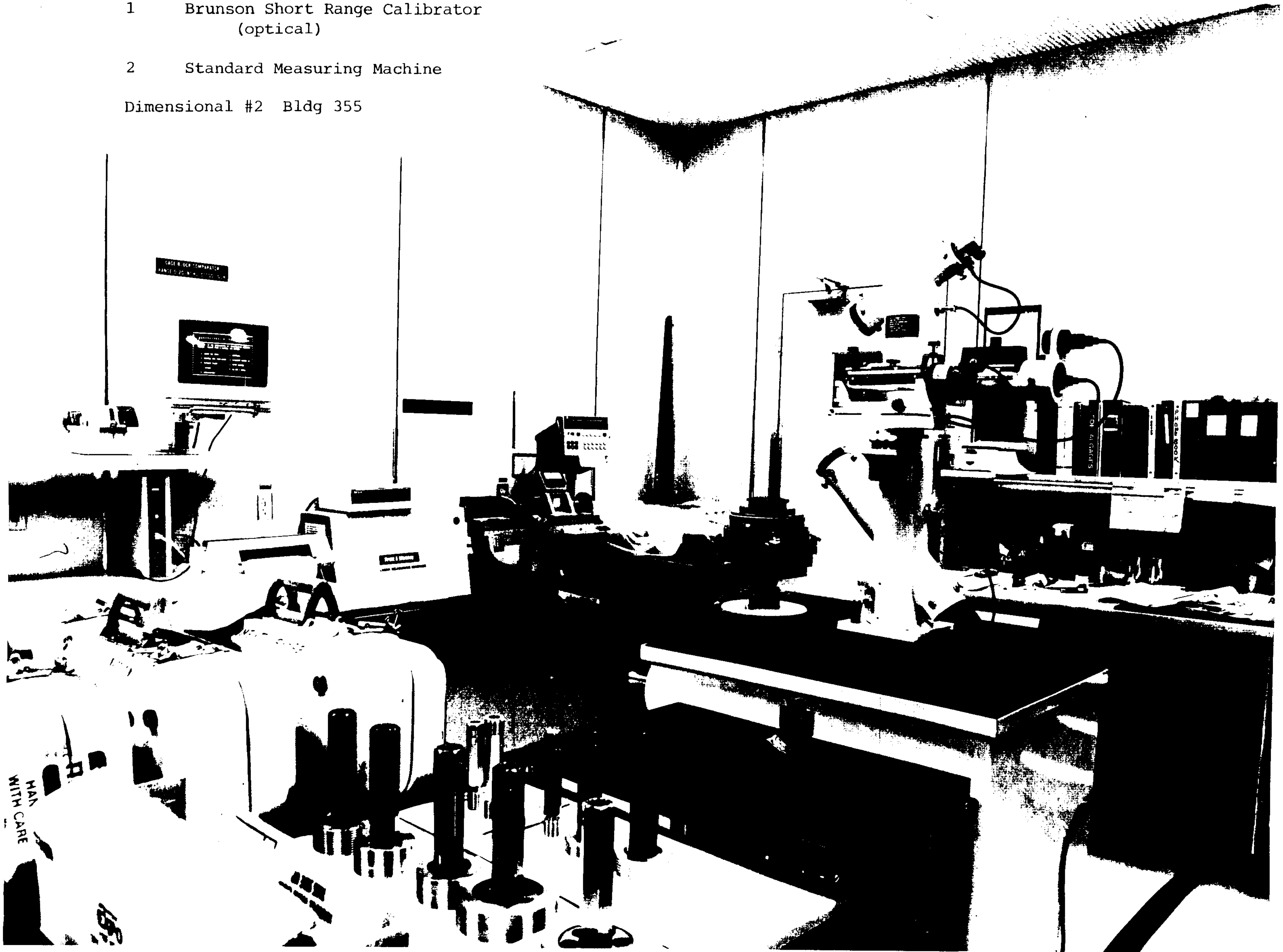
2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

1 Brunson Short Range Calibrator (optical)

2 Standard Measuring Machine

Dimensional #2 Bldg 355



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

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:

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

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								

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

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)

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: LANDING GUIDANCE DEVELOPMENT FACILITY
(NEW 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	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								

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	7 July 94
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.

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	18 JUL 94
Title	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
	7/25/94
Title	Date

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	Barton D. Strong
NAME (Please type or print)	Signature
COMMANDER	JUN 29 1994
Title	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

Document Separator

162

BRAC 95 DATA CALL #12 **ACTIVITY UIC: 68335**

"LAB" JOINT CROSS-SERVICE GROUP
DATA CALL #12

Complete Data Call Revision

NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION
LAKEHURST

PLUS REVISIONS DATED 9-13-94

This Data Call is provided as a replacement for all previous submissions of Data Call #12. This submission supersedes all previous submissions and incorporates responses to questions raised by the BSAT on 1 August, 9 August, and 12 August 1994.

NAWCAD LAKEHURST

DATA CALL TWELVE

"LAB" JOINT CROSS-SERVICE GROUP GUIDANCE PACKAGE

SECTION I: TASKING

In accordance with the Deputy Secretary of Defense memorandum dated 7 Jan 94, the Laboratory Joint Cross-Service Group (LJCSG) with DOD components should, where operationally and cost effective, strive to: retain in only one Service militarily unique capabilities used by two or more Services; consolidate workload across the Service to reduce capacity; and assign operational units from more than one Service to a single base. Specifically, the purpose of the LJCSG is:

- Determine common support functions and bases to be addressed by LJCSG
- Establish guidelines, standards, assumptions, measures of merit, data elements and milestone sches for DOD Component conduct of cross-service analysis of common support functions
- Review excess capacity analysis
- Develop closure or realignment alternatives
- Analyze cross-service trade-offs

The following information identifies to the Services common support functions and data element requirements necessary to support the cross-service analysis of these common support functions.

1.1 Guidelines

Because the DOD components are organized differently, "Lab" activities are considered to be those involved in the following life cycle efforts: Science and technology, and/or engineering development, and/or in-service engineering.

Service missions and force structure will be as stipulated in the FY1995-2000 Defense Planning Guidance and Interim Force Structure Plan.

The Military Departments will use the projected funding in the FY95 President's Budget Submission (Future Years Defense Plan -- FYDP) and an estimate of funds that will be received from outside the military department for execution.

If "lab" excess capacity exists, the Military Departments will start to reduce it where operationally and cost effective through a combination of downsizing in place within the departments, internal service consolidation, and cross service alternatives.

The Military Departments will gather, exchange, and analyze data collected per this guidance call for Common Support Functions (Appendix C) at "lab" activities (Appendix B) in accordance with the milestones and schedule dates identified in Appendix A.

Cross-service alternatives will result in an aggregate reduction in the overall "lab" infrastructure across the Military Departments -- personnel/funding/facilities and equipment.

Common cross-service Measures of Merit will be consistently applied for all cross-service alternatives.

Integration of weapon systems/components into operational forces will remain with the individual Military Departments responsible for those forces.

1.2 Standards

Evaluation of cross-service alternatives will be consistent with PL 101-510 (as amended) and the eight BRAC criteria. Only certified data will be used.

The COBRA cost model will be used to calculate estimated costs, estimated savings, and Return on Investment (ROI) of alternatives leading to proposed closures and realignments. Common inputs will be used for Military COBRA runs incorporating cross-service alternatives.

Military value analysis will be conducted by the Military Departments IAW Title 10, USC responsibilities.

1.3 Assumptions

"Lab" Common Support Functions and activities identified herein represent the major opportunities for developing cross-service alternatives. The Military Departments are not precluded from proposing other cross-service alternatives to reduce excess capacity as they assess the full complement of "lab" functions.

Previous BRAC decisions will be factored into cross-service alternatives.

"Lab" capacity will be based on budgeted workyears. A workyear is considered to be 2080 hours adjusted for time not on the job (e.g. sick leave, annual leave, etc.)

1.4 Measures of Merit

The following Measures of Merit represent the outcome from the DOD component final realignment and closure recommendations that are supported by the capabilities data which will be gathered by activity and common support function in Section III of this guidance.

- Reduction of "lab" infrastructure
- Return on investment (COBRA)
- Military value (BRAC criteria 1-4) -- the composite assessment of the quality of the remaining "lab" infrastructure

1.5 Activities

The Military Departments will collect capacity data for each "lab" activity identified in Appendix B. The "lab" activities were selected by considering all individual aggregates of personnel and facilities located at one base, under the same commander, performing predominantly science and technology (S&T), engineering development, and/or in-service engineering work. Small subelements of these "lab" activities were included with the activity. Larger subelements were broken out and defined as separate activities. The list of activities was then narrowed down to the list in Appendix B based on a joint Military Department assessment of common support functions with cross-service potential.

1.6 Common Support Functions

The common support functions (CSFs) were selected as shown in Appendix C based on a joint Military Department assessment of commonalty and cross-servicing potential. Common support functions which were already consolidated and being cross serviced were not included.

Common Support Functions are divided into two categories: product and pervasive. Product functions include all S&T, engineering development, and in-service engineering efforts associated with a product from all funding sources. Pervasive functions only include those efforts that are S&T funded, i.e. Technology Base (6.1)/Exploratory Development (6.2)/Advanced Development (6.3).

UIC N68335 R

This page intentionally left blank due to extraction of data.

NAWCHQ Change
ams NAWC-21
9/19/94

SECTION II: CAPACITY OF DOD COMPONENTS

2.1 Workload. Use the following table to describe historic and projected workload at each activity in terms of funding and workyears. Assume previous BRAC closures and realignments are implemented on schedule. Projected funding will be derived from FY95 President's Budget Submission (Then year dollars). Past fiscal year data shall begin with FY86 or at the inception of the activity as it existed on 1 Oct 93. (BRAC Criteria I & IV)

Information Required	Fiscal Years											
	86	87	88	89	90	91	92	93	94	95	96	97
Total Funds Programmed ($M)	**NOT AVAIL**	**103**	**204**	**191**	**233**	**163**	**175**	**210**	**191**	**207**	**194**	**185**
Total Actual Funds ($M)	**135**	**100**	**174**	**179**	**173**	**179**	**167**	**219**				
Programmed Workyears	**NOT AVAIL**	**2619**	**2532**	**2492**	**2567**	**2428**	**2320**	**2190**	**1967**	**1779**	**1885**	**1825**
Actual Workyears	**2545**	**2495**	**2519**	**2479**	**2502**	**2350**	**2308**	**2184**				

- Budgeted workyears are the selected indicator of the "lab" infrastructure's capacity at an aggregate level for each Military Department. They include both workyears funded directly by the Military Department and the workyears funded from organizations outside the Military Department.

Workyears = government personnel and on-site FFRDCs and SETAs

2.2 Excess "Lab" Capacity -- Measured at the DOD Component Level

- Excess "Lab" Capacity = Sum of the Peak Workyears - Sum of the Projected Workyears
  - Peak at each activity = Highest value between FY86 (or since inception of organization) and FY93
  - Projected at each activity = Estimated at FY97

SECTION III: CAPABILITY OF ACTIVITIES TO PERFORM COMMON SUPPORT FUNCTIONS (CSFs): Provide the information described for each common support function listed in Appendix C in which you are actively engaged.

3.0 **Mission:** Describe the major capabilities at your activity contributing to the common support function in bulletized format. Describe any relationship and interconnectivity with other functions (common or otherwise) in support of the overall activity mission.

3.0.1 Air Vehicles, Fixed, Flight Subsystems

The activity mission includes assuring that 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:

Aircraft Terminal Guidance
Aircraft Recovery
Aircraft Handling
Propulsion Support
Avionics Support
Aircraft Servicing and Maintenance
Aircraft/Weapon/Ship Compatibility
Aircraft 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 (e.g. catapult launch valves) and limited production of fleet essential items (e.g., cross-deck pendants for arresting gear systems)

Product Evaluation and Verification - at the catapult site, runway arrested landing site, jet car track site and jet blast deflector site.

In-Service Engineering - to support installation, operation, maintenance and overhaul of ALRE/SE 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."

3.0.2 Air Vehicles, Rotary, Flight Subsystems

The activity mission includes assuring that all rotary 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 Recovery Equipment and Support Equipment (SE). It can be further subdivided into the followingo principal areas:

Aircraft Terminal Guidance
Aircraft Recovery
Aircraft Handling
Propulsion Support
Avionics Support
Aircraft Servicing and Maintenance
Aircraft/Weapon/Ship Compatibility

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 and limited production of fleet essential items.

Product Evaluation and Verification - Elevated Fixed Platform and Universal Landing Pad.

In-Service Engineering - to support installation, operation, and certification of aviation facilities on air-capable ships.

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."

3.1 Location

3.1.1 Geographic/Climatological Features: Describe any geographic/climatological features in and around your activity that are relevant to each CSF. Indicate and justify those that are required versus those that just serve to enhance accomplishing the mission of the activity. For example, clear air at high altitude that increases quality of atmospheric, ground-based laser experiments in support of the weapons CSF. (BRAC Criteria I)

3.1.1.A Enhance Mission Accomplishment

Air Vehicles, Fixed, Flight Subsystems and Air Vehicles, Rotary, Flight Subsystems

The activity 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 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.

The activity possesses the only military parachute drop zone in the north east region.

In addition, it is noteworthy to address the potential for jointness among Lakehurst, Fort Dix and McGuire Air Force Base. The Fort Dix 31,065 acre complex which includes McGuire Air Force Base is contiguous to Lakehurst's 7,430 acres. One recent example of Jointness is the Air Mobility Warfare Center and the Army planning to use Lakehurst grounds for training exercises.

3.1.1.B Required for Mission Accomplishment

Air Vehicles, Fixed, Flight Subsystems and Air Vehicles, Rotary, Flight Subsystems

The following features are required to support the product evaluation and verification mission which necessitates catapult and arrestment of fixed wing aircraft and operation of rotary wing aircraft.

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 VFR operating areas and easy access to IFR 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.

3.1.2 Licenses & permits: Describe and list the licenses or permits (e.g., environmental, safety, etc.) that your activity currently holds and justify why they are required to allow tests, experiments, or other special capabilities at your location for each CSF. For example, permit to store and use high explosives. (BRAC Criteria I)

3.1.2.A Air Vehicles, Fixed, Flight Subsystems

The TC13 MOD O and the TC13 MOD 2 catapults are both connected to an industrial wastewater treatment system for which a <u>New Jersey Pollution Discharge Elimination System</u> permit has been authorized. This permit enables continuous operation of the catapult systems. A member of the Public Works Environmental Branch is a licensed NS operator responsible for the operation of the wastewater treatment system. A <u>New Jersey Stormwater Discharge Permit</u> details the storm water discharge for the entire catapult area under normal operation and usage. A <u>New Jersey Department of Environmental Protection and Energy (NJDEPE) Air Discharge Operating Permit</u> has been obtained for the boiler which supplies the steam for the catapult systems. The boiler is being upgraded with Continuous Emission Monitoring equipment to exceed the permit conditions, in anticipation of stricter air pollution legislation in New Jersey. The catapult and arresting gear test area is located within Noise Zone 3 where noise in excess of 75 Level of Day and Night (Ldn) can occur.

3.1.2.B Air Vehicle, Rotary, Flight Subsystems

The Helo Complex consists of an elevated fixed platform and a universal lighting pad. This testing area is also within the scope of the <u>New Jersey Stormwater Discharge Permit</u>. This area is located in Noise Zone 3.

3.1.3 Environmental Constraints:

3.1.3.A Air Vehicles, Fixed, Flight Subsystems and Air Vehicles, Rotary, Flight Subsystems

The 1993 Environmental Compliance Evaluation (ECE) determined that NAWCAD Lakehurst is in compliance with all mandated permits and licensing requirements. <u>NJDEPE Air Discharge Operating Permits</u> have been obtained for its four National Priority List (NPL) Groundwater Pump and Treatment Facilities.

EPA and NJDEPE approval has been received for the recycling of petroleum hydrocarbon contaminated soil, excavated from different NPL sites, using an asphalt batching process. Another NPL remediation project, which has obtained approval from both EPA and NJDEPE, is bio-venting of soils.

NAWCAD Lakehurst possess the unique capability to complete and maintain all required permits and licenses.

NAWCAD Lakehurst is classified under the Resource Conservation and Recovery Act (RCRA) as a generator of hazardous waste, NAWCAD Lakehurst is permitted to store hazardous waste for up to 90 days.

An increase in mission can be accommodated by the environmental resources at NAWCAD Lakehurst. An increase may require a Part B for the Treatment Storage Disposal Facility Permit. This is required if hazardous waste must be stored in excess of 90 days or if treatment is done on site.

Environmental contraints do not differ from those items listed in the most recently accepted master plan, Section V-D.

The specific topics addressed in the plan include:

Natural Constraints
- Threatened and Endangered Species
- Historic Sites
- Flood Prone Areas
- Wetlands

Man-Made Constraints
- Airfield Imaginary Surfaces
- Contaminated Areas
- Electromagnetic Interference and Radiation hazards
- Explosive Safety Quantity Distance Arcs
- Ordnance Handling Routes
- Noise Data
- Ordnance Contaminated Areas
- Range Safety Zone
- AICUZ

Although these areas place certain restrictions on growth, careful environmental planning and design would allow for growth.

3.1.4 Special Support Infrastructure: List and describe the importance of any mission related special support infrastructure (e.g. utilities) present at your location for your activity. (BRAC Criteria I)

3.1.4.A Air Vehicles, Fixed, Subsystems

The steam catapult complex requires high pressure steam to operate the two installed catapults. These catapults, a TC13 Mod 0 and a TC13 Mod 2, are used to develop and evaluate improvements to the launcher system.

The steam supply for a fully capable test catapult must be able to deliver saturated or superheated steam at a flow rate to conduct catapult steam charging tests and to demonstrate aircraft launches with a minimum launch interval of 45 seconds. The highest end pressure used on present fleet catapults is 560 psi. Therefore, the source pressure must be high enough to deliver this flow rate and pressure while taking into account pressure drop between the steam supply and catapult accumulator (typically approx. 80 psi).

The existing steam plant has 2 operational boilers that can deliver a combined total of 138,000 pounds per hour (one at 38,000 and one at 100,000 pounds per hour) at 600 psi. The current 138,000 pounds per hour delivery from the two operational boilers provides sufficient capacity to simultaneously operate both catapults or to conduct steam charging tests on one catapult by using the second catapult's accumulators to augment steam flow from the boilers.

Power Plant #2 Facility No. 362 category code - 821-09 Catapult Steam Plant. This facility provides the steam necessary for operation of the TC-13 Mod 0 and Mod 2 catapults.

Sub station #2 Facility No. 358 category code - 813-20 Substation generates more than 499 kv. This facility provides the electrical power necessary for operations of all facilities located in the vicinity of catapults and track areas.

3.1.4.B Air Vehicles, Rotary, Flight Subsystems

There is no special support infrastructure for this CSF.

3.1.5. Proximity to Mission-Related organizations: List and describe the importance and impact of not having nearby organizations which facilitate accomplishing or performing your mission -- e.g. operational units, FFRDCs, universities/colleges, other government organizations, and commercial activities. Restrict your response to the top five. Complete the following: (BRAC Criteria I)

3.1.5.A Air Vehicles, Fixed, Flight Subsystems and Air Vehicles, Rotary, Flight Subsystems.

Colleges and universities with curriculums that directly relate to general knowledge requirements for professional and technical positions at the activity are numerous and easily accessible to activity personnel. Numerous engineering contractors are closely available to provide support as required. Specialized knowledges of the unique equipment developed by the activity are not obtainable through formal education, but rather are developed through on-the-job training. It is also important that we are nearby to NAWCAD PAX (50 minute station to station flight) and within one hour drive of NAWCAD Warminster and NAWCAD Trenton for coordination and technical interface.

3.2 Personnel:

3.2.1 Total Personnel: What is the total number of government (military and civilian), on-site federally funded research and development center (FFRDC), and on-site system engineering technical assistance (SETA) personnel engaged in science and technology (S&T), engineering development and in-service engineering activities as of end FY93? For individuals that predominantly work in CSFs, involved in more than one CSF, account for those individuals in the CSF that represents the preponderance of their effort. (BRAC Criteria I)

Air Vehicle, Fixed, Flight Subsystems Types of personnel	Number of Personnel			
	Government		On-Site FFRDC	On-Site SETA
	Civilian	Military		
Technical	648	6	0	0
Management (Supv)	144	1	0	0
Other	211	0	0	0
Air Vehicle, Rotary, Flight Subsystems Types of personnel	Number of Personnel			
	Government		On-Site FFRDC	On-Site SETA
	Civilian	Military		
Technical	34	0	0	0
Management (Supv)	8	0	0	0
Other	11	0	0	0

3.2.2 Education: What is the number of government personnel actively engaged in S&T, engineering development and in-service engineering activities by highest degree and type of position? Provide the data in the following table: (BRAC Criteria I) (Civilian Only)

Air Vehicles, Fixed, Flight Subsystems Type of Degree/Diploma	Number of Government Personnel by Type of Position		
	Technical	Management (Supv)	Other
High School or Less	164	12	121
Associates	27	3	30
Bachelor	321	65	52
Masters	131	64	7
*Doctorate (include Med/Vet/etc)	5	1	1

Air Vehicles, Rotary, Flight Subsystems Type of Degree/Diploma	Number of Government Personnel by Type of Position		
	Technical	Management (Supv)	Other
High School or Less	9	1	6
Associates	1	0	2
Bachelor	17	3	3
Masters	7	3	0
Doctorate (include Med/Vet/etc)	0	0	0

*** Includes Professional Degrees (EX: JD)**

3.2.3 Experience: What is the experience level of government personnel? Fill in the number of government personnel in the appropriate boxes of the following table. (BRAC Criteria I) (Civlian Only)

Air Vehicles, Fixed, Flight Subsytems	Years of Government and/or Military Service				
Type of Position	Less than 3 years	3-10 years	11-15 years	16-20 years	More than 20 years
Technical	3	400	80	58	107
Management (Supv)	0	16	26	23	80
Other	0	70	51	37	52
Total	3	486	157	118	239
Air Vehicles, Fixed, Rotary Subsystems	Years of Government and/or Military Service				
Type of Position	Less than 3 years	3-10 years	11-15 years	16-20 years	More than 20 years
Technical	0	21	4	3	6
Management (Supv)	0	1	1	1	4
Other	0	4	3	2	3
Total	0	26	8	6	13

- Other includes employees in series 0334, 0343, 0346, 1150, 1152, 1910, 4701, 1670 with Sup. Code of 6, 8 (non-supv or mgt.)
Total population = 1056

3.2.4 Accomplishments During FY91-93: For government personnel answer the following questions.

3.2.4.1 How many patents were awarded and patent disclosures (only count disclosures with issued disclosure numbers) were made? (BRAC Criteria I)

CSF	Disclosures	Awarded	Patent Titles (List)
Air Vehicles, Fixed, Flight Subsystems	**1**	**0**	**Intense Light Filter for Imaging Systems**
Air Vehicles, Fixed, Flight Subsystems	**1**	**0**	**Oxygen Sensor Using Hall Effect Device**
Total	**2**	**0**	

3.2.4.2 How many papers were published in peer reviewed journals? (Include title of article, journal in which it was published, and month and year of publication. (BRAC Criteria I)

CSF	Number Published	Paper Titles (List)
Air Vehicles, Fixed, Flight Subsystems	1	"Electromagnetic Aircraft Launch System -- EMALS" by Michael R. Doyle, accepted for publication in the January 1995 issue of: IEEE Transactions on Magnetics, Vol 31, No. 1 by the IEEE Magnetics Society (R)
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	"Repair and Maintenance of Fiber Optic Data Links on Navy Aircraft" by Eric Fryland, published in the Sept 1991 issue of Proceedings, Volume 1580 by SPIE - the International Society for Optical Engineering (R)
TOTAL	2(R)	

(R)

3.2.4.2 How many papers were published in peer reviewed journals? (BRAC Criteria I)

CSF	Number Published	Paper Titles (List)
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	**1994: Artificial Neural Networks Engineering Conference, "A Comparison between Fuzzy C-Means and Fuzzy Min-Max Clustering for Aircraft Image Segmentation", by Susan McGrath**
Air Vehicles, Fixed, Flight Subsystems	1	**1994: IEEE Electromagnetic Launch Symposium, "Electromagnetic Aircraft Launch System -- EMALS", By Michael R. Doyle**
Air Vehicles, Rotary, Flight Subsystems.	1	**1993: Proceeding of NASA 2003 Tech Conference, "H46 Blade Using Artificial Neural Networks", by Macro Tedeschi**
Air Vehicles, Fixed, Flight Subsystems	1	**1993: Proceedings of the 1993 ASME Winter Annual Meeting, DSC-Vol 48, "Fuzzy Neural Control of an Aircraft Tracking Camera Platform", by Dennis McGrath**
Air Vehicles, Fixed, Flight Subsystems	1	**1993: Proceedings of the 27th Annual DOD Cost Analysis Symposium, Obtaining Feedback on the Life Cycle Cost Analysis of the Standard Engine Test System, by John Melin**
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	**1993: Proceedings of Technology 2003, the Fourth Annual Technology Transfer Conference, "Intelligent Control Systems", by Dennis McGrath**
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	**1993: Hazardous Materials Control Resources Institute's Abstract Guide to Manuscripts, Superfund XIV, "A Federal Success Story", NAES Lakehurst Environmental Group**

UICN68335 R

This page intentionally left blank due to extraction of data.

NAWCHQ Change
aims NAWC-21
9/19/94

Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1991: Naval Aviation Maintenance Safety Magazine, "High Pressure Can Be Hazardous To Your Health", by Kathy Donnelly
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1991: 5th IEEE International Symposium on Intelligent Control, "Conceptual Learning: Hierarchical System", by Larry Venetsky
Air Vehicles, Fixed, Flight Subsystems	1	1991: IEEE Computer Society Built-In Self Test Workshop, "System-level Simulation for Supportability Analyses", by Fred Liguori
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1991: 6th Annual Tri-Service RADCAD Symposium, "Readiness Assessment -- Where "Ilities" and "Abilities Meet", by Fred Liguori
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1990: Society of Logistics Engineers, 25th Annual Symposium, "Computer Modeling for System-Level Supportability Analyses", by Fred Liguori
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1990: Proceedings of DOD Fiber Optics Conference, "Fiber Optic Resource for Test Equipment", by Eric Fryland
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1990: Ground Water Monitoring Review, "Remediation of Contaminated Ground Water Using Biological Techniques", by Paul E. Flathman, Douglas E. Jerger and Lucy S. Bottomley

Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1993: Conference for Artificial Intelligence Applications for Military Logistics, "Logistics Support Analysis Advisor", by Mark Husni
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1993: Technical Manuals, "Maintenance Requirements Card", joint authorship between in-service engineers and logistics personnel
Air Vehicles, Fixed, Flight Subsystems	1	1992: Proceedings of the National Security Industrial Association, "TPS Documentation for CASS in Hypertext Form", by Richard Epstein
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1992: MECH Magazine, the Naval Aviation Maintenance Safety Review, "White Support Equipment", by Gabrielle Gerliczy
Air Vehicles, Fixed, Flight Subsystems	1	1992: Proceedings for AUTOTESTCON92, "CASS TPS Documentation -- A High Technology Tool", by Richard Epstein
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1992: Proceedings for AUTOTESTCON92, "Automated Integrated Diagnostics for Aircraft Mechanical Systems", by Robert Rossi
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1991: Circuit, Journal of the Institute of Interconnection Technology, Vol. 17, No. 1, "Printed Wiring Board Inner Layer Contamination Study", by Albert S. Chan
Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.	1	1991: Proceedings of the Internal Society for Optical Engineering, "Repair and Maintenance of Fiber Optic Data Links on Navy Aircraft", by Eric Fryland

UIC N68335

R

This page intentionally left blank due to extraction of data.

NAWCHQ Change
ams NAWC-21
9/19/94

Air Vehicles, Fixed, Flight Subsystems	**1**	**1990: Proceedings of IEEE Systems Readiness Technology Conference, AUTOTESTCON90, "Decision Support Tools Help Transition CASS into the Fleet",. by Chuck Tyrpak, Mike Malesich, and Jim McCabe**
TOTAL	**23**	

3.3 Workload

3.3.1 FY93 Workload

3.3.1.1 Work Year and Lifecycle: Identify the number of actual workyears executed for each applicable CSF in FY93 for each of the following: government civilian; military; on-site FFRDCs; and on-site SETAs. (BRAC Criteria I)

Air Vehicles, Fixed, Flight Subsystems	Fiscal Year 1993 Actual			
	Civilian	Military	FFRDC	SETA
Science & Technology	18	0	0	0
Engineering Development	871	6	0	0
In-Service Engineering	230	1	0	0
Air Vehicles, Rotary, Flight Subsystems	**Fiscal Year 1993 Actual**			
	Civilian	Military	FFRDC	SETA
Science & Technology	1	0	0	0
Engineering Development	46	0	0	0
In-Service Engineering	12	0	0	0

3.3.1.2 Engineering Development By ACAT: For each Common Support Function (e.g. airborne C4I) at each activity engaged in engineering development, provide:

- For each ACAT IC, ID, and II program (as defined in DODI 5000.2):
  - The name of the program
  - A brief program description
- For each ACAT III and IV programs:
  - The number of such programs
  - A list of program names
- For each program not an ACAT I, II, III, IV:
  - The number of such programs
  - A list of program names
- For the purpose of this question, any program between Milestone I and IV and containing demonstration and validation (Dem/Val 6.4)/Engineering and Manufacturing Development (EMD 6.5) funds in the FY95 PBS is considered to be engaged in engineering development (BRAC Criteria I).

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority)	Narrative
ACAT ID (Air Vehicles, Fixed, Flight Subsystems)	**V-22**	**23.5**	**3561.0**	**V-22 PROGRAM SUPPORT**

 R

ACAT III/IV (Air Vehicles, Fixed, Flight Subsystems)	2			
EMALS		10.4	1.4M	-ELECTROMAGNETIC A/C LAUNCHER SYS
ICOLS		6.6	.9M	-IMPROVED CARRIER OPTICAL LANDING SYS
ACAT III/IV (Air Vehicles, Fixed, Flight Subsytems; Air Vehicles, Rotary, Flight Subsystems)	2			
ISIS		16.2	2.2M	-INTEGRATED SHIPBOARD INFO SYS
Fire Truck		2.1	.3M	-A/S32P-25 SHIPBOARD FIRE TRUCK
OTHER	14	57.0	9.3M	
(Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems)				-SEABASED OPERATION SUPPORT -SEABASED MAINT SUPPORT -CVN 76 STUDIES; -IFF -STANDARD COMPASS SYS -STD ENG TEST SET -ADVANCED BOMB FAMILY JDAM HANDLING EQUIPMNT -AIRCRAFT LAUNCH/RECOVERY EQUIPMNT MATL STUDIES -SUPPORT EQUIPMNT

NAWC HQ Change
ams NAWC-21
9/19/94

R

OTHER (Cont'd) (Air Vehicles, Fixed, Flight Subsystems) (Air Vehicles, Rotary, Flight Subsystems)				-TARGET (QF-4) -TOW TARGET -MINE COUNTER MEASURES CONVERSION -LX STUDIES -SH-60

(R)

NAWCHQ Change
ans NAWC-21
9/19/94

ACAT III/IV (Air Vehicles, Fixed, Flight Subsystems)	7			
EMALS		10.4	1.4M	ELECTROMAGNETIC A/C LAUNCHER SYS
ICOLS		6.6	.9M	IMPROVED CARRIER OPTICAL LANDING SYS
IFOLS		0	0	IMPROVED FRESNEL LENS OPTICAL LANDING SYSTEM
(Air Vehicles, Fixed, Flight Subsytems; Air Vehicles, Rotary, Flight Subsystems)				
ISIS		16.2	2.2M	INTEGRATED SHIPBOARD INFO SYS
ADMCS		0	0	AVIATION DATA MGMT AND CONTROL SYS
Fire Truck		2.1	.3M	A/S32P-25 SHIPBOARD FIRE TRUCK
Other	20	57.0	9.3M	SEABASED OPERATION SUPPORT SEABASED MAINT SUPPORT CVN 76 STUDIES MCS CONVERSION LX STUDIES ABF JDAM ALE-50 SH-60 IFF STD COMP SYS TARGET (QF-4) TOW TARGET STD ENG TEST SET MISC SE MATL STUDIES COMMON SE SYS ENGR

3.3.1.3 In-Service Engineering: For each Common Support Function at each activity engaged in in-service engineering, list the in-service engineering efforts, the FY93 funds (from all sources) obligated for these efforts, the FY93 workyears for these efforts, and the weapon system(s) supported by these efforts. In-service engineering consists of all engineering support of fielded and/or out of production systems and includes efforts to improve cost, throughput, and schedule to support customer requirements as well as mods and upgrades for reliability, maintainability, and performance enhancements. (BRAC Criteria I)

Common Support Functions	In-Service Engineering Efforts (List)	FY93 Actual		Weapon System(s) Supported
		Funds Received (Obligation Authority)	Workyears	
Air Vehicle, Fixed, Flight Subsystems	**Ship/Facility Certifications; Product Support**	**$15,785.0**	**230**	**Various Fixed Aircraft**
Air Vehicle, Rotary, Flight Subsystems	**Ship/Faciltiy Certifications**	**$830.0**	**12**	**Various Rotary Aircraft**

3.3.2 Projected Funding

3.3.2.1 Direct Funding: For each applicable CSF, identify direct mission funding by appropriation from FY94 to FY97. Use FY95 PBS for FY95-FY97. (BRAC Criteria I)

CSF Air Vehicles, Fixed, Flight Subsystems	FY94 ($K)	FY95 ($K)	FY96 ($K)	FY97 ($K)
R&D	26,197.4	27,936.3	37,737.0	24,493.0
O&MN	57,686.5	69,023.8	61,877.4	63,997.6
APN	56,428.0	46,714.1	45,024.8	51,705.0
OPN	7,924.8	10,553.0	8,156.6	8,005.8
SCN	9,638.3	18,122.1	12,667.7	7,828.9
Other Navy	8,671.8	10,223.9	7,613.7	8,116.2
All Other	14,464.2	15,256.7	12,720.3	12,010.3
CSF Air Vehicles, Rotary, Flight Subsystems	**FY94 ($K)**	**FY95 ($K)**	**FY96 ($K)**	**FY97 ($K)**
R&D	0	0	0	0
O&MN	0	0	0	0
APN	7,352.3	6,085.4	5,866.5	6,736.9
OPN	803.0	1,069.3	826.5	811.2
SCN	181.0	340.3	237.9	147.0
Other Navy	113.0	133.2	99.2	105.8
All Other	1,314.4	1,386.4	1,150.2	1,091.4

3.3.2.2 Other Obligation Authority: For each applicable CSF, identify reimbursable and direct-cite funding (other obligation authority expected) from FY94 to FY97. Funding allocation must be traceable to FY95 PBS. (BRAC Criteria I)

CSF	FY94 ($K)	FY95 ($K)	FY96 ($K)	FY97 ($K)
Air Vehicles, Fixed, Flight Subsystem	554,614.0	485,499.0	500,473.0	575,355.0
Air Vehicles, Fixed Subsystems	29,190.0	25,553.0	26,341.0	30,282.0

3.4 Facilities and Equipment

3.4.1 Major Equipment and Facilities: Describe major facilities and equipment necessary to support each Common Support Function (include SCIFs). If the facilities and equipment are shared with other functions, identify those functions and the percentage of total time used by each of the functions. Provide labeled photographs that picture the breadth and scope of the equipment and facilities described. If it is unique to DOD, to the Federal Government, or to the US, describe why it is unique. Insert the replacement cost. For this exercise, Replacement cost = (Initial cost + capital investment) multiplied by the inflation factor for the original year of construction. (BRAC Criteria II)

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	

Air Vehicles, Fixed, Flight Subsystem NOT SHARED	**Steam Catapult Complex:** 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 and to provide in-service engineering support for this equipment. 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, which have a smaller inside diameter. Both consist of two slotted cylinders that extend the length of the stroke in which twin pistons travel. The pistons are attached to a launch shuttle and transmit up the 340,000 pounds of accelerating force to the aircraft as up to 560 psi steam is throttled into the cylinder. At the end of the launch stroke, the pistons are controlled-decelerated by a "Water Brake" Device and returned to battery position by hydraulic retraction motors.	YES	YES	YES	120,500

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Steam Catapult Complex (Cont'd) **Both catapults are capable of launching aircraft weighing up to 90,000 pounds and produce end speeds up to 185 knots under normal conditions and up to 300 knots for special catapult tests.** **Steam capacity for the catapults is obtained by means of steam accumulators that provide nearly constant pressure during the launch stroke. The TC13 Mod 0 Catapult has two 1,500 cubic foot dry accumulators, and the TC13 Mod 2 has one 1,900 cubic foot wet accumulator. A steam power plant supplies up to 138,000 pounds per hour of steam to these accumulators. Steam is generated up to a maximum 196,000 pounds/hr at 1,050 psi. Steam temperature is 900 degrees Fahrenheit. Two high pressure boilers are available and two 135 psi boilers for auxiliary steam and heating. Other equipment installed: Demineralizer, Iron Remover, Deaerator, Feed Pumps, Wells, Tanks and Air Compressor.**	**YES**	**YES**	**YES**	

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Steam Catapult Complex (Cont'd) **A unique feature of both the TC13 Mod 0 and Mod 2 is the deadload launch capability. Recessed guide slots on either side of each catapult track 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. 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.** **The catapult centerlines should be within 1-1/2 degrees of the runway centerline to permit safe aircraft launches for all required evaluations.**	**YES**	**YES**	**YES**	

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Runway Arrested Landing Site (RALS):** **This is the <u>only facility in the world</u> capable of making both high-speed ground roll-in arrestments and fly-in arrestments on shipboard arresting gear.** **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 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.**	**YES**	**YES**	**YES**	**28,544**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Runway Arrested Landing Site (RALS) (Cont'd): **The RALS 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.**	**YES**	**YES**	**YES**	

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Jet Blast Deflector Site:** **This is the <u>only site in the world</u> capable of conducting required aircraft evaluations with a MK 7 Mod 0 JBD.** **The JBD site includes a MK 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 1,200 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 MK 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 MK 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.**	**YES**	**YES**	**YES**	**3,334**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Jet Blast Deflector Site (Cont'd): **The 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.**	**YES**	**YES**	**YES**	

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem	**Runway:** **This is the <u>only facility in the world</u> dedicated to ALRE development. 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.**	**YES**	**YES**	**YES**	**17,720**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Jet Car Track Site:** **This facility is unique to the Navy for conducting tests in the 250 knot and below speed range.** **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. Installed at the recovery end of the tracks are a MK 7 Mod 3 and a MK 7 Mod 1 arresting gear**	**YES**	**YES**	**YES**	**24,537**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Jet Car Track Site (Cont'd): **integral to the testing conducted at this site. A data acquisition site is located adjacent to each major track site capable of recording by ground wires or telementry onto digital recording equipment, or by use of high-speed motion picture or closed circuit television.**	**YES**	**YES**	**YES**	

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Rotary, Flight Subsystem **NOT SHARED**	**Elevated Fixed Platform:** **This is the only facility in the world capable of evaluating RAST equipment. 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 Aids (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.**	**YES**	**YES**	**YES**	**4,160**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Rotary, Flight Subsystem **NOT SHARED**	**Universal Landing Pad:** **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 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.**	**NO**	**NO**	**NO**	**1,180**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Support Equipment Mobility Site:** **This facility is used for the testing of all wheeled ground support equipment. The site includes a 30 foot wide ramp that has a slope of 5 degrees, a vibration test bed consisting of gravel, asphalt and concrete. Ground support equipment that lift and transport various types of armaments, tow and spot aircraft, transport fire fighting equipment, etc, can be towed through or driven over the course. Data from accelerometers or strain gages can be telemetered to an on-site instrumentation van to provide instantaneous results.**	**NO**	**NO**	**NO**	**117.5**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Articulated Motion Platform:** **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 degrees to +26 degrees; roll -22 degrees to +22 degrees; yaw -29 degrees to +29 degrees; 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.**	**NO**	**NO**	**NO**	**350**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Environmental Test Lab:** The capability of this lab is unique to DOD. Lab equipment capabilities include environmental chambers of temperature, humidity, corrosion, fungus and altitude testing. Also shipboard high impact equipment as well as instrumented and computer controlled mechanical shock and vibrations equipment. The lab has closed-loop servo-controlled, electro-hydraulic actuators for performance of fatigue testing, proof loading, determining yield points and ultimate strength of specimens. In addition, the lab does pressure and hydraulic flow testing of components such as the Catapult Capacity Selector Valve. Typical documents for which capabilities exist include MIL-STD-810, 202, 167, 1399, 108, 2036, MIL-S-901, MIL-T-28800, MIL-L-6363. The enclosed photograph depicts the equipment that will be the most difficult to relocate: The Navy Light Weight Stock Machine, a large temperature humidity chamber, a hydraulically operated vibration system and a hydraulic power pump.	**YES**	**NO**	**NO**	**3,147**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) **Air Vehicles, Rotary, Flight Subsystem (5% USE)**	**Electromagnetic Interference Test Facility:** **The Electromagnetic Interference (EMI) laboratory provides the necessary RF shielded environment and test equipment required for the evaluation of fleet systems and/or subsystems for Electromagnetic Compatibility (EMC) compliance in accordance with MIL-STD-461A/B/C/D (Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference). The EMI Laboratory houses two shielded test enclosures, one shielded and one unshielded ante room and one EMP test facility. Both shielded test enclosures are partially anechoic with approximately fifty (50) percent coverage.** **The EMI facility also maintains the necessary equipments and facilities for the performance of Electromagnetic Pulse (EMP) testing in accordance with MIL-STD-461C/D and the evaluation of electrostatic bag materials and EMI gasket materials.** **The EMI facility is one of eleven test facilities nation-wide and the only one in the Aircraft Division which has been accredited through the National Voluntary Laboratory Accreditation Program (NVLAP) to perform EMI testing in accordance with MIL-STD-461.**	**NO**	**NO**	**NO**	**3,054**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Metrology and Calibration Lab: Electronic and mechanical standards (including physical, optical, dimensional, pressure, voltage and frequency standards) and the necessary environmentally controlled laboratories to house such equipment.**	**NO**	**NO**	**NO**	**2,076**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Data Handling Center: The Data Handling Center (DHC) houses off-line signal processing and reproduction includes instrumentation tape recorders, demodulation equipment for 64 channels of ground based data, telemetry demodulation equipment to 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.**	**NO**	**NO**	**NO**	**881**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**2200 sq ft Materials Laboratory outfitted with sample preparation, testing, analysis, and support equipment. List of major equipment below: Sample Preparation - To reduce components into the proper size and condition to be further studied and analyzed. - $100K Chemical Analysis - To obtain elemental chemical analysis of specimens. - $250K Electron and Optical Microscopes - To view specimens under very high magnification. Used for examination of component fracture surfaces. - $175K Physical Testing - To determine or alter physical attributes of specimens, such as hardness, impact resistance, metallurgical structure and wear properties, for example. - $500K Image Analysis - To perform computer analysis of of attributes of images generated by microscopes. - $50K Laboratory Furniture - Various benches, work surfaces, fume hoods, and other support items. - $100K**	**NO**	**NO**	**NO**	**Facility Structure $148 Equipment $1,175**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Carrier Analysis Room:** **This is the only facility in the world equipped for carrier suitability analysis, maximum density and operational spotting analysis.** **The Carrier Analysis Room, also known as the Spotting Room, provides carrier suitability and shipboard compatibility requirements documentation for Navy aircraft acquisition programs, and aircraft compatibility requirements for ship acquisitions. It provides design evaluation support, and COEA inputs. It calculates and validates all Maximum Density and Analysis Spot Factors for various aircraft configurations. It analyzes and simulates airplane operations and provides spotting and handling recommendations. These capabilities are unique within the Navy and the world. Programs supported include the main, active aircraft and ship developments such as F/A-18E/F, V-22, MLR, AX, CVN 76, CVX, LPD 17(LX), MCS and multiple UAVs.**	**YES**	**YES**	**YES**	**1,278**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Carrier Analysis Room (Cont'd): **The Spotting Room is a dedicated secure facility located within Hangar 3. It contains a computer network consisting of a Digital Microvax II, and several IBM and MAC PC workstations. Included are all the necessary peripheral devices such as plotters, printers, scanners, digitizers, a color image printer and a CD disk drive. All Spotting Room operations are fully computerized. An extensive library of files and models, both two dimensional and three dimensional, are available. In addition, traditional spotting table facilities are available with scaled deck layouts and aircraft templates with overhead photographic capability. These facilities are used to accommodate group working sessions, particularly with fleet operators, where a hands-on approach is desirable. See Attachment 1 for a pictorial layout of the facility.**	**YES**	**YES**	**YES**	

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Landing Guidance Development Facility** **This facility is used to develop advanced landing guidance and simulate performance with advanced hardware and man in the loop.**	**YES**	**YES**	**YES**	**5,300**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Manufacturing Technology** **This is an integrated, flexible, industrial manufacturing facility providing unique and critical products to the fleet. Comprised of a 240,000 square foot manufacturing facility, state-of-the-art equipment, highly trained personnel, and a dedicated engineering staff, Manufacturing Technology is the supplier of last resort and last source of repair for systems and equipment critical to CV and CVN (aircraft carrier) operations.** **Supplying Aircraft Platform Interface (API) products, Manufacturing Technology is the ONLY source of many unique systems and components which are critical to successful Navy flight operations. Without the products manufactured, repaired, and overhauled by MTD, Navy flight operations would not be possible. (See Figure 1 for Layout)**	**YES**	**YES**	**YES**	**198,012**

FIGURE 1

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
			Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Purchase Cable Test Facility:** **Prior to issuance to the fleet (stock system), NAWCADLKE conducts acceptance tests on purchase cables specimens. Purchase cable are the cables which connect the "Cross Deck Pendant" (arresting cable) to the arresting engine during aircraft recovery. NAWCADLKE is the ONLY source for acceptance testing. An 11,375 sq ft area is dedicated to the two sheave and five sheave cycle test machines which impart recovery equivalent loads to the purchase cable under test.**	**YES**	**YES**	**YES**	**18,946**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Cross Deck Pendant Cable: Manufacturing And Testing Facility;** **-Includes 40% of Heat Treat Facility Cost;** **-Includes 25% of Grit Blast Facility Cost** **NAWCADLKE is the sole manufacturer of Cross Deck Pendant cable assemblies. Bearing the primary input loads which occur during aircraft recovery, Cross Deck Pendants are the cable assembles which are caught by the aircraft's tail hook when landing. Due to their application, the processes for manufacturing these cables are considered flight critical processes. As part of our periodic validation of these critical processes, NAWCADLKE combines a unique tensile test cell with our on-station jet car site for dynamic evaluation.**	**YES**	**YES**	**YES**	**50,505**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Jet Blast Deflector Manufacturing Facility:** **-Includes 30% Of General Welding And Metal Fabrication Facility; 25% of the Total Grit Blast Facility Cost; and 5% of the Total Heat Treating Facility Cost.** **Past attempts by commercial sources to manufacture these panels have failed. A dedicated weld shop, module manufacturing area, and special positioners/fixtures combine to enable Lakehurst to meet Fleet needs for both new ship construction and retrofit.**	**YES**	**YES**	**YES**	**6,864**
Air Vehicles, Fixed, Flight Subsystem **(95% USE)** **Air Vehicles, Rotary, Flight Subsystem** **(5% USE)**	**Prototype Manufacturing Facility:** **NAWCADLKE maintains the ability to build prototype assemblies to assist the engineers and designers of our on-station Aircraft Launch and Recovery Equipment and Ground Support Equipment groups. We are able to perform prototype and small lot manufacturing for almost any customer.**	**NO**	**NO**	**NO**	**750**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Barricade Manufacturing Facility:** **NAWCADLKE is the ONLY source of cloth barricades which are used when aircraft are unable to catch the Cross Deck Pendant (arresting wire). A 5,000 square foot area is dedicated to a unique arrangement of layout tables, fixtures, and sewing machines which are capable of producing three 108 foot barricades per month. Assembly requires approximately 50 miles of stitching.**	**YES**	**YES**	**YES**	**26**
Air Vehicles, Fixed, Flight Subsystem **(95% USE)** **Air Vehicles, Rotary, Flight Subsystem** **(5% USE)**	**Heat Treating and Grit Blasting Facility** **(Grouped Together Since Heat Treating Requires Grit Blasting As An Associated Process):** **Heat Treating Facility** **Grit Blast Facility** **NAWCADLKE's heat treating facility changes the metallurgical characteristics of the steel processed so that it meets the end-item material requirements. The grit blast facility rapidly removes scale created during heat treating as well as prepares other surfaces for paint, coating, and finishing processes.**	**NO**	**NO**	**NO**	**21,163** **14,014** **7,149**

Common Support Functions	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Launch Valve Overhaul and Testing Facility:** **NAWCADLKE is the last source of repair and supplier of last resort for Catapult Low Loss Launch Valves (LLLV). These valves control the flow of steam to the aircraft carrier catapults. Significant cost savings, compared to purchase of new launch valves, is obtained through overhaul. Since NAWCADLKE is the ONLY source for overhaul and repair, continuous NAWCADLKE operations for availability of overhauled LLLV's has remained a NAWCADLKE and Fleet priority. A shortage in LLLV's could lead to reduced aircraft carrier readiness.**	**YES**	**YES**	**YES**	**2,981**

Common Support Function	Major Facility or Equipment Description	Unique To DOD	Unique To Federal Gov't	Unique To U.S.	Replacement Cost ($K)
Air Vehicles, Fixed, Flight Subsystem **NOT SHARED**	**Facility For Qualification And Aircraft Carrier Suitability Testing Of Hydraulic Pumps and Valves:** **NAWCADLKE is the ONLY test facility in the country for supplier qualification of aircraft carrier ALRE valves and pumps. Some of these products are mission critical. In addition, they often handle large hydraulic pressures. Qualification testing is used to both maintain a capable supplier base and reduce the risk of flaws in the end items which could result in the loss of Navy personnel and property.**	**YES**	**YES**	**YES**	**1,272**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacment Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) **Air Vehicles, Rotary, Flight Subsystem (5% USE)**	**Metal Machining and Forming Facility:** **NAWCADLKE possesses a fully equiped machining facility capable of manufacturing a wide range of piece-parts, assemblies, sub-system, and fully operational equipment. Dedicated engineering support and skilled artisans work with a combination of manual and computer controlled equipment. Manually controlled machine tools provide the flexibility to rapidly custom craft single pieces while computer controlled systems allow for rapid production of small prototype lots and repetitive overhaul operations. While this facility has served primarily as the supplier of last resort and the last source of repair for Navy API unique and critical assemblies, it has demonstrated the adaptability to meet the production needs of the Fleet, Marines forces, and other Services.**	**NO**	**NO**	**NO**	**99,816**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Electronics Repair And Prototype Facility: As part of the repair, overhaul, and prototype manufacture of launch and recovery systems and ground support equipment, NAWCADLKE maintains the capability to produce developmental prototypes and repair the wiring and electronics which are used in conjunction with the electro-mechanical systems which are repaired, overhauled, and manufactured.**	**NO**	**NO**	**NO**	**603**
Air Vehicles, Fixed, Flight Subsystem NOT SHARED	**Automated Machining Cell: This is an automated, multi-station machining cell which is designed to produce the terminal ends which are swaged on Cross Deck Pendants. Designed to require limited human intervention, a robot transfers work pieces between the machine tools. The final product is "rough-finished" terminal ends, which, after heat treating, can be machined to the precise tolerances required for final terminals.**	**YES**	**YES**	**YES**	**1,383**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Five Axis Horizontal Milling and Boring Machine (CNC Controlled): This is a sophisticated computer controlled milling and boring machine used on medium and large parts. This machine provides the flexibility needed to rapidly change production plans in response to fleet emergency needs. It is used for a large number of NAWCADLKE's diverse products and Fleet requirements.**	**NO**	**NO**	**NO**	**1,182**
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicle, Rotary, Flight Subsystem (5% USE)	**CNC Turning Center (#311): This machine is used for pitch shafts and pitch roll hubs on carrier optical landing systems. In addition, it is used for initial manufacture and remanufacture of launch valves, catapults and arresting gear and SH-60 transmission hoists.**	**NO**	**NO**	**NO**	**581**

Common Support Function	Major Facility or Equipment Description	Unique To DOD	Unique To Federal Gov't	Unique To U.S.	Replacement Cost ($K)
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**CNC Horizontal Milling Machine (#123):** **This is a computer controlled milling machine used primarily in the manufacture of launch valves, jet blast deflectors, and other ALRE and support equipment products. It provides the close tolerances required of precision machining.**	**NO**	**NO**	**NO**	**457**
Air Vehicles, Fixed, Flight Subsystem (95% USE) Air Vehicles, Rotary, Flight Subsystem (5% USE)	**Vertical Milling Machine (Kingsbury) (#122)** **This is a computer controlled milling machine used in the manufacture of ALRE products (with some support equipment use as well). It is used to provide close tolerances, precision machining.**	**NO**	**NO**	**NO**	**406**
Air Vehicles, Fixed, Flight Subsystem NOT SHARED	**Horizontal Milling and Boring Machine (#121):** **This milling and boring machine is used primarily in launch valve main body and steam head production and refurbishment.**	**NO**	**NO**	**NO**	**725**

Air Vehicles, Fixed, Flight Subsystem NOT SHARED	**Jig Milling and Boring Machine (#207):** This machine is an integral milling machine in the overhaul of launch valves.	NO	NO	NO	1,779

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
Air Vehicles, Fixed, Flight Subsystem NOT SHARED	**Travelling Column Milling and Boring Machine (#271): This machining center equipment is used in the initial manufacture of the large (2ft diameter x 9ft long) Launch Power Cylinders, the Low Loss Launch Valve (LLLV) Bodies, the LLLV Steam Heads, the A/C Jack Tester Stands and the Jet Blast Deflector (JBD) Panel weldments. All of these items are very critical to fleet readiness. The JBD panels and the overhauled LLLV parts are produced solely at NAWCADLKE.**	**NO**	**NO**	**NO**	**1,202**
Air Vehicles, Fixed, Flight Subsystem NOT SHARED	**650 Ton Punch Press (#513): This unusually large press is critical to Jet Blast Deflector (JBD) panels manufactured at NAWCADLKE. It is used to realign the JBD panels after the heat deformation that results during the welding of the various components which make up the panel assembly.**	**NO**	**NO**	**NO**	**574**
Air Vehicles, Fixed, Flight Subsystem NOT SHARED	**Planar Milling Machine (#108): This unusually large milling machine is critical in the manufacture of large flat precision products like the the Jet Blast Deflector panels produced <u>solely</u> at NAWCADLKE. It is also used in the production of 12ft long tracks for sheave dampers and arresting gear base components.**	**NO**	**NO**	**NO**	**2,570**

3.5 Expansion Potential

3.5.1 Laboratory Facilities: Use facilities records as of fourth-quarter FY93 in answering the following (in sq ft) for each CSF: (BRAC Criteria II)

Common Support Function	Facility or Equipment Description	Type of Space*	Space Capacity (KSF)		
			Current	Used	Excess
Air Vehicles, Fixed, Flight Subsystem	**EMALS LAB**	**LAB**	**3**	**3**	**0**
	CATAPULTS	**LAB**	**1.5**	**1.5**	**0**

Common Support Function	Facility or Equipment Description	Type of Space*	Space Capacity (KSF) Current	Used	Excess
Air Vehicles, Fixed, Flight Subsystem	INFORMATION TECH	LAB	1	1	0
	NDI/ ELECTRONICS	LAB	2	2	0
Air Vehicles, Rotary, Flight Subsystem	FIBEROPTICS	LAB	1	1	0
	PRODUCT DEVL	LAB	2	2	0
	COMPONENTS ANALYSIS	LAB	2.3	2.3	0
	INDUSTRIAL COMPLEX	TECHNICAL	240	240	0
	MATERIAL LABORATORY	TECHNICAL	2.2	2.2	0
	SPOTTING ROOM	TECHNICAL	3.3	3.3	0
	ATE SOFTWARE FACILITY	TECHNICAL	7.5	5	2.5
	INTERGATED SHIP INFORMATION SYSTEM	LAB	4	4	0
	VISUAL LANDING AID LAB	LAB	8	8	0
	PHOTOMETRIC	LAB	6	6	0
	PHOTOMETRIC	TECHNICAL	3	2.5	.5

* Administrative, Technical, Storage, Utility

3.5.1 Laboratory Facilities:

Common Support Function: **Air Vehicles, Fixed, Flight Subsystems; Air Vehicles, Rotary, Flight Subsystems.**

Major Facility or Equipment: 2200 sq ft Material Laboratory outfitted with sample preparation, testing, analysis and support equipment.

Type of Space: Technical
Space Capacity: Current: 2200 sq ft
Used: 2200 sq ft
Excess: None

Equipment Description	Replacement Costs
Sample Preparation - To reduce components into the proper size and condition to be further studied and analyzed.	$100K
Chemical Analysis - To obtain elemental chemical analysis of specimens.	$250K
Electron and Optical Microscopes - To view specimens under very high magnification. Used for examination of component fracture surfaces.	$175K
Physical Testing - To determine or alter physical attributes of specimens, such as hardness, impact resistance, metallurgical structure and wear properties, for example.	$500K
Image Analysis - To perform computer analysis of of attributes of images generated by microscopes.	$ 50K
Laboratory Furniture - Various benches, work surfaces, fume hoods, and other support items	$100K
TOTAL	$1,175K

3.5.1.1 Describe the capacity of your activity to absorb additional similar workyears categorized in the same common support function with minor facility modification. If major modification is required, describe to what extent the facilities would have to be modified. (Use FY97 workyears as your requirement) (BRAC Criteria III)

a. Manufacturing Technology:

For BRAC 95 Data Call Number 4 we estimated our workforce will be 191 Workyears. Using our current proportions of shop/office staffing, this workforce should consist of 147 workers in direct shop labor operations and 44 workers in various other managerial administrative and support functions. Current A-11 Budgeting calls for a 65% productive ratio in FY97 and this was used for Data Call 4 computations.

Considering the nature of our operations (i.e., equipment maintenance, facility functions, etc.) the highest productive ratio achievable with type of work required by our current work orders is estimated to be 70%. If we received a higher proportion of metal fabrication and welding work, which are areas currently operating at less than full production capacity, our productive ratio could approach 80% with no additional personnel . NAWCADLKE has the capability to absorb additional Workyears in aircraft launch and recovery equipment and flight critical subsystem manufacturing, support equipment prototyping and limited production, and the capability to absorb all of the repair, overhaul, and modernization work for support equipment and aircraft launch and recovery equipment currently done at the Navy Depots (NADEPs).

Assuming additional Workyears which fall within the NAWCADLKE manufacturing areas which are operating at less than full capacity, we could absorb 29 similar Workyears with no additional personnel, equipment, or facility changes. This is based on a single shift operation and a productive ratio increase from 65% to 80% due to the improvement in work order matching to NAWCADLKE production capacity.

Assuming a single shift operation, no additional personnel, equipment, or facility changes, and assuming a 15% overtime factor, (i.e., each shop employee would work an average of 46 hours per week (some employees would work no overtime, others work more than 15%) for an increase of 22 available Workyears), our additional workload capability is 51 Workyears. This value of 51 Workyears is based on the 29 Workyear improvement from increased capacity utilization plus the 22 Workyear overtime factor.

Considering additional personnel associated with additional workyears and assuming single shift operations, the NAWCADLKE can absorb up to 150 additional Workyears of effort. At the peak of the military buildup in the 1980's NAWCADLKE manufacturing staffing was in excess of 320 people. Should approximately 100 additional workers be moved to the NAWCADLKE to support additional Workyear requirements, minor facility modification would be necessary. The minor modifications would include minor changes to existing buildings for additional workspace and for storage of assets awaiting repair or shipping. Previously available shop space has been converted for RDT&E laboratory facilities (i.e. the Electro-Magnetic Aircraft Launch proof of principle and demonstration hardware).

NAWCADLKE has the ability to operate in a three shift, 24-hour manufacturing operation. This capability dramatically increases our ability to absorb additional Workyears. When moving to a three shift operation, we estimated that we would need to triple our shop workforce while needing to only double the managerial and support staff requirement. Using the estimated 147/44 ratio for FY97, and assuming that 338 trained and capable workers are added to our staff, with an 80% productive ratio, we could absorb 336 Workyears.

Further, if we were given additional personnel, equipment, and workload, using a three shift operation we could absorb 669 Workyears. From the BRAC95 Data Call 4 results, given additional equipment, personnel, and workload, we could increase production in our primary commodity hours to 1,388,457 DLMH. Using 1,750 hours per year as the actual productive time (this deducts sick leave, annual leave, etc.), this would be a total of 793 Workyears. Deducting the assumed baseline FY97 Workload of 124 Workyears, we can increase by 669 Workyears.

The NAWCADLKE Manufacturing Technology Department has the ability to contract additional work. We have been contracting out selected manufacturing work for many years. Through the years, we have developed relationships with a cadre of local suppliers (i.e., machine shops, plating contractors, etc) through the effective use of rapid farmout contracting techniques. We have skilled personnel who are currently performing pre-award surveys, contractor audits, producibility analyses and data package development/validation. In addition, our staff includes Contracting Officer Technical Representatives.

b. Materials Laboratory:

1.5 to 2.0 workyears with the existing facility.

For additional workyears, equipment and the expansion of the facility is required.

c. Spotting Room:

The existing facility can support up to 6 additional workyears of similar work.

d. Photometric Facility:

The facility is currently operating at less than full capacity with its current requirements which are based only in Navy programs. The Federal Aviation Administration funds laboratory measurements and associated field measurements with portable equipment. The existing facility could support an additional 4 workyears with only a single shift operation. Assuming either overtime and/or a second shift, the existing facility could assume an additional 6 workyears.

Minor facility modification would expand capacity up to an additional 15 workyears of photometric and radiometric measurements for electro-optic systems and devices.

e. ATE Software Facility:

NAWCADLKE has the capacity to assume similar workyears in various engineering and technical areas. In the engineering area, Automatic Test Equipment support such as development of application Test Program Sets (TPS) for various Units Under Test and the establishment of a Test Integration Facility (TIF) can be accomplished at Lakehurst with minor facility modification.

As the Cognizant Field Activity for Common ATE and CASS system software, NAWCADLKE, maintains an existing facility with the same hardware and software assets required for TPS development. These assets include one Hybrid CASS station, three off-line support mid range computer systems, multiple workstations and the software needed to station and system operations and control. For TPS development, additional CASS stations would be required but the support computer systems have enough capacity to handle the added work efforts. Should more CASS hardware be acquired for the TPS efforts, NAWCADLKE can easily establish itself as a TIF and allow multiple TPS developers to share the CASS resources. This is attainable due to the similarities in managing the ATE Software Center at NAWCADLKE and a TIF operation. There is also the fact that with current computer systems requiring less space and environmental controls, that of the current 7,500 (approximate) square feet at the ATE Center for the equipment at hand, there is approximately 2,500 feet available to house 7 to 8 additional CASS stations. With these modifications, up to 60 workyears of similar work can be accomplished at NAWCADLKE.

f. Product Evaluation and Verification:

The Product Evaluation and Verification Function can absorb additional workload in three areas:

1) Jet Car Track Site: 6 workyears
2) Jet Blast Deflector Site: 1 workyear
3) Metrology and Calibration Laboratory: 2 workyears

This estimate is based on the productive ratio for the department and utilization of selected sites and laboratories.

3.5.1.2 If there is capacity to absorb additional workyears, how many additional workyears can be supported? (BRAC Criteria III)

Given No Additional Personnel: 51 Workyears*
Given Additional Personnel (336 Workers): 336 Workyears
Given Additional Personnel and Equipment: 669 Workyears**
(Calculations explained in 3.5.1.1.a)

***Part of this additional workload capacity is based on the assumption that the additional workload received corresponds to work areas which are currently operating at less than full capacity. In addition, use of a moderate amount of overtime was assumed.**

****A two year ramp up to this work level is assumed based on a two year lead time to procure and install the additional equipment, bring on additional staff, increase raw material stocks, etc.**

The Landing Guidance Development Facility planned FY97 workload is 1.75 workyears which is 35% of its estimated total capacity of 5 workyears. Consequently, an additional 3.25 workyears could be supported by this facility.

The Product Evaluation and Verification Department can absorb additional workload in three areas. We can absorb six workyears at the Jet Car Track Site, one workyear at the Jet Blast Deflector Site, and two workyears in the Metrology and Calibration Laboratory.

3.5.1.3 For 3.5.1.1 and 3.5.1.2 (above) describe the impact of military construction programs or other alteration projects programmed in the FY95 PBS. (BRAC Criteria II)

None

3.5.2 Land Use: Provide number of buildable acres for additional laboratory/administrative support construction at your installation. (BRAC Criteria II).

638 areas.

3.5.3 Utilities: Provide an estimate of your installation's capability to expand or procure additional utility services (electric, gas, water). Estimates should be provided in appropriate units -- e.g. KWH of electricity. (BRAC Criteria II)

Electrical Supply: Present peak demand is 7,350 KiloWatts (KW) with a normal steady state of 6,200 KW. Electrical feeds on the base can support up to 26,500 KW. Jersey Central Power and Light (JCP&L) can supply up to 30,000 KW without modifying their transmission lines.

Natural Gas: Present peak demand is 9,921 CFH with a steady state load of 3,962 CFH. New Jersey Natural Gas can supply up to 2,500,000 CFH.

Sewage: Present peak demand is 860,000 GPD with a normal steady state load is 191,000 GPD. On base pumping capacity is 1,152,000 GPD. The Ocean County Utilities Authority can handle up the 1,500,000 without modification of their current system.

Potable Water: Present peak demand is 495,700 GPD with a steady state load of 343,536. Water is supplied by wells and the current pumping capacity for the base is 864,000 GPD. Usage beyond that would require additional wells.

Steam: Present peak demand is 146,500 lbm/Hr at 125 psi. The normal steady state load is 64,000 lbm/Hr. On base capacity is 186,000 lbm/Hr. Additional steam demand beyond that would require expanding the boiler plant and installing new boilers. However, the base is in the process of converting from a central steam heating plant to individual heating boilers (No. 2 fuel oil, propane, and natural gas).

SECTION IV: APPENDICES:

A. Macro Process/Schedule
B. List of Activities
C. Common Support Functions

APPENDIX A

APPENDIX B

LIST OF ACTIVITIES

AIR FORCE

1. Armstrong Lab, Brooks AFB
2. Armstrong Lab, Tyndall AFB
3. Armstrong Lab, Wright-Patterson AFB
4. Armstrong Lab, Williams AFB
5. Human Systems Center, Brooks AFB
6. Wright Lab, Wright-Patterson AFB
7. Wright Lab, Eglin AFB
8. Aeronautical Systems Center, Wright-Patterson AFB
9. Aeronautical Systems Center, Eglin AFB
10. Oklahoma City Air Logistics Center, Tinker AFB (In-service engineering)
11. Ogden Air Logistics Center, Hill AFB (In-service engineering)
12. San Antonio Air Logistics Center, Kelly AFB (In-service engineering)
13. Sacramento Air Logistics Center, McClellan AFB (In-service engineering)
14. Warner-Robins Air Logistics Center, Robins AFB (In-service engineering)
15. Phillips Lab, Kirtland AFB
16. Phillips Lab, Hanscom AFB
17. Phillips Lab, Edwards AFB
18. Space & Missile Center, Los Angeles AFB
19. Space & Missile Center, Norton AFB
20. Sacramento Air Logistics Center, Peterson AFB
21. Rome Lab, Griffiss AFB
22. Rome Lab, Hanscom AFB
23. Electronic Systems Center, Hanscom AFB
24. Sacramento Air Logistics Center, Peterson AFB (In-service engineering)

ARMY

1. Army Research Lab (ARL), Adelphi, MD
2. ARL, Aberdeen Proving Grounds (APG), MD
3. ARL, White Sands Missile Range, NM
4. ARL, NASA Langley, VA
5. ARL, NASA Lewis, OH
6. Natick Research, Development and Engineering Center, Natick, MA
7. Aviation Research, Development and Engineering Center, St Louis, MO
8. Aviation Troop Command, Aeroflight Dynamics Directorate, Moffitt Field, CA
9. Aviation Troop Command, Aviation Applied Technology Directorate, Fort Eustis, VA
10. Edgewood Research, Development and Engineering Center, Aberdeen Proving Ground, MD
11. Communications Electronics Command Research, Development and Engineering Center, Ft Monmouth, NJ
12. Communication Electronics Command Research, Development and Engineering Center - Night Vision EO Directorate, Ft Belvoir, VA
13. Missile Research, Development and Engineering Center, Redstone Arsenal, AL
14. Armaments Research, Development and Engineering Center, Picatinny Arsenal, NJ

15. Armaments Research, Development and Engineering Center, Benet Labs, Watervliet Arsenal, NY
16. Tank-Automotive Command Research, Development and Engineering Center, Warren, MI
17. USA Research Institute of Infectious Diseases, Ft Detrick, MD
18. Walter Reed Army Institute of Research, Washington D.C.
19. USA Institute of Surgical Research, Ft Sam Houston, TX
20. USA Aeromedical Research Lab, Ft Rucker, AL
21. Medical Research Institute of Chemical Defense Aberdeen Proving Grounds, MD
22. USA Research Institute of Environmental Medicine, Natick, MA
23. Construction Engineering Research Laboratory, Champaign, IL
24. Cold Regions Research and Engineering Lab, Hanover, NH
25. Topographic Engineering Center, Alexandria, VA
26. Waterways Experiment Station, Vicksburg, MS
27. USA Research Institute for Behavioral & Social Sciences, Alexandria, VA
28. Simulation, Training and Instrumentation Command (STRICOM), Orlando, FL

NAVY

1. Naval Air Warfare Center, Weapons Division, China Lake
2. Naval Air Warfare Center, Weapons Division, Point Mugu
3. Naval Air Warfare Center, Aircraft Division, Patuxent River
4. Naval Air Warfare Center, Aircraft Division, Indianapolis
5. Naval Air Warfare Center, Aircraft Division, Lakehurst
6. Naval Research Lab, Washington D.C.
7. Naval Research Lab Detachment, Bay St Louis
8. Naval Surface Warfare Center, Carderock Division, Bethesda
9. Naval Surface Warfare Center, Carderock Detachment, Annapolis
10. Naval Surface Warfare Center, Crane Division
11. Naval Surface Warfare Center, Crane Detachment, Louisville
12. Naval Surface Warfare Center, Dahlgren Division
13. Naval Surface Warfare Center, Dahlgren Detachment, Panama City
14. Naval Surface Warfare Center, Indian Head Division
15. Naval Surface Warfare Center, Port Hueneme Division
16. Naval Command, Control, and Ocean Surveillance Center, RDT&E Division, San Diego
17. Naval Command, Control, and Ocean Surveillance Center, In-Service Engineering, West Coast Division, San Diego
18. Naval Command, Control, and Ocean Surveillance Center, In-Service Engineering Division, Charleston
19. Naval Aerospace Medical Research Center, Pensacola
20. Naval Biodynamics Lab, New Orleans
21. Naval Dental Research Lab, Great Lakes
22. Naval Health Research Center, San Diego
23. Naval Medical Research Institute, Bethesda
24. Naval Undersea Warfare Center, Keyport Division, WA
25. Naval Surface Warfare Center, Carderock, Philadelphia Detachment
26. Naval Undersea Warfare Center, Newport, RI
27. Naval Undersea Warfare Center (Newport), New London, CT
28. Naval Personnel Research and Development Center, San Diego, CA

DEPARTMENT OF DEFENSE

1. Armed Forces Radiobiology Research Institute (AFRRI), Bethesda, MD

APPENDIX C

COMMON SUPPORT FUNCTIONS (DEFINITIONS LISTED FOLLOWING PAGES)

Product Functions

1. Air Vehicles
   - Fixed
     - -- Structure
     - -- Propulsion
     - -- Avionics
     - -- Flight Subsystems
   - Rotary
     - -- Structure
     - -- Propulsion
     - -- Avionics
     - -- Flight Subsystems

2. Weapons
   - ICBMs/SLBMs
   - Conventional Missiles/Rockets
   - Cruise Missiles
   - Guided Projectiles
   - Bombs
   - Guns and Ammunition
   - Directed Energy
   - Chemical/Biological

3. Space Systems
   - Launch Vehicles
   - Satellites
   - Ground Control Systems

4. C4I Systems
   - Airborne C4I
   - Fixed Ground-Based C4I
   - Ground Mobile C4I

DEFINITIONS

COMMON SUPPORT FUNCTIONS

Product Functions

1. **Air Vehicles**. Air vehicles are broken out into common support functions for fixed wing and rotary wing. Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of air vehicles. Included are all air vehicles including their application as UAV's and targets.

- Structures. Includes but not limited to all air vehicles structure technology, engineering and production efforts. Include technology and engineering practices which advance structural design and analysis; advanced structural concepts and fabrication techniques; and structural integrity.

- Propulsion. Includes but not limited to all technology, engineering and production efforts associated with air vehicle propulsion such as turbine engine, rotorcraft power drive, and hypersonic propulsion components. Such components include compressors, inlets and nozzles, turbines, mechanical systems and control, gears, bearings, shafts, and clutches. In addition, include associated subsystems activities such as turborocket, turboramjet and rotorcraft transmissions; and supporting technical and engineering disciplines.

- Avionics. Includes but not limited to all technology, engineering and production efforts associated with the air platform's integrated avionics system. The avionics suite includes but is not limited to weapon delivery systems, electronic warfare, navigation, communications, radar, electro-optic sensors, signal/data processing and associated software system and support. Includes efforts associated with developing the integrated avionics system (i.e. optimizing functional partitioning, distribution and integration of avionics/related functions).

- Flight Subsystems. Includes but not limited to all technology, engineering and production efforts for air vehicle support systems such as landing gear; transparent crew enclosures; egress systems; mechanical equipment integrity; electrical component integrity; subsystem integration; and aircraft power, pressurization, and temperature control systems.

2. **Weapons.** Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of ICBMs/SLBMs, conventional missiles and rockets, cruise missiles, guided projectiles, bombs, guns and ammunition, directed energy and chemical/biological munitions. Include with each weapon as appropriate, all related technology, engineering and production activities such as fusing/safe and arm, missile propulsion, warheads and explosives, and guidance and control.

Pervasive Functions

1. Electronic Devices
2. Environmental Sciences
3. Infectious Diseases
4. Human Systems
5. Manpower and Personnel
6. Training Systems
7. Environmental Quality
8. Advanced Materials

3. **Space**. Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of launch vehicles, satellites and associated ground control systems (satellite control only; ground systems for telemetry of data included in C4I). Include under satellites, all technology, engineering and production activities associated with space communications and space-based surveillance (and associated sensors) and space-based C4I.

4. **C4I**. Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of airborne, fixed ground-based and mobile ground based C4I systems. Include all technology, engineering and production activities associated with communications networks, radios and links, distributed information systems, data fusion, decision aids, and associated computer architectures.

Pervasive Functions (6.1, 6.2, and 6.3)

1. **Electronic Devices.** Includes but not limited to all science and technology activities supporting development of semiconductor and superconductor materials for optoelectronic, acoustic and microwave devices. Include all associated electronic materials/device fabrication and processing.

2. **Environmental Sciences.** Includes but not limited to all science and technology activities to improve measurement, characterization and modeling of the earth atmosphere and space environment. Examples include global prediction systems, space effects, and celestial backgrounds/astronomical reference sources.

3. **Infectious Diseases.** Includes but not limited to all science and technology activities which preserve manpower and performance by the prevention and treatment of militarily important infectious diseases that occur naturally worldwide.

4. **Human Systems.** Includes but not limited to all science and technology activities to enable, protect, sustain and enhance human effectiveness in DOD operations. The focus of this pervasive, multi-disciplinary area is the human and therefore impacts all DOD systems and operations. This area includes: (1) human performance definition, assessment, and aiding; (2) physiologic bioeffects of toxic hazards, ionizing and non-ionizing radiation, biodynamic (bio-mechanical) stress, and extreme environments; (3) military operational medicine; and (4) generic, human-centered design standards/methodologies for crew station subsystems, information management and display, and life support.

5. **Manpower and Personnel.** Includes but not limited to all science and technology activities which support four broad areas: (1) selection and classification of DOD personnel (including pilots); (2) identification of operational tasks performed and requirements for skills, knowledge, and aptitudes; (3) matching the right people with the jobs they are best suited for according to the needs of DOD, (4) and developing techniques for measuring and enhancing the productivity of the operational force.

6. **Training Systems.** Includes but not limited to all science and technology which support training of personnel, including training strategies, devices and simulators, and computer aided intelligent tutoring systems.

7. **Environmental Quality.** Includes but not limited to all science and technology activities which support the development of technologies to reduce the environmental costs of DOD operations while ensuring mission accomplishment is not jeopardized by adverse environmental impacts. Specifically, this area encompasses technologies to: (1) identify and cleanup sites contaminated with hazardous materials as a result of DOD operations (cleanup); (2) ensure DOD compliance with current and anticipated local, national, and international environmental laws and treaties (compliance); (3) minimize DOD use of hazardous materials and reduce DOD hazardous waste generation (pollution prevention); and (4) provide for protection of natural resources under DOD stewardship (conservation).

8. **Advanced Materials.** Includes but not limited to all science and technology activities related to structural, high temperature, electromagnetic protection, electronic, magnetic, optical,

and biomolecular materials. Note: excludes materials areas which were included in DDR&E decision of 18 Mar 94 related to the Army's Materials Research Facility at Aberdeen Proving Ground and the Navy's Materials Facility at Carderock.

DATA CALL 12 REVISION 2
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

RAYMOND A. DUDDERAR	R A Dudderar
NAME (Please type or print)	Signature
ACTING COMMANDER	8/15/94
Title	Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION LAKEHURST
Activity

Enclosure (4)

DATA CALL 12 REVISION 2
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)

WILLIAM E. NEWMAN
NAME (Please type or print)

W E Newman
Signature

COMMANDER
Title

8/18/94
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

WILLIAM C. BOWES
NAME (Please type or print)

Signature

COMMANDER
Title

19AUG94
Date

NAVAL AIR SYSTEMS COMMMAND
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 Earner
Signature

Title

8/26/94
Date

DEPARTMENT OF THE NAVY
NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION
PATUXENT RIVER, MARYLAND 20670-5304

5400
Ser AD07/1066

AUG 15 1994

From: Commander, Naval Air Warfare Center Aircraft Division, Patuxent River, MD 20670-5304
To: Commander, Naval Air Warfare Center, 1421 Jefferson Davis Highway, Arlington, VA 22243-6000

Subj: RELEASE OF BASE REALIGNMENT AND CLOSURE DATA CALL IN THE ABSENCE OF THE COMMANDER

1. During the period from 0900, 15 August 1994 until 1800, 17 August 1994, I will be on temporary additional duty.

2. Captain Raymond A. Dudderar, USN, will be Acting Commander. In my absence, he is authorized to release the completed Base Realignment and Closure Data Call, and provide the certification for the data call.

3. My point of contact at Division Headquarters is Mr. Stuart B. Simon, Code AD07. He can be reached at commercial (301) 826-1122 or DSN 326-1122.

Barton D. Strong
BARTON D. STRONG

Distribution:
CONAWCAD Indianapolis
CONAVAIRENGSTA Lakehurst
CONAWCAD Warminster
CONAWCAD Trenton
CONAWCTSD Orlando
COMNAWCAD Patuxent River
NAWCAD Patuxent River (CT00)
NAWCAD Indianapolis (Code 01)
NAVAIRENGSTA Lakehurst (Code 71)
NAWCAD Warminster (Code 01A1)
NAWCAD Trenton (Code 07B)
NAWCTSD Orlando (Code 503)
CONAS, Patuxent River

Data Call #12
Audit Changes
Lakehurst

FOR 9-13-94 REVISIONS UIC N68335

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

NEXT ECHELON LEVEL (if applicable)

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

Signature

ACTING COMMANDER
Title

9/19/94
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

20 Sep 94
Date

NAVAL AIR SYSTEMS COMMAND
Activity

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

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

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

Signature

Title

9/21/94
Date

CONTAINED W/ 9-13-94 REVISIONS

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

FOR 9-13-94 REVISIONS
UIC N68335

DATA CALL #12
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

CAPTAIN JOHN B. PATTERSON
NAME (Please type or print)

John B Patterson
Signature

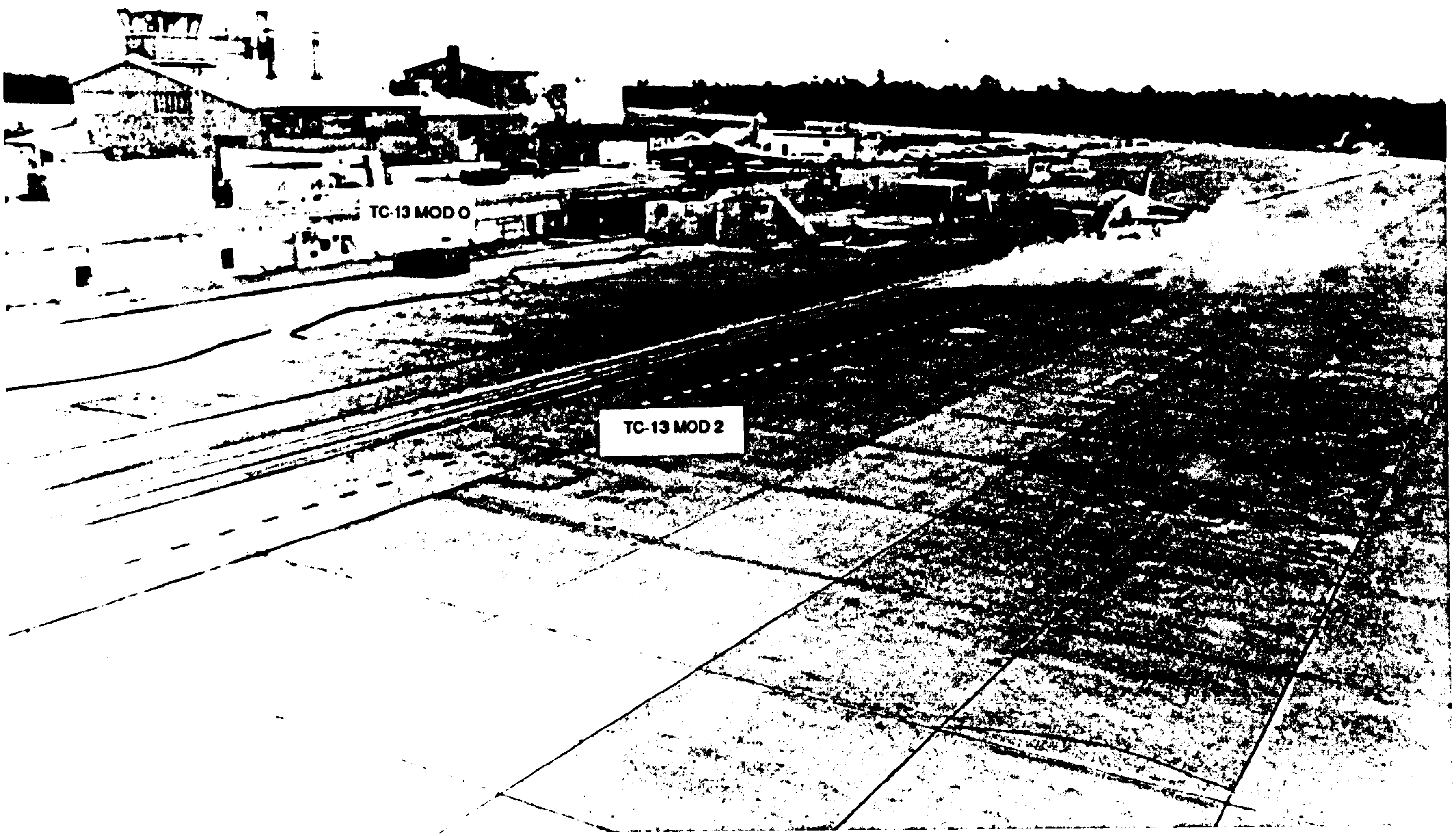
ACTING COMMANDER
Title

SEP 16 1994
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION LAKEHURST, NJ

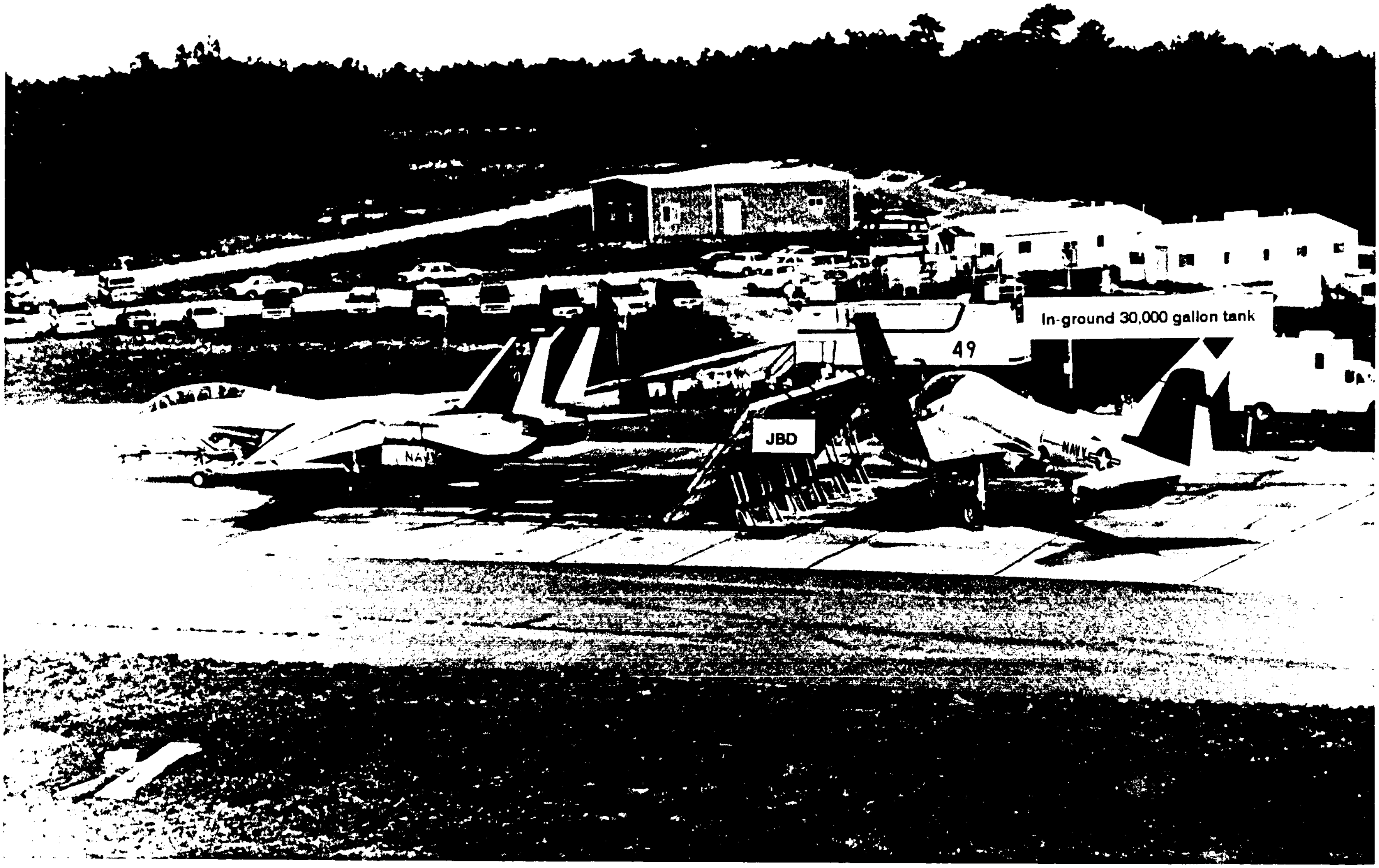
STEAM CATAPULT COMPLEX

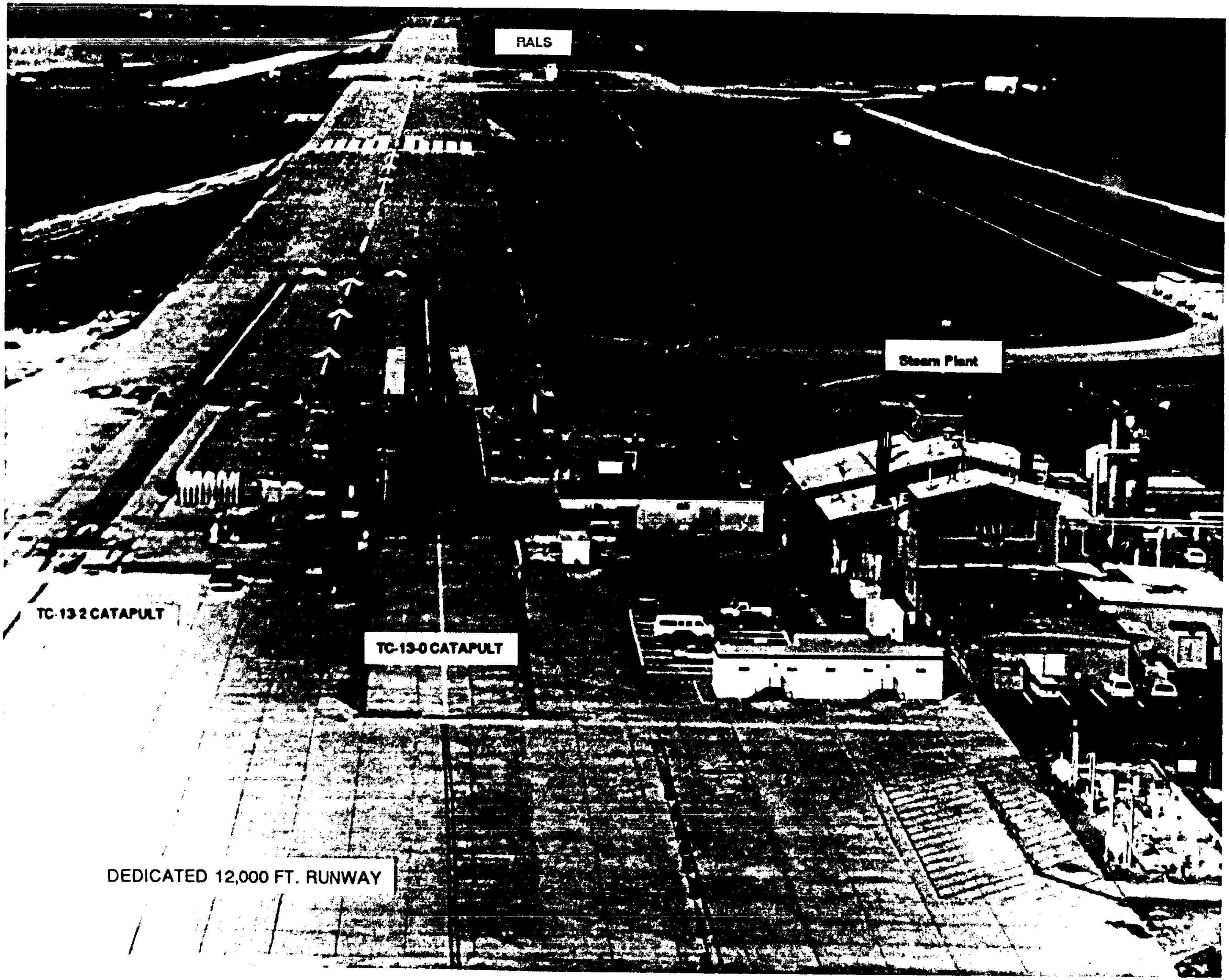
High Pressure Steam Plant

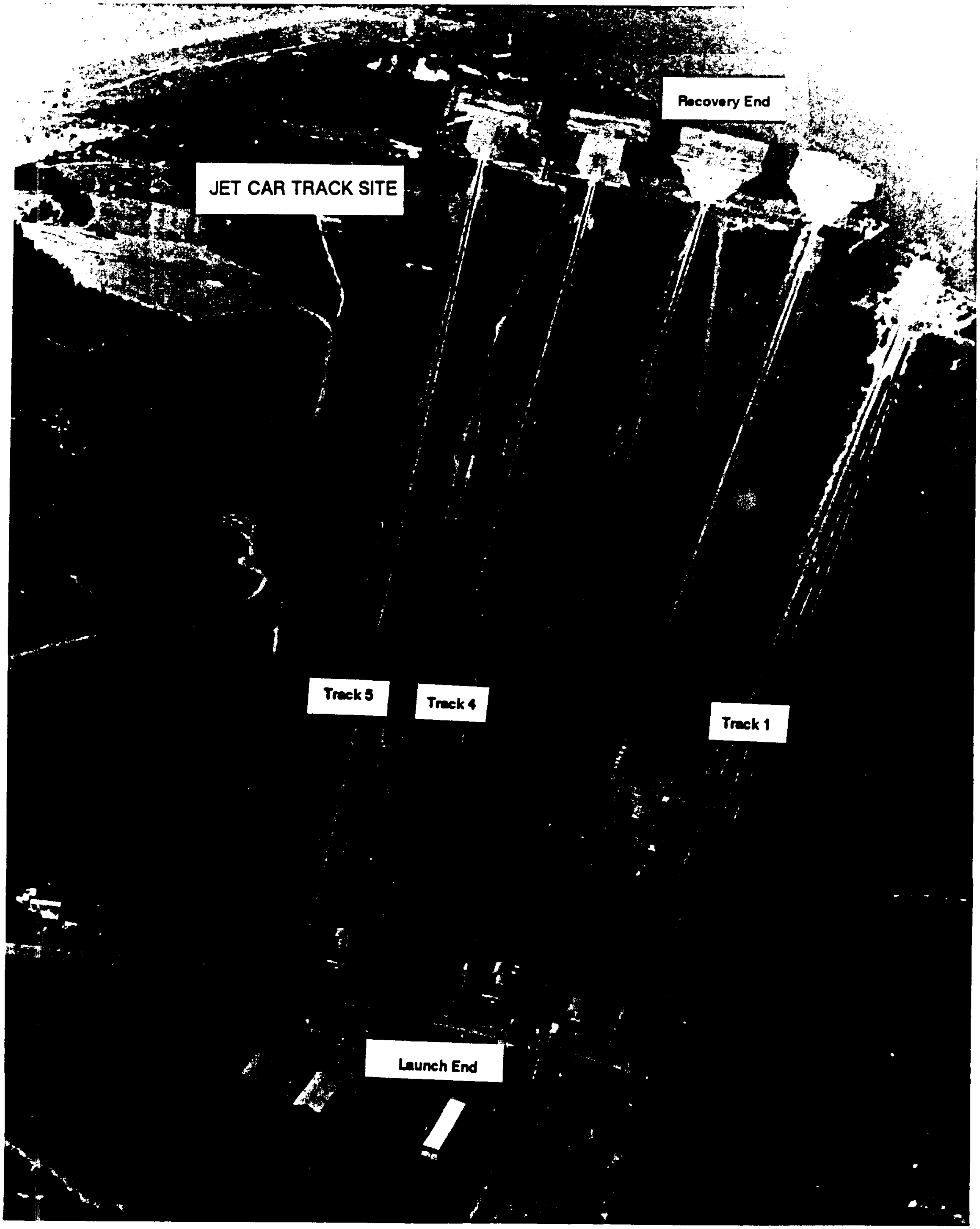


RUNWAY ARRESTED LANDING SITE

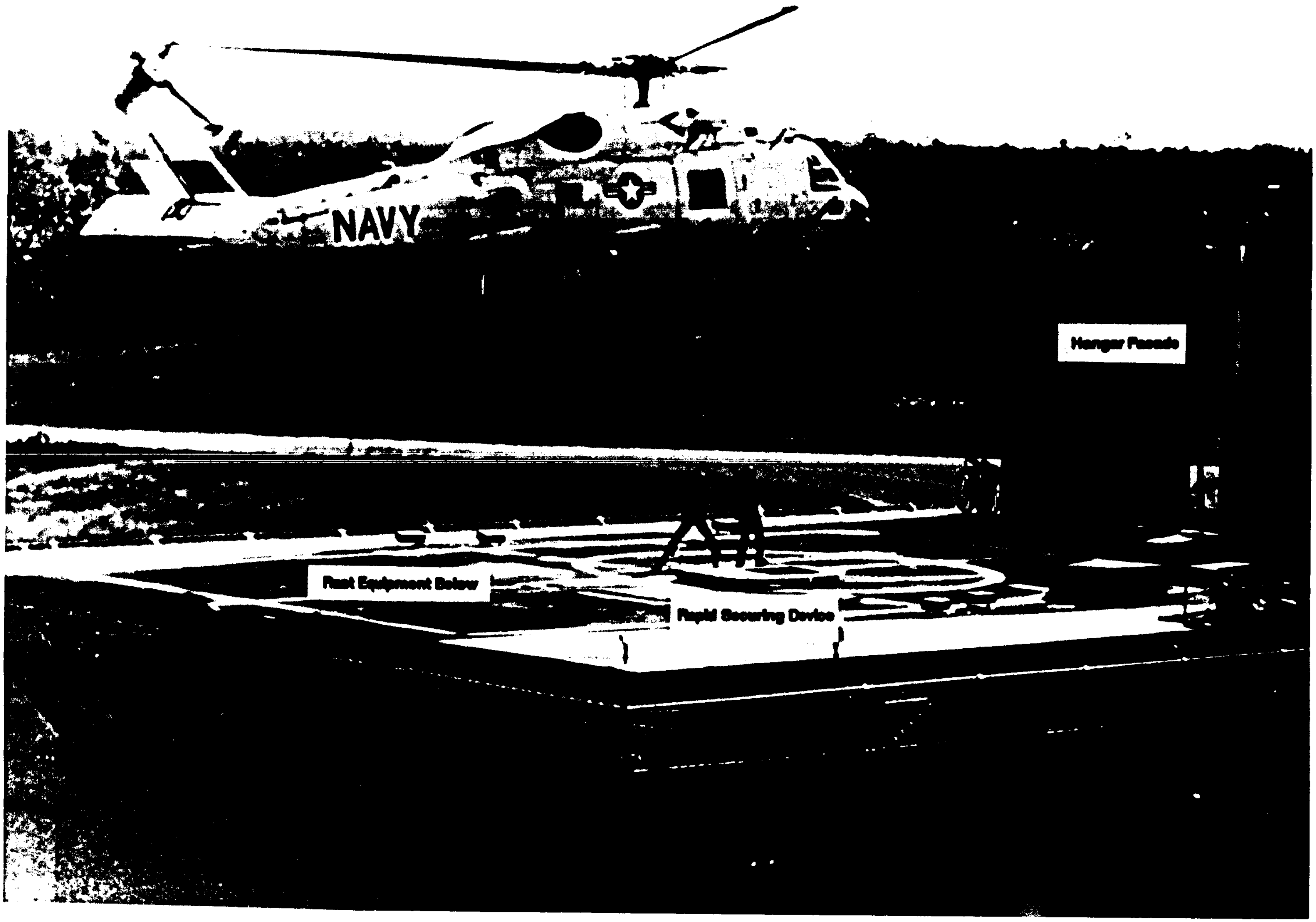
JET BLAST DEFLECTOR SITE




RALS
Steam Plant
TC-13-2 CATAPULT
TC-13-0 CATAPULT
DEDICATED 12,000 FT. RUNWAY

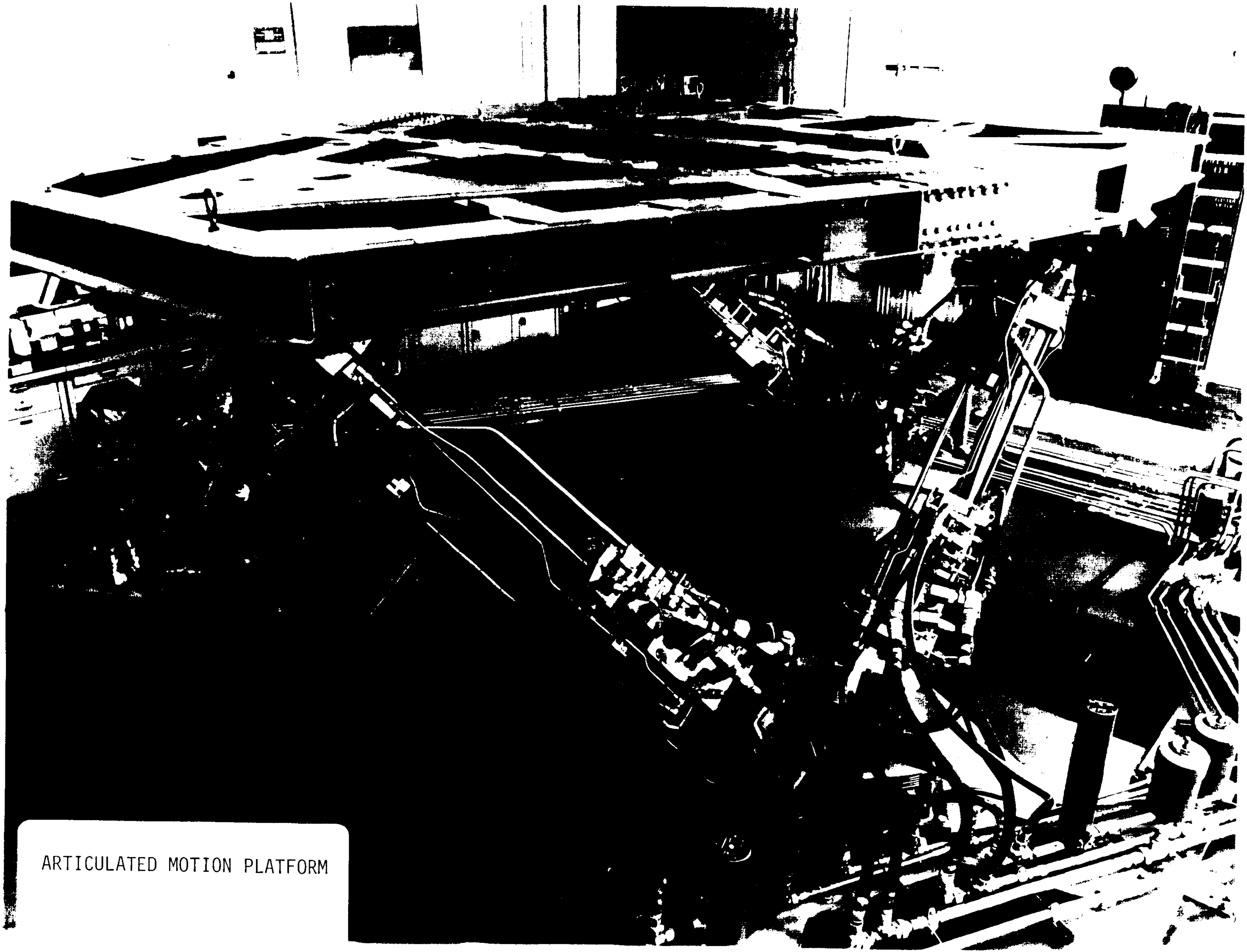

Recovery End
JET CAR TRACK SITE
Track 5
Track 4
Track 1
Launch End

ELEVATED FIXED PLATFORM

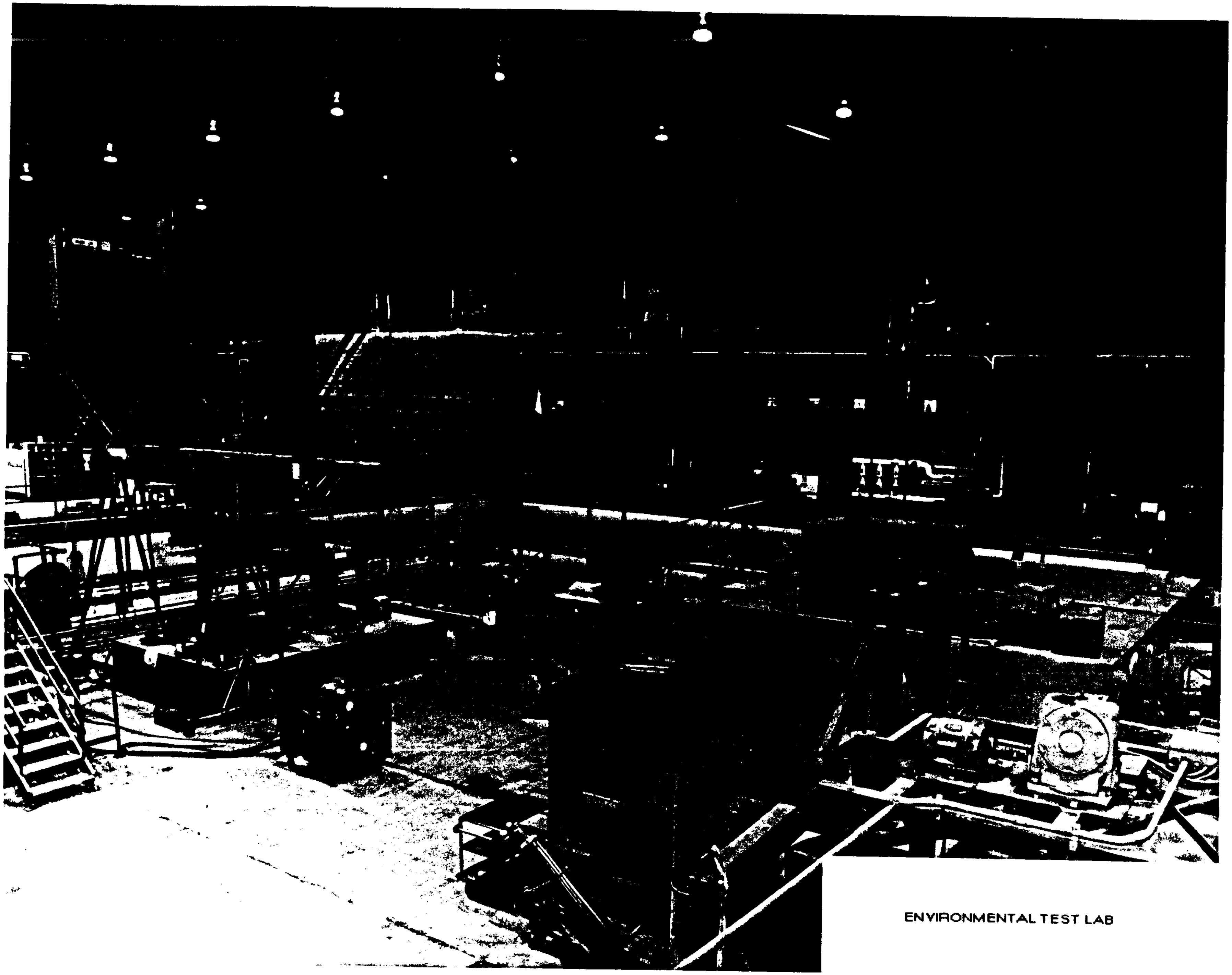


UNIVERSAL LIGHTING PAD

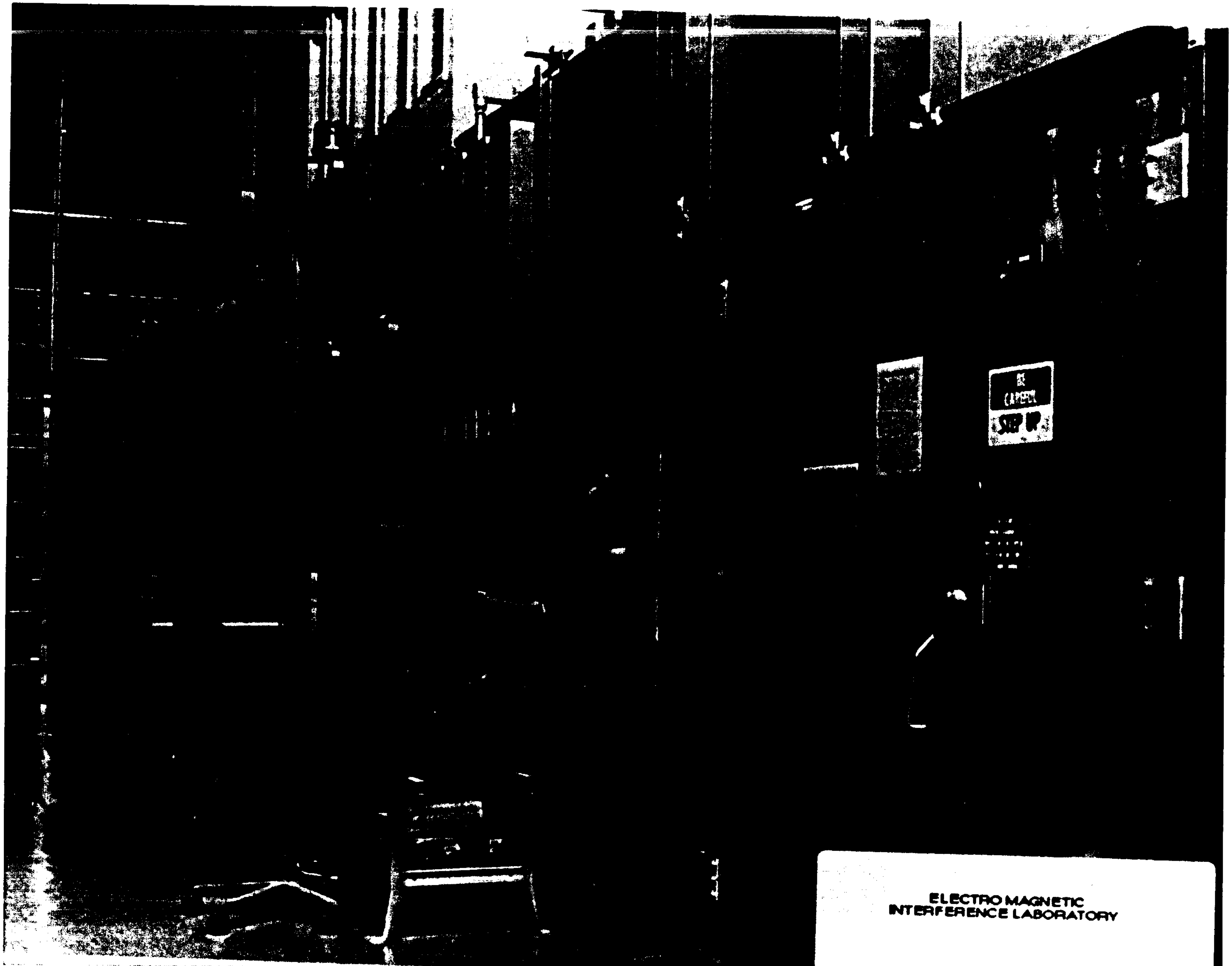
SUPPORT EQUIPMENT
MOBILITY SITE



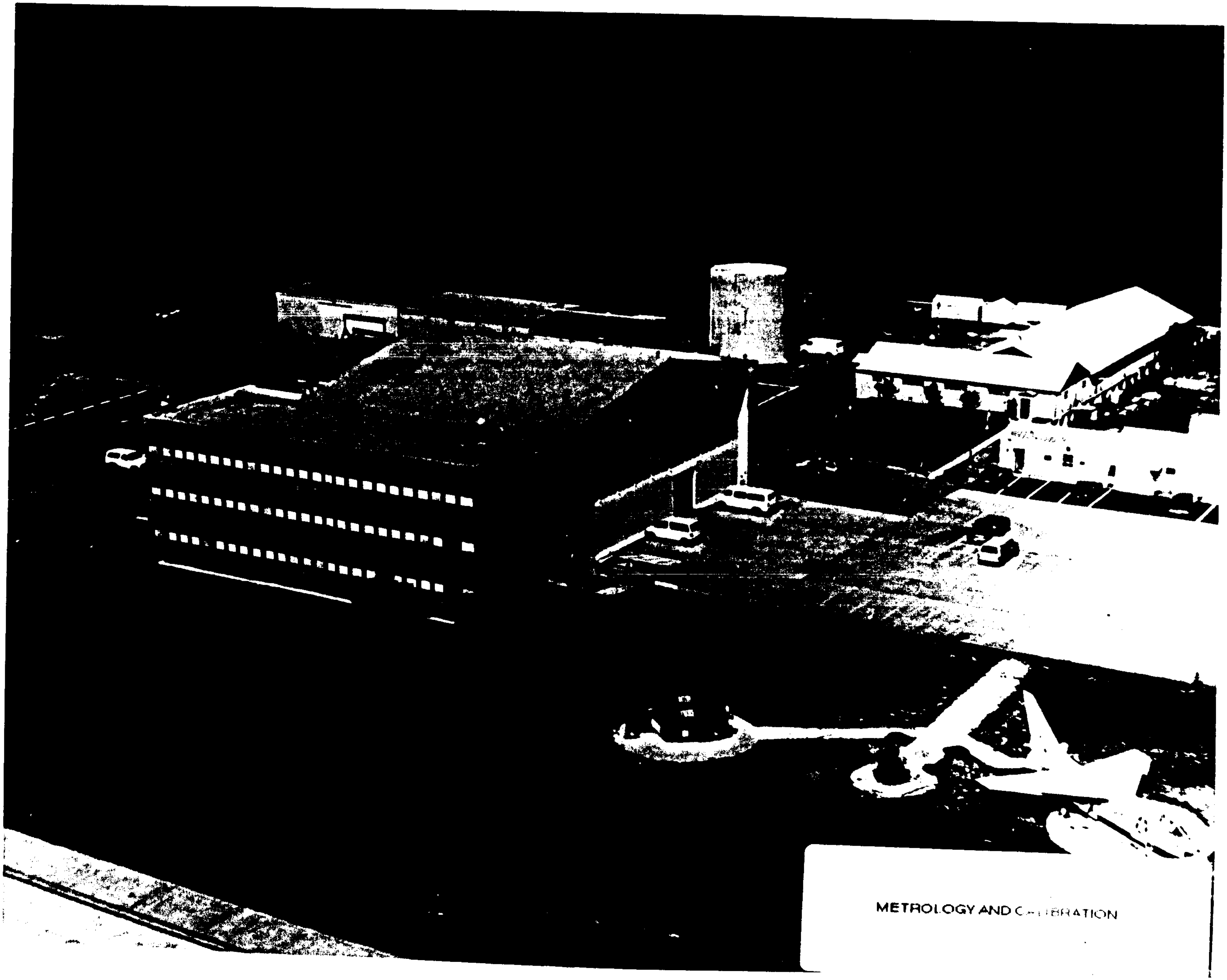
ARTICULATED MOTION PLATFORM



ENVIRONMENTAL TEST LAB

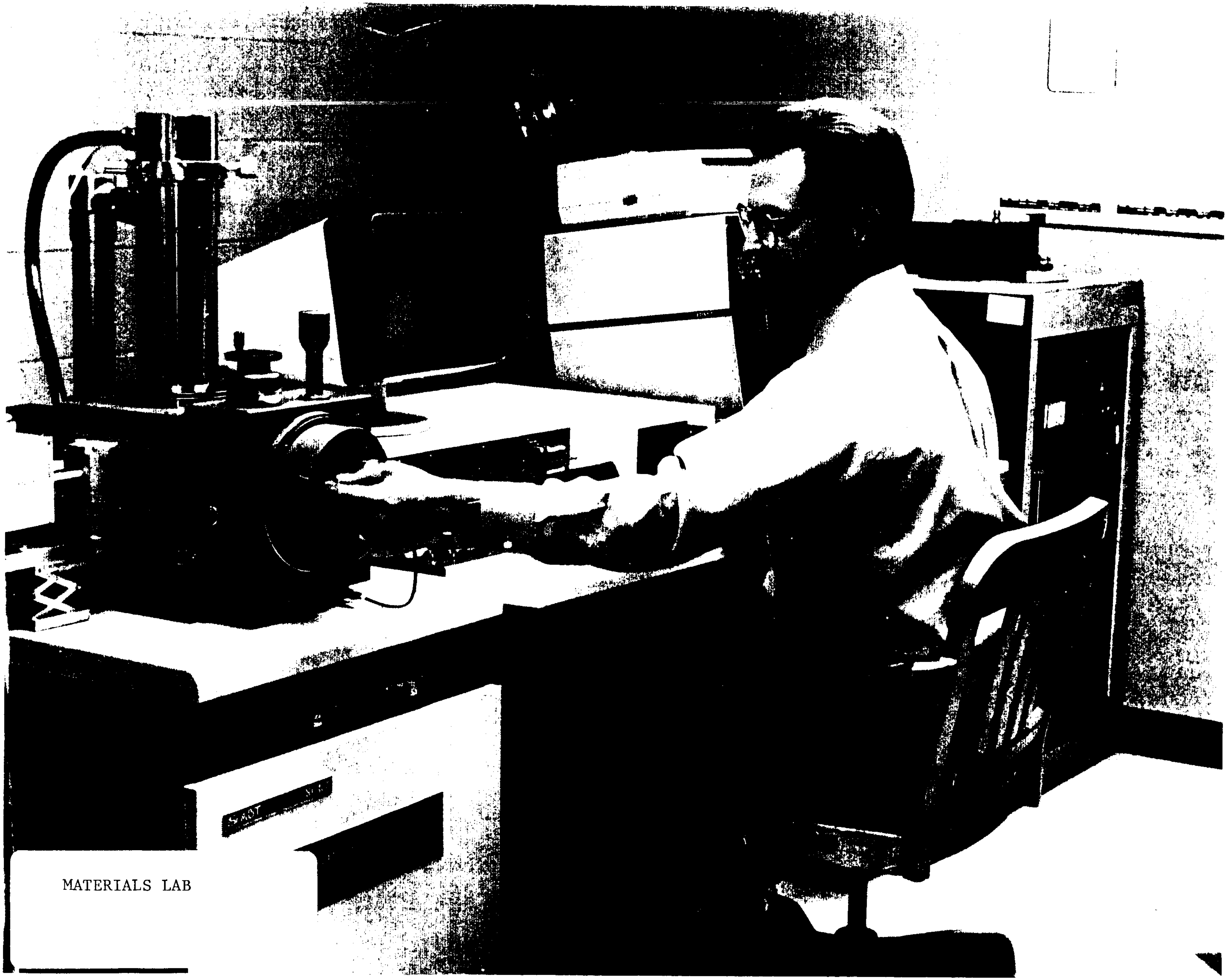


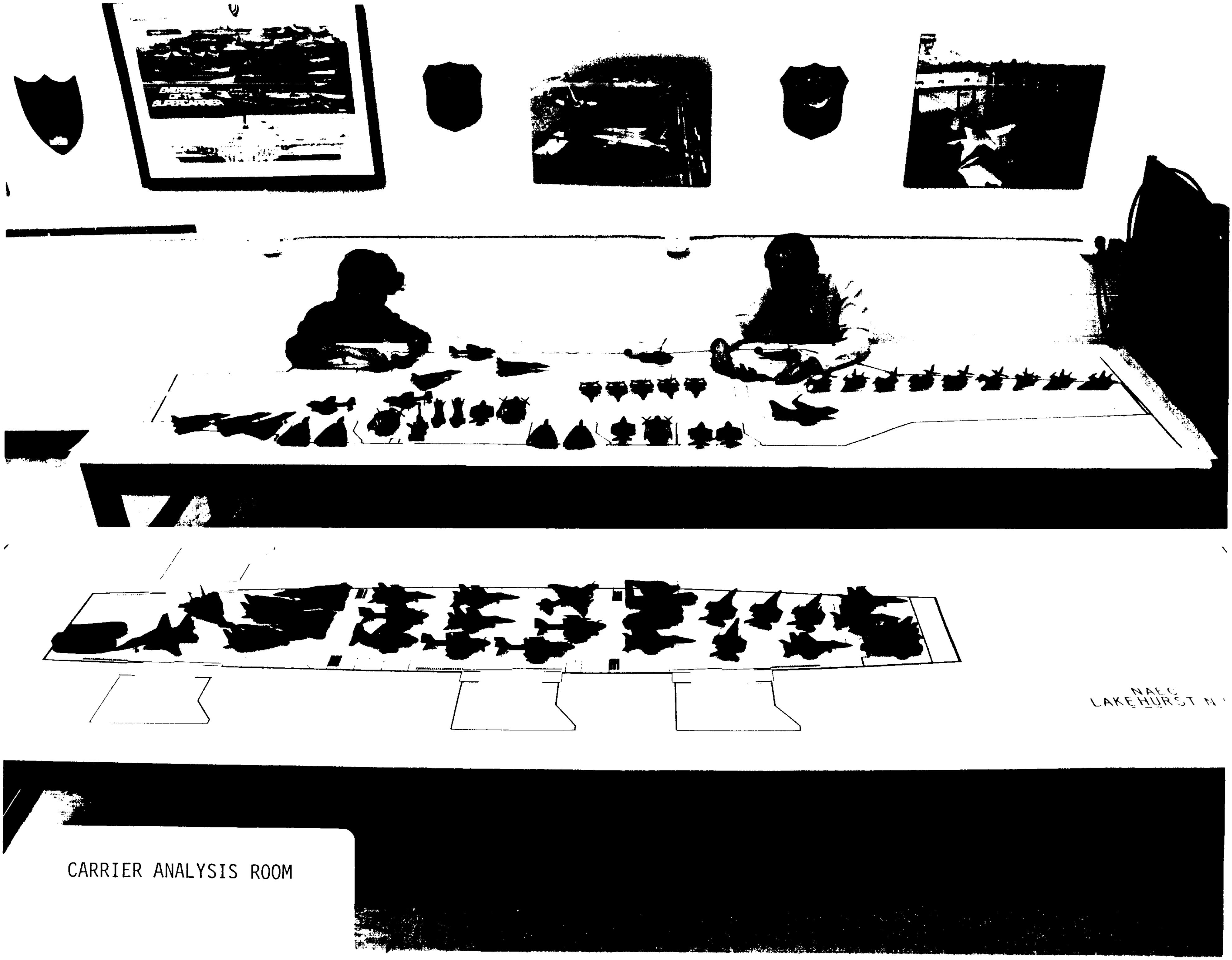
ELECTRO MAGNETIC
INTERFERENCE LABORATORY



METROLOGY AND CALIBRATION

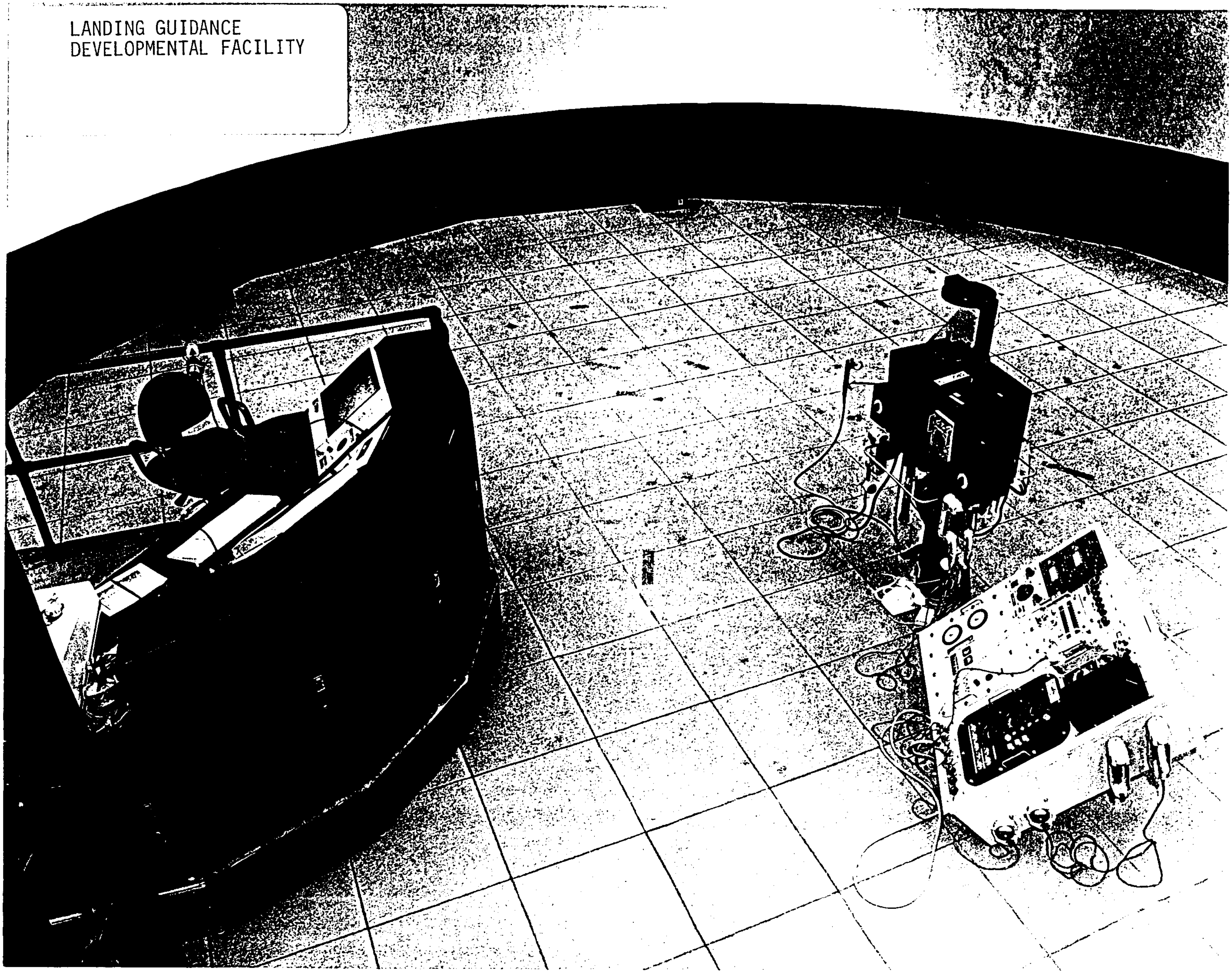
DATAHANDLING AND SIGNAL
PROCESSING EQUIPMENT

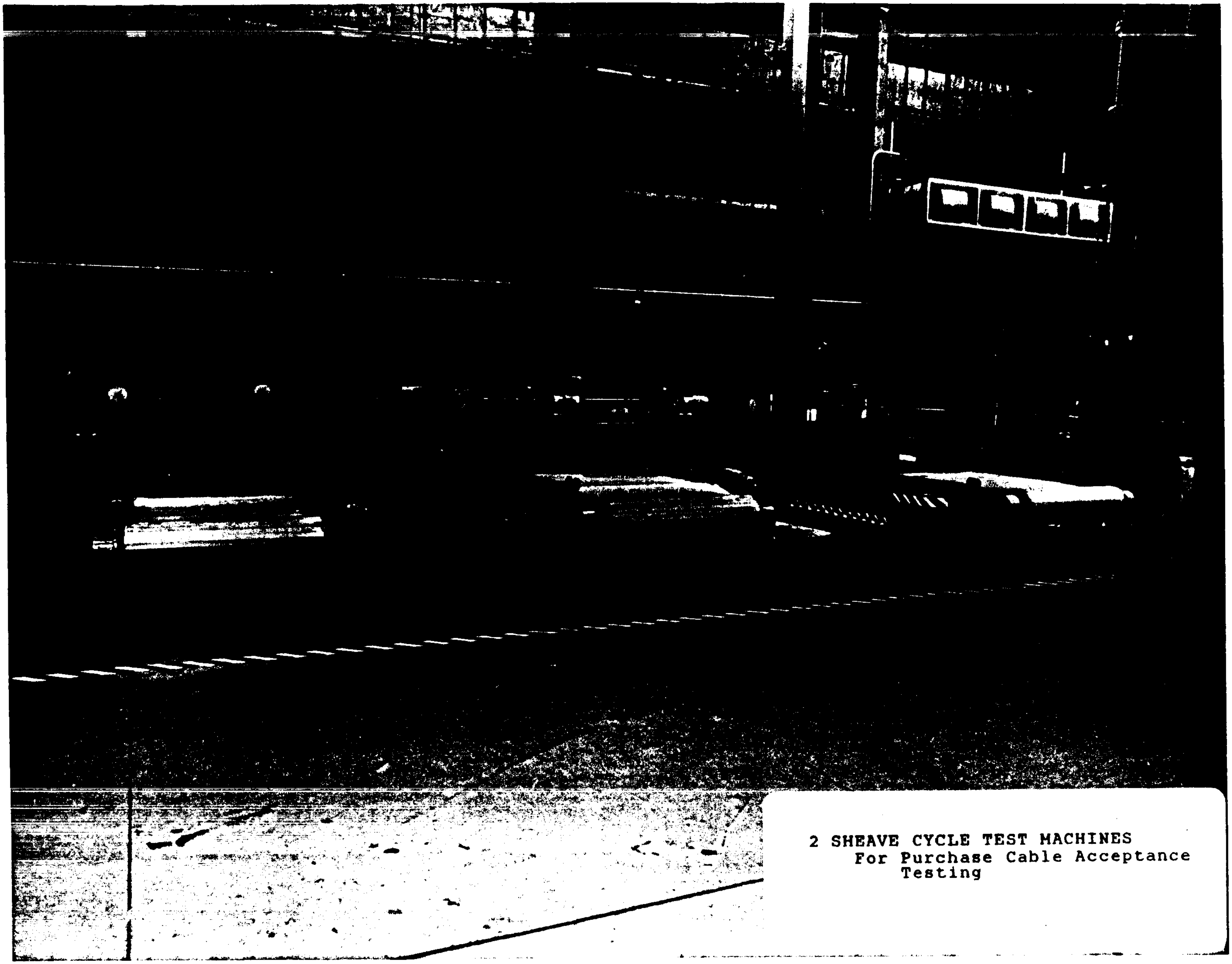

MATERIALS LAB



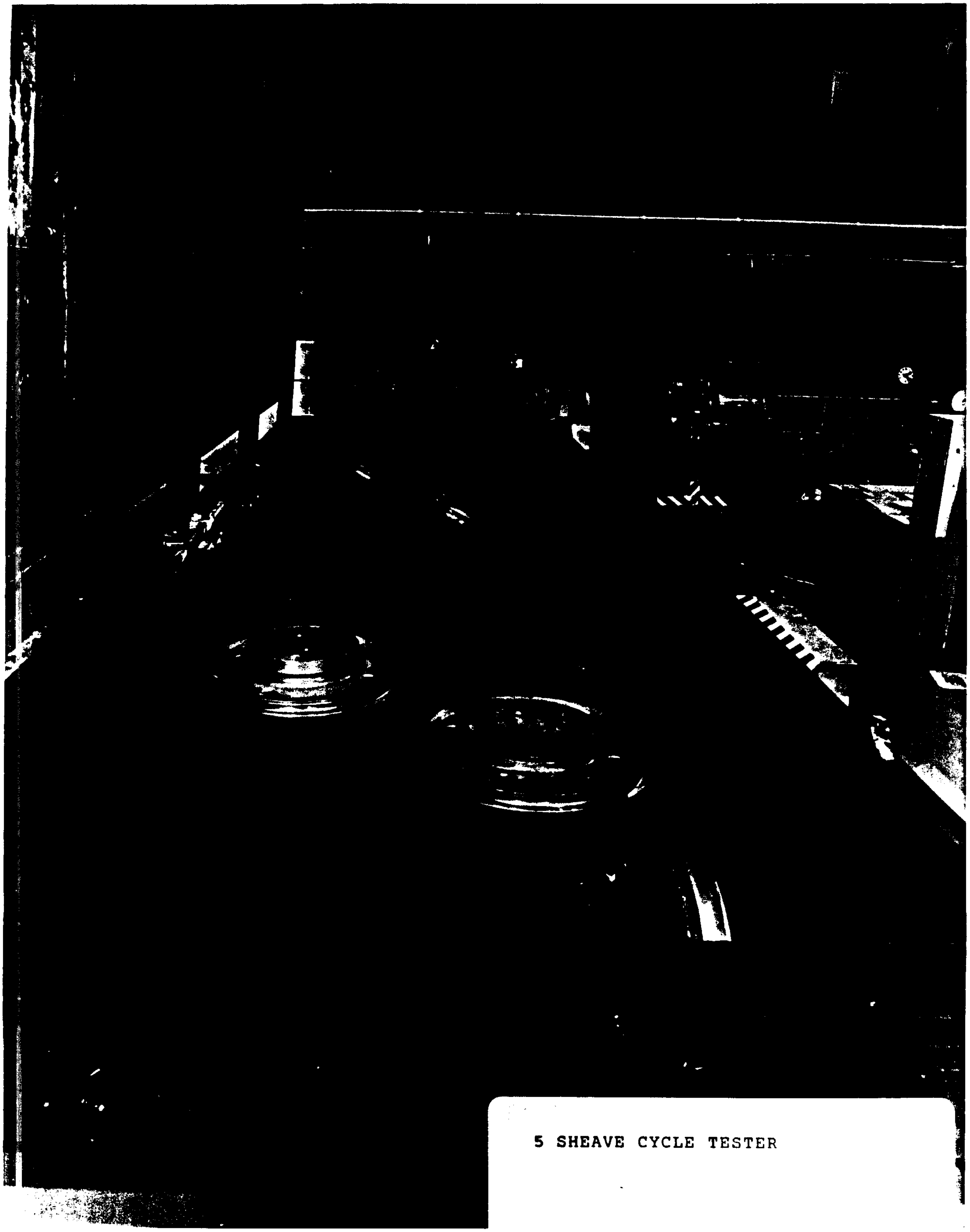
CARRIER ANALYSIS ROOM

LANDING GUIDANCE
DEVELOPMENTAL FACILITY

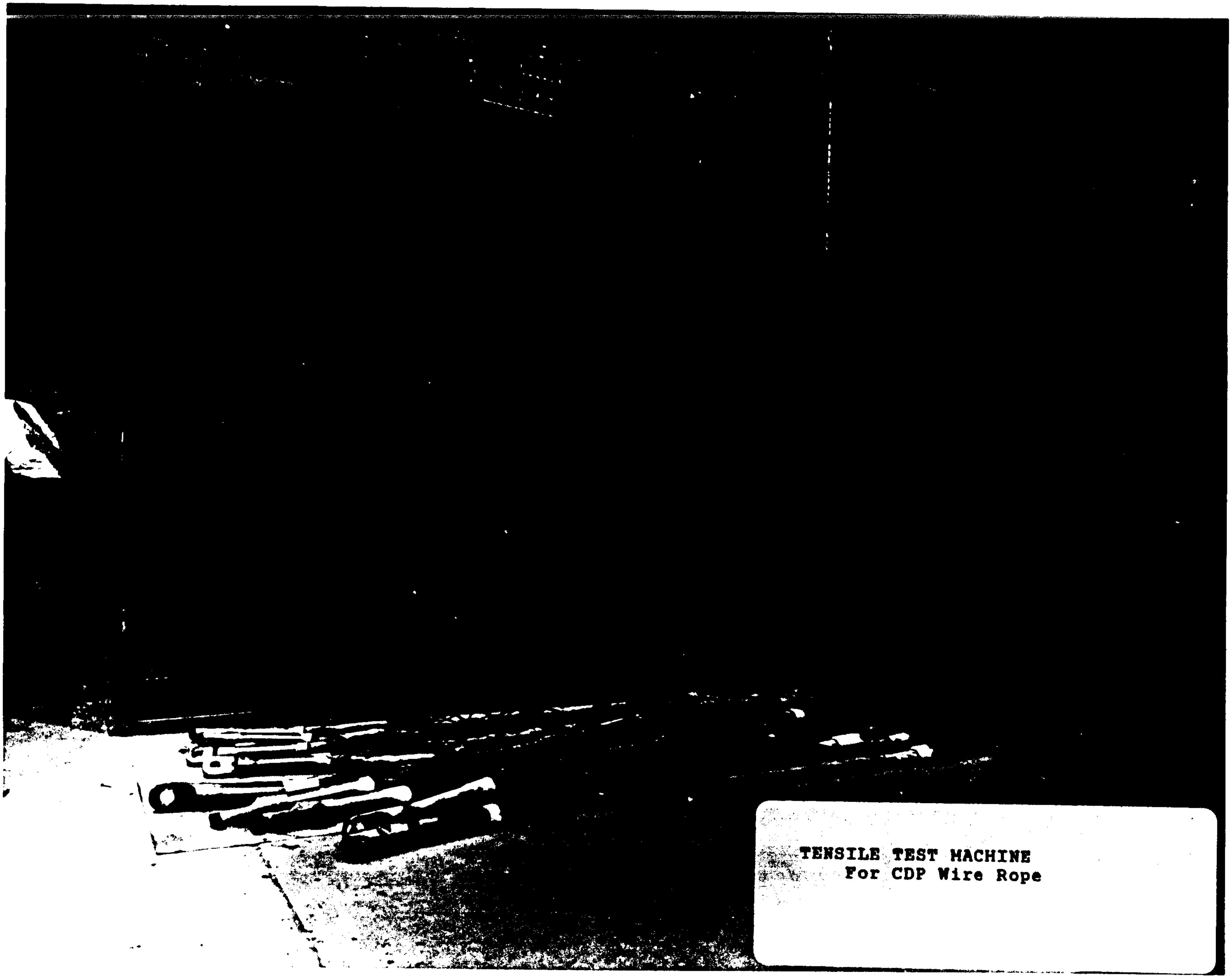




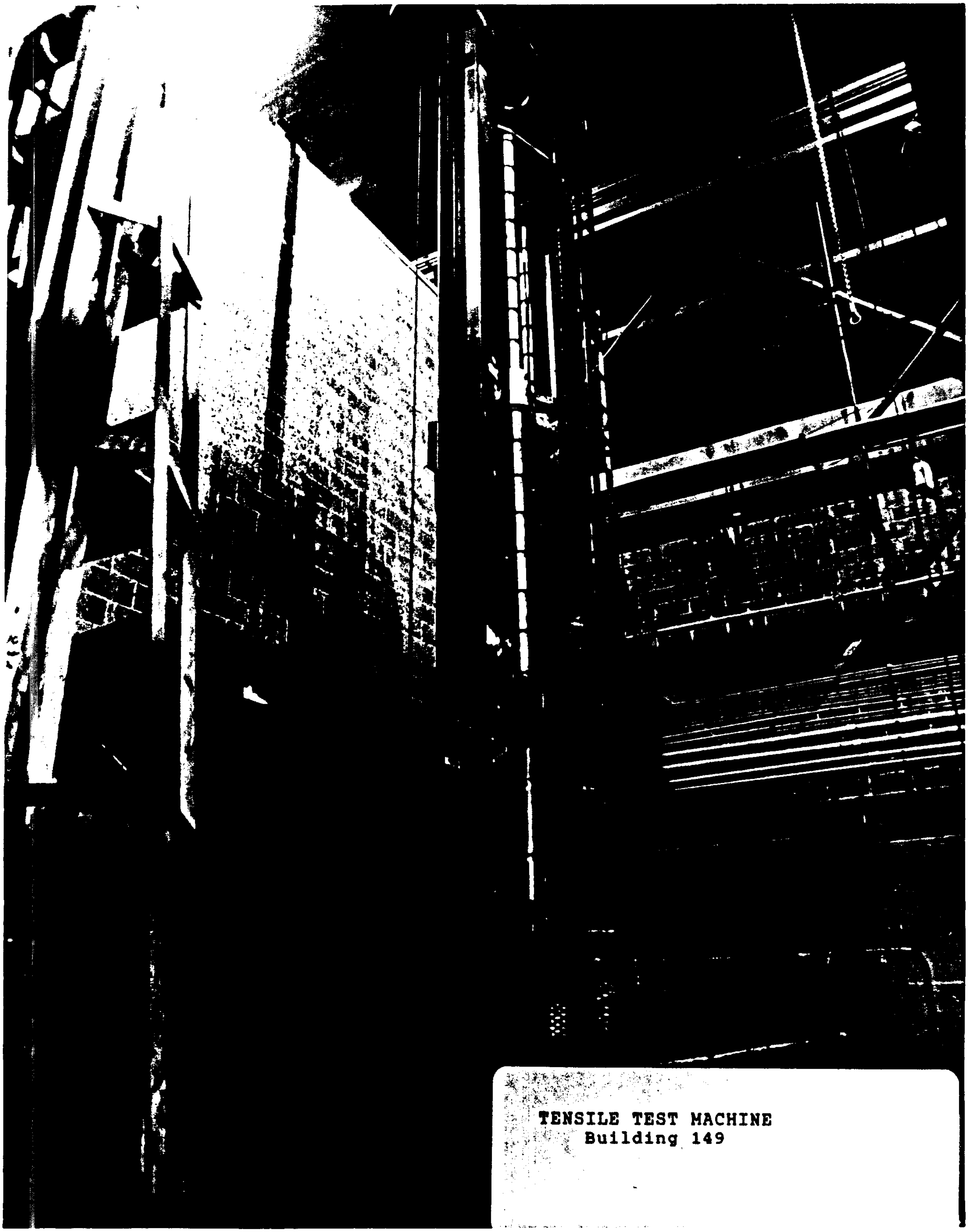
2 SHEAVE CYCLE TEST MACHINES
For Purchase Cable Acceptance Testing



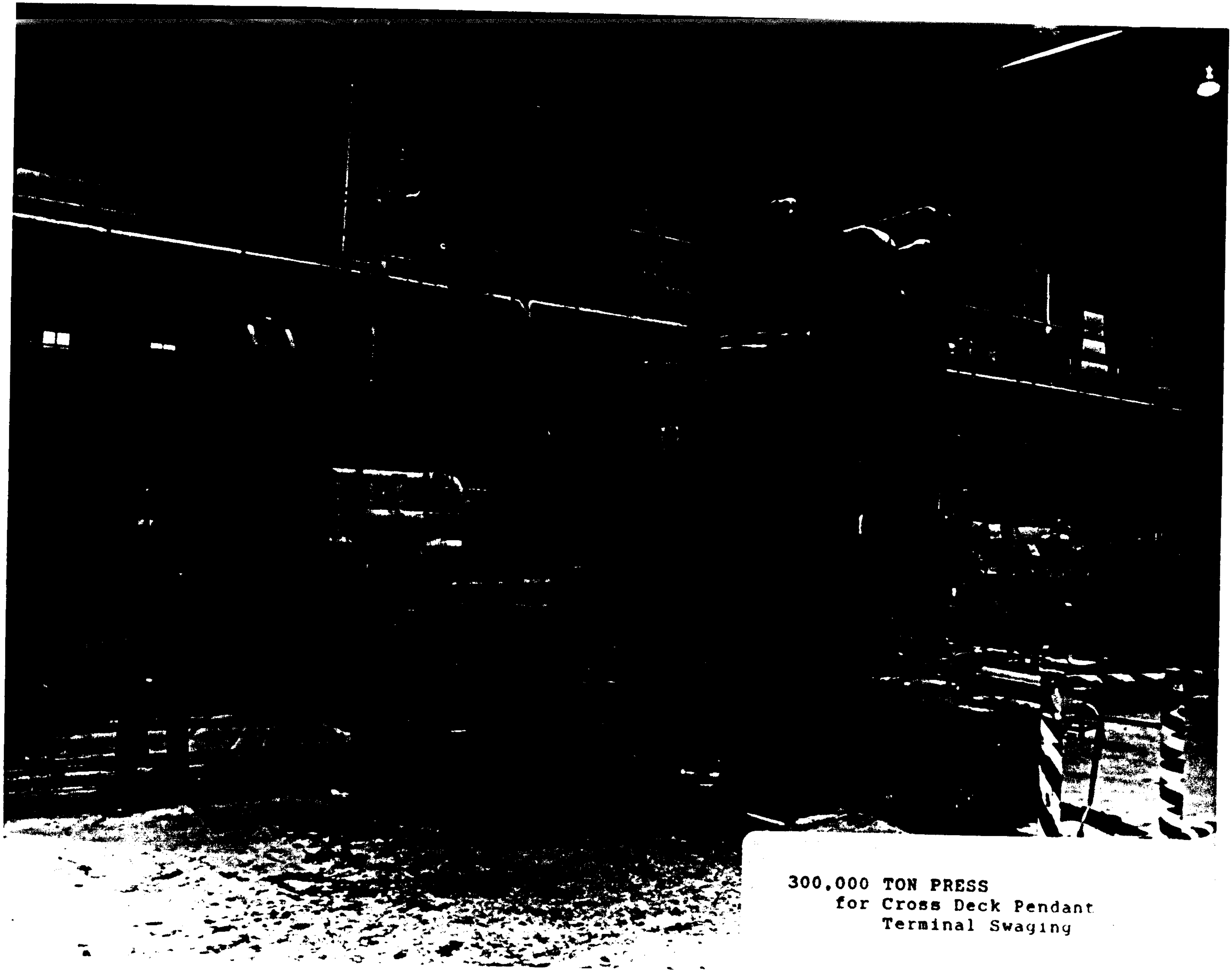
5 SHEAVE CYCLE TESTER



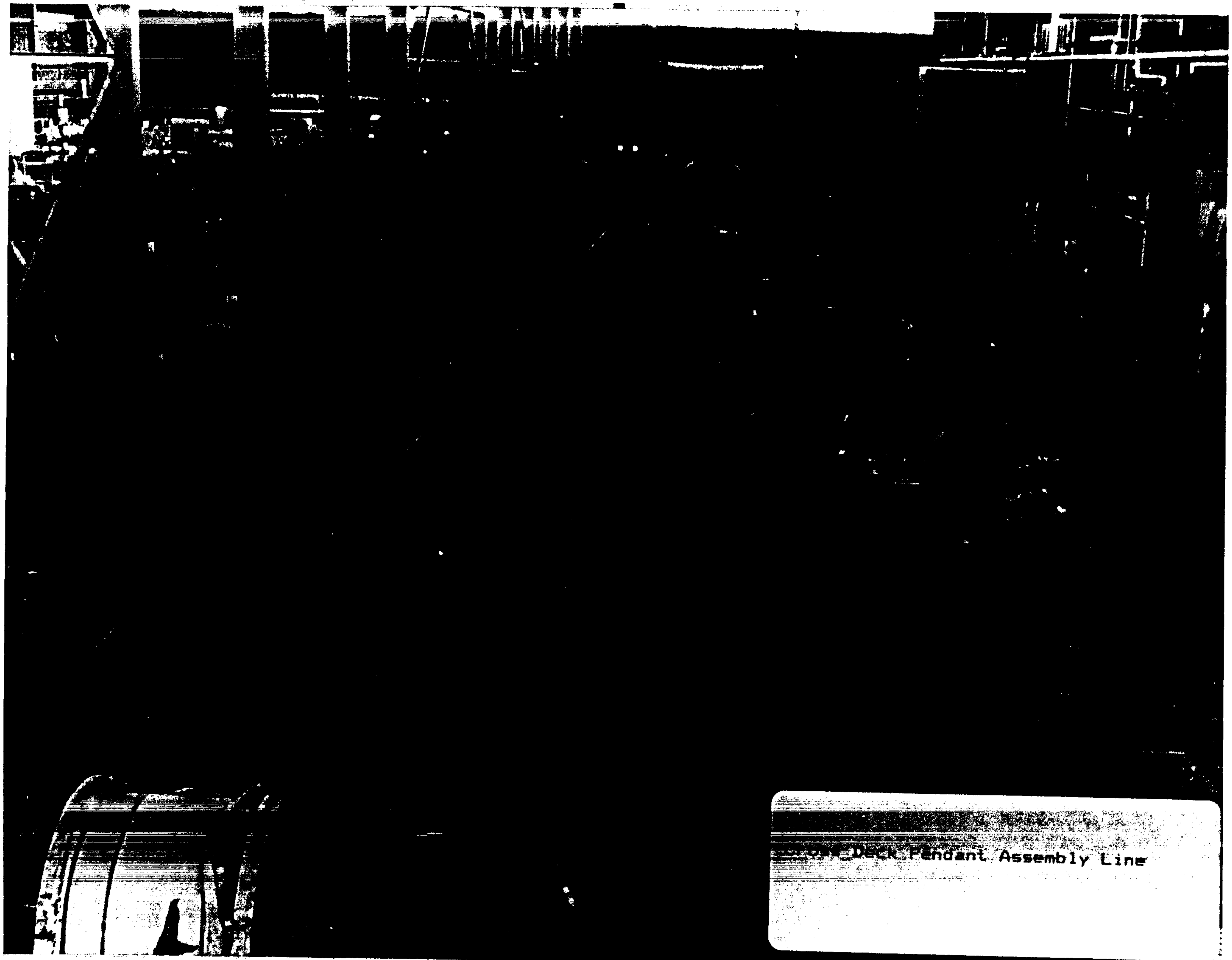
TENSILE TEST MACHINE
For CDP Wire Rope

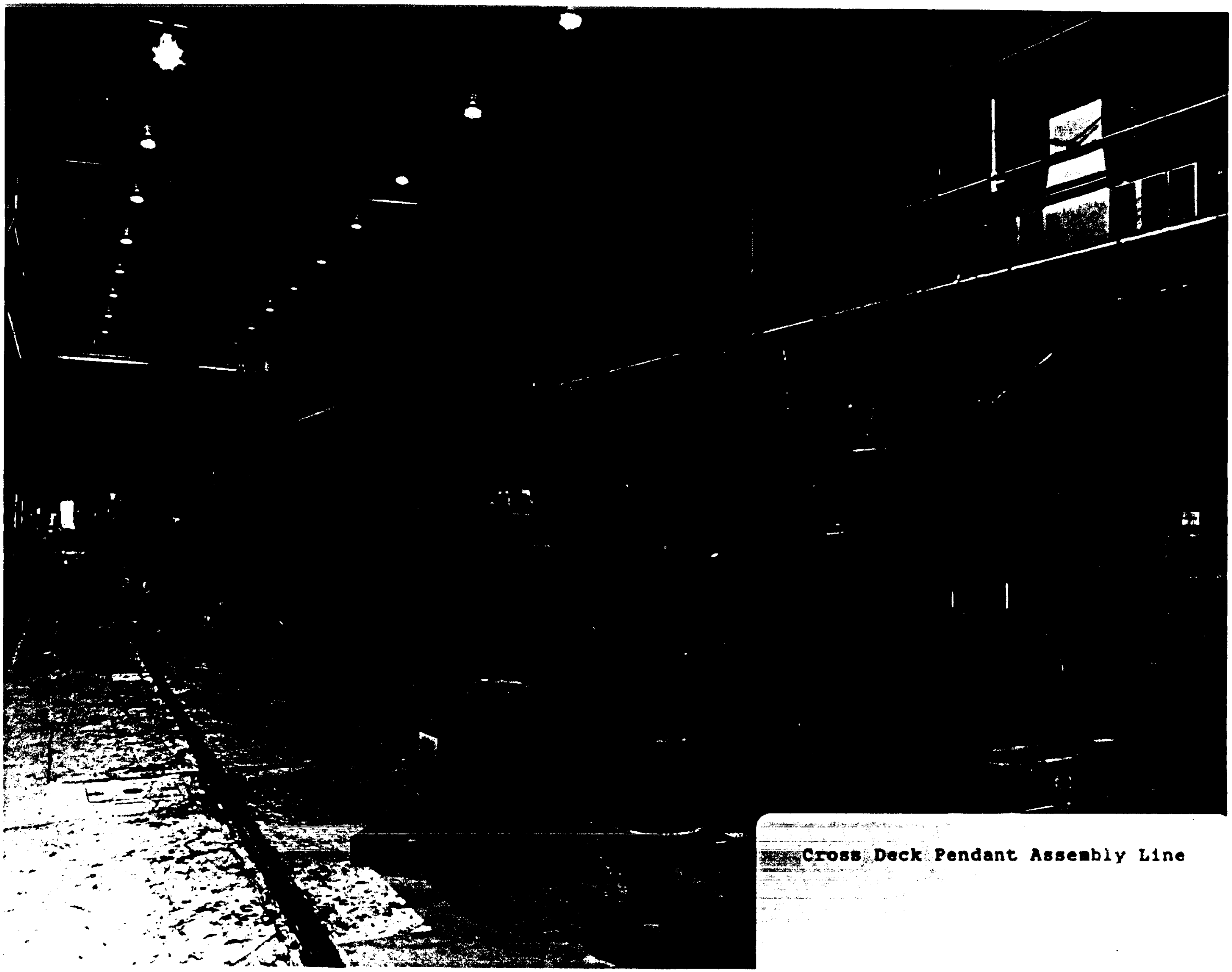


TENSILE TEST MACHINE
Building 149

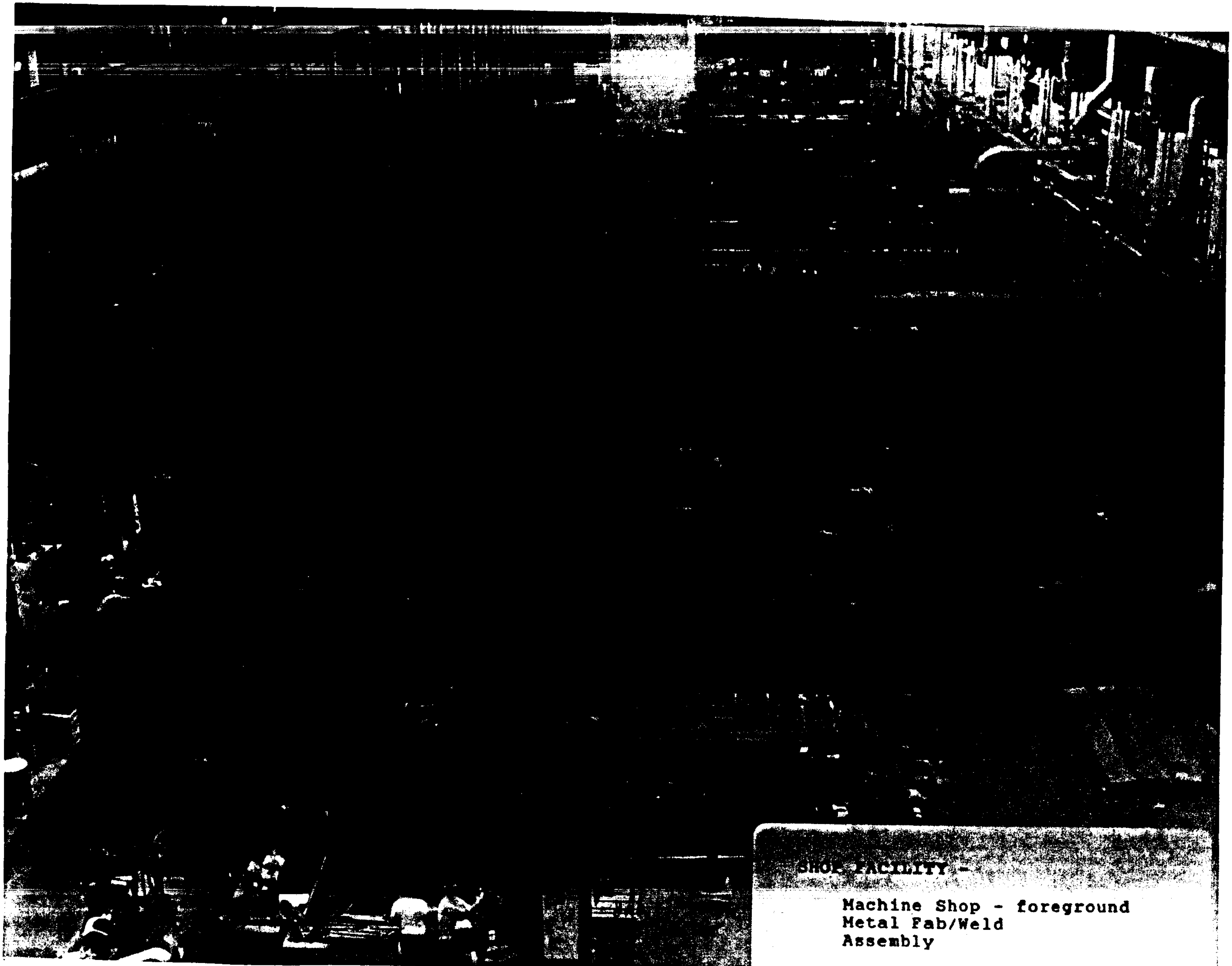


300,000 TON PRESS
for Cross Deck Pendant
Terminal Swaging


Deck Pendant Assembly Line

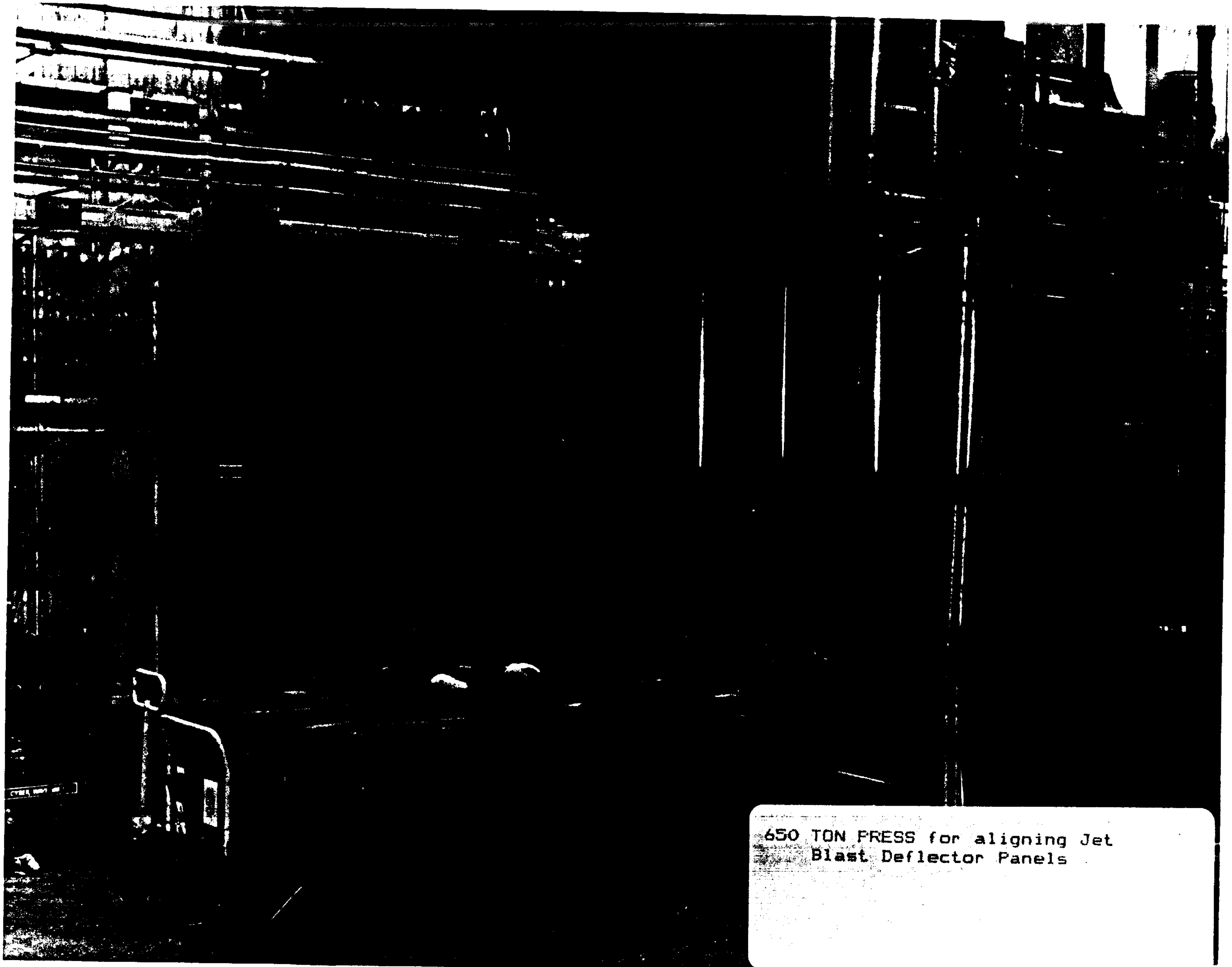


Cross Deck Pendant Assembly Line

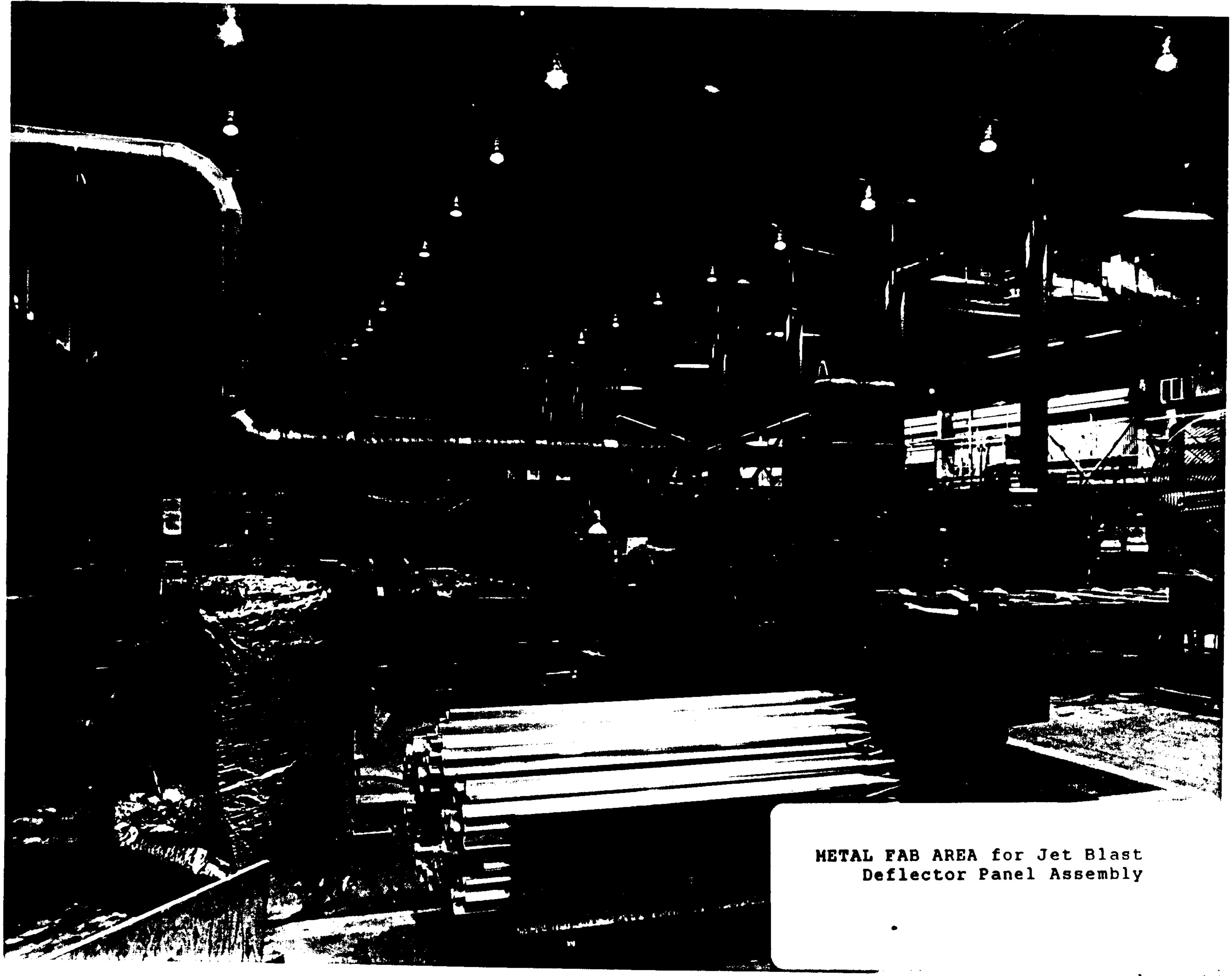


SHOP FACILITY -

Machine Shop - foreground
Metal Fab/Weld
Assembly



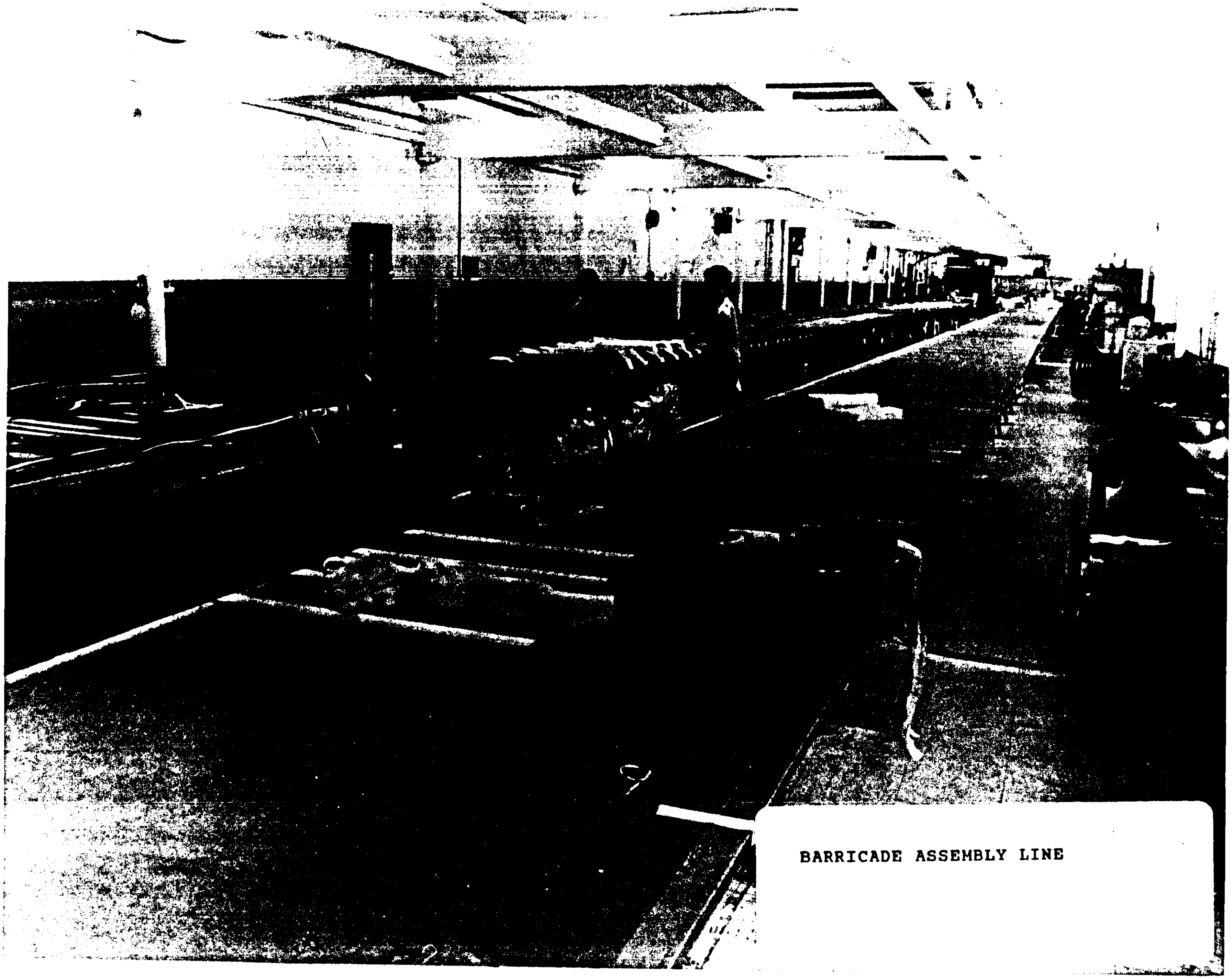
650 TON PRESS for aligning Jet
Blast Deflector Panels



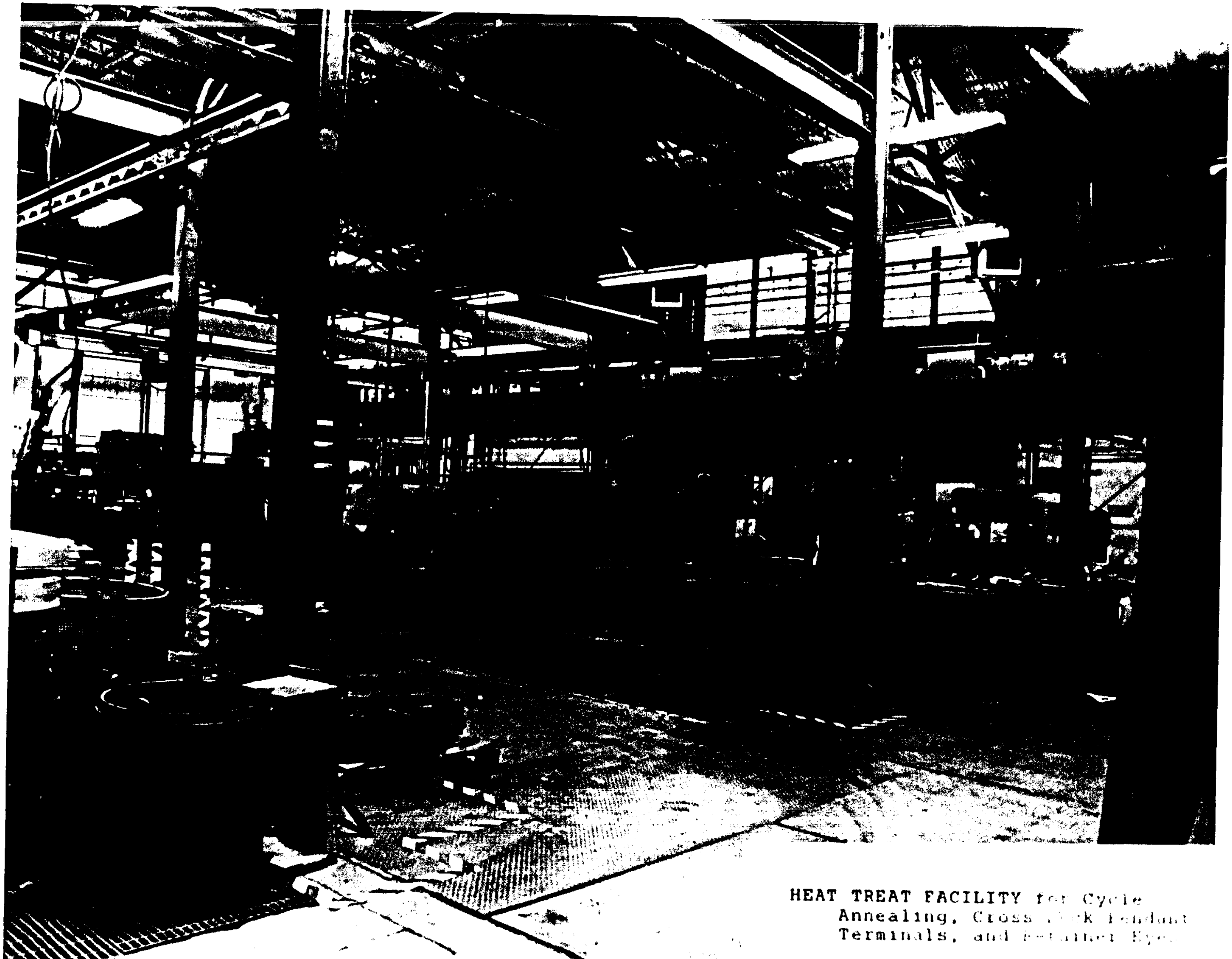
METAL FAB AREA for Jet Blast Deflector Panel Assembly

JET BLAST DEFLECTOR
WELD/POSITIONERS
Building 99

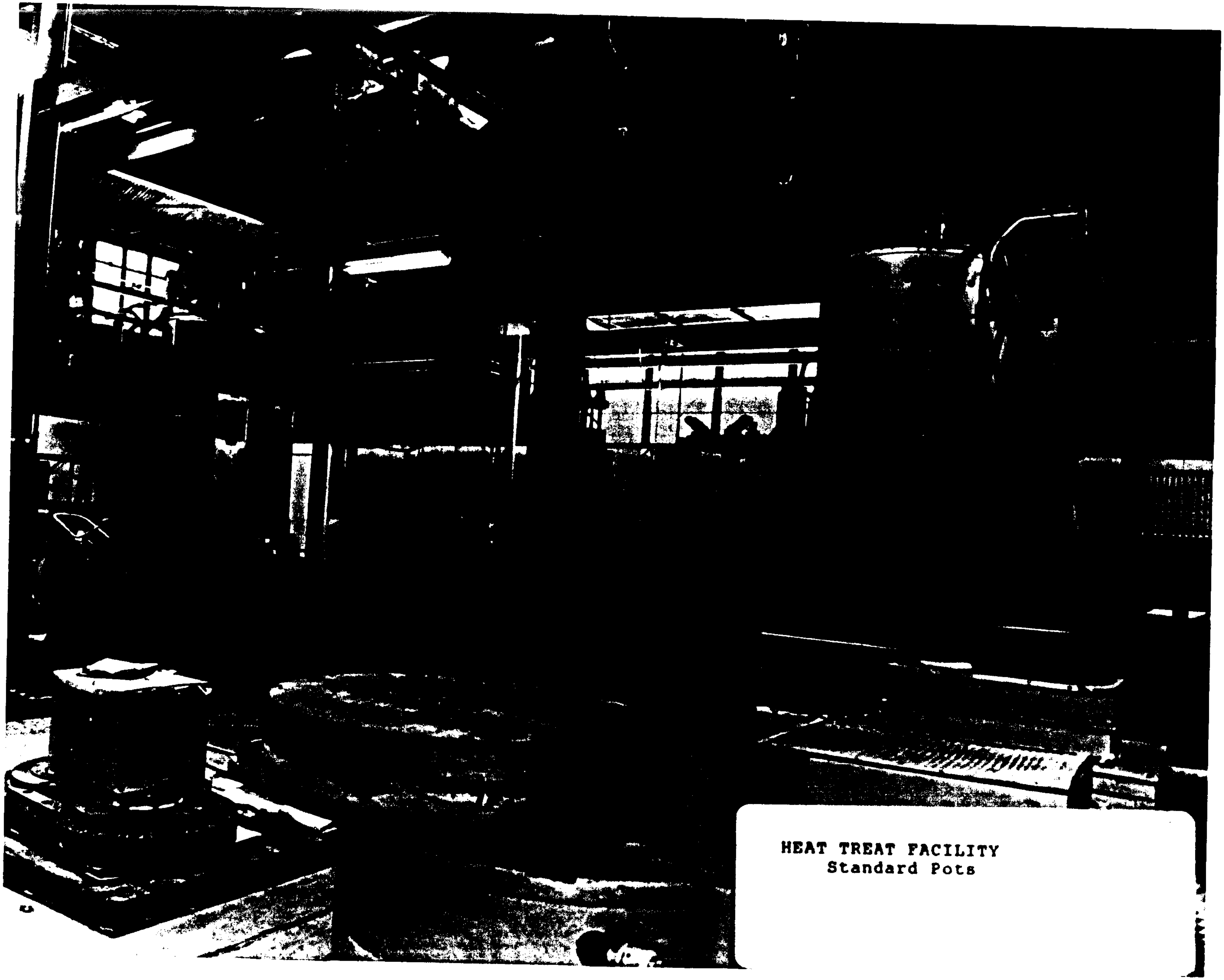
Assembly of Barricade in Progress



BARRICADE ASSEMBLY LINE

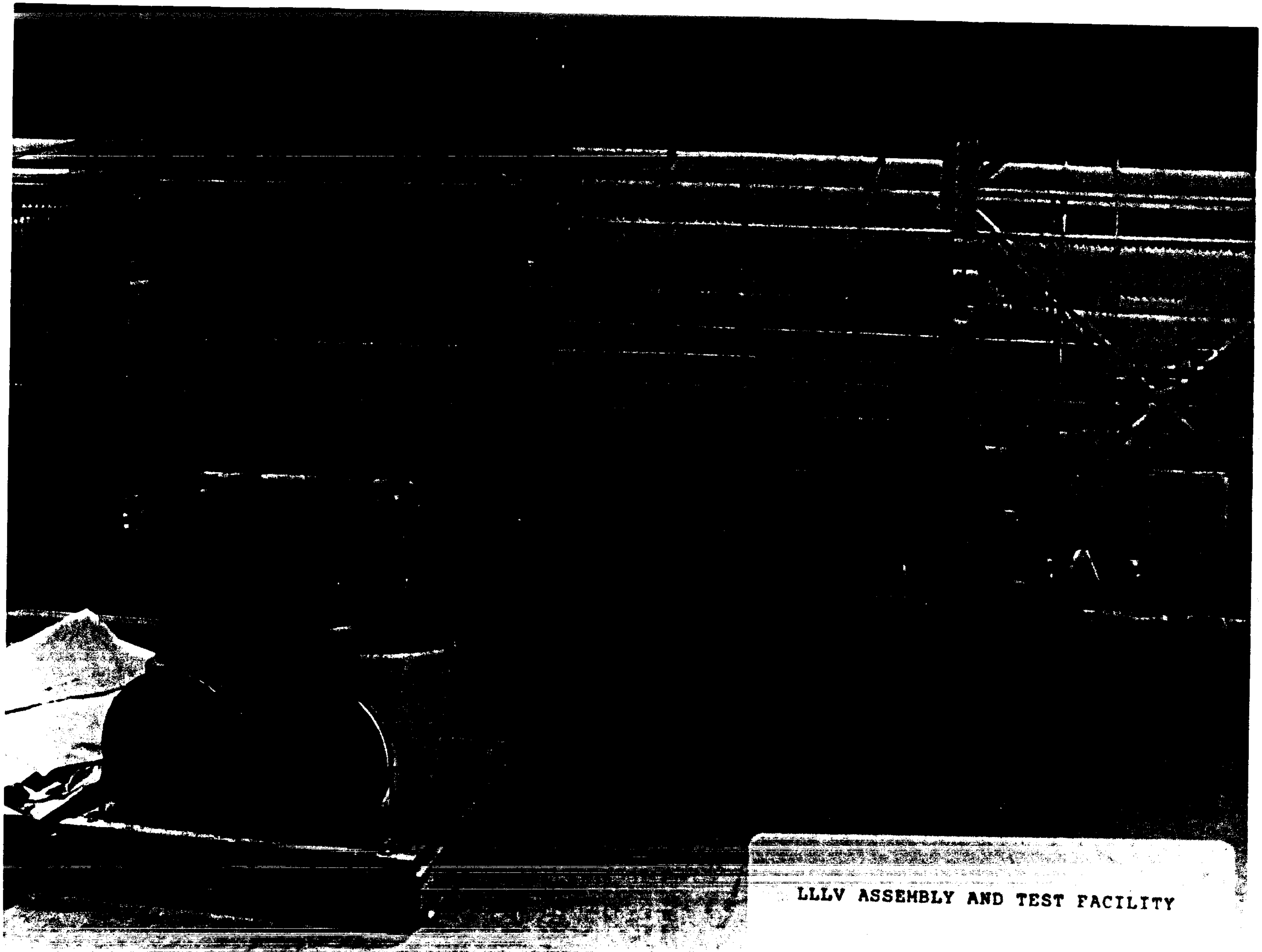


HEAT TREAT FACILITY for Cycle Annealing, Cross Lock Pendant Terminals, and Retainer Eyes

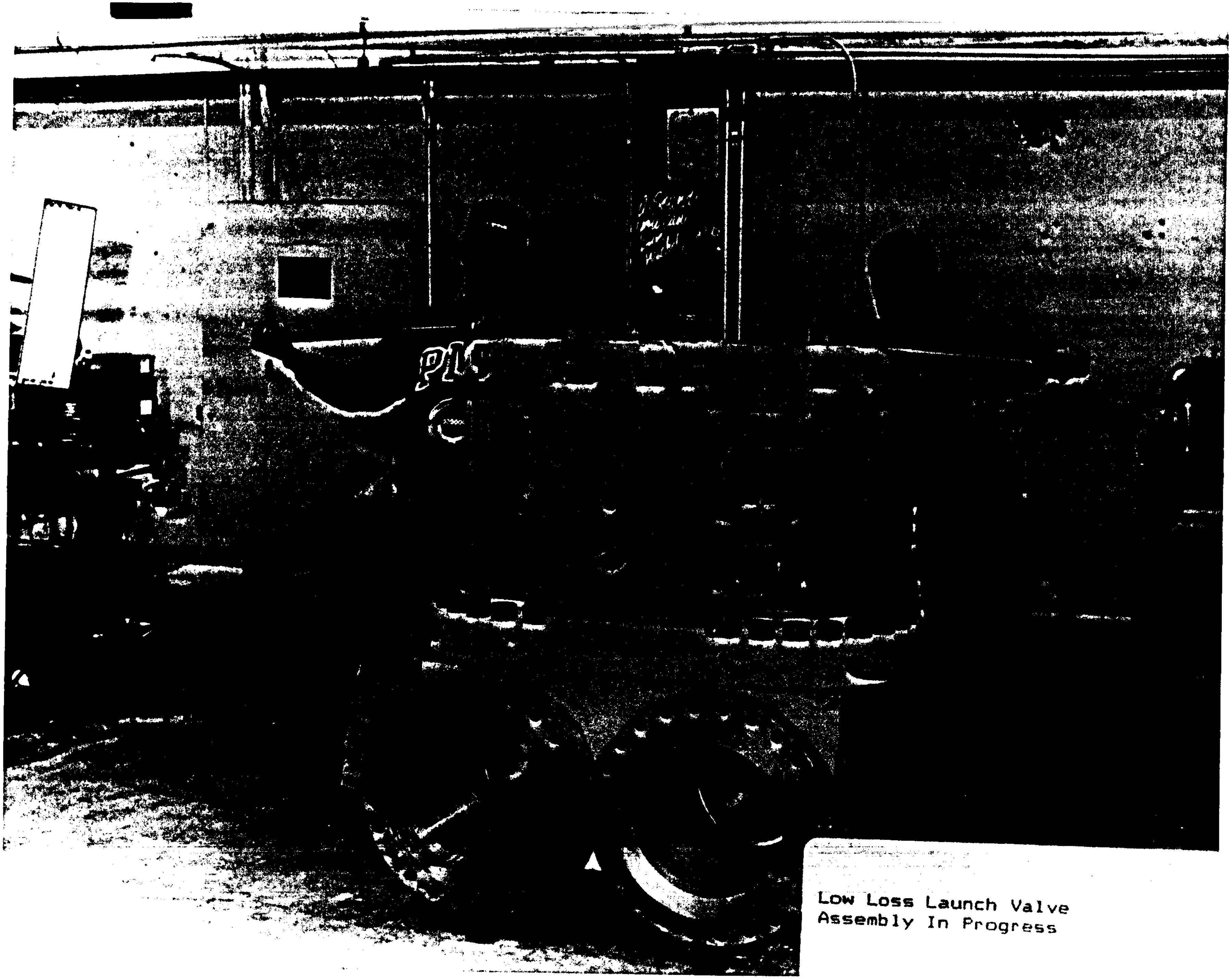


HEAT TREAT FACILITY
Standard Pots

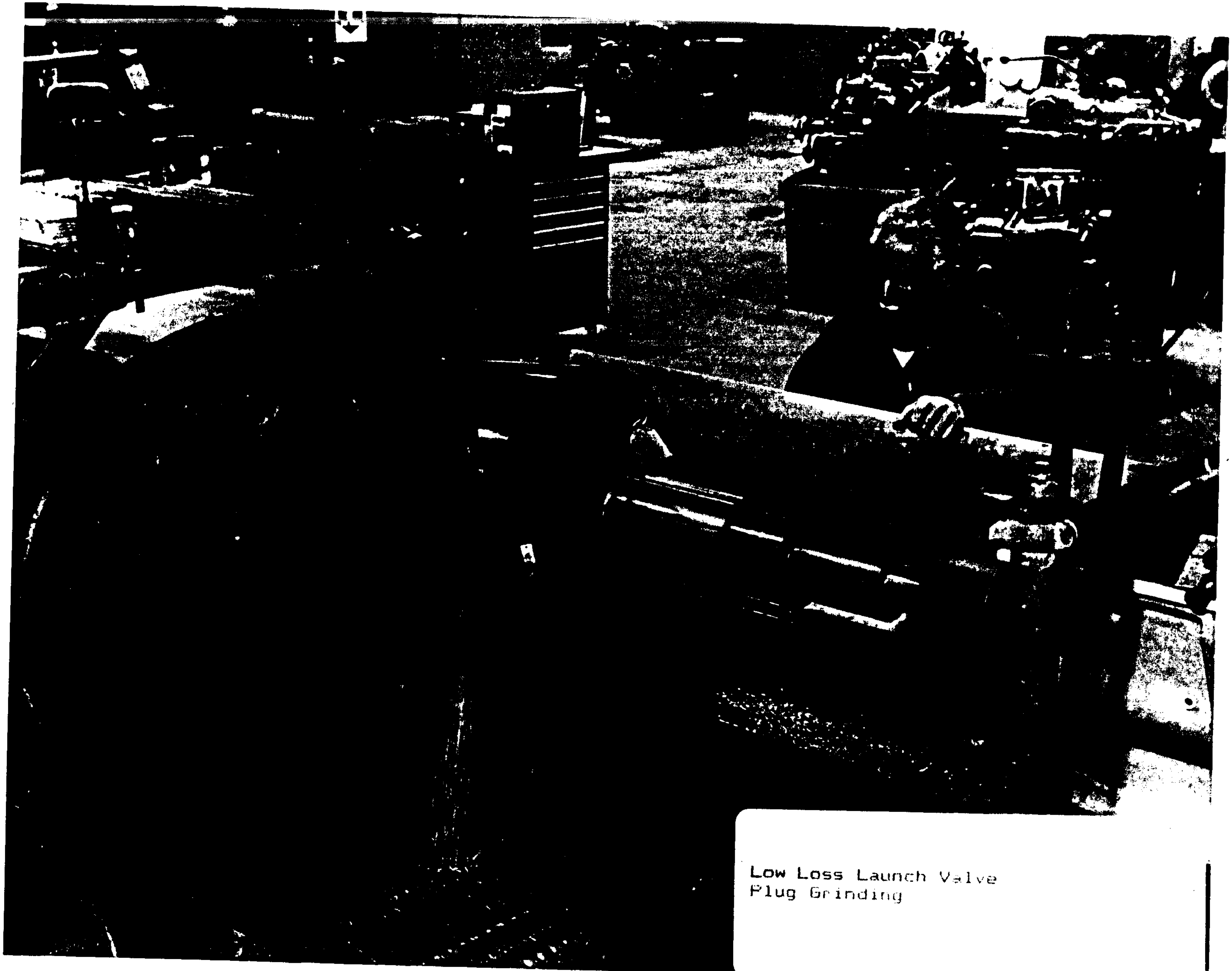
GRIT BLAST CABINET



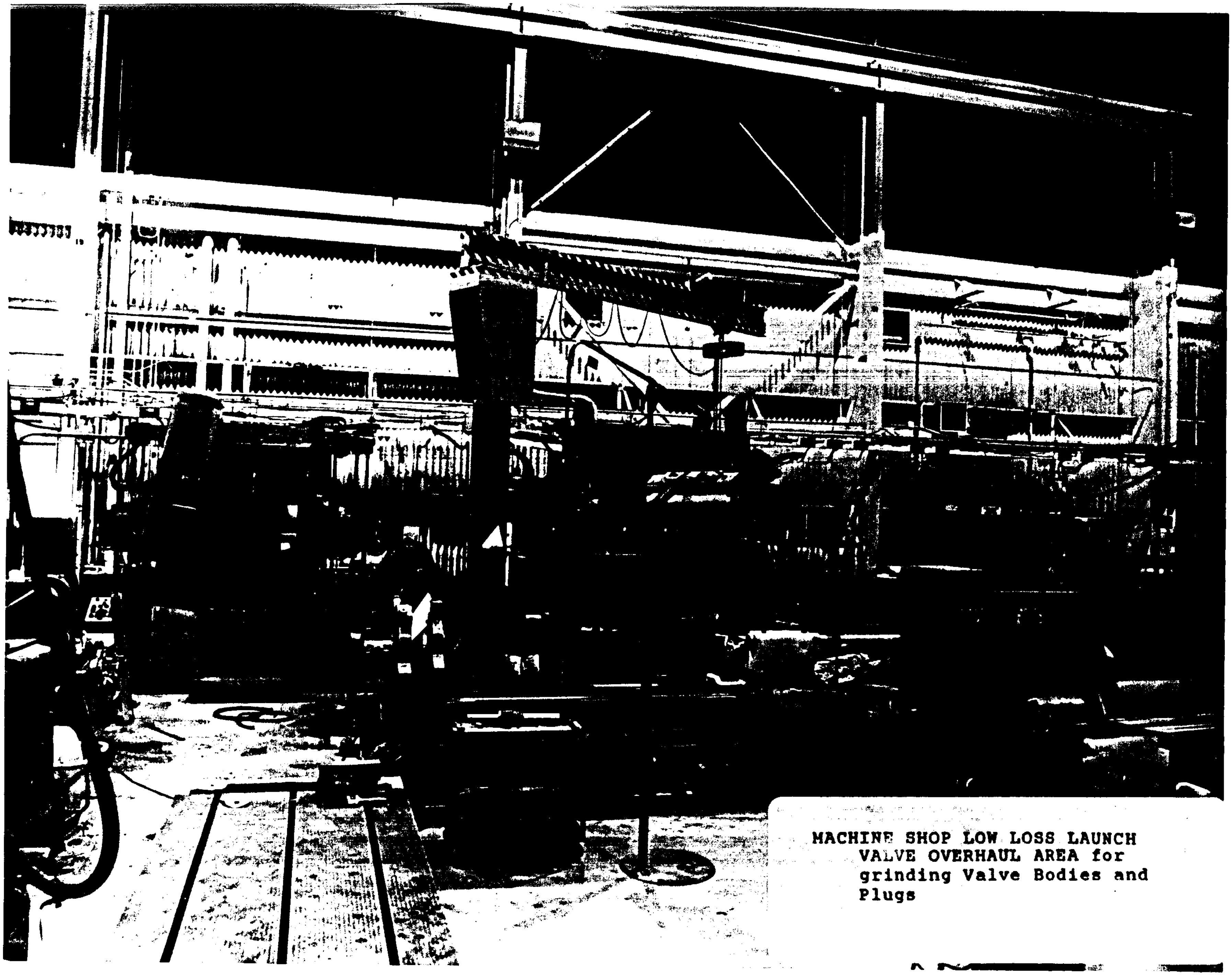
LLLV ASSEMBLY AND TEST FACILITY



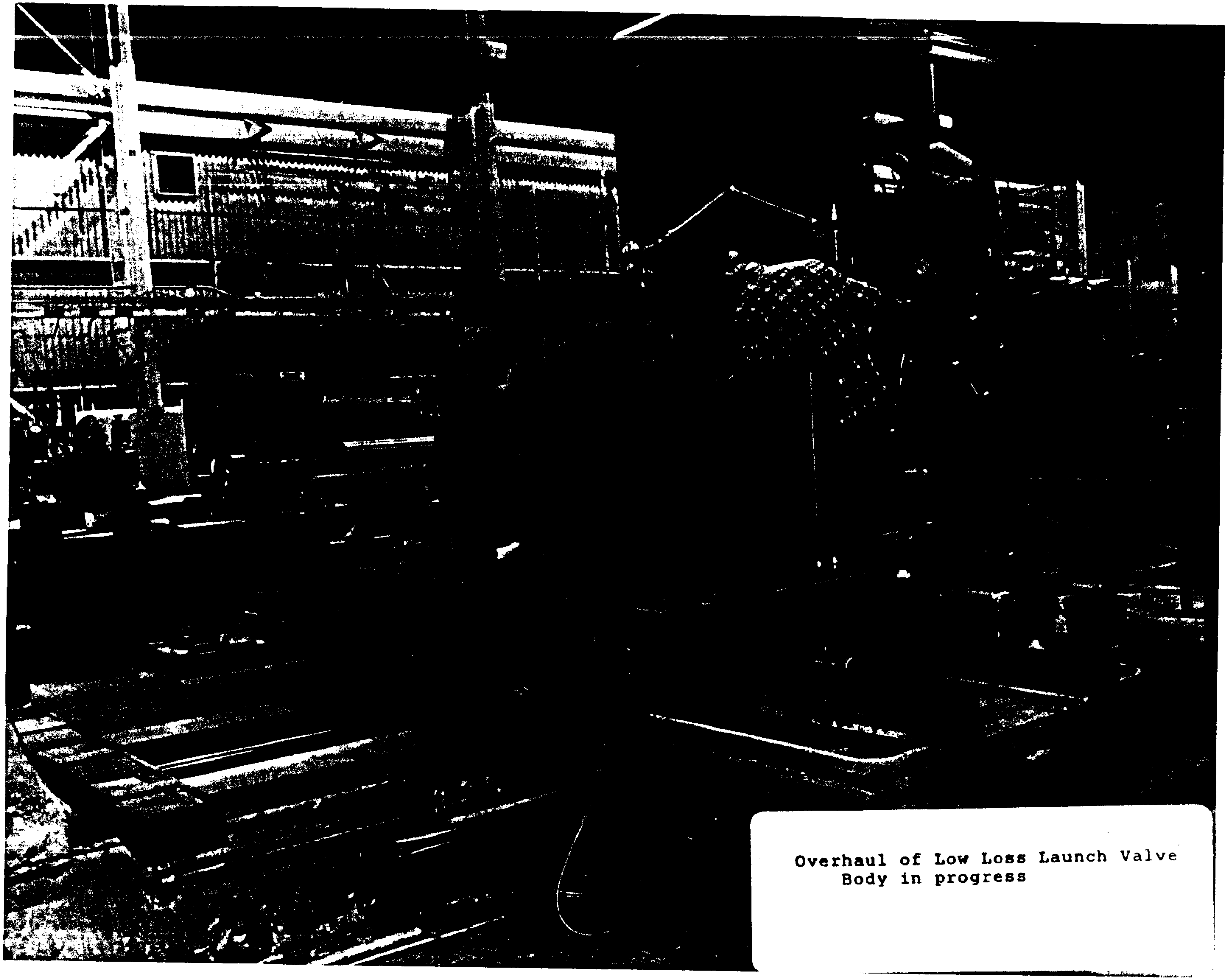
Low Loss Launch Valve
Assembly In Progress



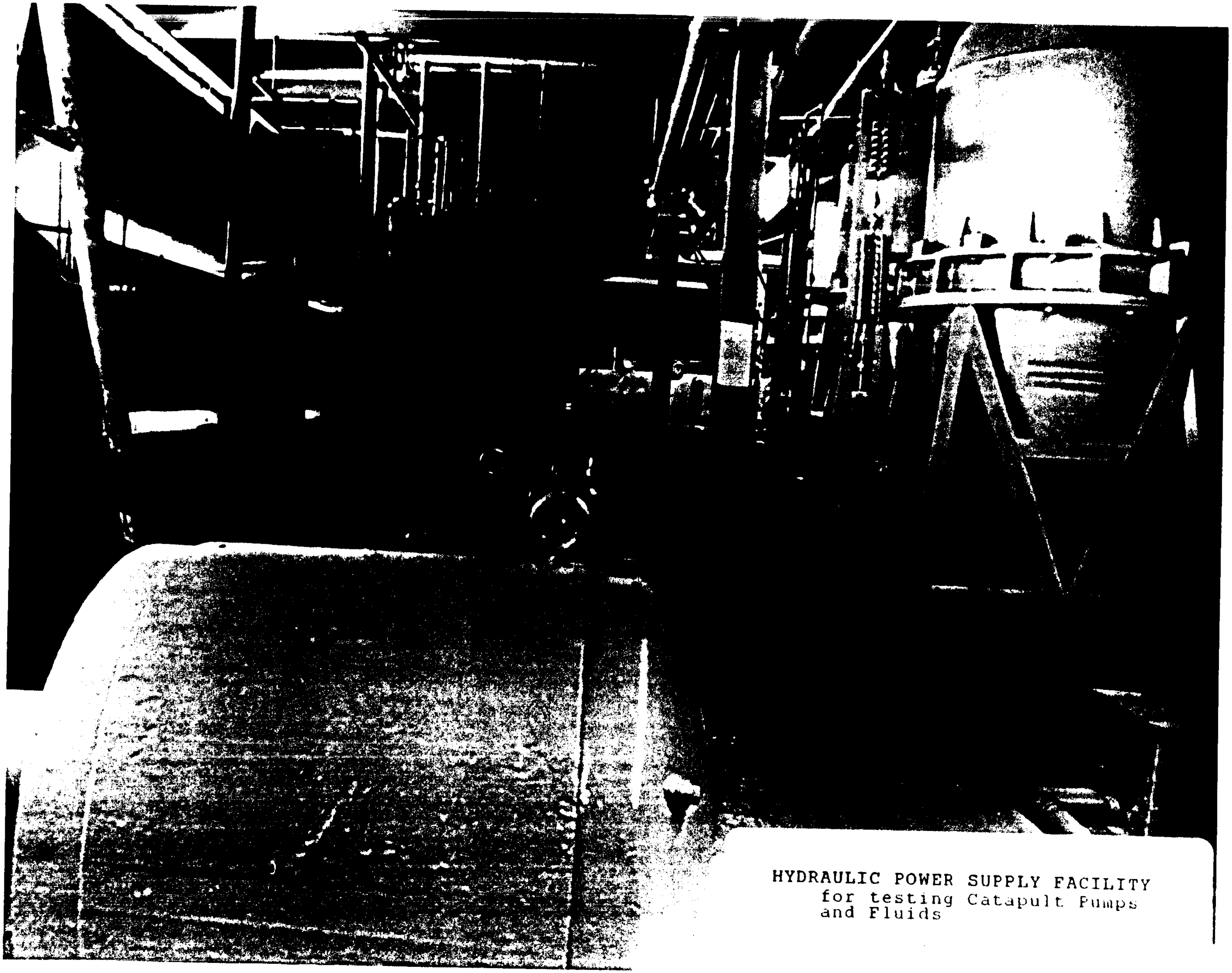
Low Loss Launch Valve
Plug Grinding



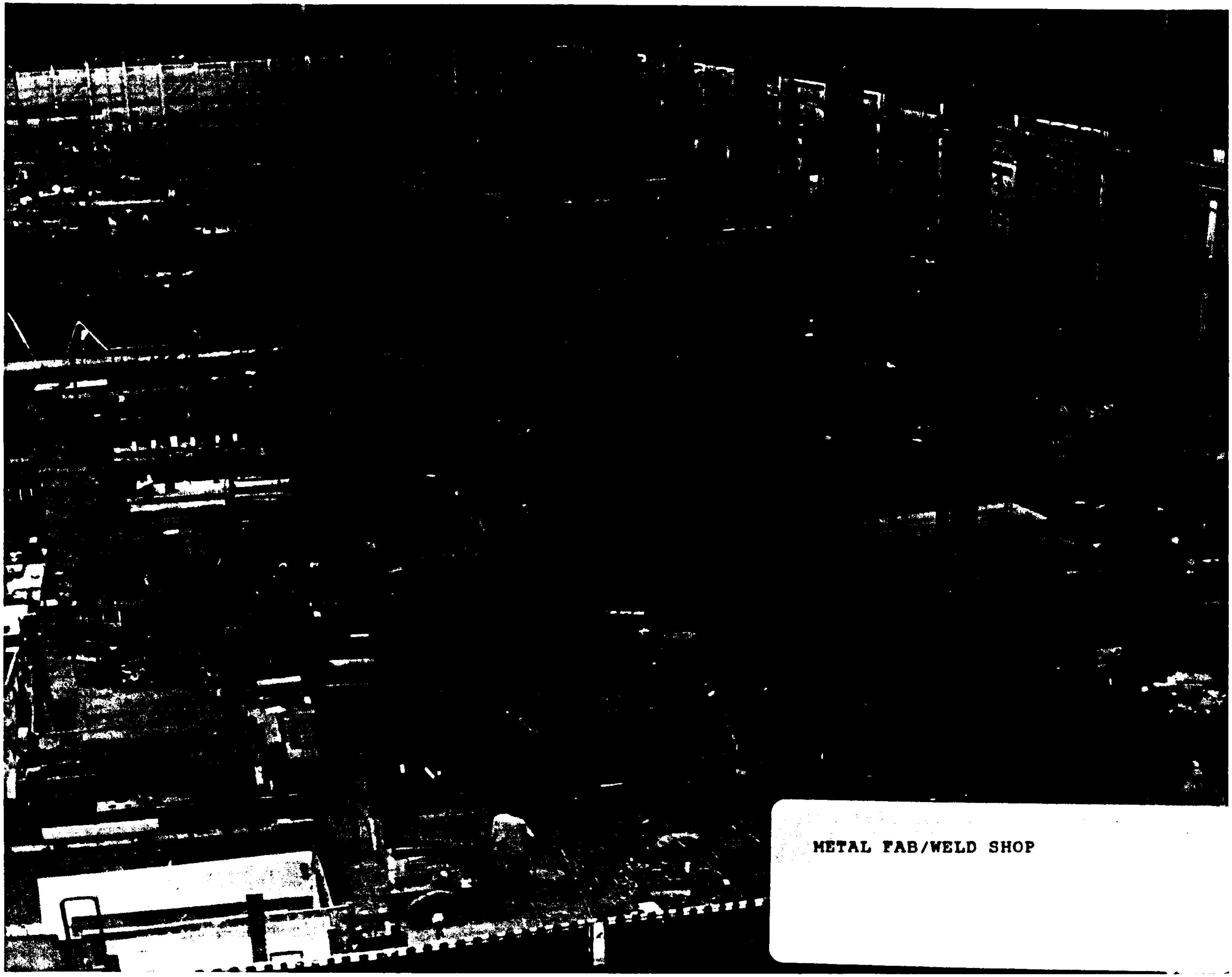
MACHINE SHOP LOW LOSS LAUNCH VALVE OVERHAUL AREA for grinding Valve Bodies and Plugs



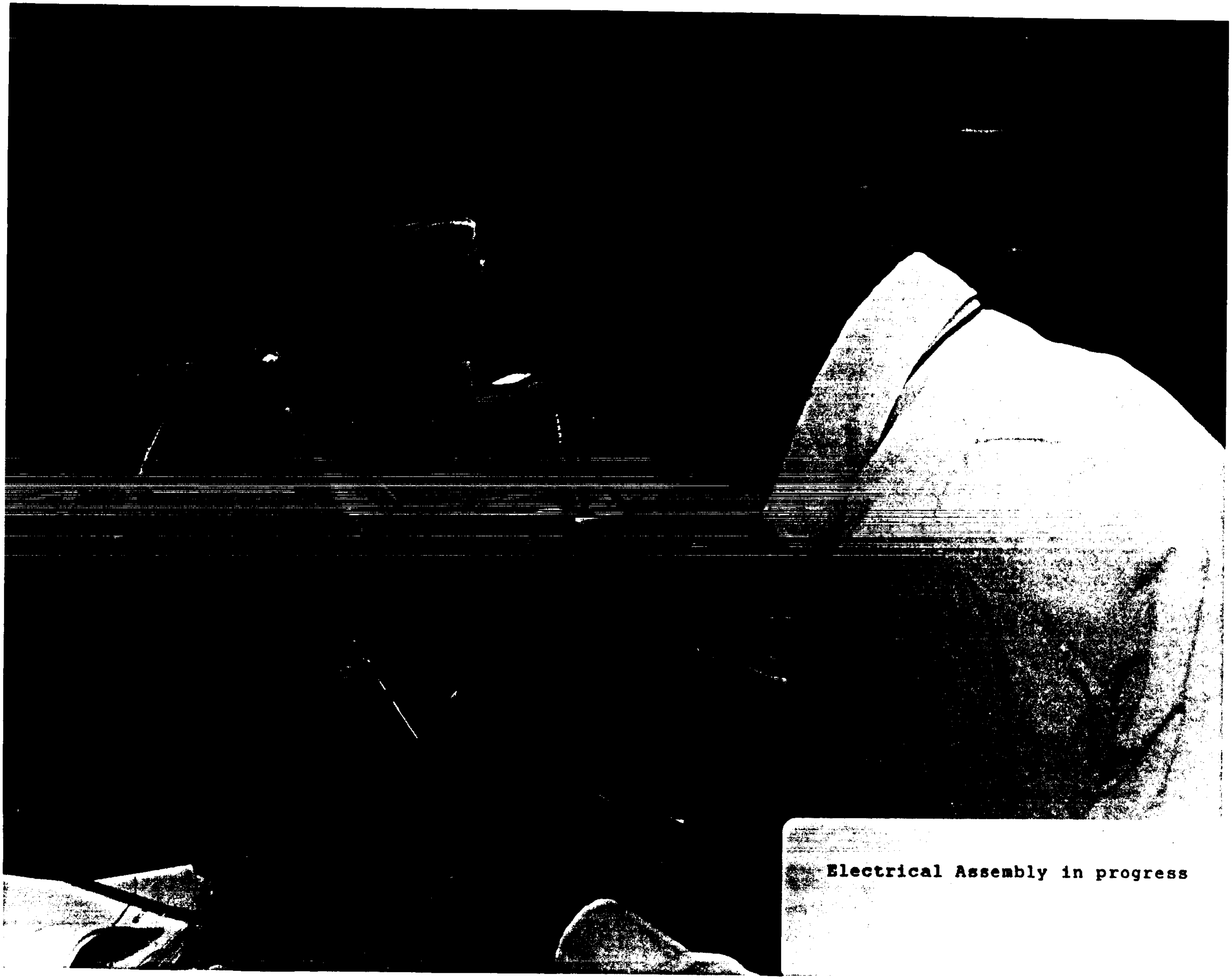
Overhaul of Low Loss Launch Valve
Body in progress



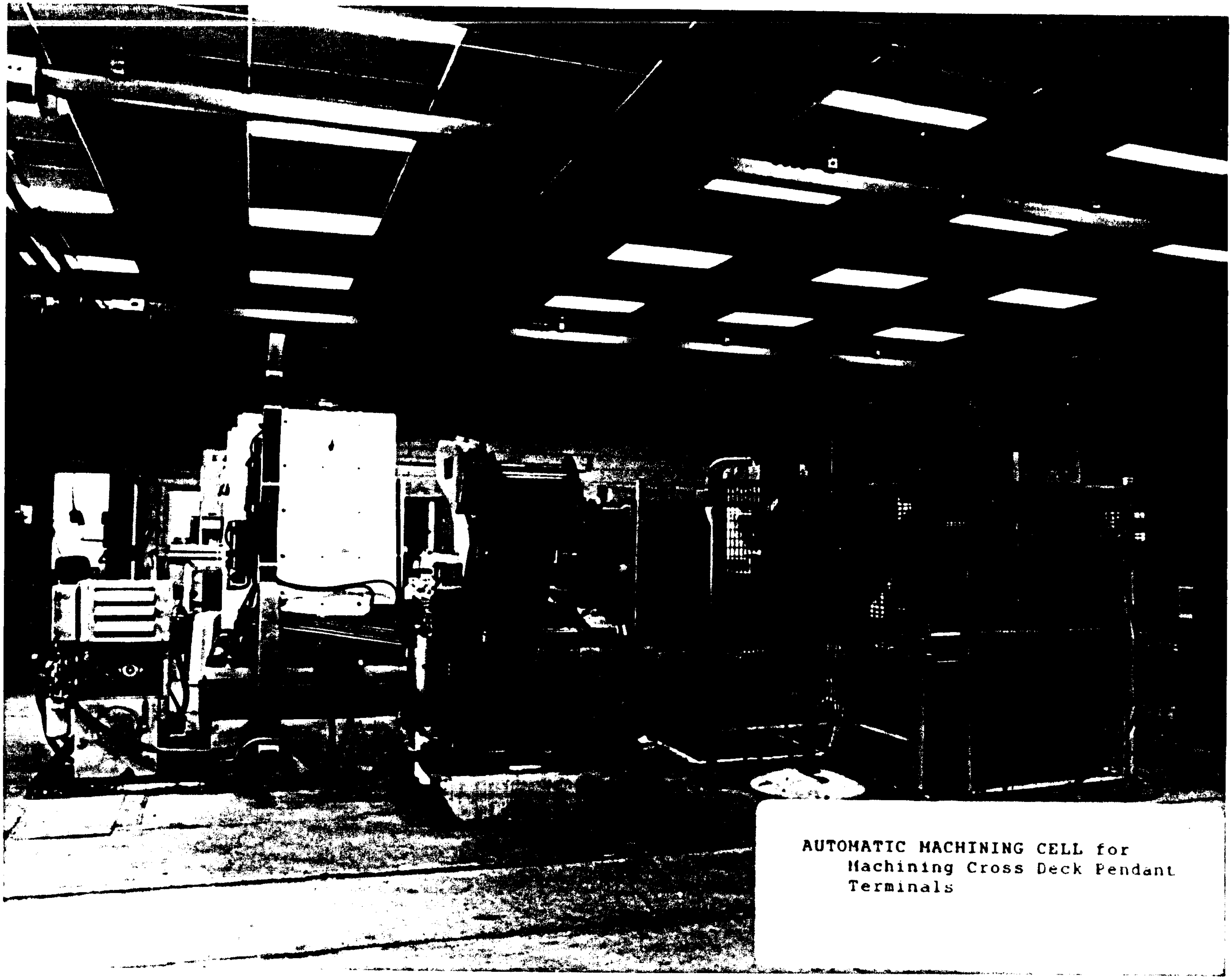
HYDRAULIC POWER SUPPLY FACILITY
for testing Catapult Pumps
and Fluids



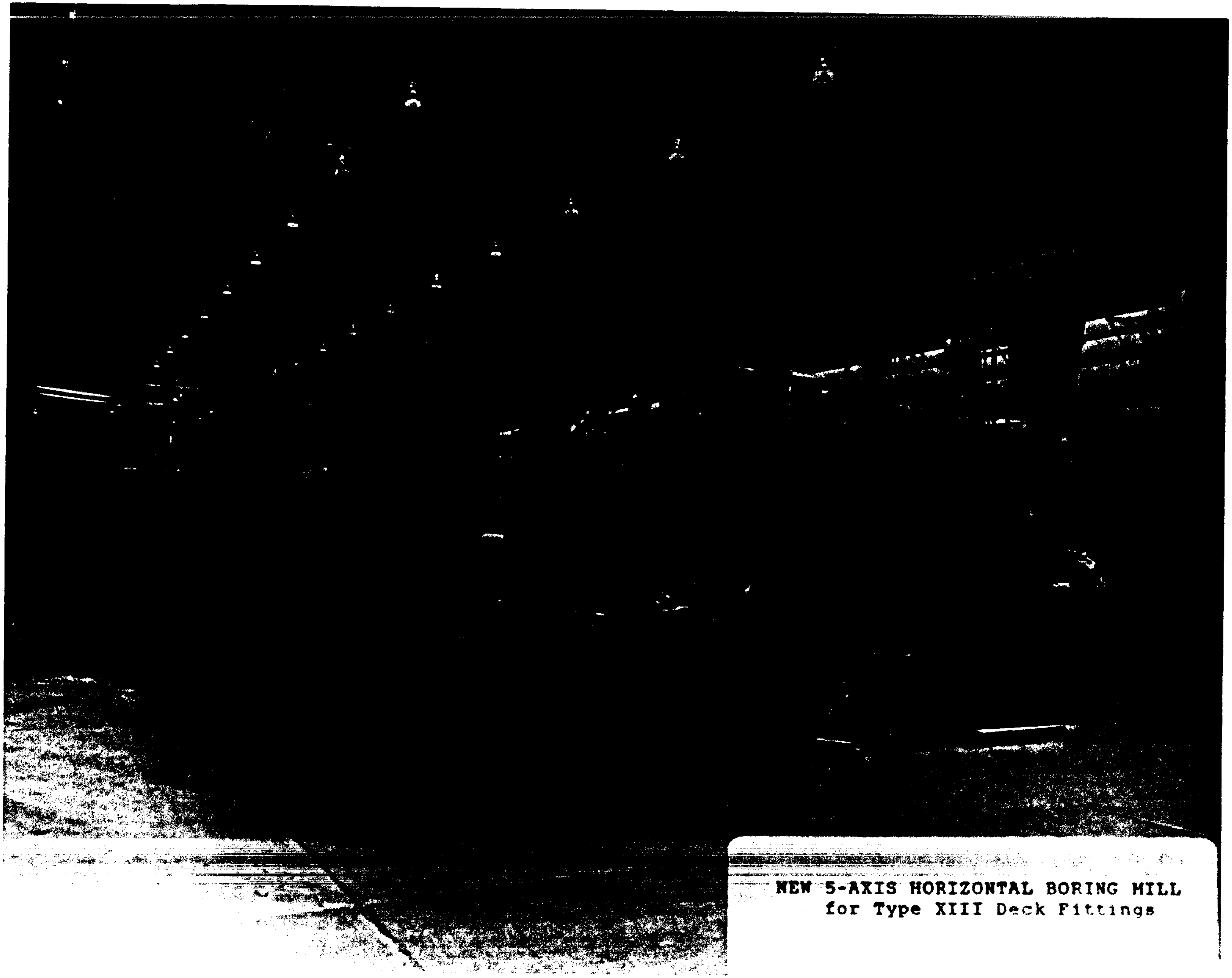
METAL FAB/WELD SHOP



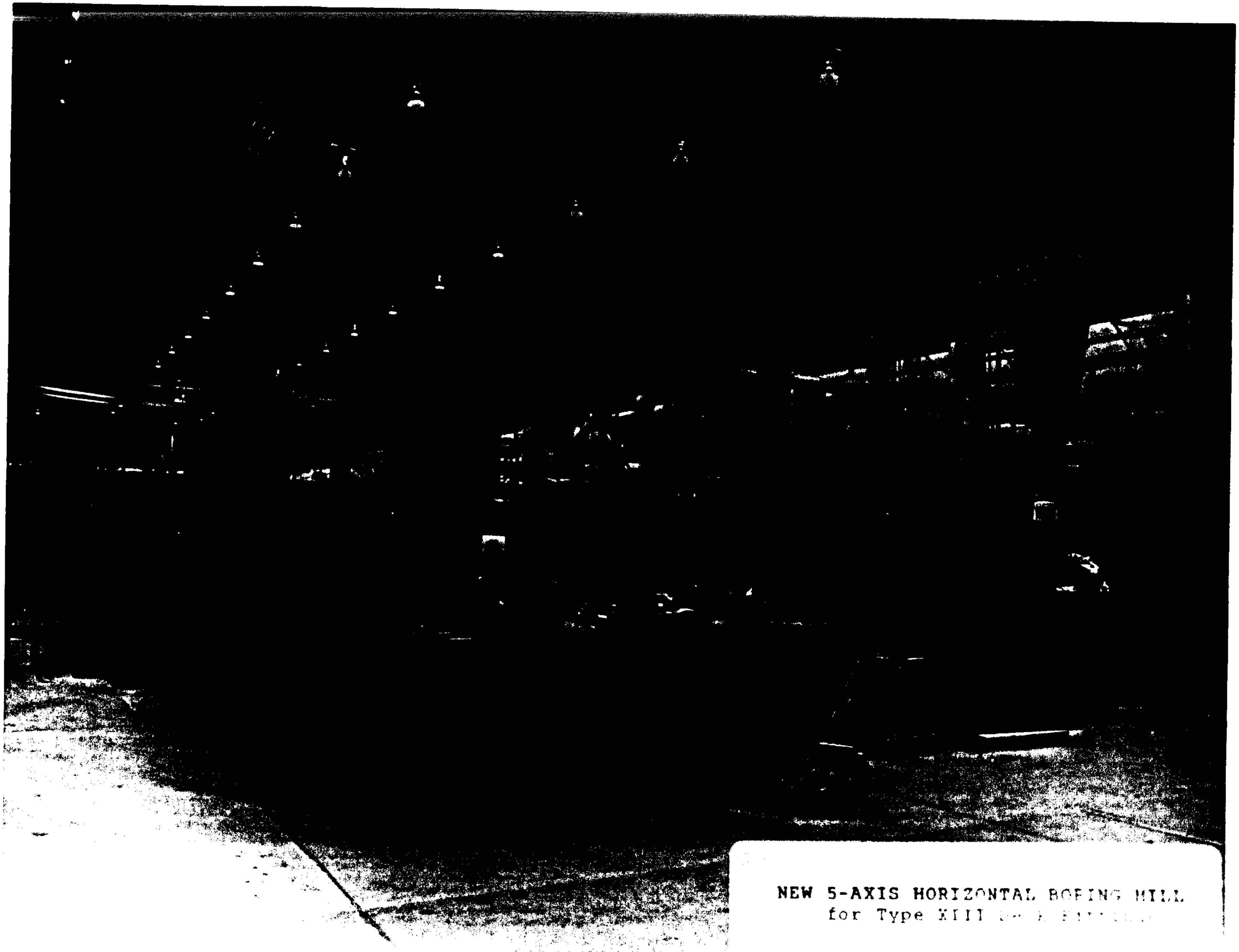
Electrical Assembly in progress



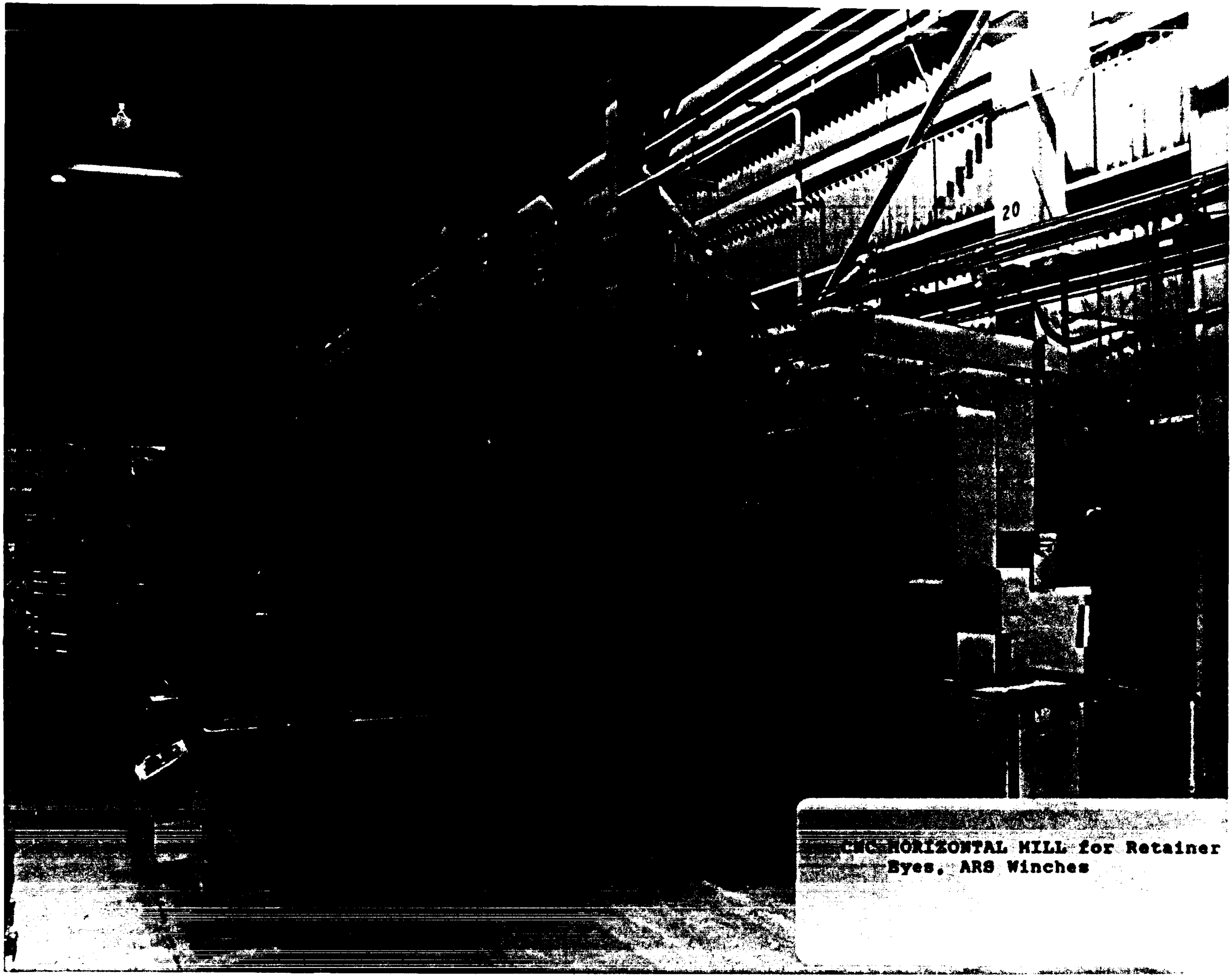
AUTOMATIC MACHINING CELL for Machining Cross Deck Pendant Terminals



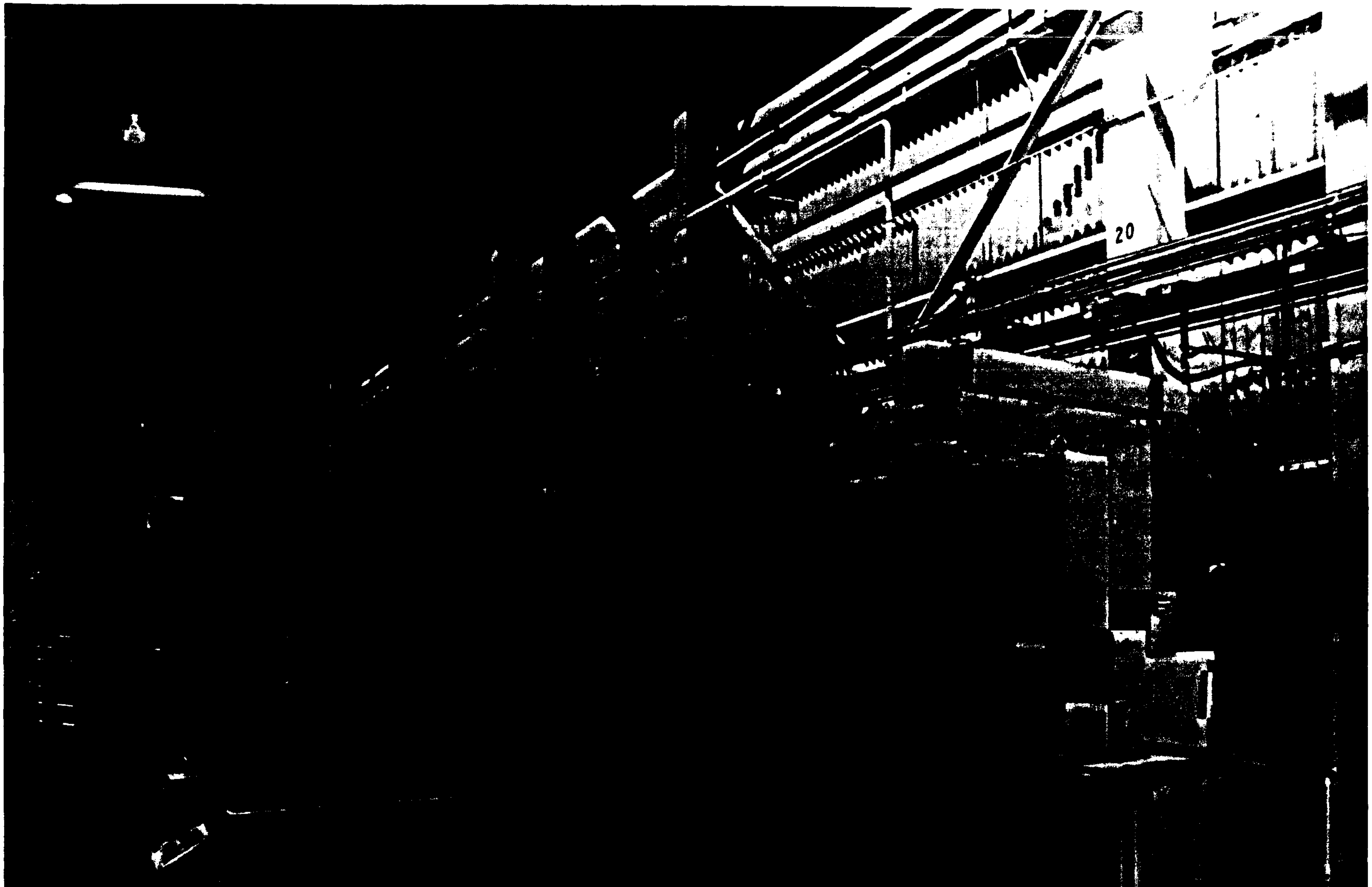
NEW 5-AXIS HORIZONTAL BORING MILL
for Type XIII Deck Fittings



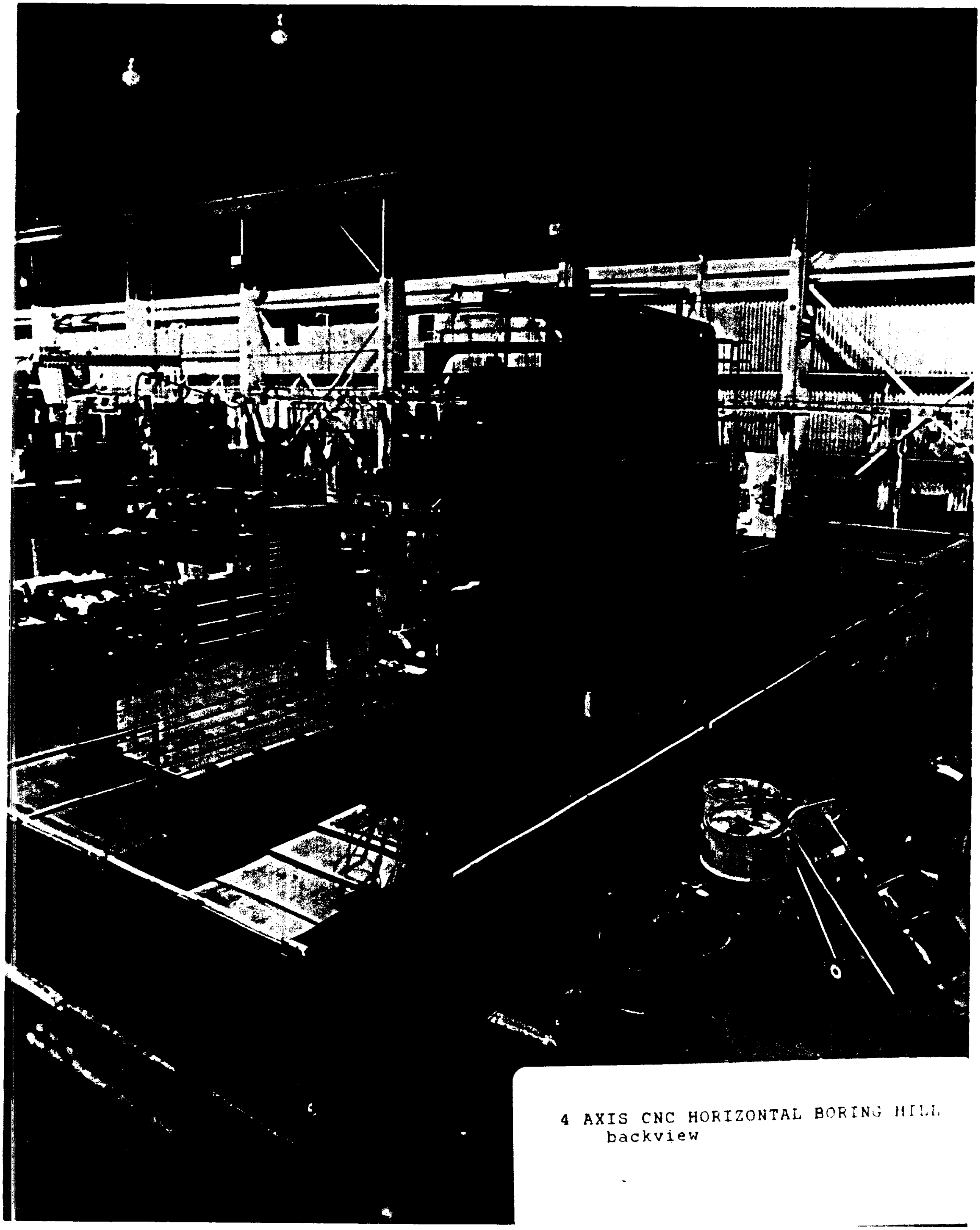
NEW 5-AXIS HORIZONTAL BORING MILL
for Type XIII



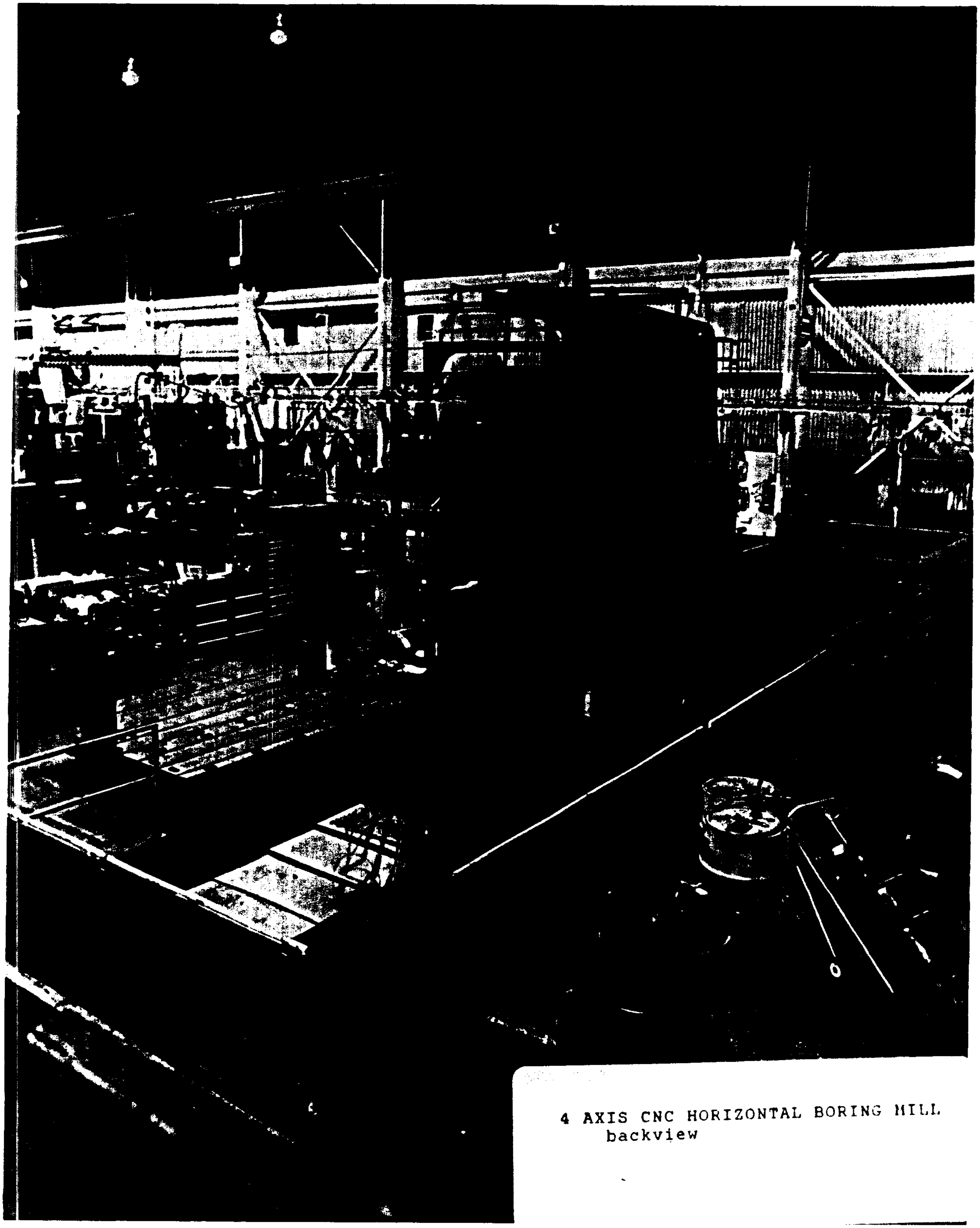
CNC HORIZONTAL MILL for Retainer Eyes, ARS Winches



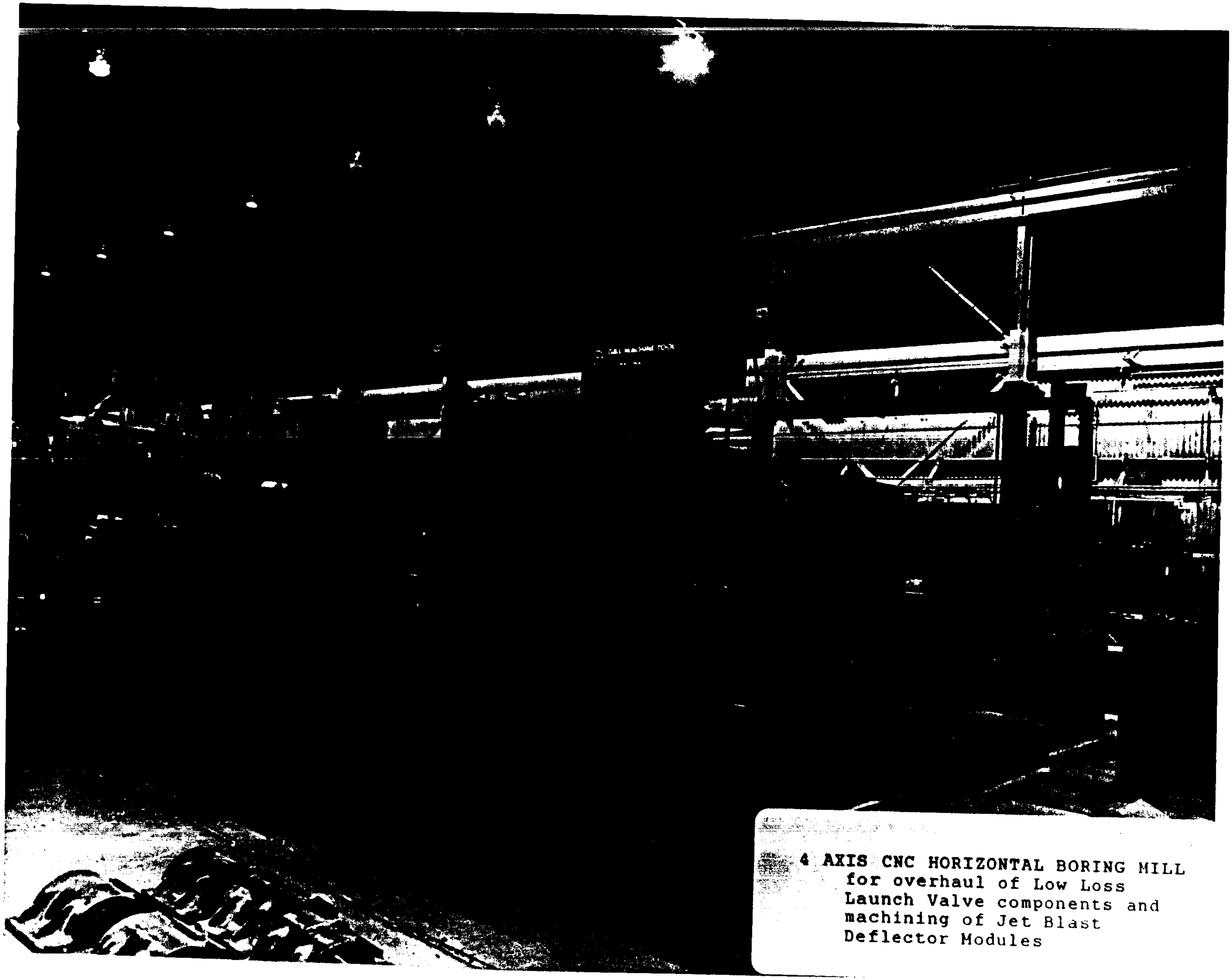
HORIZONTAL MILL for Retainer Eyes; ARS Winches



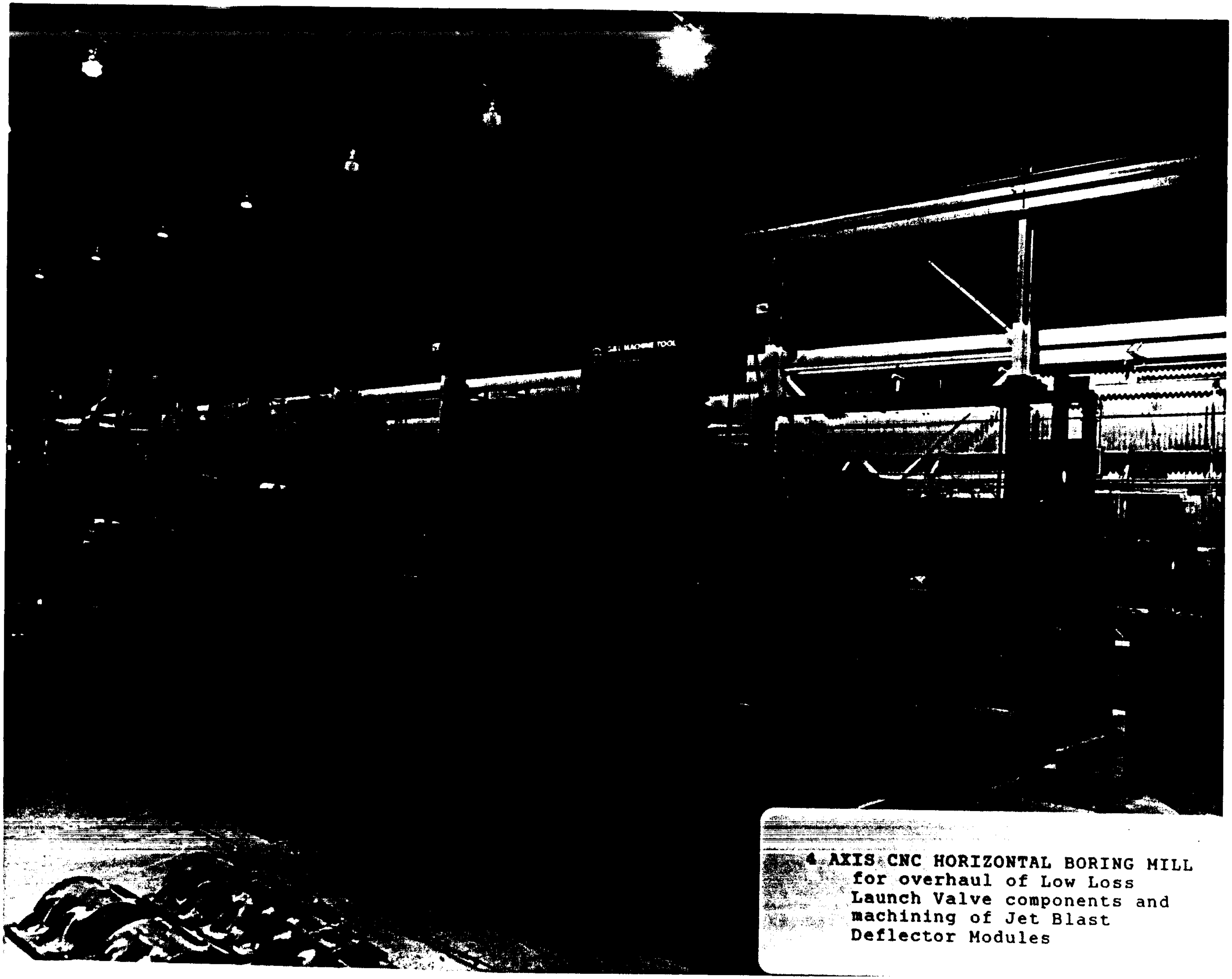
4 AXIS CNC HORIZONTAL BORING MILL
backview



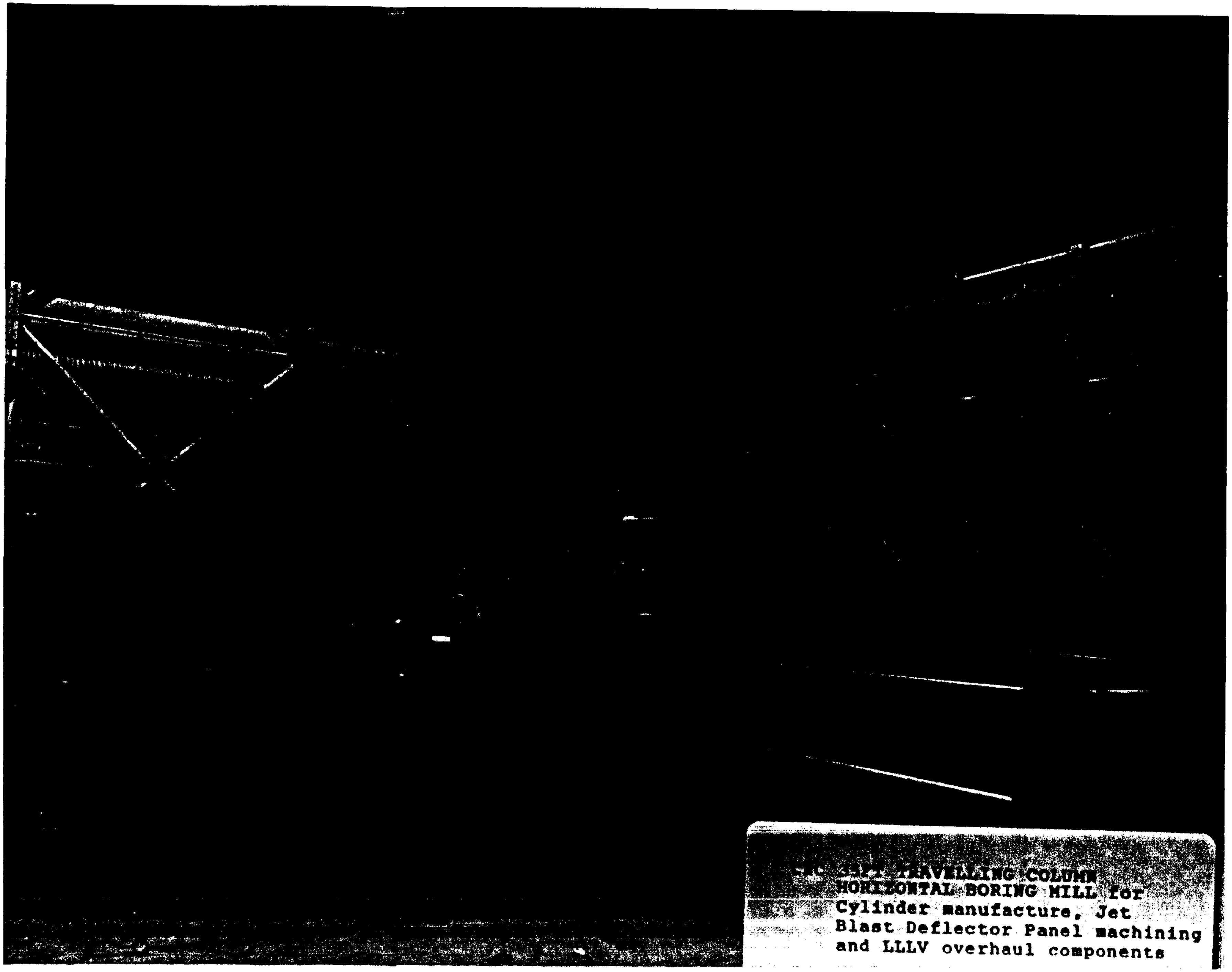
4 AXIS CNC HORIZONTAL BORING MILL
backview



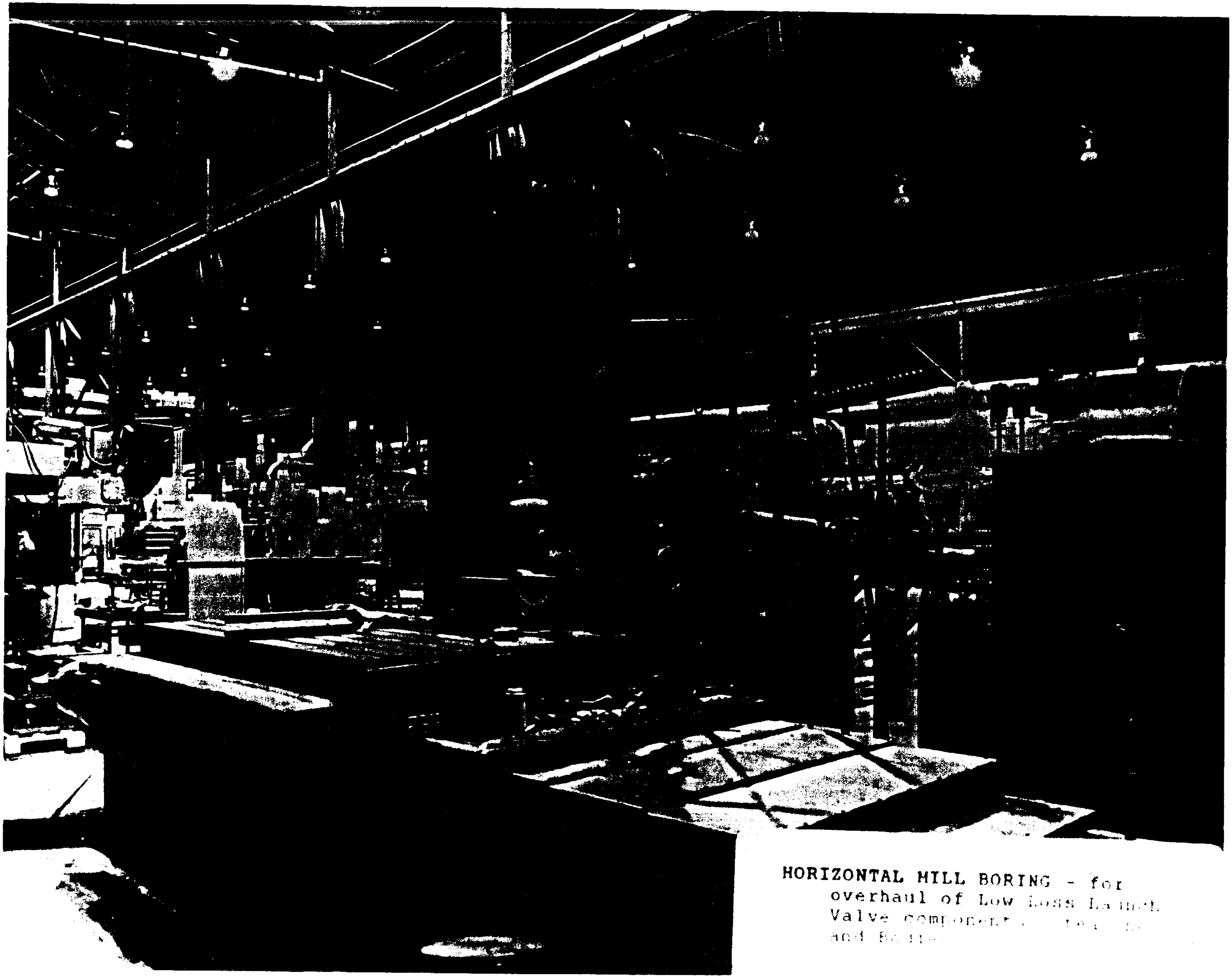
4 AXIS CNC HORIZONTAL BORING MILL for overhaul of Low Loss Launch Valve components and machining of Jet Blast Deflector Modules



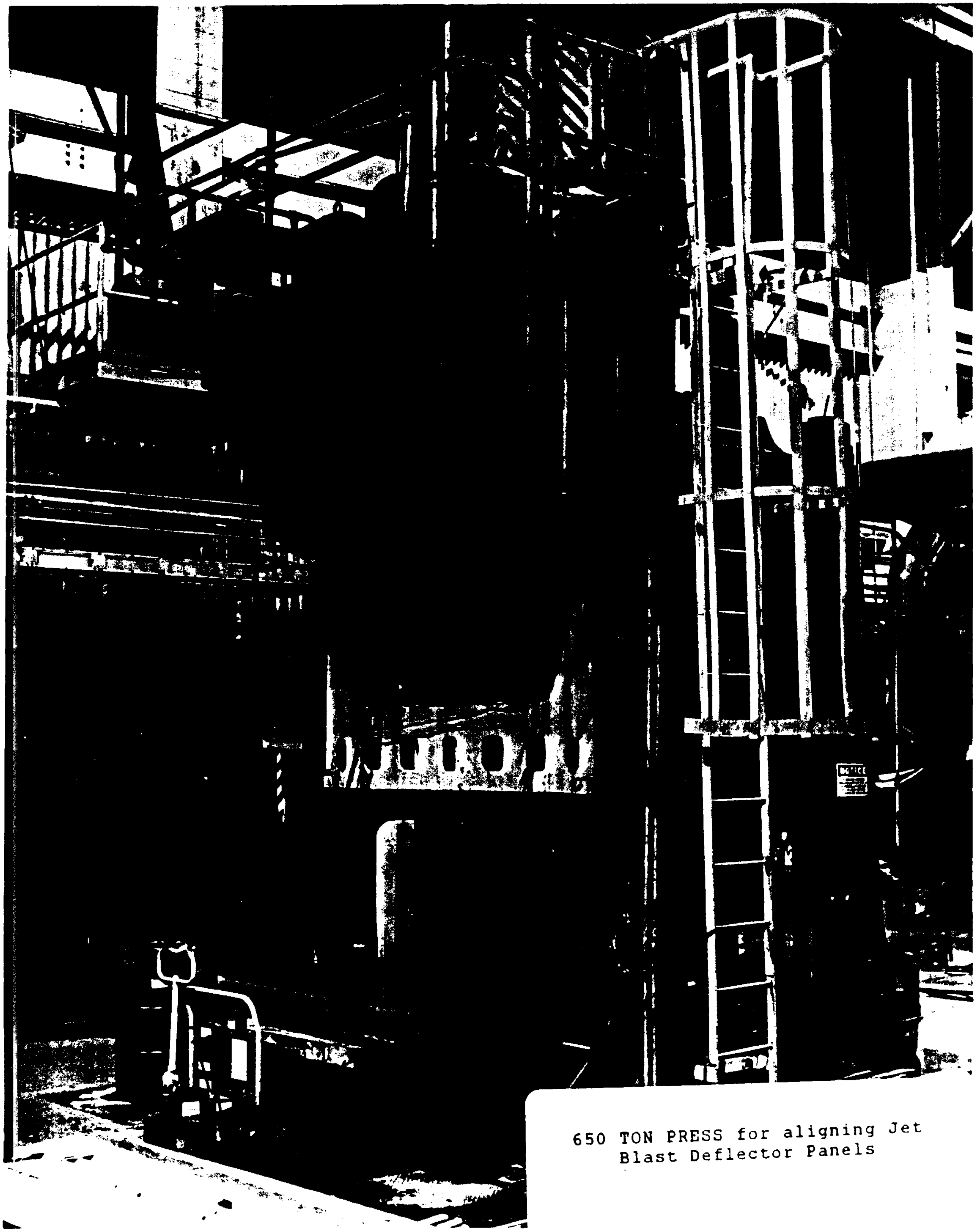
4 AXIS CNC HORIZONTAL BORING MILL for overhaul of Low Loss Launch Valve components and machining of Jet Blast Deflector Modules



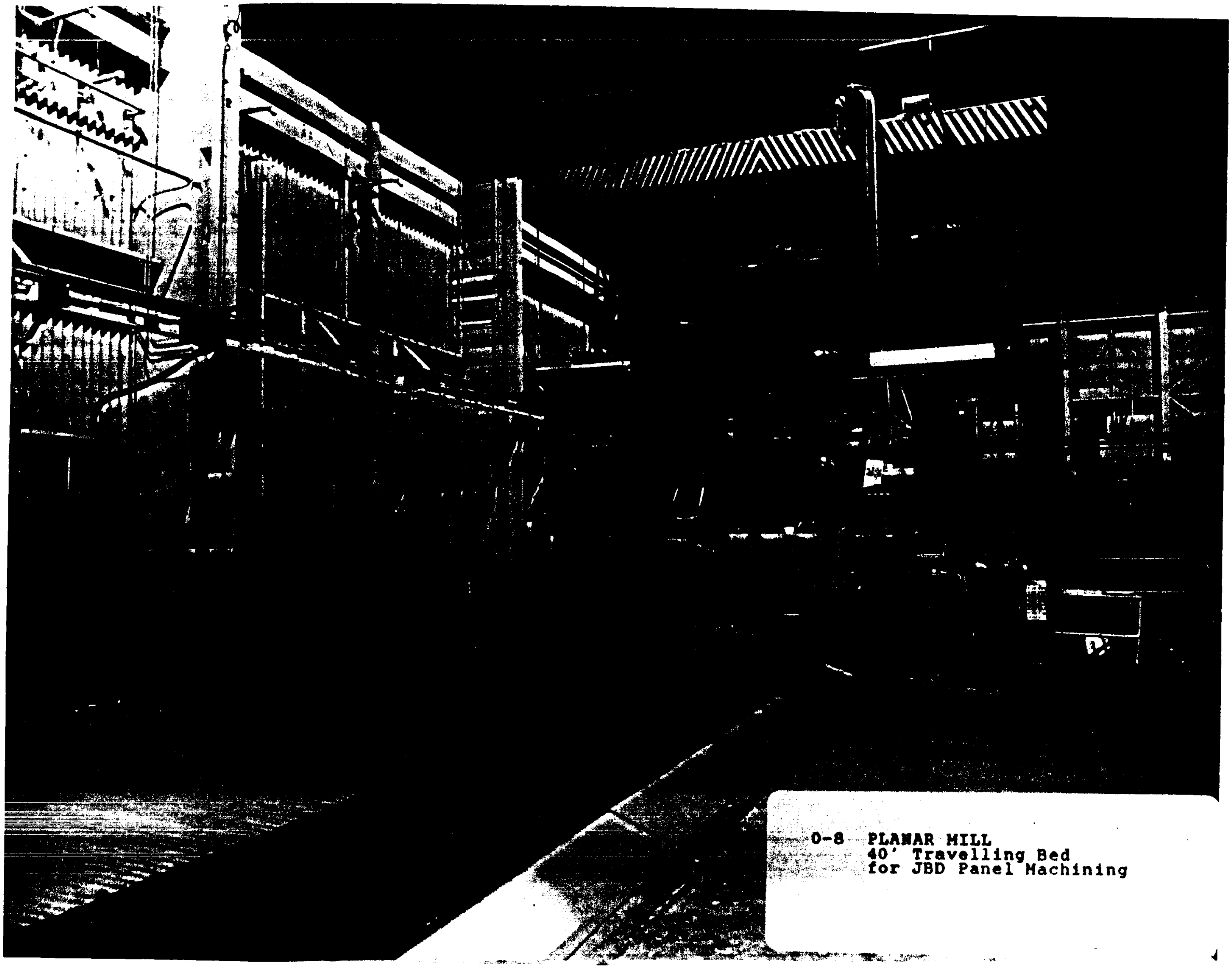
CNC 35FT TRAVELLING COLUMN
HORIZONTAL BORING MILL for
Cylinder manufacture, Jet
Blast Deflector Panel machining
and LLLV overhaul components



HORIZONTAL MILL BORING - for overhaul of Low Loss Launch Valve component [illegible] and Bo[illegible]



650 TON PRESS for aligning Jet
Blast Deflector Panels



0-8 PLANAR MILL
40' Travelling Bed
for JBD Panel Machining

Document Separator

NAWCAD LAKEHURST

163

DATA CALL TWELVE

"LAB" JOINT CROSS-SERVICE GROUP GUIDANCE PACKAGE

See Revised Data Call

Note: NAWCAD LAKEHURST has added the Common Support Function (CSF) Air Platform Interface (API) as most descriptive of its "laboratory" related activity. This addition is made in accordance with NAWC Headquarters agreement and guidance.

SECTION I: TASKING

In accordance with the Deputy Secretary of Defense memorandum dated 7 Jan 94, the Laboratory Joint Cross-Service Group (LJCSG) with DOD components should, where operationally and cost effective, strive to: retain in only one Service militarily unique capabilities used by two or more Services; consolidate workload across the Service to reduce capacity; and assign operational units from more than one Service to a single base. Specifically, the purpose of the LJCSG is:

- Determine common support functions and bases to be addressed by LJCSG
- Establish guidelines, standards, assumptions, measures of merit, data elements and milestone sches for DOD Component conduct of cross-service analysis of common support functions
- Review excess capacity analysis
- Develop closure or realignment alternatives
- Analyze cross-service trade-offs

The following information identifies to the Services common support functions and data element requirements necessary to support the cross-service analysis of these common support functions.

1.1 Guidelines

Because the DOD components are organized differently, "Lab" activities are considered to be those involved in the following life cycle efforts: Science and technology, and/or engineering development, and/or in-service engineering.

Service missions and force structure will be as stipulated in the FY1995-2000 Defense Planning Guidance and Interim Force Structure Plan.

The Military Departments will use the projected funding in the FY95 President's Budget Submission (Future Years Defense Plan -- FYDP) and an estimate of funds that will be received from outside the military department for execution.

If "lab" excess capacity exists, the Military Departments will start to reduce it where operationally and cost effective through a combination of downsizing in place within the departments, internal service consolidation, and cross service alternatives.

The Military Departments will gather, exchange, and analyze data collected per this guidance call for Common Support Functions (Appendix C) at "lab" activities (Appendix B) in accordance with the milestones and schedule dates identified in Appendix A.

Cross-service alternatives will result in an aggregate reduction in the overall "lab" infrastructure across the Military Departments -- personnel/funding/facilities and equipment.

Common cross-service Measures of Merit will be consistently applied for all cross-service alternatives.

Integration of weapon systems/components into operational forces will remain with the individual Military Departments responsible for those forces.

1.2 Standards

Evaluation of cross-service alternatives will be consistent with PL 101-510 (as amended) and the eight BRAC criteria. Only certified data will be used.

The COBRA cost model will be used to calculate estimated costs, estimated savings, and Return on Investment (ROI) of alternatives leading to proposed closures and realignments. Common inputs will be used for Military COBRA runs incorporating cross-service alternatives.

Military value analysis will be conducted by the Military Departments IAW Title 10, USC responsibilities.

1.3 Assumptions

"Lab" Common Support Functions and activities identified herein represent the major opportunities for developing cross-service alternatives. The Military Departments are not precluded from proposing other cross-service alternatives to reduce excess capacity as they assess the full complement of "lab" functions.

Previous BRAC decisions will be factored into cross-service alternatives.

"Lab" capacity will be based on budgeted workyears. A workyear is considered to be 2080 hours adjusted for time not on the job (e.g. sick leave, annual leave, etc.)

1.4 Measures of Merit

The following Measures of Merit represent the outcome from the DOD component final realignment and closure recommendations that are supported by the capabilities data which will be gathered by activity and common support function in Section III of this guidance.

- Reduction of "lab" infrastructure
- Return on investment (COBRA)
- Military value (BRAC criteria 1-4) -- the composite assessment of the quality of the remaining "lab" infrastructure

1.5 Activities

The Military Departments will collect capacity data for each "lab" activity identified in Appendix B. The "lab" activities were selected by considering all individual aggregates of personnel and facilities located at one base, under the same commander, performing predominantly science and technology (S&T), engineering development, and/or in-service engineering work. Small subelements of these "lab" activities were included with the activity. Larger subelements were broken out and defined as separate activities. The list of activities was then narrowed down to the list in Appendix B based on a joint Military Department assessment of common support functions with cross-service potential.

1.6 Common Support Functions

The common support functions (CSFs) were selected as shown in Appendix C based on a joint Military Department assessment of commonalty and cross-servicing potential. Common support functions which were already consolidated and being cross serviced were not included.

Common Support Functions are divided into two categories: product and pervasive. Product functions include all S&T, engineering development, and in-service engineering efforts associated with a product from all funding sources. Pervasive functions only include those efforts that are S&T funded, i.e. Technology Base (6.1)/Exploratory Development (6.2)/Advanced Development (6.3).

SECTION II: CAPACITY OF DOD COMPONENTS

2.1 Workload. Use the following table to describe historic and projected workload at each activity in terms of funding and workyears. Assume previous BRAC closures and realignments are implemented on schedule. Projected funding will be derived from FY95 President's Budget Submission (Then year dollars). Past fiscal year data shall begin with FY86 or at the inception of the activity as it existed on 1 Oct 93. (BRAC Criteria I & IV)

Information Required	Fiscal Years											
	86	87	88	89	90	91	92	93	94	95	96	97
Total Funds Programmed ($M)	**NOT AVAIL**	**103**	**204**	**191**	**233**	**163**	**175**	**210**	**191**	**207**	**194**	**185**
Total Actual Funds ($M)	**135**	**100**	**174**	**179**	**173**	**179**	**167**	**219**				
Programmed Workyears	**NOT AVAIL**	**2619**	**2532**	**2492**	**2567**	**2428**	**2320**	**2190**	**1967**	**1779**	**1845**	**1825**
Actual Workyears	**2545**	**2495**	**2519**	**2479**	**2502**	**2350**	**2308**	**2184**				

- Budgeted workyears are the selected indicator of the "lab" infrastructure's capacity at an aggregate level for each Military Department. They include both workyears funded directly by the Military Department and the workyears funded from organizations outside the Military Department.

Workyears = government personnel and on-site FFRDCs and SETAs

2.2 Excess "Lab" Capacity -- Measured at the DOD Component Level

- Excess "Lab" Capacity = Sum of the Peak Workyears - Sum of the Projected Workyears
  - -- Peak at each activity = Highest value between FY86 (or since inception of organization) and FY93
  - -- Projected at each activity = Estimated at FY97

SECTION III: CAPABILITY OF ACTIVITIES TO PERFORM COMMON SUPPORT FUNCTIONS (CSFs): Provide the information described for each common support function listed in Appendix C in which you are actively engaged.

3.0 **Mission:** Describe the major capabilities at your activity contributing to the common support function in bulletized format. Describe any relationship and interconnectivity with other functions (common or otherwise) in support of the overall activity mission.

The activity mission 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:

Aircraft Terminal Guidance
Aircraft Recovery
Aircraft Handling
Propulsion Support
Avionics Support
Aircraft Servicing and Maintenance
Aircraft/Weapon/Ship Compatibility
Aircraft 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 (e.g. catapult launch valves) and limited production of fleet essential items (e.g., 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

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."

3.1 Location

3.1.1 Geographic/Climatological Features: Describe any geographic/climatological features in and around your activity that are relevant to each CSF. Indicate and justify those that are required versus those that just serve to enhance accomplishing the mission of the activity. For example, clear air at high altitude that increases quality of atmospheric, ground-based laser experiments in support of the weapons CSF. (BRAC Criteria I)

A ENHANCE MISSION ACCOMPLISHMENT:

The activity 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 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.

The activity possesses the only military parachute drop zone in the north east region.

In addition, it is noteworthy to address the potential for jointness among Lakehurst, Fort Dix and McGuire Air Force Base. The Fort Dix 31,065 acre complex which includes McGuire Air Force Base is contiguous to Lakehurst's 7,430 acres. One recent example of Jointness is the Air Mobility Warfare Center and the Army planning to use Lakehurst grounds for training exercises.

B REQUIRED FOR MISSION ACCOMPLISHMENT

The following features are required to support the product evaluation and verification mission which necessitates catapult and arrestment of fixed wing aircraft and operation of rotary wing aircraft.

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 VFR operating areas and easy access to IFR 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.

3.1.2 Licenses & permits: Describe and list the licenses or permits (e.g., environmental, safety, etc.) that your activity currently holds and justify why they are required to allow tests, experiments, or other special capabilities at your location for each CSF. For example, permit to store and use high explosives. (BRAC Criteria I)

1. Air vehicles

The TC13 MOD O and the TC13 MOD 2 catapults are both connected to an industrial wastewater treatment system for which a New Jersey Pollution Discharge Elimination System permit has been authorized. This permit enables continuous operation of the catapult systems. A member of the Public Works Environmental Branch is a licensed NS operator responsible for the operation of the wastewater treatment system. A New Jersey Stormwater Discharge Permit details the storm water discharge for the entire catapult area under normal operation and usage. A New Jersey Department of Environmental Protection and Energy (NJDEPE) Air Discharge Operating Permit has been obtained for the boiler which supplies the steam for the catapult systems. The boiler is being upgraded with Continuous Emission Monitoring equipment to exceed the permit conditions, in anticipation of stricter air pollution legislation in New Jersey. The catapult and arresting gear test area is located within Noise Zone 3 where noise in excess of 75 Level of Day and Night (Ldn) can occur.

The Helo Complex consists of an elevated fixed platform and a universal lighting pad. This testing area is also within the scope of the New Jersey Stormwater Discharge Permit. This area is located in Noise Zone 3.

NAWCAD Trenton operates as a tenant because of its need to be located in Noise Zone 3 and the ability to operate at higher decibel levels than at the Trenton facility. This facility is also part of the New Jersey Stormwater Discharge Permit.

2. Training Systems

The TC13 MOD O and the TC13 MOD 2 catapult and associated arresting gear systems and the Helo Test Complex also operate as training systems. The permits and licenses mentioned above apply in this category also.

3. Environmental Quality

The 1993 Environmental Compliance Evaluation (ECE) determined that NAWCAD Lakehurst is in compliance with all mandated permits and licensing requirements. NJDEPE Air Discharge Operating Permits have been obtained for its four National Priority List (NPL) Groundwater Pump and Treatment Facilities. EPA and NJDEPE approval has been received for the recycling of petroleum hydrocarbon contaminated soil, excavated from different NPL sites, using an asphalt batching process. Another NPL remediation project, which has obtained approval from both EPA and NJDEPE, is bio-venting of soils.

NAWCAD Lakehurst possess the unique capability to complete and maintain all required permits and licenses.

NAWCAD Lakehurst is classified under the Resource Conservation and Recovery Act (RCRA) as a generator of hazardous waste, NAWCAD Lakehurst is permitted to store hazardous waste for up to 90 days.

3.1.3 Environmental Constraints:

1. Environmental Quality

An increase in mission can be accommodated by the environmental resources at NAWCAD Lakehurst. An increase may require a Part B for the Treatment Storage Disposal Facility Permit. This is required if hazardous waste must be stored in excess of 90 days or if treatment is done on site.

Environmental contraints do not differ from those items listed in the most recently accepted master plan, Section V-D.

The specific topics addressed in the plan include:

Natural Constraints
- Threatened and Endangered Species
- Historic Sites
- Flood Prone Areas
- Wetlands

Man-Made Constraints
Airfield Imaginary Surfaces
Contaminated Areas
Electromagnetic Interference and Radiation hazards
Explosive Safety Quantity Distance Arcs
Ordnance Handling Routes
Noise Data
Ordnance Contaminated Areas
Range Safety Zone
AICUZ

Although these areas place certain restrictions on growth, careful environmental planning and design would allow for growth.

3.1.4 Special Support Infrastructure: List and describe the importance of any mission related special support infrastructure (e.g. utilities) present at your location for your activity. (BRAC Criteria I)

HIGH PRESSURE STEAM PLANT:

The steam catapult complex requires high pressure steam to operate the two installed catapults. These catapults, a TC13 Mod 0 and a TC13 Mod 2, are used to develop and evaluate improvements to the launcher system.

The steam supply for a fully capable test catapult must be able to deliver saturated or superheated steam at a flow rate to conduct catapult steam charging tests and to demonstrate aircraft launches with a minimum launch interval of 45 seconds. The highest end pressure used on present fleet catapults is 560 psi. Therefore, the source pressure must be high enough to deliver this flow rate and pressure while taking into account pressure drop between the steam supply and catapult accumulator (typically approx. 80 psi).

The existing steam plant has 2 operational boilers that can deliver a combined total of 138,000 pounds per hour (one at 38,000 and one at 100,000 pounds per hour) at 600 psi. The current 138,000 pounds per hour delivery from the two operational boilers provides sufficient capacity to simultaneously operate both catapults or to conduct steam charging tests on one catapult by using the second catapult's accumulators to augment steam flow from the boilers.

Power Plant #2 Facility No. 362 category code - 821-09 Catapult Steam Plant. This facility provides the steam necessary for operation of the TC-13 Mod 0 and Mod 2 catapults.

Sub station #2 Facility No. 358 category code - 813-20 Substation generates more than 499 kv. This facility provides the electrical power necessary for operations of all facilities located in the vicinity of catapults and track areas.

3.1.5. Proximity to Mission-Related organizations: List and describe the importance and impact of not having nearby organizations which facilitate accomplishing or performing your mission -- e.g. operational units, FFRDCs, universities/colleges, other government organizations, and commercial activities. Restrict your response to the top five. Complete the following: (BRAC Criteria I)

Colleges and universities with curriculums that directly relate to general knowledge requirements for professional and technical positions at the activity are numerous and easily accessible to activity personnel. Numerous engineering contractors are closely available to provide support as required. Specialized knowledges of the unique equipment developed by the activity are not obtainable through formal education, but rather are developed through on-the-job training. It is also important that we are nearby to NAWCAD PAX (50 minute station to station flight) and within one hour drive of NAWCAD Warminster and NAWCAD Trenton for coordination and technical interface.

3.2 Personnel:

3.2.1 Total Personnel: What is the total number of government (military and civilian), on-site federally funded research and development center (FFRDC), and on-site system engineering technical assistance (SETA) personnel engaged in science and technology (S&T), engineering development and in-service engineering activities as of end FY93? For individuals that predominantly work in CSFs, involved in more than one CSF, account for those individuals in the CSF that represents the preponderance of their effort. (BRAC Criteria I)

Types of personnel	Number of Personnel			
	Government		On-Site FFRDC	On-Site SETA
	Civilian	Military		
Technical	682	6	0	0
Management (Supv)	152	1	0	0
Other	222	0	0	0

3.2.2 Education: What is the number of government personnel actively engaged in S&T, engineering development and in-service engineering activities by highest degree and type of position? Provide the data in the following table: (BRAC Criteria I) (Civilian Only)

Type of Degree/Diploma	Number of Government Personnel by Type of Position		
	Technical	Management (Supv)	Other
High School or Less	173	13	127
Associates	28	3	32
Bachelor	338	68	55
Masters	138	67	7
*Doctorate (include Med/Vet/etc)	5	1	1

*** Includes Professional Degrees (EX: JD)**

3.2.3 Experience: What is the experience level of government personnel? Fill in the number of government personnel in the appropriate boxes of the following table. (BRAC Criteria I) (Civlian Only)

Type of Position	Years of Government and/or Military Service				
	Less than 3 years	3-10 years	11-15 years	16-20 years	More than 20 years
Technical	3	421	84	61	113
Management (Supv)	0	17	27	24	84
Other	0	74	54	39	55
Total	3	512	165	124	252

- **Other includes employees in series 0334, 0343, 0346, 1150, 1152, 1910, 4701, 1670 with Sup. Code of 6, 8 (non-supv or mgt.)**

Total population = 1056

3.2.4 Accomplishments During FY91-93: For government personnel answer the following questions.

3.2.4.1 How many patents were awarded and patent disclosures (only count disclosures with issued disclosure numbers) were made? (BRAC Criteria I)

CSF	Disclosures	Awarded	Patent Titles (List)
API-ALRE	1	0	**Intense Light Filter for Imaging Systems**
API-SE	1	0	**Oxygen Sensor Using Hall Effect Device**
Total	2	0	

3.2.4.2 How many papers were published in peer reviewed journals? (BRAC Criteria I)

CSF	Number Published	Paper Titles (List)
API-ALRE/SE	**1**	**1994: Artificial Neural Networks Engineering Conference, "A Comparison between Fuzzy C-Means and Fuzzy Min-Max Clustering for Aircraft Image Segmentation", by Susan McGrath**
API-ALRE/SE	**1**	**1994: IEEE Electromagnetic Launch Symposium, "Electromagnetic Aircraft Launch System -- EMALS", By Michael R. Doyle**
API-ALRE/SE	**1**	**1993: Proceeding of NASA 2003 Tech Conference, "H46 Blade Using Artificial Neural Networks", by Macro Tedeschi**
API-ALRE/SE	**1**	**1993: Proceedings of the 1993 ASME Winter Annual Meeting, DSC-Vol 48, "Fuzzy Neural Control of an Aircraft Tracking Camera Platform", by Dennis McGrath**
API-ALRE/SE	**1**	**1993: Proceedings of the 27th Annual DOD Cost Analysis Symposium, Obtaining Feedback on the Life Cycle Cost Analysis of the Standard Engine Test System, by John Melin**
API-ALRE/SE	**1**	**1993: Proceedings of Technology 2003, the Fourth Annual Technology Transfer Conference, "Intelligent Control Systems", by Dennis McGrath**
API-ALRE/SE	**1**	**1993: Hazardous Materials Control Resources Institute's Abstract Guide to Manuscripts, Superfund XIV, "A Federal Success Story", NAES Lakehurst Environmental Group**

API-ALRE/SE	1	1993: Conference for Artificial Intelligence Applications for Military Logistics, "Logistics Support Analysis Advisor", by Mark Husni
API-ALRE/SE	1	1993: Technical Manuals, "Maintenance Requirements Card", joint authorship between in-service engineers and logistics personnel
API-ALRE/SE	1	1992: Proceedings of the National Security Industrial Association, "TPS Documentation for CASS in Hypertext Form", by Richard Epstein
API-ALRE/SE	1	1992: MECH Magazine, the Naval Aviation Maintenance Safety Review, "White Support Equipment", by Gabrielle Gerliczy
API-ALRE/SE	1	1992: Proceedings for AUTOTESTCON92, "CASS TPS Documentation -- A High Technology Tool", by Richard Epstein
API-ALRE/SE	1	1992: Proceedings for AUTOTESTCON92, "Automated Integrated Diagnostics for Aircraft Mechanical Systems", by Robert Rossi
API-ALRE/SE	1	1991: Circuit, Journal of the Institute of Interconnection Technology, Vol. 17, No. 1, "Printed Wiring Board Inner Layer Contamination Study", by Albert S. Chan
API-ALRE/SE	1	1991: Proceedings of the Internal Society for Optical Engineering, "Repair and Maintenance of Fiber Optic Data Links on Navy Aircraft", by Eric Fryland
API-ALRE/SE	1	1991: Naval Aviation Maintenance Safety Magazine, "High Pressure Can Be Hazardous To Your Health", by Kathy Donnelly

API-ALRE/SE	1	1991: 5th IEEE International Symposium on Intelligent Control, "Conceptual Learning: Hierarchical System", by Larry Venetsky
API-ALRE/SE	1	1991: IEEE Computer Society Built-In Self Test Workshop, "System-level Simulation for Supportability Analyses", by Fred Liguori
API-ALRE/SE	1	1991: 6th Annual Tri-Service RADCAD Symposium, "Readiness Assessment -- Where "Ilities" and "Abilities Meet", by Fred Liguori
API-ALRE/SE	1	1990: Society of Logistics Engineers, 25th Annual Symposium, "Computer Modeling for System-Level Supportability Analyses", by Fred Liguori
API-ALRE/SE	1	1990: Proceedings of DOD Fiber Optics Conference, "Fiber Optic Resource for Test Equipment", by Eric Fryland
API-ALRE/SE	1	1990: Ground Water Monitoring Review, "Remediation of Contaminated Ground Water Using Biological Techniques", by Paul E. Flathman, Douglas E. Jerger and Lucy S. Bottomley
API-ALRE/SE	1	1990: Proceedings of IEEE Systems Readiness Technology Conference, AUTOTESTCON90, "Decision Support Tools Help Transition CASS into the Fleet",. by Chuck Tyrpak, Mike Malesich, and Jim McCabe
TOTAL	23	

3.3 Workload

3.3.1 FY93 Workload

3.3.1.1 Work Year and Lifecycle: Identify the number of actual workyears executed for each applicable CSF in FY93 for each of the following: government civilian; military; on-site FFRDCs; and on-site SETAs. (BRAC Criteria I)

"LAB" CSF: API	Fiscal Year 1993 Actual			
	Civilian	Military	FFRDC	SETA
Science & Technology	**19**	**0**	**0**	**0**
Engineering Development	**917**	**6**	**0**	**0**
In-Service Engineering	**242**	**1**	**0**	**0**

3.3.1.2 Engineering Development By ACAT: For each Common Support Function (e.g. airborne C4I) at each activity engaged in engineering development, provide:

- For each ACAT IC, ID, and II program (as defined in DODI 5000.2):
  - The name of the program
  - A brief program description
- For each ACAT III and IV programs:
  - The number of such programs
  - A list of program names
- For each program not an ACAT I, II, III, IV:
  - The number of such programs
  - A list of program names
- For the purpose of this question, any program between Milestone I and IV and containing demonstration and validation (Dem/Val 6.4)/Engineering and Manufacturing Development (EMD 6.5) funds in the FY95 PBS is considered to be engaged in engineering development (BRAC Criteria I).

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority)	Narrative
ACAT ID	**V-22**	**23.5**	**3561.0**	**V-22 PROGRAM SUPPORT**
ACAT III/IV	**7**			
EMALS		**10.4**	**1.4M**	**ELECTROMAGNETIC A/C LAUNCHER SYS**
ICOLS		**6.6**	**.9M**	**IMPROVED CARRIER OPTICAL LANDING SYS**
IFOLS		**0**	**0**	**IMPROVED FRESNEL LENS OPTICAL LANDING SYSTEM**
Fire Truck		********	********	**A/S32P-25 SHIPBOARD FIRE TRUCK**
ISIS		**16.2**	**2.2M**	**INTEGRATED SHIPBOARD INFO SYS**
ADMCS		**0**	**0**	**AVIATION DATA MGMT AND CONTROL SYS**
Fire Truck		**2.1**	**.3M**	**P25 FIRE TRUCK**
Other	**20**	**57.0**	**9.3M**	**SEABASED OPERATION SUPPORT SEABASED MAINT SUPPORT CVN 76 STUDIES MCS CONVERSION LX STUDIES ABF JDAM ALE-50 SH-60 IFF STD COMP SYS TARGET (QF-4) TOW TARGET STD ENG TEST SET MISC SE MATL STUDIES COMMON SE SYS ENGR**

3.3.1.3 In-Service Engineering: For each Common Support Function at each activity engaged in in-service engineering, list the in-service engineering efforts, the FY93 funds (from all sources) obligated for these efforts, the FY93 workyears for these efforts, and the weapon system(s) supported by these efforts. In-service engineering consists of all engineering support of fielded and/or out of production systems and includes efforts to improve cost, throughput, and schedule to support customer requirements as well as mods and upgrades for reliability, maintainability, and performance enhancements. (BRAC Criteria I)

Common Support Functions	In-Service Engineering Efforts (List)	FY93 Actual		Weapon System(s) Supported
		Funds Received (Obligation Authority)	Workyears	
API	**ALRE/SE**	**$16,615.0**	**242**	**MULTIPLE**

3.3.2 Projected Funding

3.3.2.1 Direct Funding: For each applicable CSF, identify direct mission funding by appropriation from FY94 to FY97. Use FY95 PBS for FY95-FY97. (BRAC Criteria I)

CSF	FY94 ($K)	FY95 ($K)	FY96 ($K)	FY97 ($K)
API:				
R&D	**26,197.4**	**27,936.3**	**37,737.0**	**24,493.0**
O&MN	**57,686.5**	**69,023.8**	**61,877.4**	**63,997.6**
APN	**63,780.3**	**52,799.5**	**50,891.3**	**58,441.9**
OPN	**8,727.8**	**11,622.3**	**8,983.1**	**8,817.0**
SCN	**9,819.3**	**18,462.4**	**12,905.6**	**7,975.9**
Other Navy	**8,784.8**	**10,357.1**	**7,712.9**	**8,222.0**
All Other	**15,778.6**	**16,643.1**	**13,870.5**	**13,101.7**

3.3.2.2 Other Obligation Authority: For each applicable CSF, identify reimbursable and direct-cite funding (other obligation authority expected) from FY94 to FY97. Funding allocation must be traceable to FY95 PBS. (BRAC Criteria I)

CSF	FY94 ($K)	FY95 ($K)	FY96 ($K)	FY97 ($K)
API	**583,804.0**	**511,052.0**	**526,814.0**	**605,637.0**

3.4 Facilities and Equipment

3.4.1 Major Equipment and Facilities: Describe major facilities and equipment necessary to support each Common Support Function (include SCIFs). If the facilities and equipment are shared with other functions, identify those functions and the percentage of total time used by each of the functions. Provide labeled photographs that picture the breadth and scope of the equipment and facilities described. If it is unique to DOD, to the Federal Government, or to the US, describe why it is unique. Insert the replacement cost. For this exercise, Replacement cost = (Initial cost + capital investment) multiplied by the inflation factor for the original year of construction. (BRAC Criteria II)

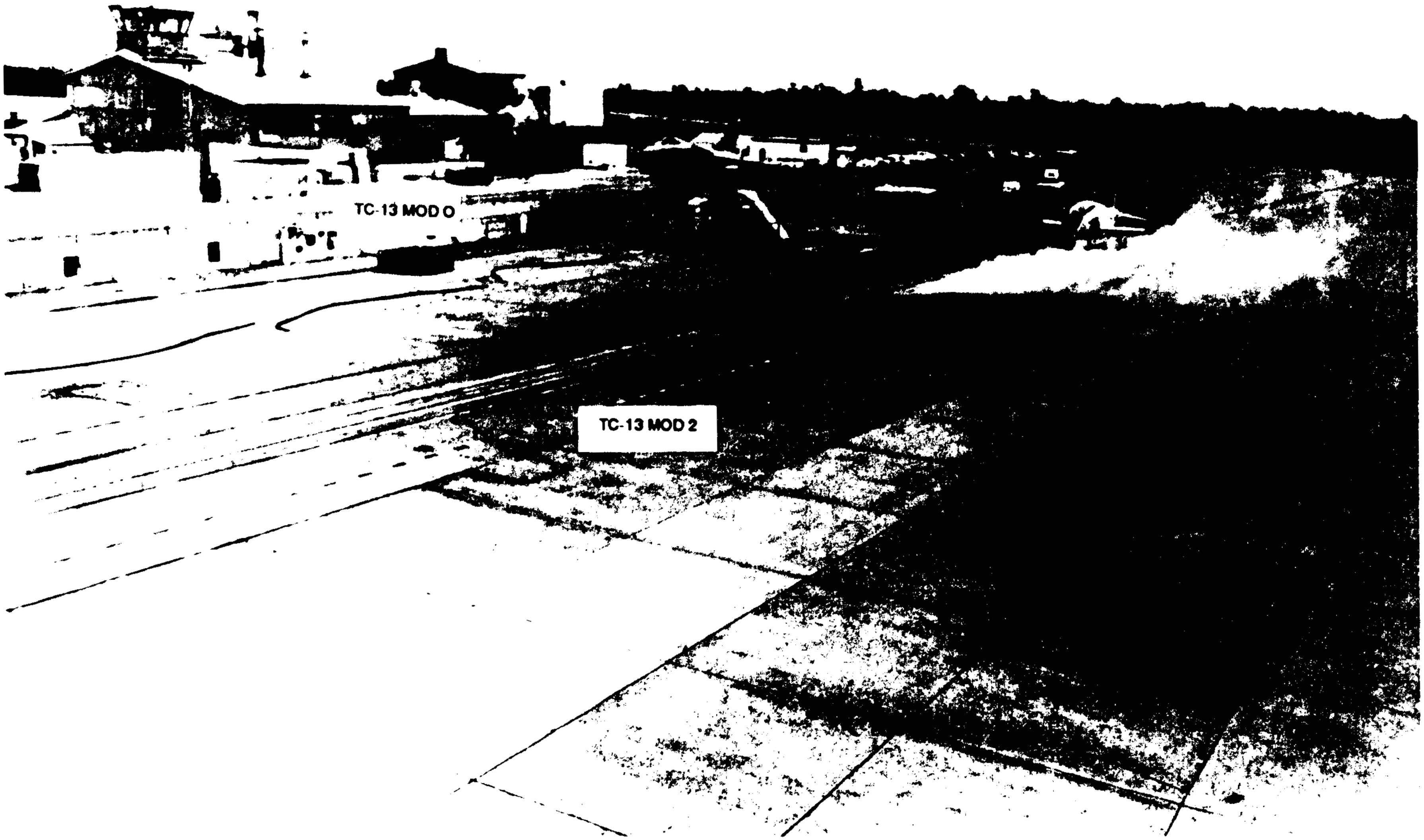
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Steam Catapult Complex:** **This steam catapult complex is the only facility in the world with the ability to launch both aircraft and deadloads.** **Two shipboard-type 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 and to provide in-service engineering support for this equipment. 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, which have a smaller inside diameter. Both consist of two slotted cylinders that extend the length of the stroke in which twin pistons travel. The pistons are attached to a launch shuttle and transmit up the 340,000 pounds of accelerating force to the aircraft as up to 560 psi steam is throttled into the cylinder. At the end of the launch stroke, the pistons are controlled-decelerated by a "Water Brake" Device and returned to battery position by hydraulic retraction motors.**	**YES**	**YES**	**YES**	**120,500**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Steam Catapult Complex (Cont'd) **Both catapults are capable of launching aircraft weighing up to 90,000 pounds and produce end speeds up to 185 knots under normal conditions and up to 300 knots for special catapult tests.** **Steam capacity for the catapults is obtained by means of steam accumulators that provide nearly constant pressure during the launch stroke. The TC13 Mod 0 Catapult has two 1,500 cubic foot dry accumulators, and the TC13 Mod 2 has one 1,900 cubic foot wet accumulator. A steam power plant supplies up to 138,000 pounds per hour of steam to these accumulators. Steam is generated up to a maximum 196,000 pounds/hr at 1,050 psi. Steam temperature is 900 degrees Fahrenheit. Two high pressure boilers are available and two 135 psi boilers for auxiliary steam and heating. Other equipment installed: Demineralizer, Iron Remover, Deaerator, Feed Pumps, Wells, Tanks and Air Compressor.**	**YES**	**YES**	**YES**	

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Steam Catapult Complex (Cont'd)** **A unique feature of both the TC13 Mod 0 and Mod 2 is the deadload launch capability. Recessed guide slots on either side of each catapult track 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. 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.** **The catapult centerlines should be within 1-1/2 degrees of the runway centerline to permit safe aircraft launches for all required evaluations.**	**YES**	**YES**	**YES**	

STEAM CATAPULT COMPLEX

High Pressure Steam Plant



Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Runway Arrested Landing Site (RALS):** **This is the <u>only facility in the world</u> capable of making both high-speed ground roll-in arrestments and fly-in arrestments on shipboard arresting gear.** **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 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.**	**YES**	**YES**	**YES**	**28,544**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Runway Arrested Landing Site (RALS) (Cont'd):** **The RALS 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.**	**YES**	**YES**	**YES**	

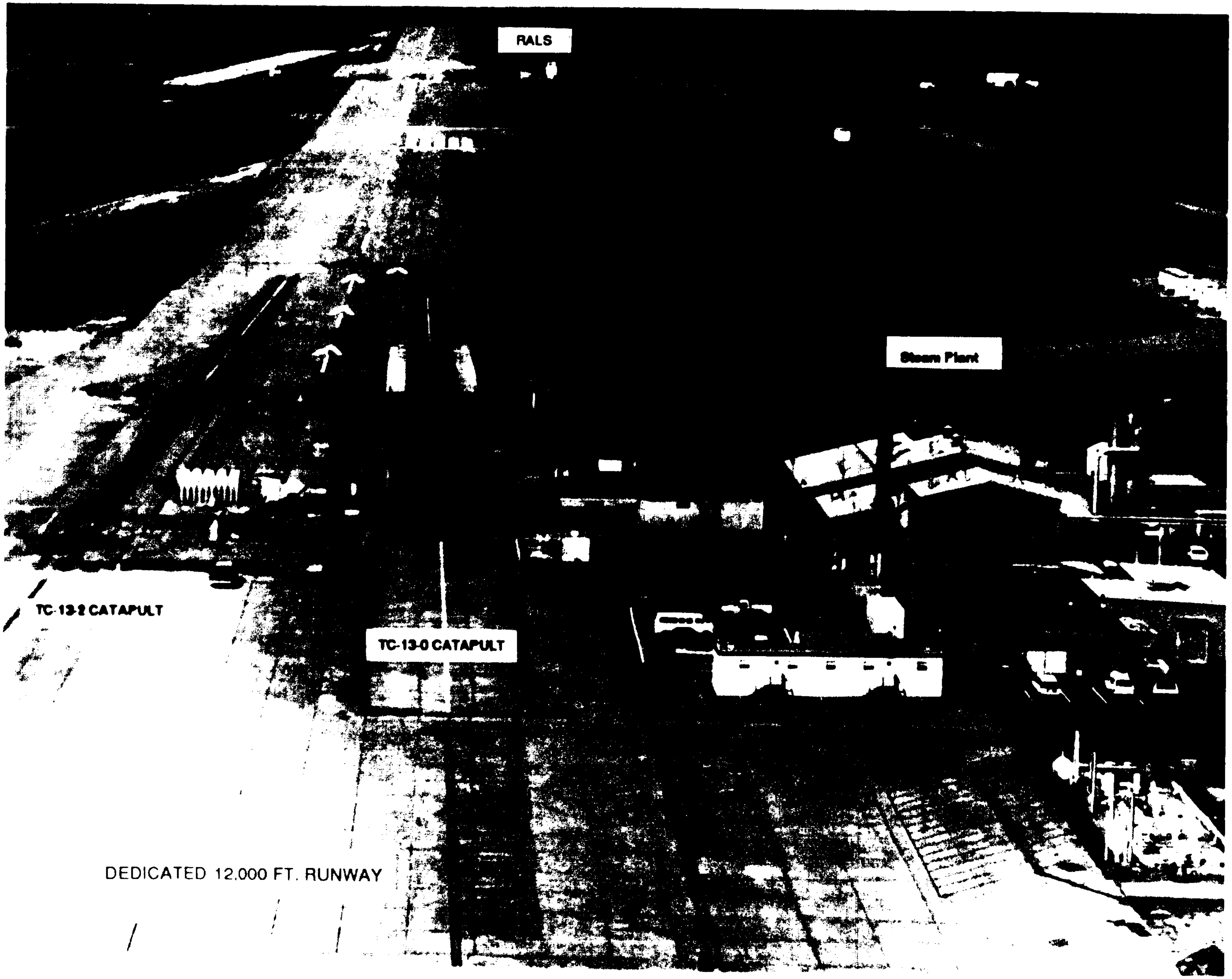
RUNWAY ARRESTED LANDING SITE

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Jet Blast Deflector Site:** **This is the <u>only site in the world</u> capable of conducting required aircraft evaluations with a MK 7 Mod 0 JBD.** **The JBD site includes a MK 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 1,200 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 MK 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 MK 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.**	**YES**	**YES**	**YES**	**3,334**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Jet Blast Deflector Site (Cont'd):** **The 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.**	**YES**	**YES**	**YES**	

JET BLAST DEFLECTOR SITE

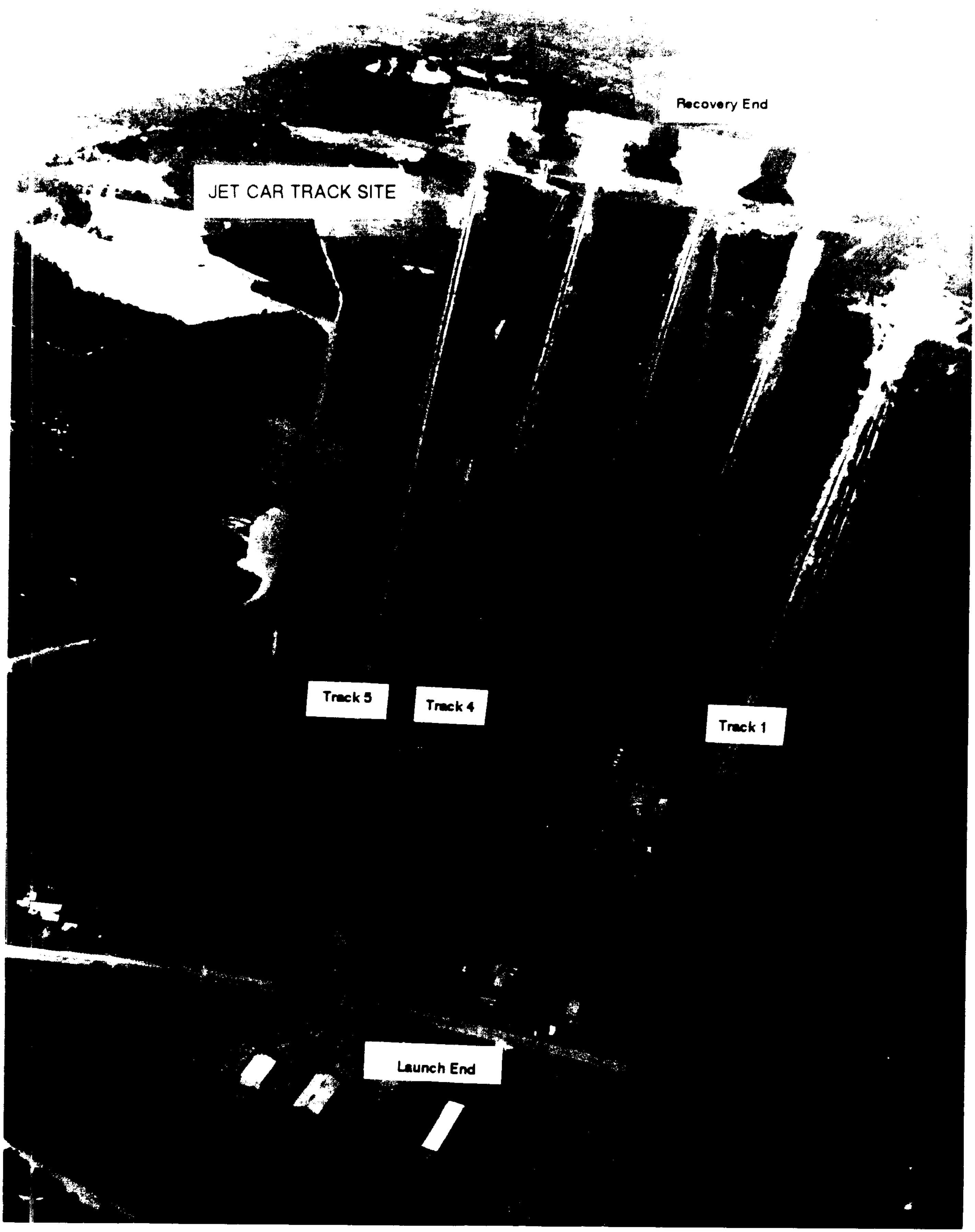
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Runway:** **This is the <u>only facility in the world</u> dedicated to Aircraft Launch and Recovery Equipment (ALRE) development. This 12,000 foot runway, dedicated 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.**	**YES**	**YES**	**YES**	**17,720**



RALS
Steam Plant
TC-13-2 CATAPULT
TC-13-0 CATAPULT
DEDICATED 12,000 FT. RUNWAY

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Jet Car Track Site:** **This facility is unique to the Navy for conducting tests in the 250 knot and below speed range.** **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. Installed at the recovery end of the tracks are a MK 7 Mod 3 and a MK 7 Mod 1 arresting gear**	**YES**	**YES**	**YES**	**24,537**

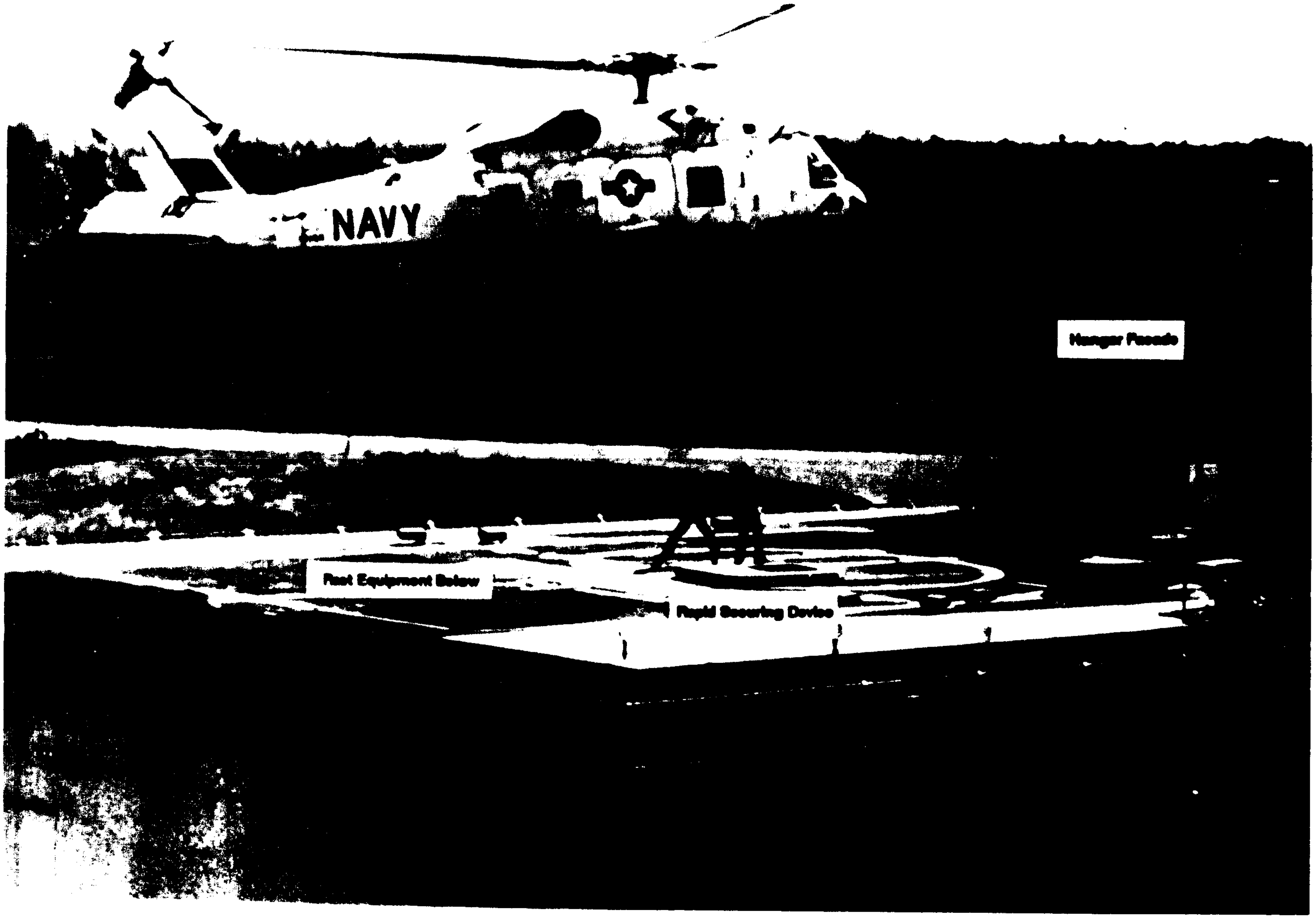
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Jet Car Track Site (Cont'd):** **integral to the testing conducted at this site. A data acquisition site is located adjacent to each major track site capable of recording by ground wires or telementry onto digital recording equipment, or by use of high-speed motion picture or closed circuit television.**	**YES**	**YES**	**YES**	



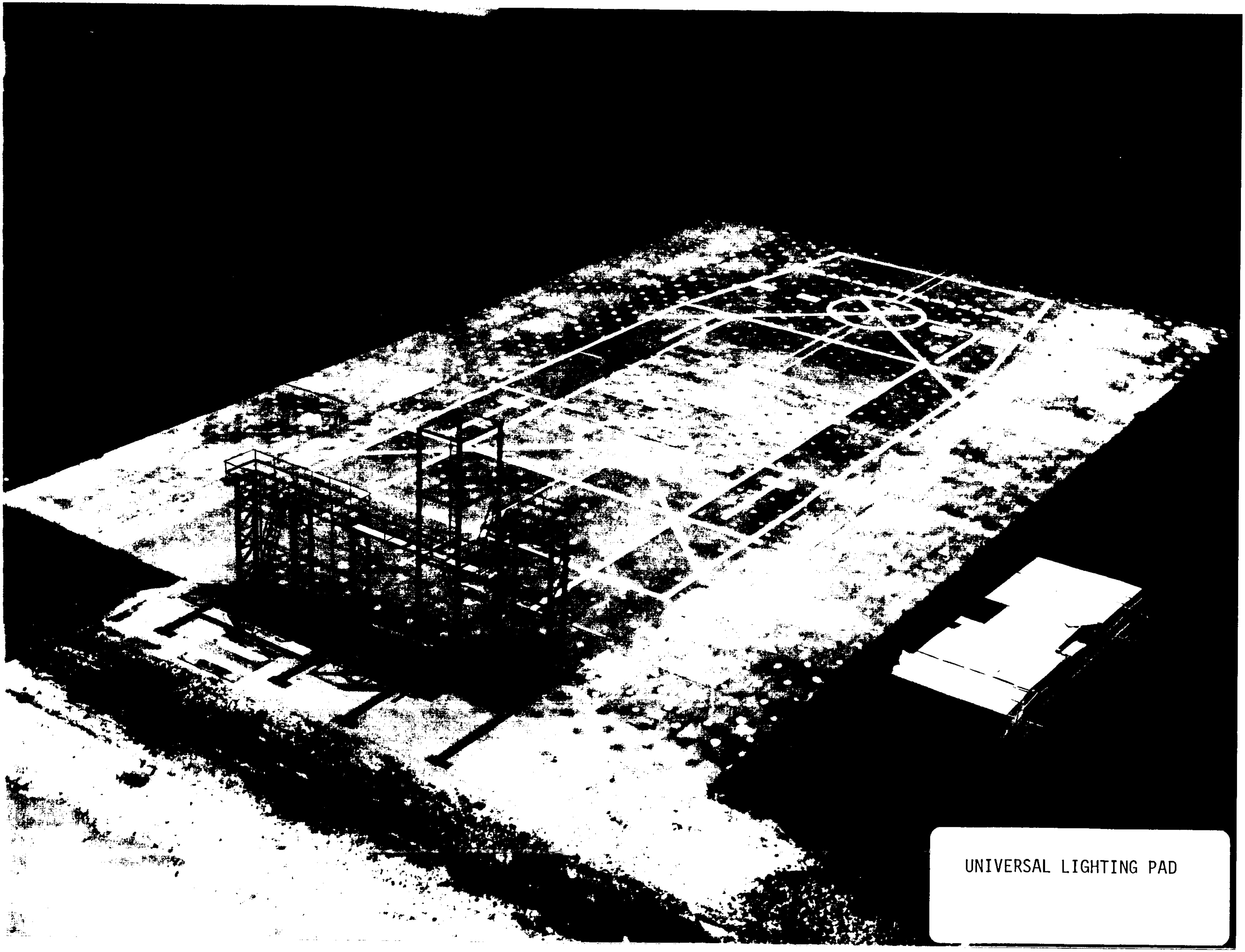
Recovery End
JET CAR TRACK SITE
Track 5
Track 4
Track 1
Launch End

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Elevated Fixed Platform:** **This is the only facility in the world capable of evaluating Recovery Assist, Securing and Traversing (RAST) equipment. 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 Aids (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.**	**YES**	**YES**	**YES**	**4,160**

ELEVATED FIXED PLATFORM

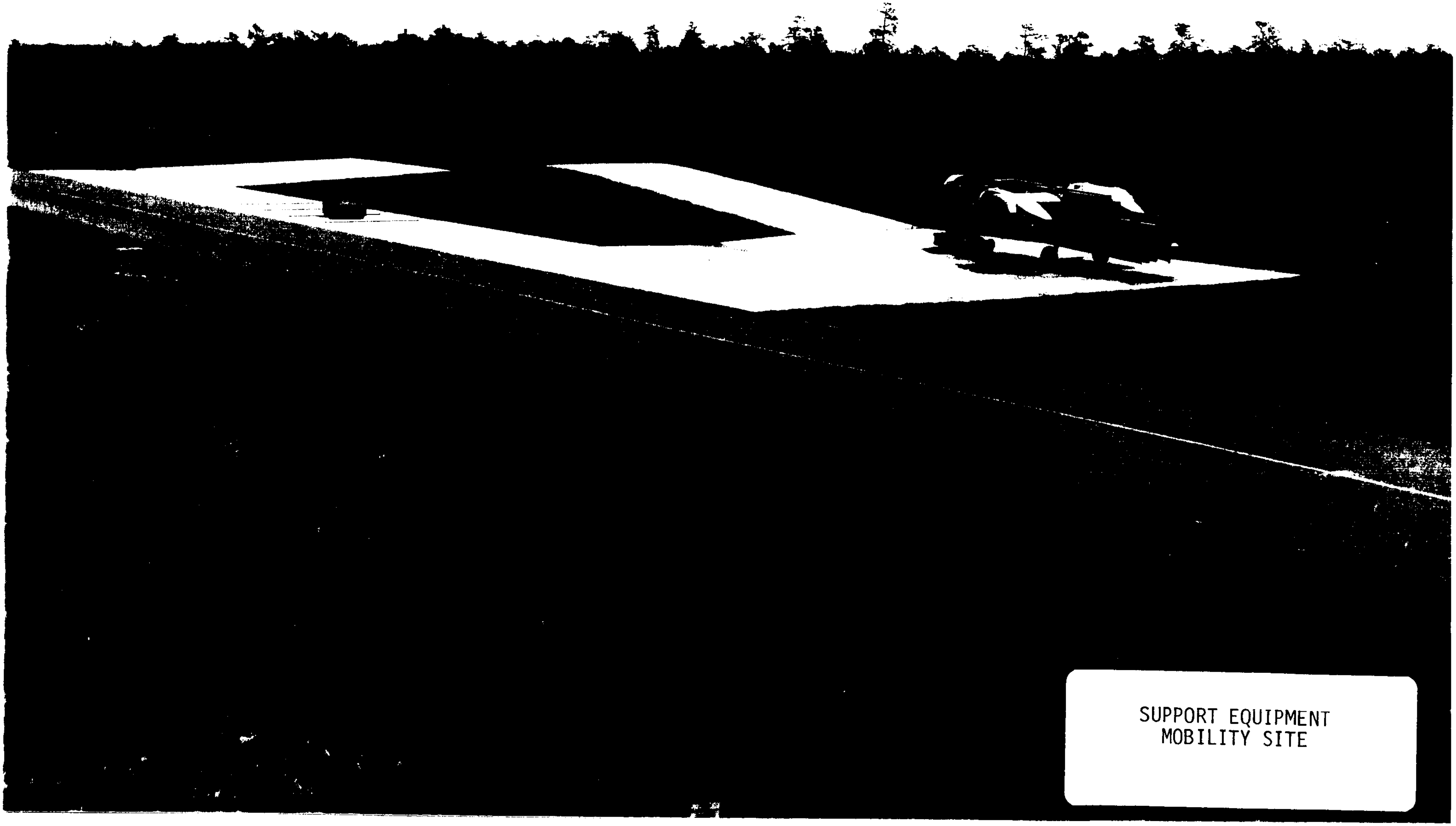


Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Universal Landing Pad:** **The Universal Landing Pad consists of a 150 foot by 250 foot concrete pad at approximately ground level. It has a 50 foot square steel center section to facilitate the installation of various layouts of visual landing aids 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.**	**NO**	**NO**	**NO**	**1,180**

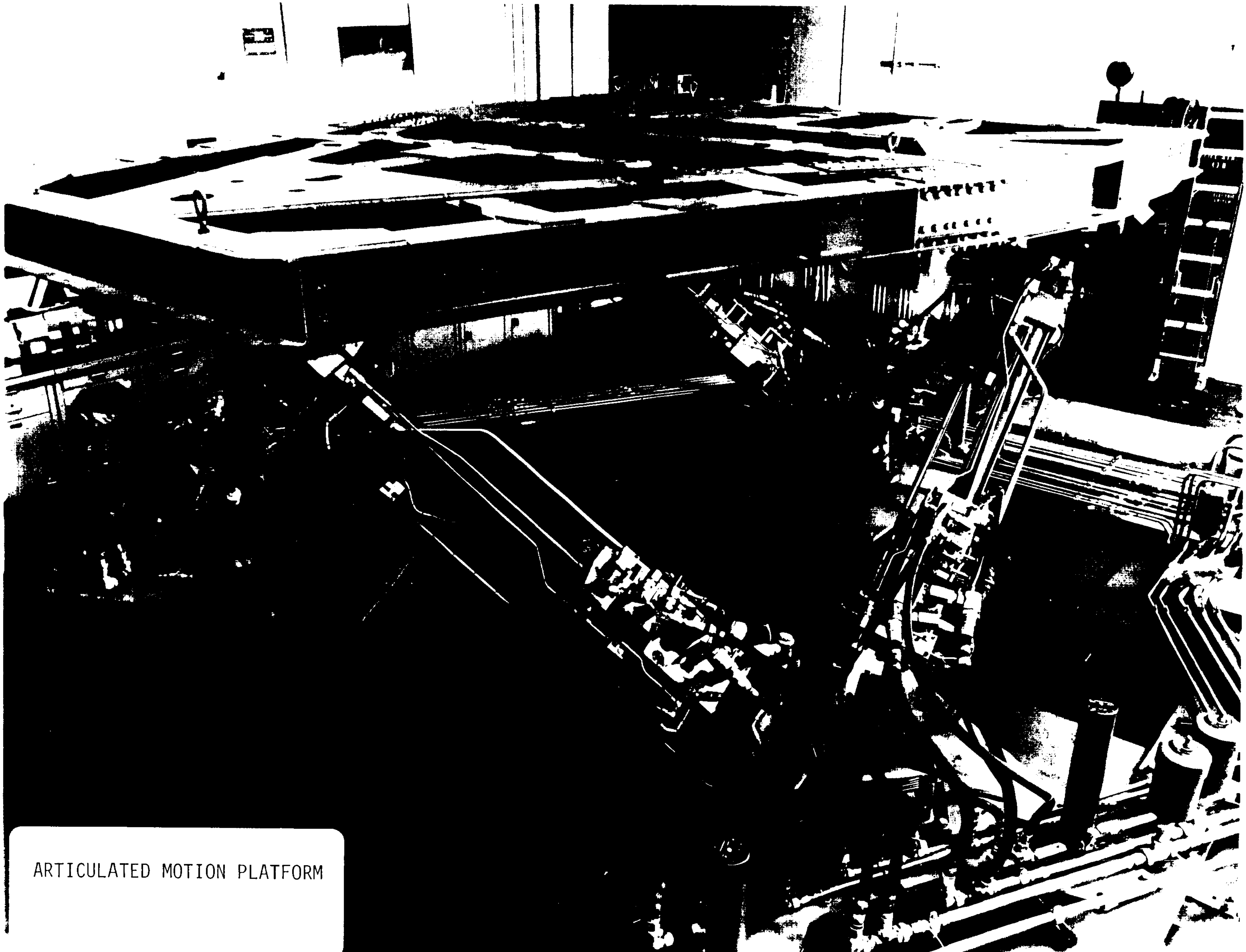


UNIVERSAL LIGHTING PAD

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Support Equipment Mobility Site:** **This facility is used for the testing of all wheeled ground support equipment. The site includes a 30 foot wide ramp that has a slope of 5 degrees, a vibration test bed consisting of gravel, asphalt and concrete. Ground support equipment that lift and transport various types of armaments, tow and spot aircraft, transport fire fighting equipment, etc, can be towed through or driven over the course. Data from accelerometers or strain gages can be telemetered to an on-site instrumentation van to provide instantaneous results.**	**NO**	**NO**	**NO**	**117.5**

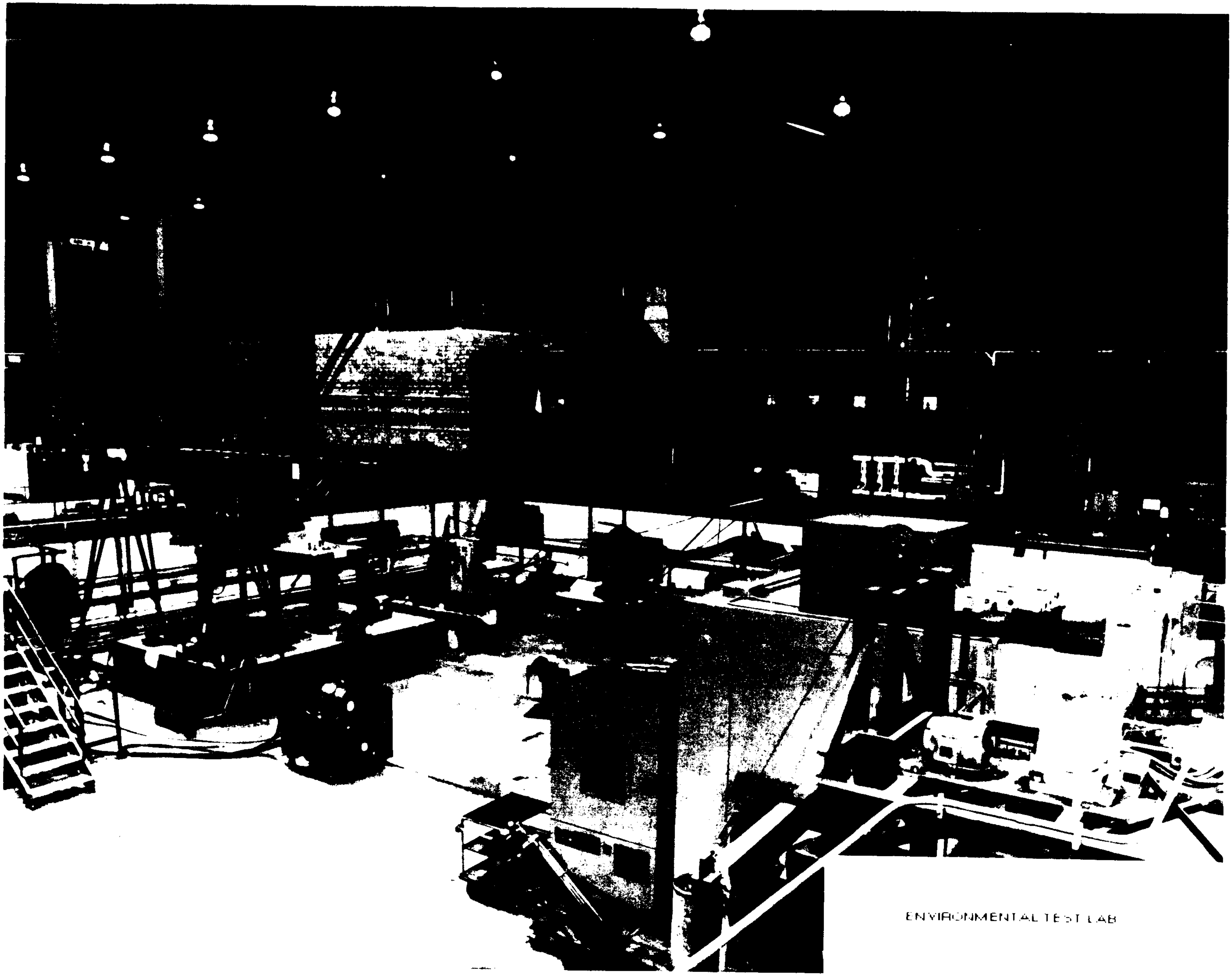

SUPPORT EQUIPMENT
MOBILITY SITE

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Articulated Motion Platform:** 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 degrees to +26 degrees; roll -22 degrees to +22 degrees; yaw -29 degrees to +29 degrees; 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.	**NO**	**NO**	**NO**	**350**



ARTICULATED MOTION PLATFORM

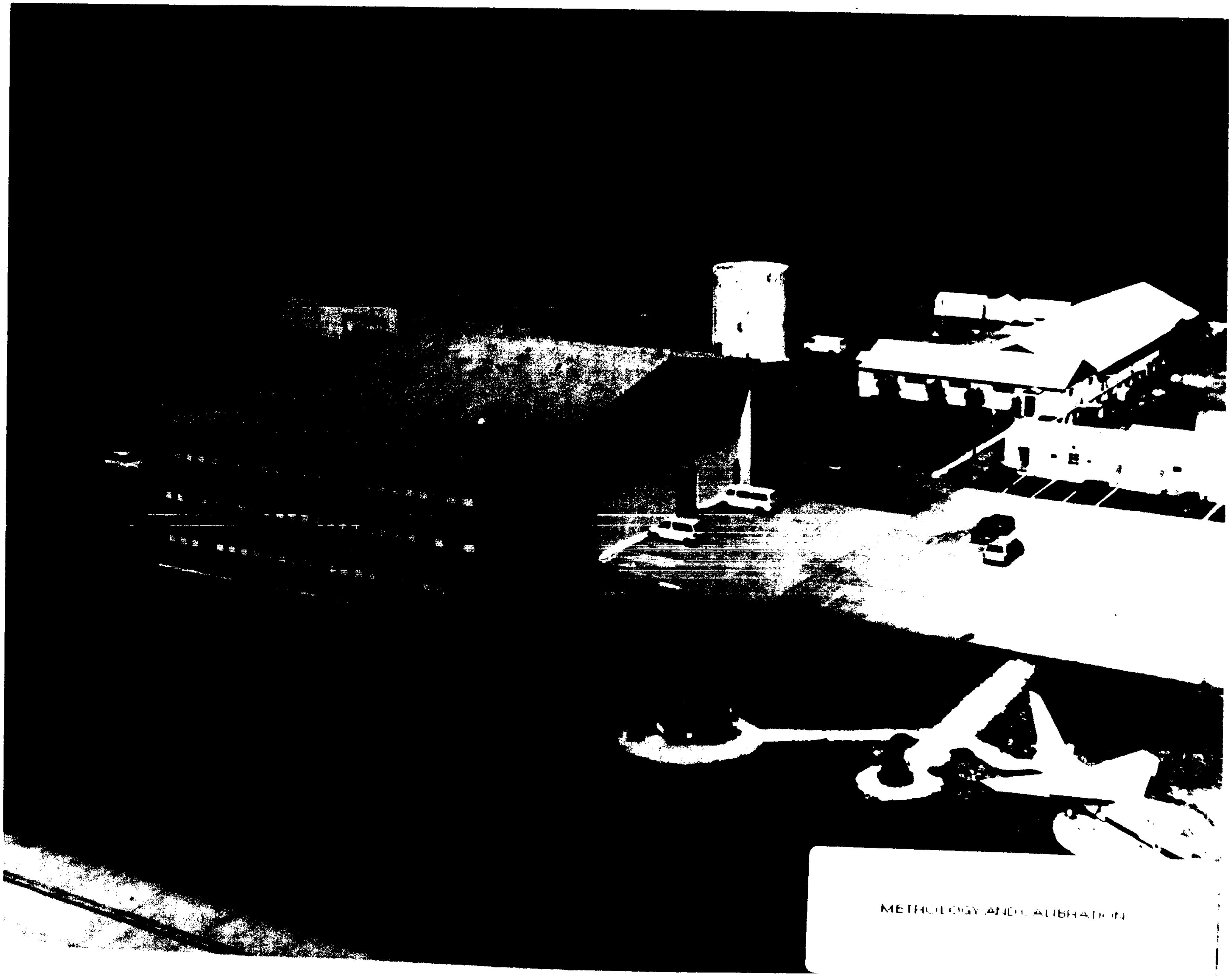
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Environmental Test Lab:** **The capability of this lab is unique to DOD. Lab equipment capabilities include environmental chambers of temperature, humidity, corrosion, fungus and altitude testing. Also shipboard high impact equipment as well as instrumented and computer controlled mechanical shock and vibrations equipment. The lab has closed-loop servo-controlled, electro-hydraulic actuators for performance of fatigue testing, proof loading, determining yield points and ultimate strength of specimens. In addition, the lab does pressure and hydraulic flow testing of components such as the Catapult Capacity Selector Valve.** **Typical documents for which capabilities exist include MIL-STD-810, 202, 167, 1399, 108, 2036, MIL-S-901, MIL-T-28800, MIL-L-6363.** **The enclosed photograph depicts the equipment that will be the most difficult to relocate: The Navy Light Weight Stock Machine, a large temperature humidity chamber, a hydraulically operated vibration system and a hydraulic power pump.**	**YES**	**NO**	**NO**	**3,147**



ENVIRONMENTAL TEST LAB

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Electromagnetic Interference Test Facility:** **The Electromagnetic Interference (EMI) laboratory provides the necessary RF shielded environment and test equipment required for the evaluation of fleet systems and/or subsystems for Electromagnetic Compatibility (EMC) compliance in accordance with MIL-STD-461A/B/C/D (Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference). The EMI Laboratory houses two shielded test enclosures, one shielded and one unshielded ante room and one EMP test facility. Both shielded test enclosures are partially anechoic with approximately fifty (50) percent coverage.** **The EMI facility also maintains the necessary equipments and facilities for the performance of Electromagnetic Pulse (EMP) testing in accordance with MIL-STD-461C/D and the evaluation of electrostatic bag materials and EMI gasket materials.** **The EMI facility is one of eleven test facilities nation-wide and the only one in the Aircraft Division which has been accredited through the National Voluntary Laboratory Accreditation Program (NVLAP) to perform EMI testing in accordance with MIL-STD-461.**	**NO**	**NO**	**NO**	**3,054**

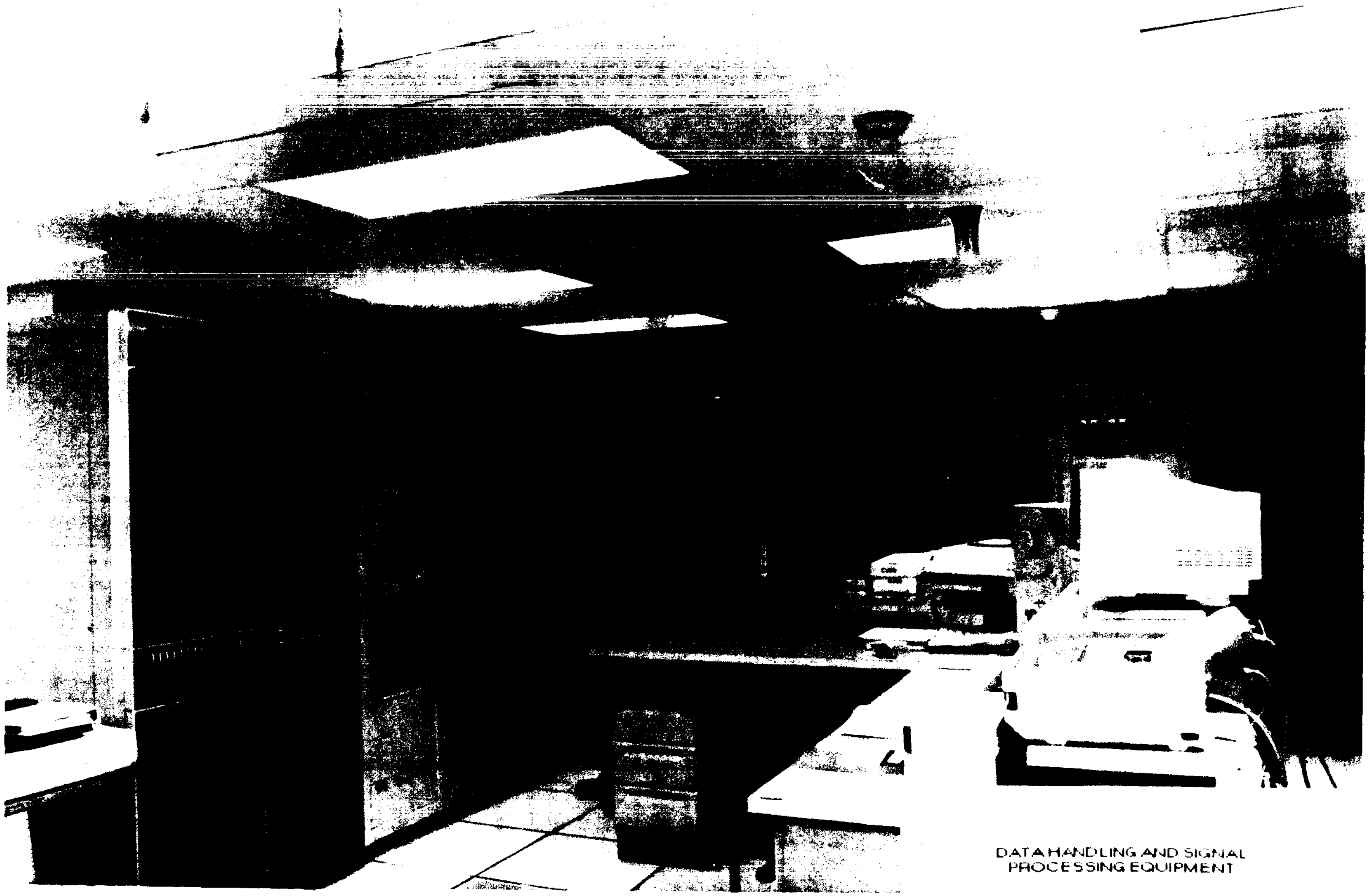
ELECTROMAGNETIC
INTERFERENCE LABORATORY



METROLOGY AND CALIBRATION

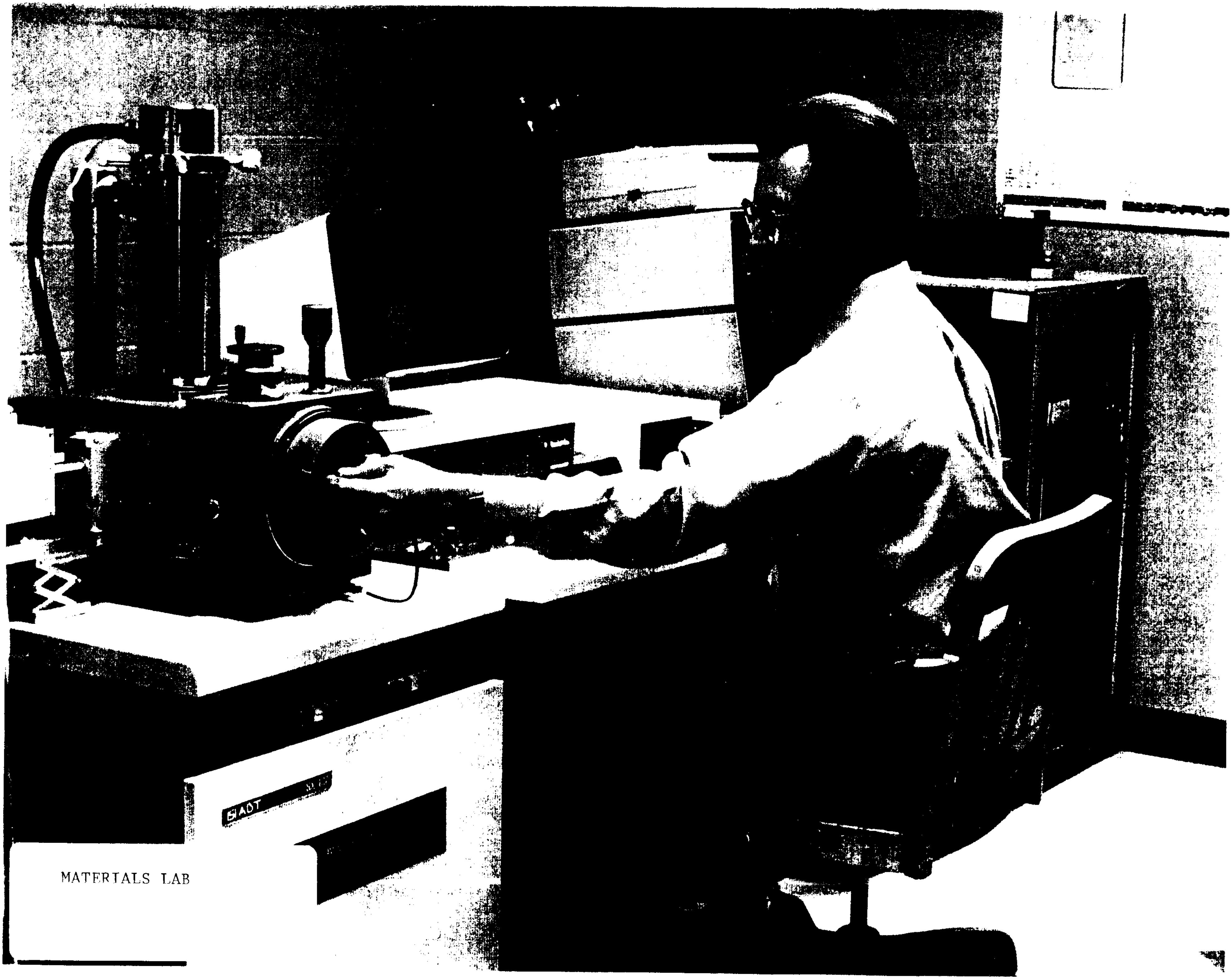
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
	Metrology and Calibration Lab: **Electronic and mechanical standards (including physical, optical, dimensional, pressure, voltage and frequency standards) and the necessary environmentally controlled laboratories to house such equipment.**	**NO**	**NO**	**NO**	**2,076**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Data Handling Center:** **The Data Handling Center (DHC) houses off-line signal processing and reproduction includes instrumentation tape recorders, demodulation equipment for 64 channels of ground based data, telemetry demodulation equipment to 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.**	**NO**	**NO**	**NO**	**881**



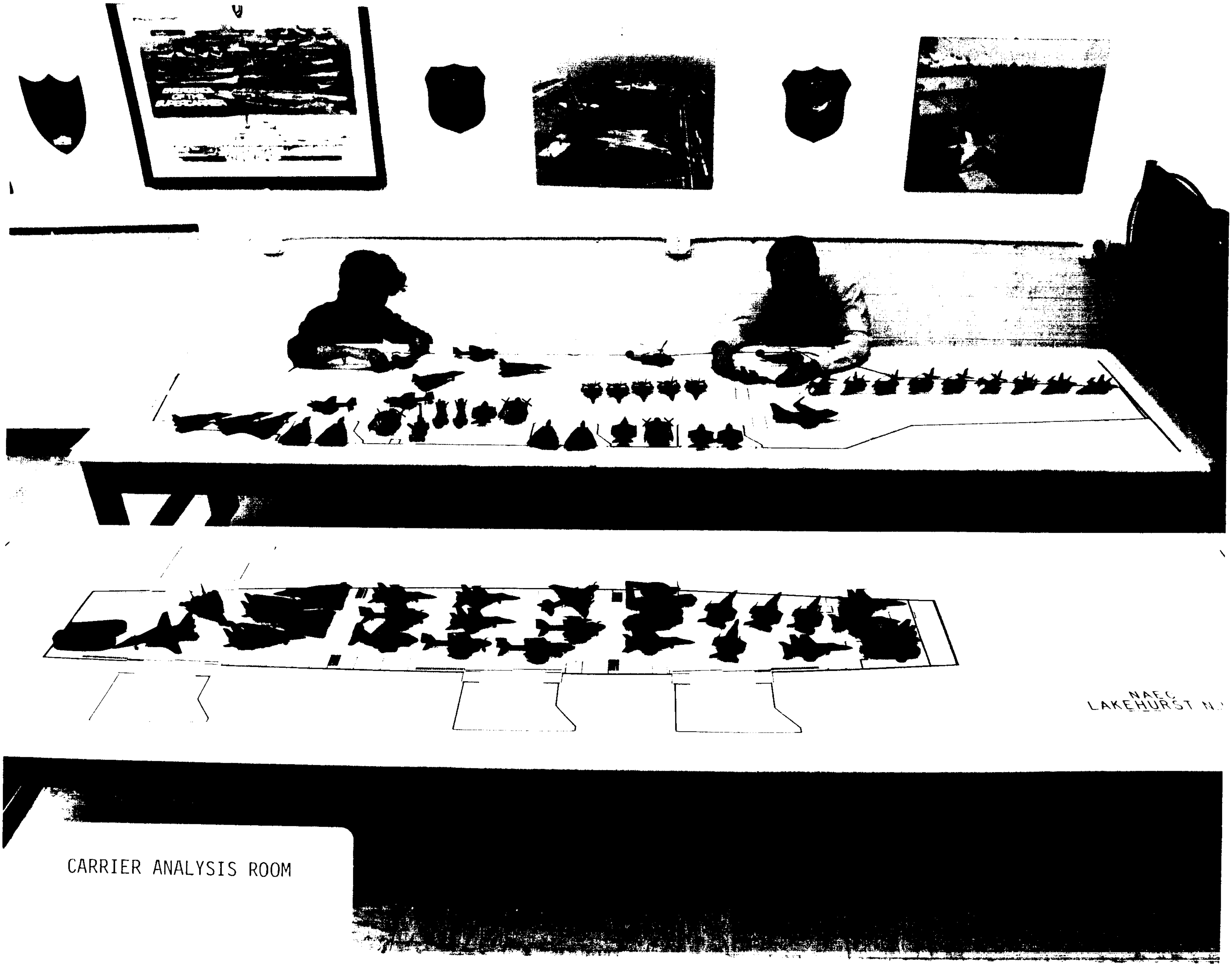
DATA HANDLING AND SIGNAL
PROCESSING EQUIPMENT

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**2200 sq ft Materials Laboratory outfitted with sample preparation, testing, analysis, and support equipment.** **List of major equipment below:** **Sample Preparation - To reduce components into the proper size and condition to be further studied and analyzed. - $100K** **Chemical Analysis - To obtain elemental chemical analysis of specimens. - $250K** **Electron and Optical Microscopes - To view specimens under very high magnification. Used for examination of component fracture surfaces. - $175K** **Physical Testing - To determine or alter physical attributes of specimens, such as hardness, impact resistance, metallurgical structure and wear properties, for example. - $500K** **Image Analysis - To perform computer analysis of of attributes of images generated by microscopes. - $50K** **Laboratory Furniture - Various benches, work surfaces, fume hoods, and other support items. - $100K**	**NO**	**NO**	**NO**	**Facility Structure $148** **Equipment $1,175**



MATERIALS LAB

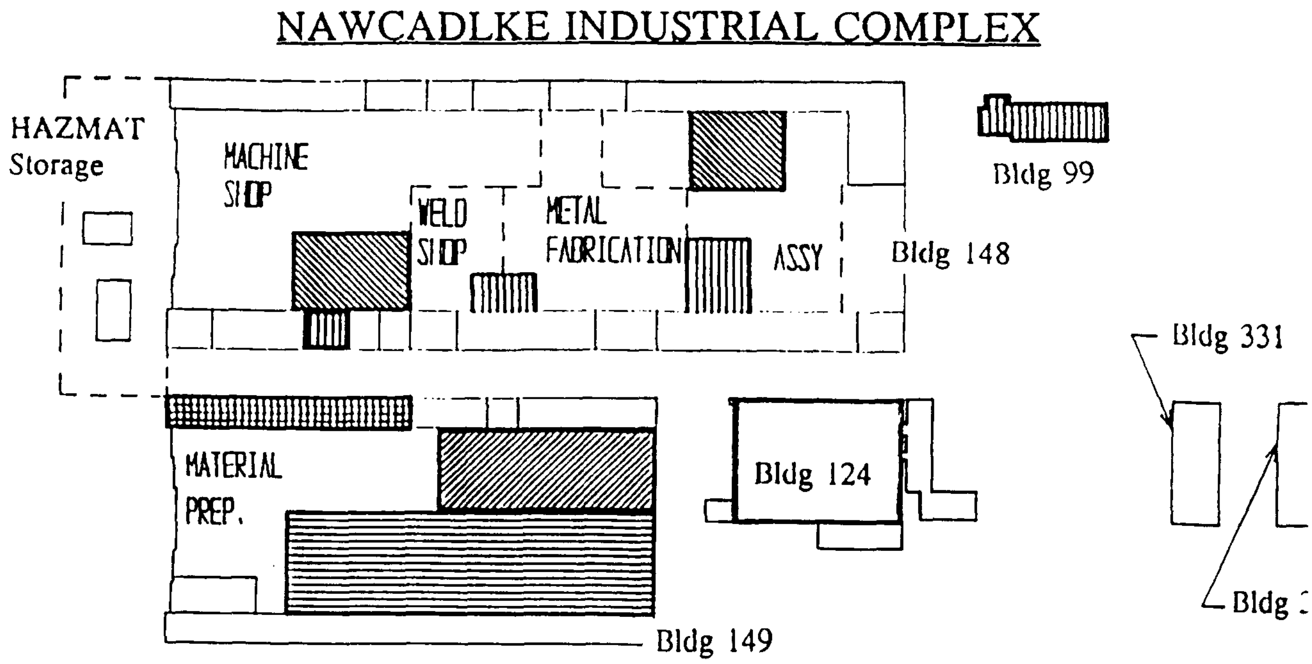
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Carrier Analysis Room:** **This is the only facility in the world equipped for carrier suitability analysis, maximum density and operational spotting analysis.** **The Carrier Analysis Room, also known as the Spotting Room, provides carrier suitability and shipboard compatibility requirements documentation for Navy aircraft acquisition programs, and aircraft compatibility requirements for ship acquisitions. It provides design evaluation support, and COEA inputs. It calculates and validates all Maximum Density and Analysis Spot Factors for various aircraft configurations. It analyzes and simulates airplane operations and provides spotting and handling recommendations. These capabilities are unique within the Navy and the world. Programs supported include the main, active aircraft and ship developments such as F/A-18E/F, V-22, MLR, AX, CVN 76, CVX, LPD 17(LX), MCS and multiple UAVs.**	**YES**	**YES**	**YES**	**8,848**



CARRIER ANALYSIS ROOM

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Carrier Analysis Room (Cont'd):** **The Spotting Room is a dedicated secure facility located within Hangar 3. It contains a computer network consisting of a Digital Microvax II, and several IBM and MAC PC workstations. Included are all the necessary peripheral devices such as plotters, printers, scanners, digitizers, a color image printer and a CD disk drive. All Spotting Room operations are fully computerized. An extensive library of files and models, both two dimensional and three dimensional, are available. In addition, traditional spotting table facilities are available with scaled deck layouts and aircraft templates with overhead photographic capability. These facilities are used to accommodate group working sessions, particularly with fleet operators, where a hands-on approach is desirable. See Attachment 1 for a pictorial layout of the facility.**	**YES**	**YES**	**YES**	

LANDING GUIDANCE
DEVELOPMENTAL FACILITY



DEDICATED MANUFACTURING AREAS:

- CROSS DECK PENDANT
- BARRICADE SEWING
- LOW LOSS LAUNCH VALVE
- JET BLAST DEFLECTOR MFG.
- PURCHASE CABLE CYCLE TESTING

NOTE: Only Primary Facilities Are Illustrated. Material Storage, Outdoor Steam Cleaning, Shipping and Receiving, And Other Manufacturing Related Facilities Are Not Shown.

Bldg 148 (Hanger 2)
- Primary Machine Shop
- Low Loss Launch Valve Overhaul and Assembly
- Metal Fabrication and Welding
- Arresting Engine Overhaul
- Packaging/Wood Shop/Shipping

Bldg 124:
- Heat Treating
- Grit Blasting
- Automated Machining Cell

Bldg 331: Electronics Shop (dedicated facility)

Bldg 149 (Hanger 3)
- Purchase Cable Test Cell
- Cross Deck Pendant Manufacture and Test
- Barricade Manufacture
- Hydraulic Pump and Valve Qualification Testing
- Paint Shop
- Material Preparation/ Assembly Overflow

Bldg 99: Jet Blast Deflector Welding (dedicated facility)

Bldg 332: Prototype Shop (dedicated facility)

Figure 1 - NAWCADLKE Facility Layout

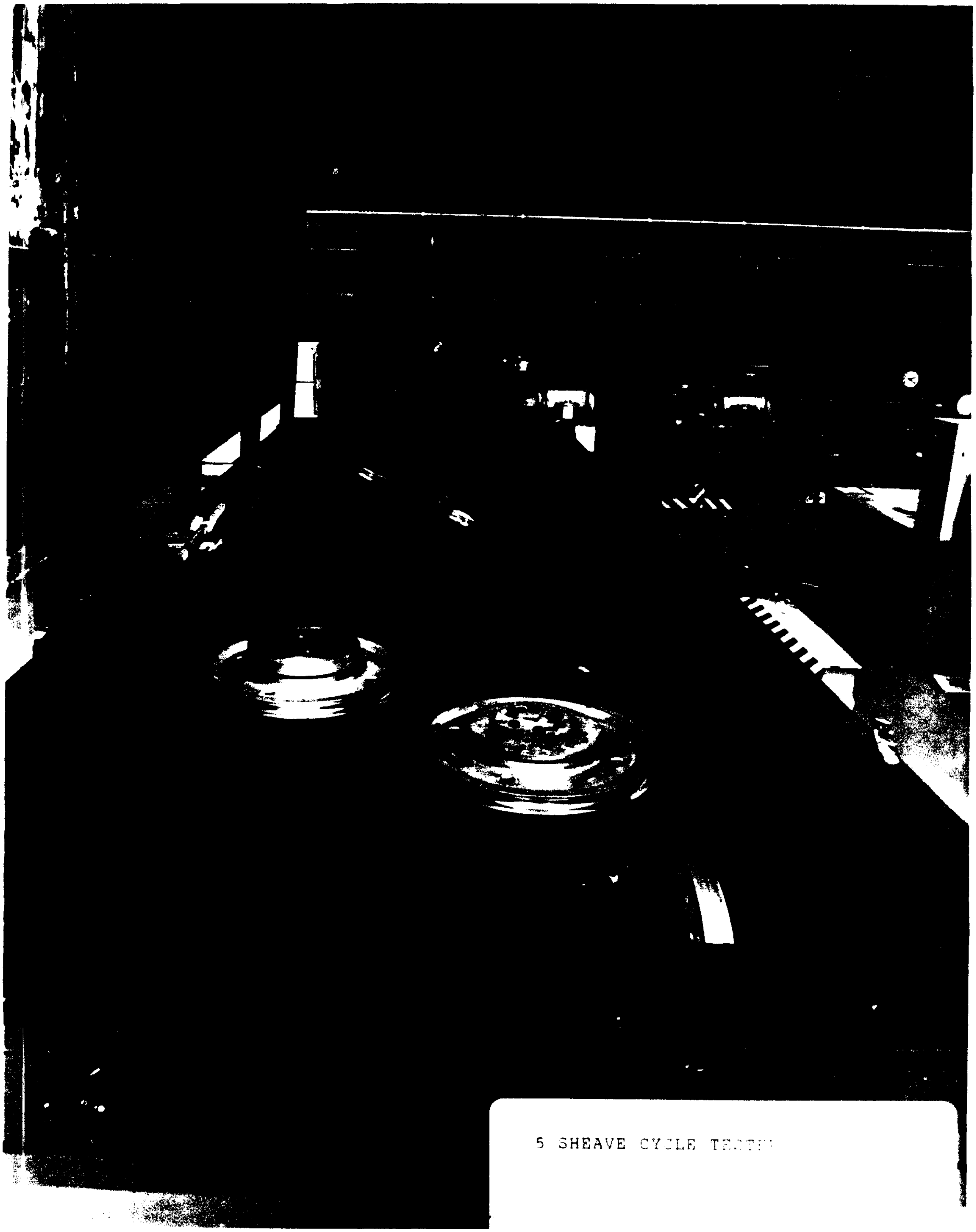
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Landing Guidance Development Facility** **This facility is used to develop advanced landing guidance and simulate performance with advanced hardware and man in the loop.**	**YES**	**YES**	**YES**	**5,300**

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products	**Manufacturing Technology** **This is an integrated, flexible, industrial manufacturing facility providing unique and critical products to the fleet. Comprised of a 240,000 square foot manufacturing facility, state-of-the-art equipment, highly trained personnel, and a dedicated engineering staff, Manufacturing Technology is the supplier of last resort and last source of repair for systems and equipment critical to CV and CVN (aircraft carrier) operations.** **Supplying Aircraft Platform Interface (API) products, Manufacturing Technology is the ONLY source of many unique systems and components which are critical to successful Navy flight operations. Without the products manufactured, repaired, and overhauled by MTD, Navy flight operations would not be possible. (See Figure 1 for Layout)**	**YES**	**YES**	**YES**	**198,012**

FIGURE 1

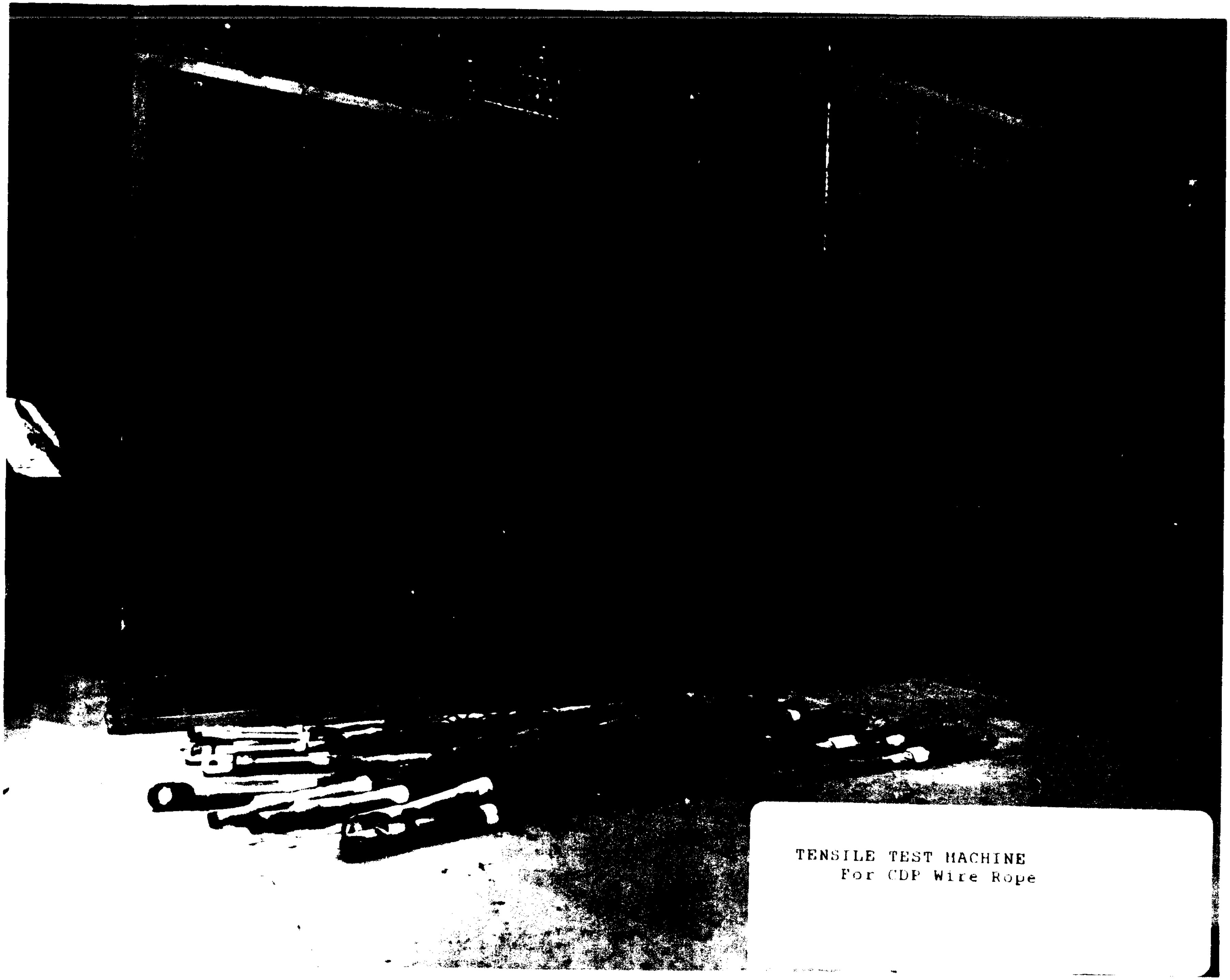
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products; ALRE	**Purchase Cable Test Facility:** **Prior to their issuance to the fleet (stock system), NAWCADLKE conducts acceptance tests on purchase cables specimens. Purchase cable are the cables which connect the "Cross Deck Pendant" (arresting cable) to the arresting engine during aircraft recovery. NAWCADLKE is the ONLY source for acceptance testing. An 11,375 sq ft area is dedicated to the two sheave and five sheave cycle test machines which impart recovery equivalent loads to the purchase cable under test.**	**YES**	**YES**	**YES**	**18,946**

2 SHEAVE CYCLE TEST MACHINE
For Full [illegible] Cable Acceptance
Testing

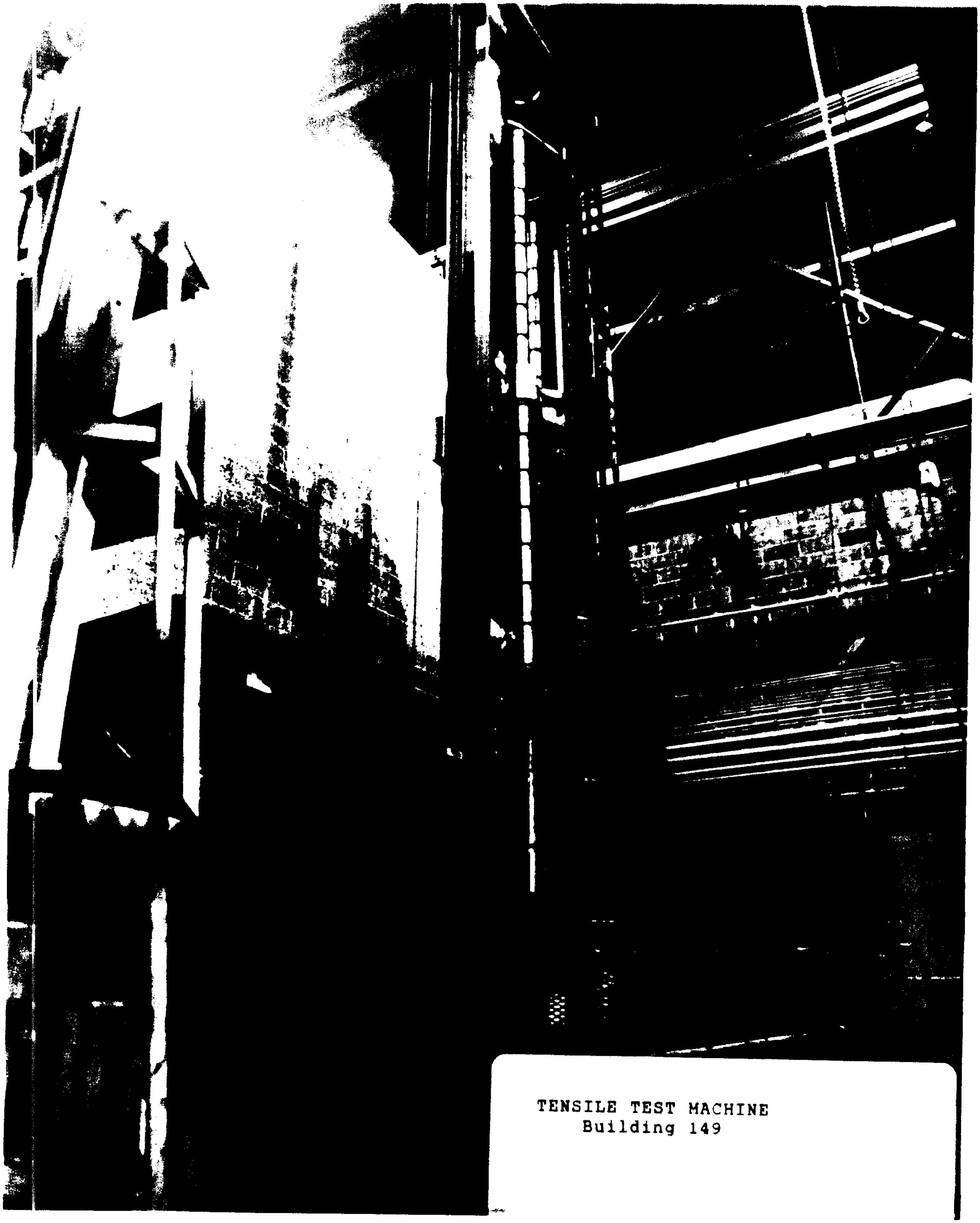


5 SHEAVE CYCLE TE[illegible]

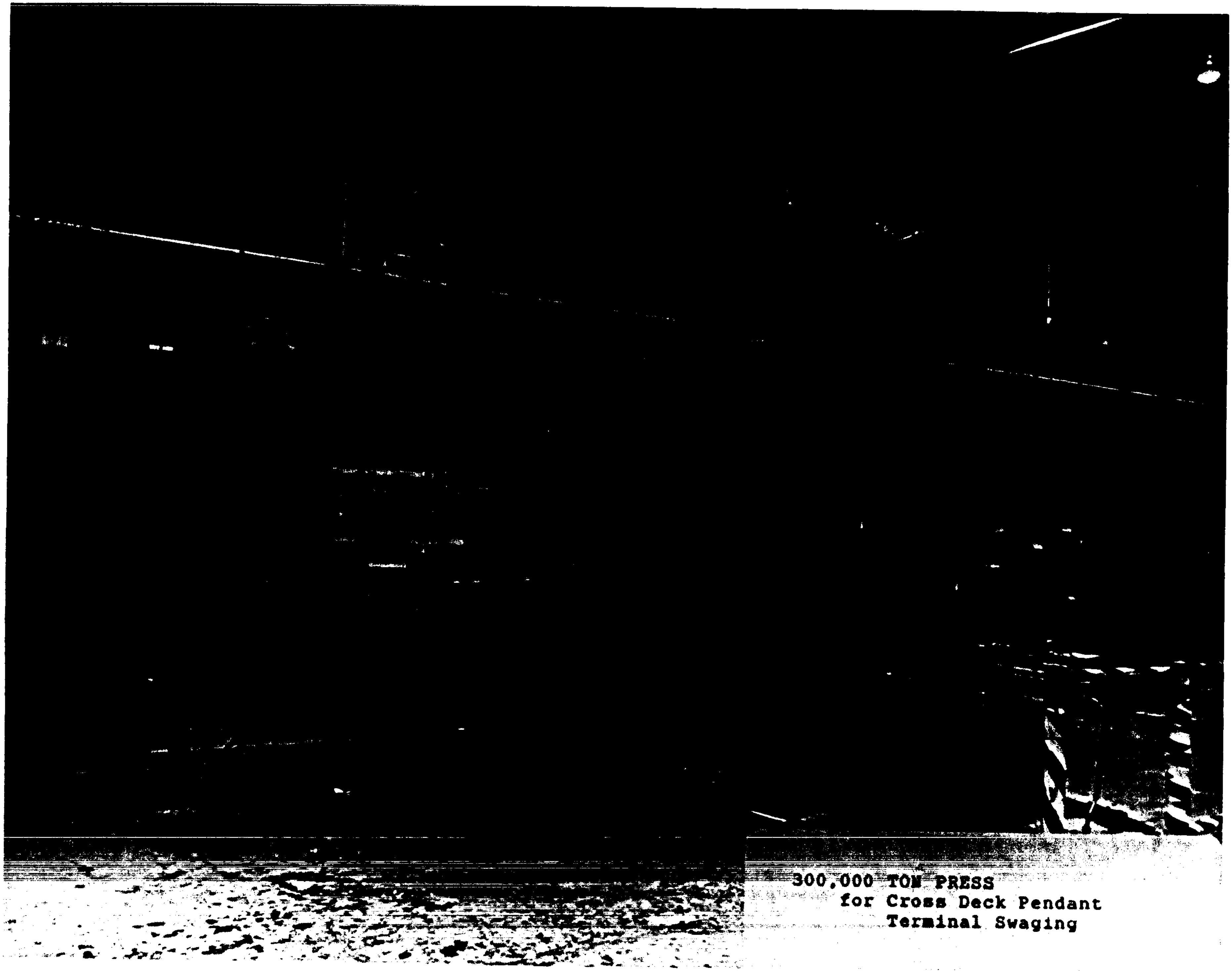
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products;	**Cross Deck Pendant Cable: Manufacturing And Testing Facility;** **-Includes 40% of Heat Treat Facility Cost;** **-Includes 25% of Grit Blast Facility Cost**	**YES**	**YES**	**YES**	**50,505**
ALRE	**NAWCADLKE is the sole manufacturer of Cross Deck Pendant cable assemblies. Bearing the primary input loads which occur during aircraft recovery, Cross Deck Pendants are the cable assembles which are caught by the aircraft's tail hook when landing. Due to their application, the processes for manufacturing these cables are considered flight critical processes. As part of our periodic validation of these critical processes, NAWCADLKE combines a unique tensile test cell with our on-station jet car site for dynamic evaluation.**				



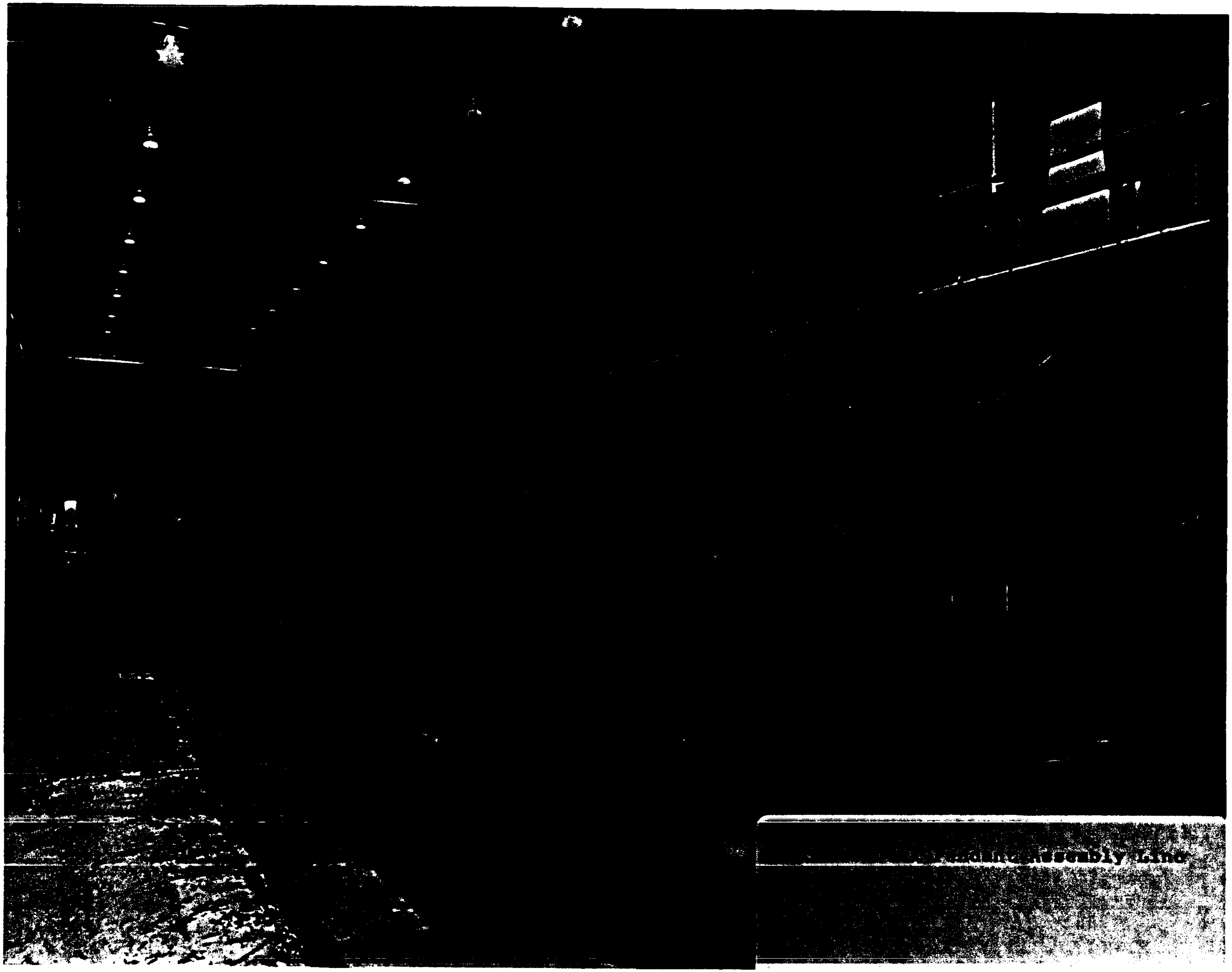
TENSILE TEST MACHINE
For CDP Wire Rope

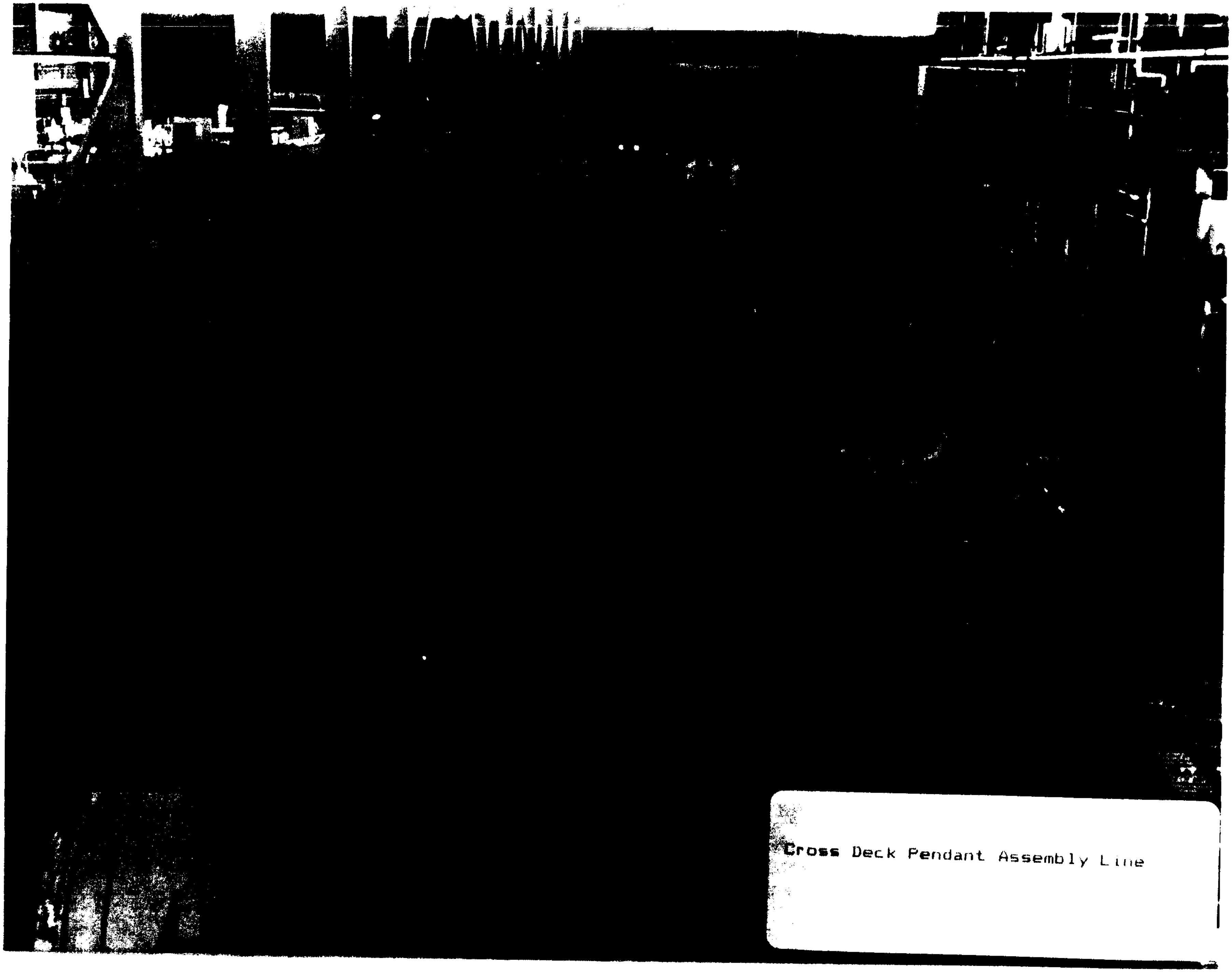


TENSILE TEST MACHINE
Building 149



300,000 TON PRESS
for Cross Deck Pendant
Terminal Swaging


Assembly Line

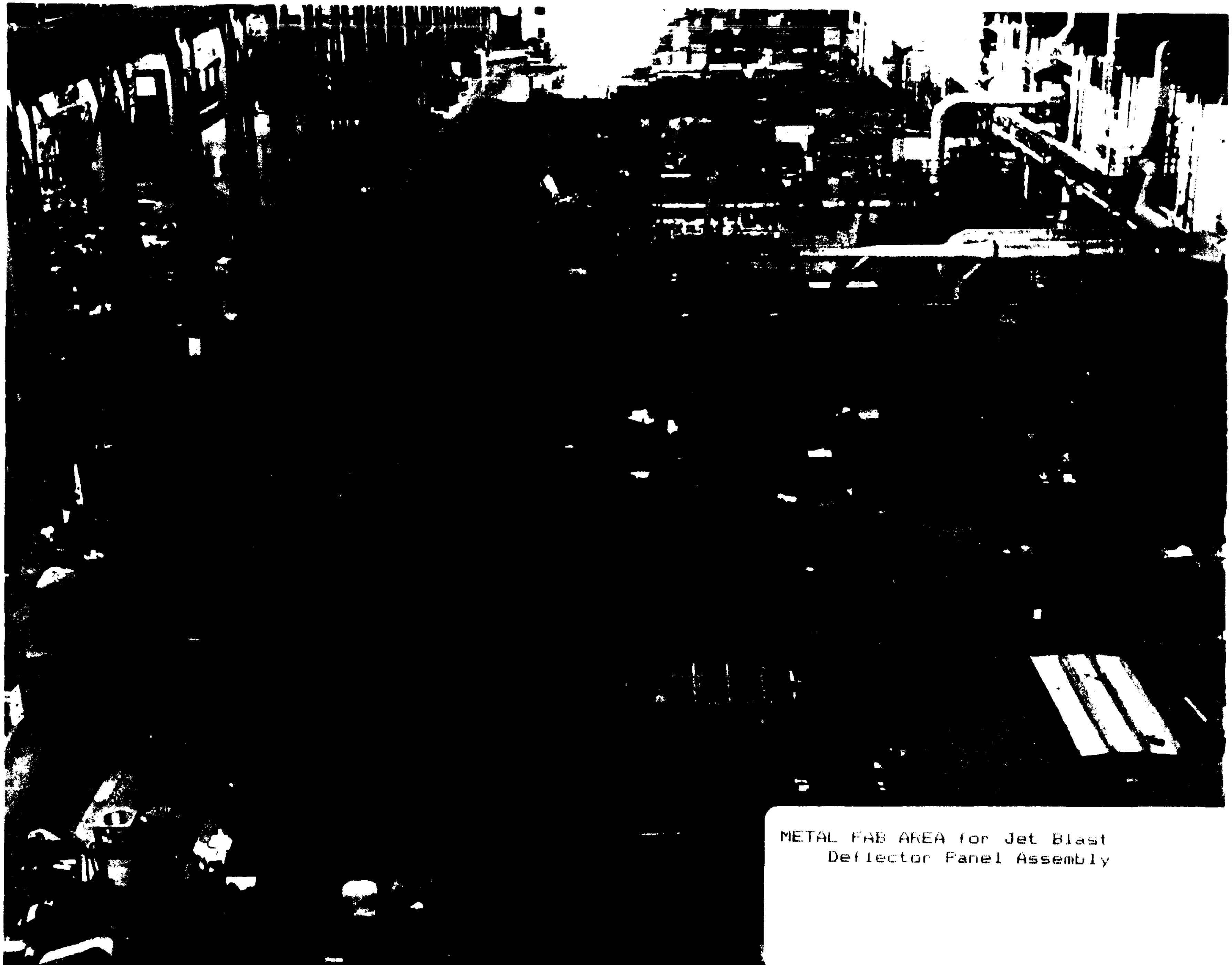


Cross Deck Pendant Assembly Line

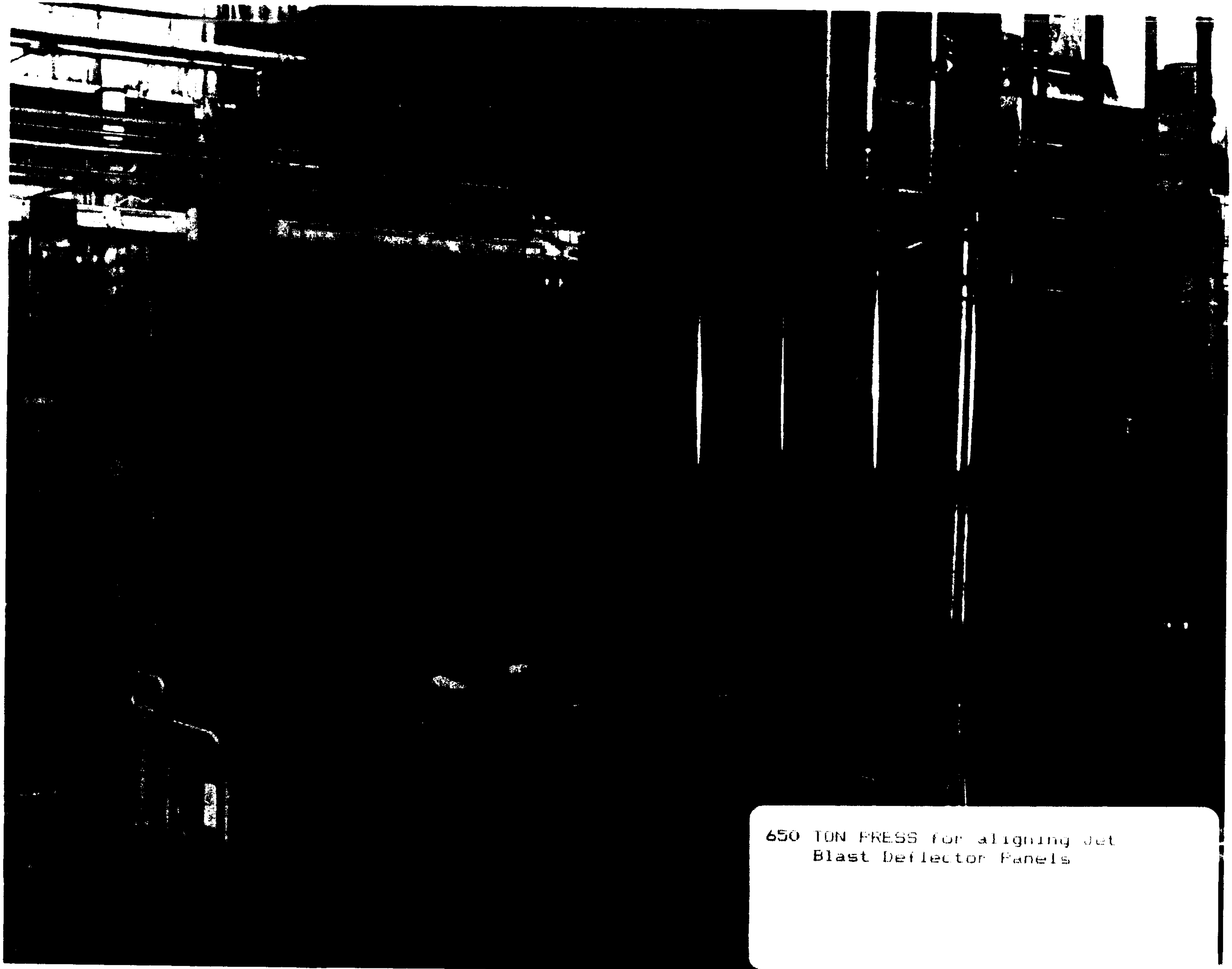
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products; **ALRE**	**Jet Blast Deflector Manufacturing Facility:** **-Includes 30% Of General Welding And Metal Fabrication Facility; 25% of the Total Grit Blast Facility Cost; and 5% of the Total Heat Treating Facility Cost.** **Past attempts by commercial sources to manufacture these panels have failed. A dedicated weld shop, module manufacturing area, and special positioners/fixtures combine to enable Lakehurst to meet Fleet needs for both new ship construction and retrofit.**	**YES**	**YES**	**YES**	**6,864**
API Products	**Prototype Manufacturing Facility:** **NAWCADLKE maintains the ability to build prototype assemblies to assist the engineers and designers of our on-station Aircraft Launch and Recovery Equipment and Ground Support Equipment groups. We are able to perform prototype and small lot manufacturing for almost any customer.**	**NO**	**NO**	**NO**	**750**

SHOP FACILITY -

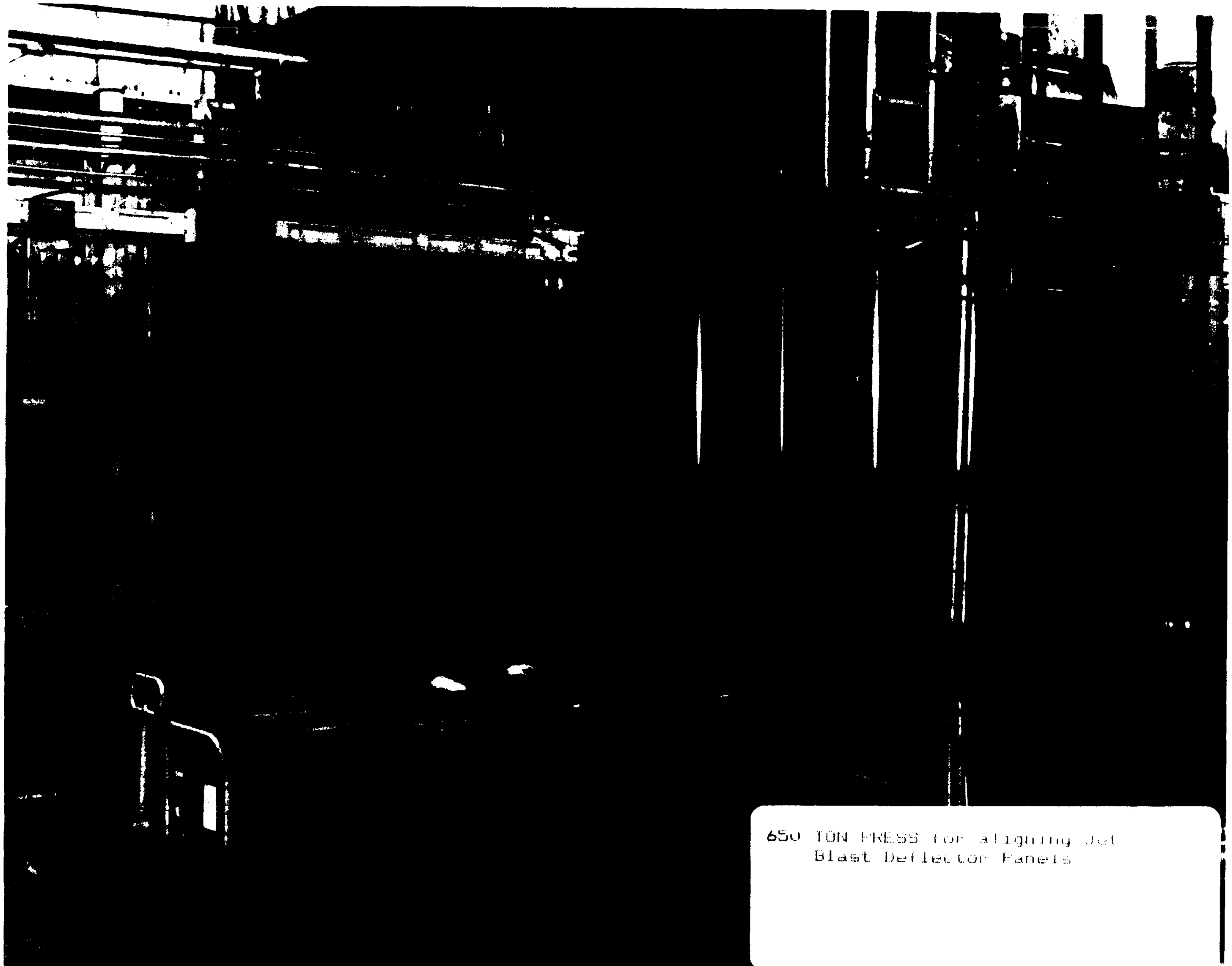
Machine Shop - foreground
Metal Fab/Weld
Assembly



METAL FAB AREA for Jet Blast
Deflector Panel Assembly



650 TON PRESS for aligning Jet Blast Deflector Panels

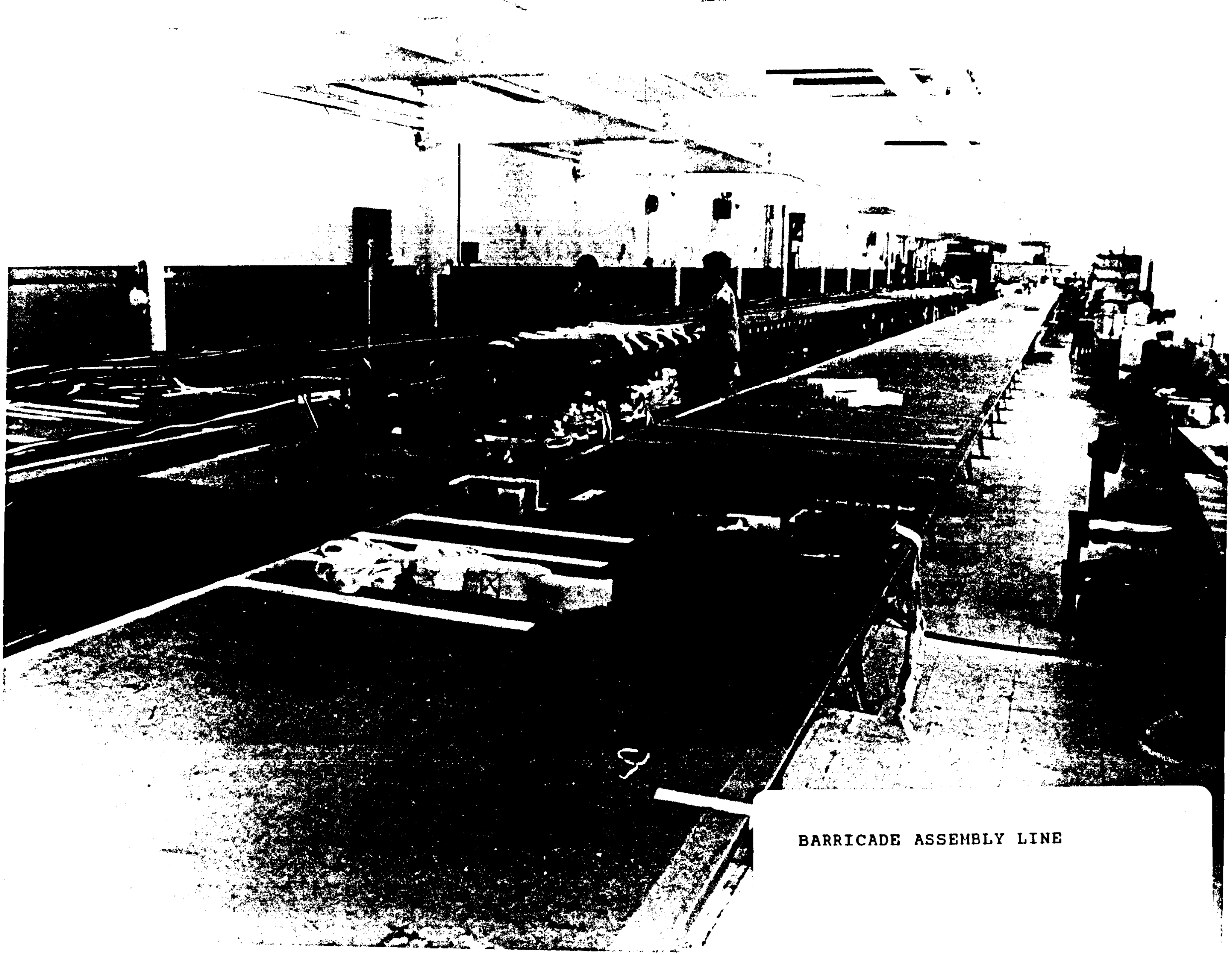


650 TON PRESS for aligning Jet Blast Deflector Panels

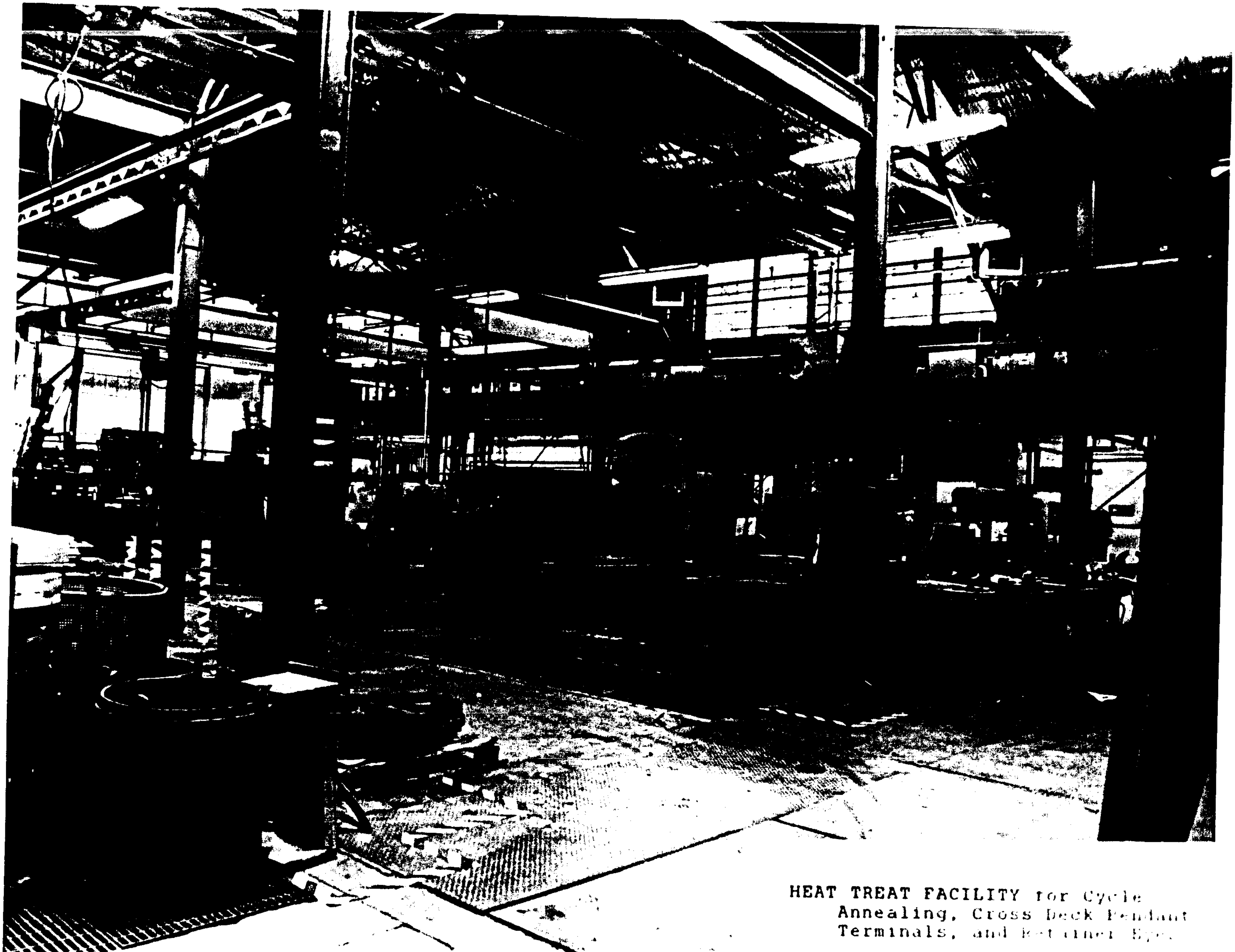
JET BLAST DEFLECTOR
WELD/POSITIONERS
Building 99

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products; ALRE	**Barricade Manufacturing Facility:** **NAWCADLKE is the ONLY source of cloth barricades which are used to land an aircraft aboard a carrier or when an emergency or battle damage precludes multiple approaches. A 5,000 square foot area is dedicated to a unique arrangement of layout tables, fixtures, and sewing machines which are capable of producing three 108 foot barricades per month. Assembly requires approximately 50 miles of stitching.**	YES	YES	YES	26
API Products SE and ALRE	**Heat Treating and Grit Blasting Facility** **(Grouped Together Since Heat Treating Requires Grit Blasting As An Associated Process):** **Heat Treating Facility** **Grit Blast Facility** **NAWCADLKE's heat treating facility changes the metallurgical characteristics of the steel processed so that it meets the end-item material requirements. The grit blast facility rapidly removes scale created during heat treating as well as prepares other surfaces for paint, coating, and finishing processes.**	NO	NO	NO	21,163 14,014 7,149

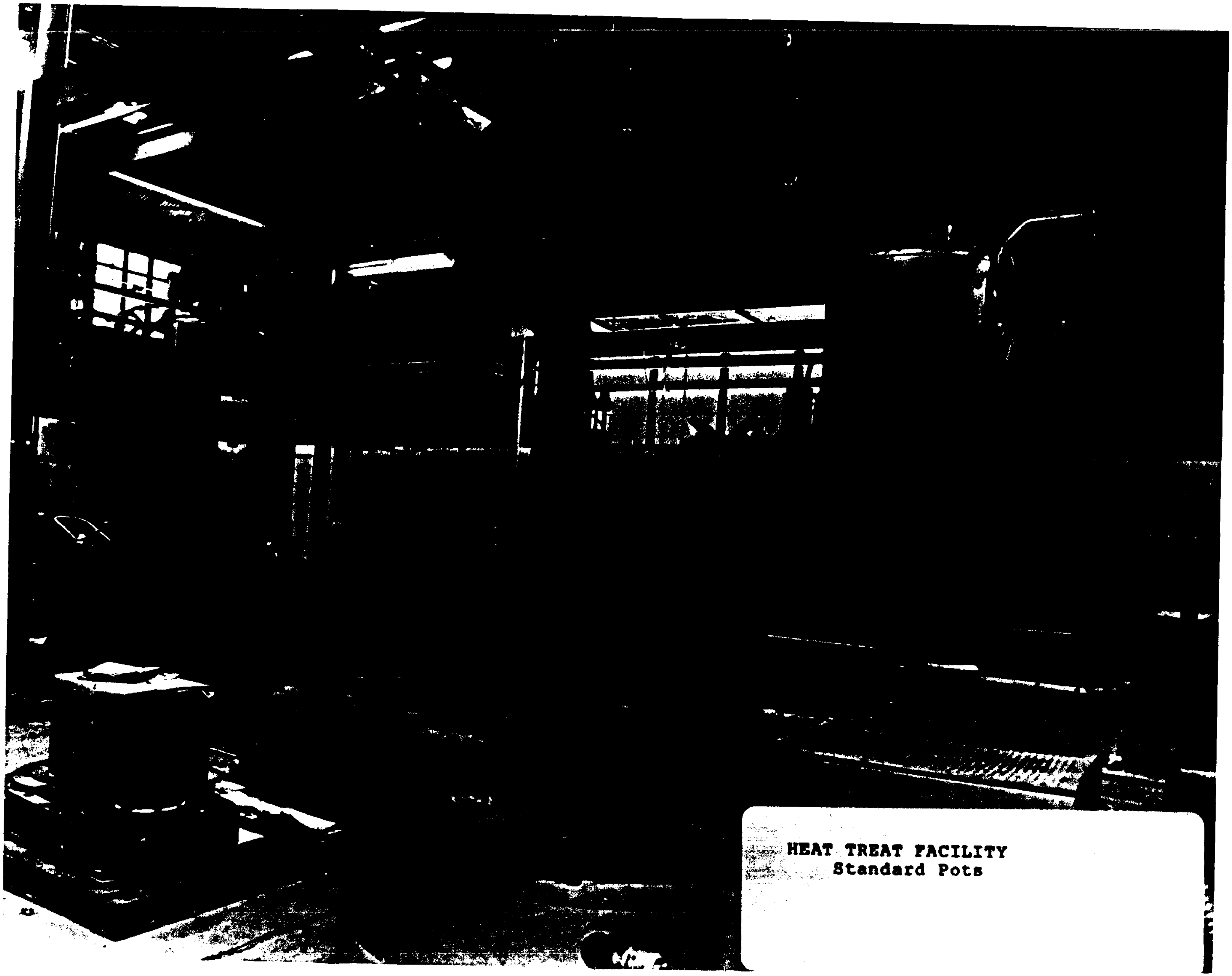
Assembly of Barricade in Progress

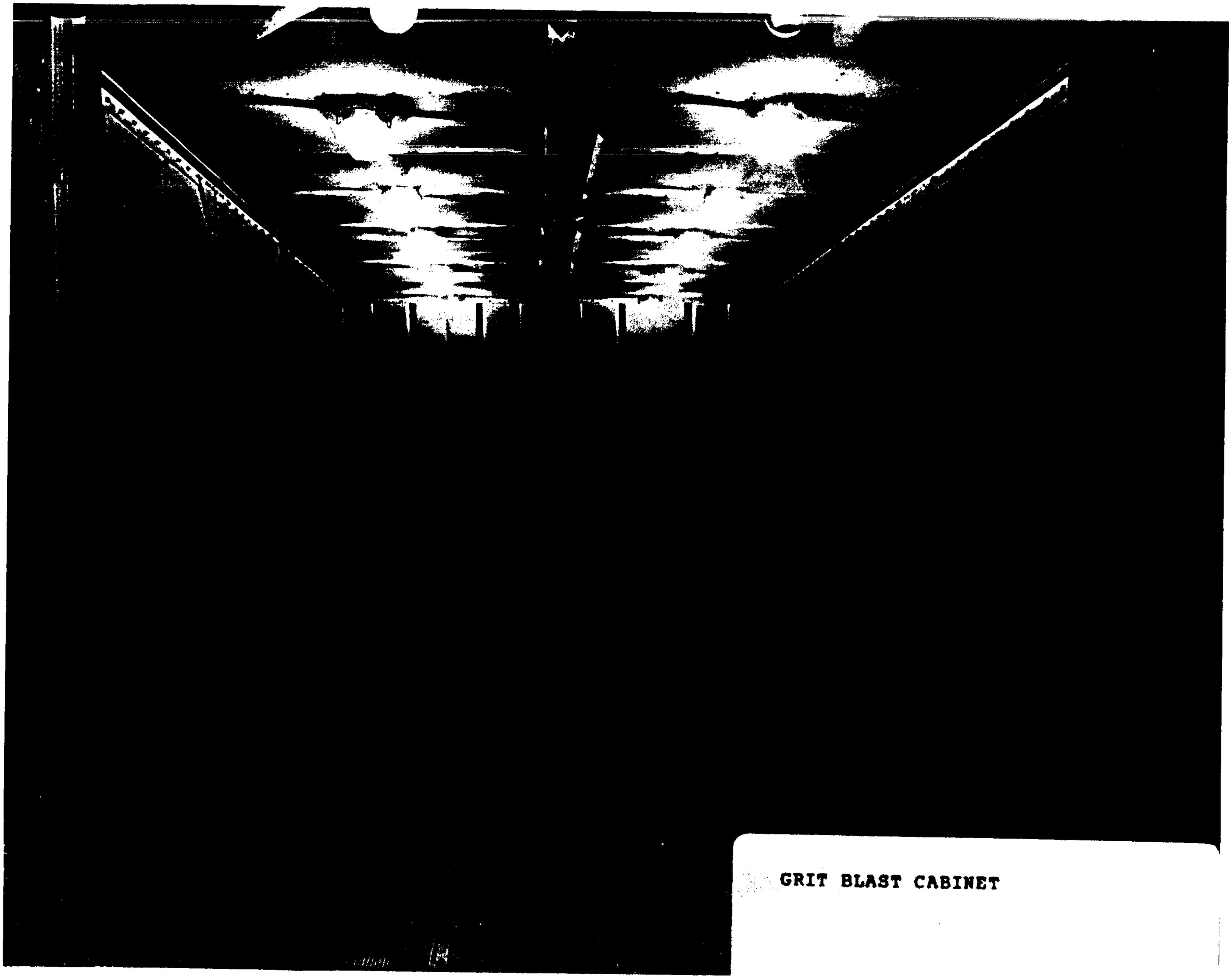


BARRICADE ASSEMBLY LINE



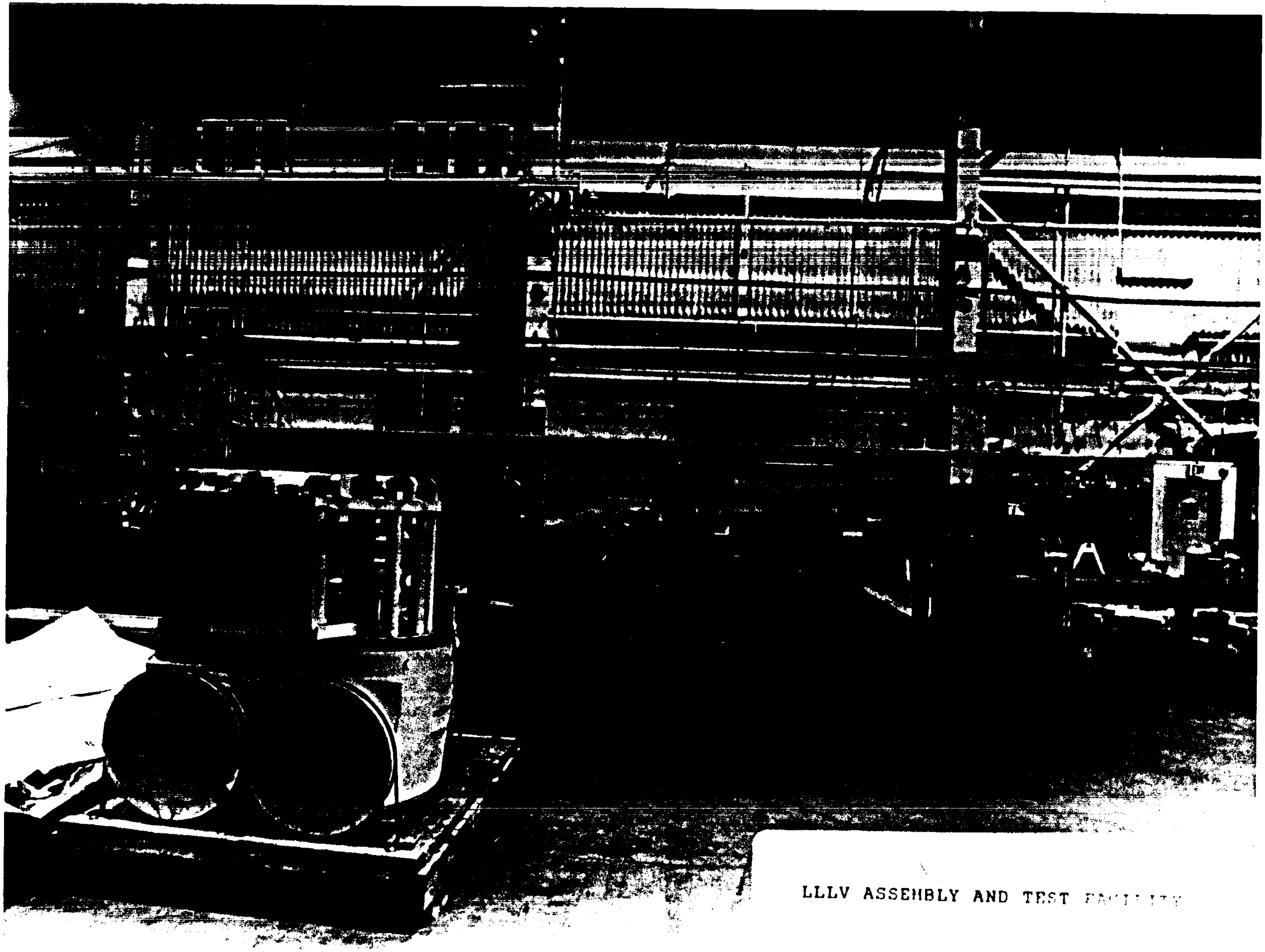
HEAT TREAT FACILITY for Cycle Annealing, Cross Deck Pendant Terminals, and Retainer Eyes.


HEAT TREAT FACILITY
Standard Pots

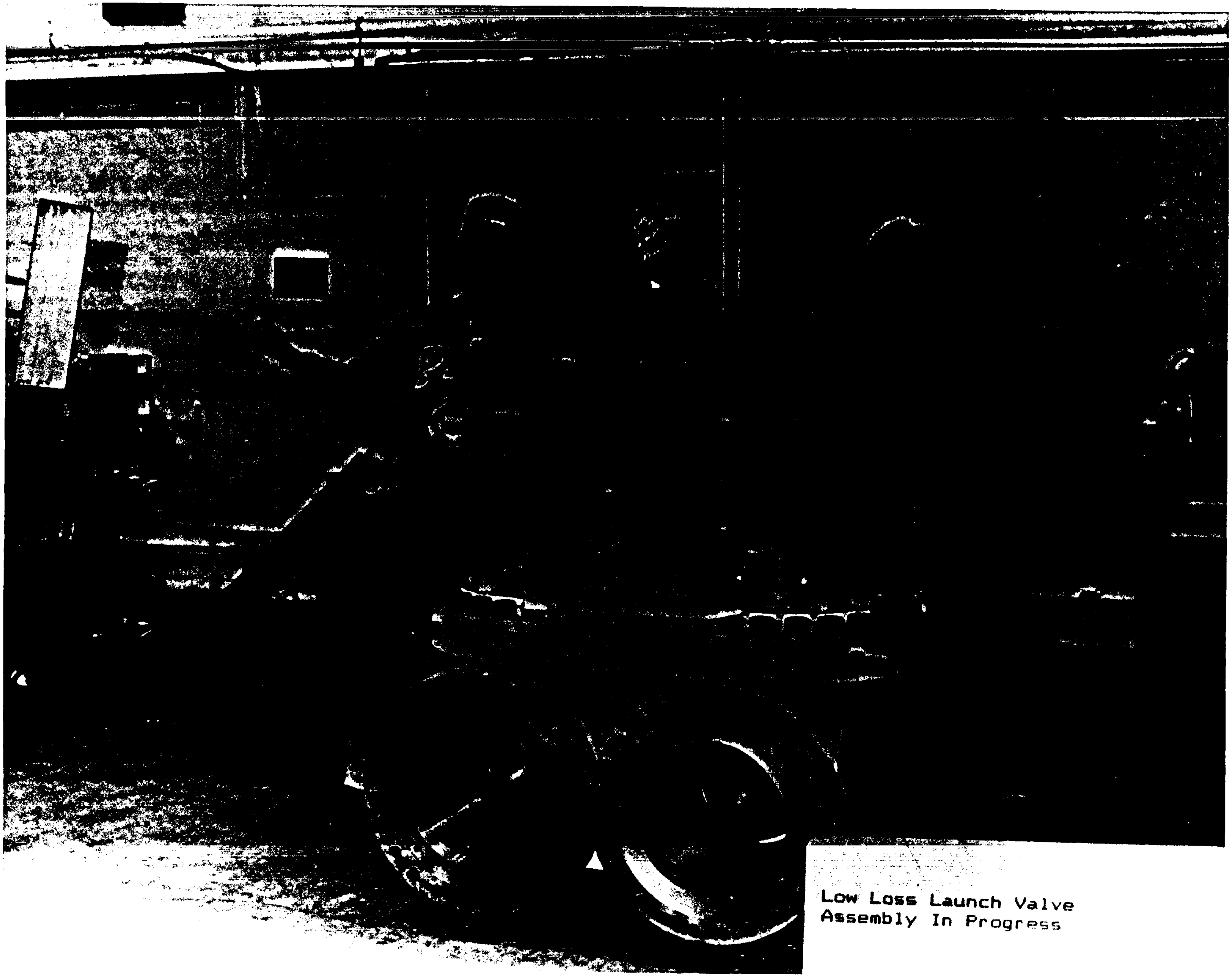


GRIT BLAST CABINET

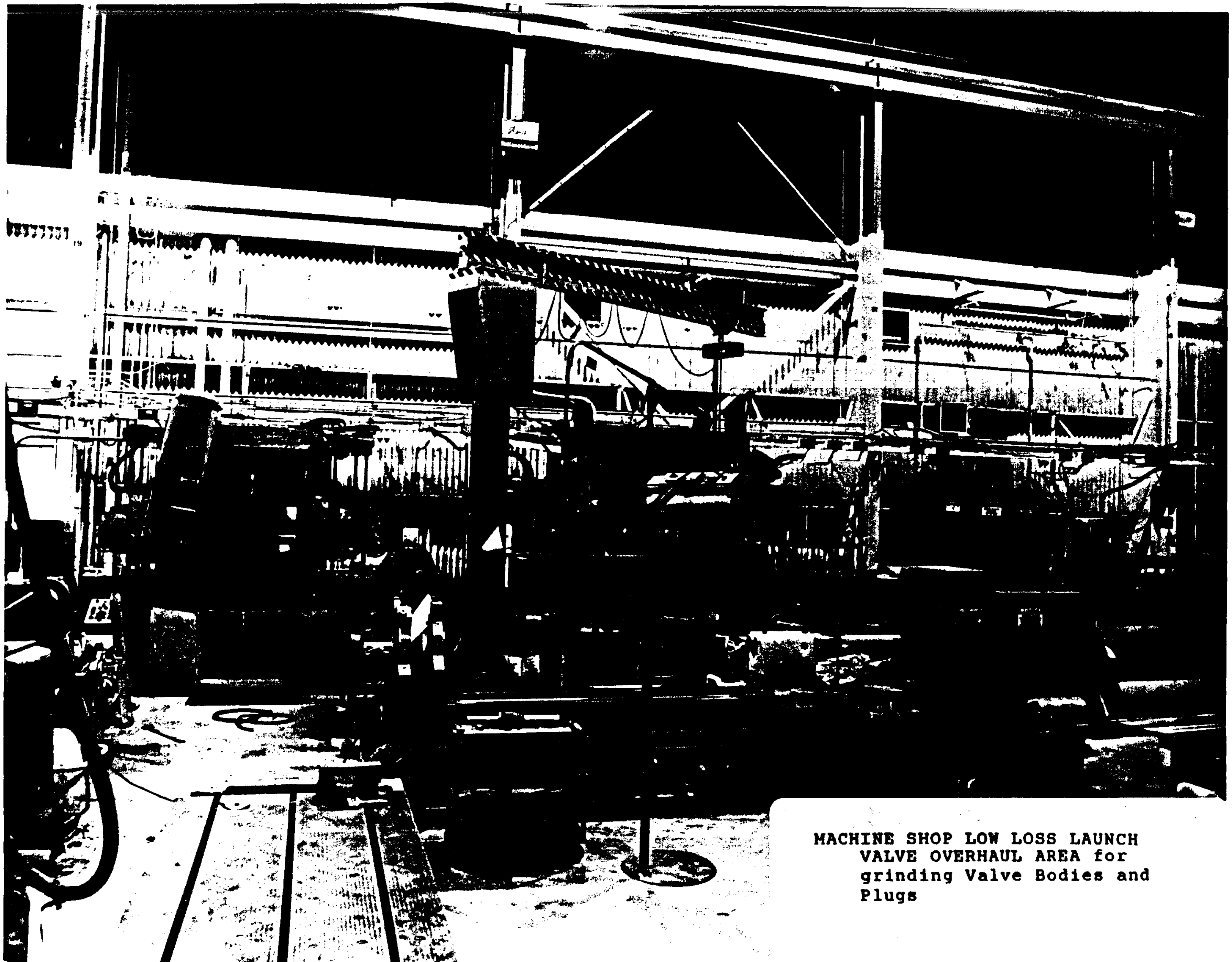
Common Support Functions	Major Facility or Equipment Description	Unique	To		Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products; ALRE	**Launch Valve Overhaul and Testing Facility:** **NAWCADLKE is the repairer and supplier of last resort for Catapult Low Loss Launch Valves (LLLV). These valves control the flow of steam to the aircraft carrier catapults and are prerequisite for aircraft carrier flight operations. Significant cost savings, compared to purchase of new launch valves, is obtained through overhaul. Since NAWCADLKE is the ONLY source for overhaul and repair, continuous NAWCADLKE operations for availability of overhauled LLLV's has remained a NAWCADLKE and Fleet priority. A shortage in LLLV's would lead to reduced aircraft carrier readiness.**	**YES**	**YES**	**YES**	**2,981**



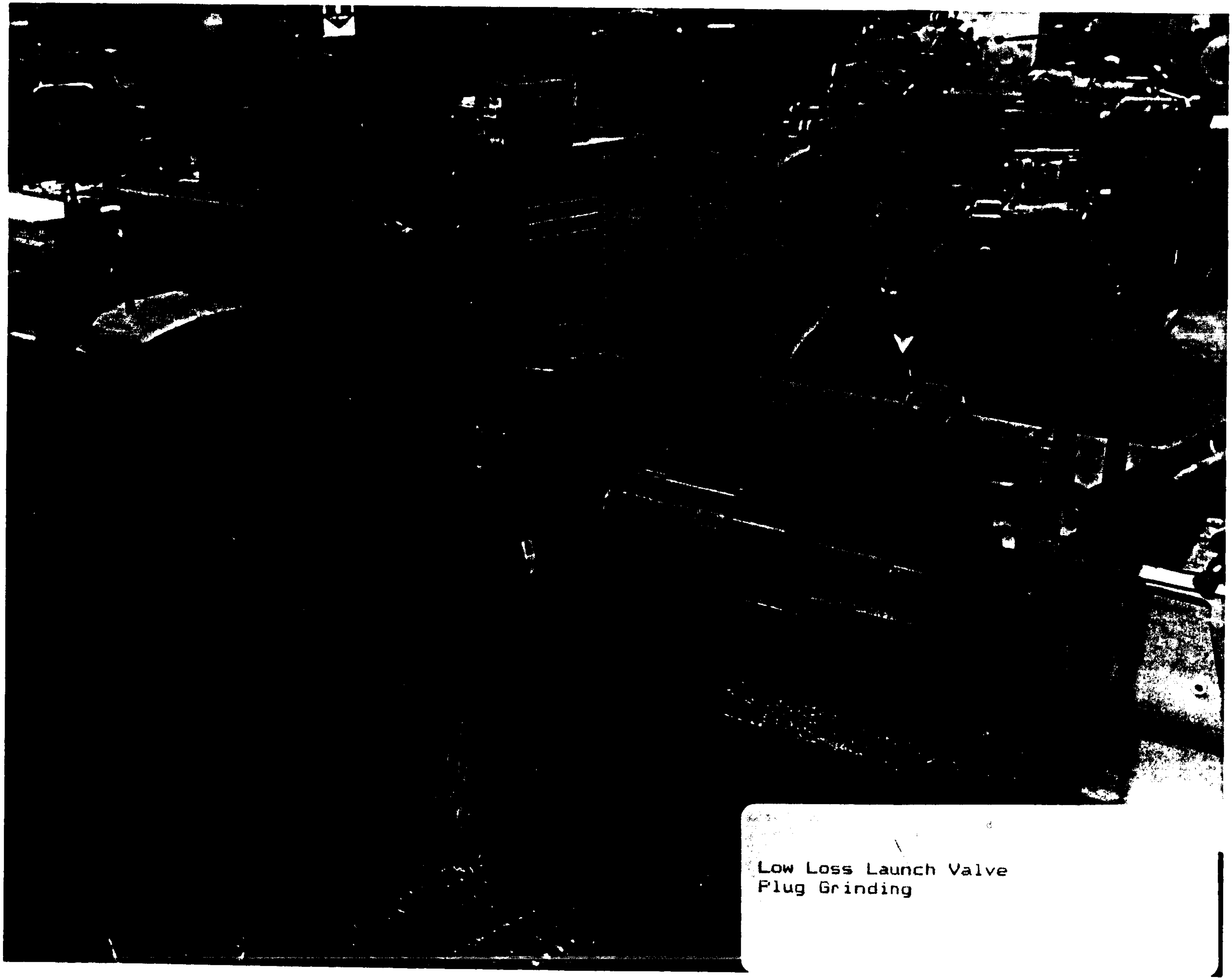
LLLV ASSEMBLY AND TEST FACILITY



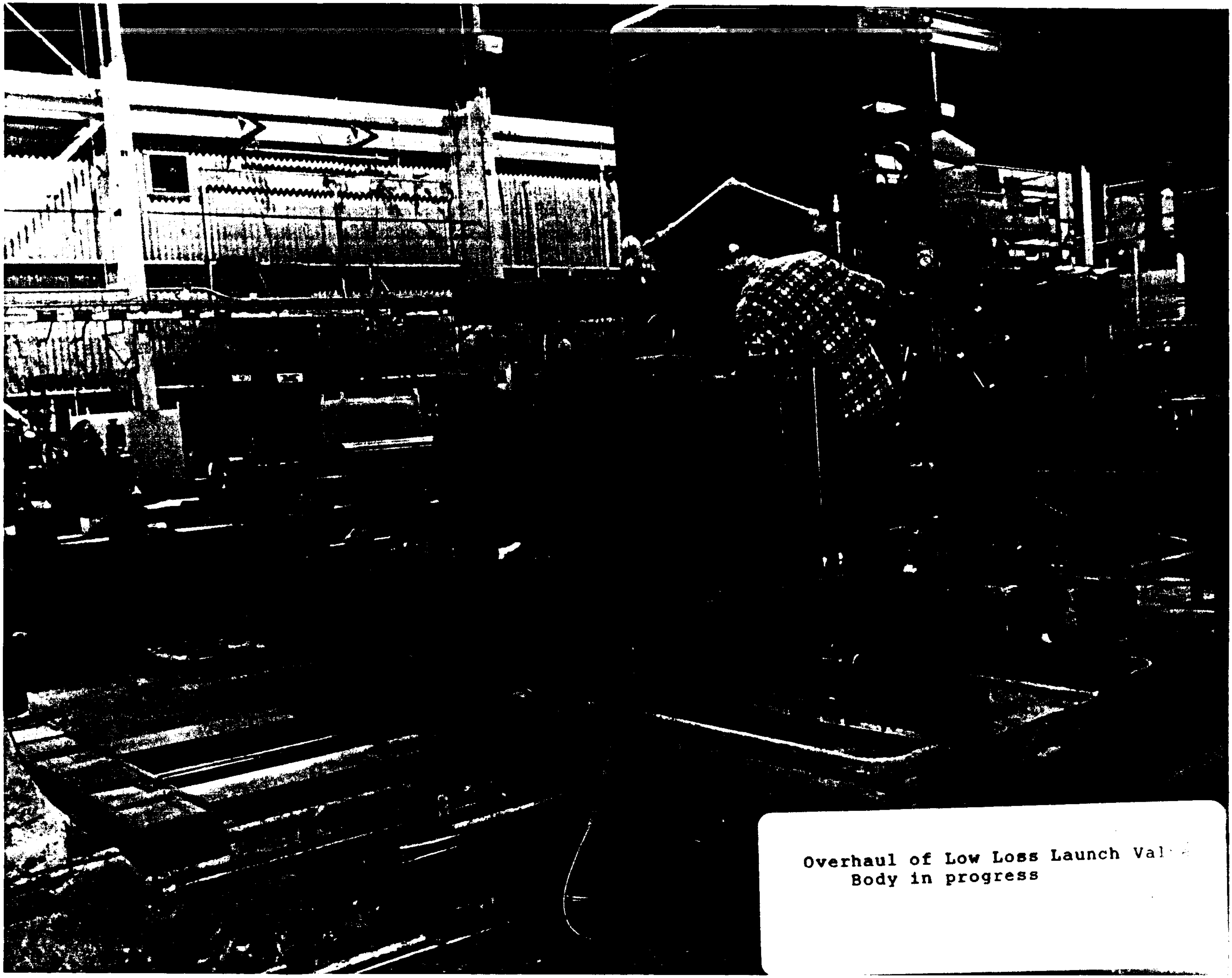
Low Loss Launch Valve
Assembly In Progress



MACHINE SHOP LOW LOSS LAUNCH VALVE OVERHAUL AREA for grinding Valve Bodies and Plugs

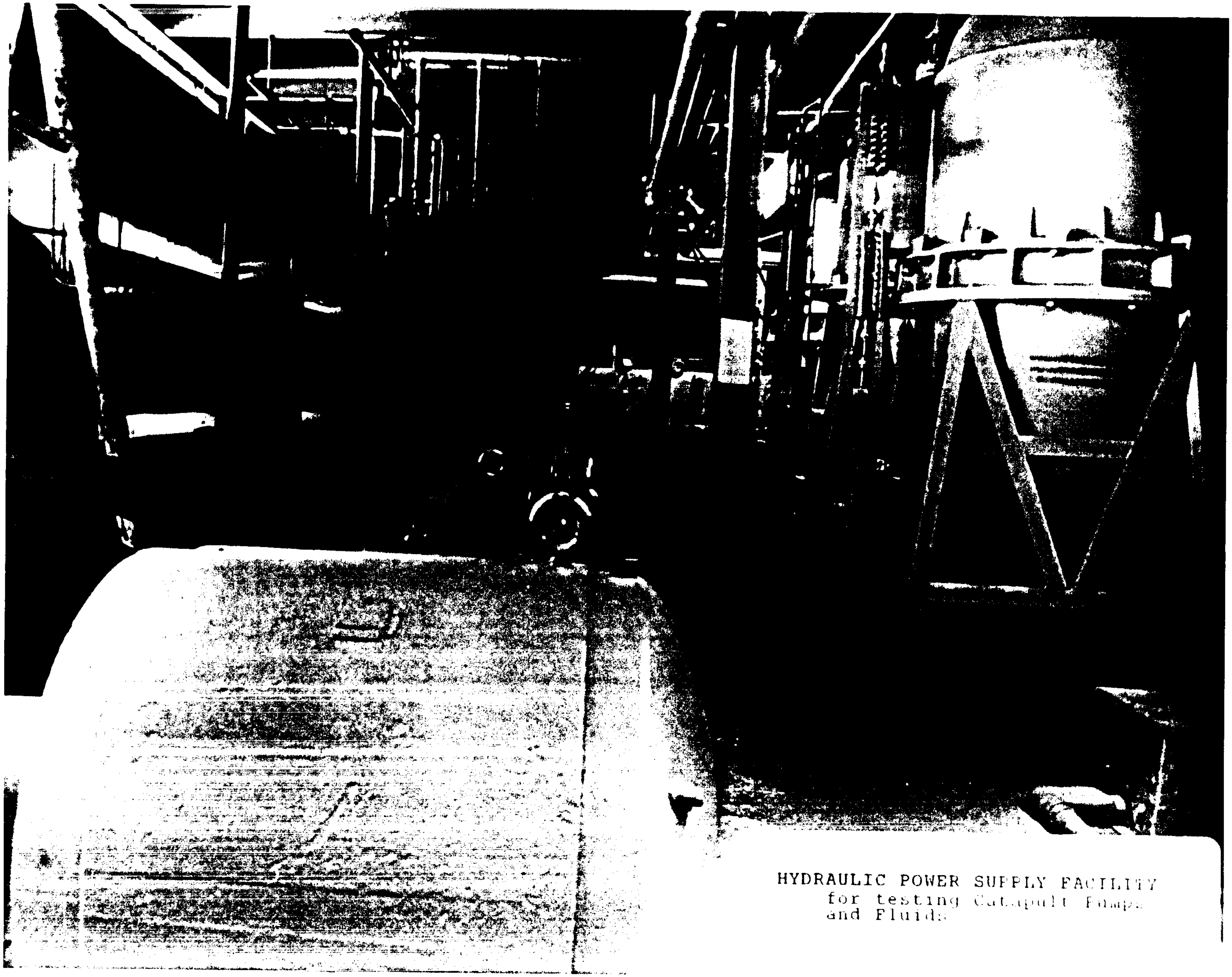


Low Loss Launch Valve
Plug Grinding



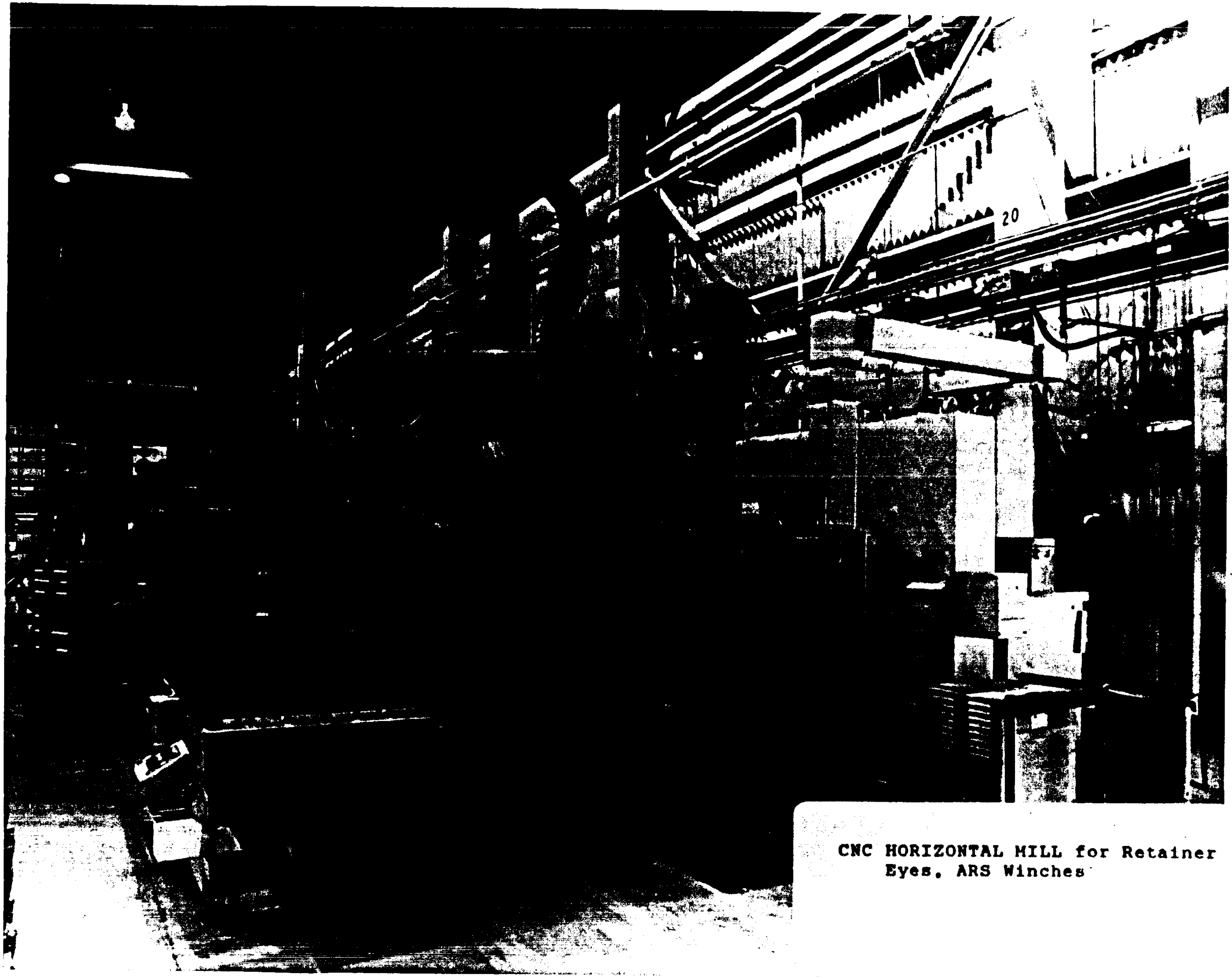
Overhaul of Low Loss Launch Val
Body in progress

Common Support Function	Major Facility or Equipment Description	Unique To DOD	Unique To Federal Gov't	Unique To U.S.	Replacement Cost ($K)
API Products; ALRE	**Facility For Qualification And Aircraft Carrier Suitability Testing Of Hydraulic Pumps and Valves:** **NAWCADLKE is the ONLY test facility in the country for supplier qualification of aircraft carrier ALRE valves and pumps. Some of these products are critical to safe conduct of carrier operations. They routinely handle very large hydraulic pressures. Qualification testing is used to both maintain a capable supplier base and reduce the risk of flaws in the items which are essential to avoiding the loss of Navy personnel and property.**	**YES**	**YES**	**YES**	**1,272**



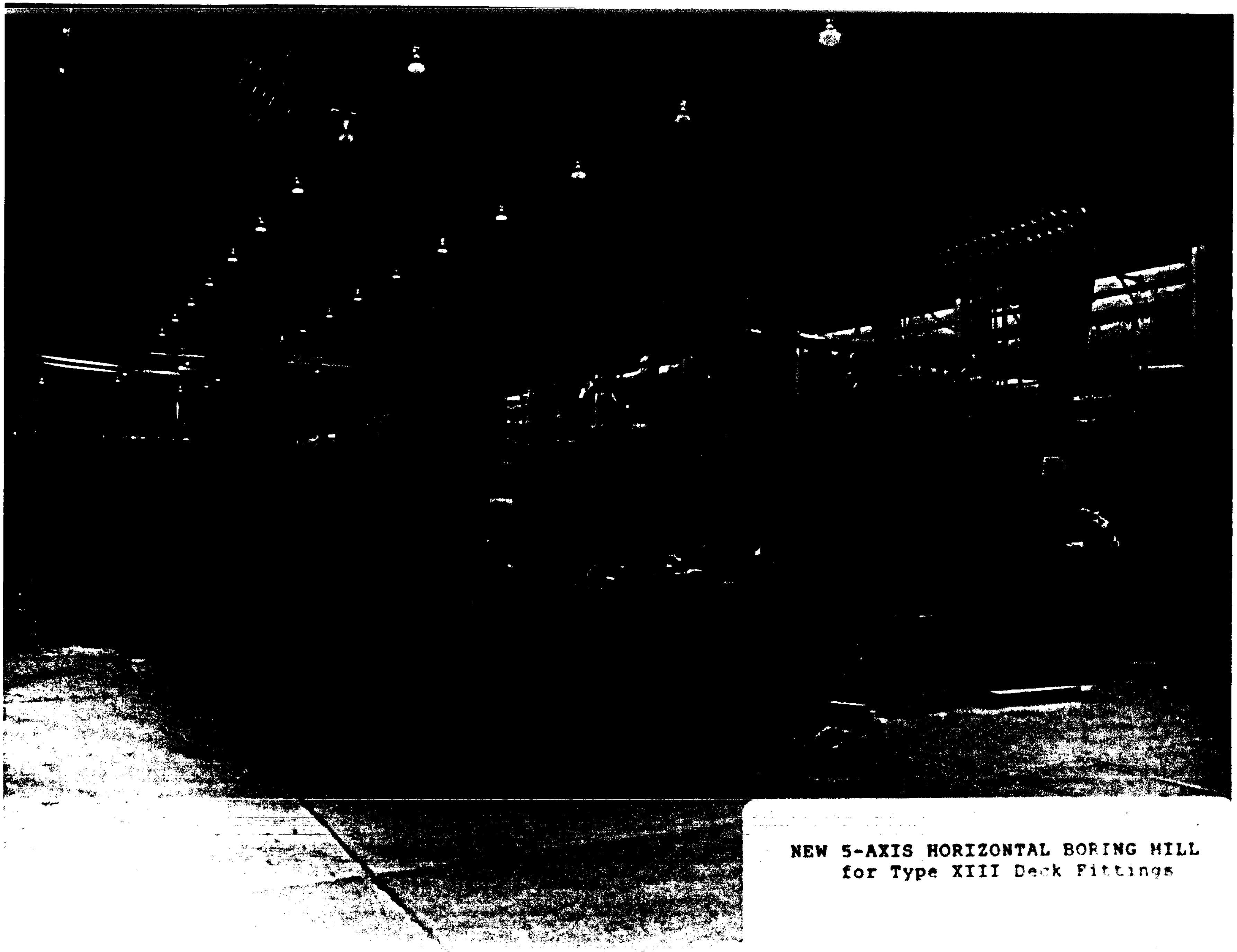
HYDRAULIC POWER SUPPLY FACILITY
for testing Catapult Pumps
and Fluids

Common Support Function	Major Facility or Equipment Description	Unique To			Replacment Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products SE and ALRE	**Metal Machining and Forming Facility:** **NAWCADLKE possesses a fully equiped machining facility capable of manufacturing a wide range of piece-parts, assemblies, sub-system, and fully operational equipment. Dedicated engineering support and skilled artisans work with a combination of manual and computer controlled equipment. Manually controlled machine tools provide the flexibility to rapidly custom craft single pieces while computer controlled systems allow for rapid production of small prototype lots and repetitive overhaul operations. While this facility has served primarily as the supplier of last resort and the last source of repair for Navy API unique and critical assemblies, it has demonstrated the adaptability to efficiently meet the production needs of the Fleet, Marines forces, and other Services.**	**NO**	**NO**	**NO**	**99,816**

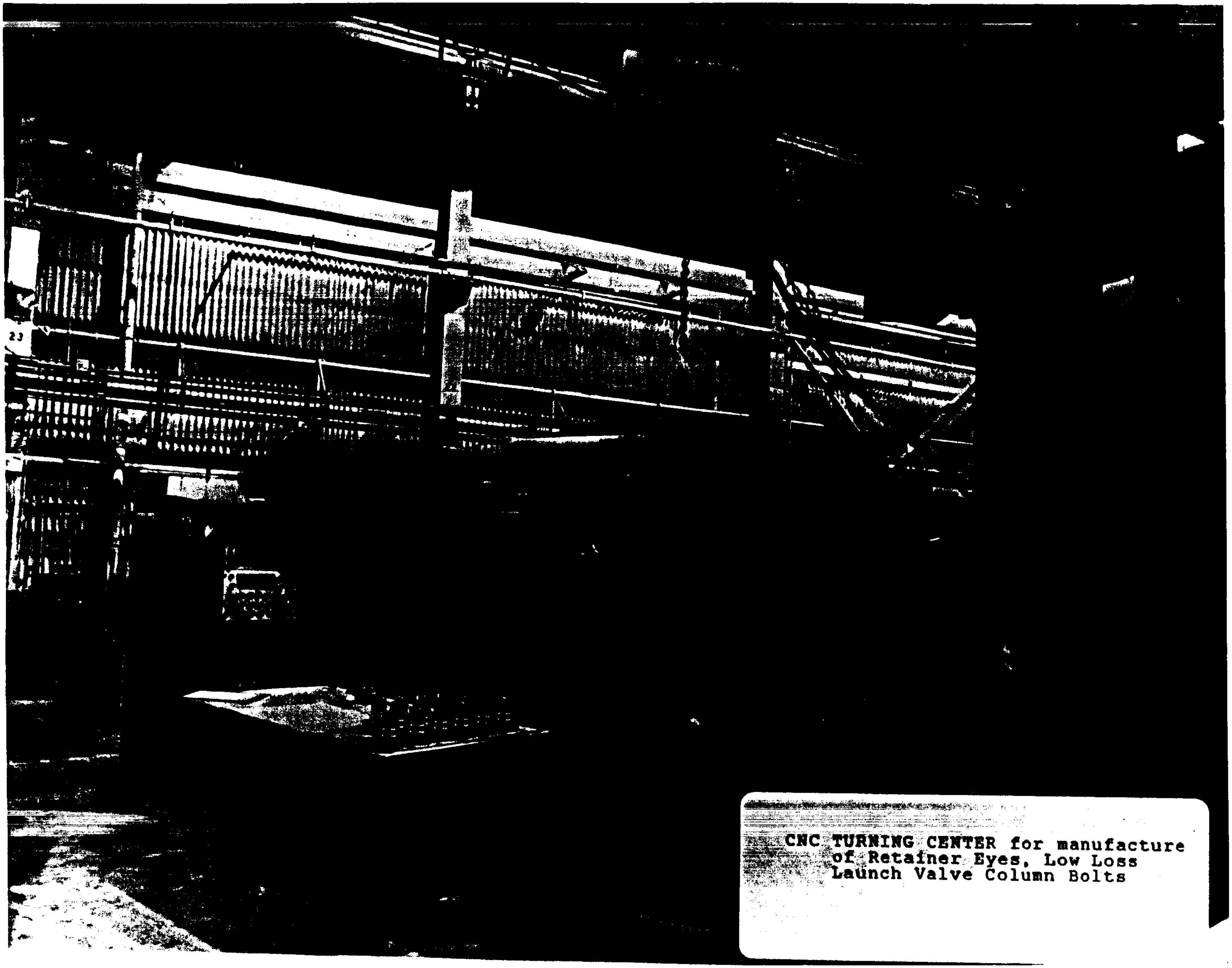


CNC HORIZONTAL MILL for Retainer
Eyes, ARS Winches

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products; SE and ALRE	**Five Axis Horizontal Milling and Boring Machine (CNC Controlled):** **This is a sophisticated computer controlled milling and boring machine used on medium and large parts. This machine provides the flexibility needed to rapidly change production plans in response to fleet emergency needs. It is used for a large number of NAWCADLKE's diverse products and Fleet requirements, many related to the safety critical aspects of landing high performance aircraft aboard ships.**	**NO**	**NO**	**NO**	**1,182**
API Products; ALRE	**CNC Turning Center (#311):** **This machine is used for pitch shafts and pitch roll hubs on carrier optical landing systems. In addition, it is used for initial manufacture and remanufacture of launch valves, catapults and arresting gear.**	**NO**	**NO**	**NO**	**1,227**

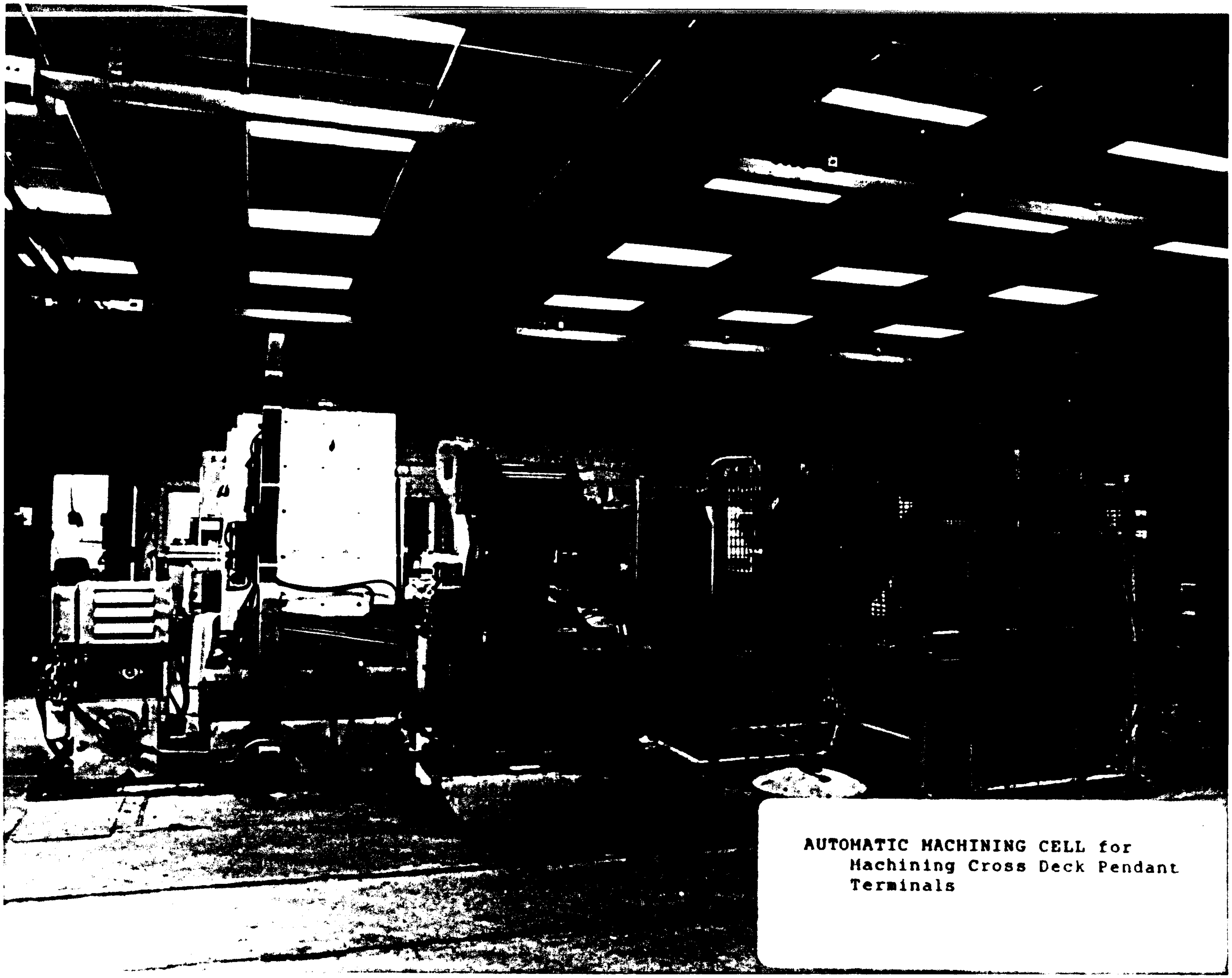


NEW 5-AXIS HORIZONTAL BORING HILL
for Type XIII Deck Fittings

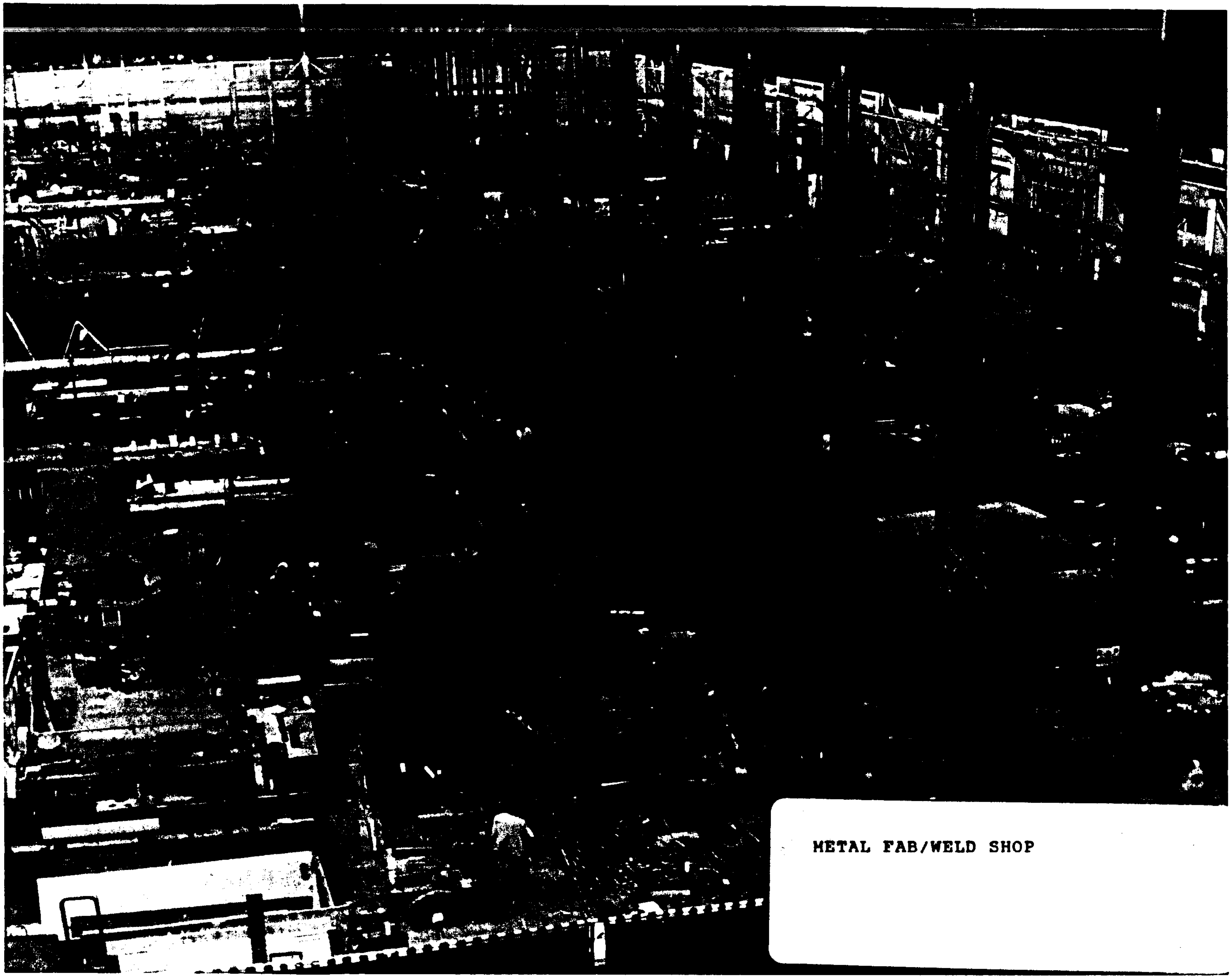


CNC TURNING CENTER for manufacture of Retainer Eyes, Low Loss Launch Valve Column Bolts

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products; SE and ALRE	**CNC Horizontal Milling Machine (#123):** **This is a computer controlled milling machine used primarily in the manufacture of launch valves, jet blast deflectors, and other ALRE and support equipment products. It provides the close tolerances required of precision machining needed for these critical components.**	**NO**	**NO**	**NO**	**457**
API Products; SE and ALRE	**Vertical Milling Machine (Kingsbury) (#122)** **This is a computer controlled milling machine used in the manufacture of ALRE products (with some support equipment use as well). It is used to provide close tolerances and precision machining.**	**NO**	**NO**	**NO**	**406**
API Products; ALRE	**Horizontal Milling and Boring Machine (#121):** **This milling and boring machine is used primarily in launch valve main body and steam head production and refurbishment.**	**NO**	**NO**	**NO**	**725**
API Products; ALRE	**Jig Milling and Boring Machine (#207):** **This machine is an integral milling machine in the overhaul of launch valves.**	**NO**	**NO**	**NO**	**1,779**

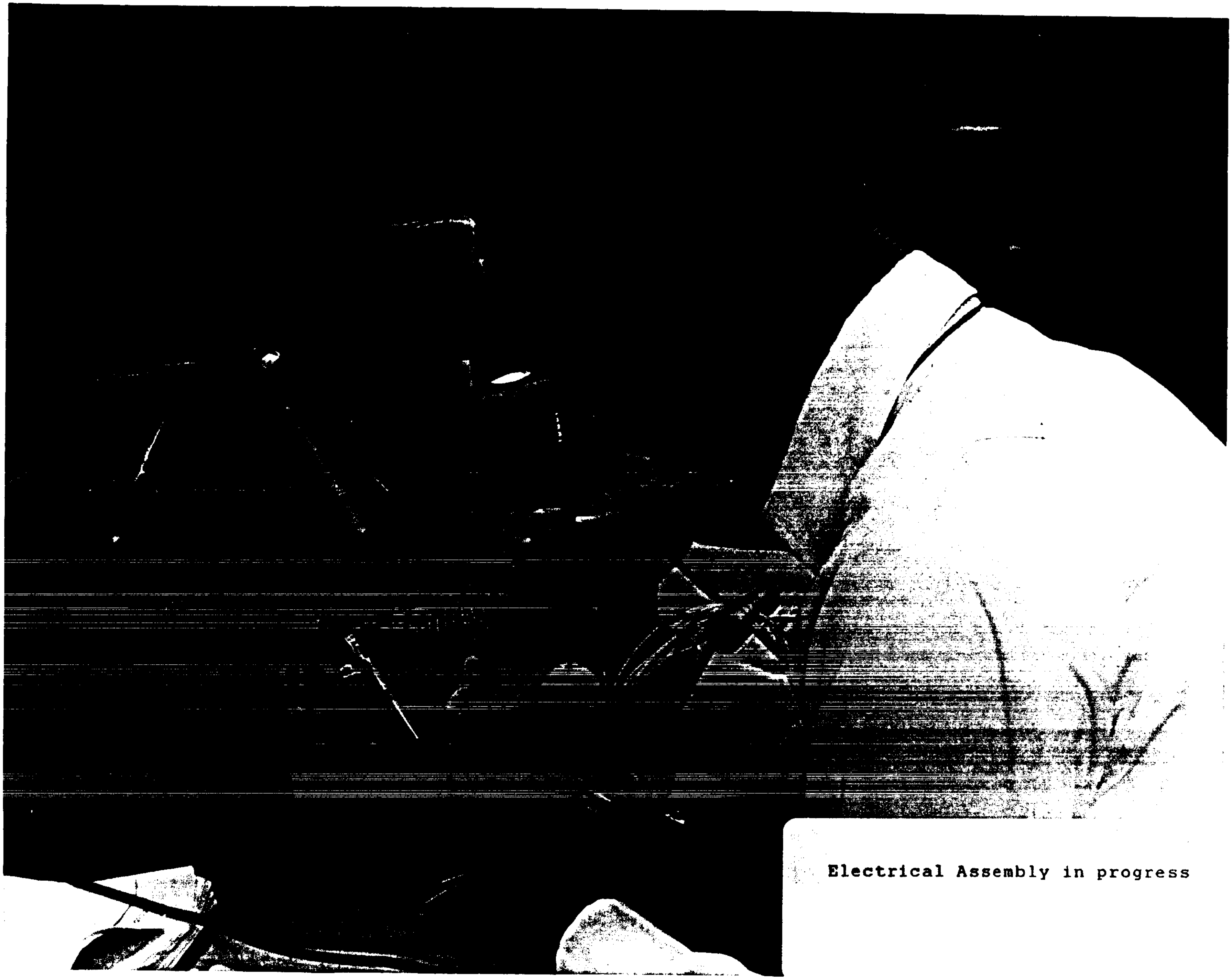


AUTOMATIC MACHINING CELL for Machining Cross Deck Pendant Terminals

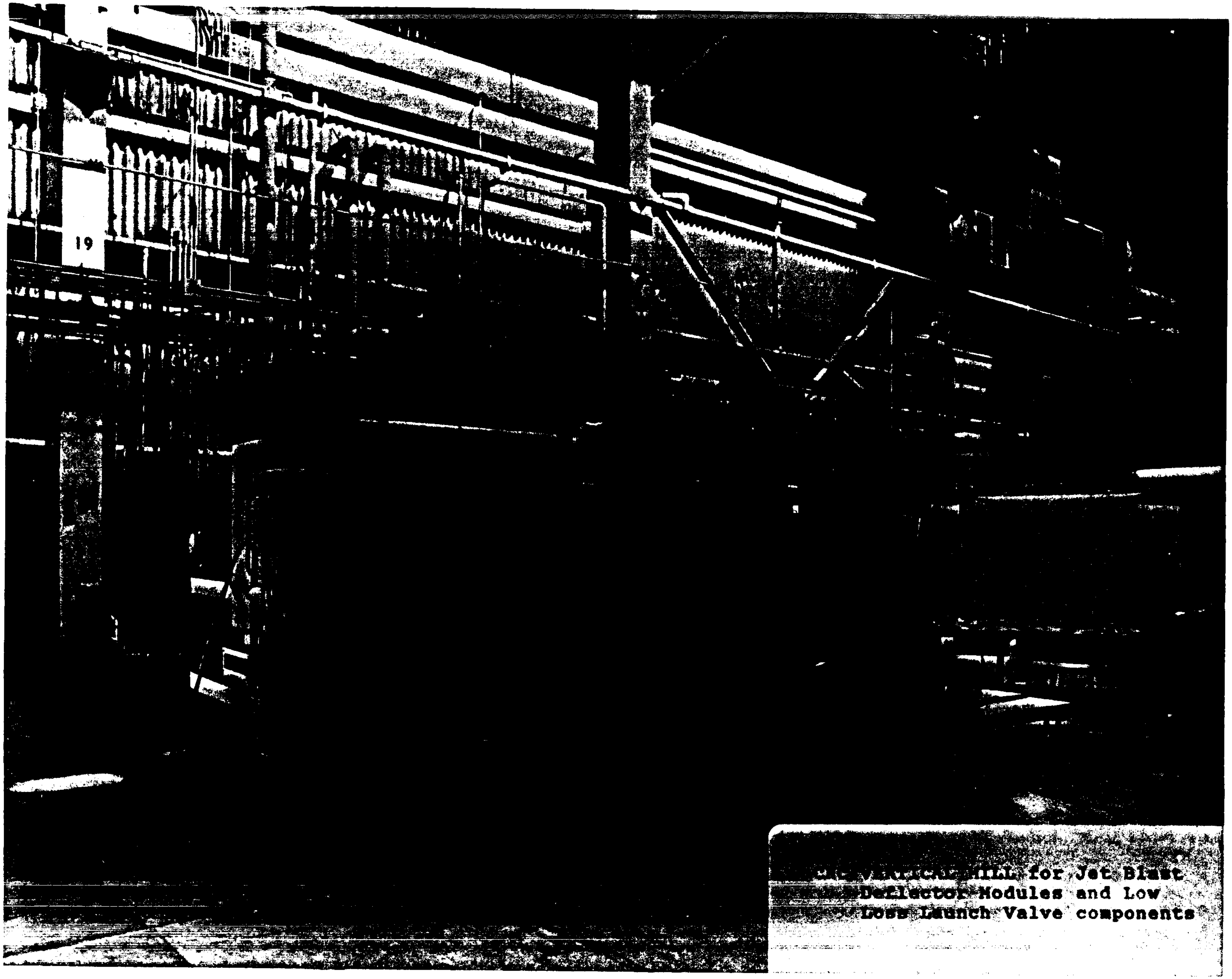


METAL FAB/WELD SHOP

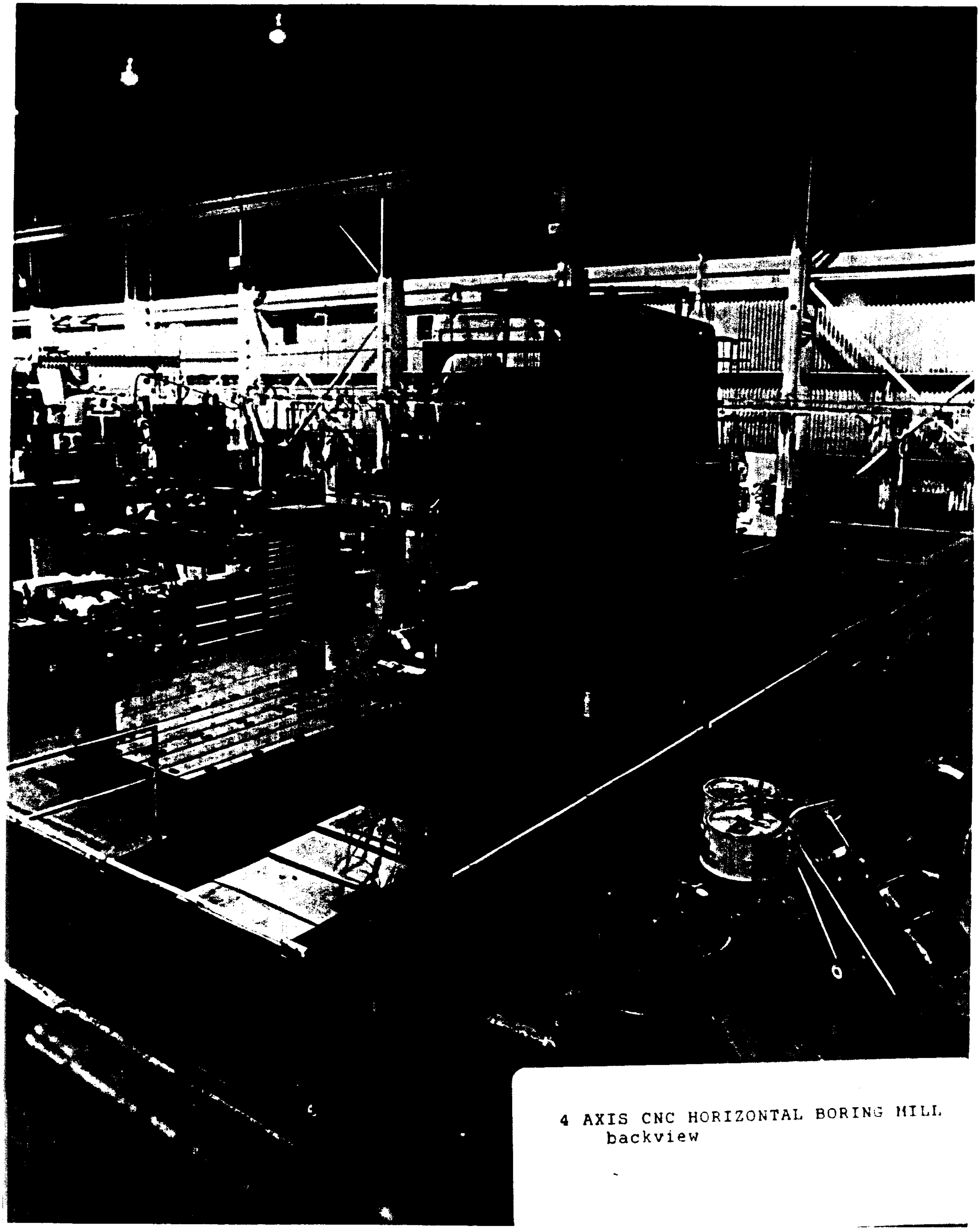
Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products SE and ALRE	**Electronics Repair And Prototype Facility:** **As part of the repair, overhaul, and prototype manufacture of launch and recovery systems and ground support equipment, NAWCADLKE maintains the capability to produce developmental prototypes and repair the wiring and electronics. These items are used in conjunction with the electro-mechanical systems which are repaired, overhauled, and manufactured here.**	**NO**	**NO**	**NO**	**603**
API Products; ALRE	**Automated Machining Cell:** **This is an automated, multi-station machining cell which is designed to produce the terminal ends which are swaged on Cross Deck Pendants. Cross Deck Pendants are the wire used to arrest the landing of carrier based aircraft and must consistently meet specifications or an aircraft accident will result. Designed to require limited human intervention, a robot transfers work pieces between the machine tools. The final product is "rough-finished" terminal ends, which, after heat treating, can be machined to the precise tolerances required for final terminals.**	**YES**	**YES**	**YES**	**1,383**



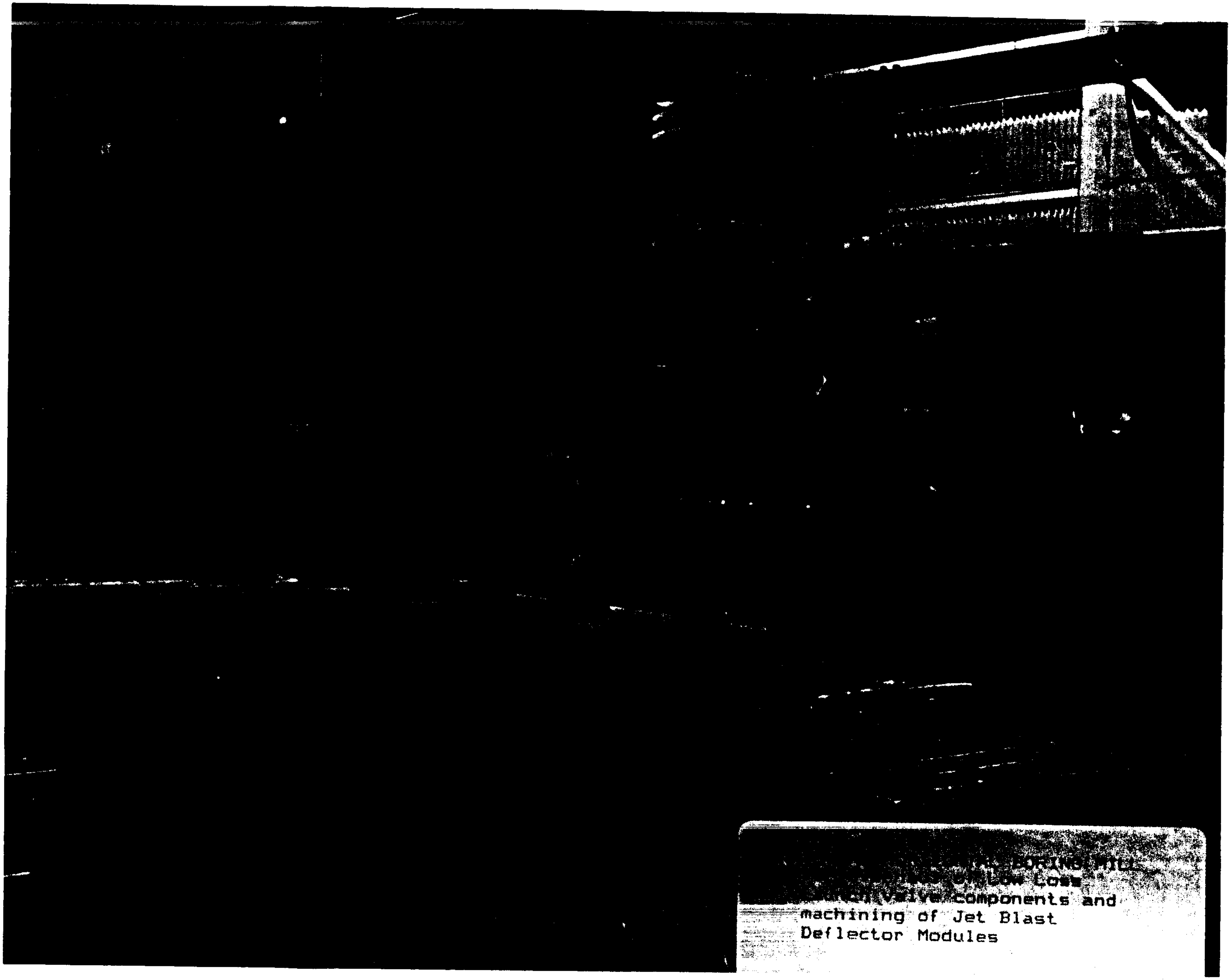
Electrical Assembly in progress

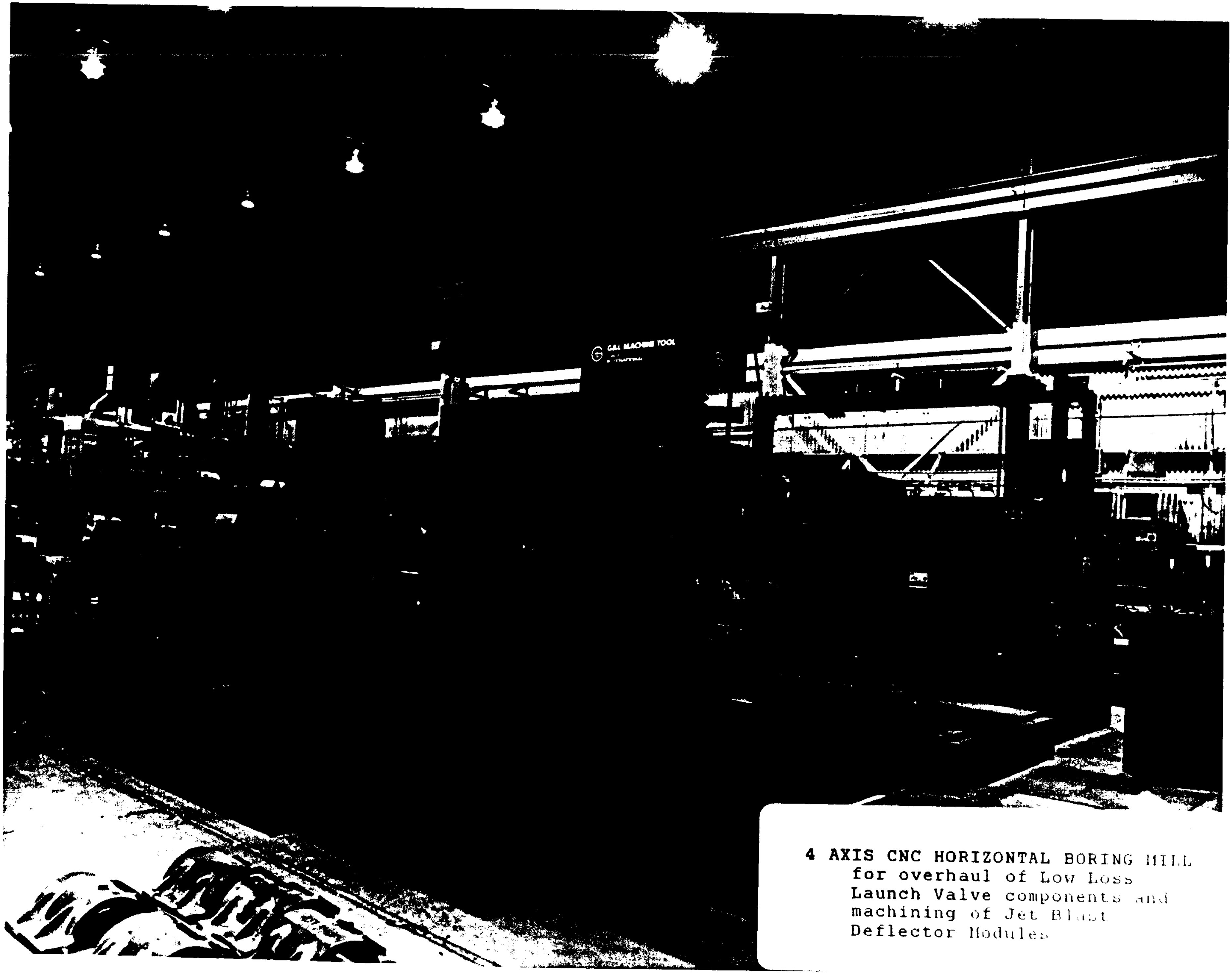


[illegible] VERTICAL MILL for Jet Blast Deflector Modules and Low Loss Launch Valve components

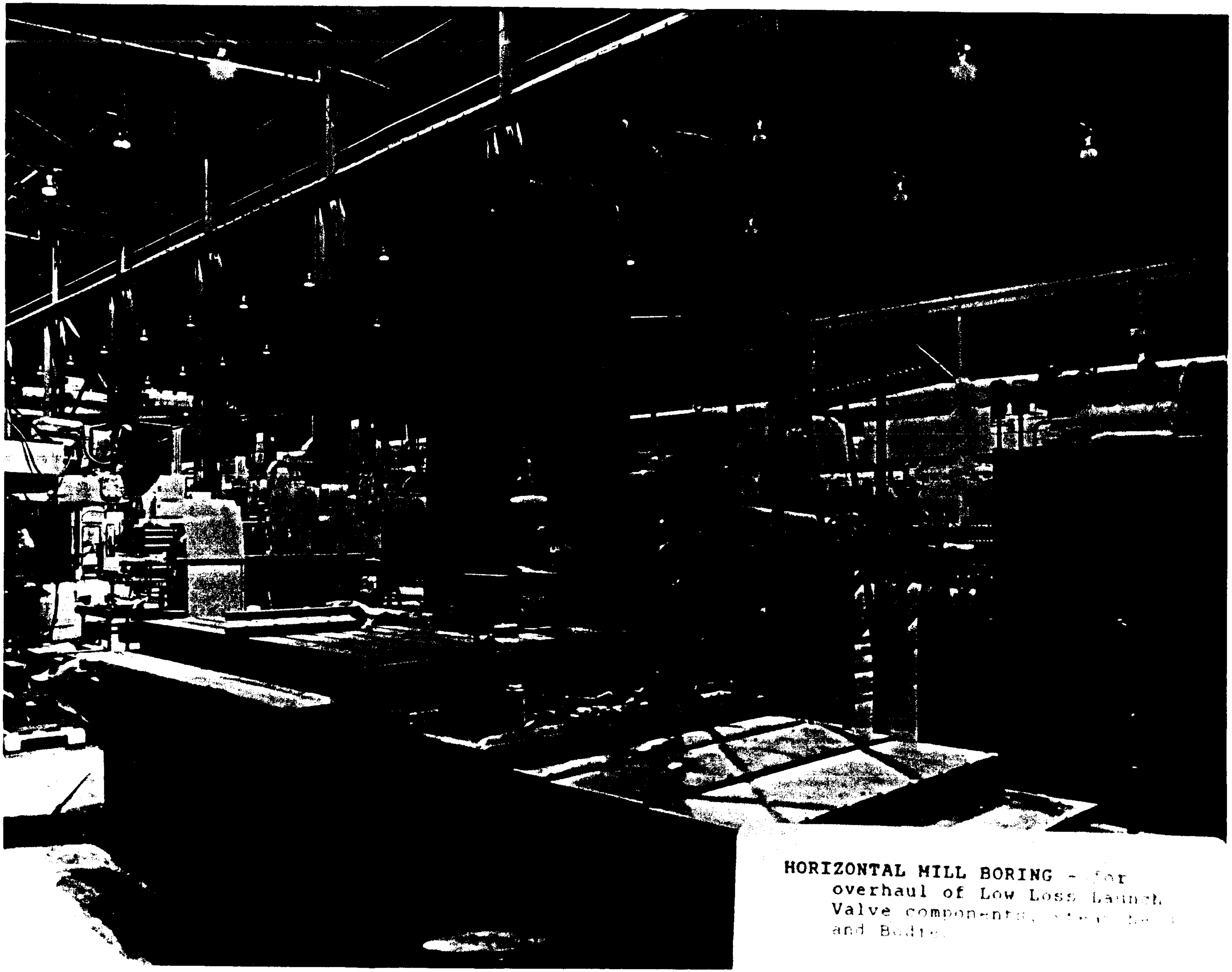


4 AXIS CNC HORIZONTAL BORING MILL
backview

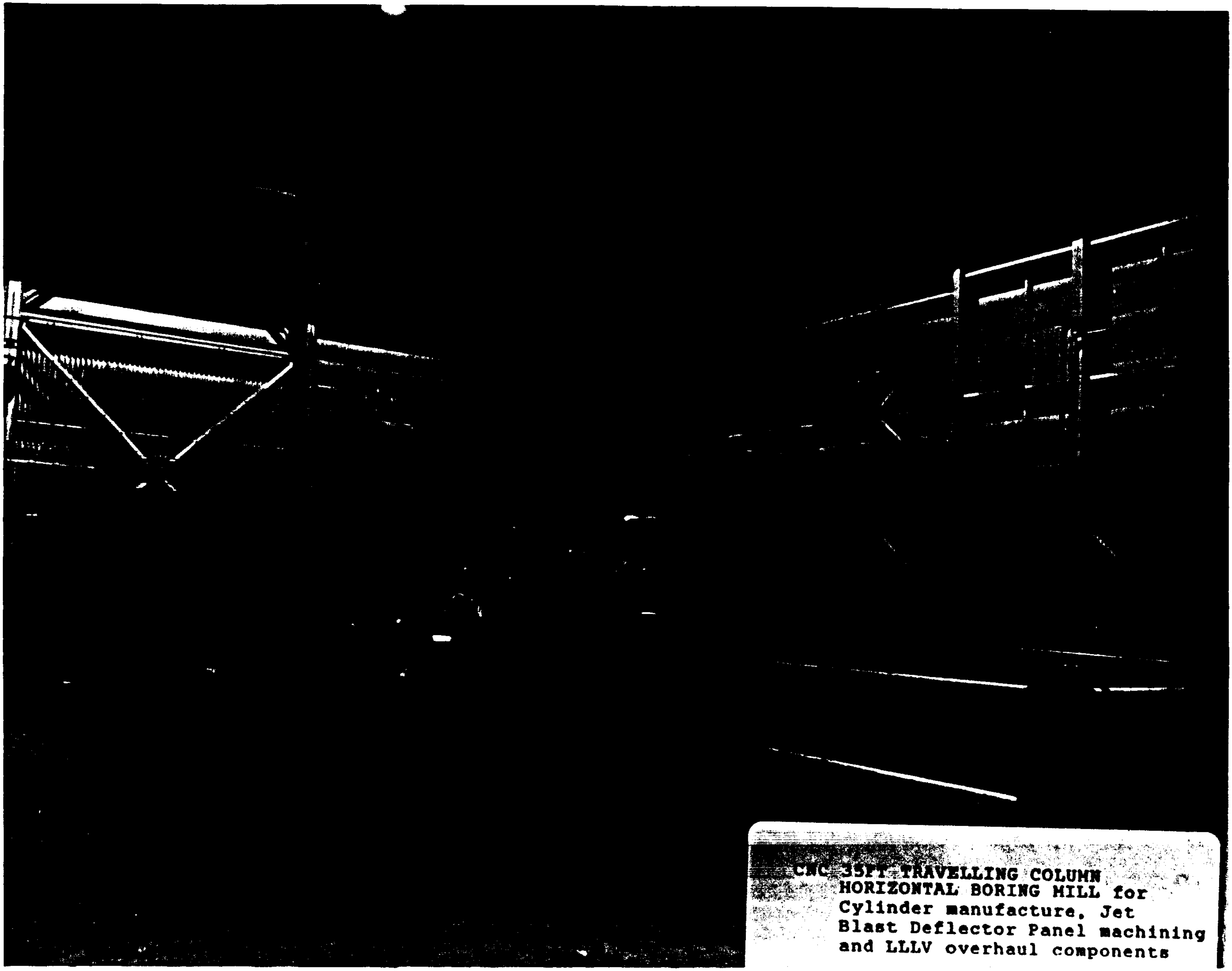

components and
machining of Jet Blast
Deflector Modules



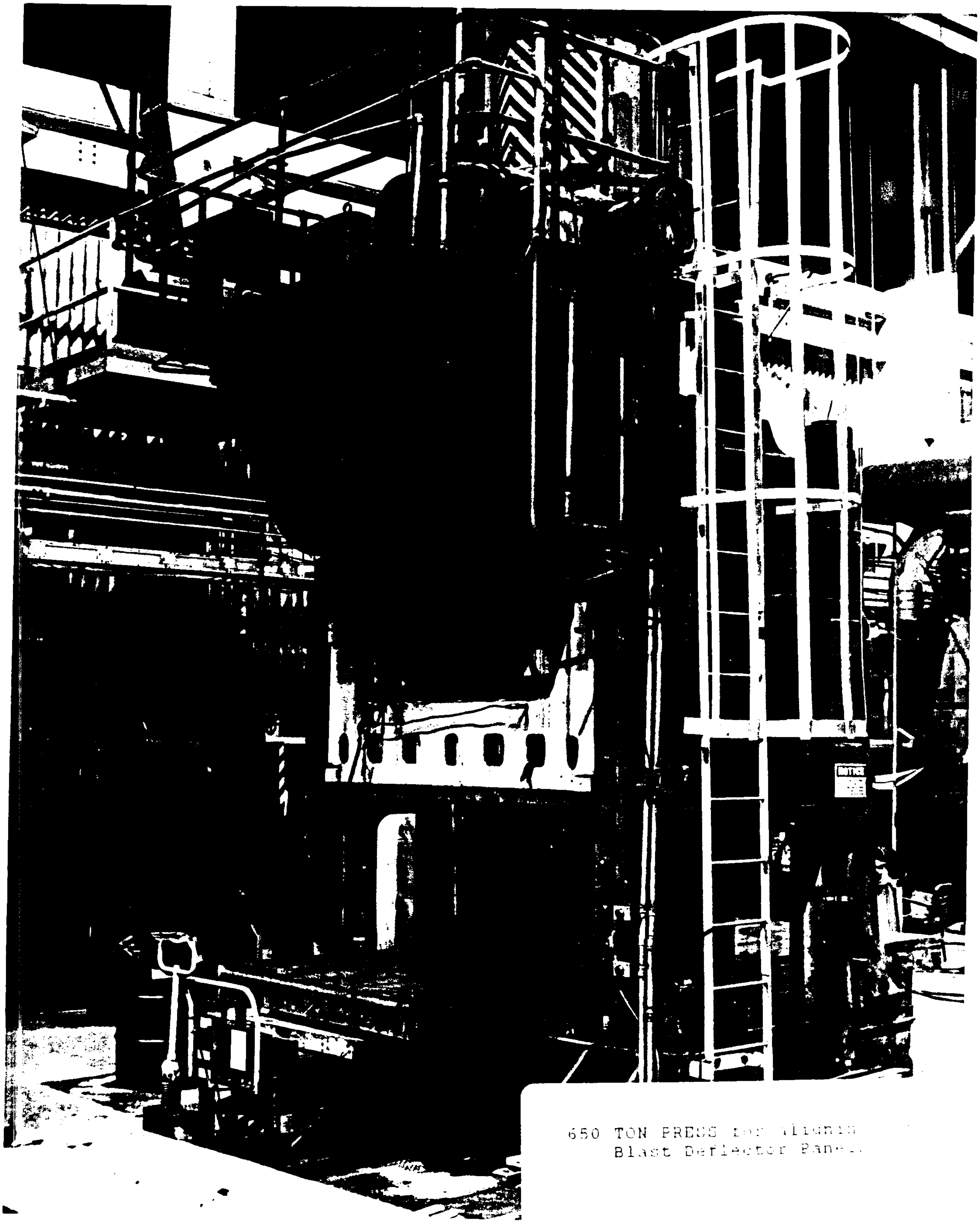
4 AXIS CNC HORIZONTAL BORING MILL
for overhaul of Low Loss
Launch Valve components and
machining of Jet Blast
Deflector Modules



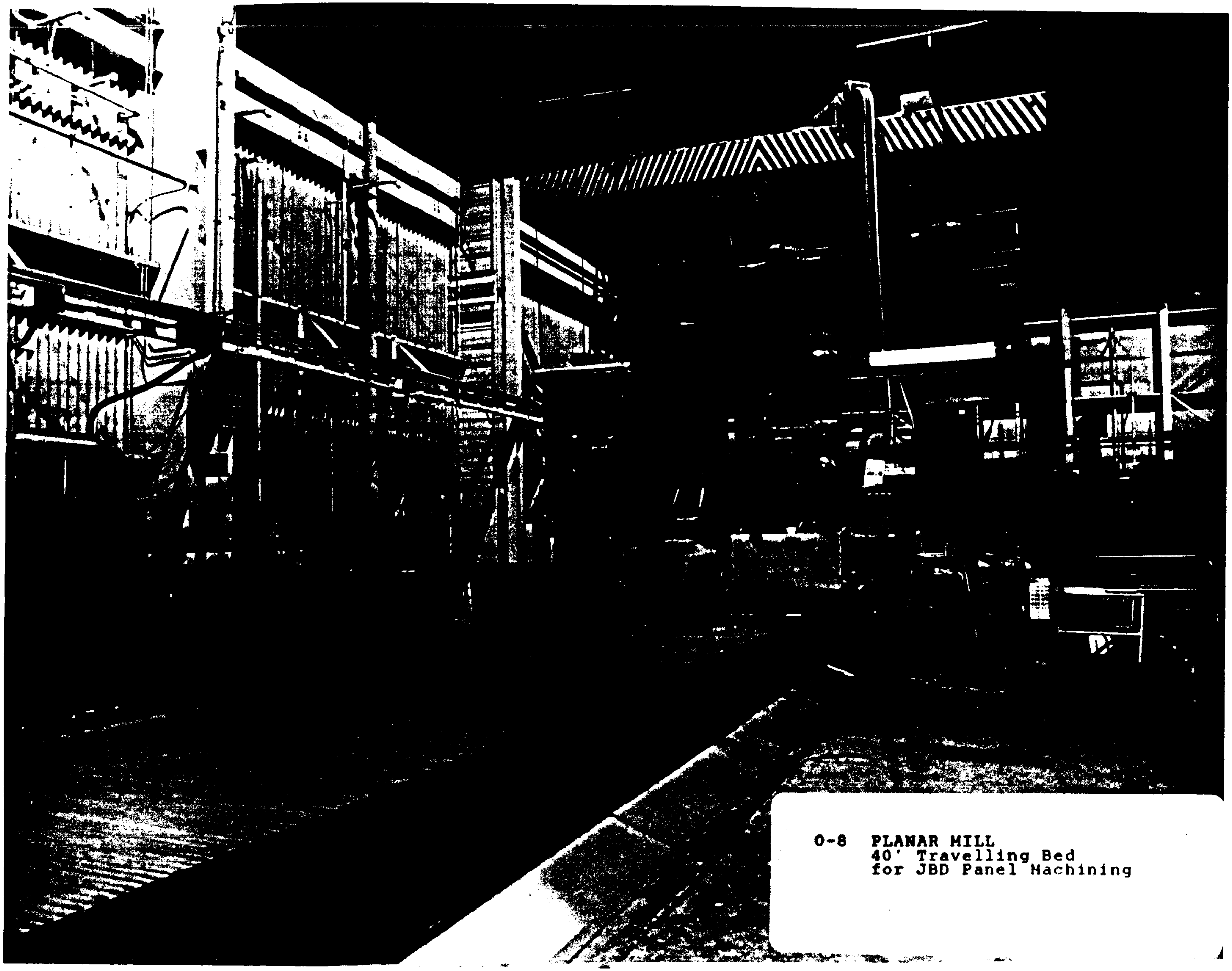
HORIZONTAL MILL BORING - for overhaul of Low Loss Launch Valve components, [illegible] and Bodies



CNC 35FT TRAVELLING COLUMN HORIZONTAL BORING MILL for Cylinder manufacture, Jet Blast Deflector Panel machining and LLLV overhaul components



650 TON PRESS for Aluminum
Blast Deflector Panel



0-8 PLANAR MILL
40' Travelling Bed
for JBD Panel Machining

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U.S.	
API Products; ALRE	**Travelling Column Milling and Boring Machine (#271):** **This machining center equipment is used in the initial manufacture of the large (2ft diameter x 9ft long) Launch Power Cylinders, the Low Loss Launch Valve (LLLV) Bodies, the LLLV Steam Heads, the A/C Jack Tester Stands and the Jet Blast Deflector (JBD) Panel weldments. All of these items are very critical to safe carrier operations and fleet readiness. The JBD panels and the overhauled LLLV parts are produced solely at NAWCADLKE.**	**NO**	**NO**	**NO**	**1,202**
API Products; ALRE	**650 Ton Punch Press (#513):** **This unusually large press is critical to Jet Blast Deflector (JBD) panels manufactured at NAWCADLKE. It is used to realign the JBD panels after the heat deformation that results during the welding of the various components which make up the panel assembly.**	**NO**	**NO**	**NO**	**574**
API Products; ALRE	**Planar Milling Machine (#108):** **This unusually large milling machine is critical in the manufacture of large flat precision products like the the Jet Blast Deflector panels produced solely at NAWCADLKE. It is also used in the production of 12ft long tracks for sheave dampers and arresting gear base components.**	**NO**	**NO**	**NO**	**2,570**

3.5 Expansion Potential

3.5.1 Laboratory Facilities: Use facilities records as of fourth-quarter FY93 in answering the following (in sq ft) for each CSF: (BRAC Criteria II)

Types of Space: **Technical**
Space Capacity: **Current: 3300 sq ft**
Used: 3300 sq ft
Excess: None

Common Support Function	Facility or Equipment Description	Type of Space*	Space Capacity (KSF)		
			Current	Used	Excess
API - ALRE	**EMALS LAB**	**LAB**	**3**	**3**	**0**
API - ALRE	**ISIS**	**LAB**	**4**	**4**	**0**

API - SE	**INFORMATION TECH**	**LAB**	**1**	**1**	**0**
API - SE	**NDI/ ELECTRONICS**	**LAB**	**2**	**2**	**0**
API - SE	**FIBEROPTICS**	**LAB**	**1**	**1**	**0**
API - ALRE	**VISUAL LANDING AID LAB**	**LAB**	**3**	**3**	**0**
	PHOTOMETRIC	**LAB**	**6**	**6**	**0**
	PRODUCT DEVL	**LAB**	**2**	**2**	**0**
	CATAPULTS	**LAB**	**1.5**	**1.5**	**0**
	COMPONENTS ANALYSIS	**LAB**	**3.9**	**3.9**	**0**
API - SE & ALRE	**VLA**	**LAB**	**5**	**5**	**0**
	INDUSTRIAL COMPLEX	**TECHNICAL**	**240**	**240**	**0**
	MATERIAL LABORATORY	**TECHNICAL**	**2.2**	**2.2**	**0**
	SPOTTING ROOM	**TECHNICAL**	**3.3**	**3.3**	**0**
	PHOTOMETRIC FACILITY	**TECHNICAL**	**3**	**2.5**	**.5**
	ATE SOFTWARE FACILITY	**TECHNICAL**	**7.5**	**5**	**2.5**

*** Administrative, Technical, Storage, Utility**

Common Support Function: Aircraft Platform Interface

3.5.1 Laboratory Facilities:

Common Support Function: **Aircraft Platform Interface**

Major Facility or Equipment: 2200 sq ft Material Laboratory outfitted with sample preparation, testing, analysis and support equipment.

Type of Space: Technical
Space Capacity: Current: 2200 sq ft
Used: 2200 sq ft
Excess: None

Equipment Description	Replacement Costs
Sample Preparation - To reduce components into the proper size and condition to be further studied and analyzed.	$100K
Chemical Analysis - To obtain elemental chemical analysis of specimens.	$250K
Electron and Optical Microscopes - To view specimens under very high magnification. Used for examination of component fracture surfaces.	$175K
Physical Testing - To determine or alter physical attributes of specimens, such as hardness, impact resistance, metallurgical structure and wear properties, for example.	$500K
Image Analysis - To perform computer analysis of of attributes of images generated by microscopes.	$ 50K
Laboratory Furniture - Various benches, work surfaces, fume hoods, and other support items	$100K
TOTAL	$1,175K

3.5.1.1 Describe the capacity of your activity to absorb additional similar workyears categorized in the same common support function with minor facility modification. If major modification is required, describe to what extent the facilities would have to be modified. (Use FY97 workyears as your requirement) (BRAC Criteria III)

a. Manufacturing Technology:

For BRAC 95 Data Call Number 4 we estimated our workforce will be 191 Workyears. Using our current proportions of shop/office staffing, this workforce should consist of 147 workers in direct shop labor operations and 44 workers in various other managerial administrative and support functions. Current A-11 Budgeting calls for a 65% productive ratio in FY97 and this was used for Data Call 4 computations.

Considering the nature of our operations (i.e., equipment maintenance, facility functions, etc.) the highest productive ratio achievable with type of work required by our current work orders is estimated to be 70%. If we received a higher proportion of metal fabrication and welding work, which are areas currently operating at less than full production capacity, our productive ratio could approach 80% with no additional personnel . NAWCADLKE has the capability to absorb additional workyears in aircraft launch and recovery equipment and flight critical subsystem manufacturing, support equipment prototyping and limited production, and the capability to absorb all of the repair, overhaul, and modernization work for support equipment and aircraft launch and recovery equipment.

Assuming additional workyears which fall within the NAWCADLKE manufacturing areas operating at less than full capacity, we could absorb 29 similar workyears with no additional personnel, equipment, or facility changes. This estimate is based on a single shift operation and a productive ratio increase from 65% to 80% due to the improvement in work order matching to NAWCADLKE production capacity.

Assuming a single shift operation, no additional personnel, equipment, or facility changes, and assuming a 15% overtime factor, (i.e., each shop employee would work an average of 46 hours per week for an increase of 22 available workyears), our additional workload capability is 51 workyears. This value of 51 workyears is based on the 29 workyear improvement from increased capacity utilization plus the 22 workyear overtime factor.

Considering additional personnel associated with additional workyears and assuming single shift operations, the NAWCADLKE can absorb up to 150 additional workyears of effort. At the peak of the military buildup in the 1980's NAWCADLKE manufacturing staffing was in excess of 320 people. Should approximately 100 additional workers be moved to the NAWCADLKE to support additional workyear requirements, minor facility modification would be necessary. The minor modifications would include minor changes to existing buildings for additional workspace and for storage of assets awaiting repair or shipping. Previously available shop space has been converted for RDT&E laboratory facilities (i.e. the Electro-Magnetic Aircraft Launch proof of principle and demonstration hardware).

NAWCADLKE has the ability to operate in a three shift, 24-hour manufacturing operation. This capability dramatically increases our ability to absorb additional workyears. When moving to a three shift operation, we estimated that we would need to triple our shop workforce while needing to only double the managerial and support staff requirement. Using the estimated 147/44 ratio for FY97, and assuming that 338 trained and capable workers are added to our staff, with an 80% productive ratio, we could absorb 336 Workyears.

Further, if we were given additional personnel, equipment, and workload, using a three shift operation we could absorb 669 workyears. From the BRAC95 Data Call 4 results, given additional equipment, personnel, and workload, we could increase production in our primary commodity hours to 1,388,457 DLMH. Using 1,750 hours per year as the actual productive time (this deducts sick leave,

annual leave, etc.), this would be a total of 793 Workyears. Deducting the assumed baseline FY97 Workload of 124 Workyears, we can increase by 669 Workyears.

The NAWCADLKE Manufacturing Technology Department has the ability to contract additional work. We have been contracting out selected manufacturing work for many years. Through the years, we have developed relationships with a cadre of local suppliers (i.e., machine shops, plating contractors, etc) through the effective use of rapid farmout contracting techniques. We have skilled personnel who are currently performing pre-award surveys, contractor audits, producibility analyses and data package development/validation. In addition, our staff includes Contracting Officer Technical Representatives.

b. Materials Laboratory:

1.5 to 2.0 workyears with the existing facility.

For additional workyears, equipment and the expansion of the facility is required.

c. Spotting Room:

The existing facility can support up to 6 additional workyears of similar work.

d. Photometric Facility:

The facility is currently operating at less than full capacity with its current requirements which are based only in Navy programs. The Federal Aviation Administration funds laboratory measurements and associated field measurements with portable equipment. The existing facility could support an additional 4 workyears with only a single shift operation. Assuming either overtime and/or a second shift, the existing facility could assume an additional 6 workyears.

Minor facility modification would expand capacity up to an additional 15 workyears of photometric and radiometric measurements for electro-optic systems and devices.

e. ATE Software Facility:

NAWCADLKE has the capacity to assume similar workyears in various engineering and technical areas. In the engineering area, Automatic Test Equipment support such as development of application Test Program Sets (TPS) for various Units Under Test and the establishment of a Test Integration Facility (TIF) can be accomplished at Lakehurst with minor facility modification.

As the Cognizant Field Activity for Common ATE and CASS system software, NAWCADLKE, maintains an existing facility with the same hardware and software assets required for TPS development. These assets include one Hybrid CASS station, three off-line support mid range computer systems, multiple workstations and the software needed to station and system operations and control. For TPS development, additional CASS stations would be required but the support computer systems have enough capacity to handle the added work

efforts. Should more CASS hardware be acquired for the TPS efforts, NAWCADLKE can easily establish itself as a TIF and allow multiple TPS developers to share the CASS resources. This is attainable due to the similarities in managing the ATE Software Center at NAWCADLKE and a TIF operation. There is also the fact that with current computer systems requiring less space and environmental controls, that of the current 7,500 (approximate) square feet at the ATE Center for the equipment at hand, there is approximately 2,500 feet available to house 7 to 8 additional CASS stations. With these modifications, up to 60 workyears of similar work can be accomplished at NAWCADLKE.

f. Product Evaluation and Verification:

The Product Evaluation and Verification Function can absorb additional workload in three areas:

1) Jet Car Track Site: 6 workyears
2) Jet Blast Deflector Site: 1 workyear
3) Metrology and Calibration Laboratory: 2 workyears

This estimate is based on the productive ratio for the department and utilization of selected sites and laboratories.

3.5.1.2 If there is capacity to absorb additional workyears, how many additional workyears can be supported? (BRAC Criteria III)

Given No Additional Personnel: 51 workyears*
Given Additional Personnel (336 workers): 336 workyears
Given Additional Personnel and Equipment: 669 workyears**
(Calculations explained in 3.5.1.1.a)

***Part of this additional workload capacity is based on the assumption that the additional workload received corresponds to work areas which are currently operating at less than full capacity. In addition, use of a moderate amount of overtime was assumed.**

****A two year ramp up to this work level is assumed based on a two year lead time to procure and install the additional equipment, bring on additional staff, increase raw material stocks, etc.**

The Landing Guidance Development Facility planned FY97 workload is 1.75 workyears which is 35% of its estimated total capacity of 5 workyears. Consequently, an additional 3.25 workyears could be supported by this facility.

The Product Evaluation and Verification Department can absorb additional workload in three areas. We can absorb six workyears at the Jet Car Track Site, one workyear at the Jet Blast Deflector Site, and two workyears in the Metrology and Calibration Laboratory.

3.5.1.3 For 3.5.1.1 and 3.5.1.2 (above) describe the impact of military construction programs or other alteration projects programmed in the FY95 PBS. (BRAC Criteria II)

3.5.2 **Land Use:** Provide number of buildable acres for additional laboratory/administrative support construction at your installation. (BRAC Criteria II).

638 areas.

3.5.3 **Utilities:** Provide an estimate of your installation's capability to expand or procure additional utility services (electric, gas, water). Estimates should be provided in appropriate units -- e.g. KWH of electricity. (BRAC Criteria II)

Electrical Supply: Present peak demand is 8,000 KiloWatts (KW) with a normal steady state of 6,000 KW. Electrical feeds on the base can support up to 26,500 KW. Jersey Central Power and Light (JCP&L) can supply up to 30,000 KW without modifying their transmission lines.

Natural Gas: Present peak demand is 5,000 CFH with a steady state load of 3,800 CFH. New Jersey Natural Gas can supply up to 2,500,000 CFH.

Sewage: Present peak demand is 860,000 GPD with a normal steady state load is 191,000 GPD. On base pumping capacity is 1,152,000 GPD. The Ocean County Utilities Authority can handle up the 1,500,000 without modification of their current system.

Potable Water: Present peak demand is 350,000 GPD with a steady state load of 250,000. Water is supplied by wells and the current pumping capacity for the base is 864,000 GPD. Usage beyond that would require additional wells.

Steam: Present peak demand is 110,000 lbm/Hr at 125 psi. The normal steady state load is 48,000 lbm/Hr. On base capacity is 186,000 lbm/Hr. Additional steam demand beyond that would require expanding the boiler plant and installing new boilers. However, the base is in the process of converting from a central steam heating plant to individual heating boilers (No. 2 fuel oil, propane, and natural gas).

SECTION IV: APPENDICES:

A. **Macro Process/Schedule**
B. **List of Activities**
C. **Common Support Functions**
D.

APPENDIX A

APPENDIX B

LIST OF ACTIVITIES

AIR FORCE

1. Armstrong Lab, Brooks AFB
2. Armstrong Lab, Tyndall AFB
3. Armstrong Lab, Wright-Patterson AFB
4. Armstrong Lab, Williams AFB
5. Human Systems Center, Brooks AFB
6. Wright Lab, Wright-Patterson AFB
7. Wright Lab, Eglin AFB
8. Aeronautical Systems Center, Wright-Patterson AFB
9. Aeronautical Systems Center, Eglin AFB
10. Oklahoma City Air Logistics Center, Tinker AFB (In-service engineering)
11. Ogden Air Logistics Center, Hill AFB (In-service engineering)
12. San Antonio Air Logistics Center, Kelly AFB (In-service engineering)
13. Sacramento Air Logistics Center, McClellan AFB (In-service engineering)
14. Warner-Robins Air Logistics Center, Robins AFB (In-service engineering)
15. Phillips Lab, Kirtland AFB
16. Phillips Lab, Hanscom AFB
17. Phillips Lab, Edwards AFB
18. Space & Missile Center, Los Angeles AFB
19. Space & Missile Center, Norton AFB
20. Sacramento Air Logistics Center, Peterson AFB
21. Rome Lab, Griffiss AFB
22. Rome Lab, Hanscom AFB
23. Electronic Systems Center, Hanscom AFB
24. Sacramento Air Logistics Center, Peterson AFB (In-service engineering)

ARMY

1. Army Research Lab (ARL), Adelphi, MD
2. ARL, Aberdeen Proving Grounds (APG), MD
3. ARL, White Sands Missile Range, NM
4. ARL, NASA Langley, VA
5. ARL, NASA Lewis, OH
6. Natick Research, Development and Engineering Center, Natick, MA
7. Aviation Research, Development and Engineering Center, St Louis, MO
8. Aviation Troop Command, Aeroflight Dynamics Directorate, Moffitt Field, CA
9. Aviation Troop Command, Aviation Applied Technology Directorate, Fort Eustis, VA
10. Edgewood Research, Development and Engineering Center, Aberdeen Proving Ground, MD
11. Communications Electronics Command Research, Development and Engineering Center, Ft Monmouth, NJ
12. Communication Electronics Command Research, Development and Engineering Center - Night Vision EO Directorate, Ft Belvoir, VA
13. Missile Research, Development and Engineering Center, Redstone Arsenal, AL
14. Armaments Research, Development and Engineering Center, Picatinny Arsenal, NJ

15. Armaments Research, Development and Engineering Center, Benet Labs, Watervliet Arsenal, NY
16. Tank-Automotive Command Research, Development and Engineering Center, Warren, MI
17. USA Research Institute of Infectious Diseases, Ft Detrick, MD
18. Walter Reed Army Institute of Research, Washington D.C.
19. USA Institute of Surgical Research, Ft Sam Houston, TX
20. USA Aeromedical Research Lab, Ft Rucker, AL
21. Medical Research Institute of Chemical Defense Aberdeen Proving Grounds, MD
22. USA Research Institute of Environmental Medicine, Natick, MA
23. Construction Engineering Research Laboratory, Champaign, IL
24. Cold Regions Research and Engineering Lab, Hanover, NH
25. Topographic Engineering Center, Alexandria, VA
26. Waterways Experiment Station, Vicksburg, MS
27. USA Research Institute for Behavioral & Social Sciences, Alexandria, VA
28. Simulation, Training and Instrumentation Command (STRICOM), Orlando, FL

NAVY

1. Naval Air Warfare Center, Weapons Division, China Lake
2. Naval Air Warfare Center, Weapons Division, Point Mugu
3. Naval Air Warfare Center, Aircraft Division, Patuxent River
4. Naval Air Warfare Center, Aircraft Division, Indianapolis
5. Naval Air Warfare Center, Aircraft Division, Lakehurst
6. Naval Research Lab, Washington D.C.
7. Naval Research Lab Detachment, Bay St Louis
8. Naval Surface Warfare Center, Carderock Division, Bethesda
9. Naval Surface Warfare Center, Carderock Detachment, Annapolis
10. Naval Surface Warfare Center, Crane Division
11. Naval Surface Warfare Center, Crane Detachment, Louisville
12. Naval Surface Warfare Center, Dahlgren Division
13. Naval Surface Warfare Center, Dahlgren Detachment, Panama City
14. Naval Surface Warfare Center, Indian Head Division
15. Naval Surface Warfare Center, Port Hueneme Division
16. Naval Command, Control, and Ocean Surveillance Center, RDT&E Division, San Diego
17. Naval Command, Control, and Ocean Surveillance Center, In-Service Engineering, West Coast Division, San Diego
18. Naval Command, Control, and Ocean Surveillance Center, In-Service Engineering Division, Charleston
19. Naval Aerospace Medical Research Center, Pensacola
20. Naval Biodynamics Lab, New Orleans
21. Naval Dental Research Lab, Great Lakes
22. Naval Health Research Center, San Diego
23. Naval Medical Research Institute, Bethesda
24. Naval Undersea Warfare Center, Keyport Division, WA
25. Naval Surface Warfare Center, Carderock, Philadelphia Detachment
26. Naval Undersea Warfare Center, Newport, RI
27. Naval Undersea Warfare Center (Newport), New London, CT
28. Naval Personnel Research and Development Center, San Diego, CA

DEPARTMENT OF DEFENSE

1. Armed Forces Radiobiology Research Institute (AFRRI), Bethesda, MD

APPENDIX C

COMMON SUPPORT FUNCTIONS (DEFINITIONS LISTED FOLLOWING PAGES)

Product Functions

1. Air Vehicles
   - Fixed
     - -- Structure
     - -- Propulsion
     - -- Avionics
     - -- Flight Subsystems
   - Rotary
     - -- Structure
     - -- Propulsion
     - -- Avionics
     - -- Flight Subsystems

2. Weapons
   - ICBMs/SLBMs
   - Conventional Missiles/Rockets
   - Cruise Missiles
   - Guided Projectiles
   - Bombs
   - Guns and Ammunition
   - Directed Energy
   - Chemical/Biological

3. Space Systems
   - Launch Vehicles
   - Satellites
   - Ground Control Systems

4. C4I Systems
   - Airborne C4I
   - Fixed Ground-Based C4I
   - Ground Mobile C4I

5. Aircraft Platform Interface
   - Aircraft Launch and Recovery Equipment (ALRE)
   - Aircraft Support Equipment (SE)

Pervasive Functions

1. Electronic Devices
2. Environmental Sciences
3. Infectious Diseases
4. Human Systems
5. Manpower and Personnel
6. Training Systems
7. Environmental Quality
8. Advanced Materials

DEFINITIONS

COMMON SUPPORT FUNCTIONS

Product Functions

1. Air Vehicles. Air vehicles are broken out into common support functions for fixed wing and rotary wing. Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of air vehicles. Included are all air vehicles including their application as UAV's and targets.

- Structures. Includes but not limited to all air vehicles structure technology, engineering and production efforts. Include technology and engineering practices which advance structural design and analysis; advanced structural concepts and fabrication techniques; and structural integrity.

- Propulsion. Includes but not limited to all technology, engineering and production efforts associated with air vehicle propulsion such as turbine engine, rotorcraft power drive, and hypersonic propulsion components. Such components include compressors, inlets and nozzles, turbines, mechanical systems and control, gears, bearings, shafts, and clutches. In addition, include associated subsystems activities such as turborocket, turboramjet and rotorcraft transmissions; and supporting technical and engineering disciplines.

- Avionics. Includes but not limited to all technology, engineering and production efforts associated with the air platform's integrated avionics system. The avionics suite includes but is not limited to weapon delivery systems, electronic warfare, navigation, communications, radar, electro-optic sensors, signal/data processing and associated software system and support. Includes efforts associated with developing the integrated avionics system (i.e. optimizing functional partitioning, distribution and integration of avionics/related functions).

- Flight Subsystems. Includes but not limited to all technology, engineering and production efforts for air vehicle support systems such as landing gear; transparent crew enclosures; egress systems; mechanical equipment integrity; electrical component integrity; subsystem integration; and aircraft power, pressurization, and temperature control systems.

2. Weapons. Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of ICBMs/SLBMs, conventional missiles and rockets, cruise missiles, guided projectiles, bombs, guns and ammunition, directed energy and chemical/biological munitions. Include with each weapon as appropriate, all related technology, engineering and production activities such as fusing/safe and arm, missile propulsion, warheads and explosives, and guidance and control.

3. **Space**. Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of launch vehicles, satellites and associated ground control systems (satellite control only; ground systems for telemetry of data included in C4I). Include under satellites, all technology, engineering and production activities associated with space communications and space-based surveillance (and associated sensors) and space-based C4I.

4. **C4I**. Includes but not limited to all science and technology, demonstration and validation, engineering development, and production activities which support employment and in-service engineering of airborne, fixed ground-based and mobile ground based C4I systems. Include all technology, engineering and production activities associated with communications networks, radios and links, distributed information systems, data fusion, decision aids, and associated computer architectures.

5. AIRCRAFT PLATFORM INTERFACE (API).

Product function

Aircraft Platform Interface (API). Includes but not limited to all science and technology, engineering development and production efforts associated with satisfying the requirement that Navy and Marine Corps aircraft are compatible with and operate effectively from their platforms. Aircraft include all fixed wing (including V/STOL) and rotary wing aircraft. Platforms include aircraft carriers, air capable ships and expeditionary airfields.

- Aircraft Launch and Recovery Equipment (ALRE). Includes but not limited to all technology, engineering and production efforts associated with ALRE such as catapults, jet blast deflectors, arresting gear, barricades, helicopter recovery systems, expeditionary airfield matting and optical landing systems.

- Aircraft Support Equipment (SE). Includes but not limited to all technology, engineering and production efforts associated with aircraft SE such as handling equipment (tow tractors, aircraft spotting dollys), propulsion support equipment (engine test systems, jet air start units), avionics support equipment (Consolidated Automated Support System, Test Program Sets) and servicing and maintenance equipment (non-destructive inspection equipment, cryogenics-oxygen/nitrogen systems).

Pervasive Functions (6.1, 6.2, and 6.3)

1. **Electronic Devices.** Includes but not limited to all science and technology activities supporting development of semiconductor and superconductor materials for optoelectronic, acoustic and microwave devices. Include all associated electronic materials/device fabrication and processing.

2. **Environmental Sciences.** Includes but not limited to all science and technology activities to improve measurement, characterization and modeling of the earth atmosphere and space environment. Examples include global prediction systems, space effects, and celestial backgrounds/astronomical reference sources.

3. **Infectious Diseases.** Includes but not limited to all science and technology activities which preserve manpower and performance by the prevention and treatment of militarily important infectious diseases that occur naturally worldwide.

4. **Human Systems.** Includes but not limited to all science and technology activities to enable, protect, sustain and enhance human effectiveness in DOD operations. The focus of this pervasive, multi-disciplinary area is the human and therefore impacts all DOD systems and operations. This area includes: (1) human performance definition, assessment, and aiding; (2) physiologic bioeffects of toxic hazards, ionizing and non-ionizing radiation, biodynamic (bio-mechanical) stress, and extreme environments; (3) military operational medicine; and (4) generic, human-centered design standards/methodologies for crew station subsystems, information management and display, and life support.

5. **Manpower and Personnel.** Includes but not limited to all science and technology activities which support four broad areas: (1) selection and classification of DOD personnel (including pilots); (2) identification of operational tasks performed and requirements for skills, knowledge, and aptitudes; (3) matching the right people with the jobs they are best suited for according to the needs of DOD, (4) and developing techniques for measuring and enhancing the productivity of the operational force.

6. **Training Systems.** Includes but not limited to all science and technology which support training of personnel, including training strategies, devices and simulators, and computer aided intelligent tutoring systems.

7. **Environmental Quality.** Includes but not limited to all science and technology activities which support the development of technologies to reduce the environmental costs of DOD operations while ensuring mission accomplishment is not jeopardized by adverse environmental impacts. Specifically, this area encompasses technologies to: (1) identify and cleanup sites contaminated with hazardous materials as a result of DOD operations (cleanup); (2) ensure DOD compliance with current and anticipated local, national, and international environmental laws and treaties (compliance); (3) minimize DOD use of hazardous materials and reduce DOD hazardous waste generation (pollution prevention); and (4) provide for protection of natural resources under DOD stewardship (conservation).

8. **Advanced Materials.** Includes but not limited to all science and technology activities related to structural, high temperature, electromagnetic protection, electronic, magnetic, optical, and biomolecular materials. Note: excludes materials areas which were included in DDR&E decision of 18 Mar 94 related to the Army's Materials Research Facility at Aberdeen Proving Ground and the Navy's Materials Facility at Carderock.

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

NEXT ECHELON LEVEL (if applicable)

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

Signature

Commander
Title

5/16/94
Date

Naval Air Warfare Center
Activity

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

NEXT ECHELON LEVEL (if applicable)

NAME (Please type or print)

Signature

Title

Date

Activity

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

MAJOR CLAIMANT LEVEL

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

Signature

Commander
Title

16 May 94
Date

Naval Air Systems Command
Activity

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

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

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

Signature

Acting
Title

27 May 1994
Date

DATA CALL 12
BRAC-95 CERTIFICATION

LAKEHURST SITE
NAWC AIRCRAFT DIVISION

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

MAY 13 1994
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER, MD
Activity