DCN 1418

161

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION
INDIANAPOLIS

ENVIRONMENTAL DATA CALL: #33
DATA CALL TO BE SUBMITTED TO
ALL NAVY/MARINE CORPS HOST ACTIVITIES

BRAC 1995 ENVIRONMENTAL DATA CALL:
All Navy/Marine Corps Host Activities

INDEX

Section	Page
GENERAL INSTRUCTIONS	2
ENDANGERED/THREATENED SPECIES AND BIOLOGICAL HABITAT	4
WETLAND	6
CULTURAL RESOURCES	7
ENVIRONMENTAL FACILITIES	8
AIR POLLUTION	13
ENVIRONMENTAL COMPLIANCE	20
INSTALLATION RESTORATION	22
LAND/AIR/WATER USE	25
WRAP-UP	30

ENVIRONMENTAL DATA CALL

Responses to the following questions provide data that will allow an assessment of the potential environmental impact associated with the closure or realignment of a Navy shore activity. This criterion consists of:

- Endangered/Threatened Species and Biological Habitat
- Wetlands
- Cultural Resources
- Environmental Facilities
- Air Pollution
- Environmental Compliance
- Installation Restoration
- Land/Air/Water Use

As part of the answers to these questions, a *source citation* (e.g., **1993** base loading, **1993** base-wide Endangered Species Survey, **1993** letter from USFWS, **1993** Base Master Plan, **1993** Permit Application, **1993** PA/SI, etc.) must be included. It is probable that, at some point in the future, you will be asked to provide additional information detailing specifics of individual characteristics. In anticipation of this request, supporting documentation (e.g., maps, reports, letters, etc.) regarding answers to these questions should be retained. Information needed to answer these questions is available from the cognizant EFD Planning and Real Estate Divisions, and Environment, Safety, and Health Divisions; and from the activity Public Works Department, and activity Health Monitoring and Safety Offices.

For purposes of the questions associated with land use at your base is *defined* as *land* (acreage owned, withdrawn, leased, and controlled through easements); *air* (space controlled through agreements with the FAA, e.g., MOAs); *and water* (navigation channels and waters along a base shoreline) *under the control of the Navy.*

Provide a list of the tenant activities with UICs that are covered in this response.

The following tenant activities are covered in this response:

Tenant Command Name	UIC
NAWC-AD Human Resources Office	**00421**
Naval Criminal Investigative Service Resident Agency	**42919**
Personnel Support Activity Detachment	**43050**
Defense Printing Service Detachment Branch Office	**43635**
Northern Division Contracts Officer	**45208**
Naval Aviation Engineering Service Unit	**62849**
Small Business Administration Region 5	**Not Applicable**
Defense Finance Accounting Service	**Not Assigned**

1. ENDANGERED/THREATENED SPECIES AND BIOLOGICAL HABITAT

1a. For federal or state listed endangered, threatened, or category 1 plant and/or animal species on your base, complete the following table. Critical/sensitive habitats for these species are designated by the U. S. Fish and Wildlife Service (USFWS). A species is present on your base if some part of its life-cycle occurs on Navy controlled property (e.g., nesting, feeding, loafing). Important Habitat refers to that number of acres of habitat that is important to some life cycle stage of the threatened/endangered species that is not formally designated.

SPECIES (plant or animal)	Designation (Threatened/ Endangered)	Federal/ State	Critical / Designated Habitat (Acres)	Important Habitat (acres)
example: Haliaeetus leucocephalus - bald eagle	*threatened*	*Federal*	*25*	*0*
None				

Source Citation: **NAWCADI Master Plan dated 5-19-92, prepared by Northern Division, NAVFAC. This document quotes the Indiana State Department of Natural Resources.**

1b.

Have your base operations or development plans been constrained due to: - USFWS or National Marine Fisheries Service (NMFS)? - State required modifications or constraints? If so, identify below the impact of the constraints including any restrictions on land use.	YES/NO **NO**
Are there any requirements resulting from species not residing on base, but which migrate or are present nearby? If so, summarize the impact of such constraints.	YES/NO **NO**

1c. If the area of the habitat and the associated species have not been identified on base maps provided in Data Call 1, submit this information on an updated version of Data Call 1 map.

N/A

1d.

Have any efforts been made to relocate any species and/or conduct any mitigation with regards to critical habitats or endangered/threatened species? Explain what has been done and why.	YES/NO **NO**

1e.

Will any state or local laws and/or regulations applying to endangered/threatened species which have been enacted or promulgated but not yet effected, constrain base operations or development plans beyond those already identified? Explain.	YES/NO **NO**

2. WETLANDS

Note: Jurisdictional wetlands are those areas that meet the wetland definitional criteria detailed in the Corps of Engineers (COE) Wetland Delineation Manual, 1987, Technical Report Y-87-1, U.S. Army Engineer Waterway Experiment Station, Vicksburg, MS or officially adapted state definitions.

2a.

Does your base possess federal jurisdictional wetlands?	YES/NO **NO**
Has a wetlands survey in accordance with established standards been conducted for your base?	YES/NO **NO**
When was the survey conducted or when will it be conducted?____/____/____	**N/A**
What percent of the base has been surveyed?	**N/A**
What is the total acreage of jurisdictional wetlands present on your base?	**N/A**

Source Citation: **NAWCADI Master Plan dated 5-19-92, prepared by Northern Division, NAVFAC.**

2b. If the area of the wetlands has not been identified on base maps provided in Data Call 1, submit this on an updated version of Data Call 1 map.

N/A

2c. Has the EPA, COE or a state wetland regulatory agency required you to modify or constrain base operations or development plans in any way in order to accommodate a jurisdictional wetland? **NO** If YES, summarize the results of such modifications or constraints.

3. CULTURAL RESOURCES

3a.

Has a survey been conducted to determine historic sites, structures, districts or archaeological resources which are listed, or determined eligible for listing, on the National Register of Historic Places? If so, list the sites below.	YES/NO **NO**

According to the NAWCADI Master Plan dated 5-19-92, no historical or archeological sites at NAWCADI are listed on or eligible for listing on the National Register of Historic Places.

b.

	YES/NO
Has the President's Advisory Council on Historic Preservation or the cognizant State Historic Preservation Officer required you to mitigate or constrain base operations or development plans in any way in order to accommodate a National Register cultural resource? If YES, list the results of such modifications or constraints below.	YES/NO **NO**

3c.

Are there any on base areas identified as sacred areas or burial sites by Native Americans or others? List below.	YES/NO **NO**

4. ENVIRONMENTAL FACILITIES

Notes: If your facility is permitted for less than maximum capacity, state the maximum capacity and explain below the associated table why it is not permitted for maximum capacity. Under "Permit Status" state when the permit expires, and whether the facility is operating under a waiver. For permit violations, limit the list to the last 5 years.

4a.

Does your base have an operating landfill?					YES / NO NO
ID/Location of Landfill	Permitted Capacity (CYD)		Maximum Capacity (CYD)	Contents[1]	Permit Status
	TOTAL	Remaining			

[1] Contents (e.g. building demolition, asbestos, sanitary debris, etc.)

Are there any current or programmed projects to correct deficiencies or improve the facility.

Not Applicable

4b. If there are any non-Navy users of the landfill, describe the user and conditions/agreements.

N/A

4c.

Does your base have any disposal, recycling, or incineration facilities for solid waste?					YES / NO NO
Facility/Type of Operation	Permitted Capacity	Ave Daily Throughput	Maximum Capacity	Permit Status	Comments

List any permit violations and projects to correct deficiencies or improve the facility.

4d.

Does your base own/operate a Domestic Wastewater Treatment Plant (WWTP) ?					YES / NO NO
ID/Location of WWTP	**Permitted Capacity**	**Ave Daily Discharge Rate**	**Maximum Capacity**	**Permit Status**	**Level of Treatment/Year Built**
None					

List permit violations and discuss any projects to correct deficiencies.

4e. If you do not have a domestic WWTP, describe the average discharge rate of your base to the local sanitary sewer authority, discharge limits set by the sanitary sewer authority (flow and pollutants) and whether the base is in compliance with their permit. Discuss recurring discharge violations.

Industrial Discharge Limits

Permit # 366201

Effluent Characteristics	Daily Maximum (mg/liter)	Monthly Average (mg/liter)	Monitoring Frequency	Sample Type
Flow	N/A	N/A	Continuous	Metered
pH	5.0-10.0 S.U.		N/A	Weekly Grab
Cadmium	0.69	0.26	Weekly	24 Hr. Composite
Chromium, Total	2.77	1.71	Weekly	24 Hr. Composite
Copper	3.38	2.07	Weekly	24 Hr. Composite
Lead	0.69	0.43	Weekly	24 Hr. Composite
Nickel	3.98	2.38	Weekly	24 Hr. Composite
Silver	0.43	0.24	Weekly	24 Hr. Composite
Zinc	2.61	1.48	Weekly	24 Hr. Composite
Cyanide, Total	1.20	0.65	Weekly	Grab

NAWCADI does not have a domestic WWTP. While domestic sewer discharges flow together with industrial discharges to the municipal publicly owned treatment works (POTW), a sanitary sewer permit is not required and no limits have been set. An industrial discharge permit (number 366201, expiration date 12-31-94) is required and limits are described above. NAWCADI 's average discharge rate is 250,000 to 300,000 gallons per day of combined industrial and domestic waste into the POTW and is in compliance with its permit, but experienced one violation in July 1993. The only violation was a discharge pH of 10.5 while our upper limit is 10.0, which was a one time occurrence.

4f.

Does your base operate an Industrial Waste Treatment Plant (IWTP)?					YES / NO NO
ID/Location of IWTP	**Type of Treatment**	**Permitted Capacity**	**Ave Daily Discharge Rate**	**Maximum Capacity**	**Permit Status**

List any permit violations and projects to correct deficiencies or improve the facility.

NAWCADI operates a pretreatment facility for its metal finishing operation, which is not an industrial waste treatment plant.

4g. Are there other waste treatment flows not accounted for in the previous tables? Estimate capacity and describe the system.

NO

4h.

Does your base operate drinking Water Treatment Plants (WTP)?					YES / NO NO
ID/Location of WTP	**Operating (GPD)**		**Method of Treatment**	**Maximum Capacity**	**Permit Status**
	Permitted Capacity	**Daily Rate**			

List permit violations and projects/actions to correct deficiencies or improve the facility.

N/A

4i. If you do not operate a WTP, what is the source of the base potable water supply. State terms and limits on capacity in the agreement/contract, if applicable.

Connected to Indianapolis Water Treatment Company. There is no contractual agreement which limits capacity.

4j.

Does the presence of contaminants or lack of supply of water constrain base operations. Explain.	YES/NO **NO**

4k.

Other than those described above does your base hold any NPDES or stormwater permits? If YES, describe permit conditions.	YES/NO **NO**
If NO, why not and provide explanation of plan to achieve permitted status.	**N/A**

NAWCADI has no NPDES permit because it has no discharges other than surface runoff into the "navigable waters of the United States". A group stormwater permit application has been filed and is pending with the State.

4l.

	YES/NO
Does your base have bilge water discharge problem?	**NO**
Do you have a bilge water treatment facility?	**NO**

Explain:

4m.

Will any state or local laws and/or regulations applying to Environmental Facilities, which have been enacted or promulgated but not yet effected, constrain base operations or development plans beyond those already identified? Explain.	YES/NO **NO**

4n. What expansion capacity is possible with these Environmental Facilities? Will any expansions/upgrades as a result of BRACON or projects programmed through the Presidents budget through FY1997 result in additional capacity? Explain.

An expansion capacity of approximately 120,000 gallons per day is available for industrial waste treatment. MILCON P-028 (FY97) will replace the current plating, printed wiring board fabrication and industrial waste water pretreatment operations. Total system capacity will remain constant.

4o. Do capacity limitations on any of the facilities discussed in question 4 pose a present or future limitation on base operations? Explain.

NO

5 AIR POLLUTION

5a.

What is the name of the Air Quality Control Areas (AQCAs) in which the base is located? **Indianapolis Air Pollution Control Section**
Is the installation or any of its OLFs or non-contiguous base properties located in different AQCAs? **NO** . List site, location and name of AQCA.

5b. For each parcel in a separate AQCA fill in the following table. Identify with an "X" whether the status of each regulated pollutant is: attainment/nonattainment/maintenance. For those areas which are in non-attainment, state whether they are: Marginal, Moderate, Serious, Severe, or Extreme. State target attainment year.

Site: **NAWCAD Indianapolis** AQCA: **Indianapolis**

Pollutant	Attainment	Non-Attainment	Maintenance	Target Attainment Year[1]	Comments[2]
CO	X				
Ozone		X		**1994**	**Marginal**
PM-10	X				
SO_2		X		**1995**	**Marginal**
NO_2	X				
Pb		X		**1996**	**Marginal**

[1] Based on national standard for Non-Attainment areas or SIP for Maintenance areas.
[2] Indicate if attainment is dependent upon BRACON, MILCON or Special Projects. Also indicate if the project is currently programmed within the Presidents FY1997 budget.

While NAWCADI is in the Indianapolis non-attainment area it is not a significant contributor to the air pollutants causing the problem, and for that reason is not involved in the remediation plan. "Target Attainment Year" applies to the City of Indianapolis.

Site: St. Croix AQCA: NONE

St. Croix is located in the Virgin Islands where they have no Air Quality Control Areas. Therefore, the following chart is not applicable to St. Croix.

Pollutant	Attainment	Non-Attainment	Maintenance	Target Attainment Year[1]	Comments[2]
CO					
Ozone					
PM-10					
SO_2					
NO_2					
Pb					

1 Based on national standard for Non-Attainment areas or SIP for Maintenance areas.

2 Indicate if attainment is dependent upon BRACON, MILCON or Special Projects. Also indicate if the project is currently programmed within the Presidents FY1997 budget.

5c. For your base, identify the baseline level of emissions, established in accordance with the Clean Air Act. Baseline information is assumed to be 1990 data or other year as specified. Determine the total level of emissions (tons/yr) for CO, NOx, VOC, PM10 for the general sources listed. For all data provide a list of the sources and show your calculations. Use known emissions data, or emissions derived from use of state methodologies, or identify other sources used. "Other Mobile" sources include such items as ground support equipment.

NAWCADI has never been required to establish a baseline for air emissions.

	Emission Sources (Tons/Year)				
Pollutant	Permitted Stationary	Personal Automobiles	Aircraft Emissions	Other Mobile	Total
CO	1.61	16.0	0	9.8	27.5
NOx	6.44	.92	0	0.56	8.34
VOC	1.81	2.58	0	1.58	5.98
PM10	0.138	.07	0	0.5	0.267

Source Document : **EPA Guidebook "Compilation of Air Pollutant Emission Factors" (AP-42) as prescribed by Indiana state environmental program system**

Permitted Stationary

Boilers used 92 million ft^3 of natural gas in 1990.

Pollutant		AP 42 factor Tons/Year	Usage	Conversion Factor
CO	=	$\frac{35 \text{ lbs}}{\text{Million ft}^3}$	x 92 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$ = 1.61 T/Y
NO_X	=	$\frac{140 \text{ lbs}}{\text{Million ft}^3}$	x 92 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$ = 6.44 T/Y
VOC T/Y from boilers	=	$\frac{2.8 \text{ lbs}}{\text{Million ft}^3}$	x 92 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$ = 0.1288
VOC from paint booths	=	14 lbs/day	x $\frac{240 \text{ days}}{\text{yr}}$	x $\frac{\text{Ton}}{2000 \text{ lbs}}$ = 1.68 T/Y
PM10	=	$\frac{3 \text{ lbs}}{\text{Million ft}^3}$	x 92 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$ = 0.138 T/Y

Personal Automobile Emissions

NAWC Indy had about 2430 cars on station each full working day in 1990.

Average drive on station is 2590 ft. as scaled on drawing of parking lots.

1990 Emissions

Yearly "on base" mileage = 2590 ft x 52 weeks/yr x 4.5 workdays x 2430 cars = 278,925
5280 ft/mi week
miles/year

Pollutant	Factor	Data Source	1990 Emission (tons/year)
CO	52 gm/mile	State of Indiana	16.0
Nox	3 gm/mile	State of Indiana	.92
VOC	8.4 gm/mile	State of Indiana	2.58
PM10	.25 gm/mile	EPA	.07

Conversion factor (908,000 gm/ton)

Other Mobile (Base Vehicles)

This includes cars, trucks, lawn mowers, fork trucks, tractors, etc. for both on and off base travel. Based on Public Works records, total mileage = 170,500 miles/yr.

Pollutant	Factor	Data Source	Total Emission (tons/year)
CO	52 gm/mile	State of Indiana	9.8
Nox	3 gm/mile	State of Indiana	.56
VOC	8.4 gm/mile	State of Indiana	1.58
PM10	.25 gm/mile	EPA	.05

5d. For your base, determine the total FY1993 level of emissions (tons/yr) for CO, NOx, VOC, PM10 for the general sources listed. For all data provide a list of the sources and show your calculations. Use known emissions data, or emissions derived from use of state methodologies, or identify other sources used. "Other Mobile" sources include such items as ground support equipment.

Emissions Sources (Tons/Year)

Pollutant	Permitted Stationary	Personal Automobiles	Aircraft Emissions	Other Mobile	Total
CO	1.715	12.8	0	9.8	24.315
NOx	6.86	.74	0	0.56	8.16
VOC	1.82	2.07	0	1.58	5.47
PM10	0.147	.06	0	0.5	0.257

Source Document: **EPA Guidebook "Compilation of Air Pollutant Emission Factors" (AP-42) as prescribed by Indiana state environmental program system**

Permitted Stationary

Boilers used 98 million ft^3 of natural gas in 1993.

Pollutant		AP 42 factor Factor	Tons/Year	Conversion Usage	
CO	=	$\frac{35 \text{ lbs}}{\text{Million ft}^3}$	x 98 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$	= 1.715 T/Y
NO_X	=	$\frac{140 \text{ lbs}}{\text{Million ft}^3}$	x 98 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$	= 6.86 T/Y
VOC T/Y from boilers	=	$\frac{2.8 \text{ lbs}}{\text{Million ft}^3}$	x 98 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$	= 0.1372
VOC from paint booths	=	14 lbs/day	x $\frac{240 \text{ days}}{\text{yr}}$	x $\frac{\text{Ton}}{2000 \text{ lbs}}$	= 1.68 T/Y
PM10	=	$\frac{3 \text{ lbs}}{\text{Million ft}^3}$	x 98 Million ft^3	x $\frac{\text{Ton}}{2000 \text{ lbs}}$	= 0.147 T/Y

Personal Automobile Emissions

NAWC Indy had about 1950 cars on station each full working day in 1993.

Average drive on station is 2590 ft. as scaled on drawing of parking lots.

1993 Emissions

Yearly "on base" mileage = $\frac{2590 \text{ ft}}{5280 \text{ ft/mi}}$ x 52 weeks/yr x $\frac{4.5 \text{ workdays}}{\text{week}}$ x 1950 cars = 224,000 miles/year

Pollutant	Factor	Data Source	1993 Emission (tons/year)
CO	52 gm/mile	State of Indiana	12.8
Nox	3 gm/mile	State of Indiana	.74
VOC	8.4 gm/mile	State of Indiana	2.07
PM10	.25 gm/mile	EPA	.06

Conversion factor (908,000 gm/ton)

Other Mobile (Base Vehicles)

This includes cars, trucks, lawn mowers, fork trucks, tractors, etc. for both on and off base travel. Based on Public Works records, total mileage = 170,500 miles/yr.

Emission factors

Pollutant	Factor	Data Source	Total Emission (tons/year)
CO	52 gm/mile	State of Indiana	9.8
Nox	3 gm/mile	State of Indiana	.56
VOC	8.4 gm/mile	State of Indiana	1.58
PM10	.25 gm/mile	EPA	.05

5e. Provide estimated increases/decreases in air emissions (Tons/Year of CO, NOx, VOC, PM10) expected within the next six years (1995-2001). Either from previous BRAC realignments and/or previously planned downsizing shown in the Presidents FY1997 budget. Explain.

The total level of personal automobile emissions is anticipated to decrease slightly due to previously planned downsizing. Permitted stationary and other mobile emissions are anticipated to remain constant.

5f. Are there any critical air quality regions (i.e. non-attainment areas, national parks, etc.) within 100 miles of the base?

There are several non-attainment areas within 100 miles, none of which are related to the mission or operation of the NAWC Indianapolis facility. A detailed listing of these areas is not available. There are no National Parks within a 100 mile radius of NAWC Indianapolis, although the Hoosier National Forest begins approximately 50 miles south of NAWC Indianapolis and extends through several counties, to the Indiana-Ohio line.

5g. Have any base operations/mission/functions (i.e.: training, R&D, ship movement, aircraft movement, military operations, support functions, vehicle trips per day, etc.) been restricted or delayed due to air quality considerations. Explain the reason for the restriction and the "fix" implemented or planned to correct.

NO

5h. Does your base have Emission Reduction Credits (ERCs) or is it subject to any emission offset requirements? If yes, provide details of the sources affected and conditions of the ERCs and offsets. Is there any potential for getting ERCs?

NO

6. ENVIRONMENTAL COMPLIANCE

6a. Identify compliance costs, currently known or estimated that are required for permits or other actions required to bring existing practices into compliance with appropriate regulations. Do not include Installation Restoration costs that are covered in Section 7 or recurring costs included in question 6c. For the last two columns provide the combined total for those two FY's.

Program	Survey Completed?	Costs in $K to correct deficiencies					
		FY94	FY95	FY96	FY97	FY98-99	FY00-01
Air	1989	0	0	0	0	0	0
Hazardous Waste	1991	0	0	0	0	0	0
Safe Drinking Water Act		0	0	0	0	0	0
PCBs	1992	0	0	0	0	0	0
Other (non-PCB) Toxic Substance Control Act		0	0	0	0	0	0
Lead Based Paint		0	0	0	0	0	0
Radon		0	0	0	0	0	0
Clean Water Act		0	0	0	0	0	0
Solid Waste		0	0	0	0	0	0
Oil Pollution Act		0	0	0	0	0	0
USTs	1994	106	1060	0	0	0	0
Other		0	0	0	0	0	0
Total		106	1060	0	0	0	0

Provide a separate list of compliance projects in progress or required, with associated cost and estimated start/completion date.

Replace Two (2) Diesel Tanks - These two tanks were upgraded by replacement in FY94 to improve leak detection and spill protection. Cost was $106K.

Replace Six (6) Heating Oil Tanks - The engineering design to replace these tanks was finished in FY93 at a cost of $25K. The actual replacement is scheduled to be started and finished in FY95 at a cost of $1,060K.

6b.
Does your base have structures containing asbestos? **YES** What % of your base has been surveyed for asbestos? **100%** Are additional surveys planned? **NO** What is the estimated cost to remediate asbestos ($K) **150** Are asbestos survey costs based on encapsulation, removal or a combination of both? **BOTH**

6c. Provide detailed cost of recurring operational (environmental) compliance costs, with funding source. **($K)**

Funding Source	FY92	FY93	FY94	FY95	FY96	FY97	FY98-99	FY00-01
O&MN		0	0	0	0	0	0	0
	HA	0	0	0	0	0	0	0
	PA	0	0	0	0	0	0	0
	Other O&MN (specify)	0	0	0	0	0	0	0
	Other (specify) DBOF	1.55	1.55	4.55	4.25	4.25	8.5	8.5
TOTAL		1.55	1.55	4.55	4.25	4.25	8.5	8.5

6d. Are there any compliance issues/requirements that have impacted operations and/or development plans at your base.

NO

7. INSTALLATION RESTORATION

7a.

Does your base have any sites that are contaminated with hazardous substances or petroleum products?	YES/NO **NO**
Is your base an NPL site or proposed NPL site?	**NO**

7b. Provide the following information about your Installation Restoration (IR) program. Project list may be provided in separate table format. Note: List only projects eligible for funding under the Defense Environmental Restoration Account (DERA). Do not include UST compliance projects properly listed in section VI.

Site # or name	Type site [1]	Groundwater Contaminated?	Extends off base?	Drinking Water Source?	Cost to Complete ($M)/Est. Compl. Date	Status[2]/Comments
NONE						

[1] Type site: CERCLA, 'RCRA corrective action (CA), UST or other (explain)
[2] Status = PA, SI, RI, RD, RA, long term monitoring, etc.

7c. Have any contamination sites been identified for which there is no recognized/accepted remediation process available? List.

NO

7d.

Is there a groundwater treatment system in place?	YES/NO **NO**
Is there a groundwater treatment system planned?	YES/NO **NO**

State scope and expected length of pump and treat operation .

Not Applicable

7e.

Has a RCRA Facilities Assessment been performed for your base?	YES/NO **NO**

7f. Does your base operate any conforming storage facilities for handling **hazardous materials**? If YES, describe facility, capacity, restrictions, and permit conditions.

This facility has several storage areas for hazardous materials which comply with OSHA and NFPA requirements. These facilities are as follows:

Facility	Capacity	Restrictions	Permits
Flammable Storage Bldg	**1071 Sq. Ft.**	**Flammable Material Only**	**Not Required**
Oil Storage Bldg.	**360 Sq. Ft**	**Oil Only**	**Not Required**
Chemical Storage Sheds (6)	**1622 Sq. Ft.**	**Only Compatible Material**	**Not Required**

7g. Does your base operate any conforming storage facilities for handling **hazardous waste**? If YES, describe facility, capacity, restrictions, and permit conditions.

NO

7h. Is your base responsible for any non-appropriated fund facilities (exchange, gas station) that require cleanup? If so, describe facility/location and cleanup required/status.

NO

7i.

Do the results of any radiological surveys conducted indicate limitations on future land use? Explain below.	**NO**

No radiological surveys have been conducted as radioactive materials have not been used at this facility.

7j. Have any base operations or development plans been restricted due to Installation Restoration considerations?

NO

7k. List any other hazardous waste treatment or disposal facilities not included in question 7b. above. Include capacity, restrictions and permit conditions.

NONE

8. LAND / AIR / WATER USE

8a. List the acreage of each real estate component controlled or managed by your base (e.g., Main Base - 1,200 acres, Outlying Field - 200 acres, Remote Range - 1,000 acres, remote antenna site - 5 acres, Off-Base Housing Area - 25 acres).

Parcel Descriptor	Acres	Location
Main Base	163	6000 E. 21st Street, Indianapolis, IN
St. Croix	22.5	U.S. Virgin Islands

8b. Provide the acreage of the land use categories listed in the table below: **Indianapolis**

LAND USE CATEGORY		ACRES
Total Developed: (administration, operational, housing, recreational, training, etc.)		**95**
Total Undeveloped (areas that are left in their natural state but are under specific environmental development constraints, i.e.: wetlands, endangered species, etc.)		Wetlands: **0**
		All Others: **0**
Total Undeveloped land considered to be without development constraints, but which may have operational/man caused constraints (i.e.: HERO, HERF, HERP, ESQD, AICUZ, etc.) TOTAL		**0**
Total Undeveloped land considered to be without development constraints		**68**
Total Off-base lands held for easements/lease for specific purposes		**0**
Breakout of undeveloped, restricted areas. Some restricted areas may overlap:	ESQD	**N/A**
	HERF	**N/A**
	HERP	**N/A**
	HERO	**N/A**
	AICUZ	**N/A**
	Airfield Safety Criteria	**N/A**
	Other	**N/A**

8b. Provide the acreage of the land use categories listed in the table below: **St. Croix**

LAND USE CATEGORY		ACRES
Total Developed: (administration, operational, housing, recreational, training, etc.)		**1**
Total Undeveloped (areas that are left in their natural state but are under specific environmental development constraints, i.e.: wetlands, endangered species, etc.)		Wetlands: **0**
		All Others: **0**
Total Undeveloped land considered to be without development constraints, but which may have operational/man caused constraints (i.e.: HERO, HERF, HERP, ESQD, AICUZ, etc.) TOTAL		**0**
Total Undeveloped land considered to be without development constraints		**21.5***
Total Off-base lands held for easements/lease for specific purposes		**0**
Breakout of undeveloped, restricted areas. Some restricted areas may overlap:	ESQD	**N/A**
	HERF	**N/A**
	HERP	**N/A**
	HERO	**N/A**
	AICUZ	**N/A**
	Airfield Safety Criteria	**N/A**
	Other	**N/A**

***While 21.5 acres are available, only 2 acres are flat cleared land. The other 19.5 acres are steep forested hillsides. There is also an un-manned Coast Guard Light house on the property.**

8c. How many acres on your base (includes off base sites) are dedicated for training purposes (e.g., vehicular, earth moving, mobilization)? This does not include buildings or interior small arms ranges used for training purposes__**0**__.

8d. What is the date of your last AICUZ update? **N/A** Are any waivers of airfield safety criteria in effect on your base? Y/N Summarize the conditions of the waivers below.

NAWCADI does not have an airfield.

8e. List the off-base land use *types* (e.g., residential, industrial, agricultural) and *acreage* within Noise Zones 2 & 3 generated by your flight operations and whether it is compatible/incompatible with AICUZ guidelines on land use

Acreage/Location/ID	Zones 2 or 3	Land Use	Compatible/ Incompatible
. N/A			

8f. List the navigational channels and berthing areas controlled by your base which require maintenance dredging? Include the frequency, volume, current project depth, and costs of the maintenance requirement

Navigational Channels/ Berthing Areas	Location / Description	Maintenance Dredging Requirement			
		Frequency	Volume (MCY)	Current Project Depth (FT)	Cost ($M)
N/A.					

8g. Summarize planned projects through FY 1997 requiring **new channel or berthing area** dredged depths, include location, volume and depth.

N/A

8h.

Are there available **designated dredge disposal areas** for maintenance dredging material? List location, remaining capacity, and future limitations.	**N/A**
Are there available **designated dredge disposal areas** for new dredge material? List location, remaining capacity, and future limitations.	**N/A**
Are the dredged materials considered contaminated? List known contaminants.	**N/A**

8.i. List any requirements or constraints resulting from consistency with **State Coastal Zone Management Plans**.

N/A

8j. Describe any **non-point source pollution problems affecting water quality** ,e.g.: coastal erosion.

N/A

8k

If the base has a cooperative agreement with the US Fish and Wildlife Service and/or the State Fish and Game Department for conducting a hunting and fishing program, does the agreement or these resources constrain either current or future operations or activities? Explain the nature and extent of restrictions.	YES/NO **N/A**

8l. List any other areas on your base which are indicated as protected or preserved habitat other than threatened/endangered species that have been listed in Section 1. List the species, whether or not treated, and the acres protected/preserved.

N/A

9. WRAP-UP

9a. Are there **existing or potential environmental showstoppers** that have affected or will affect the accomplishment of the installation mission that have not been covered in the previous 8 questions?

NONE

9b. Are there any **other environmental permits** required for base operations, include any relating to industrial operations.

Air permits

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

All air permits expire 9-30-95.

9c. Describe any **other environmental or encroachment restrictions** on base property not covered in the previous 8 sections.

This base is located within the city of Indianapolis where normal urban building restrictions apply.

9d. List **any future/proposed laws/regulations or any proposed laws/regulations** which will constrain base operations or development plans in any way. Explain.

NONE

DATA CALL #33
NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION, INDIANAPOLIS SITE

DATA CALL 33
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)

BARTON D. STRONG
NAME (Please type or print)

Signature

COMMANDER
Title

31 May 1994
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER, MD
Activity

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

NEXT ECHELON LEVEL (if applicable)

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

Signature

COMMANDER
Title

6/7/94
Date

NAVAL AIR WARFARE CENTER
Activity

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

MAJOR CLAIMANT LEVEL

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

Signature

COMMANDER
Title

24 JUN 94
Date

NAVAL AIR SYSTEMS COMMAND
Activity

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

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

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

Signature

ACTING
Title

06 JUL 1994
Date

DATA CALL #33

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

23 May 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity

BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

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

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

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

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

ACTIVITY COMMANDER

D. B. MCKINNEY
NAME (Please type or print)

Signature

ACTING COMMANDER
Title

6/23/94
Date

NAVAL AIR WARFARE CENTER
Activity

DATA CALL #33 CHANGES
NAWCAD INDIANAPOLIS

Document Separator

DATA CALL 63
FAMILY HOUSING DATA

161

Information on Family Housing is required for use in BRAC-95 return on investment calculaitons.

Installation Name:	NAWCAD Indianapolis
Unit Identification Code (UIC):	N00163
Major Claimant:	NAVAIR

Percentage Of Military Familica Living on-Base:	0
Number of Vacant Officer Housing Units:	0
Number of Vacant Enlisted Housing Units:	0
Fy 1996 Family Housing Budget ($000):	0
Total Number of Officer Housing Units:	0
Total Number of Enlisted Housing Units:	0

No Family Housing Data exist for this UIC.

Note: All data should reflect figures as of the beginning of FY 1996. If major DON installations share a family housing complex, figures should reflect an estimate of the installation's prorated share of the family housing complex.

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

MAJOR CLAIMANT LEVEL

J. E. BUFFINGTON, RADM, CEC, USN
NAME (Please type or print)

Signature

COMMANDER
Title

7/20/94
Date

NAVAL FACILITIES ENGINEERING COMMAND
Activity

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

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

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

Signature

Title

7/25/94
Date

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

J. R. REVER
NAME (Please type of print)

Signature

CAPT. CEC, USN
COMMANDING OFFICER
Title

27 June 1994
Date

SOUTHNAVFACENGCOM
Activity

Enclosure (1)

BRAC-95 CERTIFICATION

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

YVONNE O. SPRING
NAME (Please type or print)

Signature

Housing Management Specialist
Title

27 June 1994
Date

Housing Division
Division

Facilities Management Dept.
Department

SOUTHNAVFACENCON
Activity

Enclosure (1)

Document Separator

N00163

DATA CALL 1: GENERAL INSTALLATION INFORMATION

1. ACTIVITY: Follow example as provided in the table below (*delete the examples when providing your input*). If any of the questions have multiple responses, please provide all. If any of the information requested is subject to change between now and the end of Fiscal Year (FY) 1995 due to known redesignations, realignments/closures or other action, provide current and projected data and so annotate.

° Name

Official name	**Naval Air Warfare Center Aircraft Division Indianapolis**
Acronym(s) used in correspondence	**NAVAIRWARCENACDIV Indianapolis**
Commonly accepted short title(s)	**NAWCAD Indy** **NAWC Indy**

° Complete Mailing Address

Commander
Naval Air Warfare Center
6000 East 21st Street
Indianapolis, IN 46219-2189

° PLAD

NAVAIRWARCENACDIV INDIANAPOLIS IN

° PRIMARY UIC: **00163** (Plant Account UIC/ for Plant Account Holders)
Enter this number as the Activity identifier at the top of each Data Call response page.

° ALL OTHER UIC(s): **47796** PURPOSE: **Naval Advisory Group for Combat Systems Support**

2. PLANT ACCOUNT HOLDER:

° Yes **X** No ____ (check one)

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

3. ACTIVITY TYPE: Choose most appropriate type that describes your activity and completely answer all questions.

° HOST COMMAND: A host command is an activity that provides facilities for its own functions and the functions of other (tenant) activities. A host has accountability for Class 1 (land), and/or Class 2 (buildings, structures, and utilities) property, regardless of occupancy. It can also be a tenant at other host activities.

· Yes __X__ No ___ (check one)

° TENANT COMMAND: A tenant command is an activity or unit that occupies facilities for which another activity (i.e., the host) has accountability. A tenant may have several hosts, although one is usually designated its primary host. If answer is "Yes," provide best known information for your primary host only.

· Yes ___ No __X__ (check one)

· Primary Host (current) UIC:

· Primary Host (as of 01 Oct 1995) UIC:

· Primary Host (as of 01 Oct 2001) UIC:

° INDEPENDENT ACTIVITY: For the purposes of this Data Call, this is the "catch-all" designator, and is defined as any activity not previously identified as a host or a tenant. The activity may occupy owned or leased space. Government Owned/Contractor Operated facilities should be included in this designation if not covered elsewhere.

· Yes ___ No __X__ (check one)

4. SPECIAL AREAS: List all Special Areas. Special Areas are defined as Class 1/Class 2 property for which your command has responsibility that is not located on or contiguous to main complex.

Name	Location	UIC
Ham's Bluff (Sonobuoy Quality Assurance (Laboratory) See Note (1) Below	**St. Croix, US Virgin Islands**	**00163**
Temporary Lodging (9 Units)	**Arlington, VA**	**00163**
Temporary Lodging (1 Unit)	**Norfolk, VA**	**00163**
Temporary Lodging (1 Unit)	**San Diego, CA**	**00163**
Defense Electronics Supply Center (DESC) Warehouse (42,930 SF)	**Dayton, OH**	**00163**
Electronic Manufacturing Productivity Facility	**Indianapolis, IN**	**00163**
Public Works Warehouse (9,359 SF)	**Indianapolis, IN**	**00163**
Office Space (10,042 SF)	**Indianapolis, IN**	**00163**

Note (1): In process of transferring property to another Government agency.

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

5. DETACHMENTS: If your activity has detachments at other locations, please list them in the table below.

Name	UIC	Location	Host name	Host UIC
NAWCAD Indianapolis FIT Detachment	**48576**	**Dalghren, VA**	**NSWC Division Dalghren**	**00178**
NAWCAD Indianapolis FIT Detachment (1)	**48865**	**Alameda, CA**	**Naval Aviation Depot, Alameda, CA**	**65885**
Naval Avionics Center Detachment (2)	**N/A**	**Dayton, OH**	**Wright-Patterson AFB**	**59560 Station Number**

(1) The detachment associated with Alameda will be relocated to the Naval Aviation Depot receiving the corresponding function as a result of the BRAC 93 decision to close Naval Aviation Depot, Alameda, CA.

(2) Formally requested that this detachment be disestablished, as a part of the Fact and Justification which will establish the Naval Avionics Facility Indianapolis by the end of FY 1993.

6. BRAC IMPACT: Were you affected by previous Base Closure and Realignment decisions (BRAC-88, -91, and/or -93)? If so, please provide a brief narrative.

From BRAC-91, this facility, formerly known as Naval Avionics Center, was realigned as part of the establishment of the Naval Air Warfare Center (NAWC). NAWC is the full spectrum center for air platforms and air warfare combat and weapons systems. This facility is aligned with the Aircraft Division of the NAWC. By the end of FY 1993, as directed by BRAC 91, the Naval Avionics Facility Indianapolis will be establsihed to provide "basekeeper support to NAWC technical functions performed at Indianapolis.

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

7. MISSION: Do not simply report the standard mission statement. Instead, describe important functions in a bulletized format. Include anticipated mission changes and brief narrative explanation of change; also indicate if any current/projected mission changes are a result of previous BRAC-88, -91,-93 action(s).

Current Missions

Provide the Navy and the DoD with Avionics and Electronic Systems capabilities for Airborne, Surface and Submarine Combat/Weapon Systems. Functions are also used in support of Command and Control, Special Purpose, and Naval Forces Training. These capabilities (functions) include:

Multi-Service Development / Acquisition / Life Cycle Support of Common Avionics and Electronic Systems.

Research and Development of Avionics and Electronic Systems.

Manufacturing Science and Technology (MS&T) expertise for acquisition support and application of dual use and commercial technology transfer.

Rapid Prototyping and Limited Production of Avionics and Electronic Systems.

Program Support/Management for Acquisition of Avionics/Electronic Systems and Components

Modernization and Replacement of Fielded Fleet Avionics and Electronic Systems.

Test and Evaluation and Technical Evaluations for the Development and Acceptance of Avionics and Electronic Systems for Fleet Use.

Integrated Logistics Support for Fleet Electronic Systems throughout Full Life Cycle.

Maintenance, Repair, Testing, In Service Engineering, and Program Support for Select Fielded Fleet Equipment.

Mission Statement:

To conduct research, development, engineering, material acquisition, pilot and limited manufacturing, technical evaluation, depot maintenance and integrated logistics support on assigned airborne electronics (avionics), missile, spaceborne, undersea, and surface weapon systems, and related equipment. To perform such other functions and tasks as directed by the Commander, Naval Air Warfare Center.

Projected Missions for FY 2001

Continue with the current Avionics and Electronic Systems mission for Airborne, Surface and Submarine Systems; provide an expanded focus on:

MS&T efforts with an emphasis on the Technology Transfer between the Government and Private sectors of the Electronics Industrial Base (Defense and Non-Defense Related).

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

Development of integrated processes to incorporate appropriate MS&T to ensure affordable, reliable, maintainable fielded electronic systems.

Development and Utilization of Dual Use Technologies, Technology Spin-On and Spin-Off.

Development and Prototyping of DoD Acquisition Concepts through Industry/Government Relationships.

Joint Industry/Government approaches to more rapidly Develop, Manufacture and Field required Fleet equipment.

Modeling and Simulation to enable technology development, permit more cost effective Prototyping and affordable Production, and ensure supportability during the Acquisition Process.

FOR OFFICIAL USE ONLY
PRECOSIONAL INFORMATION

8. UNIQUE MISSIONS: Describe any missions which are unique or relatively unique to the activity. Include information on projected changes. Indicate if your command has any National Command Authority or classified mission responsibilities.

Current Unique Missions

DoD's only activity that has the capability, facilities and knowledge base to provide support over the full acquisition life cycle for Avionics, Electronic Systems, and selected equipment.

Totally integrated avionics and electronic systems engineering, acquisition, manufacturing, and supportability activity.

Unique Mission Details

Development Engineering of Avionics and Electronic Systems

Comprehensive design and prototyping capability unique within the government is used to support acquisition and to develop Avionics and Electronic solutions to satisfy Fleet Operational/Safety problems when requirements cannot be satisfied by the normal acquisition process.

Examples:

- **Total avionics systems design, development, acquisition and integration responsibilities for Airborne Electronic Mission Systems Aircraft (including training Naval forces), e.g. EP-3E, ES-3.**

- **Navy Lead for Tri-Service Common Avionics/Electronic Systems Initiatives, Applications, and Acquisition, e.g., Joint Integrated Avionics Working Groups, Joint Services Review Committee.**

- **Special Security, Scientific and Technical intelligence support to a variety of classified, communications security (COMSEC), and compartmented programs.**

- **Only U.S. Active Noise Reduction Test Facility to simulate environments of high level acoustic noise.**

- **One of two U.S. facilities that can measure Night Vision Instrumentation Systems (NVIS) for compliance with National Institute of Standards and Technology.**

Integrated Production Support for Acquisition

People, facilities and expertise that provide the ability to deliver production quality Electronic Systems to the Fleet and provide production acquisition expertise unique within the DoD.

Examples:

- **Original designer and developer of DSMAC terminal guidance in Tomahawk Cruise Missile subsequently transitioned to industry for follow-on production.**

- **Unique test facilities such as the Integrated Avionics Laboratory**

FOR OFFICIAL USE ONLY
PROPRIETARY INFORMATION

(simulating avionics systems such as V-22) and the Mobile Navigation Laboratory for Fleet navigation software.

- Only facility with qualification product list (QPL) testing and support for aircraft wiring, aircraft connectors, aircraft instruments, audio devices and information panels.

- Avionics and Electronic Systems surge production capability utilized during Desert Storm including such weapons as Walleye and SLAM data links and guidance and control sections.

- "Smart Buyer" production engineering expertise in support of DoD production decision milestones, e.g., production risk assessments.

Avionics and Electronic Systems Program Acquisition Support

The integration of development, prototyping, and production knowledge is unique within the DoD and assures cost effective development, delivery, and logistics support of fleet Avionics and Electronic Systems.

Examples:

- Decentralized Acquisition Agent with Program Management authority for all production Common Avionics Equipment, e.g. AYK-14 standard airborne computer.

- Only Navy acquisition agent for production Sonobuoys.

- Designated Lead Activity for Joint Computer-aided Acquisition & Logistics Support (CALS); Navy lead in digital data environments.

- Second source and competitive source development resulting in substantial cost savings and affordable, competitive acquisitions with validated data packages (e.g. GPS and Navy bomb racks).

- Avionics and Electronic System cost analysis, "should cost" estimates, "smart buyer" analysis and support.

Modernization of Fleet Electronic Systems

Unique expertise for product improvement, obsolescence management and planning, and equipment conversion provides the Navy with Fleet system enhancement and modernization capabilities

Examples:

- Tomahawk Cruise Missile terminal guidance (DSMAC) design agent for upgrades.

- Reverse engineering and fabrication capability for obsolete microelectronics and spare parts.

- Unique DoD capability and facility for missile guidance system repair such as Poseidon and Trident.

- Rapid prototyping / fabrication capability reducing design concept to

FOR OFFICIAL USE ONLY
PRECISIONAL INFORMATION

finished product lead time e.g. fabricating mine hunting sonar electronics to satisfy urgent need identified during Desert Storm.

- Quick response/emergency Manufacturing for Fleet requirements such as ADU-703 adapter for F-14 ground attack capability.

- Developed and fabricated state of the art satellite receiving system to replace obsolete unreliable equipment.

Electronic Systems Manufacturing, Science and Technology Transfer

Extensive leading edge facilities and expertise for Electronic prototype/production technology (i.e. Rapid Acquisition of Manufactured Parts (RAMP) and Electronic Manufacturing Productivity Facility (EMPF)) provide a unique capability within the Navy for electronic technology transfer between DoD and Industry, and the opportunity for leverage of commercial Electronics technology with military systems.

Examples:

- Center of Excellence for Navy avionics and electronics manufacturing processes and technology.

- Primary educational/training center for manufacturing technology systems and processes (e.g. EMPF).

- Only Navy electronics oriented RAMP site in the country.

- One of two Navy Activities providing industry and government solder training and certification.

- Navy unique capability to transition requirements/design to industry reducing acquisition risk/cost.

- Evaluate and validate private industry manufacturing technology systems and processes (e.g. Best Manufacturing Practices (BMP) program and project specific source selections such as AIWS).

- Manufacturing technology transfer to industry and other DoD activities.

Projected Unique Missions for FY 2001

To become the DoD Leader/Technical Expert in acquisition and manufacturing technology for electronic equipment by performing the "Projected Missions for FY 2001" as identified in item 7. Requires the development of innovative partnerships within the industrial base to mutually share, transfer, and effectively utilize technologies.

FOR OFFICIAL USE ONLY
PROPRIETARY INFORMATION

9. IMMEDIATE SUPERIOR IN COMMAND (ISIC): Identify your ISIC. If your ISIC is not your funding source, please identify that source in addition to the operational ISIC.

° Operational name UIC

Commander **00421**
Naval Air Warfare Center
Aircraft Division
Patuxent River, MD 20670-5304

° Funding Source

Industrially funded activity, operating under Defense Business Operations Fund (DBOF) regulations. Funding is received as reimbursable or direct cite from multiple sources, including all services, DoD, and other government agencies.

10. PERSONNEL NUMBERS: Host activities are responsible for totaling the personnel numbers for all of their tenant commands, even if the tenant command has been asked to separately report the data. The tenant totals here should match the total tally for the tenant listing provided subsequently in this Data Call (see Tenant Activity list). (Civilian count shall include Appropriated Fund personnel only.)

On Board Count as of 01 January 1994

	Officers	Enlisted	Civilian (Appropriated)
° Reporting Command	9	9	2874 FTE
° Tenants (total)	2	9	76

Authorized Positions as of 30 September 1994

	Officers	Enlisted	Civilian (Appropriated)
° Reporting Command	8	15	2859 FTE
° Tenants (total)	2	10	78

Note: Figures are based on civilian on-board full time equivalency.

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

11. KEY POINTS OF CONTACT (POC): Provide the work, FAX, and home telephone numbers for the Commanding Officer or OIC, and the Duty Officer. Include area code(s). You may provide other key POCs if so desired in addition to those above.

	Title/Name	Office	Fax	Home
°	**Captain T.R. Darnell** **Commanding Officer**	**317-353-7000** **DSN 369-7000**	**317-353-3772**	**317-357-7122**
°	**Robert Barnett** **Executive Director**	**317-353-7002** **DSN 369-7002**	**317-353-3772**	**317-861-6963**
°	**Duty Officer**	**317-353-3105** **DSN 369-3105**	**317-353-3122**	**(N/A]**
°	**Robert R. Butcher** **BRAC POC**	**317-353-7801** **DSN 369-7801**	**317-353-3772**	**317-842-5483**
°	**Virginia B. Calhoun** **Alternate BRAC POC**	**317-353-3201** **DSN 369-3201**	**317-353-3772**	**317-823-2215**

12 TENANT ACTIVITY LIST: This list must be all-inclusive. Tenant activities are to ensure that their host is aware of their existence and any "subleasing" of space. This list should include the name and UIC(s) of all organizations, shore commands and home ported units, active or reserve, DOD or non-DOD (include commercial entities). The tenant listing should be reported in the format provide below, listed in numerical order by UIC, separated into the categories listed below. Host activities are responsible for including authorized personnel numbers, on board as of **30 September 1994**, for all tenants, even if those tenants have also been asked to provide this information on a separate Data Call. (Civilian count shall include Appropriated Fund personnel only.)

° Tenants residing on main complex (shore commands)

Tenant Command Name	UIC	Officer	Enlisted	Civilian
NAWCAD Human Resources Office	**00421**	**0**	**0**	**38**
Naval Criminal Investigative Service Resident Agency	**42919**	**0**	**0**	**1**
Personnel Support Activity Detachment	**43050**	**1**	**8**	**6**
Defense Printing Service Detachment Branch Office	**43635**	**0**	**0**	**14**
Northern Division Contracts Officer	**45208**	**1**	**0**	**5**
Naval Aviation Engineering Service Unit	**62849**	**0**	**0**	**2**
Small Business Administration Region 5	**N/A**	**0**	**0**	**1**
Defense Finance Accounting Service	**Not Assignd**	**0**	**0**	**11**

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

° Tenants residing on main complex (homeported units.)

Tenant Command Name	UIC	Officer	Enlisted	Civilian
N/A				

° Tenants residing in Special Areas (Special Areas are defined as real estate owned by host command not contiguous with main complex; e.g. outlying fields).

Tenant Command Name	UIC	Location	Officer	Enlisted	Civilian
N/A					

° Tenants (Other than those identified previously)

Tenant Command Name	UIC	Location	Officer	Enlisted	Civilian
N/A					

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

13. REGIONAL SUPPORT: Identify your relationship with other activities, not reported as a host/tenant, for which you provide support. Again, this list should be all-inclusive. The intent of this question is capture the full breadth of the mission of your command and your customer/supplier relationships. Include in your answer any Government Owned/Contractor Operated facilities for which you provide administrative oversight and control.

TASKED VIA FUNDING DOCUMENT

Activity name	Location		Support function (tasked via funding document)
Program Executive Officer for Air ASW, Assault & Special Mission Programs PMA-257 PMA-275 PMA-261 PMA-276 PMA-264 PMA-290 PMA-271 PMA-299 PMA-273	Arlington	VA	Complete range of Mission Activities i.e. RDT&E, Acquisition, Life Cycle Support.
Program Executive Officer for Cruise Missiles Project & Unmanned Aerial Vehicles PMA-208 PMA-280 PMA-258 PMA-281 PMA-263	Arlington	VA	Complete range of Mission Activities i.e. RDT&E, Acquisition, Life Cycle Support.
Program Executive Officer for Tactical Aircraft Programs PMA-201 PMA-242 PMA-231 PMA-251 PMA-233 PMA-265 PMA-234 PMA-272 PMA-241	Arlington	VA	Complete range of Mission Activities i.e. RDT&E, Acquisition, Life Cycle Support.
Naval Air Systems Command Acquisition and Operations AIR-114 PMA-213 PMA-200 PMA-48 PMA-202 PMA-260 PMA-205 PMA-209	Arlington	VA	Complete range of Mission Activities i.e. RDT&E, Acquisition, Life Cycle Support, cost analysis
Naval Air Systems Command Logistics and Fleet Support AIR-410 AIR-411 AIR-412 AIR-415	Arlington	VA	 Logistics Management Support Logistics Support Supply Policy Fleet Support & Resource Mgmt
Naval Air Systems Command Systems and Engineering AIR-500 AIR-511 AIR-516 AIR 530 AIR-546	Arlington	VA	 Plans and Resources Systems Engineering Mgmt., Systems Integration Product Integrity & Production Engineering Air Vehicle Support Avionics Systems Engineering

FOR OFFICIAL USE ONLY
PRE-DECISIONAL INFORMATION

Naval Air Warfare Center, Weapons Div	China Lake Point Mugu	CA CA	Technical analysis, Technical Support, QA & R&M, Design, prototype fabrication & documentation, Engineering & Logistics support for delivered product, hardware repair, system analysis
Naval Air Warfare Center, Aircraft Div	Warminster Lakehurst Patuxent River	PA NJ MD	Technical Support, Test & Evaluation Support, prototype development, engineering investigation, evaluations
Naval Aviation Depot	North Island Jacksonville Cherry Point Norfolk	CA FL NC VA	Calibration, Test & Evaluation, Program Management, acquisition, systems engineering, logistics, aircraft integration
Naval Air Technical Service Facility	Philadelphia	PA	Generate technical data
Strategic Systems Programs	Washington	DC	Complete range of Mission Activities i.e. RDT&E, Acquisition, Life Cycle Support.
Naval Sea Systems Command PMS-376 PMS-422 PMS-377 PMS-425 PMS-380 NELO PMS-413	Arlington	VA	Research & Development for digital data exchange technology transfer, technical & policy support, design development, rapid prototyping and emergency manufacturing.
Naval Surface Warfare Center	Dahlgren Bethesda Indian Head Crane Louisville	VA MD MD IN KY	Technical Support, development engineering, Test & Evaluation, micro electronic design fabrication, Technical Support, Test & Evaluation, calibration support, technology demo & evaluation, support equipment development & fabrication Technical Support, Test & Evaluation
Naval Sea Logistics Center	Mechanicsburg	PA	Calibration, Test & Evaluation, SMQ-6 demilitarization, spare part production, prototype and acquisition
Naval Undersea Warfare Center	Suffolk Keyport	VA WA	Emergency Manufacturing Acquisition, manufacturing
Naval Space and Warfare Systems Command PMW-101 PMW-165 PMW-151 PMW-167 PMW-152	Arlington	DC	Complete range of Mission Activities i.e. RDT&E, Acquisition, Integration, Life Cycle Support
Naval Command Control & Ocean Surveillance Center	San Diego Vallejo	CA CA	Design, test coordination, tech support, aircraft integration, design, acquisition
Naval Supply Systems Command	Washington Philadelphia	DC PA	Complete range of mission activities, i.e. Acquisition, Life Cycle, Manufacturing Technology and Spares Manufacturing
Defense Logistics Agency	Arlington Richmond Columbus Dayton	VA VA OH OH	Technical support, Test & Evaluation, qualification testing, acquisition support, manufacturing
Chief of Naval Research	Arlington	VA	Manufacturing technology
Naval Research Laboratory	Washington	DC	Mission planning, software support
Naval Ordnance Station	Indian Head	MD	Stereolithography, mechanical design, manufacturing of training equipment

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

Fleet Tactical Deception Group, Pacific	San Diego	CA	Logistics Support
Fleet Tactical Readiness Group	Norfolk	VA	Logistics Support
Naval Civil Engineering Laboratory	Port Hueneme	CA	Prototype/production
Naval Intelligence Support Center	Washington	DC	Special Projects, design, development, rapid prototyping and acquisition
Naval Investigative Service	Newport	RI	In-service support agreement, engineering support
Naval Oceanographic Office	Bay St. Louis	MS	Development/rapid prototype/production
Naval Security Group Command	Washington	DC	Complete range of Mission Activities i.e. RDT&E, Acquisition, Life Cycle Support.
Nuclear Systems Engineering	Kirtland AFB	NM	Technical systems evaluation
Naval Air Station	Glenview	IL	Calibration support by written agreement
Naval Test Center	Great Lakes	MI	Calibration support by written agreement
Air Force	Scott AFB	IL	Acquisition
Air Force Material Command	Los Angeles AFB McClellan AFB Eglin AFB Hanscom AFB Wright Patterson AFB	CA CA FL MA OH	Complete range of Mission Activities i.e. RDT&E, Acquisition, Life Cycle Support.
Air Force Cryptologic Support Center	San Antonio	TX	Design and development of technology demonstration
Joint Electronic Warfare Center	San Antonio	TX	Design, development, rapid prototyping
Army Material Command	St. Louis	MO	System Engineering, Test & Evaluation, qualification, documentation validation
Marine Corps. Logistics Base	Albany	GA	Manufacturing Engineering Support
Marine Corps. System Command	Quantico	VA	Design, prototype development, testing, manufacturing, acquisition, configuration management, Logistics management, Contractor SPT, tech manuals
National Security Agency	Ft. Meade	MD	Technical Support
NASA - Langley Research Center	Hampton Cleveland	VA OH	Design, development, prototype manufacturing
Federal Aviation Administration	Washington Oklahoma City	DC OK	Development, Technical Support, manufacturing, cost estimating
National Institutes of Standards and Technology	Gaithersburg	MD	Research & Development, evaluation support

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

Contractors			Test & Evaluation, qualification testing
All States Inc.	Chicago	IL	
AMP Inc.	Harrisburgh	PA	
Anderson Products	Boston	MA	
Assoc. Aircraft Mfr &	Ft. Lauderdale	FL	
Sales Inc	Beaverton	OR	
Astro Tool Corp.	Monmirail	FR	
Axon Cable SA	Columbus	OH	
BF Goodrich Flight Sys.	Glenroithes	SC	
Inc.	Fife	CT	
Brand-Rex Limited	Norwalk	FL	
Burndy	Naples	WI	
Cable USA Inc.	Winooski	IL	
Champlain Cable Corp.	Elk Grove	IN	
Cinch Connector Div.	Village	CA	
Cooper Industries Belden	Richmond	CA	
Div.	San Fernando	FL	
Crown Connector, Inc	Fountain Valley	MA	
Dacon Sys., Inc.	Orlando	CA	
Daniels Manufacturing	Clinton	FR	
Corp.	Banning	FL	
Delta Surpre. Wire &	Draveil	CA	
Cable, Inc	Lakeland	CA	
Deutsch Engrd.	Claremont	MA	
Connecting Dev	Anaheim	WE	
Filotex	Turner Falls	DE	
General Electric Co.	Hanover	PA	
Hirel Connectors, Inc.	Den	MA	
J-Tech, Inc	Montgomeryvil	TX	
Judd Wire, Inc.	le	UK	
Kabelmetal Electro	Waltham	CT	
GMBH	Grand Prairie	RI	
Kabelwerke Reinshagen	Mansfield	OH	
GMBH	Wallingford	NC	
MALCO	Providence	FL	
Omni Spectra, Inc.	Fairborn	NH	
R&B Electronics, Inc.	Elm City	NC	
Rhimco Industries, Inc.	St. Augustus	CA	
Specialty Cable Corp	Nashua	WI	
Star Tron	Elm City		
Sys. Control Technology	Westlake		
Inc.	Village		
Teledyne Thermatics	Milwaukee		
Tensolite Company			
Teradyne, Inc.			
Thermatics			
Trompeter Electronics,			
Inc.			
Tyton Corp.			

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

Contractor			
CTS Corp.	New Hope	MN	Technical Acquisition Support
Glen Air International Ltd.	Mansfield	UK	Performance Evaluation
Matrix Science Corp.	Torrance	CA	Test & Evaluation , qualification, design, equipment interpretation
New Hampshire Ball Bearings, Inc.	Laconia	NH	Production items, Test & Evaluation, qualification design, equipment interpretation.
Schatz Mfg. Co.	Poughkeepsie	NY	Test & Evaluation
Textron Defense Systems	Wilmington	MA	Technical Support

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

SUPPORT AGREEMENTS

Activity name	Location		Support function (unfunded)
Naval Surface Warfare Center	Crane	IN	Provides security, intelligence and training support (MOU)
Naval Reserve Center	Indianapolis	IN	Calibration support, safety video tapes, physical security surveys, packaging and shipping services for large cargo as needed. (verbal agreement)
Air Force	Grissom AFB	IN	Facilities and intelligence information (verbal agreement)
Army	Ft. Harrison Ft. Knox	IN KY	Provides security, intelligence and training support (MOU)
Army Reserve	Ft. Harrison	IN	ADP support (tentative agreement)
Defense Finance Accounting Service	Cleveland	OH	Verification audits (verbal agreement - awaiting ISSA)
Developmental Manufacturing and Modification Facility (DMMF)	Dayton	OH	Technical support (MOA)
Federal activities, both DoD and Non-DoD	Indianapolis	IN	Annual blue collar wage survey (Federal Personnel Manual (FPM) designated host activity))
National Manufacturing Electronics Productivity Center	Indianapolis	IN	Optics Training, (CRADA)
Indiana Business Modernization & Manufacturing Technology	Indianapolis	IN	Serve on Manufacturing Technical Committee (verbal agreement), Electronics training (CRADA)
National Coalition for Manufacturing	Indianapolis	IN	Electronics consultation (letter of agreement under EMPF)
Sandia National Labs.	Albuquerque	NM	Manufacturing technology (MOA through EMPF)
Institute for Electronics & Packaging Production (IPC)	Lincolnwood	IL	National Soldering Packaging Production (IPC) Certification Program/IPC Standards training (letter of agreement under EMPF)
Boy Scouts of America Explorer Post 475 (BSA)	Indianapolis	IN	Provide facilities , technical expertise and leadership (written agreement)

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

14. FACILITY MAPS: This is a primary responsibility of the plant account holders/host commands. Tenant activities are not required to comply with submission if it is known that your host activity has complied with the request. Maps and photos should not be dated earlier than 01 January 1991, unless annotated that no changes have taken place. Any recent changes should be annotated on the appropriate map or photo. Date and label all copies.

° Local Area Map. This map should encompass, at a minimum, a 50 mile radius of your activity. Indicate the name and location of all DoD activities within this area, whether or not you support that activity. Map should also provide the geographical relationship to the major civilian communities within this radius. (Provide 12 copies.)

Local area map provided indicates a radius of approximately 50 miles from our activity.

° Installation Map / Activity Map / Base Map / General Development Map / Site Map. Provide the most current map of your activity, clearly showing all the land under ownership/control of your activity, whether owned or leased. Include all outlying areas, special areas, and housing. Indicate date of last update. Map should show all structures (numbered with a legend, if available) and all significant restrictive use areas/zones that encumber further development such as HERO, HERP, HERF, ESQD arcs, agricultural/forestry programs, environmental restrictions (e.g., endangered species). (Provide in two sizes: 36x 42 (2 copies, if available); and 11x 17 (12 copies).)

The following maps are provided:

Naval Air Warfare Center Aircraft Division Indianapolis (main site)

Electronic Manufacturing Productivity Facility (EMPF)

Downtown Indianapolis area, approximately 8 miles from the main site.

Ham's Bluff Sonobuoy Quality Assurance Laboratory, St. Croix, US Virgin Islands

° Aerial photo(s). Aerial shots should show all base use areas (both land and water) as well as any local encroachment sites/issues. You should ensure that these photos provide a good look at the areas identified on your Base Map as areas of concern/interest - remember, a picture tells a thousand words. Again, date and label all copies. (Provide 12 copies of each, 8_x 11.)

Naval Air Warfare Center Aircraft Division Indianapolis (main site, 2 views)

Electronic Manufacturing Productivity Facility (EMPF)

Ham's Bluff Sonobuoy Quality Assurance Laboratory, St. Croix, US Virgin Islands

° Air Installations Compatible Use Zones (AICUZ) Map. (Provide 12 copies.)

N/A

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

BRAC-95 CERTIFICATION

Reference: SECNAVNOTE 11000 of 08 December 1993

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

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

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

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief. Data Call #1.

ACTIVITY COMMANDER

Thomas R. Darnell
NAME (Please type or print)

Signature

Commanding Officer
Title

31 January 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity Indianapolis

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

NEXT ECHELON LEVEL (if applicable)

BARTON D. STRONG
NAME (Please type or print)

Signature

Commander
Title

22 Feb '94
Date

Naval Air Warfare Center Aircraft Divisin, Patuxent River, MD
Activity

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

NEXT ECHELON LEVEL (if applicable)

G. H. STROHSAHL
NAME (Please type or print)

Signature

Commander
Title

23 Feb 94
Date

Naval Air Warfare Center Headquarters
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
NAME (Please type or print)

Signature

Commander
Title

24 Feb 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)

S. F. Loftus
Vice Admiral, U.S. Navy
NAME (Please type or print)

Signature

Deputy Chief of Naval
Operations (Logistics)
Title

3-11-94
Date

161

"LAB" JOINT CROSS-SERVICE GROUP GUIDANCE PACKAGE

See Revised Data Call

Section I: Taskings
1.1 Guidelines
1.2 Standards
1.3 Assumptions
1.4 Measures of Merit
1.5 Activities
1.6 Common Support Functions

Section II: Capacity of DOD Components
2.1 Workload
2.2 Excess Capacity

Section III: Capability of Activities to Perform Common Support Functions
3.0 Mission
3.1 Location
3.2 Personnel
3.3 Workload
3.4 Facilities & Equipment
3.5 Expansion Potential

Section IV: Appendices
A. Macro Process/Schedule
B. List of Activities
C. Common Support Functions

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 schedules 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)

The R & D and in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

Information Required	Fiscal Years											
	86*	87*	88*	89*	90*	91*	92*	93	94	95	96	97
Total Funds Programmed ($M)	23.9	23.0	36.0	29.4	39.0	53.3	47.3	50.4	48.6	46.2	46.3	46.3
Total Actual Funds ($M)	23.9	23.0	36.0	29.4	39.0	53.3	47.3	50.4				
Programmed Workyears	200	186	312	222	306	353	331	297	293	265	262	260
Actual Workyears	200	186	312	222	306	353	331	297				

*** Our accounting system does not isolate funding and workload for the categories requested (ISE, S&T, and ED). FY86 - 92 are estimates.**

- 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 (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 NAWC Indianapolis Mission covers a wide variety of functions throughout the life cycle. The R&D and in-service Engineering portions of the mission follow.

NAWC Indianapolis is DOD's only activity that has the capability, facilities, and knowledge-base to provide support over the full acquisition life cycle for Avionics, Electronic Systems, and selected equipment. In addition, our capabilities are totally integrated to support avionics and electronic systems engineering, acquisition, manufacturing, and supportability functions.

The specific major capabilities that support the Common Product Support Function #1 (Air Vehicles), #2 (Weapons), #4 (C^4I), and Pervasive Function #1 (Electronic Devices) include:

- **Development Engineering of Avionics Electronic Systems**

  Comprehensive design and prototyping capability unique within the government used to develop Avionics and Electronic solutions to satisfy Fleet Operational/Safety problems.
  - **Multi-service development and life cycle support of avionics and electronic systems**
  - **Research and development of avionics and electronic systems**
  - **Manufacturing Science and Technology (MS&T) expertise for acquisition support and application of dual use and commercial technology transfer**
  - **Rapid prototyping in support of avionics and electronics development.**

- **Avionics and Electronic Systems Program Acquisition Support**

  The integration of development, prototyping, and production knowledge to assure cost effective development and in-service engineering of fleet Avionics and Electronic Systems.
  - **In-service engineering for selected fielded Fleet equipment**

The relationship and interconnectivity with other functions (common or otherwise) in support of the overall NAWC Indianapolis mission is as follows:

While some of the capabilities at NAWC Indianapolis support CSF Product #1, #2 and #4, and CSF Pervasive #1, these capabilities are also an integral part of an overall integrated capability that supports a much broader mission than the "lab" activities of this data call. Therefore, even if there were no "lab" activities at NAWC Indianapolis, these totally integrated capabilities would still be needed to support the broader mission in the areas of engineering, acquisition, manufacturing and logistics.

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)

NAWC Indianapolis is centrally located such that it can easily serve customers from both coasts. The Center is within 3-5 hours of travel to Navy activities on the west coast (such as China Lake) and the east coast (Pax River). NAWC Indianapolis' mission of engineering, development, and in-service engineering for avionics and electronic systems involves working with both platforms/aircraft systems at the Aircraft Division (AD) and weapons/ weapon system integration at the Weapons Divisions (WD).

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)

Air Permits

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

Wastewater Permit

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

Underground Storage Tank Registration

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

The licenses and permits described above apply equally to all CSFs.

3.1.3 **Environmental constraints:** Describe and list the environmental or land use constraints present at your activity which limit or restrict your current scope for each CSF, i.e., would not allow increased "volume" or "spectrum" for the CSF. Example -- Volume: frequency of a type of experiment. Example -- Spectrum: Current permit to detonate high explosives will not allow detonation or storage of increased quantity of explosives without legal waiver (state law) or relocation of surrounding (non-govt) buildings. (BRAC Criteria II)

There are no environmental or land use constraints which would limit increased use for existing CFSs.

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)

None

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)

NSWC Crane - NAWC Indianapolis does not provide significant funding to NSWC Crane to support the portion of our mission defined in this data call. Our proximity, however, does enable us to pursue surface/air electronic system issues more effectively and provide efficient use of facilities and personnel to achieve cost effective solutions for our customers. While the performance of our mission would not be jeopardized by not having NSWC Crane, a certain synergy of technical resources does result.

EMPF - NAWC Indianapolis' functional expertise is enhanced by an important geographically oriented venture known as the Electronics Manufacturing Productivity Facility (EMPF). The EMPF's basic mission is to advance the state-of-the-art in electronics and increase the domestic productivity in electronics manufacturing. It is one of only four Navy Centers of Excellence that have been established. The EMPF, through a Cooperative Research And Development Agreement (CRADA) with Purdue University, Indiana University-Purdue University at Indianapolis (IUPUI), private industry, and the Navy, provides the mechanism to identify, develop, transfer, and implement innovative electronics manufacturing technologies, processes, and practices for domestic firms. At the same time, training is provided to University students to provide them with the multidisciplinary skills necessary to improve their job opportunities. This electronic manufacturing technology initiative is geographically linked to the Indianapolis area and the Navy.

Common Support Functions	Name	Type of Organization	Distance	Workyears Performed by Your Activity	Workyears Funded by Your Activity
Air Vehicle, Electronic Devices	NSWC, CRANE	Government	75	21	2
Air Vehicle, Weapons, C^4I Systems, Electronic Devices	EMPF	Government, industry, and academic consortium	7	0	25

THIS PAGE LEFT BLANK

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	**241**	**0**	**0**	**0**
Management (Supv)	**5**	**0**	**0**	**0**
Other	**56**	**0**	**0**	**0**

R

	Number of Civilian Personnel per CSF				
Types of personnel	Air Vehicle, Fixed Wing, Avionics	Air Vehicle, Rotary Wing, Avionics	Weapons	CYI Systems, Fixed Ground-Based C4I	Pervasive Functions, Electronic Devices
Technical	**138**	**52**	**25**	**6**	**20**
Management (Supv)	**3**	**1**	**1**	**0**	**0**
Other	**33**	**12**	**6**	**1**	**4**

Revised pg

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)

Type of Degree/ Diploma	Number of Government Personnel by Type of Position		
	Technical	Management (Supv)	Other
High School or Less	29	0	30
Associates	36	1	19
Bachelor	155	3	6
Masters	19	1	1
Doctorate (include Med/Vet/etc.)	2	0	0

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	**241**	0	0	0
Management (Supv)	**5**	0	0	0
Other	**56**	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)

Type of Degree/ Diploma	**Number of Government Personnel by Type of Position**		
	Technical	**Management (Supv)**	**Other**
High School or Less	**29**	**0**	**30**
Associates	**36**	**1**	**19**
Bachelor	**155**	**3**	**6**
Masters	**19**	**1**	**1**
Doctorate (include Med/Vet/etc.)	**2**	**0**	**0**

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)

	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	8	115	48	27	43
Management (Supv)	0	0	1	1	3
Total	8	115	49	28	46

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)

None

CSF	**Disclosures**	**Awarded**	**Patent Titles (List)**
None			
Total			

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

The papers listed relate to the entire NAWC Indianapolis Mission rather than limited to the R&D and in-service engineering functions.

CSF	Number Published	Paper Titles (List)
Air Vehicle, Avionics and Electronic Devices		"Applications of a Poled Electro-Optic Thin Film In An Evanescent Coupler"
		"An Active Evanescent Coupler for Smart Processing"
		"Composite-Embedded Fiber Optic Data Links and Related Material/Connector Issues"
		"Composite-Embedded Fiber Optic Data Links"
		"Composite-Embedded Fiber Optic Data Links in Avionics Packaging"
		"Composite-Embedded Fiber Optic Data Links in Standard Electronic Modules"
		"Composite-Embedded Optical Fibers for Communications Links in SAMPE"
		"High Resolution Optical Pattern Generation"
		"Organized Wire, Integrated Board, and Mass Termination Techniques"
		"Ribbonized, Organized, Integrated Wiring System"
		"Stereolithography for Rapid Prototyping"
		"VHSIC Hardware Description Language"
		"Rapid Prototyping Techniques"

CSF	Number Published	Paper Titles (List)
		"Advanced Microelectronics Facility Capabilities"
		"MIL-STD-1553/1773 Conversion"
		"A JIAWG Common Module Software Interface"
		"A New Development in Embedded Computer Performance Measurement"
		"Additional Developments in Embedded Computer Performance Measurements"
		"Developments in Multiprocessor Embedded Computer Performance"
		"Embedded Computer Design Choices and Solutions"
		"Dynamic Reconfiguration Demonstration System"
		"A Proposed Real-Time ADA Test"
		"Standard Embedded Software Communications Interface"
		"An Open Systems Approach to Technology Insertion"
		"Combined Unloaded and Loaded Board Testing"
		"What is WAT? Wrap Around Test, Maximizing Avionics BIT Utilization to Minimize Flight Line Armament Systems Test Equipment Requirements"
		"Technology Transfer Characteristics for a new Model for Implementing Strategic Information Systems"
		"Diffraction Losses in Optical Resonators"
		"Logical Protocol, Errata, Correction, and Clarifications"

CSF	Number Published	Paper Titles (List)
		"Physical Layer and Profile Specification"
		"Physical Layer and Profile Specification, Errata, Correction, and Clarifications"
		"Recommended Practices"
		"Standard for Conformance Test Requirements for Future Bus+"
		"Standard for Future Bus+, Profile M (Military)"
		"Standard for Future Bus+, Profile M (Military), Errata, Correction, and Clarifications"
		"Fault Tolerant Extensions for Future Bus+"
		"Ambient Noise Data Logger Buoy"
		"Multiple Processor Computer Performance Measurement"
		"Pooled Spares and Dynamic Reconfiguration"
		"Multiple Processor Embedded Computer Performance"
		"Environmental Stress Screening Guidelines for Assemblies"
		"TriService Environmental Stress Screening Guidelines"
		"Active and Passive Thermal Management"
		"Application of Advanced Materials and Technologies to Avionics Packaging"
		"Immersion-Cooled Standard Electronic Clamshell Module: A Building Block for Future High-Flux Avionics

CSF	Number Published	Paper Titles (List)
		Systems"
		"Development of an Experimental Metal Matrix Composite Card Rail Heat Exchanger"
		"Cooling of High-Density Airborne Electronics using Direct-Immersion, Two-Phase, Sub-Cooled Dielectric Fluids"
		"Investigation of Diamond Films for Advanced High Density Avionics Packaging"
		"Advanced Electronics Packaging Utilizing Direct-Immersion Two-Phase Forced Convection Subcooled Coolant and High Specific Property Advanced Materials"
		"Electronic Packaging Using Combined Metal Matrix Composites And Diamond Film Materials"
		"EMI Shielding of Advanced Composite Enclosures"
		"Applications of Advanced Composites to Electronics Enclosures Packaging"
		"Application of Resin and Metal Matrix Composites to Advanced Avionics Enclosures"
		"Applications of Composite Material Systems to Avionics Systems Packaging"
		"Applications of Advanced Composites in a 3/4 ATR Transportable Rack"
		"The Growth of <100> Textured Diamond Films on Polycrystalline Ceramic Substrates"
		"Nucleation of Diamond Films on Foreign Substrates"

CSF	Number Published	Paper Titles (List)
		"Common Avionics, Today and Tomorrow"
		"Evolution and Assessment of Inertial Navigation Systems (INS) forCarrier Based Aircraft"
		"Common Avionics Solution for US Navy Embedded GPS/INS Systems"
		"Avionics System Architecture"
		"MCC and EMPF Form Advanced Electronics Packaging Facility"
		"Applications of Composite Solder Principles"
		"Evaluations of Solder Alternatives for Surface Mount Technology"
		"Fine Pitch Rework Process Modeling"
		"Improved Solderability Testing Using Wetting Balance Standard"
		"Microstructure Phenomenon in Fine Pitch"
		"Non-Wetting Defect Detection Using Two Wetting Balance Techniques"
		"A Reliability Assessment of No-Clean and Water Soluble Fluxes in Cable Assembly Applications"
		"A Search for CFC Alternatives is Over?"
		"Stencil Printing Fine Pitch Applications"
		"Surface Coatings: A Comparative Study of Impact On Solderability"

CSF	Number Published	Paper Titles (List)
		"Ultrasonic Cleaning on Fine Pitch Components-Establishing a New Standard"
		"Variables That Influence Today's Cleanliness Test Equipment"
		"Advancements in Reflow Process Development"
		"Solderability Concerns in Surface Mount Technology"
		"Cleaning Processes in Surface Mount Technology"
		"Process Controls in SMT Rework"
		"Alternative Applications of Automated Laser Inspection"
		"Ultrasonic Cleaning of Military PWA's"
		"Heat Transfer Effect on Solderability for Tinning Processes"
		"Fine Pitch Placement-Lessons Learned"
		"Infrared Reflow Processes with Fine Pitch Assemblies"
		"Cleaning Fine Pitch Assemblies with CFC Alternatives"
		"Semi-Aqueous Cleaning for Fine Pitch Surface Mount Technology"
		"Ultrasonic Failures with Fine Pitch Components"
		"Fine Pitch Solder Joint Microstructure Phenomena"
		"Stencil Design & Volume Control for Fine Pitch Applications"

CSF	Number Published	Paper Titles (List)
		"Solder Bumping for Fine Pitch Applications"
		"Manufacturing Electronics Using CFC Alternatives"
		"Alternatives to Lead-Based Solders"
		"Rework & Repair of Fine Pitch SMT"
		"Microstructure Phenomena in Fine Pitch Solder Joints"
		"Solder Paste SPC via RF Impedance Measurements"
		"Conformal Coating Adhesion Over No-Clean Fluxes"
		"Do We Need 'How To' Manufacturing"
		"Stencil Printing Fine-Pitch Applications"
		"Computer Thermal Modeling of a Convective IR Reflow Oven"
		"The Convective Infrared Reflow Process with Fine-Pitch Assemblies"
		"Solder Joint Volume Calculation Using a Spreadsheet"
		"Effects of Tip Cleaning Devices and Heater Technology on Manual Solder Processes"
		"Phase II Testing of Hughes Reactive Aqueous Defluxing System (RADS)"
		"Phase II Testing of International Specialty Products Micropure CDF"
		"Phase II Testing of Bioact EC7R"

CSF	Number Published	Paper Titles (List)
		"Semi-Aqueous Cleaning: Process Controls for 20-mil Pitch Technology"
		"Phase II Testing of Alpha Metals 2110 Saponifier"
		"Phase II Testing of Exxon Actrel ED 11 & Actrel ES"
		"Phase II Testing of Envirosolv KNI-2000"
		"Phase II Testing of Church & Dwight Armakleen E-2001"
		"An In-Depth Look at Ionic Cleanliness Testing"
		"Phase II Testing of Prozone"
		"Phase II Testing of Petroferm Bioact EC-Ultra"
		"No CFC's, Now What Do I Do"
		"Ultrasonic Cleaning of Military PWAs"
		"Cleaning Military Electronics in the Future"
		"Testing of Bioact EC7 as an Alternative to CFCs"
		"Logic of Visual Inspection"
		"Alternative Applications of Automated Laser Inspection"
		"Solder Joint Rework Simulation Analysis"
		"Process Controls in SMT Rework"
		"Component Solderability Workshop Proceedings"
		"Solderability, Phase II, Part 1; Parametric Effect"

CSF	Number Published	Paper Titles (List)
		"Impact of Flux Type on Wetting Balance Testing in the Scanning Mode"
		"Surface Coatings: A Comparative Study of Impacts on Solderability"
		"Analysis of Oxidation Arrest Paper"
		"Solderability Concerns in Surface Mount Technology"
		"Material Solderability; 1960s-1990"
		"Heat Transfer Effect on Solderability Tinning Process"
		"Thermal Analysis of Printed Wiring Boards Using SINDA"
		"Thermal Fatigue Analysis Software for Leadless Chip Carriers"
		"Quicker Queries"
		"The Programmer's New Clothes—A Skeptic's View of Object-Oriented Programming"
		"Carrier Aircraft Inertial Navigation System/Global Positioning System Performance"
		"Carrier Alignment of CAINS II Using GPS as Reference Data"
		"Loss Prevention Initiative Wins Award"
		"Environmental Performance Evaluation of Advanced Composite Materials for use in Military Electronics"

CSF	Number Published	Paper Titles (List)
		"IPC Phase 3 Testing- Water Soluble Fluxes- Status Report" **"Immersion/Two Phase Cooling"**
TOTAL	**139**	

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)

The R&D in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

"LAB"	Fiscal Year 1993 Actual			
	Civilian	Military	FFRDC	SETA
Science & Technology	**23.3**	**0**	**0**	**0**
Engineering Development	**238.7**	**0**	**0**	**0**
In-Service Engineering	**40.3**	**0**	**0**	**0**

R

"LAB"	Fiscal Year 1993 Actual Workyears per CSF				
	Air Vehicles, Fixed Wing, Avionics	Air Vehicles, Rotary Wing, Avionics	Weapons - ICBM/SLBM, Conv. Missiles	C4I Systems, Fixed Ground Based C4I	Pervasive Functions, Electronic Devices
Science & Technology	**0**	**0**	**0**	**0**	**23.3**
Engineering Development	**158.6**	**64.2**	**15.9**	**0**	**0**
In-Service Engineering	**17.8**	**0**	**16.3**	**6.2**	**0**

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)

The R&D in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

"LAB"	Fiscal Year 1993 Actual			
	Civilian	Military	FFRDC	SETA
Science & Technology	**23.3**	**0**	**0**	**0**
Engineering Development	**238.7**	**0**	**0**	**0**
In-Service Engineering	**40.3**	**0**	**0**	**0**

Revised pg

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).

CSF 1. AIR VEHICLES
AVIONICS (FIXED & ROTARY WING)

R

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ACAT IC	0604777N	22.6	$3,253	Lead GPS Aircraft Integration activity. Performs GPS hardware and software integration for numerous platforms including CH-53E, P-3C, ES-3A, and C-130.
ACAT IC	0204229N	1.6	$199	In support of the Tactical Aircraft Mission Planning System, NAWCADI has developed and prototyped a "key manager" device for controlling crypto-key information.

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).

CSF 1. AIR VEHICLES

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ACAT IC	0604777N	22.6	$3,253	Lead GPS Aircraft Integration activity. Performs GPS hardware and software integration for numerous platforms including CH-53E, P-3C, ES-3A, and C-130.
ACAT IC	0204229N	1.6	$199	In support of the Tactical Aircraft Mission Planning System, NAWCADI has developed and prototyped a "key manager" device for controlling crypto-key information.

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ACAT ID	0204136N	0.5	$44	With the elimination of the F/A-18 tactical nuclear mission, NAWCADI, as the lead for AMAC systems, served a on select study group to generate a plan to reconstitute carrier nuclear mission capability.
ACAT ID	0604262N	30.0	$5,839	Lead V22 system/software activity; provides avionics systems engineering/integration, avionics engineering system design, and acquisition support.
ACAT II	0604212N	0.2	$47	Lead field activity that provides acquisition, and engineering support for the development, test and evaluation, and transition to production of avionics systems for the CV-Helo program.
ACAT II	0603100N	3.6	$478	Lead INEWS field activity (a multispectral approach warning system, Electronic Support Measures system, Radar Warning Receiver system, and defense Electronic Counter-Measures system).
ACAT II	0604221N	0.2	$39	Engineering and program management support of the P3 Update IV Avionics.
ACAT III	0604261N	1.0	$327	Sonobuoy - Mini Drifting
ACAT III	0604261N	1.1	$870	Sonobuoy (RDT) Development
ACAT IV	0604574	5.0	$813	AN/AYK- 14 Advanced Development
Other	(Number)	0.8	$153	Radiant Snow
		7.5	$1,270	Project 7.5.9

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
		0.5	$78	TAMPS
		0.9	$129	ALS-ADA Support
		9.1	$1,372	Beartrap (ASW)
		8.7	$1352	V/STOL Optical Landing
		2.9	$381	Composite Material
		1.5	$482	Std Compass AHR
		7.0	$1,104	Computer - Next Generation
		2.6	$233	Equipment - Cost Analysis
		0.7	$64	Expendables - AC
		2.7	$349	EA-6B ADVCAP
		2.4	$150	EMPF
		4.9	$808	ES-3A GPS Integration
		0.7	$98	Chaff/Expendable
		1.4	$611	Avionics Standard
		1.7	$74	AC-8B Muxbus Data
		0.2	$30	AV-8B AMDS Logistics
		20.4	$3,472	EP-3E (ARIES II)
		0.9	$57	AN/ARN-138 MMR-M
		0.2	$28	AN/ALQ-149
		2.2	$431	ALFS FSED Tech Support
		10.6	$2,742	AIS
		0.5	$78	Advanced Avionics
		5.6	$774	A-X
		0.4	$29	CASS - Consolidated
		0.1	$17	NASA Power Supply
		7.0	$963	JIAWG Technical Support
		1.5	$321	Integrated Defense Electronics
		1.2	$167	Sonobuoy - Hass
		0.2	$72	Integrated Defense Electronics
		0.9	$164	FTRG RDT
		0.2	$30	Non-Standard Parts
		8.2	$1,239	AN/ALQ-170(V)4/5
		0.3	$41	Software Ntest
		0.7	$257	P-3 Mod ASP System

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
		0.3	$65	AN/ALT-40 FAEWS
		0.7	$67	P-3 Update IV/Mini-DAMA
		8.5	$1,087	V-22 Configuration
		5.9	$1,291	V-22 Aircraft Wiring
		3.3	$453	V-22 Mission Plan
		0.5	$71	GPWS CAT 3 (HELO)
		6.8	$981	MH-53 GPS Integration
		1.1	$151	Magic Lantern

Revised pg

CSF 2. WEAPONS

R

CSF	Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ICBM/ SLBM	ACATIC	0101221N	1.3	$171	Provide producibility support and design/prototyping support equipment/handing devices for the next generation Trident II(d5) missile.
Conv. Missile	ACAT ID	0604727N	5.2	$911	Provide producibility inputs into design criteria to ensure design to cost goals are achieved in Joint Stand Off Weapon (JSOW) production phase.
	ACAT II	None			
	ACAT III/IV	None			
Cruise Missile	Other		1.7	$312	Weapon - GWSATP
Conv. Missile			0.1	$15	Target Subsonic
Conv. Missile			7.6	$579	UAV Common Electronics

CSF 2. WEAPONS

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ACAT IC	0101221N	1.3	$171	Provide producibility support and design/prototyping support equipment/handing devices for the next generation Trident II(d5) missile.
ACAT ID	0604727N	5.2	$911	Provide producibility inputs into design criteria to ensure design to cost goals are achieved in Joint Stand Off Weapon (JSOW) production phase.
ACAT II	(Name)			(Description)
ACAT III/IV	(Number)			(List)
Other		1.7	$312	Weapon - GWSATP
		0.1	$15	Target Subsonic
		7.6	$579	UAV Common Electronics

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 engineer -ing 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)

R

Common Support Functions	In-Service Engineering Efforts (List)	FY93 Actual		Weapon System(s) Supported
		Funds Received (Obligation Authority) ($K)	Workyears	
Air Vehicle Avionics (Fixed & Rotary Wing)	Cognizant Field Activity	$201	1.6	F-14 TARPS
	Product Support	$189	2.2	A-6 AN/APQ-156 Radar
	Production Support (Test Sets)	$161	0.8	Various Aircraft
	Test/Evaluation Supp (ASO)	$149	0.1	Various Aircraft
	Production Support (ASW Receivers)	$18	0.3	LAMPS MK III
	Cognizant Field Activity (FTRG)	$1595	10.7	Various Aircraft
	Product Support (MSAS)	$239	1.6	Secure Communications
	Aircraft Wiring - Engr Supp Services	$136	0.5	Various Aircraft
Weapons-ICBM/SLBM	Support Equipment	$77	0.6	FBM

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) ($K)	Workyears	
Air Vehicle	Cognizant Field Activity	$201	1.6	F-14 TARPS
	Product Support	$95	1.0	A-6 AN/APQ-156 Radar
	Production Support (Test Sets)	$161	0.8	Various Aircraft
	Test/Evaluation Supp (ASO)	$149	0.1	Various Aircraft
	Production Support (ASW Receivers)	$18	0.3	LAMPS MK III
	Cognizant Field Activity (FTRG)	$1595	10.7	Various Aircraft
	Product Support (MSAS)	$239	1.6	Secure Communications
	Product Support	$94	1.2	A-6 AN/APQ-156 Radar
	Aircraft Wiring - Engr Supp Services	$136	0.5	Various Aircraft
Weapons	Support Equipment	$77	0.6	FBM
	Logistics Support	$183	1.5	FBM - POSEIDON
	Product Support (Missile Bit Test Set)	$466	2.4	HARM

Revised pg

Common Support Functions	In-Service Engineering Efforts (List)	FY93 Actual		Weapon System(s) Supported
		Funds Received (Obligation Authority) ($K)	Workyears	
Weapons-ICBM/SLBM	Logistics Support	$183	1.5	FBM - POSEIDON
Weapons-Conv. Missiles	Product Support Missile BIT Test Set	$466	2.4	HARM
Weapons-Guided Projectile	Integrated Logistics Support - Support Equipment	$85	0.7	WALLEYE
Weapons-Guided Projectile	Production Engineering	$62	0.2	AWW-13
Weapons - Bombs	Cognizant Field Activity	$1496	10.9	Aircraft Armament Equipment (Racks and Launchers)
C4I - Fixed Ground	Product Support	$69	0.6	AN/FPS-106 Met Radar
C4I - Fixed Ground	Product Support	$785	5.6	SMQ-11 - Satellite Receiving System

FOR OFFICIAL USE ONLY
PRE-DECISIONAL INFORMATION

Revised pg

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)

NAWC AD Indianapolis is an industrially funded activity operating under Defense Business Operation Fund (DBOF) regulations. All funding is received as reimbursable or direct cite from multiple sources, including all services, DoD, and other government agencies. No direct mission funding (MRTFB or BOS) is received in support of lab activities.

CSF	FY94	FY95	FY96	FY97
	N/A	N/A	N/A	N/A

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

Common Support Functions	In-Service Engineering Efforts (List)	FY93 Actual		Weapon System(s) Supported
		Funds Received (Obligation Authority) ($K)	Workyears	
	Integrated Logistics Support - Support Equipment	$85	0.7	WALLEYE
	Production Engineering	$62	0.2	AWW-13
	Cognizant Field Activity	$1496	10.9	Aircraft Armament Equipment (Racks and Launchers)
C4I	Product Support	$69	0.6	AN/FPS-106 Met Radar
	Product Support	$785	5.6	SMQ-11 - Satellite Receiving System

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)

NAWC AD Indianapolis is an industrially funded activity operating under Defence Business Operation Fund (DBOF) regulations. All funding is received as reimbursable or direct cite from multiple sources, including all services, DoD, and other government agencies. No direct mission funding (MRTFB of BOS) is received in support of lab activities.

CSF	FY94	FY95	FY96	

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)

The R & D and in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

R

CSF	FY94 ($K)	FY95 ($K)	FY96 ($K)	FY97 ($K)
Air Vehicles Avionics (Fixed & Rotary Wing)	28,790	38,877	39,281	39,532
Weapons - Bombs, Guided Projectiles, ICBM/SLBM, & Conv. Missiles	2,300	3,017	2,951	2,871
C4I Systems - Fixed-Ground	14,068	1,316	1,105	1,073
Electronic Devices	3,447	3,036	2,969	2,889

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)

The major facilities at NAWC Indianapolis that support the "lab" activities of this data call are listed below. These facilities are also a part of an overall integrated capability that supports a broader naval aviation mission at NAWC Indianapolis.

Revised pg

Therefore, even if there were no "lab" peculiar support functions at NAWC Indianapolis, these totally integrated capabilities and facilities are still needed to support NAWC Indianapolis mission in the areas of engineering, acquisition, manufacturing and logistics for avionics and electronic systems.

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)

The R & D and in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

CSF	FY94 ($K)	FY95 ($K)	FY96 ($K)	FY97 ($K)
Air Vehicles	28,790	38,877	39,281	39,532
Weapons	2,300	3,017	2,951	2,871
C4I Systems	14,068	1,316	1,105	1,073
Electronic Devices	3,447	3,036	2,969	2,889

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)

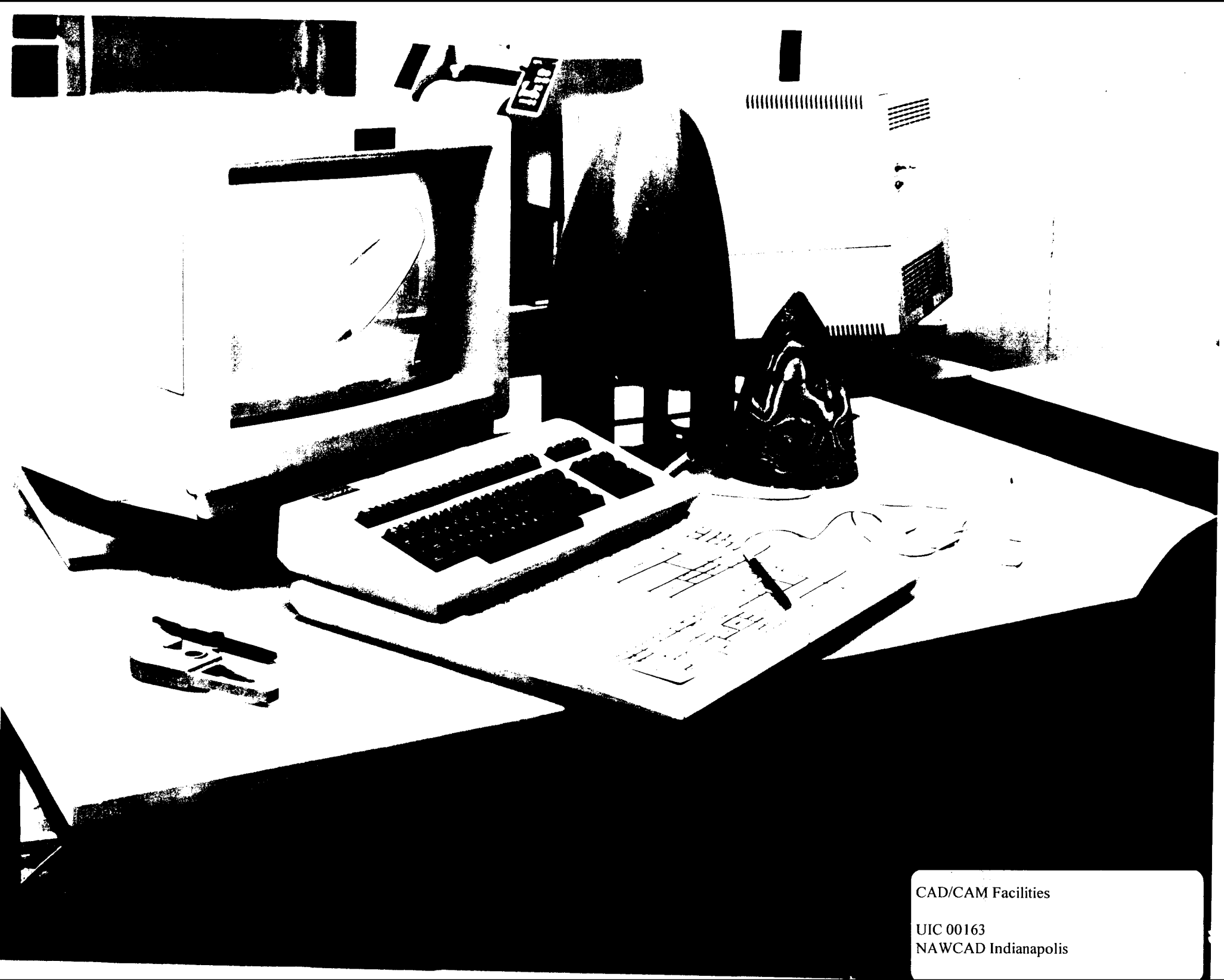
The major facilities at NAWC Indianapolis that support the "lab" activities of this data call are listed below. These facilities are also a part of an overall integrated capability that supports a broader naval aviation mission at NAWC Indianapolis. Therefore, even if there were no "lab" peculiar support functions at NAWC Indianapolis, these totally integrated capabilities and facilities are still needed to support NAWC Indianapolis mission in the areas of engineering, acquisition, manufacturing and logistics for avionics and electronic systems.

The replacement cost for each facility reflects the total cost to replicate the facility elsewhere even though less than 15% of the utilization of the facilities is for R&D and in-service engineering.

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U. S.	
All	The **Advanced Electronics Facility** is a microelectronics facility that provides a broad spectrum of microelectronics design, development and evaluation of thick film hybrid and thin film microcircuits as well as surface acoustic wave and microwave integrated circuit stripline devices. These capabilities support avionics and electronic system projects from concept to final production implementation.	X			8,740
All	The **Avionics/Electronics Development Lab** is used during the design, development, and prototyping phases of electronic equipment. The development is facilitated by an unobstructed view for RF, microwave and infrared testing. The lab includes an electronic model shop that provides prototyping support.				20,740
All	The **Computer Aided Design/Computer Aided Manufacturing CAD/CAM Facilities** support various ship-board and avionics systems by utilizing the CAD equipment to produce CAM data, tooling, schematics, and Printed Wiring Board (PWB) documentation for fabrication, assembly and testing of PWBs. This facility includes equipment for five stand alone systems, four Bravo Micro VAX's with seven stations.				36,440

Advanced Electronics Facility

UIC 00163
NAWCAD Indianapolis

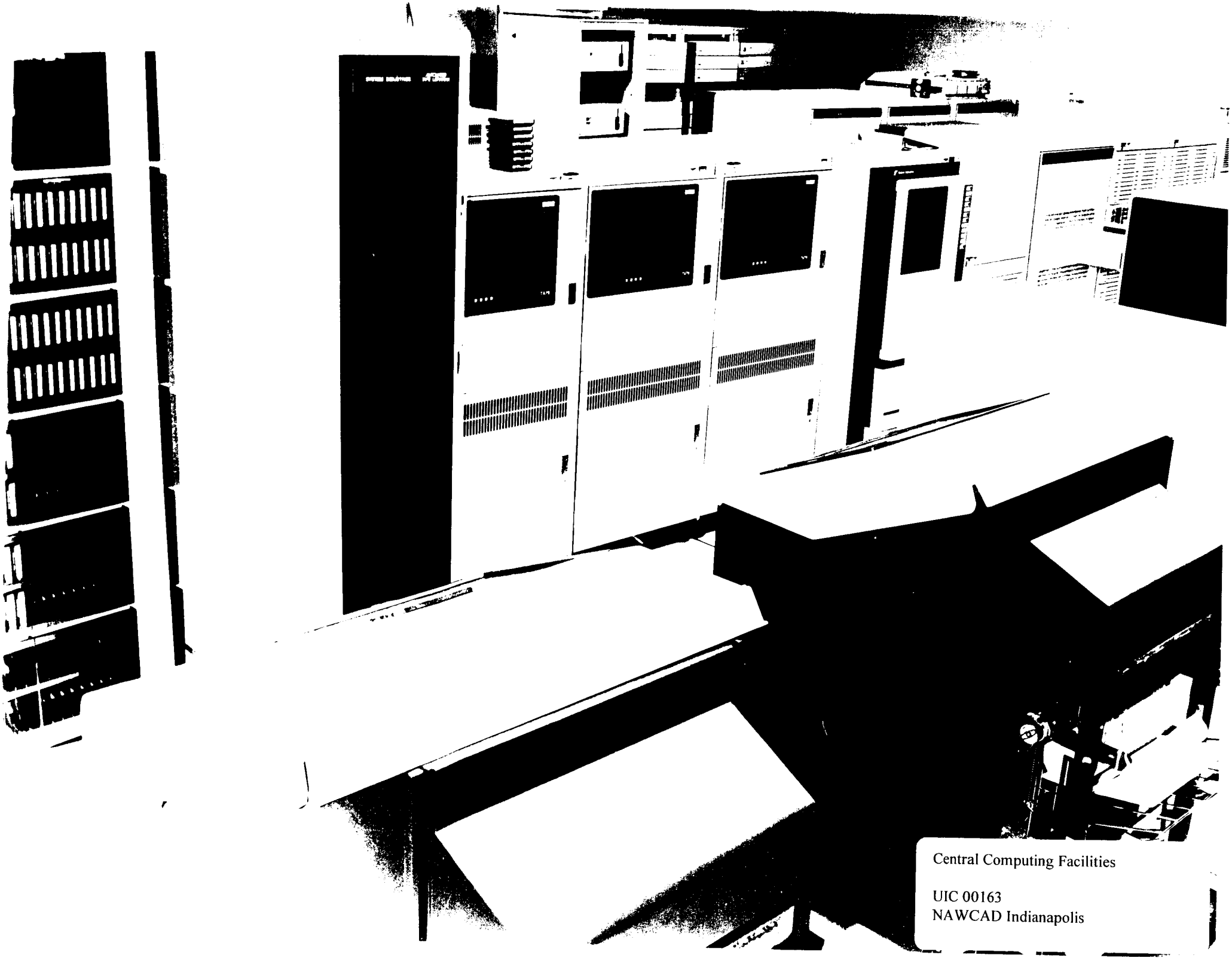


CAD/CAM Facilities

UIC 00163
NAWCAD Indianapolis

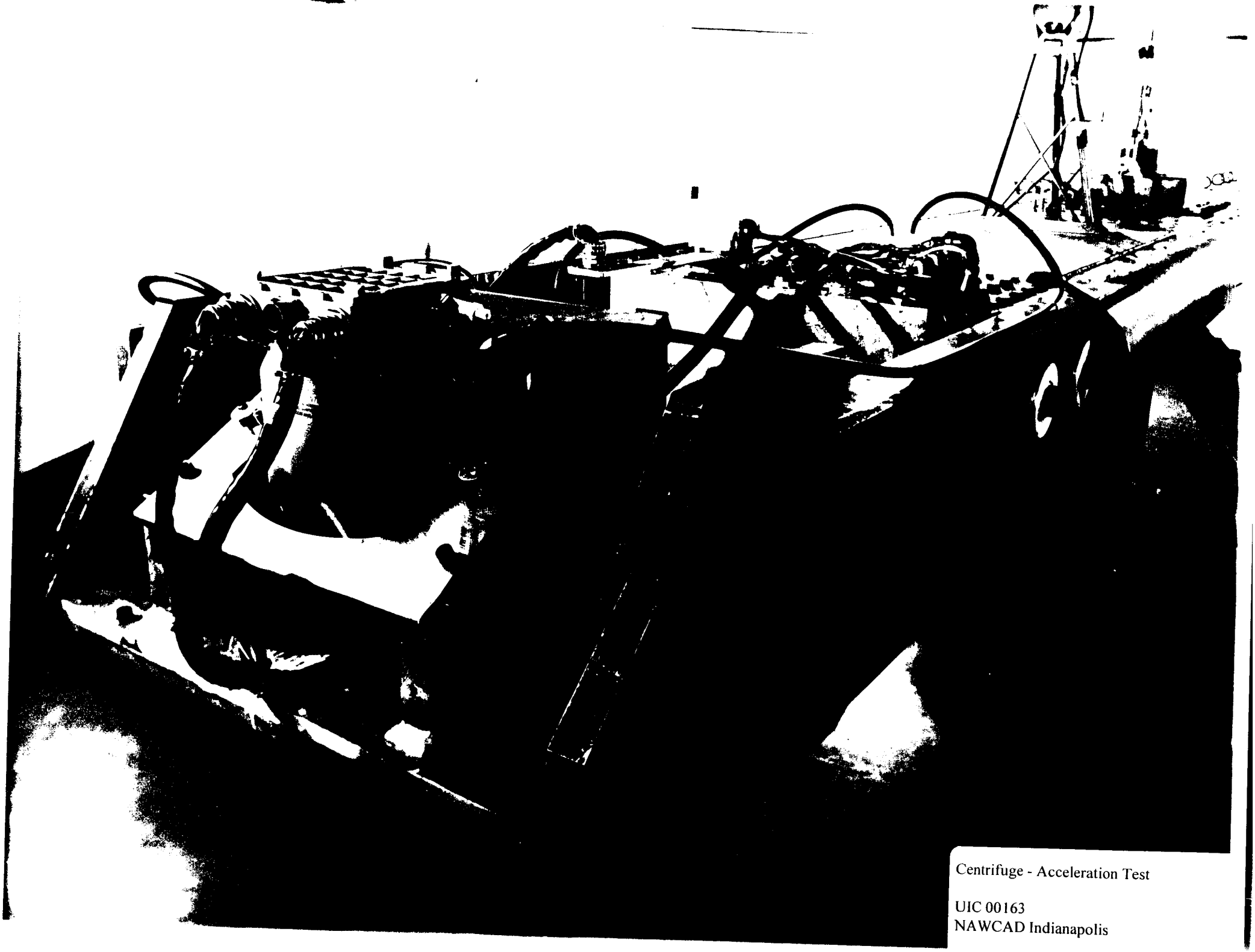
Avionics Electronics
Development Lab
UIC 00163
NAWCAD Indianapolis

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U. S.	
All	The **Central Computing Facility** (CCF) is a secure site for the location of the central computers that serve as the main computer for all business computer functions and processing. The DEC VAX computer cluster is housed here. This facility holds all current business data on storage devices for immediate user access.				9,230
All	The **Centrifuge - Acceleration Test Facility** has the capability to conduct design, development, and manufacturing acceleration tests on electronic equipment and systems. This includes a fifteen foot centrifuge with 148 slip rings, 3 rotary coaxial joints, and rotary glands as well as a four foot centrifuge with 16 slip rings and a rotary joint. Video capability is used for monitoring special testing.	X			1,230
All	The **Electro-Magnetic Interference (EMI) Facility** conducts design, development and first article qualification tests used to assess the conducted and radiated electromagnetic profiles of airborne and shipboard electronic systems. This facility consists of three shielded enclosures: one anechoic, one partially anechoic, and one Mode Stirred Chamber.				3,070



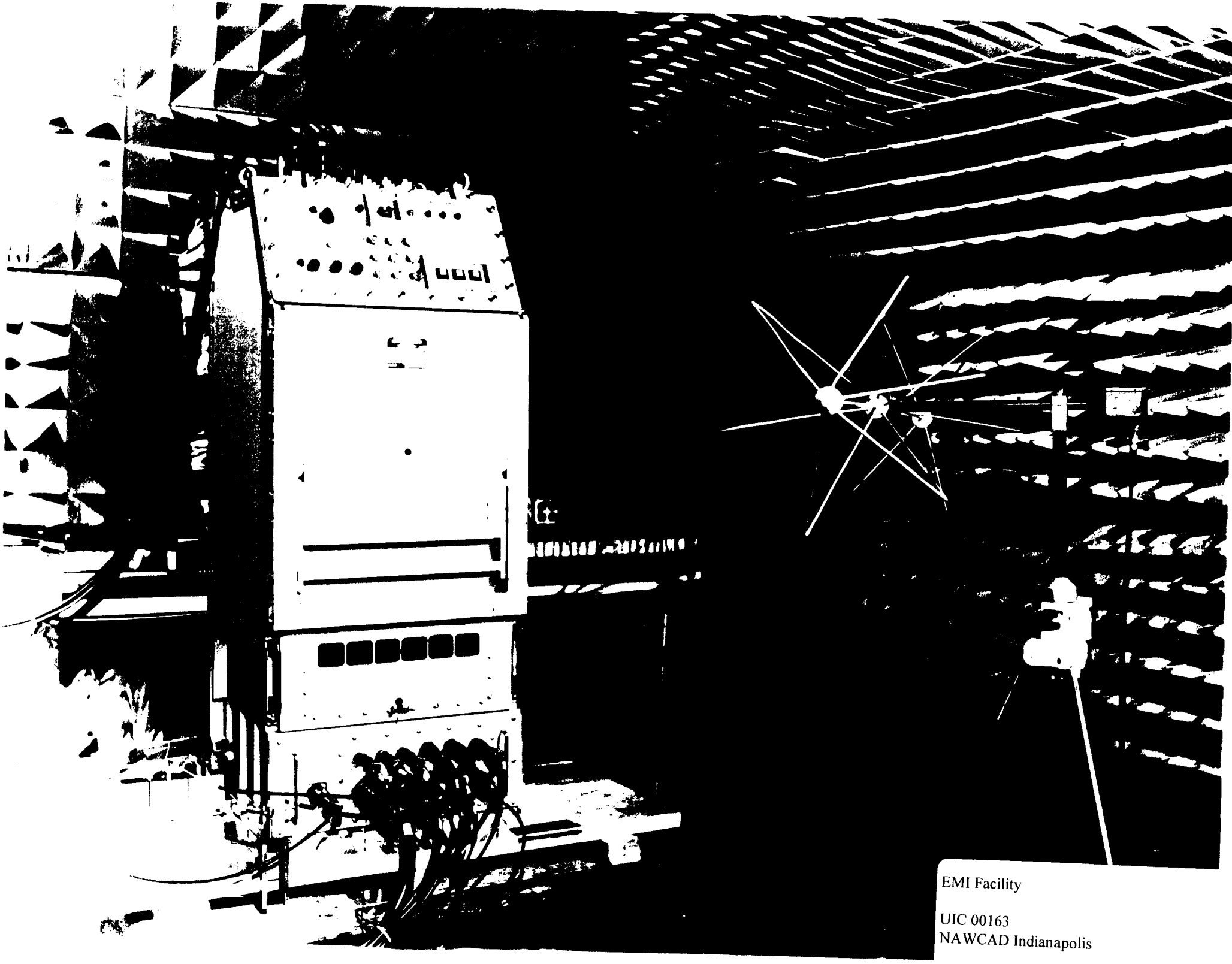
Central Computing Facilities

UIC 00163
NAWCAD Indianapolis



Centrifuge - Acceleration Test

UIC 00163
NAWCAD Indianapolis



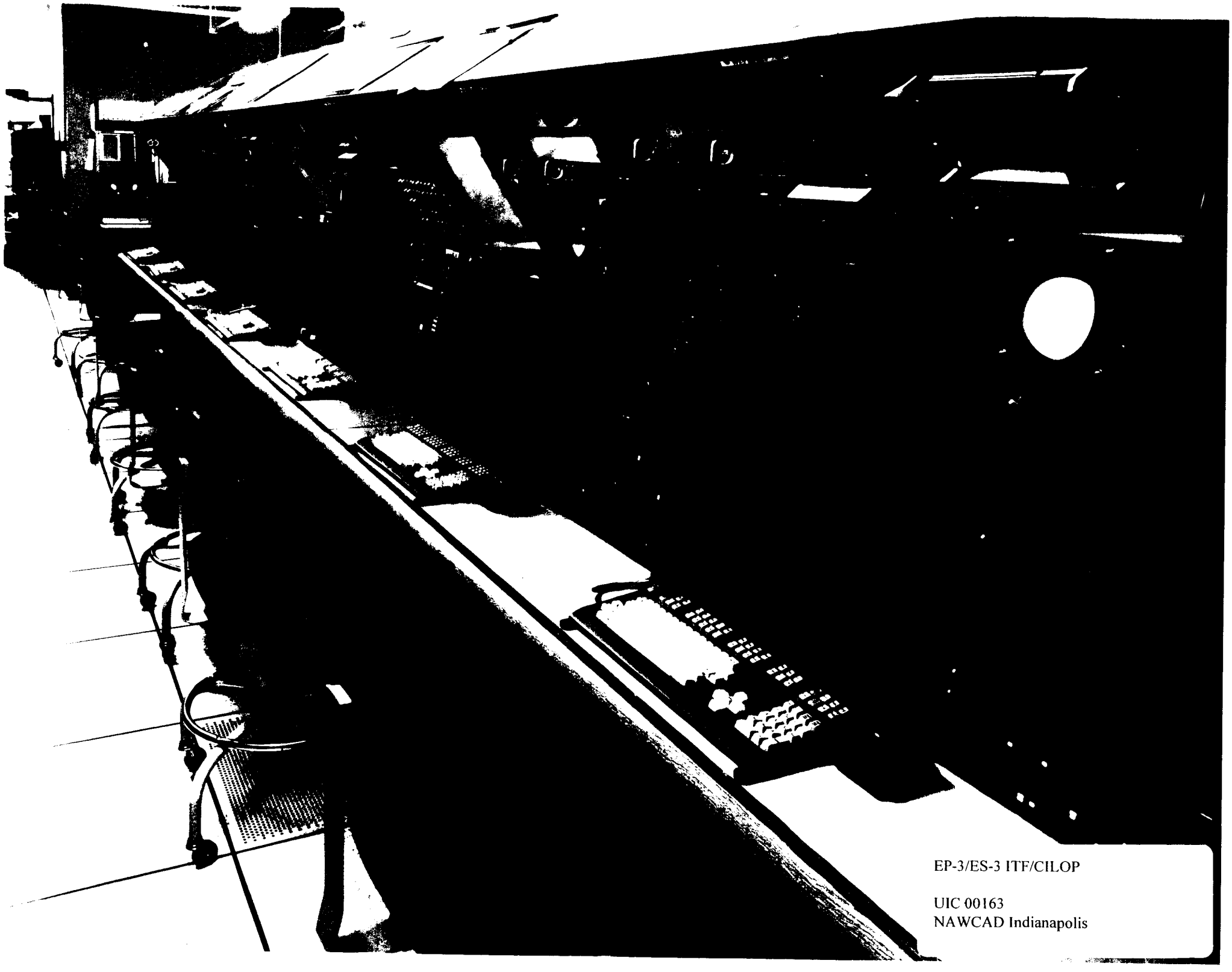
EMI Facility

UIC 00163
NAWCAD Indianapolis

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U. S.	
All	The **Environmental Test Facility** includes a Climatic Test Lab and a Dynamic Test & Data Acquisition/ Analysis Lab including three temperature chambers, one thermal shock chamber, six temperature/humidity chambers, five altitude chambers, one accelerated weathering chamber, two salt spray chambers and one explosive chamber as well as ten vibration and four shock machines. This facility provides extensive climatic environmental test capability for first article and qualification testing of electronic equipment and systems.				9,630
All	The **EP-3/ES-3 CILOP and Integrated Test Facility** supports the EP-3E and ES-3A Software Support Activities (SSAs) and other related VQ Projects and contains full-scale mockups of EP-3E and ES-3A aircraft for software development, integration, test, training, and engineering support	X	X	X	18,610
All	The **Electronic Warfare Facility** provides the capabilities of Bayesian radar identification algorithm development for Radar Warning Receivers (RWRs), jammers and Electronic Surveillance Measure (ESM) sets.				2,160

Environmental Test Facility

UIC 00163
NAWCAD Indianapolis



EP-3/ES-3 ITF/CILOP

UIC 00163
NAWCAD Indianapolis

EW Facility

UIC 00163
NAWCAD Indianapolis

Common Support Function	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
		DOD	Federal Gov't	U. S.	
All	The **Failure Analysis Facility** is used to determine the failure mechanisms and causes of failed electrical and electronics component parts and subassemblies. The only government owned Scanning Auger Multiprobe has the combined functions of Auger Electron Spectroscopy and Secondary Ion Mass Spectroscopy with two Scanning Electron Microscopes and Energy Dispersive x-ray Analysis System.				2,440
All	The **Integrated Avionics Lab** provides hardware and software tools for avionics integration during design, development, and support phases of acquisition for avionics systems and sub-systems.				18,420
All	The **Material Lab** consists of an Metals/Composite Lab, an Organic Materials Lab and an Inorganic Material Lab which provide analysis, test, evaluation, and consultation on metals, composites, organic and inorganic chemistry.				13,890
All	The **Microwave Integrated Circuit Lab** is used for design, simulations, prototyping, testing, and evaluating of radio frequency circuits and systems.				2,740
All	The **Secure Compartmented Integrated Facilities (SCIF)** are used for all projects that require access to sensitive information and special security and intelligence support. These TEMPEST approved facilities include ductwork silencing, acoustic isolation, RF shielding, access control systems, motion detectors and alarm systems.				3,140

Failure Analysis Facility

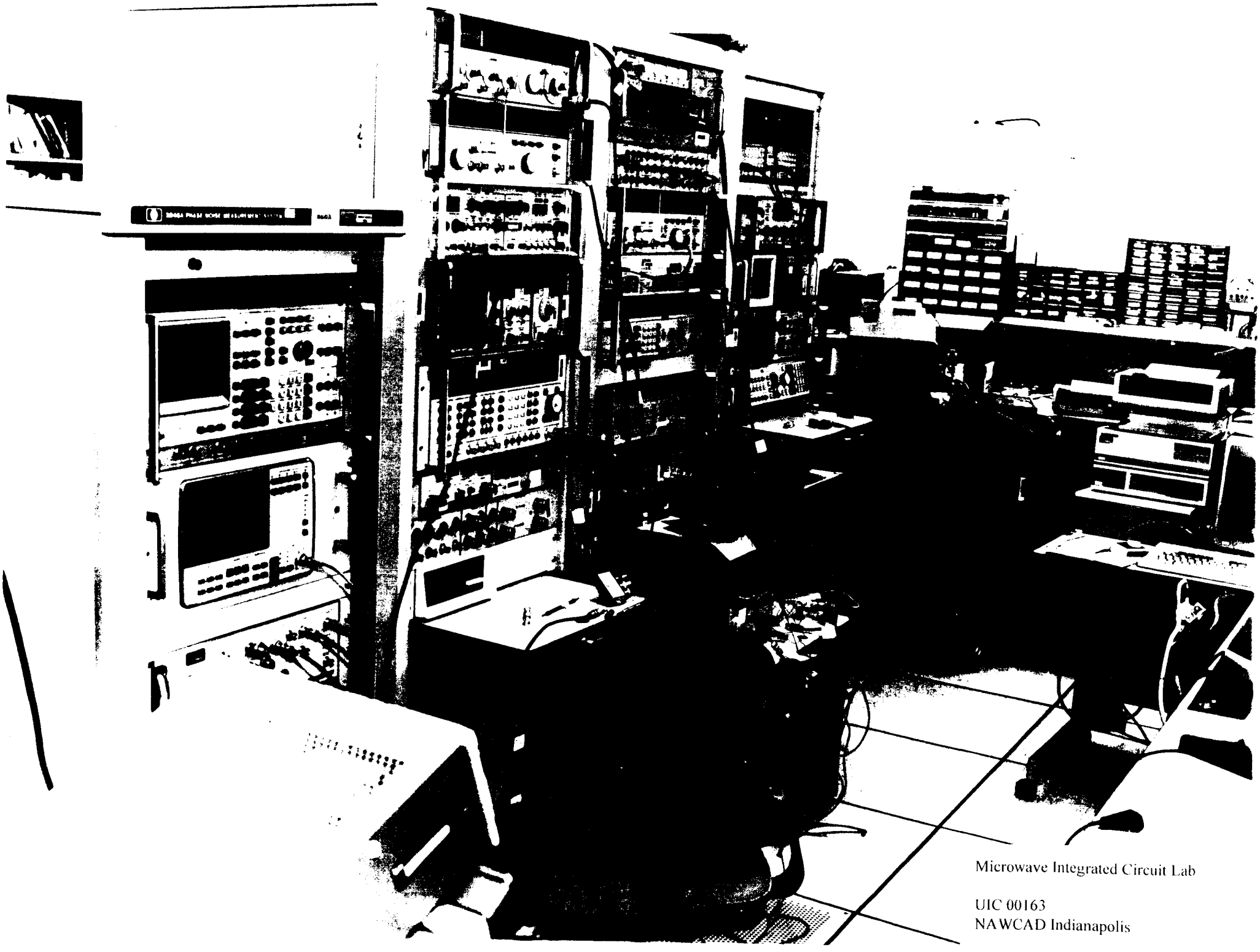
UIC 00163
NAWCAD Indianapolis

Integrated Avionics Lab

UIC 00163
NAWCAD Indianapolis

Material Lab

UIC 00163
NAWCAD Indianapolis



Microwave Integrated Circuit Lab

UIC 00163
NAWCAD Indianapolis

Secure Compartmented Integrated Facility
(SCIF)
UIC 00163
NAWCAD Indianapolis

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

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.

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.

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
All	Advanced Electronics Facility	Technical	10.4	10.4	0
All	Avionics & Electronics Dev Lab	Technical	25.5	25.5	0
All	CAD/CAM Facilities	Technical	9.6	9.6	0
All	CCF	Administrative	7.9	7.9	0
All	Centrifuge	Technical	2.5	2.5	0
All	EMI Facilities	Technical	1.1	1.1	0
All	Environmental Test	Technical	19.4	19.4	0
All	EP-3/ES-3 CILOP/ITF	Technical	8.2	8.2	0
All	EW Lab	Technical	7.1	7.1	0
All	Failure Analysis Lab	Technical	0.9	0.9	0
All	Integrated Avionics Lab	Technical	7.2	7.2	0
All	Materials Lab	Technical	22.5	22.5	0
All	Microwave Int Circuit Lab	Technical	1.8	1.8	0
All	CPC/SCIF	Technical	3.9	3.9	0

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

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
All	Advanced Electronics Facility	Technical	10.4	10.4	0
All	Avionics & Electronics Dev Lab	Technical	25.5	25.5	0
All	CAD/CAM Facilities	Technical	9.6	9.6	0
All	CCF	Administrative	7.9	7.9	0
All	Centrifuge	Technical	2.5	2.5	0
All	EMI Facilities	Technical	1.1	1.1	0
All	Environmental Test	Technical	19.4	19.4	0
All	EP-3/ES-3 CILOP/ITF	Technical	8.2	8.2	0
All	EW Lab	Technical	7.1	7.1	0
All	Failure Analysis Lab	Technical	0.9	0.9	0
All	Integrated Avionics Lab	Technical	7.2	7.2	0
All	Materials Lab	Technical	22.5	22.5	0
All	Microwave Int Circuit Lab	Technical	1.8	1.8	0
All	CPC/SCIF	Technical	3.9	3.9	0

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

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)

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

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

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

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)

68 Acres.

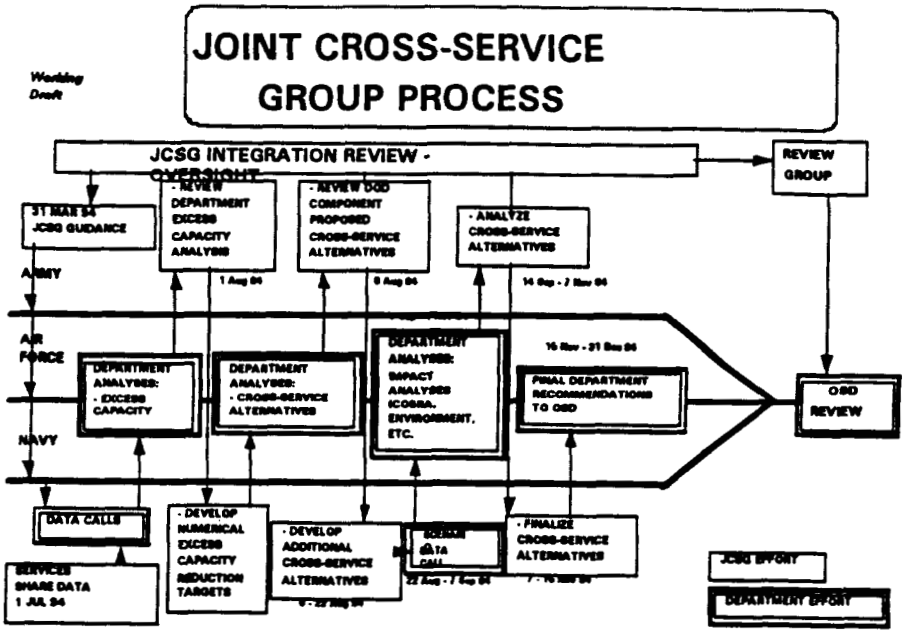
3.5.3 **Utilities:** Provide an estimate of your installation's capability to expand or procure additional utility services (electric, gas, water). Estimates should be provided in appropriate units -- e.g. KWH of electricity. (BRAC Criteria II)

Our facility is in a major metropolitan area. There are no restrictions to increasing any of our utility services near or long-term.

SECTION IV: APPENDICES

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

APPENDIX A


JOINT CROSS-SERVICE
GROUP PROCESS
Working Draft
JCSG INTEGRATION REVIEW - OVERSIGHT
REVIEW GROUP
31 MAR 94 JCSG GUIDANCE
- REVIEW DEPARTMENT EXCESS CAPACITY ANALYSIS
- REVIEW DOD COMPONENT PROPOSED CROSS-SERVICE ALTERNATIVES
- ANALYZE CROSS-SERVICE ALTERNATIVES
ARMY
AIR FORCE
NAVY
DEPARTMENT ANALYSES: - EXCESS CAPACITY
DEPARTMENT ANALYSES: - CROSS-SERVICE ALTERNATIVES
DEPARTMENT ANALYSES: IMPACT ANALYSES (COBRA, ENVIRONMENT, ETC.
FINAL DEPARTMENT RECOMMENDATIONS TO OSD
OSD REVIEW
DATA CALLS
SERVICES SHARE DATA 1 JUL 94
- DEVELOP NUMERICAL EXCESS CAPACITY REDUCTION TARGETS
- DEVELOP ADDITIONAL CROSS-SERVICE ALTERNATIVES
SERVICE DATA CALL
- FINALIZE CROSS-SERVICE ALTERNATIVES
JCSG EFFORT
DEPARTMENT EFFORT

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 Mammoth, 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

DATA CALL 12
BRAC-95 CERTIFICATION

INDIANAPOLIS SITE
NAWC AIRCRAFT DIVISION

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

NEXT ECHELON LEVEL (if applicable)

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

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)

G H Strohsahl
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.

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. Green, Jr.
NAME (Please type or print)

J B Green Jr.
Signature

Acting
Title

27 May 1994
Date

DATA CALL #12

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

29 April 1994
Date

Naval Air Warfare Center, Aircraft Div., Indianapolis
Activity

DATA CALL 12 CHANGE 1
NAWC AIRCRAFT DIVISION
INDIANAPOLIS

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

NEXT ECHELON LEVEL (if applicable)

BARTON D. STRONG, RADM, USN
NAME (Please type or print)

Barton D. Strong
Signature

ACTING COMMANDER
Title

28 June 1994
Date

NAVAL AIR WARFARE CENTER
Activity

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

NEXT ECHELON LEVEL (if applicable)

NAME (Please type or print)

Signature

Title

Date

Activity

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

MAJOR CLAIMANT LEVEL

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

Signature

COMMANDER
Title

18 JUL 94
Date

NAVAL AIR SYSTEMS COMMAND
Activity

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

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

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

Signature

Title

7/25/94
Date

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

NEXT ECHELON LEVEL (if applicable)

CAPT John Patterson
NAME (Please type or print

John Patterson
Signature

ACTING COMMANDER
Title

27 JUNE 1994
Date

NAWCAD
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 of print

Signature

Title

Date

Activity

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

MAJOR CLAIMANT LEVEL

NAME (Please type or print

Signature

Title

Date

Activity

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

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

NAME (Please type of print

Signature

Title

Date

DATA CALL #12

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

CHANGE I NAWCAD/INDY 10 JUNE 94 - DATA CALL NUMBER 12

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

10 June 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity

FOR OFFICIAL USE ONLY
PREDECISIONAL INFORMATION

Enclosure (2)

161

Complete Data Call Revision

BRAC 95 DATA CALL #12

ACTIVITY UIC: 00163

PLUS REVISIONS DATED 9-14-94

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

NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION
INDIANAPOLIS

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.

"LAB" JOINT CROSS-SERVICE GROUP GUIDANCE PACKAGE

Section I: Taskings
1.1 Guidelines
1.2 Standards
1.3 Assumptions
1.4 Measures of Merit
1.5 Activities
1.6 Common Support Functions

Section II: Capacity of DOD Components
2.1 Workload
2.2 Excess Capacity

Section III: Capability of Activities to Perform Common Support Functions
3.0 Mission
3.1 Location
3.2 Personnel
3.3 Workload
3.4 Facilities & Equipment
3.5 Expansion Potential

Section IV: Appendices
A. Macro Process/Schedule
B. List of Activities
C. Common Support Functions

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 schedules 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)

The R&D, Engineering Development, and in-service engineering covered in the first table represents approximately 15% of the total NAWC Indianapolis workload.

Information Required	Fiscal Years											
	86*	87*	88*	89*	90*	91*	92*	93	94	95	96	97
Total Funds Programmed ($M)	23.9	23.0	36.0	29.4	39.0	53.3	47.3	50.4	48.6	46.2	46.3	46.3
Total Actual Funds ($M)	23.9	23.0	36.0	29.4	39.0	53.3	47.3	50.4				
Programmed Wkyrs	200	186	312	222	306	353	331	297	293	265	262	260
Actual Workyears	200	186	312	222	306	353	331	297				

*** Our accounting system does not isolate funding and workload for the categories requested (ISE, S&T, and ED). FY86 - 92 are estimates.**

NAWC IndianapolisÕ total funding and workyears is shown below:

Information Required	Fiscal Years											
	86	87	88	89	90	91	92	93	94	95	96	97
Total Funds Programmed ($M)	203.7	124.5	225.0	276.9	258.8	253.3	310.5	320.9	275.0	289.0	303.0	299.0
Total Actual Funds ($M)	186.3	183.0	242.2	238.4	258.6	241.4	351.4	321.5				
Programmed Wkyrs	2,801	3,025	3,054	3,241	3,328	3,314	3,383	3,159	3,031	2,766	2,766	2,736
Actual Workyears	3,068	3,135	3,239	3,344	3,474	3,406	3,363	3,212				

(1) FY87 receipts exceeded budget due to unexpectedly high APN receipts. Ò Total funds programmed" was reduced by $20M due to NAVCOMPT required rebate.
(2) This is total funds programmed without direct cite.
Note: This information was extracted from Data Call #4

- 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 (since inception of organization) and Y93
--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 NAWC Indianapolis Mission covers a wide variety of functions throughout the life cycle. The R&D and in-service Engineering portions of the mission follow.

NAWC Indianapolis is DOD's only activity that has the capability, facilities, and knowledge-base to provide support over the full acquisition life cycle for Avionics, Electronic Systems, and selected equipment. In addition, our capabilities are totally integrated to support avionics and electronic systems engineering, acquisition, manufacturing, and supportability functions.

NAWC Indianapolis has specific major capabilities that support the following Common Product Support functions.

Air Vehicle Fixed Avionics
Air Vehicle Fixed Flight Subsystems
Air Vehicle Rotary Avionics
Weapons Bombs
Weapons Conventional Missiles/Rockets
Weapons Cruise Missiles
Weapons Guided Projectiles
Weapons ICBM/SLBM
C^4I, Fixed Ground Based
C^4I, Ground Mobile

The following list of capabilities applies in total to each of the previously listed CSF's.

_ Development Engineering of Avionics Electronic Systems Comprehensive design and prototyping capability unique within the government used to develop Avionics and Electronic solutions to satisfy Fleet Operational/Safety problems.

- **Multi-service development and life cycle support of avionics and electronic systems**
- **Research and development of avionics and electronic systems**
- **Manufacturing Science and Technology (MS&T) expertise for acquisition support and application of dual use and commercial technology transfer**
- **Rapid prototyping in support of avionics and electronics development.**

_ Avionics and Electronic Systems Program Acquisition Support

The integration of development, prototyping, and production knowledge to assurecost effective development and in-service engineering of fleet Avionics and Electronic Systems.

- **In-service engineering for selected fielded Fleet equipment**

In addition NAWC Indianapolis has the capability for research and development of avionics and electronics systems which relates to the Pervasive Function of Electronic Devices.

The relationship and interconnectivity with other functions (common or otherwise) in support of the overall NAWC Indianapolis mission is as follows:

While some of the capabilities at NAWC Indianapolis support previously mentioned CSF's, these capabilities are also an integral part of an overall integrated capability that supports a much broader mission than the "lab" activities of this data call. Therefore, even if there were no "lab" activities at NAWC Indianapolis, these totally integrated capabilities would still be needed to support the broader mission in the areas of engineering, acquisition, manufacturing and logistics.

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)

NAWC Indianapolis is centrally located such that it can easily serve customers from both coasts. The Center is within 3-5 hours of travel to Navy activities on the west coast (such as China Lake) and the east coast (Pax River). NAWC Indianapolis' mission of engineering, development, and in-service engineering for avionics and electronic systems involves working with both platforms/aircraft systems at the Aircraft Division (AD) and weapons/ weapon system integration at the Weapons Divisions (WD).

This relates to the work that is conducted here under the following CSFs as well as our other workload.

CSF
Air Vehicle Fixed Avionics
Air Vehicle Fixed Flight Subsystems
Air Vehicle Rotary Avionics
C^4I Fixed Ground Based
C^4I Ground Mobile
Electronic Devices
Weapons Bombs
Weapons Conventional Missiles/Rockets
Weapons Cruise Missiles
Weapons Guided Projectiles
Weapons ICBM/SLBM

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)

Air Permits

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

Wastewater Permit

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

Underground Storage Tank Registration

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

These licenses and permits apply to the general facility and as such are utilized for the following CSFs.

CSF

Air Vehicle Fixed Avionics
Air Vehicle Fixed Flight Subsystems
Air Vehicle Rotary Avionics
C^4I Fixed Ground Based
C^4I Ground Mobile
Electronic Devices
Weapons Bombs
Weapons Conventional Missiles/Rockets
Weapons Cruise Missiles
Weapons Guided Projectiles
Weapons ICBM/SLBM

3.1.3 **Environmental constraints:** Describe and list the environmental or land use constraints present at your activity which limit or restrict your current scope for each CSF, i.e., would not allow increased "volume" or "spectrum" for the CSF. Example -- Volume: frequency of a type of experiment. Example -- Spectrum: Current permit to detonate high explosives will not allow detonation or storage of increased quantity of explosives without legal waiver (state law) or relocation of surrounding (non-govt) buildings. (BRAC Criteria II)

There are no environmental or land use constraints which would limit increased use for existing CFSs.

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)

None

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)

NSWC Crane - NAWC Indianapolis does not provide significant funding to NSWC Crane to support the portion of our mission defined in this data call. Our proximity, however, does enable us to pursue surface/air electronic system issues more effectively and provide efficient use of facilities and personnel to achieve cost effective solutions for our customers. While the performance of our mission would not be jeopardized by not having NSWC Crane, a certain synergy of technical resources does result.

EMPF - NAWC Indianapolis' functional expertise is enhanced by an important geographically oriented venture known as the Electronics Manufacturing Productivity Facility (EMPF). The EMPF's basic mission is to advance the state-of-the-art in electronics and increase the domestic productivity in electronics manufacturing. It is one of only four Navy Centers of Excellence that have been established. The EMPF, through a Cooperative Research And Development Agreement (CRADA) with Purdue University, Indiana University-Purdue University at Indianapolis (IUPUI), private industry, and the Navy, provides the mechanism to identify, develop, transfer, and implement innovative electronics manufacturing technologies, processes, and practices for domestic firms. At the same time, training is provided to University students to provide them with the multidisciplinary skills necessary to improve their job opportunities. This electronic manufacturing technology initiative is geographically linked to the Indianapolis area and the Navy.

Common Support Functions	Name	Type of Organization	Distance	Workyears Performed by Your Activity	Workyears Funded by Your Activity
Air Vehicle Fixed Avionics	NSWC, CRANE	Government	75	1.4	2
Electronic Devices	NSWC, CRANE	Government	75	18.8	2
Air Vehicle Fixed Avionics	EMPF	Consortium *	7	0	13
Air Vehicle Rotary Avionics	EMPF	Consortium *	7	0	12

* **Government, industry, academia**

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)

Number of Civilian Personnel per CSF *											
Types of personnel	Air Vehicle Fixed Wing Avionics	Air Vehicle Fixed Wing Flight Subsystems	Air Vehicle Rotary Wing Avionics	Weapons ICMB	Weapons Conven	Weapons Cruise	Weapons Guided	Weapons Bombs	C^4I Systems Fixed Ground-Based C^4I	C^4I Systems Ground-Mobile C^4I	Pervasive Functions Electronic Devices
Technical	**81**	**4**	**34**	**2**	**8**	**1**	**1**	**4**	**1**	**3**	**13**
Management (Supv)	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Other	**80**	**5**	**31**	**2**	**7**	**0**	**0**	**6**	**0**	**3**	**11**

*** Personnel records are not broken out by CSF. This information is based on best estimate.**

Enclosure (4)

NAWCHQ Change
VBC, NAWC-21D
9/19/94

191

Number of Civilian Personnel per CSF *											
Types of personnel	Air Vehicle Fixed Wing Avionics	Air Vehicle Fixed Wing Flight Subsystems	Air Vehicle Rotary Wing Avionics	Weapons ICMB	Weapons Conven	Weapons Cruise	Weapons Guided	Weapons Bombs	C^4I Systems Fixed Ground-Based C^4I	C^4I Systems Ground-Mobile C^4I	Pervasive Functions Electronic Devices
Technical	**131**	**7**	**52**	**3**	**12**	**1**	**1**	**8**	**1**	**5**	**20**
Management (Supv)	**3**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Other	**31**	**2**	**12**	**1**	**3**	**0**	**0**	**2**	**0**	**1**	**4**

*** Personnel records are not broken out by CSF. This information is based on best estimate.**

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)

Common Support Function	Type of Degree/Diploma *														
	High School or Less			Associates			Bachelor			Masters			Doctorate		
	Tech	Mgt	Other	Tech	Mgt	Other	Tech	Mgt	Other	Tech	Mgt	Other	Tech	Mgt	Other
Air Vehicle Fixed Avionics	16		16	20	1	11	84	2	3	10	1	1	1		
Air Vehicle Fixed Flight	1		1	1		1	4		0	1					
Air Vehicle Rotary	6		6	8		4	33		1	4			1		
Weapons ICBM	1		1				2								
Weapons Conventional	1		2	2		1	8	1	1	1					
Weapons Cruise							1								
Weapons Guided							1								
Weapons Bombs	1		1	1		1	5			1					
C^4I Fixed Ground Based C^4I							1								
C^4I Ground Mobile C^4I	1		1	1			3								
Electronic Devices	2		2	3		1	13		1	2					
TOTAL	29		30	36	1	19	155	3	6	19	1	1	2		

* Personnel records are not broken out by CSF. This information is based on best estimates.

Common Support Function	Type of Degree/Diploma *														
	High School or Less			Associates			Bachelor			Masters			Doctorate		
	Tech	Mgt	Other	Tech	Mgt	Other	Tech	Mgt	Other	Tech	Mgt	Other	Tech	Mgt	Other
Air Vehicle Fixed Avionics	6		26	10	1	21	57	2	29	7	1	4	1		
Air Vehicle Fixed Flight			2	1		1	3		1			1			
Air Vehicle Rotary	3		10	4		8	23		12	3		1	1		
Weapons ICBM			2				2								
Weapons Conventional	1		1	1		2	5	1	4	1					
Weapons Cruise							1								
Weapons Guided							1								
Weapons Bombs			2	1		1	3		2	1					
C^4I Fixed Ground Based C^4I							1								
C^4I Ground Mobile C^4I	1		1			1	2		1	1					
Electronic Devices	1		3	1		3	9		5	1		1			
TOTAL	12		47	18	1	37	107	3	54	13	1	7	2		

* Personnel records are not broken out by CSF. This information is based on best estimates.

NAWC HQ change
VBC NAWC-21D
9/19/94

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)

Common Support Function	Years of Government and/or Military Service *									
	Less than 3 yrs		3 10 yrs		11 - 15 yrs		16 - 20 yrs		More than 20 yrs	
	Tech	Mgt	Tech	Mgt	Tech	Mgt	Tech	Mgt	Tech	Mgt
Air Vehicle Fixed Avionics	3		39		15	1	9	1	15	2
Air Vehicle Fixed Flight			1		1		1		1	
Air Vehicle Rotary	1		16		6		4		7	
Weapons ICBM			1		1		0		0	
Weapons Conventional	1		4		2		0		1	1
Weapons Cruise			1							
Weapons Guided					1					
Weapons Bombs			2		0		1		1	
C^4I Fixed			1							
C^4I Ground			2		0		0		1	
Electronic Devices	1		6		2		2		2	
TOTAL	6		73		28	1	17	1	28	3

* Personnel records are not broken out by CSF. This information is based on best estimates.

NAWCHQ Change
VSC, NAWC-21D
9/19/94

Common Support Function	Years of Government and/or Military Service *									
	Less than 3 yrs		3 10 yrs		11 - 15 yrs		16 - 20 yrs		More than 20 yrs	
	Tech	Mgt	Tech	Mgt	Tech	Mgt	Tech	Mgt	Tech	Mgt
Air Vehicle Fixed Avionics	4		63		26	1	14	1	24	2
Air Vehicle Fixed Flight			3		1		1		1	
Air Vehicle Rotary	2		25		10		6		9	
Weapons ICBM			1		1		1		1	
Weapons Conventional	1		6		2		1		2	1
Weapons Cruise										
Weapons Guided					1					
Weapons Bombs			4		2		1		1	
C^4I Fixed			1							
C^4I Ground			2		1		1		1	
Electronic Devices	1		10		4		2		4	
TOTAL	8		115		48	1	27	1	43	3

* Personnel records are not broken out by CSF. This information is based on best estimates.

R

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)

None

CSF	Disclosures	Awarded	Patent Titles (List)
None			
Total			

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

The papers listed relate to the entire NAWC Indianapolis Mission rather than limited to the R&D and in-service engineering functions.

R

CSF	Number Published	Paper Titles (List)
Weapons Bombs	1	"What is WAT? Wrap Around Test, Maximizing Avionics BIT Utilization to Minimize Flight Line Armament Systems Test Equipment Requirements" AERO Tech Sep 91
Air Vehicle Fixed Avionics	1	"Tri-Service Environmental Stress Screening Guidelines" Institute of Environmental Sciences, 93
Air Vehicle Fixed Avionics	1	"Non-Wetting Defect Detection Using Two Wetting Balance Techniques" ISHM, 1992
C^4I Fixed Ground Base	1	"Quicker Queries" International Tandem Users Group Journal, Best Paper 93
Air Vehicle Fixed Avionics	1	"The Programmer's New Clothes -- A Skeptic's View of Object-Oriented Programming" International Tandem Users Journal, 93
Weapons ICBM	1	"Loss Prevention Initiative Wins Award" Periodical, SENTRY, 92
TOTAL	6	

NAWC HQ Change
VBC
NAWC-21D
9/19/94

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)

None

CSF	Disclosures	Awarded	Patent Titles (List)
None			
Total			

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

The papers listed relate to the entire NAWC Indianapolis Mission rather than limited to the R&D and in-service engineering functions.

CSF	Number Published	Paper Titles (List)
Weapons Cruise Missiles	1	"Applications of a Poled Electro-Optic Thin Film In An Evanescent Coupler"
Weapons Cruise Missiles	1	"An Active Evanescent Coupler for Smart Processing"
Air Vehicle Fixed Flight Subsystems	1	"Composite-Embedded Fiber Optic Data Links and Related Material/Connector Issues"
Air Vehicle Fixed Flight Subsystems	1	"Composite-Embedded Fiber Optic Data Links"
Air Vehicle Fixed Flight Subsystems	1	"Composite-Embedded Fiber Optic Data Links in Avionics Packaging"
Air Vehicle Fixed Flight Subsystems	1	"Composite-Embedded Fiber Optic Data Links in Standard Electronic Modules"
Electronic Devices	1	"Composite-Embedded Optical Fibers for Communications Links in SAMPE"

R

(THIS PAGE INTENTIONALLY LEFT BLANK DUE TO EXTRACTION OF DATA)

Weapon Conventional Missile /Rockets	1	"High Resolution Optical Pattern Generation"
Air Vehicle Fixed Flight Subsystems	1	"Organized Wire, Integrated Board, and Mass Termination Techniques"
Air Vehicle Fixed Flight Subsystems	1	"Ribbonized, Organized, Integrated Wiring System"
Air Vehicle Rotary Avionics	1	"Stereolithography for Rapid Prototyping"
Electronic Devices	1	"VHSIC Hardware Description Language"
Air Vehicle Fixed Avionics	1	"Rapid Prototyping Techniques"
Air Vehicle Fixed Avionics	1	"Advanced Microelectronics Facility Capabilities"
Air Vehicle Fixed Avionics	1	"MIL-STD-1553/1773 Conversion"
Air Vehicle Fixed Avionics	1	"A JIAWG Common Module Software Interface"
Air Vehicle Fixed Avionics	1	"A New Development in Embedded Computer Performance Measurement"
Air Vehicle Fixed Avionics	1	"Additional Developments in Embedded Computer Performance Measurements"
Air Vehicle Fixed Avionics	1	"Developments in Multiprocessor Embedded Computer Performance"
Air Vehicle Fixed Avionics	1	"Embedded Computer Design Choices and Solutions"
Air Vehicle Fixed Avionics	1	"A Proposed Real Time ADA Test"
Air Vehicle Fixed Avionics	1	"Dynamic Reconfiguration Demonstration System"
Air Vehicle Fixed Avionics	1	"Standard Embedded Software Communications Interface"
Air Vehicle Rotary Avionics	1	"An Open Systems Approach to Technology Insertion"
Air Vehicle Fixed Avionics	1	"Combined Unloaded and Loaded Board Testing"
Weapons Bombs	1	"What is WAT? Wrap Around Test, Maximizing Avionics BIT Utilization to Minimize Flight Line Armament Systems Test Equipment Requirements"

R

(THIS PAGE INTENTIONALLY LEFT BLANK DUE TO EXTRACTION OF DATA)

C^4I Fixed Ground Base	1	"Technology Transfer Characteristics for a new Model for Implementing Strategic Information Systems"
Electronic Devices	1	"Diffraction Losses in Optical Resonators"
Air Vehicle Fixed Avionics	1	"Logical Protocol, Errata, Correction, and Clarifications"
Air Vehicle Fixed Avionics	1	"Physical Layer and Profile Specification"
Air Vehicle Fixed Avionics	1	"Physical Layer and Profile Specification, Errata, Correction, and Clarifications"
Air Vehicle Fixed Avionics	1	"Standard for Conformance Test Requirements for Future Bus+"
Air Vehicle Fixed Avionics	1	"Standard for Future Bus+, Profile M (Military)"
Air Vehicle Fixed Avionics	1	"Standard for Future Bus+, Profile M (Military), Errata, Correction, and Clarifications"
Air Vehicle Fixed Avionics	1	"Fault Tolerant Extensions for Future Bus+"
C^4I Fixed Ground Base	1	"Ambient Noise Data Logger Buoy"
Air Vehicle Fixed Avionics	1	"Multiple Processor Computer Performance Measurement"
Air Vehicle Fixed Avionics	1	"Pooled Spares and Dynamic Reconfiguration"
Air Vehicle Fixed Avionics	1	"Multiple Processor Embedded Computer Performance"
Weapons Cruise Missiles	1	"Environmental Stress Screening Guidelines for Assemblies"
Air Vehicle Fixed Avionics	1	"Tri-Service Environmental Stress Screening Guidelines"
Air Vehicle Rotary Avionics	1	"Active and Passive Thermal Management"
Air Vehicle Fixed Avionics	1	"Application of Advanced Materials and Technologies to Avionics Packaging"
Electronic Devices	1	"Immersion-Cooled Standard Electronic Clamshell Module: A Building Block for Future High-Flux Avionics Systems"
Electronic Devices	1	"Development of an Experimental Metal Matrix Composite Card Rail Heat Exchanger"
Electronic Devices	1	"Cooling of High-Density Airborne Electronics using Direct-Immersion, Two-Phase, Sub-Cooled Dielectric Fluids"

R

(THIS PAGE INTENTIONALLY LEFT BLANK DUE TO EXTRACTION OF DATA)

Electronic Devices	1	"Investigation of Diamond Films for Advanced High Density Avionics Packaging"
Electronic Devices	1	"Advanced Electronics Packaging Utilizing Direct-Immersion Two-Phase Forced Convection Subcooled Coolant and High Specific Property Advanced Materials"
Electronic Devices	1	"Electronic Packaging Using Combined Metal Matrix Composites And Diamond Film Materials"
Electronic Devices	1	"EMI Shielding of Advanced Composite Enclosures"
Electronic Devices	1	"Applications of Advanced Composites to Electronics Enclosures Packaging"
Electronic Devices	1	"Application of Resin and Metal Matrix Composites to Advanced Avionics Enclosures"
Electronic Devices	1	"Applications of Composite Material Systems to Avionics Systems Packaging"
Electronic Devices	1	"Applications of Advanced Composites in a 3/4 ATR Transportable Rack"
Electronic Devices	1	"The Growth of <100> Textured Diamond Films on Polycrystalline Ceramic Substrates"
Electronic Devices	1	"Nucleation of Diamond Films on Foreign Substrates"
Air Vehicle Fixed Avionics	1	"Common Avionics, Today and Tomorrow"
Air Vehicle Fixed Avionics	1	"Evolution and Assessment of Inertial Navigation Systems (INS) for Carrier Based Aircraft"
Air Vehicle Fixed Avionics	1	"Common Avionics Solution for US Navy Embedded GPS/INS Systems"
Air Vehicle Fixed Avionics	1	"Avionics System Architecture"
Electronic Devices	1	"MCC and EMPF Form Advanced Electronics Packaging Facility"
Air Vehicle Fixed Avionics	1	"Applications of Composite Solder Principles"
Air Vehicle Fixed Avionics	1	"Evaluations of Solder Alternatives for Surface Mount Technology"
Air Vehicle Fixed Avionics	1	"Fine Pitch Rework Process Modeling"
Air Vehicle Fixed Avionics	1	"Improved Solderability Testing Using Wetting Balance Standard"
Air Vehicle Fixed Avionics	1	"Microstructure Phenomenon in Fine Pitch"
Air Vehicle Fixed Avionics	1	"Non-Wetting Defect Detection Using Two Wetting Balance Techniques"

R

(THIS PAGE INTENTIONALLY LEFT BLANK DUE TO EXTRACTION OF DATA)

Air Vehicle Fixed Avionics	1	"A Reliability Assessment of No-Clean and Water Soluble Fluxes in Cable Assembly Applications"
Air Vehicle Fixed Avionics	1	"A Search for CFC Alternatives is Over?"
Air Vehicle Fixed Avionics	1	"Stencil Printing Fine Pitch Applications"
Air Vehicle Fixed Avionics	1	"Surface Coatings: A Comparative Study of Impact On Solderability"
Air Vehicle Fixed Avionics	1	"Ultrasonic Cleaning on Fine Pitch Components-Establishing a New Standard"
Air Vehicle Fixed Avionics	1	"Variables That Influence Today's Cleanliness Test Equipment"
Air Vehicle Fixed Avionics	1	"Advancements in Reflow Process Development"
Air Vehicle Fixed Avionics	1	"Solderability Concerns in Surface Mount Technology"
Air Vehicle Fixed Avionics	1	"Cleaning Process in Surface Mount Technology"
Air Vehicle Fixed Avionics	1	"Process Controls in SMT Rework"
Air Vehicle Fixed Avionics	1	"Alternative Applications of Automated Laser Inspection"
Air Vehicle Fixed Avionics	1	"Ultrasonic Cleaning of Military PWA's"
Air Vehicle Fixed Avionics	1	"Heat Transfer Effect on Solderability for Tinning Processes"
Air Vehicle Fixed Avionics	1	"Fine Pitch Placement-Lessons Learned"
Air Vehicle Fixed Avionics	1	"Infrared Reflow Processes with Fine Pitch Assemblies"
Air Vehicle Fixed Avionics	1	"Cleaning Fine Pitch Assemblies with CFC Alternatives"
Air Vehicle Fixed Avionics	1	"Semi-Aqueous Cleaning for Fine Pitch Surface Mount Technology"
Air Vehicle Fixed Avionics	1	"Ultrasonic Failures with Fine Pitch Components"
Air Vehicle Fixed Avionics	1	"Fine Pitch Solder Joint Microstructure Phenomena"
Air Vehicle Fixed Avionics	1	"Stencil Design & Volume Control for Fine Pitch Applications"
Air Vehicle Fixed Avionics	1	"Solder Bumping for Fine Pitch Applications"

R

(THIS PAGE INTENTIONALLY LEFT BLANK DUE TO EXTRACTION OF DATA)

Air Vehicle Fixed Avionics	1	"Manufacturing Electronics Using CFC Alternatives"
Air Vehicle Fixed Avionics	1	"Alternatives to Lead-Based Solders"
Air Vehicle Fixed Avionics	1	"Rework & Repair of Fine Pitch SMT"
Air Vehicle Fixed Avionics	1	"Microstructure Phenomena in Fine Pitch Solder Joints"
Air Vehicle Fixed Avionics	1	"Solder Paste SPC via RF Impedance Measurements"
Air Vehicle Fixed Avionics	1	"Conformal Coating Adhesion Over No-Clean Fluxes"
Air Vehicle Fixed Avionics	1	"Do We Need 'How To' Manufacturing"
Air Vehicle Fixed Avionics	1	"Stencil Printing Fine-Pitch Applications"
Air Vehicle Fixed Avionics	1	"Computer Thermal Modeling of a Convective IR Reflow Oven"
Air Vehicle Fixed Avionics	1	"The Convective Infrared Reflow Process with Fine-Pitch Assemblies"
Air Vehicle Fixed Avionics	1	"Solder Joint Volume Calculation Using a Spreadsheet"
Air Vehicle Fixed Avionics	1	"Effects of Tip Cleaning Devices and Heater Technology on Manual Solder Processes"
Air Vehicle Fixed Avionics	1	"Phase II Testing of Hughes Reactive Aqueous Defluxing System (RADS)"
Air Vehicle Fixed Avionics	1	"Phase II Testing of International Specialty Products Micropure CDF"
Air Vehicle Fixed Avionics	1	"Phase II Testing of Bioact EC7R"
Air Vehicle Fixed Avionics	1	"Semi-Aqueous Cleaning: Process Controls for 20-mil Pitch Technology"
Air Vehicle Fixed Avionics	1	"Phase II Testing of Alpha Metals 2110 Saponifier"
Air Vehicle Fixed Avionics	1	"Phase II Testing of Exxon Actrel ED 11 & Actrel ES"
Air Vehicle Fixed Avionics	1	"Phase II Testing of Envirosolv KNI-2000"
Air Vehicle Fixed Avionics	1	"Phase II Testing of Church & Dwight Armakleen E-2001"
Air Vehicle Fixed Avionics	1	"An In-Depth Look at Ionic Cleanliness Testing"

R

(THIS PAGE INTENTIONALLY LEFT BLANK DUE TO EXTRACTION OF DATA)

Air Vehicle Fixed Avionics	1	"Phase II Testing of Prozone"
Air Vehicle Fixed Avionics	1	"Phase II Testing of Petroferm Bioact EC-Ultra"
Air Vehicle Fixed Avionics	1	"No CFC's, Now What Do I Do"
Air Vehicle Fixed Avionics	1	"Ultrasonic Cleaning of Military PWAs"
Air Vehicle Fixed Avionics	1	"Cleaning Military Electronics in the Future"
Air Vehicle Fixed Avionics	1	"Testing of Bioact EC7 as an Alternative to CFCs"
Air Vehicle Fixed Avionics	1	"Logic of Visual Inspection"
Air Vehicle Fixed Avionics	1	"Alternative Applications of Automated Laser Inspection"
Air Vehicle Fixed Avionics	1	"Solder Joint Rework Simulation Analysis"
Air Vehicle Fixed Avionics	1	"Process Controls in SMT Rework"
Air Vehicle Fixed Avionics	1	"Component Solderability Workshop Proceedings"
Air Vehicle Fixed Avionics	1	"Solderability, Phase II, Part 1; Parametric Effect"
Air Vehicle Fixed Avionics	1	"Impact of Flux Type on Wetting Balance Testing in the Scanning Mode"
Air Vehicle Fixed Avionics	1	"Surface Coatings: A Comparative Study of Impacts on Solderability"
Air Vehicle Fixed Avionics	1	"Analysis of Oxidation Arrest Paper"
Air Vehicle Fixed Avionics	1	"Solderability Concerns in Surface Mount Technology"
Air Vehicle Fixed Avionics	1	"Material Solderability; 1960s-1990"
Air Vehicle Fixed Avionics	1	"Heat Transfer Effect on Solderability Tinning Process"
Air Vehicle Fixed Avionics	1	"Thermal Analysis of Printed Wiring Boards Using SINDA"
Air Vehicle Fixed Avionics	1	"Thermal Fatigue Analysis Software for Leadless Chip Carriers"
C^4I Fixed Ground Base	1	"Quicker Queries"

R

(THIS PAGE INTENTIONALLY LEFT BLANK DUE TO EXTRACTION OF DATA)

Air Vehicle Fixed Avionics	1	"The Programmer's New Clothes---A Skeptic's View of Object-Oriented Programming"
Air Vehicle Fixed Avionics	1	"Carrier Aircraft Inertial Navigation System/Global Positioning System Performance"
Air Vehicle Fixed Avionics	1	"Carrier Alignment of CAINS II Using GPS as Reference Data"
Weapons ICBM	1	"Loss Prevention Initiative Wins Award"
Electronic Devices	1	"Environmental Performance Evaluation of Advanced Composite Materials for use in Military Electronics"
Air Vehicle Fixed Avionics	1	"IPC Phase 3 Testing- Water Soluble Fluxes- Status Report"
Electronic Devices	1	"Immersion/Two Phase Cooling"
TOTAL	137	

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)

The R&D in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

"LAB"	Fiscal Year 1993 Actual			
	Civilian	Military	FFRDC	SETA
Science & Technology	**23.3**	**0**	**0**	**0**
Engineering Development	**238.7**	**0**	**0**	**0**
In-Service Engineering	**40.3**	**0**	**0**	**0**

	Fiscal Year 1993 Actual Workyears per CSF		
	S&T	**Engr Devel**	**ISE**
Air Vehicle Fixed Avionics	**0**	**145.2**	**17.3**
Air Vehicle Fixed Flight Subsystems	**0**	**8.7**	**0.5**
Air Vehicle Rotary Avionics	**0**	**64.4**	**0**
C^4I Fixed Ground Based C^4I	**0**	**0**	**0.6**
C^4I Ground Mobile C^4I	**0**	**0**	**5.6**
Weapons Bombs	**0**	**0**	**10.9**

Weapons Conventional. Missiles/Rockets	**0**	**12.9**	**2.4**
Weapons Cruise Missiles	**0**	**1.7**	**0**
Weapons Guided Projectiles	**0**	**0**	**0.9**
Weapons ICMBs/SLBMs	**0**	**1.3**	**2.1**
Electronic Devices	**23.3**	**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).

CSF 1. AIR VEHICLES
FIXED AVIONICS

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ACAT IC	0604777N	22.6	$3,253	Lead GPS Aircraft Integration activity. Performs GPS hardware and software integration for numerous platforms including CH-53E, P-3C, ES-3A, and C-130.
ACAT IC	0204229N	1.6	$199	In support of the Tactical Aircraft Mission Planning System, NAWCADI has developed and prototyped a "key manager" device for controlling crypto-key information.
ACAT ID FIXED	0204136N	0.5	$44	With the elimination of the F/A-18 tactical nuclear mission, NAWCADI, as the lead for AMAC systems, served a on select study group to generate a plan to reconstitute carrier nuclear mission capability.
ACAT II	0603100N	3.6	$478	Lead INEWS field activity (a multispectral approach warning system, Electronic Support Measures system, Radar Warning Receiver system, and defense Electronic Counter-Measures system).
ACAT II	0604221N	0.2	$39	Engineering and program management support of the P3 Update IV Avionics.
ACAT III	0604261N	1.0	$327	Sonobuoy - Mini Drifting
ACAT III	0604261N	1.1	$870	Sonobuoy (RDT) Development
~~ACAT IV~~	~~0604574~~	~~5.0~~	~~$813~~	~~AN/AYK-14 Advanced Development~~

CONTAINED ON REVISED PAGE 28R
DATED 9-14-94

R

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ACAT IV	0604574	5.0	$813	AN/AYK- 14 Advanced Development
OTHER	29	0.8	$153	Radiant Snow
		7.5	$1,270	Project 7.5.9
		0.5	$78	TAMPS
		0.9	$129	ALS-ADA Support
		9.1	$1,372	Beartrap (ASW)
				R
		1.5	$482	Std Compass AHR
		7.0	$1,104	Computer - Next Generation
				R
		0.7	$64	Expendables - AC
		2.7	$349	EA-6B ADVCAP
		2.4	$150	EMPF
		4.9	$808	ES-3A GPS Integration
		0.7	$98	Chaff/Expendable
		1.4	$611	Avionics Standard
		1.7	$74	AC-8B Muxbus Data
		0.2	$30	AV-8B AMDS Logistics
		20.4	$3,472	EP-3E (ARIES II)
		0.9	$57	AN/ARN-138 MMR-M
		0.2	$28	AN/ALQ-149
		2.2	$431	ALFS FSED Tech Support
		10.6	$2,742	AIS
		0.5	$78	Advanced Avionics
		5.6	$774	A-X
		0.4	$29	CASS - Consolidated
		0.1	$17	NASA Power Supply
		7.0	$963	JIAWG Technical Support
		1.5	$321	Integrated Defense Electronics
		1.2	$167	Sonobuoy - Hass
		0.2	$72	Integrated Defense Electronics
		0.9	$164	FTRG RDT
				R

NAWCHQ Change
VBC NAWC-21B
9/19/94

OTHER		0.8	$153	Radiant Snow
		7.5	$1,270	Project 7.5.9
		0.5	$78	TAMPS
		0.9	$129	ALS-ADA Support
		9.1	$1,372	Beartrap (ASW)
		2.9	$381	Composite Material
		1.5	$482	Std Compass AHR
		7.0	$1,104	Computer - Next Generation
		2.6	$233	Equipment - Cost Analysis
		0.7	$64	Expendables - AC
		2.7	$349	EA-6B ADVCAP
		2.4	$150	EMPF
		4.9	$808	ES-3A GPS Integration
		0.7	$98	Chaff/Expendable
		1.4	$611	Avionics Standard
		1.7	$74	AC-8B Muxbus Data
		0.2	$30	AV-8B AMDS Logistics
		20.4	$3,472	EP-3E (ARIES II)
		0.9	$57	AN/ARN-138 MMR-M
		0.2	$28	AN/ALQ-149
		2.2	$431	ALFS FSED Tech Support
		10.6	$2,742	AIS
		0.5	$78	Advanced Avionics
		5.6	$774	A-X
		0.4	$29	CASS - Consolidated
		0.1	$17	NASA Power Supply
		7.0	$963	JIAWG Technical Support
		1.5	$321	Integrated Defense Electronics
		1.2	$167	Sonobuoy - Hass
		0.2	$72	Integrated Defense Electronics
		0.9	$164	FTRG RDT
		0.2	$30	Non-Standard Parts
		8.2	$1,239	AN/ALQ-170(V)4/5
		0.3	$41	Software Ntest
		0.7	$257	P-3 Mod ASP System
		0.3	$65	AN/ALT-40 FAEWS
		0.7	$67	P-3 Update IV/Mini-DAMA

CSF 1. AIR VEHICLES
ROTARY AVIONICS

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ACAT ID ROTARY	0604262N	30.0	$5,839	Lead V22 system/software activity; provides avionics systems engineering/integration, avionics engineering system design, and acquisition support.
ACAT II ROTARY	0604212N	0.2	$47	Lead field activity that provides acquisition, and engineering support for the development, test and evaluation, and transition to production of avionics systems for the CV-Helo program.
OTHER		8.5	$1,087	V-22 Configuration
		5.9	$1,291	V-22 Aircraft Wiring
		3.3	$453	V-22 Mission Plan
		8.6	$71	GPWS CAT 3 (HELO)
		6.8	$981	MH-53 GPS Integration
		1.1	$151	Magic Lantern

CSF 1. AIR VEHICLES
FIXED FLIGHT SUBSYSTEMS

Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
OTHER		8.7	$1352	V/STOL Optical Landing

CSF 2. WEAPONS

CSF	Engineering Development	Name or Number	Workyears (FY93 Actual)	FY93 Funds Received (Obligation Authority) ($K)	Narrative
ICBM/SLBM	ACATIC	0101221N	1.3	$171	Provide producibility support and design/prototyping support equipment/handing devices for the next generation Trident II(d5) missile.
Conventional Missile	ACAT ID	0604727N	5.2	$911	Provide producibility inputs into design criteria to ensure design to cost goals are achieved in Joint Stand Off Weapon (JSOW) production phase.
	ACAT II	None			
	ACAT III/IV	None			
Cruise Missile	Other		1.7	$312	Weapon - GWSATP
Conventional Missile			0.1	$15	Target Subsonic
Conventional Missile			7.6	$579	UAV Common Electronics

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 engineer -ing 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) ($K)	Workyears	
Air Vehicle Fixed Avionics	Cognizant Field Activity	$201	1.6	F-14 TARPS
	Product Support	$189	2.2	A-6 AN/APQ-156 Radar
	Production Support (Test Sets)	$161	0.8	Various Aircraft
	Test/Evaluation Supp (ASO)	$149	0.1	Various Aircraft
	Production Support (ASW Receivers)	$18	0.3	Various Aircraft
	Cognizant Field Activity (FTRG)	$1595	10.7	Various Aircraft
	Product Support (MSAS)	$239	1.6	Secure Communications
Air Vehicle Fixed Flight Subsystems	Aircraft Wiring - Engr Supp Services	$136	0.5	Various Aircraft
Weapons-ICBM/SLBM	Support Equipment	$77	0.6	FBM
Weapons-ICBM/SLBM	Logistics Support	$183	1.5	FBM - POSEIDON
Weapons-Conventional Missiles	Product Support (Missile BIT Test Set)	$466	2.4	HARM
Weapons-Guided Projectile	Integrated Logistics Support - Support Equipment	$85	0.7	WALLEYE
Weapons-Guided Projectile	Production Engineering	$62	0.2	AWW-13
Weapons Bombs	Cognizant Field Activity	$1496	10.9	Aircraft Armament Equipment (Racks and Launchers)

C^4I - Fixed Ground	Product Support	$69	0.6	AN/FPS-106 Met Radar
C^4I - Fixed Ground	Product Support	$785	5.6	SMQ-11 - Satellite Receiving System

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)

NAWC AD Indianapolis is an industrially funded activity operating under Defense Business Operation Fund (DBOF) regulations. All funding is received as reimbursable or direct cite from multiple sources, including all services, DoD, and other government agencies. No direct mission funding (MRTFB of BOS) is received in support of lab activities.

CSF	FY94	FY95	FY96	FY97
	N/A	N/A	N/A	N/A

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)

The R&D, Engineering Development, and in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

CSF	FY94 ($K)	FY95 ($K)	FY96 ($K)	FY97 ($K)
Air Vehicles Fixed Avionics	20,153	27,214	27,497	27,672
Air Vehicle Rotary Avionics	8,637	11,663	11,784	11,860
C^4I Systems - Fixed-Ground Based C^4I	14,068	1,316	1,105	1,073
Weapons Bombs	779	1,021	999	972
Weapons Conventional. Missiles/Rockets	1,094	1,435	1,403	1,365
Weapons Cruise Missiles	120	159	156	151
Weapons Guided Projectiles	64	84	82	80
Weapons ICBMs/SLBMs	243	318	311	303
Electronic Devices	3,447	3,036	2,969	2,889

No projected workload for C^4I Ground Mobile C^4I for FY94 - FY97.

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)

The major facilities at NAWC Indianapolis that support the "lab" activities of this data call are listed below. These facilities are also a part of an overall integrated capability that supports a broader naval aviation mission at NAWC Indianapolis.

Therefore, even if there were no "lab" peculiar support functions at NAWC Indianapolis, these totally integrated capabilities and facilities are still needed to support NAWC Indianapolis mission in the areas of engineering, acquisition, manufacturing and logistics for avionics and electronic systems.

The replacement cost for each facility reflects the total cost to replicate the facility elsewhere even though less than 15% of the utilization of the facilities is for R&D, Engineering Development, and in-service engineering.

Common Support Function	% CSF Utilization of Facility	Major Facility or Equipment Description	Unique To			Replacement Cost ($K)
			DOD	Federal Gov't	U. S.	
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	37 2 14 1 1 6 3 3 1 1 1	The **Advanced Electronics Facility** is a microelectronics facility that provides a broad spectrum of microelectronics design, development and evaluation of thick film hybrid and thin film microcircuits as well as surface acoustic wave and microwave integrated circuit stripline devices. These capabilities support avionics and electronic system projects from concept to final production implementation.	X			8,740
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	37 2 14 1 1 6 3 3 1 1 1	The **Avionics/Electronics Development Lab** is used during the design, development, and prototyping phases of electronic equipment. The development is facilitated by an unobstructed view for RF, microwave and infrared testing. The lab includes an electronic model shop that provides prototyping support.				20,740

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	11 1 4 1 1 1 1 1 1 1 1	The **Computer Aided Design/ Computer Aided Manufacturing CAD/CAM Facilities** support various ship-board and avionics systems by utilizing the CAD equipment to produce CAM data, tooling, schematics, and Printed Wiring Board (PWB) documentation for fabrication, assembly and testing of PWBs. This facility includes equipment for five stand alone systems, four Bravo Micro VAX's with seven stations.				36,440
Air Vehicle Fixed Avionics Air Vehicle Fixed Flt Systems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	8 1 3 1 1 1 1 1 1 1 1	The **Central Computing Facility (CCF)** is a secure site for the location of the central computers that serve as the main computer for all business computer functions and processing. The DEC VAX computer cluster is housed here. This facility holds all current business data on storage devices for immediate user access.				9,230

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	16 1 6 1 1 2 1 1 1 1 1	The **Centrifuge - Acceleration Test Facility** has the capability to conduct design, development, and manufacturing acceleration tests on electronic equipment and systems. This includes a fifteen foot centrifuge with 148 slip rings, 3 rotary coaxial joints, and rotary glands as well as a four foot centrifuge with 16 slip rings and a rotary joint. Video capability is used for monitoring special testing.	X			1,230
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	16 1 6 1 1 2 1 1 1 1 1	The **Electro-Magnetic Interference (EMI) Facility** conducts design, development and first article qualification tests used to assess the conducted and radiated electromagnetic profiles of airborne and shipboard electronic systems. This facility consists of three shielded enclosures: one anechoic, one partially anechoic, and one Mode Stirred Chamber.				3,070

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	16 1 6 1 1 2 1 1 1 1 1	The **Environmental Test Facility** includes a Climatic Test Lab and a Dynamic Test & Data Acquisition/ Analysis Lab including three temperature chambers, one thermal shock chamber, six temperature/humidity chambers, five altitude chambers, one accelerated weathering chamber, two salt spray chambers and one explosive chamber as well as ten vibration and four shock machines. This facility provides extensive climatic environmental test capability for first article and qualification testing of electronic equipment and systems.				9,630
Air Vehicle Fixed Avionics	60	The **EP-3/ES-3 CILOP and Integrated Test Facility** supports the EP-3E and ES-3A Software Support Activities (SSAs) and other related VQ Projects and contains full-scale mockups of EP-3E and ES-3A aircraft for software development, integration, test, training, and engineering support	X	X	X	18,610
Air Vehicle Fixed Avionics	84	The **Electronic Warfare Facility** provides the capabilities of Bayesian radar identification algorithm development for Radar Warning Receivers (RWRs), jammers and Electronic Surveillance Measure (ESM) sets.				2,160

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	16 1 6 1 1 2 1 1 1 1 1	The **Failure Analysis Facility** is used to determine the failure mechanisms and causes of failed electrical and electronics component parts and subassemblies. The only government owned Scanning Auger Multiprobe has the combined functions of Auger Electron Spectroscopy and Secondary Ion Mass Spectroscopy with two Scanning Electron Microscopes and Energy Dispersive x-ray Analysis System.				2,440
Air Vehicle Fixed Avionics Air Vehicle Rotary Avionics	57 25	The **Integrated Avionics Lab** provides hardware and software tools for avionics integration during design, development, and support phases of acquisition for avionics systems and sub-systems.				18,420
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	16 1 6 1 1 2 1 1 1 1 1	The **Material Lab** consists of an Metals/Composite Lab, an Organic Materials Lab and an Inorganic Material Lab which provide analysis, test, evaluation, and consultation on metals, composites, organic and inorganic chemistry.				13,890

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	8 1 3 1 1 1 1 1 1 1 1	The **Microwave Integrated Circuit Lab** is used for design, simulations, prototyping, testing, and evaluating of radio frequency circuits and systems.				2,740
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	54 3 21 1 1 8 4 5 1 1 1	The **Secure Compartmented Integrated Facilities (SCIF)** are used for all projects that require access to sensitive information and special security and intelligence support. These TEMPEST approved facilities include ductwork silencing, acoustic isolation, RF shielding, access control systems, motion detectors and alarm systems.				3,140

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 Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	Advanced Electronics Facility	Technical	10.4	10.4	0
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	Avionics & Electronics Dev Lab	Technical	25.5	25.5	0
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	CAD/CAM Facilities	Technical	9.6	9.6	0

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	CCF	Administrative	7.9	7.9	0
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	Centrifuge	Technical	2.5	2.5	0
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	EMI Facilities	Technical	1.1	1.1	0

R

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)

The R&D in-service engineering covered in this table represents approximately 15% of the total NAWC Indianapolis workload.

R

"LAB"	Fiscal Year 1993 Actual			
	Civilian	Military	FFRDC	SETA
Science & Technology	**23.3**	**0**	**0**	**0**
Engineering Development	**228.5**	**0**	**0**	**0**
In-Service Engineering	**40.3**	**0**	**0**	**0**

R

	Fiscal Year 1993 Actual Workyears per CSF		
	S&T	**Engr Devel**	**ISE**
Air Vehicle Fixed Avionics	**0**	**139.5**	**17.3**
Air Vehicle Fixed Flight Subsystems	**0**	**8.7**	**0.5**
Air Vehicle Rotary Avionics	**0**	**64.4**	**0**
C^4I Fixed Ground Based C^4I	**0**	**0**	**0.6**
C^4I Ground Mobile C^4I	**0**	**0**	**5.6**
Weapons Bombs	**0**	**0**	**10.9**

NAWC HQ Change
VBC, NAWC-21D
9/19/94

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	Environmental Test	Technical	19.4	19.4	0
Air Vehicle Fixed Avionics	EP-3/ES-3 CILOP/ITF	Technical	8.2	8.2	0
Air Vehicle Fixed Avionics	EW Lab	Technical	7.1	7.1	0
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	Failure Analysis Lab	Technical	0.9	0.9	0
Air Vehicle Fixed Avionics Air Vehicle Rotary Avionics	Integrated Avionics Lab	Technical	7.2	7.2	0
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	Materials Lab	Technical	22.5	22.5	0

Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	Microwave Int Circuit Lab	Technical	1.8	1.8	0
Air Vehicle Fixed Avionics Air Vehicle Fixed Flight Subsystems Air Vehicle Rotary Avionics C^4I Fixed Ground Based C^4I Ground Mobile Electronic Devices Weapons Bombs Weapons Conventional Missiles/Rockets Weapons Cruise Missiles Weapons Guided Projectiles Weapons ICBM/SLBM	CPC/SCIF	Technical	3.9	3.9	0

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

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)

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

This area can be configured as required. Using the utilization of existing space, the following assignment of this additional floor area is provided. However, any combination of the total is possible.

CSF	Sq. Ft

Air Vehicle Fixed Avionics	7,440
Air Vehicle Fixed Flight Subsystems	930
Air Vehicle Rotary Avionics	2,790
C^4I Fixed Ground Based	930
C^4I Ground Mobile	930
Electronic Devices	930
Weapons Bombs	930
Weapons Conventional Missiles/Rockets	930
Weapons Cruise Missiles	930
Weapons Guided Projectiles	930
Weapons ICBM/SLBM	930
Other *	18,600
Total	93,000

*** NAWC AD Indianapolis workload not covered by R&D and In-Service Engineering funds.**

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

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

This additional workload can be distributed as required. Using the present execution of existing workload as a baseline; the following assignment of this additional workload is provided. However, any combination of the total is possible.

CSF	Wk/Yrs
Air Vehicle Fixed Avionics	40
Air Vehicle Fixed Flight Subsystems	5
Air Vehicle Rotary Avionics	15
C^4I Fixed Ground Based	5
C^4I Ground Mobile	5
Electronic Devices	5
Weapons Bombs	5
Weapons Conventional Missiles/Rockets	5
Weapons Cruise Missiles	5
Weapons Guided Projectiles	5
Weapons ICBM/SLBM	5
Other *	400
Total	500

*** NAWC AD Indianapolis workload not covered by R&D and In-Service Engineering funds.**

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)

There are 68 buildable acres. Using the utilization of existing area as a baseline; the following assignment of this additional space is provided. However, any combination of the total is possible.

CSF	Acres
Air Vehicle Fixed Avionics	5.0
Air Vehicle Fixed Flight Subsystems	0.5
Air Vehicle Rotary Avionics	2.0
C^4I Fixed Ground Based	0.5
C^4I Ground Mobile	0.5
Electronic Devices	0.5
Weapons Bombs	0.5
Weapons Conventional Missiles/Rockets	0.5
Weapons Cruise Missiles	0.5
Weapons Guided Projectiles	0.5
Weapons ICBM/SLBM	0.5
Other *	56.5
Total	68

*** NAWC AD Indianapolis workload not covered by R&D and In-Service Engineering funds.**

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)

Our facility is in a major metropolitan area. There are no restrictions to increasing any of our utility services near or long-term for any of the following.

Air Vehicle Fixed Avionics
Air Vehicle Fixed Flight Subsystems
Air Vehicle Rotary Avionics
C^4I Fixed Ground Based
C^4I Ground Mobile
Electronic Devices
Weapons Bombs
Weapons Conventional Missiles/Rockets
Weapons Cruise Missiles
Weapons Guided Projectiles
Weapons ICBM/SLBM

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 Mammoth, 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

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.

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.

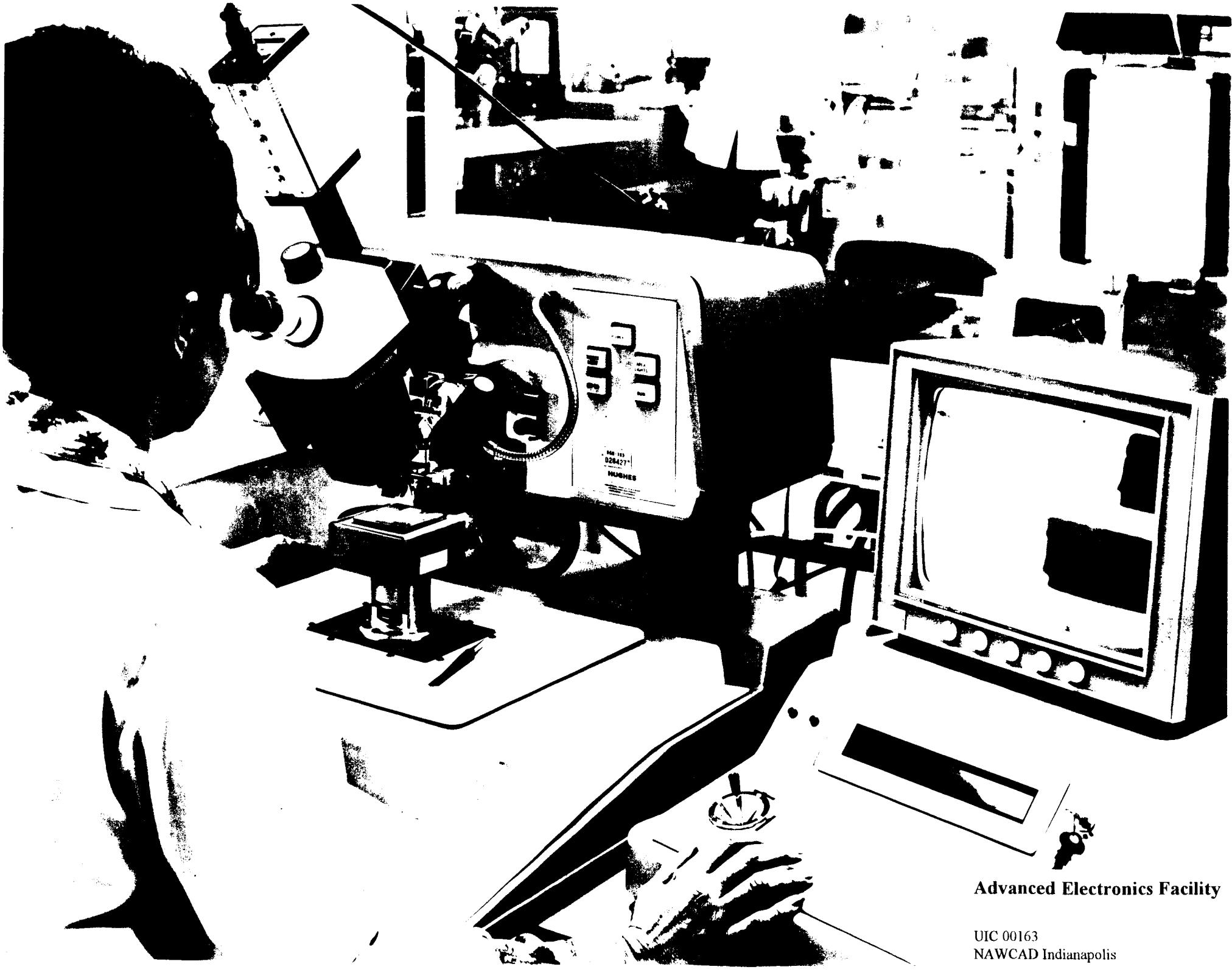
5. Manpower and Personnel. Includes but not limited to all science and technology activities which support four broad areas: (1) selection and classification of DOD personnel (including pilots);

(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.



Advanced Electronics Facility

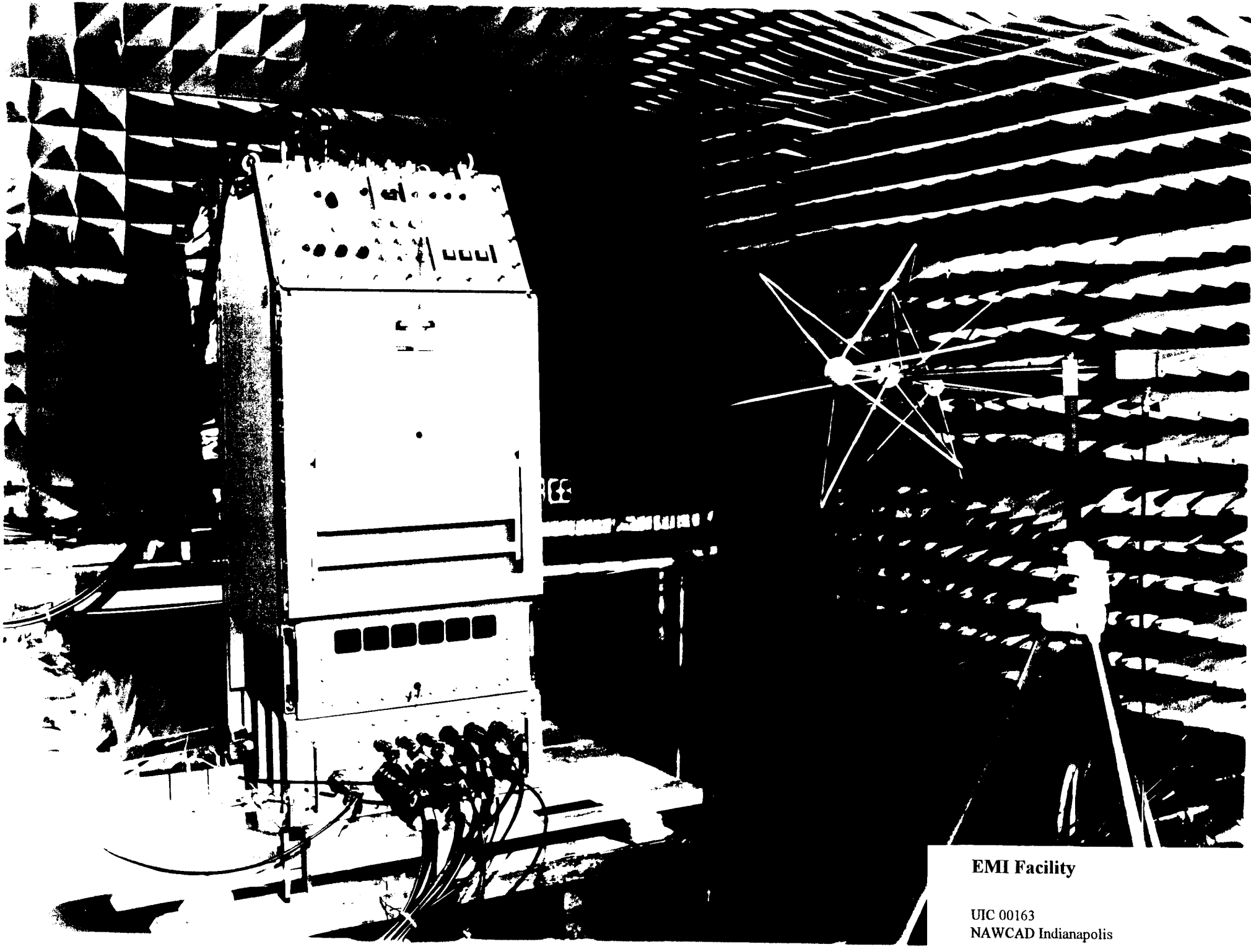
UIC 00163
NAWCAD Indianapolis

Avionics/Electronics Development Lab

UIC 00163
NAWCAD Indianapolis

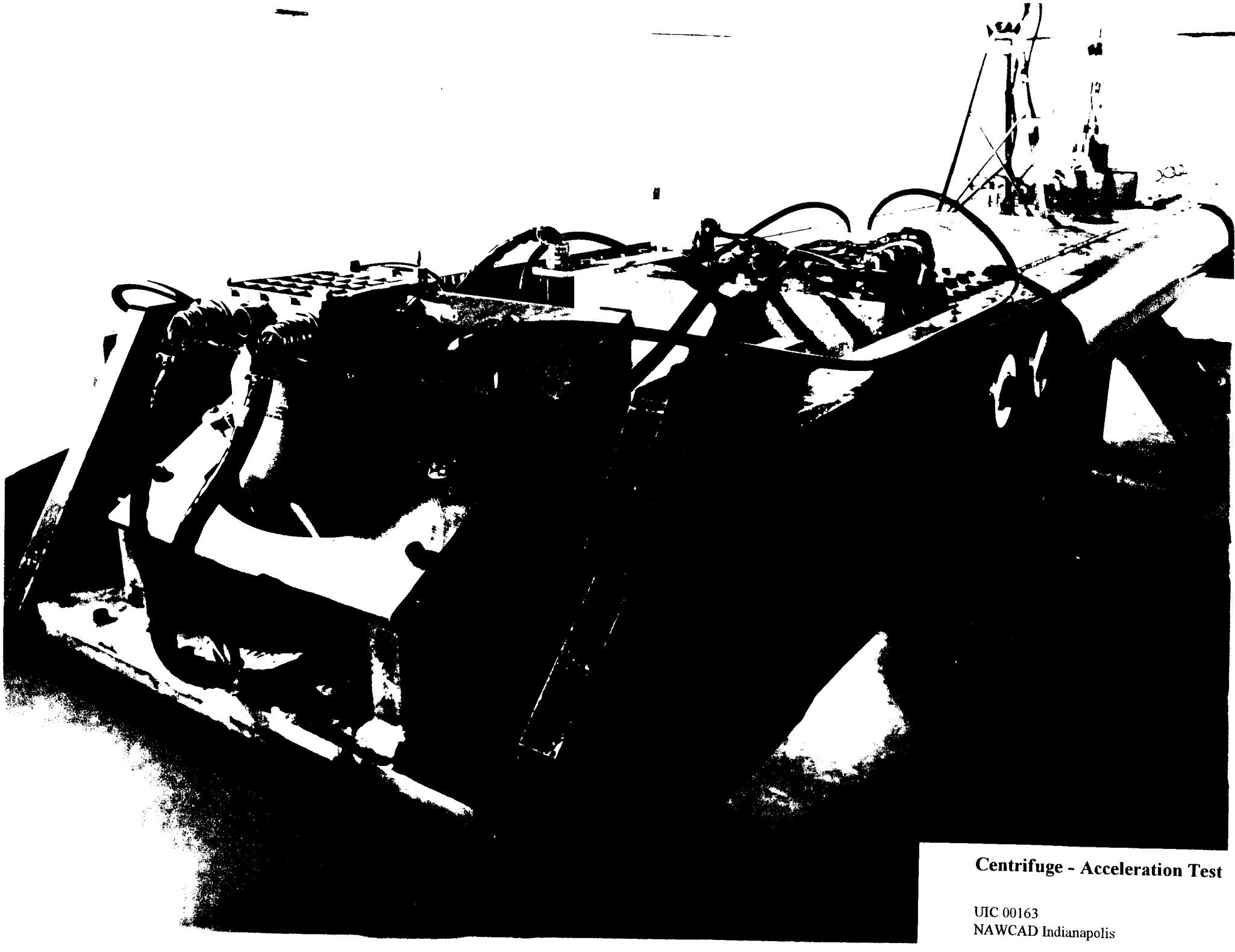
CAD/CAM Facilities

UIC 00163
NAWCAD Indianapolis



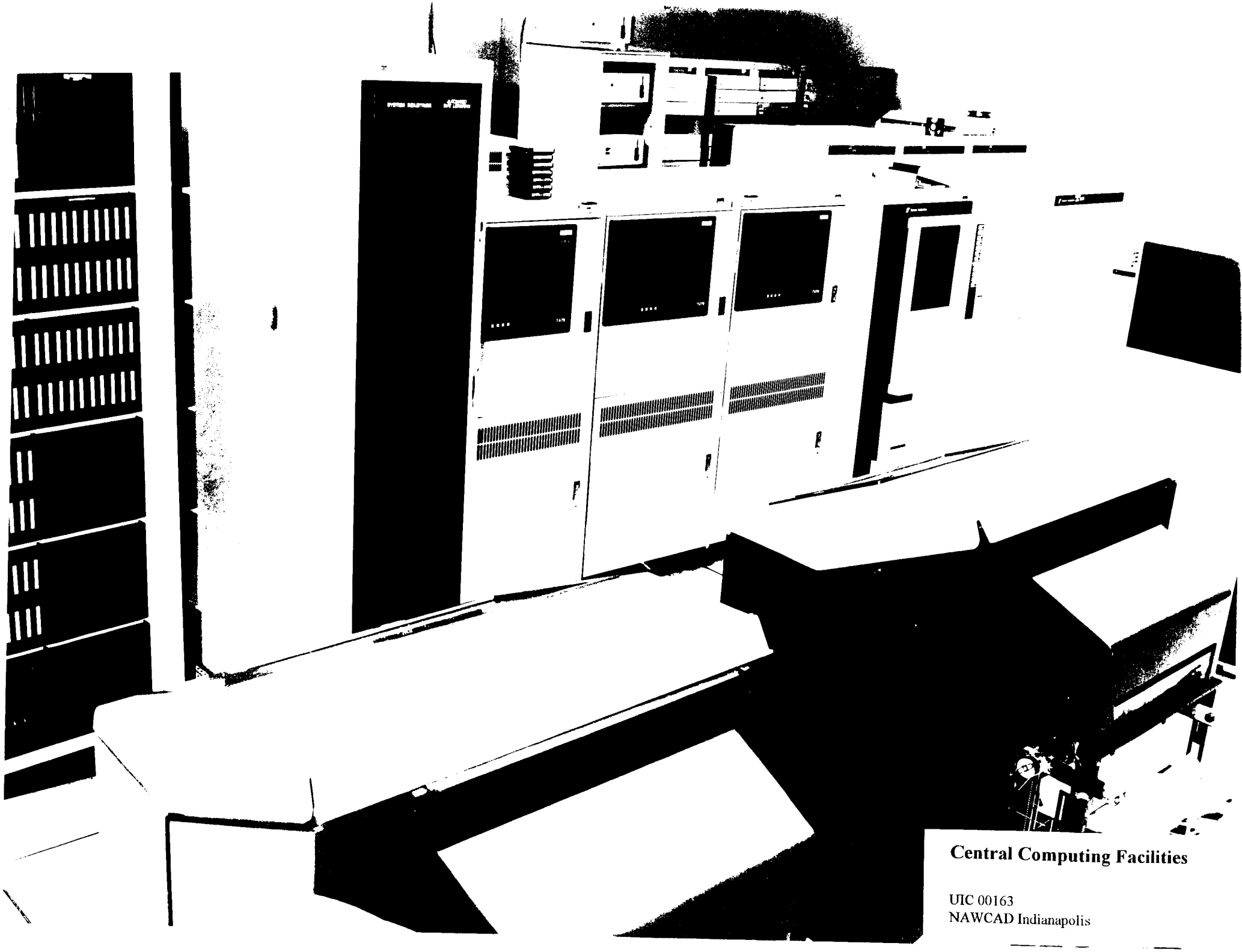
EMI Facility

UIC 00163
NAWCAD Indianapolis



Centrifuge - Acceleration Test

UIC 00163
NAWCAD Indianapolis

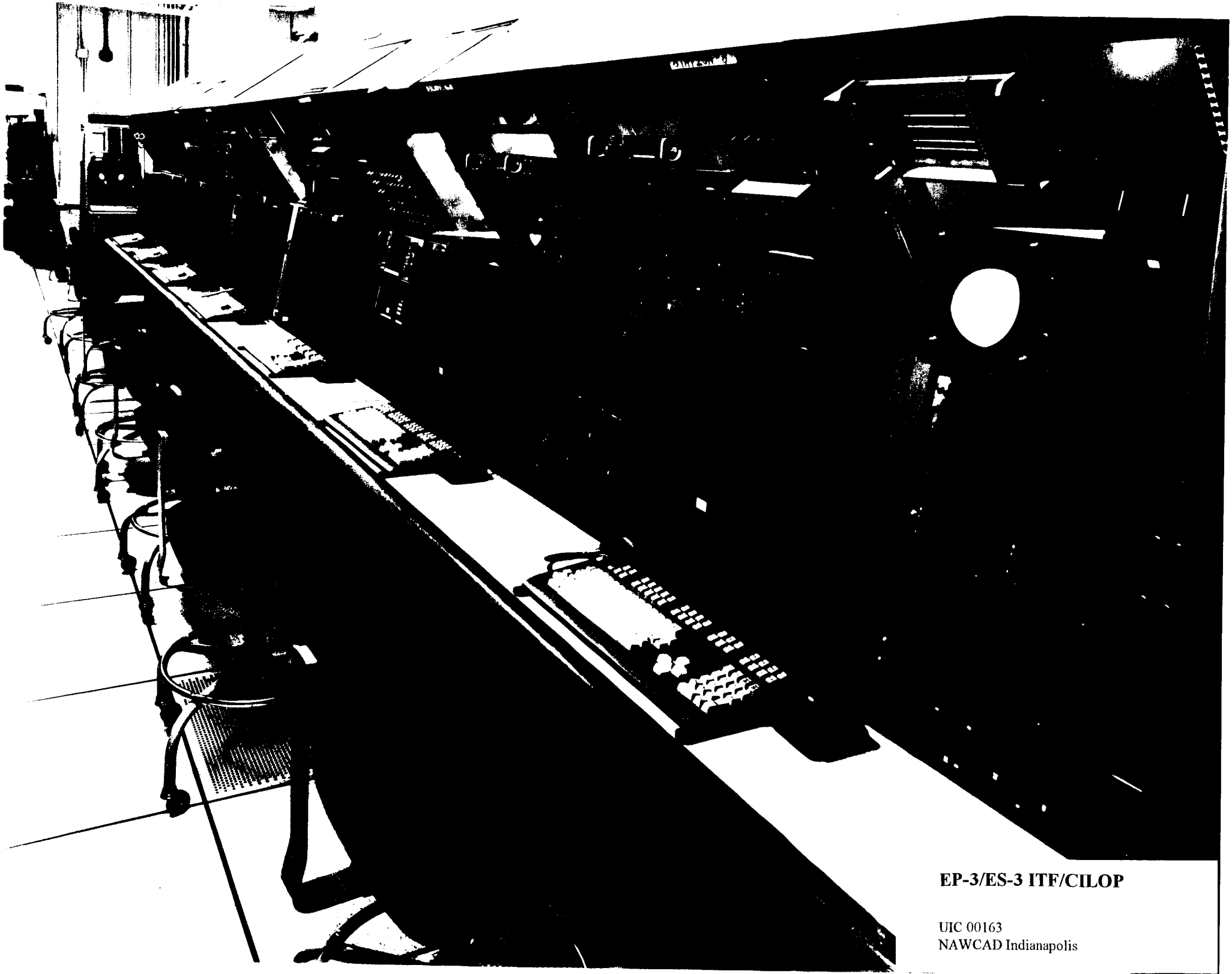


Central Computing Facilities

UIC 00163
NAWCAD Indianapolis

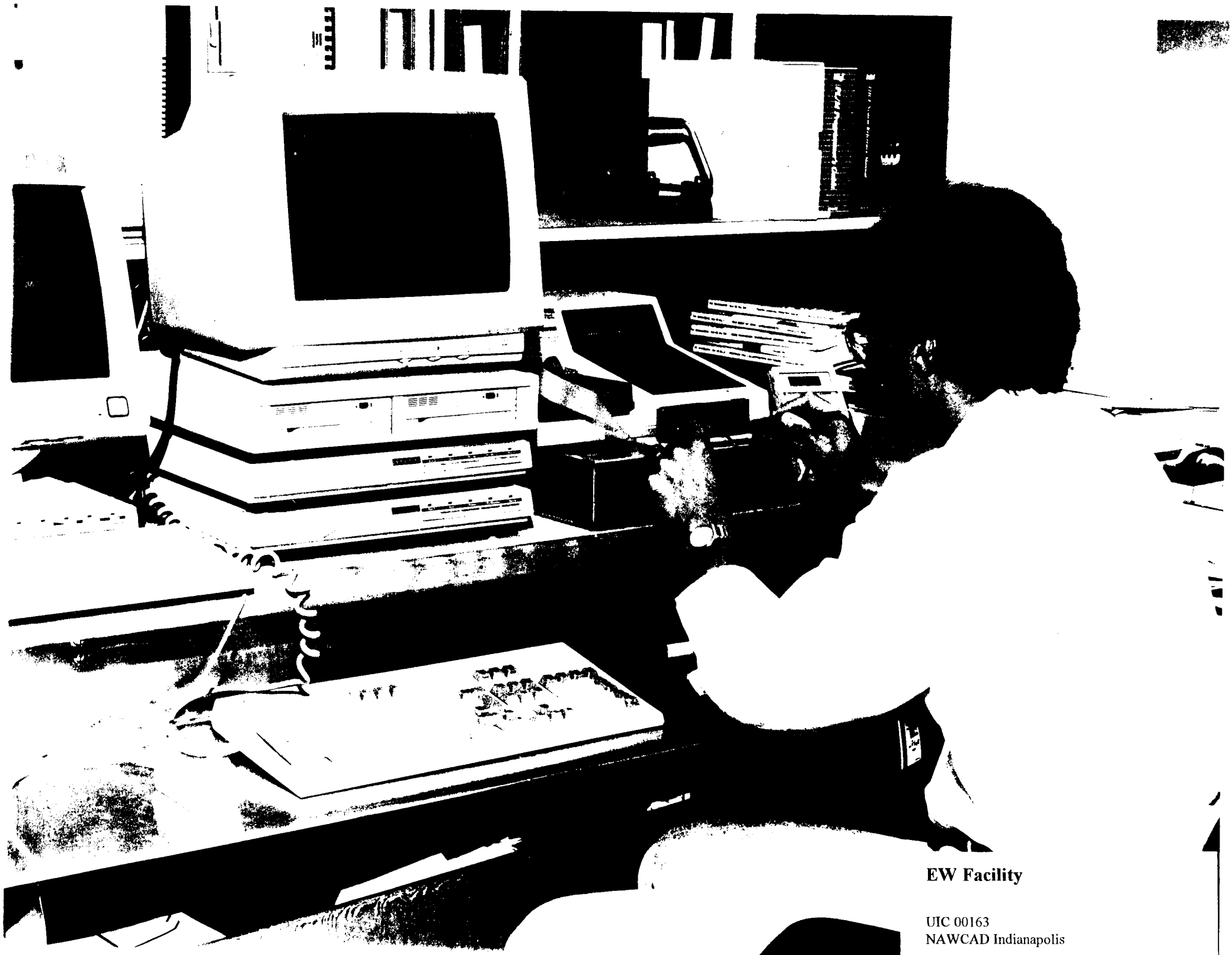
Environmental Test Facility

UIC 00163
NAWCAD Indianapolis



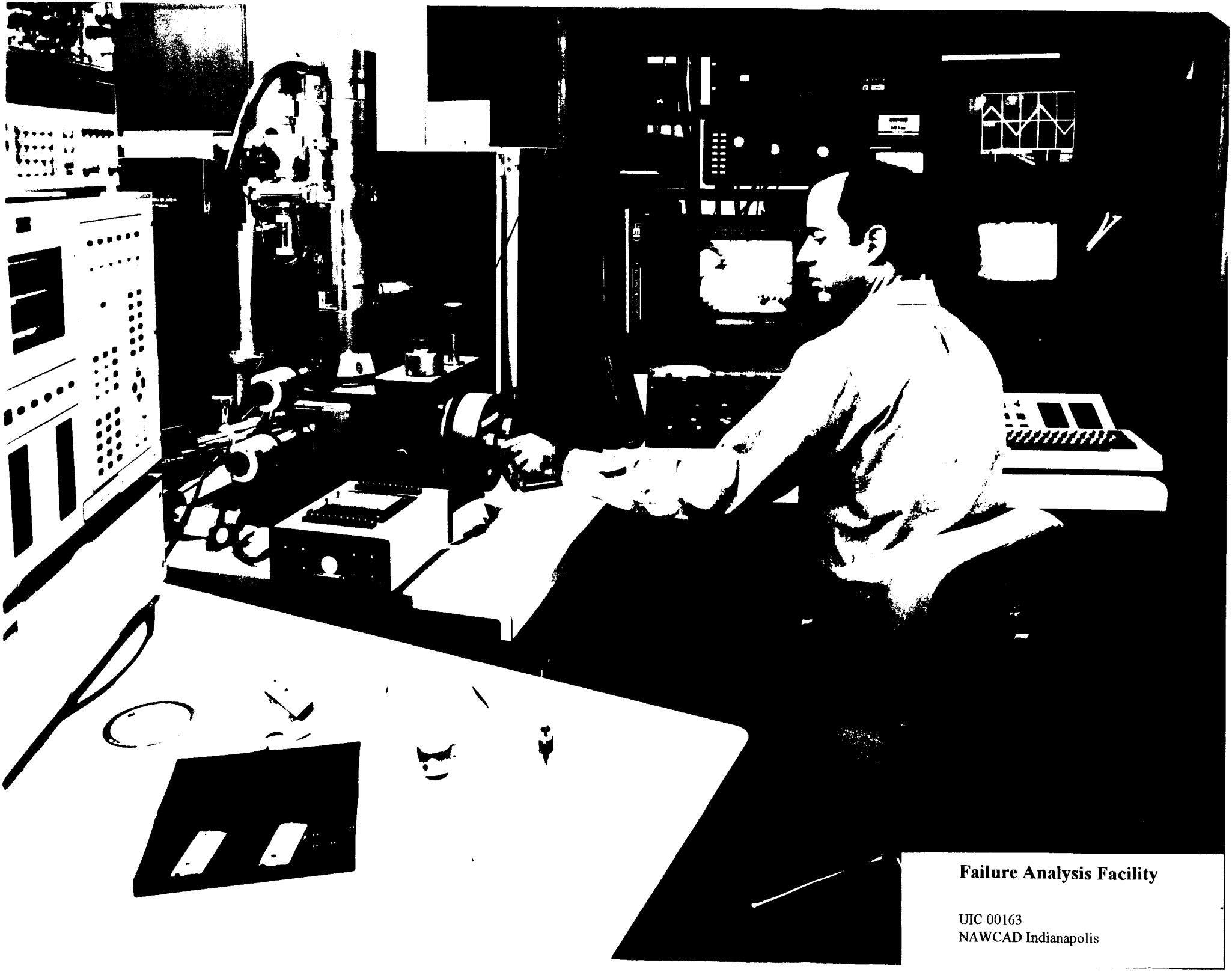
EP-3/ES-3 ITF/CILOP

UIC 00163
NAWCAD Indianapolis



EW Facility

UIC 00163
NAWCAD Indianapolis

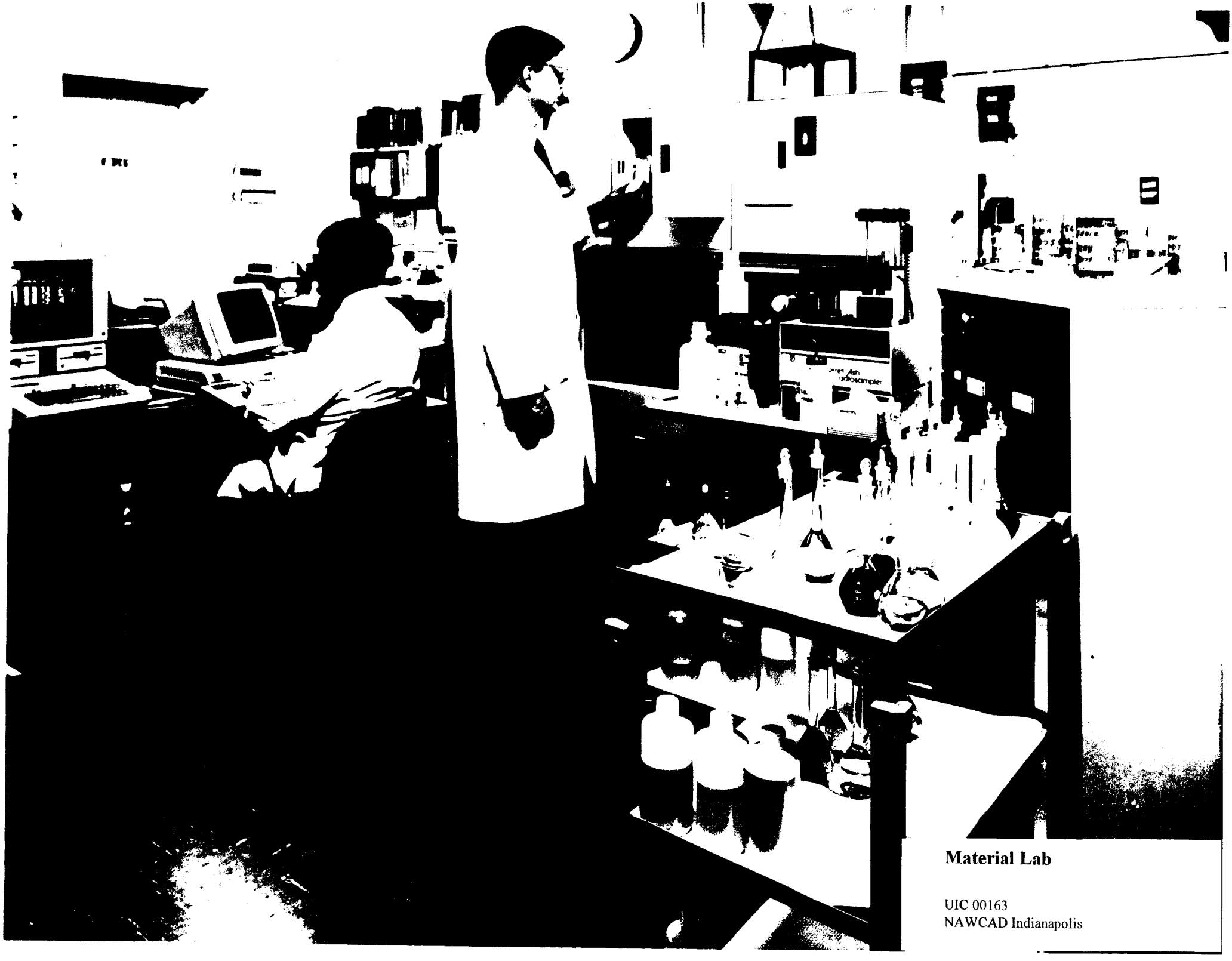


Failure Analysis Facility

UIC 00163
NAWCAD Indianapolis

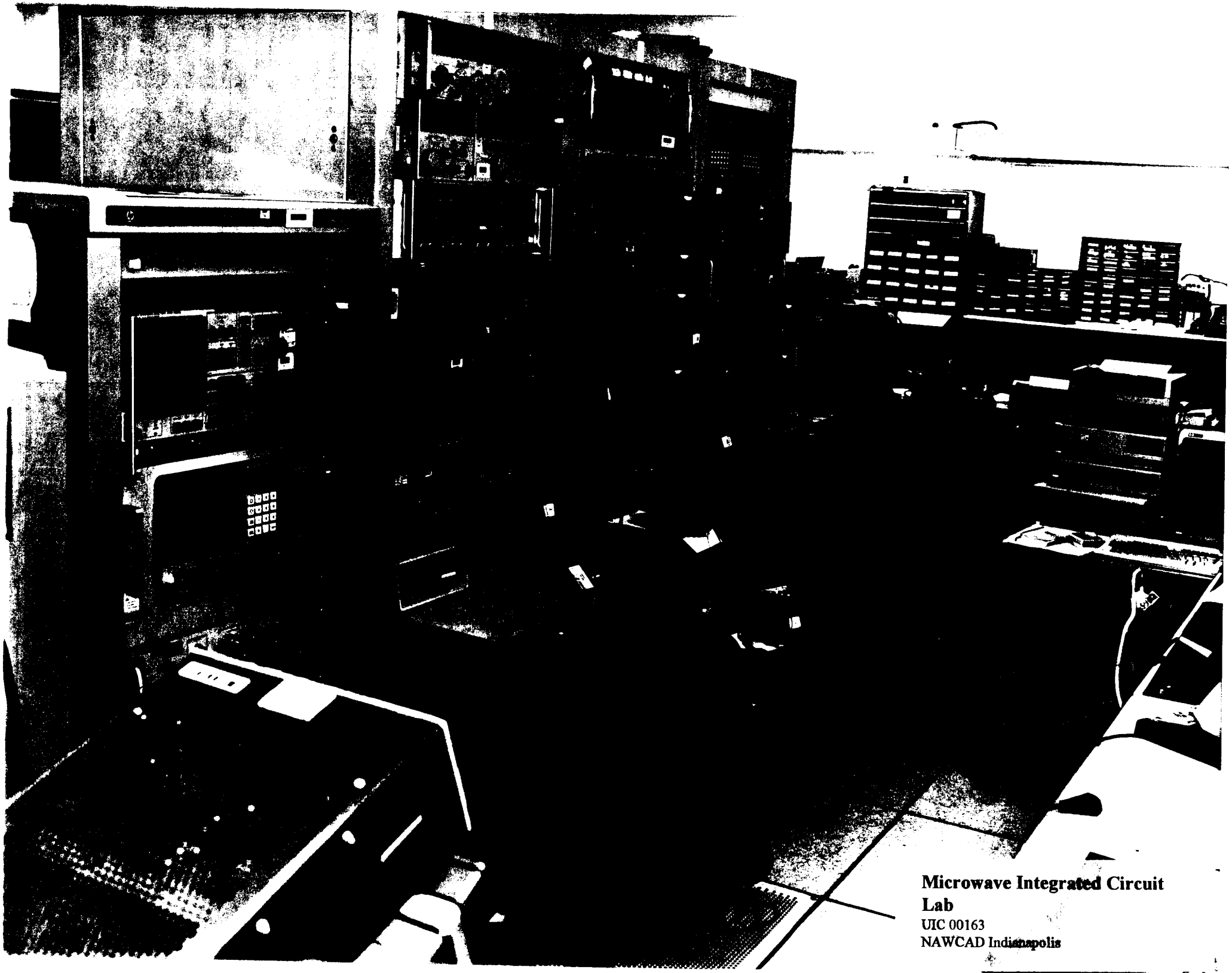
Integrated Avionics Lab

UIC 00163
NAWCAD Indianapolis

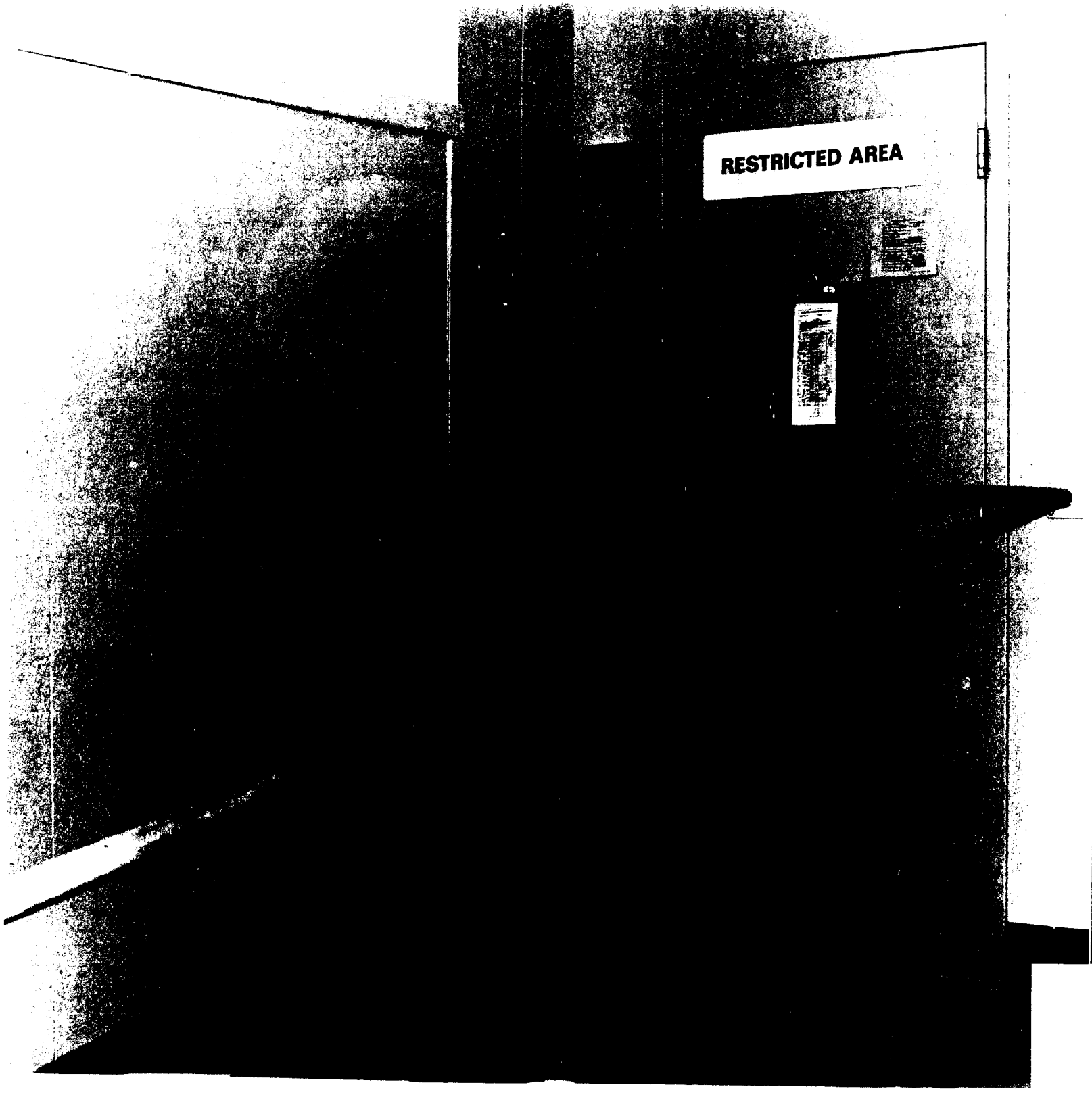


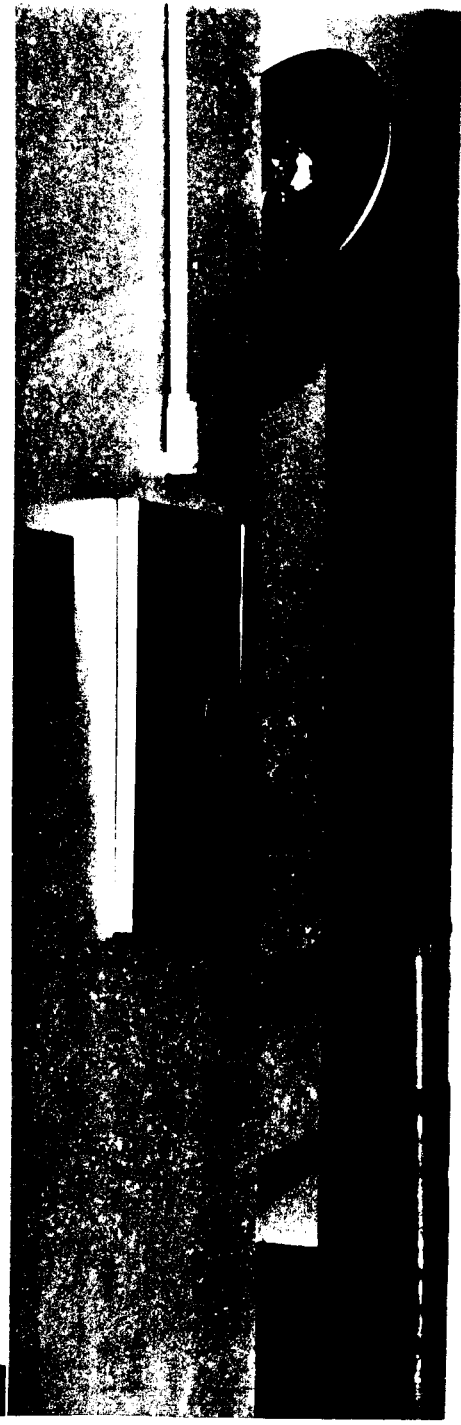
Material Lab

UIC 00163
NAWCAD Indianapolis



Microwave Integrated Circuit Lab
UIC 00163
NAWCAD Indianapolis





Secure Compartmented Integrated Facility (SCIF)
UIC 00163
NAWCAD Indianapolis

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)

BARTON D. STRONG
NAME (Please type or print)

Barton D. Strong
Signature

COMMANDER
Title

5 August 1994
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER, MD
Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.
NEXT ECHELON LEVEL (if applicable)

WILLIAM E. NEWMAN
NAME (Please type or print)

WE 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.
MAJOR CLAIMANT LEVEL

WILLIAM C. BOWES
NAME (Please type or print)

Signature

COMMANDER
Title

19 AUG 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)

WA Earner
Signature

Title

8/26/94
Date

DATA CALL #12

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

DATA CALL NUMBER 12 - REVISION 2, 4 AUGUST 1994

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

4 August 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity

Enclosure (2)

NAWCAD
INDY

UIC 00163

DATA CALL #12 - REVISION 3, 14 SEPTEMBER 1994
BRAC-95 CERTIFICATION

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.
NEXT ECHELON LEVEL (if applicable)

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

Signature

ACTING COMMANDER
Title

SEP 16 1994
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER, MD
Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.
NEXT ECHELON LEVEL (if applicable)

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

Signature

ACTING COMMANDER
Title

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.
MAJOR CLAIMANT LEVEL

WILLIAM C. BOWES
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

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

UIC 00163

DATA CALL NUMBER 12 - REVISION 3, 14 SEPTEMBER 1994

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

14 SEPTEMBER 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity

Enclosure (2)

161

DATA CALL 66 UIC: 43050
INSTALLATION RESOURCES

Activity Information:

Activity Name:	PERSUPPDET Indianapolis
UIC:	43050
Host Activity Name (if response is for a tenant activity):	NAWCAD Indianapolis
Host Activity UIC:	00163

General Instructions/Background. A separate response to this data call must be completed for each Department of the Navy (DON) host, independent and tenant activity which separately budgets BOS costs (regardless of appropriation), and, is located in the United States, its territories or possessions.

1. Base Operating Support (BOS) Cost Data. Data is required which captures the total annual cost of operating and maintaining Department of the Navy (DON) shore installations. Information must reflect FY 1996 budget data supporting the FY 1996 NAVCOMPT Budget Submit. Two tables are provided. Table 1A identifies "Other than DBOF Overhead" BOS costs and Table 1B identifies "DBOF Overhead" BOS costs. These tables must be completed, as appropriate, for all DON host, independent or tenant activities which separately budget BOS costs (regardless of appropriation), and, are located in the United States, its territories or possessions. Responses for DBOF activities may need to include both Table 1A and 1B to ensure that all BOS costs, including those incurred by the activity in support of tenants, are identified. If both table 1A and 1B are submitted for a single DON activity, please ensure that no data is double counted (that is, included on both Table 1A and 1B). The following tables are designed to collect all BOS costs currently budgeted, regardless of appropriation, e.g., Operations and Maintenance, Research and Development, Military Personnel, etc. Data must reflect FY 1996 and should be reported in thousands of dollars.

a. Table 1A - **Base Operating Support Costs (Other Than DBOF Overhead).** This Table should be completed to identify "Other Than DBOF Overhead" Costs. Display, in the format shown on the table, the O&M, R&D and MPN resources currently budgeted for BOS services. O&M cost data must be consistent with data provided on the BS-1 exhibit. Report only direct funding for the activity. Host activities should not include reimbursable support provided to tenants, since tenants will be separately reporting these costs. Military personnel costs should be included on the appropriate lines of the table. Please ensure that individual lines of the table do not include duplicate costs. Add additional

lines to the table (following line 2j., as necessary, to identify any additional cost elements not currently shown). **Leave shaded areas of table blank.**

Table 1A - Base Operating Support Costs (Other Than DBOF Overhead)			
Activity Name: PERSUPPDET Indianapolis		UIC: 43050	
Category	FY 1996 BOS Costs ($000)		
	Non-Labor	Labor	Total
1. Real Property Maintenance Costs:			
1a. Maintenance and Repair			
1b. Minor Construction			
1c. Sub-total 1a. and 1b.			
2. Other Base Operating Support Costs:			
2a. Utilities			
2b. Transportation			
2c. Environmental			
2d. Facility Leases			
2e. Morale, Welfare & Recreation			
2f. Bachelor Quarters			
2g. Child Care Centers			
2h. Family Service Centers			
2i. Administration	49	541	590
2j. Other (Specify)			
2k. Sub-total 2a. through 2j:	49	541	590
3. Grand Total (sum of 1c. and 2k.):	49	541	590

b. Funding Source. If data shown on Table 1A reflects more than one appropriation, then please provide a break out of the total shown for the "3. Grand-Total" line, by appropriation:

Appropriation	Amount ($000)
O&MN	230
MPN	265
RPN	95

c. Table 1B - **Base Operating Support Costs (DBOF Overhead).** This Table should be submitted for all current DBOF activities. Costs reported should reflect BOS costs supporting the DBOF activity itself (usually included in the G&A cost of the activity). For DBOF activities which are tenants on another installation, total cost of BOS incurred by the tenant activity for itself should be shown on this table. It is recognized that differences exist among DBOF activity groups regarding the costing of base operating support: some groups reflect all such costs only in general and administrative (G&A), while others spread them between G&A and production overhead. Regardless of the costing process, all such costs should be included on Table 1B. The Minor Construction portion of the FY 1996 capital budget should be included on the appropriate line. Military personnel costs (at civilian equivalency rates) should also be included on the appropriate lines of the table. Please ensure that individual lines of the table do not include duplicate costs. Also ensure that there is no duplication between data provided on Table 1A. and 1B. These two tables must be mutually exclusive, since in those cases where both tables are submitted for an activity, the two tables will be added together to estimate total BOS costs at the activity. Add additional lines to the table (following line 21., as necessary, to identify any additional cost elements not currently shown). **Leave shaded areas of table blank.**

Other Notes: All costs of operating the five Major Range Test Facility Bases at DBOF activities (even if direct RDT&E funded) should be included on Table 1B. Weapon Stations should include underutilized plant capacity costs as a DBOF overhead "BOS expense" on Table 1B..

DATA CALL 66 UIC: 43050
INSTALLATION RESOURCES

Table 1B - Base Operating Support Costs (DBOF Overhead)			
Activity Name: N/A; not a DBOF Activity		UIC: 43050	
Category	FY 1996 Net Cost From UC/FUND-4 ($000)		
	Non-Labor	Labor	Total
1. Real Property Maintenance Costs:			
1a. Real Property Maintenance (>$15K)			
1b. Real Property Maintenance (<$15K)			
1c. Minor Construction (Expensed)			
1d. Minor Construction (Capital Budget)			
1c. Sub-total 1a. through 1d.			
2. Other Base Operating Support Costs:			
2a. Command Office			
2b. ADP Support			
2c. Equipment Maintenance			
2d. Civilian Personnel Services			
2e. Accounting/Finance			
2f. Utilities			
2g. Environmental Compliance			
2h. Police and Fire			
2i. Safety			
2j. Supply and Storage Operations			
2k. Major Range Test Facility Base Costs			
2l. Other (Specify)			
2m. Sub-total 2a. through 2l:			
3. Depreciation			
4. Grand Total (sum of 1c., 2m., and 3.) :			

2. Services/Supplies Cost Data. The purpose of Table 2 is to provide information about projected **FY 1996** costs for the purchase of services and supplies by the activity. **(Note: Unlike Question 1 and Tables 1A and 1B, above, this question is not limited to overhead costs.)** The source for this information, where possible, should be either the NAVCOMPT OP-32 Budget Exhibit for O&M activities or the NAVCOMPT UC/FUND-1/IF-4 exhibit for DBOF activities. Information must reflect FY 1996 budget data supporting the FY 1996 NAVCOMPT Budget Submit. Break out cost data by the major sub-headings identified on the OP-32 or UC/FUND-1/IF-4 exhibit, disregarding the sub-headings on the exhibit which apply to civilian and military salary costs and depreciation. Please note that while the OP-32 exhibit aggregates information by budget activity, this data call requests OP-32 data for the activity responding to the data call. Refer to NAVCOMPTINST 7102.2B of 23 April 1990, Subj: Guidance for the Preparation, Submission and Review of the Department of the Navy (DON) Budget Estimates (DON Budget Guidance Manual) with Changes 1 and 2 for more information on categories of costs identified. Any rows that do not apply to your activity may be left blank. However, totals reported should reflect all costs, exclusive of salary and depreciation.

Table 2 - Services/Supplies Cost Data

Activity Name: PERSUPPDET Indianapolis	UIC: 43050
Cost Category	**FY 1996 Projected Costs ($000)**
Travel:	1
Material and Supplies (including equipment):	39
Industrial Fund Purchases (other DBOF purchases):	
Transportation:	
Other Purchases (Contract support, etc.):	9
Total:	49

3. Contractor Workyears.

a. **On-Base Contract Workyear Table.** Provide a projected estimate of the number of contract workyears expected to be **performed "on base"** in support of the installation during FY 1996. Information should represent an annual estimate on a full-time equivalency basis. Several categories of contract support have been identified in the table below. While some of the categories are self-explanatory, please note that the category "mission support" entails management support, labor service and other mission support contracting efforts, e.g., aircraft maintenance, RDT&E support, technical services in support of aircraft and ships, etc.

Table 3 - Contract Workyears	
Activity Name: PERSUPPDET Indianapolis	**UIC: 43050**
Contract Type	**FY 1996 Estimated Number of Workyears On-Base**
Construction:	
Facilities Support:	
Mission Support:	
Procurement:	
Other:*	
Total Workyears:	0

* **Note:** Provide a brief narrative description of the type(s) of contracts, if any, included under the "Other" category.

b. Potential Disposition of On-Base Contract Workyears. If the mission/functions of your activity were relocated to another site, what would be the anticipated disposition of the on-base contract workyears identified in Table 3.?

1) Estimated number of contract workyears which would be transferred to the receiving site (This number should reflect the number of jobs which would in the future be contracted for at the receiving site, not an estimate of the number of people who would move or an indication that work would necessarily be done by the same contractor(s)):

N/A; no contract workyears

2) Estimated number of workyears which would be eliminated:

N/A; no contract workyears

3) Estimated number of contract workyears which would remain in place (i.e., contract would remain in place in current location even if activity were relocated outside of the local area):

N/A; no contract workyears

c. **"Off-Base" Contract Workyear Data.** Are there any contract workyears located in the local community, but not on-base, which would either be eliminated or relocated if your activity were to be closed or relocated? If so, then provide the following information **(ensure that numbers reported below do not double count numbers included in 3.a. and 3.b., above)**: No.

No. of Additional Contract Workyears Which Would Be Eliminated	General Type of Work Performed on Contract (e.g., engineering support, technical services, etc.)
None	

No. of Additional Contract Workyears Which Would Be Relocated	General Type of Work Performed on Contract (e.g., engineering support, technical services, etc.)
None	

PSA GREAT LAKES UIC N68598
DATA CALL SIXTY-SIX

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

NEXT ECHELON LEVEL (if applicable)

NAME (Please type or print) _____ Signature _____

Title _____ Date _____

Activity _____

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

NEXT ECHELON LEVEL (if applicable)

NAME (Please type or print) _____ Signature _____

Title _____ Date _____

Activity _____

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

MAJOR CLAIMANT LEVEL

RADM H. W. GEHMAN, JR.
NAME (Please type or print)

H.W. Gehman Jr
Signature

Acting
Title Commander in Chief
U.S. Atlantic Fleet
Activity

15 AUG 1994
Date

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)

WAEarner
Signature

Title

8/25/94
Date

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

N/A: DATA GENERATED AT THE CLAIMANT LEVEL

NAME (Please type of print) _____ Signature _____

Title _____ Date _____

Activity _____

Document Separator

DATA CALL 64
CONSTRUCTION COST AVOIDANCES

Table 1: Military Construction (MILCON) Projects (Excluding Family Housing Construction Projects)

Installation Name:	INDIANAPOLIS IN NAWCACDIV
Unit Identification Code (UIC):	N00163
Major Claimant:	NAVAIR

Project FY	Project No.	Description	Appn	Project Cost Avoid ($000)
1997	028	CHEMICAL PROC FAC	MCON	11,180
		Sub-Total - 1997		11,180
		Grand Total		11,180

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

MAJOR CLAIMANT LEVEL

J. E. BUFFINGTON, RADM, CEC, USN
NAME (Please type or print)

Signature

COMMANDER
Title

12/9/94
Date

NAVAL FACILITIES ENGINEERING 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

12/7/94
Date

BRAC-95 CERTIFICATION

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

MICHAEL D. THORNTON
NAME (Please type or print)

MDThornton
Signature

CDR, CEC, USN
Title

9 Dec 94
Date

MILCON PROGRAMMING DIVISION
Division

NAVAL FACILITIES ENGINEERING COMMAND
Activity

BRAC DATA CALL NUMBER 64
CONSTRUCTION COST AVOIDANCE

Information on cost avoidance which could be realized as the result of cancellation of on-going or programmed construction projects is provided in Tables 1 (MILCON) and 2 (FAMILY HOUSING). These tables list MILCON/FAMILY HOUSING projects which fall within the following categories:

1. all programmed construction projects included in the FY1996 - 2001 MILCON/FAMILY HOUSING Project List,

2. all programmed projects from FY1995 or earlier for which cost avoidance could still be obtained if the project were to be canceled by 1 OCT 1995, and,

3. all programmed BRAC MILCON/FAMILY HOUSING projects for which cost avoidance could still be obtained if the project were to be canceled by 1 OCT 1995.

Projects listed in Tables 1 and 2 with potential cost avoidance were determined as meeting any one of the following criteria:

Projects with projected Work in Place (WIP) less than 75% of the Current Working Estimate (CWE) as of 1 OCT 1995 .

Projects with projected completion dates or Beneficial Occupancy Dates subsequent to 31 March 1996.

Projects with projected CWE amount greater than $15M.

The estimated cost avoidance for projects terminated after construction award would be approximately one-half of the CWE for the remaining work. Close-out, claims and other termination costs can consume the other half.

Document Separator

R

161

DATA CALL 64

CONSTRUCTION COST AVOIDANCES

Table 1: Military Construction (MILCON) Projects (Excluding Family Housing Construction Projects)

Installation Name:	**INDIANAPOLIS IN NAWCACDIV**
Unit Identification Code (UIC):	**N00163**
Major Claimant:	**NAVAIR**

Project FY	Project No.	Description	Appn	Project Cost Avoid ($000)
1997	028	CHEMICAL PROC FAC	MCON	11,180
		Sub-Total - 1997		**11,180**
		Grand Total		**11,180**

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

MAJOR CLAIMANT LEVEL

J. E. BUFFINGTON, RADM, CEC, USN
NAME (Please type or print)

Signature

COMMANDER
Title

12/9/94
Date

NAVAL FACILITIES ENGINEERING 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

12/7/94
Date

BRAC-95 CERTIFICATION

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

MICHAEL D. THORNTON
NAME (Please type or print)

CDR, CEC, USN
Title

MILCON PROGRAMMING DIVISION
Division

NAVAL FACILITIES ENGINEERING COMMAND
Activity

MD Thornton
Signature

9 Dec 94
Date

BRAC DATA CALL NUMBER 64
CONSTRUCTION COST AVOIDANCE

Information on cost avoidance which could be realized as the result of cancellation of on-going or programmed construction projects is provided in Tables 1 (MILCON) and 2 (FAMILY HOUSING). These tables list MILCON/FAMILY HOUSING projects which fall within the following categories:

1. all programmed construction projects included in the FY1996 - 2001 MILCON/FAMILY HOUSING Project List,

2. all programmed projects from FY1995 or earlier for which cost avoidance could still be obtained if the project were to be canceled by 1 OCT 1995, and,

3. all programmed BRAC MILCON/FAMILY HOUSING projects for which cost avoidance could still be obtained if the project were to be canceled by 1 OCT 1995.

Projects listed in Tables 1 and 2 with potential cost avoidance were determined as meeting any one of the following criteria:

Projects with projected Work in Place (WIP) less than 75% of the Current Working Estimate (CWE) as of 1 OCT 1995 .

Projects with projected completion dates or Beneficial Occupancy Dates subsequent to 31 March 1996.

Projects with projected CWE amount greater than $15M.

The estimated cost avoidance for projects terminated after construction award would be approximately one-half of the CWE for the remaining work. Close-out, claims and other termination costs can consume the other half.

Document Separator

DATA CALL 64

CONSTRUCTION COST AVOIDANCES

Table 1: Military Construction (MILCON) Projects (Excluding Family Housing Construction Projects)

Installation Name:	INDIANAPOLIS IN NAWCACDIV
Unit Identification Code (UIC):	N00163 #161
Major Claimant:	NAVAIR

Project FY	Project No.	Description	Appn	Project Cost Avoid ($000)
1997	028	CHEMICAL PROC FAC	MCON	11,180
		Sub-Total - 1997		**11,180**
2000	035	AIR COND PLANT RENOV	MCON	3,520
		Sub-Total - 2000		**3,520**
		Grand Total		**14,700**

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

MAJOR CLAIMANT LEVEL

J. E. BUFFINGTON, RADM, CEC, USN
NAME (Please type or print)

Signature

COMMANDER
Title

7/13/94
Date

NAVAL FACILITIES ENGINEERING 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

2/18/94
Date

BRAC-95 CERTIFICATION

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

MARK E. DONALDSON
NAME (Please type or print)

Signature

CDR, CEC, USN
Title

12 July 1994
Date

MILCON PROGRAMMING DIVISION
Division

FACILITIES PROGRAMMING AND CONSTRUCTION DIRECTORATE
Department

NAVAL FACILITIES ENGINEERING COMMAND
Activity

Enclosure (1)

Document Separator

Activity Identification: Please complete the following table, identifying the activity for which this response is being submitted.

Activity Name:	**Naval Air Warfare Center Aircraft Division Indianapolis**
UIC:	**00163**
Major Claimant:	**Naval Air Systems Command**

General Instructions/Background:

Information requested in this data call is required for use by the Base Structure Evaluation Committee (BSEC), in concert with information from other data calls, to analyze both the impact that potential closure or realignment actions would have on a local community and the impact that relocations of personnel would have on communities surrounding receiving activities. In addition to Cost of Base Realignment Actions (COBRA) analyses which incorporate standard Department of the Navy (DON) average cost factors, the BSEC will also be conducting more sophisticated economic and community infrastructure analyses requiring more precise, activity-specific data. For example, activity-specific salary rates are required to reflect differences in salary costs for activities with large concentrations of scientists and engineers and to address geographic differences in wage grade salary rates.

Questions relating to "Community Infrastructure" are required to assist the BSEC in evaluating the ability of a community to absorb additional employees and functions as the result of relocation from a closing or realigning DON activity.

Due to the varied nature of potential sources which could be used to respond to the questions contained in this data call, a block appears after each question, requesting the identification of the source of data used to respond to the question. To complete this block, identify the source of the data provided, including the appropriate references for source documents, names and organizational titles of individuals providing information, etc. Completion of this "Source of Data" block is critical since some of the information requested may be available from a non-DoD source such as a published document from the local chamber of commerce, school board, etc. Certification of data obtained from a non-DoD source is then limited to certifying that the information contained in the data call response is an accurate and complete representation of the information obtained from the source. Records must be retained by the certifying official to clearly document the source of any non-DoD information submitted for this data call.

General Instructions/Background (Continued):

The following notes are provided to further define terms and methodologies used in this data call. Please ensure that responses consistently follow this guidance:

Note 1: Throughout this data call, the term **"activity"** is used to refer to the DON installation that is the addressee for the data call.

Note 2: Periodically throughout this data call, questions will include the statement that the response should refer to the **"area defined in response to question 1.b., (page 3)"**. Recognizing that in some large metropolitan areas employee residences may be scattered among many counties or states, **the scope of the "area defined" may be limited to the sum of:**

- **those counties that contain government (DoD) housing units (as identified in 1.b.2)), and,**
- **those counties closest to the activity which, in the aggregate, include the residences of 80% or more of the activity's employees.**

Note 3: Responses to questions referring to **"civilians"** in this data call should reflect **federal civil service appropriated fund employees.**

1. Workforce Data

a. Average Federal Civilian Salary Rate. Provide the projected FY 1996 average gross annual appropriated fund **civil service** salary rate for the activity identified as the addressee in this data call. This rate should include all cash payments to employees, and exclude non-cash personnel benefits such as employer retirement contributions, payments to former employees, etc.

Average Appropriated Fund Civilian Salary Rate:	**46,786**

Source of Data (1.a. Salary Rate): CP-2 Manpower Budget

b. Location of Residence. Complete the following table to identify where employees live. Data should reflect current workforce.

1) Residency Table. Identify residency data, by county, for both military and civilian (civil service) employees working at the installation (including, for example, operational units that are homeported or stationed at the installation). For each county listed, also provide the estimated average distance from the activity, in miles, of employee residences and the estimated average length of time to commute one-way to work. For the purposes of displaying data in the table, any county(s) in which 1% or fewer of the activity's employees reside may be consolidated as a single line entry in the table, titled "Other".

County of Residence	State	No. of Employees Residing in County		Percentage of Total Employees	Average Distance From Base (Miles)	Average Duration of Commute (Minutes)
		Military *	Civilian			
Marion	In	21	1,812	63	7	14
Hancock	In	1	319	11	15	25
Hamilton	In	1	187	6	18	29
Johnson	In	2	183	6	20	32
Shelby	In	1	75	3	20	32
Morgan	In	0	71	2	30	45
Hendricks	In	0	61	2	28	42
Other	In	0	213	7	Various	Various

1) Data as of 30 Jun 94

= 100%

As discussed in Note 2 on Page 2, subsequent questions in the data call refer to the "area defined in response to question 1.b., (page 3)". In responding to these questions, the scope of the "area defined" may be limited to the sum of: a) those counties that contain government (DoD) housing units (as identified below), and, b) those counties closest to the activity which, in the aggregate, include the residences of 80% or more of the activity's employees.

e. Education Level of Civilian Workforce

1) Education Level Table. Complete the following table, identifying the education level of the activity's **civil service** workforce. Data as of 31 MAR'94 KC 8/19/94 AIR 0163

Last School Year Completed	Number of Employees	Percentage of Employees
8th Grade or less	5	.2
9th through 11th Grade	53	1.8
12th Grade or High School Equivalency	770	26.3
1-3 Years of College	660	22.5
4 Years of College (Bachelors Degree)	1,248	42.6
5 or More Years of College (Graduate Work)	194	6.6
TOTAL	2,930	100 %

2) Degrees Achieved. Complete the following table for the activity's **civil service** workforce. Identify the number of employees with each of the following degrees, etc. To avoid double counting, only identify the highest degree obtained by a worker (e.g., if an employee has both a Master's Degree and a Doctorate, only include the employee under the category "Doctorate").

Degree	Number of Civilian Employees
Terminal Occupation Program - Certificate of Completion, Diploma or Equivalent (for areas such as technicians, craftsmen, artisans, skilled operators, etc.)	103
Associate Degree	157
Bachelor Degree	1,251
Masters Degree	172
Doctorate	19

Source of Data (1.e.1 and 2) Education Level Data: DCPDS - Sue Huff, HRO

f. Civilian Employment By Industry. Complete the following table to identify by "industry" the type of work performed by **civil service** employees at the activity. The intent of this table is to attempt to stratify the activity civilian workforce using the same categories of industries used to identify private sector employment. Employees should be categorized based on their primary duties. Additional information on categorization of private sector employment by industry can be found in the Office of Management and Budget Standard Industrial Classification (SIC) Manual. However, you do not need to obtain a copy of this publication to provide the data requested in this table.

Note the following specific guidance regarding the "Industry Type" codes in the first column of the table: Even though categories listed may not perfectly match the type of work performed by civilian employees, please attempt to assign each civilian employee to one of the "Industry Types" identified in the table. However, only use the Category 6, "Public Administration" sub-categories when none of the other categories apply. Retain supporting data used to construct this table at the activity-level, in case questions arise or additional information is required at some future time. **Leave shaded areas blank.** Data as of 31 MAR 94. RC 8/19/94 AIR-09B3

Industry	SIC Codes	No. of Civilians	% of Civilians
1. Agriculture, Forestry & Fishing	01-09	-	
2. Construction (includes facility maintenance and repair)	15-17	**92**	**3.14**
3. Manufacturing (includes Intermediate and Depot level maintenance)	20-39		
3a. Fabricated Metal Products (include ordnance, ammo, etc.)	34	**126**	**4.30**
3b. Aircraft (includes engines and missiles)	3721 et al	-	
3c. Ships	3731	-	
3d. Other Transportation (includes ground vehicles)	various	-	
3e. Other Manufacturing not included in 3a. through 3d.	various	**586**	**20.00**
Sub-Total 3a. through 3e.	20-39	**712**	**24.30**
4. Transportation/Communications/Utilities	40-49		
4a. Railroad Transportation	40	**0**	

Industry	SIC Codes	No. of Civilians	% of Civilians
4b. Motor Freight Transportation & Warehousing (includes supply services)	42	**101**	**3.45**
4c. Water Transportation (includes organizational level maintenance)	44	-	
4d. Air Transportation (includes organizational level maintenance)	45	-	
4e. Other Transportation Services (includes organizational level maintenance)	47	**11**	**.38**
4f. Communications	48	**23**	**.78**
4g. Utilities	49	-	
Sub-Total 4a. through 4g.	40-49	**135**	**4.61**
5. Services	70-89		
5a. Lodging Services	70	-	
5b. Personal Services (includes laundry and funeral services)	72	-	
5c. Business Services (includes mail, security guards, pest control, photography, janitorial and ADP services)	73	**310**	**10.58**
5d. Automotive Repair and Services	75	**1**	**.03**
5e. Other Misc. Repair Services	76	-	
5f. Motion Pictures	78	-	
5g. Amusement and Recreation Services	79	-	
5h. Health Services	80	**5**	**.17**
5i. Legal Services	81	**6**	**.20**
5j. Educational Services	82	**3**	**.10**
5k. Social Services	83	-	
5l. Museums	84	-	

Industry	SIC Codes	No. of Civilians	% of Civilians
5m. Engineering, Accounting, Research & Related Services (includes RDT&E, ISE, etc.)	87	**1,454**	**49.63**
5n. Other Misc. Services	89	**205**	**7.00**
Sub-Total 5a. through 5n.:	70-89	**1,984**	**67.71**
6. Public Administration	91-97		
6a. Executive and General Government, Except Finance	91	**5**	**.17**
6b. Justice, Public Order & Safety (includes police, firefighting and emergency management)	92	**2**	**.07**
6c. Public Finance	93		
6d. Environmental Quality and Housing Programs	95		
Sub-Total 6a. through 6d.		**7**	**.24**
TOTAL		**2,930**	100 %

Source of Data (1.f.) Classification By Industry Data: DCPDS - Byron Faith, HRO; Sue Huff, HRO

g. Civilian Employment by Occupation. Complete the following table to identify the types of "occupations" performed by **civil service** employees at the activity. Employees should be categorized based on their primary duties. Additional information on categorization of employment by occupation can be found in the Department of Labor Occupational Outlook Handbook. However, you do not need to obtain a copy of this publication to provide the data requested in this table.

Note the following specific guidance regarding the "Occupation Type" codes in the first column of the table: Even though categories listed may not perfectly match the type of work performed by civilian employees, please attempt to assign each civilian employee to one of the "Occupation Types" identified in the table. Refer to the descriptions immediately following this table for more information on the various occupational categories. Retain supporting data used to construct this table at the activity-level, in case questions arise or additional information is required at some future time. **Leave shaded areas blank.** Data as of 31MAR94 RC 5/19/94 AIR-C9B3

Occupation	Number of Civilian Employees	Percent of Civilian Employees
1. Executive, Administrative and Management	**351**	**11.98**
2. Professional Specialty		
2a. Engineers	**1,009**	**34.43**
2b. Architects and Surveyors	**1**	**.03**
2c. Computer, Mathematical & Operations Research	**120**	**4.10**
2d. Life Scientists		
2e. Physical Scientists	**11**	**.38**
2f. Lawyers and Judges	**4**	**.14**
2g. Social Scientists & Urban Planners		
2h. Social & Recreation Workers		
2i. Religious Workers		
2j. Teachers, Librarians & Counselors		
2k. Health Diagnosing Practitioners (Doctors)	**1**	**.03**
2l. Health Assessment & Treating(Nurses, Therapists, Pharmacists, Nutritionists, etc.)	**1**	**.03**
2m. Communications	**16**	**.55**

Occupation	Number of Civilian Employees	Percent of Civilian Employees
2n. Visual Arts	7	.24
Sub-Total 2a. through 2n.:	1,170	39.93
3. Technicians and Related Support		
3a. Health Technologists and Technicians	2	.07
3b. Other Technologists	506	17.27
Sub-Total 3a. and 3b.:	508	17.34
4. Administrative Support & Clerical	243	8.29
5. Services		
5a. Protective Services (includes guards, firefighters, police)	31	1.06
5b. Food Preparation & Service	0	0
5c. Dental/Medical Assistants/Aides		
5d. Personal Service & Building & Grounds Services (includes janitorial, grounds maintenance, child care workers)	11	.38
Sub-Total 5a. through 5d.	42	1.44
6. Agricultural, Forestry & Fishing	0	0
7. Mechanics, Installers and Repairers	282	9.62
8. Construction Trades	25	.85
9. Production Occupations	256	8.74
10. Transportation & Material Moving	53	1.81
11. Handlers, Equipment Cleaners, Helpers and Laborers (not included elsewhere)	0	0
TOTAL	2,930	100 %

Source of Data (1.g.) Classification By Occupation Data: DCPDS - Byron Faith, HRO; Sue Huff, HRO

Description of Occupational Categories used in Table 1.g. The following list identifies public and private sector occupations included in each of the major occupational categories used in the table. Refer to these examples as a guide in determining where to allocate **appropriated fund civil service jobs** at the activity.

1. **Executive, Administrative and Management.** Accountants and auditors; administrative services managers; budget analysts; construction and building inspectors; construction contractors and managers; cost estimators; education administrators; employment interviewers; engineering, science and data processing managers; financial managers; general managers and top executives; chief executives and legislators; health services managers; hotel managers and assistants; industrial production managers; inspectors and compliance officers, except construction; management analysts and consultants; marketing, advertising and public relations managers; personnel, training and labor relations specialists and managers; property and real estate managers; purchasing agents and managers; restaurant and food service managers; underwriters; wholesale and retail buyers and merchandise managers.

2. **Professional Specialty.** Use sub-headings provided.

3. **Technicians and Related Support.** Health Technologists and Technicians sub-category - self-explanatory. Other Technologists sub-category includes aircraft pilots; air traffic controllers; broadcast technicians; computer programmers; drafters; engineering technicians; library technicians; paralegals; science technicians; numerical control tool programmers.

4. **Administrative Support & Clerical.** Adjusters, investigators and collectors; bank tellers; clerical supervisors and managers; computer and peripheral equipment operators; credit clerks and authorizers; general office clerks; information clerks; mail clerks and messengers; material recording, scheduling, dispatching and distributing; postal clerks and mail carriers; records clerks; secretaries; stenographers and court reporters; teacher aides; telephone, telegraph and teletype operators; typists, word processors and data entry keyers.

5. **Services.** Use sub-headings provided.

6. **Agricultural, Forestry & Fishing.** Self explanatory.

7. **Mechanics, Installers and Repairers.** Aircraft mechanics and engine specialists; automotive body repairers; automotive mechanics; diesel mechanics; electronic equipment repairers; elevator installers and repairers; farm equipment mechanics; general maintenance mechanics; heating, air conditioning and refrigeration technicians; home appliance and power tool repairers, industrial machinery repairers; line installers and cable splicers; millwrights; mobile heavy equipment mechanics; motorcycle, boat and small engine mechanics; musical instrument repairers and tuners; vending machine servicers and repairers.

8. **Construction Trades.** Bricklayers and stonemasons; carpenters; carpet installers; concrete masons and terrazzo workers; drywall workers and lathers; electricians; glaziers; highway maintenance; insulation workers; painters and paperhangers; plasterers; plumbers and pipefitters; roofers; sheet metal workers; structural and reinforcing ironworkers; tilesetters.

9. Production Occupations. Assemblers; food processing occupations; inspectors, testers and graders; metalworking and plastics-working occupations; plant and systems operators, printing occupations; textile, apparel and furnishings occupations; woodworking occupations; miscellaneous production operations.

10. Transportation & Material Moving. Busdrivers; material moving equipment operators; rail transportation occupations; truckdrivers; water transportation occupations.

11. Handlers, Equipment Cleaners, Helpers and Laborers (not included elsewhere). Entry level jobs not requiring significant training.

h. Employment of Military Spouses. Complete the following table to provide estimated information concerning **military spouses** who are also employed in the area defined in response to question 1.b., above. **Do not fill in shaded area.**

1. Percentage of Military Employees Who Are Married:	75%
2. Percentage of Military Spouses Who Work Outside of the Home:	62%
3. Break out of Spouses' Location of Employment (Total of rows 3a. through 3d. should equal 100% and reflect the number of spouses used in the calculation of the "Percentage of Spouses Who Work Outside of the Home".	
3a. Employed "On-Base" - Appropriated Fund:	0
3b. Employed "On-Base" - Non-Appropriated Fund:	0
3c. Employed "Off-Base" - Federal Employment:	0
3d. Employed "Off-Base" - Other Than Federal Employment	100%

Source of Data (1.h.) Spouse Employment Data: CDR Dennis Mitchell, XO ATC Stephen Batten, FIT LCPC

2. Infrastructure Data. For each element of community infrastructure identified in the two tables below, rate the community's ability to accommodate the relocation of additional functions and personnel to your activity. Please complete each of the three columns listed in the table, reflecting the impact of various levels of increase (20%, 50% and 100%) in the number of personnel working at the activity (and their associated families). In ranking each category, use one of the following three ratings:

A - Growth can be accommodated with little or no adverse impact to existing community infrastructure and at little or no additional expense.

B - Growth can be accommodated, but will require some investment to improve and/or expand existing community infrastructure.

C - Growth either cannot be accommodated due to physical/environmental limitations or would require substantial investment in community infrastructure improvements.

Table 2.a., "Local Communities": This first table refers to the local community (i.e., the community in which the base is located) and its ability to meet the increased requirements of the installation.

Table 2.b., "Economic Region": This second table asks for an assessment of the infrastructure of the economic region (those counties identified in response to question 1.b., (page 3) - taken in the aggregate) and its ability to meet the needs of additional employees and their families moving into the area.

For both tables, annotate with an asterisk (*) any categories which are wholly supported on-base, i.e., are not provided by the local community. These categories should also receive an A-B-C rating. Answers for these "wholly supported on-base" categories should refer to base infrastructure rather than community infrastructure.

a. Table A: Ability of the local community to meet the expanded needs of the base.

1) Using the **A - B - C** rating system described above, complete the table below.

Category	20% Increase	50% Increase	100% Increase
Off-Base Housing	A	A	A
Schools - Public	A	A	A
Schools - Private	A	A	A
Public Transportation - Roadways	A	A	A
Public Transportation - Buses/Subways	A	A	A
Public Transportation - Rail	N/A	N/A	N/A
Fire Protection	A	A	A
Police	A	A	A
Health Care Facilities	A	A	A
Utilities:	A	A	A
Water Supply	A	A	A
Water Distribution	A	A	A
Energy Supply	A	A	A
Energy Distribution	A	A	A
Wastewater Collection	A	A	A
Wastewater Treatment	A	A	A
Storm Water Collection	A	A	A
Solid Waste Collection and Disposal	A	A	A
Hazardous/Toxic Waste Disposal	A	A	A
Recreational Activities	A	A	A

N/A = Not Applicable

Remember to mark with an asterisk any categories which are wholly supported on-base.

A $529 million, three-year infrastructure improvement program for Indianapolis sewers, parks, bridges, roads, traffic signals, drainage, housing, and police services was launched in early 1993 and will ensure the continued quality of the city's infrastructure and its ability to accommodate continued growth. Funding for this program, "Building Better Neighborhoods," included a $150-million general obligation bond issued by the city. The triple-A rated, fiscally responsible Indianapolis government has held the line on property taxes, downsized government by over 800 employees, and cut spending by putting the provision of some ancillary city services out for competitive bid. As a result, the city has been able to fund the remainder of this major infrastructure initiative with existing revenue sources.

Examples of infrastructure accomplishments to date include major road resurfacing in all Marion County townships, street reconstruction, the start of construction on a new south district station for police, the start of construction on a new fire station, major rehabilitation of three public housing projects, completion of a new park aquatic center, and significant renovation of the Fountain Square neighborhood on the southeast side of downtown Indianapolis.

2) For each rating of "C" identified in the table on the preceding page, attach a brief narrative explanation of the types and magnitude of improvements required and/or the nature of any barriers that preclude expansion.

Not Applicable

Source of Data (2.a. 1 & 2) - Local Community Table: Indianapolis Economic Development Corporation

b. Table B: Ability of the region described in the response to question 1.b. (page 3) (taken in the aggregate) to meet the needs of additional employees and their families relocating into the area.

1) Using the **A - B - C** rating system described above, complete the table below.

Category	20% Increase	50% Increase	100% Increase
Off-Base Housing	A	A	A
Schools - Public	A	A	A
Schools - Private	A	A	A
Public Transportation - Roadways	A	A	A
Public Transportation - Buses/Subways	A	A	A
Public Transportation - Rail	N/A	N/A	N/A
Fire Protection	A	A	A
Police	A	A	A
Health Care Facilities	A	A	A
Utilities:	A	A	A
Water Supply	A	A	A
Water Distribution	A	A	A
Energy Supply	A	A	A
Energy Distribution	A	A	A
Wastewater Collection	A	A	A
Wastewater Treatment	A	A	A
Storm Water Collection	A	A	A
Solid Waste Collection and Disposal	A	A	A
Hazardous/Toxic Waste Disposal	A	A	A
Recreation Facilities	A	A	A

N/A = Not Applicable

Remember to mark with an asterisk any categories which are wholly supported on-base.

In general, the impact of even a 100% increase in Naval Air Warfare Center personnel could be comfortably accommodated by the City of Indianapolis and the Indianapolis Metropolitan Statistical Area (MSA). Assuming 2.45 persons per household (average in Marion County per the 1990 census), an influx of 3,340 workers and their households would add just 1.1% to the cities' and 0.7% to the MSA's general population. These figures are not far from annual growth rates experienced in the metro area in the past 10 years.

2) For each rating of "C" identified in the table on the preceding page, attach a brief narrative explanation of the types and magnitude of improvements required and/or the nature of any barriers that preclude expansion.

Not Applicable

Source of Data (2.b. 1 & 2) - Regional Table: Indianapolis Economic Development Corporation

3. Public Facilities Data:

a. **Off-Base Housing Availability.** For the counties identified in the response to question 1.b. (page 3), in the aggregate, estimate the current average vacancy rate for community housing. Use current data or information identified on the latest family housing market analysis. For each of the categories listed (rental units and units for sale), combine single family homes, condominiums, townhouses, mobile homes, etc., into a single rate

Apartment vacancy rates vary between 5.0% and 11.4% within the Indianapolis area, vacancy rates for owned housing not available.

Rental Units:

In excess of 170,000 units are available in the Metropolitan Statistical Area.

Units for Sale:

More than 370,000 single family homes exist in the Metropolitan Statistical Area. As of June 1994, more than 6,600 were for sale.

Source of Data (3.a. Off-Base Housing): Indianapolis Economic Development Corporation, Indianapolis Chamber of Commerce, U. S. Census Bureau, CB Commercial, Indiana Business Research Center

b. **Education.**

1) Information is required on the current capacity and enrollment levels of school systems serving employees of the activity. Information should be keyed to the counties identified in the response to question 1.b. (page 3).

School District	County	Number of Schools			Enrollment		Pupil-to-Teacher Ratio		Does School District Serve Gov't Housing Units? *
		Ele-men-tary	Middle	High	Cur-rent	Max. Capacity	Cur-rent	Max. Ratio	
Eagle Union CSC	Boone	3	1	1	2,414	**	18.4	**	
Lebanon CSC	Boone	4	1	1	2,974	**	16.1	**	
Western Boone Co. CSC	Boone	2	---	1 JR/SR	1,624	**	15.7	**	
Carmel Clay Schools	Hamilton	8	2	1	8,587	**	18.2	**	
Hamilton Heights School Corp.	Hamilton	1	1	1	2,128	**	20.4	**	
Hamilton Southeastern Schools	Hamilton	5	1	1	3,812	**	17.7	**	
Marion-Adams Schools	Hamilton	2	1	1	1,098	**	19.3	**	
Noblesville Schools	Hamilton	5	1	1	4,976	**	18.7	**	
Westfield Washington Schools	Hamilton	1	1	1	1,848	**	19.2	**	
Eastern Hancock Co. CSC	Hancock	1	---	1 JR/SR	1,108	**	17.1	**	
Greenfield-Central CSC	Hancock	4	2	1	3,308	**	12.9	**	
Mt. Vernon CSC	Hancock	2	1	1	2,289	**	19.9	**	

School District	County	Number of Schools			Enrollment		Pupil-to-Teacher Ratio		Does School District Serve Gov't Housing Units? *
		Ele-men-tary	Middle	High	Cur-rent	Max. Capacity	Cur-rent	Max. Ratio	
Southern Hancock Co. CSC	Hancock	2	1	1	2,194	**	19.6	**	
Avon CSC	Hendricks	3	1	1	3,147	**	18.6	**	
Brownsburg CSC	Hendricks	3	1	1	3,614	**	17.8	**	
Danville CSC	Hendricks	2	1	1	1,809	**	17.7	**	
Mill Creek CSC	Hendricks	2	1	1	1,401	**	16.9	**	
Northwest Hendricks School Corp.	Hendricks	2	---	1 JR/SR	1,157	**	16.4	**	
Planifield CSC	Hendricks	3	1	1	3,369	**	18.1	**	
Center Grove CSC	Johnson	5	1	1	5,539	**	20.5	**	
Clark-Pleasant CSC	Johnson	3	1	1	2,385	**	19.6	**	
Edinburgh CSC	Johnson	1	---	1 JR/SR	944	**	17.6	**	
Franklin CSC	Johnson	5	1	1	3,352	**	19.5	**	
Greenwood CSC	Johnson	3	1	1	3,137	**	18.8	**	
Ninevah-Hensley-Jackson United School Corp.	Johnson	1	1	1	1,637	**	18.2	**	
Beech Grove Schools	Marion	2	1	1	2,078	**	19.4	**	
Decatur Township Schools	Marion	4	1	1	4,938	**	19.5	**	
Franklin Township Schools	Marion	5	1	1	4,416	**	17.9	**	

School District	County	Number of Schools			Enrollment		Pupil-to-Teacher Ratio		Does School District Serve Gov't Housing Units? *
		Ele-men-tary	Middle	High	Cur-rent	Max. Capacity	Cur-rent	Max. Ratio	
Indianapolis Public Schools	Marion	69	10	7	50,344	**	18.6	**	Yes
Lawrence Township Schools	Marion	8	2	2	11,449	**	17.4	**	
Perry Township Schools	Marion	9	2	2	11,077	**	17.3	**	
Pike Township Schools	Marion	6	2	1	5,684	**	15.8	**	
Speedway Public Schools	Marion	4	1	1	1,417	**	16.1	**	
Warren Township Schools	Marion	10	2	1	9,066	**	15.7	**	
Washington Township Schools	Marion	7	3	1	9,575	**	16.5	**	
Wayne Township Schools	Marion	10	3	1	12,135	**	17.3	**	
Eminence Consolidated	Morgan	1	---	1 JR/SR	397	**	13.1	**	
MSD of Martinville	Morgan	8	2	1	5,169	**	18.9	**	
Monroe-Gregg Schools	Morgan	2	---	1 JR/SR	1,384	**	15.5	**	
Mooresville Consolidated Schools	Morgan	5	1	1	3,375	**	17.6	**	
Northwestern CSC of Shelby Co.	Shelby	1	1	1	1,526	**	18.7	**	
Shelby Eastern Schools	Shelby	2	1	1	1,730	**	18.1	**	
Shelbyville-Central Schools	Shelby	4	1	1	3,487	**	18.1	**	
Southwestern CSC of Shelby	Shelby	1	1	1	728	**	17.6	**	

* Answer "Yes" in this column if the school district in question enrolls students who reside in government housing.
** Information not available

Source of Data (3.b.1) Education Table: 1993 School Statistical Report, Indiana Farm Bureau, Indianapolis Chamber of Commerce, Indianapolis Economic Development Corporation

2) Are there any on-base "Section 6" Schools? If so, identify number of schools and current enrollment.

No

Source of Data (3.b.2) On-Base Schools: Michael Sargent, Assistant to the Executive Director

3) For the counties identified in the response to question 1.b. (page 3), in the aggregate, list the names of undergraduate and graduate colleges and universities which offer certificates, Associate, Bachelor or Graduate degrees :

Institution	Fall '93 Total Enrollment	Programs
Indiana University-Purdue University-Indianapolis (IUPUI)	**27,552**	**IUPUI offers 30 I.U. and Purdue associate degrees and certificates, along with 68 four-year bachelor's degree programs. The total number of degrees offered, associate through doctoral, is 167. IUPUI has schools of art, business, continuing studies, education, engineering and technology, dentistry, journalism, law, liberal arts, medicine, music, nursing, physical education, public and environmental affairs, science, social work, and I.U. and Purdue graduate schools. Evening study is offered for some courses in most programs, particularly for master degrees or for job-enhancement programs. A weekend college program is also available.**
Butler	**4,386**	**Butler University offers four-year programs in liberal arts, fine arts, pharmacy, business, and education. The school also offers masters degrees in education, business (MBA), pharmacy, art, and liberal arts, and a Ph.D. in pharmacy. Butler offers associate degrees and a significant number of evening courses. Students can earn undergraduate and graduate degrees through evening course work.**
University of Indianapolis	**3,508**	**The University of Indianapolis is a private, independent, coeducational, church-related university offering an impressive array of undergraduate and graduate degree programs rooted in a strong liberal arts tradition. Specifically, the university offers four-year degree programs in business, nursing, education, and arts and science and offers some 2-year degrees. Advanced study options include the university's graduate school of physical therapy. A variety of evening courses are offered.**

Institution	Fall '93 Total Enrollment	Programs
Vincennes University	1,032	A public junior college granting degrees in more than 100 fields, based 120 miles southwest of Indianapolis, but with several satellite compuses in the metro area.
Marian College	1,350	Marion College is a Catholic, coeducational, comprehensive liberal arts college with four-year and two-year programs. The college also has strong professional programs in nursing, allied health, radiologic technology, and respiratory therapy. Through Marian's evening program, students can obtain two-year and four-year degrees in some areas. Among 1,500 private four-year colleges, Marian was recently rated 60th by Money magazine.
Martin University	557	Martin University is a four-year, liberal arts institution established for adult, non-traditional student. As such, the majority of the institution's classes are offered during the evenings and on weekends, covering topics including English, humanities, computer technology, business, science, and math. Martin has recently begun offering graduate degrees in the areas of community psychology and urban minority studies.

Additionally, Ball State University, Indiana Wesleyan, Clark College, and Bristol University offer local evening courses. Purdue University, Indiana University, National Technological University, Ball State University and Parks College of Logistics offer classes on base.

Source of Data (3.b.3) Colleges: Indianapolis Economic Development Corporation

4) For the counties identified in the response to question 1.b. (page 3), in the aggregate, list the names and major curriculums of vocational/technical training schools:

Institution	Fall '93 Total Enrollment	Programs
Indiana Vocational Technical College (Ivy Tech)	**6,488**	**Although not a four-year institution, Ivy Tech is an important educational resource for the Indianapolis community. Last year, the college trained more than 8,000 enrolled students in skills ranging from health care to computer-aided design. Companies can upgrade employees' skills by sending them to one or more of the 900-plus courses currently offered at the college or work with Ivy Tech to develop a customized course path for job requirements. Between 30-40% of Ivy Tech's courses are offered in the evening, covering the range of the college's program areas.**
ITT Technical Institute	**1,025**	**Another technical and career training resource for Indianapolis students, offering primarily two-year degrees in technical fields.**
Lincoln Technical Institute	**500**	**Another technical and career training resource in Indianapolis.**

Source of Data (3.b.4) Vo-tech Training: Indianapolis Economic Development Corporation

c. **Transportation.**

1) Is the activity served by public transportation?

	Yes	No
Bus:	X	
Rail:		X
Subway:		X
Ferry:		X

Indianapolis Metro Bus carries about 30,000 passengers daily with a 1993 ridership of 8.9 million passenger. Fifty-one local and express bus routes throughout Marion County serve area residents. Current fares are: $1.00 during rush hour, $1.25 on express buses, 75 cents outside rush hour, and 25 cents for transfers. Premiums of 25 and 50 cents are charged for service to Speedway, Johnson County, and Lawrence (outside city limits).

Source of Data (3.c.1) Transportation: Indianapolis Economic Development Corporation

2) Identify the location of the nearest passenger railroad station (long distance rail service, not commuter service within a city) and the distance from the activity to the station.

Indianapolis Amtrack station is located in downtown Indianapolis, approximately 7 miles away.

Source of Data (3.c.2) Transportation: Michael Sargent, Assistant to the Executive Director

3) Identify the name and location of the nearest commercial airport (with public carriers, e.g., USAIR, United, etc.) and the distance from the activity to the airport.

Indianapolis International Airport is 18 miles from NAWC Indianapolis.

Source of Data (3.c.3) Transportation: Michael Sargent, Assistant to the Executive Director

4) How many carriers are available at this airport?

Indianapolis International Airport is served by 15 commercial passenger airlines.

Source of Data (3.c.4) Transportation: Indianapolis Airport Authority

5) What is the Interstate route number and distance, in miles, from the activity to the nearest Interstate highway?

The Shadeland Avenue exit of Interstate I-70 is located less than one mile from the front gate of NAWC Indianapolis. In addition, Interstates I-74, I-69, I-65 and the I-465 beltway pass through the City of Indianapolis. Any of these Interstate highways can be reached in less than 30 minutes from NAWC Indianapolis.

Source of Data (3.c.5) Transportation: Michael Sargent, Assistant to the Executive Director

6) Access to Base:

a) Describe the quality and capacity of the road systems providing access to the base, specifically during peak periods. (Include both information on the area surrounding the base and information on access to the base, e.g., numbers of gates, congestion problems, etc.)

NAWC Indianapolis is well served by the expansive Interstate highway and local road system. A major reconstruction of the I-465 beltway is currently in process and will be completed by the year 1995. Department of Transportation information indicates that a 4-lane city street is designed to handle 40,000 vehicles per 24 hours. Traffic counts of the local roads indicate usage of 15,000-19,000 vehicles per 24 hours, well within design limits. During peak periods of morning and evening rush hours, workers can easily enter and exit the activity without waiting or gridlock on accessroads or local city streets.

b) Do access roads transit residential neighborhoods?

NAWC Indianapolis is located in a residential/light commercial area. Access roads are undivided 4-lane city streets which are adjacent to both residential neighborhoods and NAWC Indianapolis.

c) Are there any easements that preclude expansion of the access road system?

The location of NAWC Indianapolis prohibits access road expansion. However, this expansion would not be needed, even if employment doubled in size, due to the capacity of the local road system.

d) Are there any man-made barriers that inhibit traffic flow (e.g., draw bridges, etc.)?

No

Source of Data (3.c.6) Transportation): Indianapolis Department of Metropolitan Development 1989 Study, Indianapolis Department of Transportation

d. **Fire Protection/Hazardous Materials Incidents.** Does the activity have an agreement with the local community for fire protection or hazardous materials incidents? Explain the nature of the agreement and identify the provider of the service.

We do not have a formal written agreement with the City of Indianapolis. Our property is located within the fire service/hazmat response district of the Indianapolis Fire Department.

For the Navy to receive the fire protection for naval activities located within the geographical boundaries of a municipality or fire district, a mutual aid agreement is not required. NAWCAD INST 6280.1 preauthorizes the activity commander to directly initiate emergency assistance with the Indianapolis Fire Department-Hazardous Material Response Team. The Code of Indianapolis, Marion County, Indianapolis, Sec 12-11 Fire Prevention Bureau establishes that our activity is within the geographical boundaries of the City of Indianapolis. In addition, our activity meets regularly with local officials in order to establish coordinated efforts for emergency response.

Source of Data (3.d. Fire/Hazmat): NAWC Indianapolis Health, Safety and Environment Support Office

e. **Police Protection.**

1) What is the level of legislative jurisdiction held by the installation?

Legislative concurrent jurisdiction.

2) If there is more than one level of legislative jurisdiction for installation property, provide a brief narrative description of the areas covered by each level of legislative jurisdiction and whether there are separate agreements for local law enforcement protection.

Only one level of jurisdiction exists.

3) Does the activity have a specific written agreement with local law enforcement concerning the provision of local police protection?

No written agreement exists.

4) If agreements exist with more than one local law enforcement entity, provide a brief narrative description of whom the agreement is with and what services are covered.

No written agreement exists.

5) If military law enforcement officials are routinely augmented by officials of other federal agencies (BLM, Forest Service, etc.), identify any written agreements covering such services and briefly describe the level of support received.

No augmentation agreements exists.

Source of Data (3.e. 1 - 5) - Police: NAWC Indianapolis Office of Counsel

f. **Utilities.**

1) Does the activity have an agreement with the local community for water, refuse disposal, power or any other utility requirements? Explain the nature of the agreement and identify the provider of the service.

Refuse disposal is handled by a private contractor (Fisk Sanitation Services, Inc.). The contractor is required to dispose of solid waste in compliance with all local, state, and federal codes/ regulations. The various collection points are serviced on a frequency basis in accordance with the contract. The Indianapolis Water Company provides water to the activity as an industrial user. Sewer service is provided by the Indianapolis Department of Public Works. These utilities operate under guidelines established by the Indiana Utility Regulatory Commission and are the sole providers of these services in the Indianapolis area. As such, no special agreements have been established. Power is provided by the Indianapolis Power and Light Company. The activity is a high load factor, category two user based upon historical demand. Rates are adjusted from a power factor baseline of 75%. The activity's actual power factor is fairly constant at about 92%. Natural gas for heating and industrial processes is distributed in the Indianapolis area by Citizen's Gas and Coke Utility Company. The Navy purchases its' gas from the pipeline from one or two sources, depending upon which one offers the better rate for the coming month. Citizen's Gas and Coke Utility and Krystal Gas Marketing are the two alternate sources. Service is provided on an interruptable basis, and back-up heating is via an on-station supply of fuel oil.

2) Has the activity been subject to water rationing or interruption of delivery during the last five years? If so, identify time period during which rationing existed and the restrictions imposed. Were activity operations affected by these situations? If so, explain extent of impact.

No

3) Has the activity been subject to any other significant disruptions in utility service, e.g., electrical "brown outs", "rolling black outs", etc., during the last five years? If so, identify time period(s) covered and extent/nature of restrictions/disruption. Were activity operations affected by these situations? If so, explain extent of impact.

No

Source of Data (3.f. 1 - 3) Utilities: Refuse Disposal - NAVFAC Contract #N62472-91-B-8979; Water - NAVFAC Contract #N62472-71-C-9836; Sewer - NAVFAC Contract #N62472-71-C-9837; Power - Public Service Commission of Indiana Publication Number E-15 ;Natural Gas - Defense Fuel Supply Center Contract #DLA-600-93-D-7534

4. Business Profile. List the top ten employers in the geographic area defined by your response to question 1.b. (page 3), taken in the aggregate, (include your activity, if appropriate):

Employer	Product/Service	No. of Employees
1. City-County Government	Government/Public Schools/ Public Transportation	30,336
2. State of Indiana	Government/State University & Technical School	24,045
3. Federal Government	Defense Finance Center/ Ft. Benjamin Harrison/ NAWC Indianapolis	20,000
4. Eli Lilly & Co.	Pharmaceutical Products	8,750
5. Methodist Hospital	Hospital/Health Care	6,032
6. St. Vincent Hospital & Health Care Center	Hospital/Health Care	5,737
7. Allison Engine Co.	Gas Turbine Engines	5,700
8. Community Hospital of Indianapolis	Hospital/Health Care	5,150
9. Marsh Supermarkets	Grocers - Retail/ Headquarters	5,100
10. The Kroger Co.	Grocers - Retail/ Headquarters	4,800

Source of Data (4. Business Profile): Indianapolis Chamber of Commerce

5. **Other Socio-Economic Impacts.** For each of the following areas, describe other recent (past 5 years), on-going or projected economic impacts (both positive and negative) on the geographic region defined by your response to question 1.b. (page 3), in the aggregate:

a. Loss of Major Employers:

Indianapolis has had plant closings in the past several years. There has been downsizing activity, including: Amtrak, AT&T, City of Indianapolis, and Indianapolis Public Schools. AMAX Coal did consolidate operations elsewhere and close its Indianapolis facility last year. Ft. Benjamin Harrison is still in the process of closing, resulting in the loss of several hundred civilian jobs.

b. Introduction of New Businesses/Technologies:

The majority of Indianapolis' job growth experienced during the last decade resulted from increases in services and retail trade. At the same time, Indianapolis has seen some share of business expansions and new business ventures in the manufacturing sector. The Indiana Business Modernization & Technology Corporation works with area businesses to promote the use of new technologies, as does the Electronics Manufacturing Productivity Facility (EMPF). NAWCAD Indianapolis is an integral part of EMPF's mission. Indianapolis Power & Light, the area electric utility, promotes the use of new electrotechnologies in manufacturing operations.

c. Natural Disasters:

Indianapolis has not experienced any major natural disasters in the last 5 years.

d. Overall Economic Trends:

The unemployment rate for the metro area has remained between 4% and 6% in the past 5 years. Continued population and job growth are forecasted over the next two decades, and demonstrated commitments by the City of Indianapolis to curtailing costs, investing in infrastructure, and streamlining regulations continue to benefit the overall business climate. Economic growth is expected to be spurred by the ongoing investments of existing newcomer businesses.

The Indiana Business Research Center forecasted the following in its Indiana Business Review, released at year-end 1993:

"Employment in 1994 for the Indianapolis metropolitan area is expected to increase 1.25-1.75%. Industries expected to be major contributors to employment growth are transportation services (United Airlines Maintenance Center), wholesale and retail trade, financial services, and business services. Because of Indianapolis' relatively low business cost environment and central location, existing firms should be able to expand locally. These same factors, along with relatively low housing costs and the increasing national attention received by the city's innovative ways of dealing with financial challenges, should attract new firms to the area."

Source of Data (5. Other Socio/Econ): Indianapolis Network for Employment and Training, Indianapolis Economic Development Corporation

6. **Other.** Identify any contributions of your activity to the local community not discussed elsewhere in this response.

NAWC Indianapolis is a major supporter of the community through a variety of programs. As one of these community support projects, NAWC Indianapolis is partnered with two public schools in the Partners in Education program, coordinated by the Indianapolis Public Schools and the Chamber of Commerce. At the elementary-school level, volunteers participate by reading to students in the lower grades, and by helping children of all ages develop reading and other skills. During the Christmas holidays, employees have the opportunity to donate needed school supplies through a "giving tree," and the annual book drive provides hundreds of books for the class libraries. At the junior-high level, volunteers tutor students at all levels of ability, ranging from those who need remedial assistance to those with special talents and interests. Additionally, employees volunteer to judge at many of the science and invention fairs at area schools.

Additional educational opportunities are provided within NAWC Indianapolis itself. For the past 3 years, our Federal Women's Program Committee has arranged a "shadowing" experience for engineering students to accompany a professional throughout a day's business activities. Engineering students from universities such as Indiana University-Purdue University at Indianapolis and Purdue University have participated. Additionally, tours of the facility are frequently arranged for various high school and trade-school groups. These groups are guided by experts in engineering and/or manufacturing and allow the students to learn about career possibilities in these fields. NAWC Indianapolis has also participated extensively in the co-op programs of various universities, allowing hands-on experience for the students in several fields of study.

The NAWC Indianapolis-sponsored Explorer Scout Post took learning to a new height when they were one of seven posts nationwide chosen to send an experiment into orbit aboard the Space Shuttle Endeavor in September 1992. The post specializes in communications and engineering, and has had more than 700 high-school-aged members since its inception 30 years ago; many of these members have subsequently become NAWC Indianapolis employees and have continued the post through their adult leadership. Project POSTAR, the experiment designed and constructed by the post, measured the effects of cosmic radiation on samples of various types of optical fibers.

NAWC Indianapolis has been recognized and commended for its active role in the many civic organizations of Indianapolis and the surrounding area. Participation in events such as Indycon, a major electronics show, helps us interface with small, disadvantaged, and minority-owned businesses. In addition, employees are very active in cultural community events such as the Hispanic-American Fiesta and the Black Expo, and patriotic displays such as Armed Forces Day.

Source of Data (6. Other): Michael Sargent, Assistant to the Executive Director

DATA CALL 65
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)

BARTON D. STRONG
NAME (Please type or print)

Barton D. Strong
Signature

COMMANDER
Title

13 July 1994
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER, MD
Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.
NEXT ECHELON LEVEL (if applicable)

WILLIAM E. NEWMAN
NAME (Please type or print)

W E Newman
Signature

COMMANDER
Title

~~7/18/94~~ 8/18/94 WEN
Date

NAVAL AIR WARFARE CENTER
Activity

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

WILLIAM C. BOWES
NAME (Please type or print)

Signature

COMMANDER
Title

19 AUG 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

8/26/94
Date

DATA CALL #65

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

2 July 1994
Date

Naval Air Warfare Center, Aircraft Div.
Indianapolis
Activity

Data Call #60
NAW C AD, INDY

BRAC-95 CERTIFICATION

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

KHERIE CRAWFORD
NAME (Please type or print)

Kherie Crawford
Signature

BRAC 95 COORDINATOR
Title

19 AUG 94
Date

AIR-0?B
Division

BRAC PROGRAM OFFIC
Department

NAVAL AIR SYSTEMS COMMAND
Activity

Pen & Ink Changes

Enclosure (1)

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

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS
1.1 GUIDANCE
1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities/Capabilities
1.1.B Guidance for Military Department Data Collection
1.1.C Guidance for Military Department Data Analysis
1.2 ASSUMPTIONS
1.3 FUNCTIONAL AREAS
1.3.A Air Vehicles
1.5.B Electronic Combat (EC) Systems
1.3.C Armaments/Weapons

SECTION 2: CAPACITY & TECHNICAL RESOURCES
2.1 WORKLOAD
2.1.A Historical Workload
2.1.B Forecasted Workload
2.2 UNCONSTRAINED CAPACITY
2.3 TECHNICAL RESOURCES

SECTION 3: MEASURES OF MERIT
3.1 OVER-ARCHING MEASURES OF MERIT
3.1.A Interconnectivity
3.1.B Facility Condition
3.1.C Environmental and Encroachment Carrying Capacity
3.1.D Specialized Test Support Facilities and Targets
3.1.E Expandability
3.1.F Uniqueness
3.1.G Available Air, Land, and Sea Space
3.1.H Geographic/Climatological Features
3.2 AIR VEHICLES
3.2.A Supersonic Airspace
3.2.B Airfield and Facility Characteristics
3.2.C Test Operations
3.3 ELECTRONIC COMBAT
3.3.A Threat Environment
3.3.B Test Article Support
3.4 ARMAMENTS/WEAPONS
3.4.A Directed Energy
3.4.B Rocket Missile Bomb Systems

T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

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

1.1 GUIDANCE

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

1.1.A.1 Scope

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

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

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

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

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

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

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

1.1.A.2 T&E Facilities/Capabilities

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

The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C41, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

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

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

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

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

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

1.1.B Guidance for Military Department Data Collection

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

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

See Tab A for requested facility information.

1.1.C Guidance for Military Department Data Analysis

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

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.

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

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

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

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

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

1.3.A Air Vehicles

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

Vehicle. Unmanned air vehicles and cruise missiles are included.

1.3.B Electronic Combat (EC) Systems

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

1.3.C Armaments / Weapons

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

SECTION 2: CAPACITY & TECHNICAL RESOURCES

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

See Tab A for requested facility information

2.1 WORKLOAD

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

2.1.A Historical Workload

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

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

***excludes overtime**

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

2.1.B Forecasted Workload

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

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

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

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

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

2.2 UNCONSTRAINED CAPACITY

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

See Tab A for requested facility information.

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

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

2.3 TECHNICAL RESOURCES

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

No

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

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

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

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

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

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

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

SECTION 3: MEASURES OF MERIT

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

CRITERION l: 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.

See Tab A

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

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

-3.1.B Facility Condition (MV 11) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*
Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

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

-3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? Yes/no. If yes, explain.

No

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

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

Not Applicable

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

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

Air Permits - City of Indianapolis

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

Wastewater Permit - City of Indianapolis

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

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

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

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

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

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

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

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

None

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

None

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

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

No

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

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

No

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

Not Applicable

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

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

Yes

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

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

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

No

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

No

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

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

Yes

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

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

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

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

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

Unique Within

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

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

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

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

Yes - See Table Above

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

Yes - See Table above.

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

Yes

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

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

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

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

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

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

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

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

None

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

No

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

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

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

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

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

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

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

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

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

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

None

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

None

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

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

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

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

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

Not Applicable

3.2 AIR VEHICLES

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

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

-3.2.A Supersonic Airspace (MV 11) - Measure of Merit: *Extent of range size to support weapon system requirements.*

Not Applicable

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

No

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

No

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

-3.2.B Airfield and Facility characteristics (MV II) - Measure of Merit: *Extent*

of air vehicle infrastructure to support T&E operations.

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

NAWC Indianapolis does not have an airfield

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

that the airspace can accommodate.

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

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

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

3.3 ELECTRONIC COMBAT

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

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

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

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

-3.3.A.7.B Representative distance?

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

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

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

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

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

Not Applicable

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

None

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

None

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

Yes

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

3.4 ARMAMENTS / WEAPONS

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

3.4.A Directed Energy (MV 11) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

This includes testing of all types of directed energy weapons.

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

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

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

Not Applicable

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

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

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

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

-3.4.B.1 Ground Space

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

3.4.B.2 Test Operations

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

--Unguided 2000 pound-class ballistic weapon
---live?
---inert?
--Guided weapon (e.g., GBU24 class)
---live?
---inert?
--Stand-off weapon (e.g., AGM-130 class) ---live?
---inert?
--Short-range missile (e.g., AEVI-9) ---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
--Long-range missile (e.g., AIM-120) ---below 5000 feet MSL

---between 5000 and 20,000 feet MSL ---above 20,000 feet MSL

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

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

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

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

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

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

Unit Identification Code (UIC): Enter the UIC.

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

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

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

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

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

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

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

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

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

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

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

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

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

(5) Training and Doctrine (T&D)- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements.

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, 17E, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

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

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

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

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

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

Provide fact sheets. not to exceed two pages.

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

3. Form, Additional Information

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

4. Form, Facility Condition

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

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

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

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

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

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

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

5. Form, Historical Workload

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

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

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

6. Form, Determination of Unconstrained Capacity

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

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

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

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

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

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

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

Workload Per Test

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

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

Workload Per

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

Unconstrained

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

Annual

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

Revised pg

GENERAL INFORMATION

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

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

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

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

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

FOR OFFICIAL USE ONLY

GENERAL INFORMATION

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

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

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:

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

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

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

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

Interconnectivity/Multi-Use of T&E Facility:

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

FOR OFFICIAL USE ONLY

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

Summary of Technical Capabilities:

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

Keywords:

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **12,800**

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

Office Space Square Footage: **0**

Tonnage of Equipment: **38,000**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1992**

NATURE OF LAST UPGRADE: **Establishment**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **1288.98**
Connectivity	**4**	**1**	**4**	
Software Functionality	**25**	**1**	**25**	ANNUAL UNCONSTRAINED CAPACITY 9 **470,478**
Hardware in the Loop	**25**	**1**	**25**	
		TOTAL	**54**	

FOR OFFICIAL USE ONLY

Integrated Avionics Lab

UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division, (NAWCAD)

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

Air Vehicles

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:

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

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

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

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

FOR OFFICIAL USE ONLY

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

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **1,725**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1993**

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

MAJOR UPGRADES PROGRAMMED

None.

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **190.96**
Software Functionality	**8**	**1**	**8**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **69,700**
		TOTAL	**8**	

FOR OFFICIAL USE ONLY

DSMAC Lab

UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division (NAWCAD)

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

EC

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:

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

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

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

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

FOR OFFICIAL USE ONLY

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

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

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

Interconnectivity/Multi-Use of T&E Facility:

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

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

Type of Test Supported:

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

FOR OFFICIAL USE ONLY

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

Summary of Technical Capabilities:

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

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

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **3,163**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1990**

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

MAJOR UPGRADES PROGRAMMED

None.

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

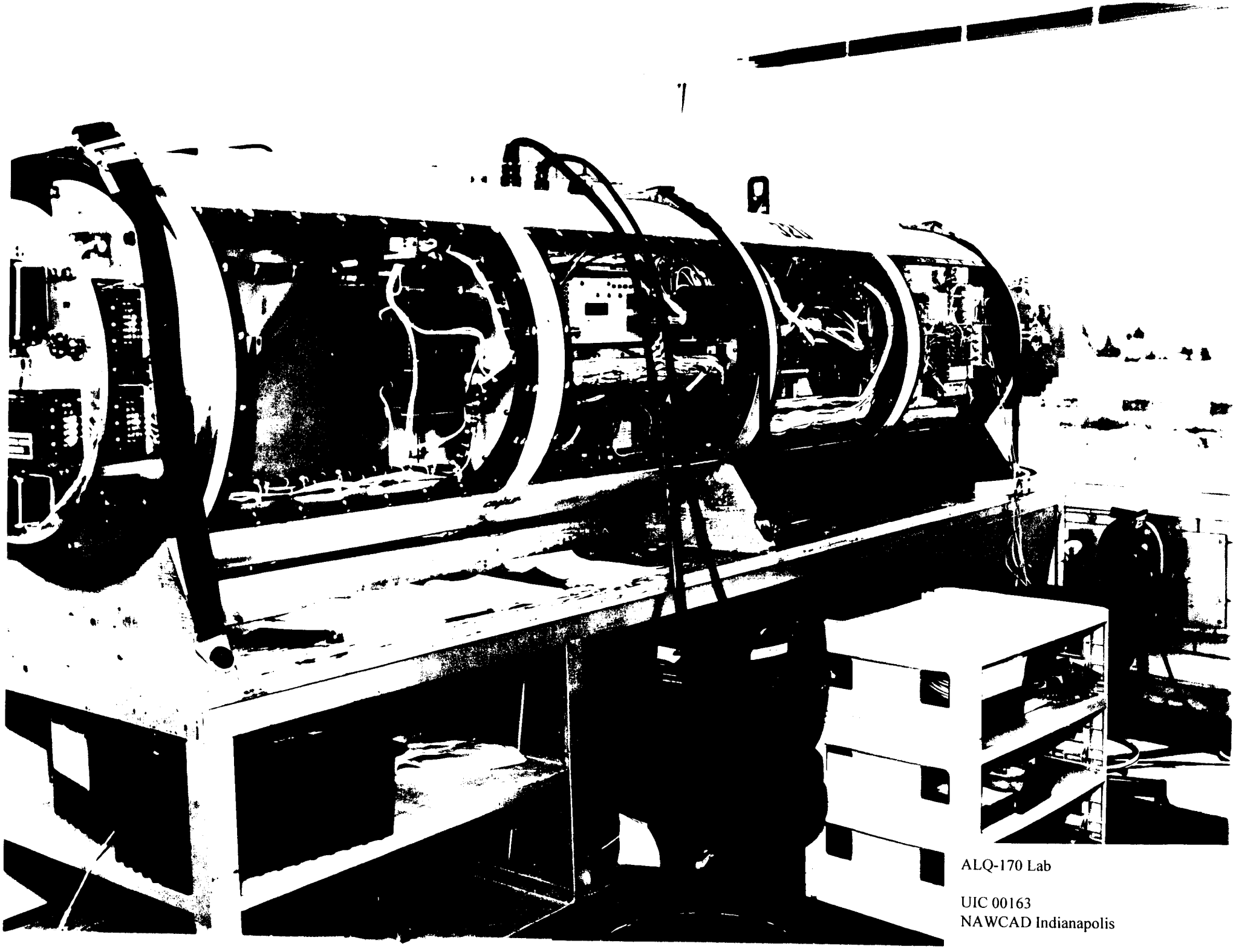
DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **358.05**
Software Functionality	3	1	3	
WRA Functionality	3	1	3	ANNUAL UNCONSTRAINED CAPACITY 9 **130,688**
System Functionality	3	3	9	
		TOTAL	15	

FOR OFFICIAL USE ONLY



ALQ-170 Lab

UIC 00163
NAWCAD Indianapolis

Revised pg

GENERAL INFORMATION

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

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

Air Vehicles

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

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

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

FOR OFFICIAL USE ONLY

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division (NAWCAD)

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

Air Vehicles

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:

The EP-3/ES-3 CILOP and ITF support the EP-3E and ES-3A Software Support Activities (SSAs) and other related VQ Projects such as Storyteller, Viper, VQ Trainer, Classic Aerie, Classic Nidus, ASUW, VPU, Story Classic, PGPU, GSS, Ripsaw, WIXS, and others. This facility contains full-scale mockups of EP-3E and ES-3A aircraft for software development, integration, test, training, and engineering support.

This facility houses the EP-3E and ES-3A SSA software development hot benches containing the core data processing avionics boxes from the aircraft as well as the subsystems which are the most software intensive on the aircraft, i.e. MSP, ARR-81, GPS, Cubic Receivers. The benches have simulation and stimulation equipment and software debugging and analysis tools and are directly linked to the VAX complex resident in the building. The EP-3E and ES-3A SSA's share a series of VAX's which are networked together along with 30 networked user terminals. This shared software environment is crucial to both SSAs.

The EP-3E and the ES-3A benches are used for: fixing Software Trouble Reports (STRs) in the mission software and system maintenance software; coding and sub-system level testing of each STR fix; system integration testing of fixes in conjunction with the entire OFP software; full blown regression testing of all software deliverables prior to their delivery to the fleet; configuration software source code, STRs, changes to the software and tapes of the software to be delivered to the fleet and elsewhere; troubleshooting all engineering problems found in the fleet and make appropriate corrections. Also vendors use the benches to validate new firmware and hardware changes and troubleshoot. The Navy Fleet Introduction Team (FIT) personnel uses them to validate their training manuals and train Fleet personnel. They are also used for the design of new sub-systems for the EP-3E and ES-3A Programs and the integration of their new software and hardware packages; and all validation testing for the Fleet since there is no "test aircraft" for the EP-3E and ES-3A.

FOR OFFICIAL USE ONLY

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

Interconnectivity/Multi-Use of T&E Facility: **No physical interconnections with any other lab internal or external to NAWC Indianapolis.**
Type of Test Supported: **Software and Hardware change testing, systems integration testing, validation testing.**
Summary of Technical Capabilities: **EP-3E and ES-3A full scale mock-ups of the Mission Avionics Suite (MAS)** **VAX 11/780's, VAX 4000/200, PDP 11/60** **Enhanced Tactical Electronic Warfare Environmental Simulator** **Light Electronic Warfare Trainer** **Communication Simulator** **LTN-72 Simulator** **ES-3A Navigation Simulator** **Microprogrammable Bus Terminal** **APS-137 Radar Simulator** **ALD-9 Line of Bearing Simulators** **MSP Stimulation Equipment** **PEACE Simulators** **Link-11 Stimulation** **ETU-106 Demodulator Test Set** **Six Megahertz Data Capture Unit** **AN/ALR-76 Programmable Interface Unit (PIU)** **GPS Satellite Simulator** **AN/USH 26 Simulation PC** **MSP Stimulation Box** **USH-26 Ground Support Station** **Electronic Warfare Environmental Simulator**
Keywords: **Mission Avionics Suite, Navigation, Electronic Warfare**

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	1	1	1	1	1	1
Enlisted	12	12	12	12	12	12	12
Civilian	103	103	103	103	103	103	103
Contractor							
Total	116	116	116	116	116	116	116

Note: Personnel listed represent total users of the facility for performance of technical functions. T & E aspects of support account for less than 20% of their workload.

Total Square Footage: **11,040**

Test Area Square Footage: **11,040**

Office Space Square Footage: **0**

Tonnage of Equipment: **34,500 lbs**

Volume of Equipment: **190k cu. ft.**

Annual Maintenance Cost: **$38,650**

Estimated Moving Cost: **$15,875,520 ***

*** Includes replacement of EP-3 and ES-3 since existing facility must remain in operation during transition.**

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$180,000	$180,000	$180,000	180,000	$180,000	$180,000	$180,000

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

AGE: **8 years** REPLACEMENT VALUE: **$3,600,000**

MAINTENANCE AND REPAIR BACKLOG: **$80k**

DATE OF LAST UPGRADE: **1990**

NATURE OF LAST UPGRADE: **Provided a 5000 sq. ft. facility to support the VQ Software Support Activity**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	11	11	11	12	12	12	12	12
	TEST HOURS	5	5	5	5	5	5	5	5
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR	1	1	1	1	1	1	1	1
	TEST HOURS	1	1	1	1	1	1	1	1
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	OVERHEAD LABOR								

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

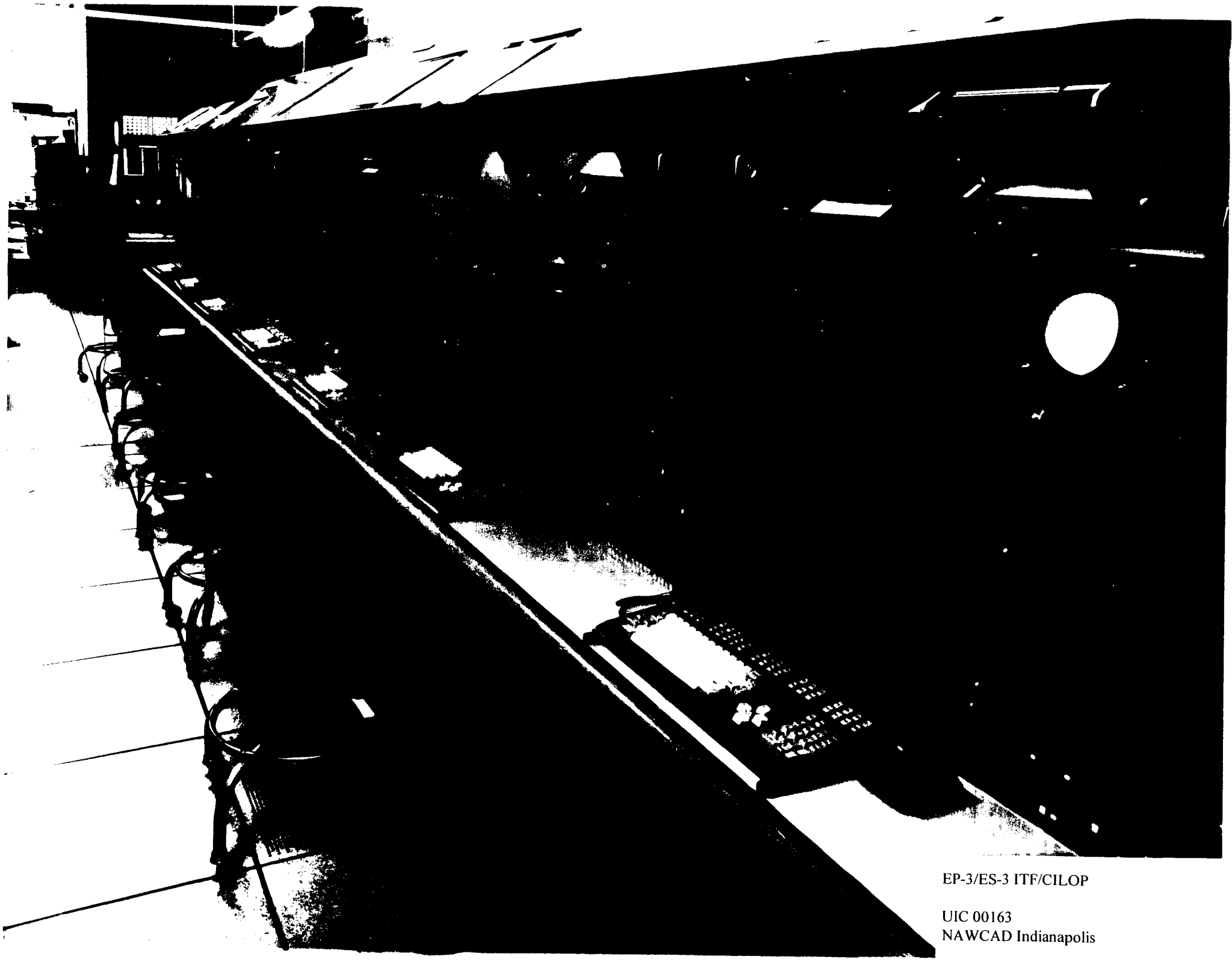
DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **EP-3/ES-3 Convert in Lieu of Procurement (CILOP) and Integrated Test Facilities**

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

TEST TYPES **4**	**TESTS AT ONE TIME** **5**	**WORKLOAD PER TEST PER FACILITY HOUR** **6**	**WORKLOAD PER FACILITY HOUR** **7**	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **1002.54**
Software Functionality	30	1	30	
WRA Functionality	2	2	4	ANNUAL UNCONSTRAINED CAPACITY 9 **365,927**
System Functionality	2	4	8	
		TOTAL	42	

FOR OFFICIAL USE ONLY



EP-3/ES-3 ITF/CILOP

UIC 00163
NAWCAD Indianapolis

Revised pg

GENERAL INFORMATION

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

Service: NAVY Organization/Activity: **Naval Air Warfare Center, Aircraft Division, (NAWCAD)** Location: **Indianapolis, IN**

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

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

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

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

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division, (NAWCAD)

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

Air Vehicles

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

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

FOR OFFICIAL USE ONLY

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

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **2,668**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1993**

NATURE OF LAST UPGRADE: **Establishment**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

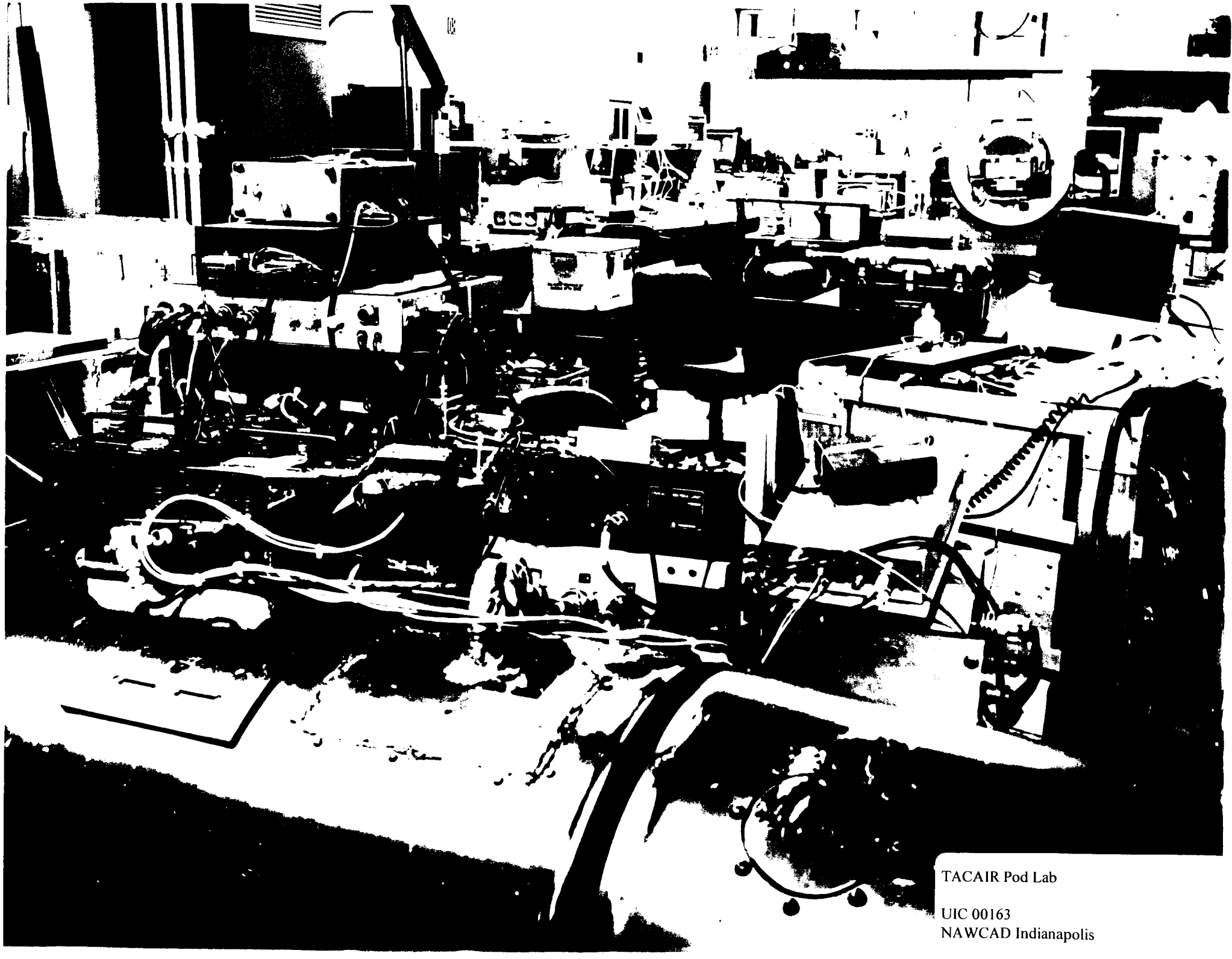
DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ÷) 8 **381.92**
Software Functionality	**2**	**2**	**4**	
Hardware Functionality	**3**	**2**	**6**	ANNUAL UNCONSTRAINED CAPACITY 9 **139,401**
Integration Testing	**3**	**2**	**6**	
		TOTAL	**16**	

FOR OFFICIAL USE ONLY



TACAIR Pod Lab

UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division (NAWCAD)

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

EC

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:

The EW Facility provides the capabilities of: Bayesian radar identification algorithm development for Radar Warning Receivers (RWRs), jammers and ESM sets; and threat library maintenance for the ALR-76 RWR.

This facility is used to develop advanced missile threat simulations for the ALQ-170 Set which simulates missile threats against ship-board Electronic Counter Measures (ECM). Housed in this facility are all the computer resources necessary to code and burn programs into Read-Only Memory (ROM). Each workstation has removable hard drives for storing classified information and is set up in an environment where specific tasks are automated and Software Configuration Management is implemented with the aid of a EW Laboratory area network.

Interconnectivity/Multi-Use of T&E Facility:

No physical interconnectivity but highly dependent on the ALQ-170 Laboratory for ALQ-170 software and integration testing. Develop ALQ-170 software in this lab but checkout, debug and testing is done in the ALQ-170 Laboratory. This facility is also used by the ALR-76 program which need threat library support that is developed in this lab. The AN/ALR-76 Programmable Interface Unit (PIU) is located in the EP-3/ES-3 CILOP and Integrated Test Facility. The PIU is a computer controlled device which allows the software programmers to debug and troubleshoot and change the code within the AN/ALR-76.

Type of Test Supported:

ALQ-170 software initial checkout; Bayesian radar identification algorithm validation and threat library development and validation.

FOR OFFICIAL USE ONLY

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

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **1,081**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1991**

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

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **143.22**
Software Functionality	**6**	**1**	**6**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **52,275**
		TOTAL	**6**	

FOR OFFICIAL USE ONLY

EW Facility

UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

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

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

All

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:

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

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

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

Interconnectivity/Multi-Use of T&E Facility:

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

FOR OFFICIAL USE ONLY

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

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **8,403**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

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

DATE OF LAST UPGRADE: **1987**

NATURE OF LAST UPGRADE: **Establishment**

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

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

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **930.93**
Software Functionality	**39**	**1**	**39**	
				ANNUAL UNCONSTRAINED CAPACITY 9 **339,789**
		TOTAL	**39**	

FOR OFFICIAL USE ONLY

Central Computing Facilities

UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division (NAWCAD)

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

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **6,095**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

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

DATE OF LAST UPGRADE: **1992**

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

MAJOR UPGRADES PROGRAMMED

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

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

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

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

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

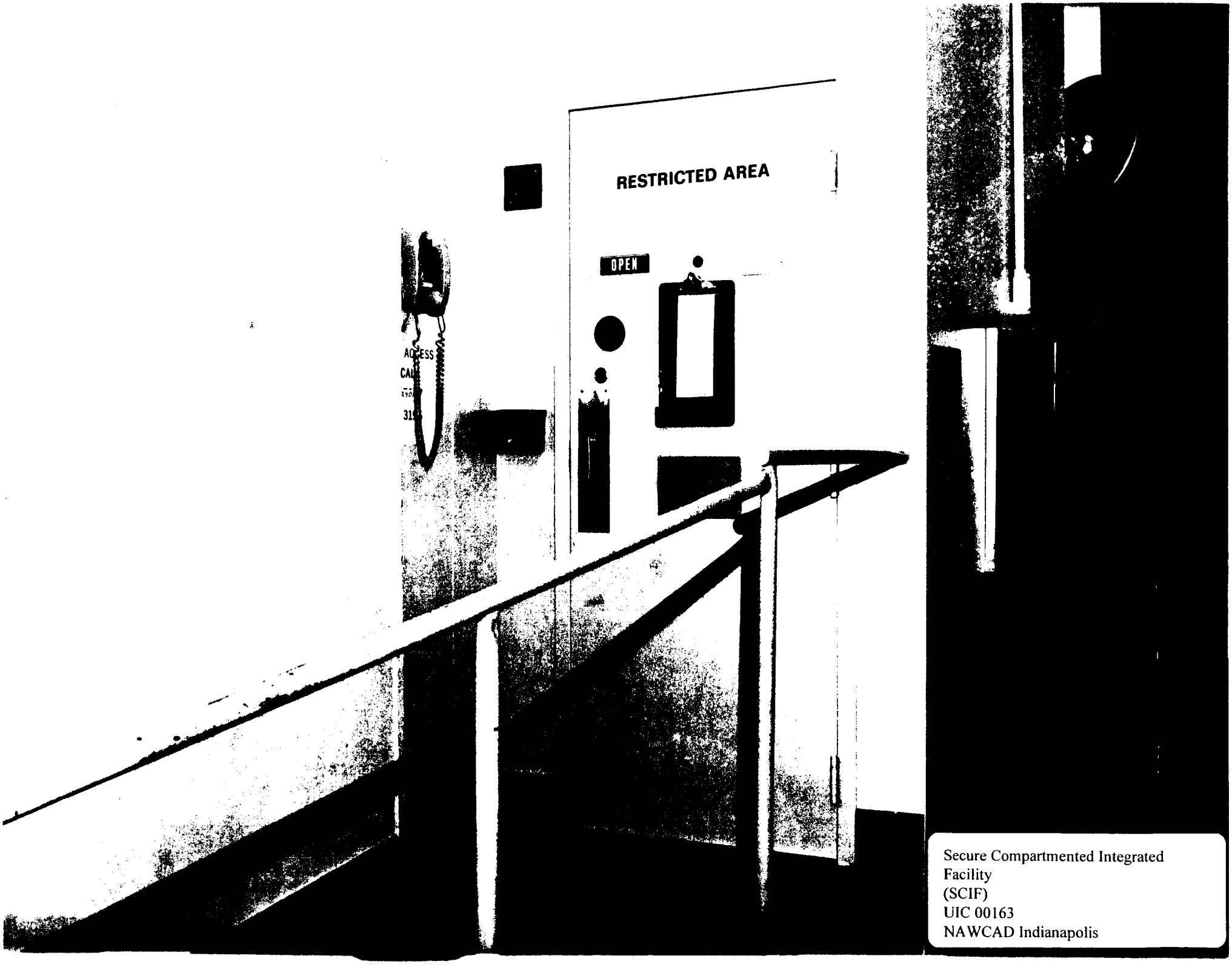
FACILITY/CAPABILITY TITLE: **Secure Compartmented Integrated Facility**

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 *
*	*	*	*	
				ANNUAL UNCONSTRAINED CAPACITY 9 *
		TOTAL	*	

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

FOR OFFICIAL USE ONLY



Secure Compartmented Integrated Facility
(SCIF)
UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division

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

Air Vehicles

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:
The Avionics/Electronics Development Laboratory is used during the design, development, and prototyping phases of electronic equipment. The lab includes an electronic model shop that provides prototyping support such as breadboarding, modifications, fabrication, troubleshooting and repairs. **This lab is comprised of a variety of specifically designated areas and supports many programs including: the AWW-13 integrated support area; the DSM-96 area; the Beartrap lab and the Optics lab which supports the following programs: Advanced Avionics Subsystems & Technology (AAS&T); Standard hardware Acquisition & Reliability Program (SHARP); Advanced Optical Sonobouy; Advanced Gun Weapons Systems Technology Program (AGWSTP); Compass Attitude Heading Reference System (AHRS) Fiber Optic Gyroscope; Optical Backplane Interconnect System (OBIS); and Night Vision.**
Interconnectivity/Multi-Use of T&E Facility:
Is interconnected with Central Computing Facilities to do real time exchange of data and control for simulations and data modeling need to do software testing and hardware-in-the-loop functions.
Type of Test Supported:
Avionics and electronics systems hardware and software development checkout, functionality testing and hardware/software integration testing.

FOR OFFICIAL USE ONLY

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

Summary of Technical Capabilities:
AWW-13 lab **Antenna/radar range** **Engineering development labs** **DSM-96 lab** **Electronics model shop** **Microwave integrated circuit lab** **Mobile communication lab** **Mobile navigation lab** **Non-magnetic test facility** **Optics lab** **SHARP development lab** **Sonobouy lab** **Stores suspension and release equipment** **Telemetry lab** **Weapons support equipment**
Keywords:
Engineering Development Labs, DSM-96, AWW-13, Optics, Telemetry

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **31,531**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1990**

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

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **3,628.24**
Software Functionality	**16**	**1**	**16**	
System Functionality	**10**	**3**	**30**	ANNUAL UNCONSTRAINED CAPACITY 9 **1,324,308**
WRA Functionality	**53**	**2**	**106**	
		TOTAL	**152**	

FOR OFFICIAL USE ONLY

Avionics/Electronics
Development Lab
UIC 00163
NAWCAD Indianapolis

GENERAL INFORMATION

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

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

Naval Air Warfare Center, Aircraft Division (NAWCAD)

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

All

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

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

Facility Description; Including mission statement:

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

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

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

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

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

FOR OFFICIAL USE ONLY

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

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

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

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

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

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

FOR OFFICIAL USE ONLY

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

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

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

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

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

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

FOR OFFICIAL USE ONLY

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

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

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

Interconnectivity/Multi-Use of T&E Facility:

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

Type of Test Supported:

See Technical capabilities below.

Summary of Technical Capabilities:

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

Keywords:

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

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

PERSONNEL

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

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

Total Square Footage: **45,883**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

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

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

MAINTENANCE AND REPAIR BACKLOG: **$0**

DATE OF LAST UPGRADE: **1993**

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

MAJOR UPGRADES PROGRAMMED

None

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

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

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

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

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **1,169.63**
Audio Component	**1**	**1**	**1**	
Acceleration	**2**	**1**	**2**	ANNUAL UNCONSTRAINED CAPACITY 9 **426,915**
EMI	**3**	**2**	**6**	
Temperature	**3**	**1**	**3**	
Thermal Shock	**1**	**1**	**1**	
Temperature/ Humidity	**6**	**1**	**6**	
Altitude	**5**	**1**	**5**	
Accelerated Weathering	**1**	**1**	**1**	
Salt Spray	**2**	**1**	**2**	
Explosion	**1**	**1**	**1**	
Vibration	**10**	**1**	**10**	
Shock	**4**	**1**	**4**	
Failure Analysis	**3**	**2**	**6**	
Night Vision Compatibility	**1**	**1**	**1**	
		TOTAL	**49**	

FOR OFFICIAL USE ONLY

GENERAL INFORMATION

Facility/Capability Title: **Industrial Facilities**

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

Naval Air Warfare Center, Aircraft Division (NAWCAD)

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

All

T&E Test Facility Category

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

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

FOR OFFICIAL USE ONLY

TECHNICAL INFORMATION

Facility/Capability Title: **Industrial Facilities**

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

FOR OFFICIAL USE ONLY

ADDITIONAL INFORMATION

Facility/Capability Title: **Industrial Facilities**

PERSONNEL

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

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

Total Square Footage: **330,159**

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

Office Space Square Footage: **0**

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

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

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

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

CAPITAL EQUIPMENT INVESTMENT

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

FOR OFFICIAL USE ONLY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **Industrial Facilities**

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

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

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

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

MAJOR UPGRADES PROGRAMMED

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

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

2. UPGRADE TITLE:

TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

FOR OFFICIAL USE ONLY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: **Industrial Facilities**

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

Direct labor and test hours are in workyears.

FOR OFFICIAL USE ONLY

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: **Industrial Facilities**

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

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ·) 8 **811.58**
System Acceptance	**8**	**2**	**16**	
System Reliability	**18**	**1**	**18**	ANNUAL UNCONSTRAINED CAPACITY 9 **296,227**
		TOTAL	**34**	

FOR OFFICIAL USE ONLY

* 41C00163

REQUESTS FOR CLARIFICATION

From the Base Structure Analysis Team (BSAT)

Control #: EC-025

Date sent: 8 September 1994

To: CAPT Doug Cook

Voice: (703) 604-1857
Fax: (703) 604-1859

Service: Navy
Site: Naval Air Warfare Centers
Facility/Capability: Various
Page: Various

CLARIFICATION/CORRECTION REQUESTED for Data Call #13. Various Questions

Further clarification is required on reported facilities/capabilities for Electronic Combat (Measurement Facilities, Hardware-In-The-Loop, Installed-Systems-Test Facilities, and Open Air Ranges) and for Armament/Weapons (Measurement Facilities, Hardware-In-The-Loop, and installed-Systems-Test-Facilities) Please direct each of your subordinate activities to fill out and submit the attached forms (Forms #1, #2, and/or #3) for each facility/capability that they reported in their response to Data Call #13 (e.g. a separate Form #1 should be completed for each Measurement Facility reported that performed work in the Electronic Combat functional area, a separate Form #2 should be completed for each Hardware-In-The-Loop facility that performed work in the Armament/Weapons functional area, etc.) Provide a YES or NO response for each question on each form.

CDR Mark B. Samuels, CEC, US
(703) 681-0481, or (703) 578-5750

NOTE: This information is needed urgently, Request you respond with clarification comments (below) or corrected page(s) by 12 September 1994. FAX a preliminary response directly to the T&E Joint Cross-Service Working Group @(703)578-6592. Then, send your official response, properly certified, through your chain of command for certification and further forwarding to the BSAT.

Reply: NAWC AD Indianapolis (UIC 00163) has two facilities identified in support of the Electronic Combat T&E Functional Area. Form #1's are attached. This site has no Armament/Weapons T&E Functional Area Facilities.
Attachments: ALQ-170 Laboratory; Electronic Warfare Facility

Robert R. Butcher	03A	(317) 353-7801	9/12/94
Name	Code	Commercial Phone #	Date

Enclosure (3)

FOR OFFICIAL USE ONLY - BRAC '95 WORKING PAPERS

* NAWCHQ Change
OMS NAWC-21
9/19/94

R

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

Activity Title: NAWC AD INDIANAPOLIS **UIC:** 00163

Facility/Capability Title: ALQ-170 Lab

T&E Test Facility Category: Digital Models & Computer Simulation (DMS)

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

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

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

R

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

Activity Title: NAWC AD INDIANAPOLIS **UIC:** 00163

Facility/Capability Title: Electronic Warfare Facility

T&E Test Facility Category: Digital Models & Computer Simulation (DMS)

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

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

Is this Facility/Capability equipped to support Top Secret or Special Access required work? Yes___ No _X_.

BRAC-95 CERTIFICATION

DATA CALL 13

Reference: SECNAVNOTE 11000 of 08 December 1993

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

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

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

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

ACTIVITY COMMANDER

T. R. DARNELL
NAME (Please type or print)

T. Darnell
Signature

Commanding Officer
Title

7 Jul 94
Date

Naval Air Warfare Center, Aircraft Division, Indianapolis
Activity

DATA CALL 13
NAWCAD
INDIANAPOLIS

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

NEXT ECHELON LEVEL (if applicable)

BARTON D. STRONG
NAME (Please type or print)

Signature

COMMANDER
Title

6 July 1994
Date

NAVAL AIR WARFARE CENTER, AIRCRAFT DIVISION
Activity

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

NEXT ECHELON LEVEL (if applicable)

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

Signature

COMMANDER
Title

7 July 94
Date

NAVAL AIR WARFARE CENTER
Activity

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

MAJOR CLAIMANT LEVEL

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

Signature

COMMANDER
Title

18 JUL 94
Date

NAVAL AIR SYSTEMS COMMAND
Activity

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

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

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

Signature

Title

7/25/94
Date

DATA CALL 13 CHANGE I
BRAC-95 CERTIFICATION

TABA pg 1, 23, 30

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

NEXT ECHELON LEVEL (if applicable)

BARTON D. STRONG
NAME (Please type or print)

Barton D. Strong
Signature

COMMANDER
Title

2 Sept '94
Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION
Activity

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

NEXT ECHELON LEVEL (if applicable)

WILLIAM E. NEWMAN
NAME (Please type or print)

W E Newman
Signature

COMMANDER
Title

9/9/94
Date

NAVAL AIR WARFARE CENTER
Activity

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

MAJOR CLAIMANT LEVEL

WILLIAM C. BOWES
NAME (Please type or print)

Signature

COMMANDER
Title

15 Sep 94
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 A Earner
Signature

Title

9/20/94
Date

DATA CALL #13 TABA pg 1, 23, 30

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

T Darnell
Signature

Commanding Officer
Title

29 August 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity

NAWCAD
INDY
#EC-025

Rev. UIC00163 161

Pg 1-3

DATA CALL #13 - REQUESTS FOR CLARIFICATION
CONTROL #EC-025
BRAC-95 CERTIFICATION

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.
NEXT ECHELON LEVEL (if applicable)

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

Signature

SEP 16 1994

ACTING COMMANDER
Title

Date

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER, MD
Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.
NEXT ECHELON LEVEL (if applicable)

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

Signature

ACTING COMMANDER
Title

Date

NAVAL AIR WARFARE CENTER
Activity

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

WILLIAM C. BOWES
NAME (Please type or print)

Signature

COMMANDER
Title

25 Sep 94
Date

NAVAL AIR SYSTEMS COMMAND
Activity

I certify that the information contained herein is accurate and complete to the best of my knowledge and belief.
DEPUTY CHIEF OF NAVAL OPERATIONS (LOGISTICS)
DEPUTY CHIEF OF STAFF (INSTALLATIONS & LOGISTICS)

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

Signature

Title

9/26/94
Date

DATA CALL #13 - REQUESTS FOR CLARIFICATION UIC 00163
Control # EC-025

BRAC-95 CERTIFICATION

Reference: SECNAV NOTE 11000 dtd 8 Dec 93

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

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

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

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

ACTIVITY COMMANDER

Thomas R. Darnell
(Name (Please type or print)

Signature

Commanding Officer
Title

14 September 1994
Date

Naval Air Warfare Center, Aircraft Div.
Activity