EXECUTIVE CORRESPONDENCE TRACKING SYSTEM (ECTS) # 950628-7

DCN 920

FROM:	TO: GENERAL
TITLE:	TITLE:
ORGANIZATION: OFFICE OF SECDEF	ORGANIZATION: DBCRC
INSTALLATION (s) DISCUSSED: CALIFORNIA BASES	

OFFICE OF THE CHAIRMAN	FYI	ACTION	INIT	COMMISSION MEMBERS	FYI	ACTION	INIT
CHAIRMAN DIXON				COMMISSIONER CORNELLA			
STAFF DIRECTOR	✓			COMMISSIONER COX			
EXECUTIVE DIRECTOR	✓			COMMISSIONER DAVIS			
GENERAL COUNSEL	✓			COMMISSIONER KLING			
MILITARY EXECUTIVE				COMMISSIONER MONTOYA			
				COMMISSIONER ROBLES			
DIR./CONGRESSIONAL LIAISON				COMMISSIONER STEELE			
DIR./COMMUNICATIONS				REVIEW AND ANALYSIS			
				DIRECTOR OF R & A	✓		
EXECUTIVE SECRETARIAT				ARMY TEAM LEADER	✓		
				NAVY TEAM LEADER	✓		
DIRECTOR OF ADMINISTRATION				AIR FORCE TEAM LEADER	✓		
CHIEF FINANCIAL OFFICER				INTERAGENCY TEAM LEADER	✓		
DIRECTOR OF TRAVEL				CROSS SERVICE TEAM LEADER	✓		
DIR./INFORMATION SERVICES							

TYPE OF ACTION REQUIRED

	Prepare Reply for Chairman's Signature		Prepare Reply for Commissioner's Signature
	Prepare Reply for Staff Director's Signature		Prepare Direct Response
	ACTION: Offer Comments and/or Suggestions	✓	FYI

Subject/Remarks:

PROVIDING INFO REGARDING BRAC 95 ECONOMIC IMPACT - TOTAL JOB CHANGE BY INSTALLATION IN CALIFORNIA

Due Date:	Routing Date: 950628	Date Originated:	Mail Date:

Includes Redirects.

BRAC-95 Economic Impact
Total Job Change By Installation
California

Activity	Direct	% of State Jobs
Jobs Out :		
DEFENSE DISTRIBUTION DEPOT MCCL	(428)	0.0%
FISC OAKLAND	(416)	0.0%
FORT HUNTER LIGGETT	(478)	0.0%
NSY LONG BEACH	(4,029)	0.0%
MCCLELLAN AFB	(11,585)	(0.1%)
NAS LEMOORE	(3,573)	0.0%
NAS MIRAMAR	(831)	0.0%
NAS NORTH ISLAND	(423)	0.0%
NCCOSC RDT&E SAN DIEGO	(289)	0.0%
NISE WEST SAN DIEGO	(58)	0.0%
NRC POMONA	(10)	0.0%
NRC SANTA ANA	(14)	0.0%
NAVCOMMSTA STOCKTON	(7)	0.0%
OAKLAND ARMY BASE	(725)	0.0%
ONIZUKA AFB	(1,524)	0.0%
SIERRA ARMY DEPOT	(356)	0.0%
SUPSHIP LONG BEACH	(19)	0.0%
EAST FT BAKER	(97)	0.0%
ONTARIO AGS	(26)	0.0%
Total Jobs Out :	(24,888)	(0.2%)

Please refer to this number when responding 95062-8-7

BRAC-95 Economic Impact
Total Job Change By Installation

Jobs In :		
CBC PORT HUENEME	2	0.0%
DEFENSE CONTRACT MANAGEMENT D	22	0.0%
DEFENSE DISTRIBUTION REGION WES	297	0.0%
EDWARDS AFB	3	0.0%
FISC SAN DIEGO	18	0.0%
MARCH AFB	176	0.0%
NAS NORTH ISLAND	1,583	0.0%
NADEP NORTH ISLAND	219	0.0%
NAVMEDCEN SAN DIEGO	137	0.0%
NAVSTA SAN DIEGO	241	0.0%
WPNSTA SEAL BEACH	177	0.0%
NAWC CHINA LAKE	302	0.0%
NCCOSC RDT&E SAN DIEGO	820	0.0%
NSWC PORT HUENEME	107	0.0%
TRACY FACILITY	319	0.0%
Total Jobs In :	4,423	0.0%
Net Job Change :	(20,465)	(0.1%)

BRAC-95 Economic Impact
Total Job Change By Installation
Texas

Activity	Direct	% of State Jobs
Jobs Out :		
BERGSTROM AFB	(384)	0.0%
DEFENSE DISTRIBUTION DEPOT RED R	(688)	0.0%
DEFENSE DISTRIBUTION DEPOT SAN A	(578)	0.0%
KELLY AFB	(12,277)	(0.1%)
NRF LAREDO	(6)	0.0%
RED RIVER ARMY DEPOT	(386)	0.0%
REESE AFB	(2,435)	0.0%
Total Jobs Out :	(16,754)	(0.2%)
Jobs In :		
FORT BLISS	532	0.0%
FORT SAM HOUSTON	441	0.0%
LACKLAND AFB	3,064	0.0%
LAUGHLIN AFB	652	0.0%
LONE STAR ARMY AMMUNITION PLAN	510	0.0%
NAS CORPUS CHRISTI	974	0.0%
SHEPPARD AFB	224	0.0%
JRB FT WORTH	7	0.0%
Total Jobs In :	6,404	0.1%

As of: 12:45 28 June 1995

State Report 1

BRAC-95 Economic Impact
Total Job Change By Installation

Net Job Change : (10,350) (0.1%)

Document Separator

M E M O R A N D U M

DATE: June 25, 1995

TO: David L, Charles S, Ben B, Wade N, Team Leads,
Madelyn C, CeCe C

FROM: Frank Cirillo

RE: Adds Results for '95

I have heard one of the major concerns of the administration is the excessive number of Adds that were actually acted upon by this Commission vs. previous Commissions.

As a comparison I include a copy of my Nov 94 memo on the same subject. In short, my memo shows that 72 bases were added by the 1993 Commission with 11 of those closed and 7 realigned. Thus a total of 18 of the 72 or 25% were acted upon. In 1995, preliminary figures show 36 bases were added (32) or the recommendation expanded(4). Six of those were closed and two realigned for a total of 9 or 25% being acted upon.

	1993	1995	TOTAL
ADDS 0R PLUS UPS	**72**	**36**	**108**
CLOSED	11	7	18
REALIGNED	7	2	9
TOTAL ACTIONS	**18**	**9**	**27**
PERCENTAGE	**25%**	**25%**	**25%**

Frank Cirillo

M E M O R A N D U M

DATE: November 18, 1994

TO: Senator Alan J. Dixon

Thru: Ben Borden, David Lyles

FROM: Frank Cirillo

RE: Senator Dixon's November 14 Question on "Adds"

CC: Charles, Wade, Alex, Bob, Ed, CeCe

During the November 14 session concerning Review and Analysis issues, Senator Dixon asked the staff to get back to him on the number of bases added by the Commission for further consideration that were actually impacted in the final report. The table below and the attached marked pages from the 1993 Report reflect those figures and specific bases. In fact, 72 major and minor bases were added for consideration and 18 of those (25%) were actually recommended by the Commission for closure or realignment. For purposes of this discussion (which parallels the definitions used for Commission regional hearings and press releases) Major was defined as impacting 300 or more direct jobs (civilian and military).

1993 COMMISSION BASES ADDED FOR FURTHER STUDY

	MAJOR	MINOR	TOTAL
COMMISSION ADDS	51	21	72
ACTUALLY CLOSED	4	7	11
ACTUALLY RALIGNED	2	5	7
TOTAL CHANGES	6(12%)	12(57%)	18(25%)

See Attached Listing

Frank Cirillo

Air Force Team Leader

Document Separator

To: Staff
From: J Dowdy

Subj: Impacts of Closures on Coast Guard Activities

Please be sure to consider the impact to the U.S. Coast Guard when doing your analysis and write-ups.

Glenn MK

Ann AR

Dick [illegible]

Les Jef

Brian BK

Joe _____

U.S. Department of Transportation
United States Coast Guard

Commandant
U. S. Coast Guard

2100 Second St., S.W.
Washington, DC 20593-0001
Staff Symbol: G-CPP
Phone: (202) 267-2355

DRAFT

Honorable Alan Dixon
Chairman, Defense Base Closure
and Realignment Commission
1700 North Moore Street
Suite 1425
Arlington, VA 22209

Dear Mr. Chairman:

The Coast Guard has reviewed the list of recommended base closures and realignments provided by the Secretary of Defense and the 35 recently added by the Commission. I have enclosed a matrix portraying those facilities which will have direct impacts on Coast Guard operations should they close or realign.

The eight Department of Defense facilities identified in the matrix will directly impact our operations in terms of forcing the relocation of a Coast Guard tenant command or terminating established relationships in direct support of Coast Guard field operations. We have identified numerous other facilities that will indirectly affect the Coast Guard in terms of loss of traditional military support provided among services. Examples of these indirect affects include the potential closure of Navy Public Works Center Guam which supplies shoreside services to Coast Guard vessels and waterfront maintenance; the potential closure of Navy Fleet and Industrial Supply Center which frequently provides supplies, equipment and repair parts for Coast Guard vessels; and the potential closure of Naval Shipyard Long Beach which provides direct, high quality ship repair services and family support services to the Coast Guard.

As the federal government continues to streamline operations to meet the needs of its customers, the Coast Guard's motto remains Semper Paratus, always ready. I ask that you consider the Coast Guard in your recommendations to the President. Should you have questions, my point of contact is Captain Blain Brinson, who may be reached at (202) 267-2355.

Sincerely,

Enclosure

Joe
Put cover letter plus
noted attachments to
each X-Service member.
J.O.

Ann

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
NAS SOUTH WEYMOUTH, MA cont.		The NAS South Weymouth closure may reduce the Navy need for housing by as much as 80 units. The CG will still own these units, but not receive maintenance funding. Loss of commissary and exchange facilities will impact drilling reservists in the area. Closure of the clinic will have a minor affect on CG personnel at Station Scituate. D1 field operations will be impacted to a limited degree if the NAS closes: D1 provides semi-annual intelligence briefings to the P-3 squadron at South Weymouth, who in turn provide Target of Interest information to the district during/after flights. The squadron has also been an additional reconaissance asset during AMIO operations.
NAS CORPUS CHRISTI, TX (Realignment)	AIRSTA CORPUS CHRISTI	AIRSTA Corpus Christi is a tenant command of this facility. The Navy may desire to relocate several tenants to maximize space utilization. At one time, NAS expressed an intent to use the CG hangar for the USN minesweeper helos. If that occured, the Navy has indicated they would provide CG with another location on base and would attempt to assist with move/remodeling costs. The latest BRAC developments/ recommendations make it likely that CG will retain its current location in Hangar 41.
MCCLELLAN AFB, CA (Closure)	AIRSTA SACRAMENTO	AIRSTA Sacramento is a tenant command of this facility. Closure of the AFB would force relocation of CG airsta. The CG does not desire to become an airfield landlord. The Air Force currently provides interservice support such as airfield, control tower, crash and fire, weather office, and civil engineering support. They also provide family support services such as housing, medical, dental, exchange, commissary, etc. Airsta Sacramento also receives courier service, communications support and is a local user of the Air Force Classified Material System account. The CG has

Les

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
		local radio transceivers and antennae installed in the Air Force hangar, such as VHF and HF.
NAS POINT MUGU, CA	CG DISTRICT 11	The CG has a National Distress System VHF-FM High Level Site at Point Mugu. The Navy provides the control circuits, power and emergency power to the site.
BAYONNE MILITARY OCEAN TERMINAL, NJ (Closure)		This site is being considered as a proposed location for several NY area commands. Closure of this facility will probably make Army barracks unavailable for CG cutters tentatively planned to homeport there as part of the Streamlining proposals.
FORT DIX, NJ (Realignment)	ATLANTIC STRIKE TEAM	Atlantic Strike Team is a tenant command of this facility. FY95 AC&I project to construct equipment facility with construction award anticipated 3/30/95. No impact anticipated.

Bryan, Dick, Les

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
EGLIN AFB, FL (Realignment)	LORAN MONITORING SITE STA DESTIN FT WALTON NATIONAL DISTRESS SYSTEM CAPE SAN BLAS NATIONAL DISTRESS SYSTEM	STA Destin, FT Walton NDS, Cape San Blas NDS all located on Army property but managed by Eglin (utilities, tower, equipment hut, etc) Impact unknown.
NSWC CRANE DIVISION DETACHMENT, KY (Closure)	CGYD MLCLANT MLCPAC	This closure will have a major impact on field support of the MK75 gun, MK15 CIWS and MK36 SRBOC. This center provides technical and parts assistance, overhauls and defines maintenance procedures for these weapon systems. The Navy may continue to support the MK15 CIWS and MK36 SRBOC, but is removing the MK75 from its inventory. CG YARD may be able to fill this gap.
NUWC NEWPORT DIVISION NEW LONDON DETACHMENT NEW LONDON, CT (Closure)	CGC EAGLE CGC REDWOOD STA NEW LONDON	CGC EAGLE currently moors at Pier 7 when in homeport. SECDOD recommendation is for Pier 7 to remain open. This pier also provides a homeport for the CGC REDWOOD. Anticipate STA New London will acquire its current site and will retain access to Pier 7.
NAVAL COMMAND, CONTROL AND OCEAN SURVEILLANCE CENTER, IN-SERVICE ENGINEERING CENTER EAST COAST DETACHMENT, NORFOLK, VA (Realignment)	G-T MLCLANT MLCPAC	Headquarters, Headquarters units, and MLCs contract with NISE East for electronics engineering support. Unclear from the recommendations as to what functions may be deleted. Major moves of personnel/equipment may result in project elimination or delays.
FORT HAMILTON, NY (Realignment)		May affect USCG personnel remaining in NY area if GI relocates and commissary/exchange close. Other potential impacts unknown.

05/31/95 10:48 ☎202 267 4401 USCG G-CPP 007

Ann / Glenn

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
EAST FORT BAKER, CA (Closure)	STA GOLDEN GATE	The Fort has some limited housing, currently used by a few CG families. Recent degradation in maintenance has already influenced a decision to vacate.
RIO VISTA ARMY RESERVE (Closure)	STA RIO VISTA	This facility is adjacent to Station Rio Vista. Do not anticipate any impact due to closure.
MOFFET FEDERAL AIRFIELD AGS, CA (Closure)	AIRSTA SACRAMENTO	The 129th Air National Guard Air Rescue Squadron is located at this facility. Occasionally, this squadron flies long range SAR for the CG and maintains long range SAR guard when CG C-130's are down. SECDOD recommendation is for Squadron to relocate to McClellan AFB which should facilitate an improved working relationship between Airsta Sacramento and the Squadron.
NAVAL COMMAND, CONTROL AND OCEAN SURVEILLANCE CENTER, IN-SERVICE ENGINEERING WEST COAST DIVISION, SAN DIEGO, CA (Closure)	G-T MLCLANT MLCPAC	Headquarters, Headquarters units, and MLCs contract with NISE West for electronics engineering support. Unclear from the recommendations as to what functions may be deleted. Major moves of personnel/equipment may result in project elimination or delays.
ROBINS AFB, GA (Realignment) the	AR&SC ELIZABETH CITY	AR&SC receives complete Air Force support for repair of CG C-130's through ISSA agreements. AR&SC does not have the facilities to repair C-130's. Impact on ISSA's unknown.
KELLY AFB, TX (Realignment)	AR&SC ELIZABETH CITY	AR&SC receives complete Air Force support for repair of CG C-130's through ISSA agreements. ARSC does not have the facilities to repair the C-130's. Impact on ISSA's unknown.
HILL AFB, UT (Realignment) AVIATION TROOP COMMAND, MO	AR&SC ELIZABETH CITY (Closure)	These facilities provide ISSA support to AR&SC. They do depot level preventive maintenance on our C-130's and H60s.

Les - Jone

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
NAVAL MANAGEMENT SYSTEMS SUPPORT OFFICE, CHESAPEAKE, VA (Closure)		This facility provides In-Service Engineering Agent (ISEA) services for the Microcomputer Organizational Maintenance Management Systems. This system allows for an electronic link to the USN Maintenance Data System. We currently have a MIPR in place with them to perform this function for us.
NAVAL SEA SYSTEM COMMAND, ARLINGTON, VA (Realignment)	G-ODO	All NAVORD equipment program managers are located here. We deal directly with all applicable program managers on ordnance matters. Impact unknown.
BROOKS AFB, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of commissary/exchange facilities will impact active duty and reserve personnel in CGD8.
BERGSTROM AFB, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of commissary/exchange facilities will impact active duty and reserve personnel in CGD8.
DEFENSE DISTRIBUTION DEPOT RED RIVER, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of support services will impact reserve personnel in CGD8.
RED RIVER ARMY DEPOT, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of support services will impact reserve personnel in CGD8.
NAS BARBERS POINT, HI (Change to previous BRAC)	CGAS BARBERS POINT	Navy housing may continue to be available to the CG; the BRAC '95 SECDOD recommendation retains it for multi-service use. Positive impact to CG.

05/31/95 10:52 ☎202 267 4401 USCG G-CFI

Document Separator

TO: TEAM LEADS. - COAST GUARD IMPACTS
Ben 5/31/95 to Merrill, Mark, Dave, Fxc
CDAVE PLS INSURE ANN/LES SEE FOR "ISSUES" SLIDE

Plans, Policy and Evaluation Division
U. S. Coast Guard Headquarters
2100 2nd Street, SW
Washington, DC 20593-0001

Office Number: (202) 267-2355
Fax Number: (202) 267-4401

Date: 31 May 95

To: Mr. Ben Borden

Office/Routing Symbol:

Work Phone:

Fax Phone: 703-696-~~0504~~ 0550

From: Ms. Kathy Scott
202-267-2360

Comments: Attached is an advance draft copy of letter for Commandant's signature. Enclosure provides matrix of direct impacts on CG due to BRAC '95.

Number of pages to follow this cover sheet: 6

This fax machine is "UNATTENDED"
and receives automatically 24 hours a day.
Please let me know that you are sending a document.

U.S. Department of Transportation
United States Coast Guard

Commandant
U. S. Coast Guard

2100 Second St., S.W.
Washington, DC 20593-0001
Staff Symbol: G-CPP
Phone: (202) 267-2355

DRAFT

Honorable Alan Dixon
Chairman, Defense Base Closure
and Realignment Commission
1700 North Moore Street
Suite 1425
Arlington, VA 22209

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Sincerely,

Enclosure

DRAFT

IMPACT OF DOD FACILITY CLOSURES/REALIGNMENTS

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
NAVAL AIR FACILITY ADAK, AL (Closure)	LORAN STATION (LORSTA) ATTU AIR STATION (AIRSTA) KODIAK ADAK LORAN MONITOR COMMUNICATION STATION KODIAK	Closure of this facility will have a major impact on CG operations in the North Pacific. Loss of use of this facility will impair our ability to perform maritime law enforcement and safety and security missions. Adak currently provides both cutter and aircraft support for CG ops. Loss of this facility will result in decreased aircraft on-scene time and delay of medical evacuation patients. It will result in fewer on-scene cutter days for law enforcement patrols. Loss of Loran monitoring station at Adak may force a relocation of the site at great cost. CG cutters also use Adak for JP-5 refueling. They could potentially switch to diesel fuel available at Dutch Harbor, but with negative impacts. Naval Security Group Adak currently supports COMMSTA Kodiak remote MF and HF transceivers and receivers. Its closure will terminate the Inter-service Support Agreement (ISSA). Other support alternatives are being investigated.
CHARLES MELVIN PRICE SUPPORT CENTER, IL (Closure)	NAVAL ENGINEERING SUPPORT UNIT (NESU) ST. LOUIS ELECTRONICS MAINTENANCE DETACHMENT (EMD) ST. LOUIS MARINE SAFETY OFFICE (MSO) ST. LOUIS	NESU & EMD St. Louis are existing tenants of this facility. MSO St. Louis currently maintains their small boats and pollution responses equipment in a building at the Support Center. A planning proposal for a new Base St. Louis at this site has been approved. Anticipate closure will lead to a Title 10 transfer of 22 acres to the CG for the new base. Impact on NESU and EMD St. Louis is unknown. Charles Melvin Price Support Center also provides an exchange, commissary, gym, golf course and club house that are used by CG personnel. The Army Depot at Granite City will remain active, providing

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
CHARLES MELVIN PRICE SUPPORT CENTER cont.		commissary/exchange services to CG personnel. CG Auxiliary would be directly impacted by closure of this facility. The Support Center houses the Auxiliary's National Supply Center (ANSC). The ANSC is the storage and distribution center for Auxiliary pubs, awards, member course, etc. The ANSC is operated under contract, with CG managing the contract and overseeing operations. The Auxiliary may be forced to lease the same space, most likely at an increased cost, or move the location, requiring transportation of inventory and development of a new contract. The CG District 2 armory is currently in shared Army space. A new armory is included within the scope of the new Base St. Louis design. There may be an opportunity for future consolidation of the NESU, EMD, and MSO at the new base site.
SELFRIDGE ARMY GARRISON, MI (Closure)	AIRSTA DETROIT GROUP/BASE DETROIT MSO DETROIT STATION BELLE ISLAND STATION PORT HURON STATION ST. CLAIR SHORES AIDS TO NAVIGATION TEAM (ANT) DETROIT CG CUTTER (CGC) BRISTOL BAY	Airsta Detroit is a tenant command of this facility. It is unlikely that the Airsta will have to relocate as the airfield property is under the custody of the Michigan Air National Guard (ANG). Operational services are supported by an ISSA between the Air Station and Michigan ANG. With a total closure of this base, CG may lose commissary, exchange, medical, and child care services. Fire fighting services and Airfield Crash and Rescue are 50% funded by the Army and 50% by the 127th Fighter Wing of Michigan ANG. If the ANG is unable to absorb 100% funding, a significant cutback in the airfield support could occur or CG might have to provide additional funds to continue support of this service. CG occupies 116 of 745 Army housing units. The Army has no plans to continue to run this housing. Closure could mean expanding our leased housing for eligible members.

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
SENECA ARMY DEPOT, NY (Closure)	LORSTA SENECA	Staffing at LORSTA Seneca is programmed to decrease from 20 personnel to 4 with the completion of a LORAN consolidated control project 7/97. The nature of LORAN operations makes movement of the LORAN facility impossible and the option to acquire the property has been explored locally. The effect of closure of Seneca housing, 32 units, would minimally impact the CG. Additional minor concerns include the transfer of LORSTA water and sewer currently provided by Seneca Army Depot, to Seneca County. The Army also manages a profitable MWR recreational travel camp, used by Active Duty Military and retirees as vacation cottages. The depot also provides telephone services to LORSTA Seneca.
NAS SOUTH WEYMOUTH, MA (Closure)	SOUTH WEYMOUTH BUOY DEPOT STATION SCITUATE CG DISTRICT 1	South Weymouth Buoy Depot is a tenant command of this facility. The CG does not own or lease, just has use of the site. The ISSA with the Navy states that an additional 6 acres could be made available to the CG if the NAS ever closed. The NAS Fire Department provides protection and safety inspections for the Depot. We may be able to rely on the local Fire Department to provide protection services. We currently lease 50 housing units from the Navy for CG families in the Boston area. The housing is poor and considered to be a maintenance burden; however, other housing options are limited. The NAS housing may be unnecessary for Boston-area members; District 1 needs to address this in the future. The Navy exchange may close; may be feasible for CG Exchange System to take over if a CG presence remains. The CG may see a significant decrease in the established ISSA with the Navy at Airsta Cape Cod. The CG provides the Navy use of 95 units of housing at Cape Cod.

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
NAS SOUTH WEYMOUTH, MA cont.		The NAS South Weymouth closure may reduce the Navy need for housing by as much as 80 units. The CG will still own these units, but not receive maintenance funding. Loss of commissary and exchange facilities will impact drilling reservists in the area. Closure of the clinic will have a minor affect on CG personnel at Station Scituate. D1 field operations will be impacted to a limited degree if the NAS closes: D1 provides semi-annual intelligence briefings to the P-3 squadron at South Weymouth, who in turn provide Target of Interest information to the district during/after flights. The squadron has also been an additional reconaissance asset during AMIO operations.
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DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
		local radio transceivers and antennae installed in the Air Force hangar, such as VHF and HF.
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DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
EGLIN AFB, FL (Realignment)	LORAN MONITORING SITE STA DESTIN FT WALTON NATIONAL DISTRESS SYSTEM CAPE SAN BLAS NATIONAL DISTRESS SYSTEM	STA Destin, FT Walton NDS, Cape San Blas NDS all located on Army property but managed by Eglin (utilities, tower, equipment hut, etc) Impact unknown.
NSWC CRANE DIVISION DETACHMENT, KY (Closure)	CGYD MLCLANT MLCPAC	This closure will have a major impact on field support of the MK75 gun, MK15 CIWS and MK36 SRBOC. This center provides technical and parts assistance, overhauls and defines maintenance procedures for these weapon systems. The Navy may continue to support the MK15 CIWS and MK36 SRBOC, but is removing the MK75 from its inventory. CG YARD may be able to fill this gap.
NUWC NEWPORT DIVISION NEW LONDON DETACHMENT NEW LONDON, CT (Closure)	CGC EAGLE CGC REDWOOD STA NEW LONDON	CGC EAGLE currently moors at Pier 7 when in homeport. SECDOD recommendation is for Pier 7 to remain open. This pier also provides a homeport for the CGC REDWOOD. Anticipate STA New London will acquire its current site and will retain access to Pier 7.
NAVAL COMMAND, CONTROL AND OCEAN SURVEILLANCE CENTER, IN-SERVICE ENGINEERING CENTER EAST COAST DETACHMENT, NORFOLK, VA (Realignment)	G-T MLCLANT MLCPAC	Headquarters, Headquarters units, and MLCs contract with NISE East for electronics engineering support. Unclear from the recommendations as to what functions may be deleted. Major moves of personnel/equipment may result in project elimination or delays.
FORT HAMILTON, NY (Realignment)		May affect USCG personnel remaining in NY area if GI relocates and commissary/exchange close. Other potential impacts unknown.

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DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
NAVAL SHIPYARD LONG BEACH, CA (Closure)	SUPRTCEN SAN PEDRO	The shipyard and SIMA provide direct, high quality ship repair services to local CG. Service connectivity for the RAPIDS program and the Defense Switched Network at CGD11 are provided by the Naval Shipyard. Alternate service points will have to be identified. This closure will also impact support services for the CG, i.e., a Family Support Center, commissary, exchange, barber shop, pharmacy, medical services, child care. CGD11 Response Advisory Team houses our Vessel of Opportunity Skilling System at the Shipyard. SUPRTCEN San Pedro uses the Navy clinic for some x-ray and laboratory services. Because of the distance of San Pedro from any other federal direct care inpatient or specialty service provider, the CG may have to contract for or obtain an MOU with the Dept. of Veterans Affairs for many of these services. Closure may also eliminate berthing/ messing opportunities for reservists augmenting CG commands in the area. PSU 311 is in the process of being established using a warehouse on the shipyard. They are currently setting up temporary storage facilities and will probably require additional warehouse cost if they have to relocate.
MCCLELLAN AFB, CA (Realignment)	AIRSTA SACRAMENTO See Previous Impact on McClellan	McClellan is slated for realignment. Currently 29 CG families reside there in Air Force housing. If the realignment results in more AF families at McClellan, the CG may see a reduction in government owned housing opportunities. Consolidation of workloads at McClellan should not impact CG operations at Airsta Sacramento as long as the runway remains operational and the current support provided by the Air Force continues.

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
EAST FORT BAKER, CA (Closure)	STA GOLDEN GATE	The Fort has some limited housing, currently used by a few CG families. Recent degradation in maintenance has already influenced a decision to vacate.
RIO VISTA ARMY RESERVE (Closure)	STA RIO VISTA	This facility is adjacent to Station Rio Vista. Do not anticipate any impact due to closure.
MOFFET FEDERAL AIRFIELD AGS, CA (Closure)	AIRSTA SACRAMENTO	The 129th Air National Guard Air Rescue Squadron is located at this facility. Occasionally, this squadron flies long range SAR for the CG and maintains long range SAR guard when CG C-130's are down. SECDOD recommendation is for Squadron to relocate to McClellan AFB which should facilitate an improved working relationship between Airsta Sacramento and the Squadron.
NAVAL COMMAND, CONTROL AND OCEAN SURVEILLANCE CENTER, IN-SERVICE ENGINEERING WEST COAST DIVISION, SAN DIEGO, CA (Closure)	G-T MLCLANT MLCPAC	Headquarters, Headquarters units, and MLCs contract with NISE West for electronics engineering support. Unclear from the recommendations as to what functions may be deleted. Major moves of personnel/equipment may result in project elimination or delays.
ROBINS AFB, GA (Realignment) X SVS	AR&SC ELIZABETH CITY	AR&SC receives complete Air Force support for repair of CG C-130's through ISSA agreements. AR&SC does not have the facilities to repair C-130's. Impact on ISSA's unknown.
the X SVS KELLY AFB, TX (Realignment) X SVS	AR&SC ELIZABETH CITY	AR&SC receives complete Air Force support for repair of CG C-130's through ISSA agreements. ARSC does not have the facilities to repair the C-130's. Impact on ISSA's unknown.
HILL AFB, UT (Realignment) AVIATION TROOP COMMAND, MO	AR&SC ELIZABETH CITY (Closure)	These facilities provide ISSA support to AR&SC. They do depot level preventive maintenance on our C-130's and H60s.

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
NAVAL MANAGEMENT SYSTEMS SUPPORT OFFICE, CHESAPEAKE, VA (Closure)		This facility provides In-Service Engineering Agent (ISEA) services for the Microcomputer Organizational Maintenance Management Systems. This system allows for an electronic link to the USN Maintenance Data System. We currently have a MIPR in place with them to perform this function for us.
NAVAL SEA SYSTEM COMMAND, ARLINGTON, VA (Realignment)	G-ODO	All NAVORD equipment program managers are located here. We deal directly with all applicable program managers on ordnance matters. Impact unknown.
BROOKS AFB, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of commissary/exchange facilities will impact active duty and reserve personnel in CGD8.
BERGSTROM AFB, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of commissary/exchange facilities will impact active duty and reserve personnel in CGD8.
DEFENSE DISTRIBUTION DEPOT RED RIVER, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of support services will impact reserve personnel in CGD8.
RED RIVER ARMY DEPOT, TX (Closure)	GRU GALVESTON GRU CORPUS CHRISTI AIRSTA CORPUS CHRISTI	Loss of support services will impact reserve personnel in CGD8.
NAS BARBERS POINT, HI (Change to previous BRAC)	CGAS BARBERS POINT	Navy housing may continue to be available to the CG; the BRAC '95 SECDOD recommendation retains it for multi-service use. Positive impact to CG.

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
FORT GREELY, AL (Realignment)	LORSTA TOK	LORSTA Tok personnel use the commissary and exchange at Ft Greely. Ft Greely closure will not impair LORAN operations. The Army metrology lab at Greeley repairs and calibrates all electronics equipment on inventory at LORSTA TOK. If the lab were to close as part of this realignment, the CG would have to pay for this service or purchase $25K worth of calibrating equipment.
SHIP REPAIR FACILITY, GUAM (Closure)	MARSEC MSO GUAM CGC BASSWOOD CGC GALVESTON ISLAND	Closure of this facility could lead to eventual closure of the naval station clinic and hospital, the primary source of medical care for the 116 CG personnel and their dependents in Naval housing. Vessel maintenance and repair assistance has been provided at this facility, as well as dry dock capability. Additional cutter transit time will be required for this type of maintenance. In addition, the Navy metrology lab repairs and calibrates all electronics equipment on inventory at MARSEC Guam. If the lab closes, the cost for this work would increase by an estimated $5K per year.
NAVAL ACTIVITIES GUAM (Realignment)	MARSEC MSO GUAM CGC GALVESTON ISLAND CGC BASSWOOD	Naval Activities Guam supports active duty and reserve CG on Guam in many ways as tenant activities. ISSA's are in place with the Navy Public Works Center for general, electrical, water/sewer and housing support, as well as telephone services for our buildings, offices and grounds on NAVACT. MARSEC, MSO and the 2 cutters are located on CG property within NAVACTS. CG units are directly supported by almost every department of NAVACTS. The Navy provides security, training spaces, MWR services, food services, consolidated bachelor quarters, portion operations, commercial travel, fire department response, legal services, etc.

DOD INSTALLATION	AFFECTED CG UNITS	IMPACT
GREATER PITTSBURGH IAP AIR RESERVE STATION, PA (Closure)	MSO PITTSBURGH	Closure of this facility will impact Reserve personnel who stay at this facility when drilling. Costs of Reserve drills will escalate in the Pittsburgh area because of high costs associated with temporary lodging.
SPACE AND NAVAL WARFARE SYSTEMS COMMAND ARLINGTON, VA (Change to previous BRAC)		Relocation of this command to San Diego will make it difficult to participate in Navy electronic systems programs affecting CG, e.g. Defense Message System, high speed fleet broadcast, NTCS-A/JMCIS, NAVMAC-II.
FITZSIMONS ARMY MEDICAL CENTER, CO (Closure)		Primary impact on health care services will be the relocation of the Optical Fabrication Laboratory to Ft Sam Houston, TX. This laboratory provides military eyeware support to CG personnel west of the Mississippi River. Loss of service may only be temporary during transfer to Texas.
FORT BUCHANAN, PR (Realignment)	CG BASE SAN JUAN	Closure of the family housing units and conversion to a primary reserve unit will affect health care provided by the Army clinic primarily for CG dependents.
NAVAL AIR STATION ALAMEDA, CA (Change to previous BRAC)	PACAREA	PACAREA (Pi) presently picks up Defense Courier Service material at NAS Alameda. A new delivery system will need to be developed to take care of delivery of classified material in a timely manner. PACAREA (Pi) provides over the counter Sensitive Compartmented Information traffic service to local Navy ships and CG units. When NAS closes, PACAREA anticipates losing the assigned Navy billets that assist the staffing for this service.
OAKLAND ARMY BASE, CA	CG PACIFIC AREA	Anticipate telephone circuit (secure and non-secure impacts.

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9 July 1993

MEMORANDUM FOR THE SECRETARY OF DEFENSE

SUBJECT: Joint Fixed-Wing Training (Secretary of Defense Memorandum, 15 April 1993) - ACTION MEMORANDUM

This memorandum and the attached plan respond to your 15 April 1993 memorandum directing the Secretary of the Air Force, assisted by the Secretary of the Navy, to consolidate initial fixed-wing aircraft training. The plan also addresses related issues of airlift/tanker/maritime training, and navigator/Naval Flight Officer (NFO) training.

In primary training, the services will begin an instructor exchange in Fiscal Year 1993, and a student exchange in Fiscal Year 1994. The 35th Flying Training Squadron at Reese Air Force Base, Texas, and Training Squadron 3 at Naval Air Station Whiting, Florida, will be the prototype joint training squadrons. They fly the T-37 and T-34 aircraft respectively. Other squadrons will become joint not later than the point at which they convert to the Joint Primary Aircraft Training System (JPATS) aircraft and a common syllabus.

The services will test joint airlift/tanker/maritime training and systems officer training. Pilots in the airlift/tanker/maritime track will complete either Air Force T-1A or Navy T-44 training. Air Force systems officers will attend initial training at Randolph Air Force Base, Texas, and then cross flow into the Navy program at Naval Air Station Pensacola, Florida.

Two post-graduate programs will be affected. In Fiscal Year 1995, Navy electronic warfare officers will attend joint training at Randolph Air Force Base. The Army indicates efficiencies may be possible by aligning their fixed-wing transition training with existing Navy programs.

Most cost avoidance has already accrued by closing four training bases. Additional cost avoidance will occur through acquiring a common JPATS. A small recurring cost will grow to approximately $500 thousand annually. The services agree joint training is worth the cost.

Michael B. Donley
Acting Secretary of the Air Force

Frank B. Kelso II
Acting Secretary of the Navy

Attachment:
Joint Fixed-Wing Aircraft Training Plan

EXECUTIVE SUMMARY

This plan responds to the 15 April 1993 Secretary of Defense memo on the "Roles, Missions, and Functions of the Armed Forces of the US." The plan will consolidate joint fixed-wing aircraft training for Air Force, Navy, Army, Marine Corps, and Coast Guard students. Three distinct areas for training future combat aircrews can be immediately exploited as joint training: fixed-wing primary, advanced airlift/tanker/maritime patrol training, and advanced training for Naval Flight Officers/systems officers/electronic warfare officers.

As the services studied joint training options, several observations were apparent. First, the services, in conjunction with the U.S. Congress have closed several training bases--the cost avoidance associated with these base closure initiatives will account for the preponderance of cost reductions associated with military flying training. One Navy base, Chase, and two Air Force bases, Mather and Williams, have closed in FY93. One other Navy base, Meridian, has been nominated for closure in BRAC Round III. As a result of these closures, DoD will realize an annual recurring savings of $189M per year with only $324M required up front to close all four bases.

Moreover, Secretary Aspin's direction to continue with the acquisition of a common Joint Primary Aircraft Training System (JPATS), will avoid additional costs. More than $575M in redundant development and production costs are avoided by conducting a single aircraft procurement for both services. Additional savings will be realized with one depot overseeing a reduced number of sources for parts and support, and training management staff responsibilities that are jointly shared.

Training capacity and infrastructure were also examined as part of this joint study. Neither the Air Force nor the Navy has the remaining aircraft or base capacity to train all DoD primary students projected for FY99 and beyond. Both services have retired substantial numbers of obsolete training aircraft as projected student loads have been

modified to reflect force structure drawdowns. It was determined that any reduction to post-BRAC III basing structure would preclude expected FY99 mission accomplishment due to the excessive base and airspace loading which would result. Both service training infrastructures are sized appropriately to the force structure supported by existing budgets. Whereas the on-going DoD Bottom-Up Review may produce additional force structure changes that in time further reduce the required numbers of aviation graduates, both services are prepared to respond to these adjustments as they are finalized.

In response to Deputy SECDEF Perry's 28 May 1993 memo on fixed-wing training for helicopter bound student pilots, the helo study group, led by the Secretary of the Navy, will separately address alternatives to the present method of training to include the practice of using fixed-wing training to select and train students enroute to follow-on rotary wing training. Their report will outline the impacts on fixed-wing training force structure associated with these alternatives. Based on their recommendations, fixed-wing training plans could change accordingly. As with the results of the Bottom-Up Review, both services will respond to any policy changes in this regard by resizing the numbers of primary aircraft and instructors, and reevaluating the base infrastructure needed to accommodate modified training loads.

The services will test other joint training programs as well. Prototype airlift/ tanker/maritime patrol advanced pilot training will occur at Reese AFB in the T-1A and at NAS Corpus Christi in the T-44. The Air Force will also train systems officers in the Navy NFO program at NAS Pensacola. Navy electronic warfare officers will attend Air Force electronic warfare training at Randolph AFB after they complete their initial training at NAS Pensacola. While incurring slight additional costs, these initiatives allow us to exploit existing hardware and programs to provide the best training possible to students of all services.

In summary, joint training has enormous potential. Our approach will be to start this year, build the program year by year, learn as we go, and produce the world's best

joint pilot and systems officer training programs. Young aviators will be exposed to the joint service environment, while field grade officers will earn joint duty credit, thus promoting future joint operations. Services will gain from each others' training strengths, resulting in better training overall. Economies of scale will be attainable in every joint training venture, especially with a common aircraft, ground training system, and logistics system. The services are prepared to step smartly into joint training and take full advantage of common training systems like JPATS. The remainder of this report outlines the details of our plan and schedule, and offers a first look at costs and cost avoidance. As we train together, we will continue to improve the quality of our graduates and work toward further efficiencies.

JOINT FIXED WING AIRCRAFT TRAINING ANALYSIS

- Observations 5
- Joint Fixed Wing Primary 8
- Joint Airlift/Tanker/Maritime Patrol 15
- Joint NFO/Systems Officer/EWO Training 18
- Estimated Costs and Savings 23
- Summary 26

OBSERVATIONS

There have been three base closures of military flying training bases as a result of the Base Realignment and Closure process--Mather and Williams Air Force bases, and Chase Naval Air Station. NAS Meridian has been nominated for potential closure in the BRAC Round III (See Figure 1). The remaining infrastructure appears to be sized appropriately for steady state outyear needs.

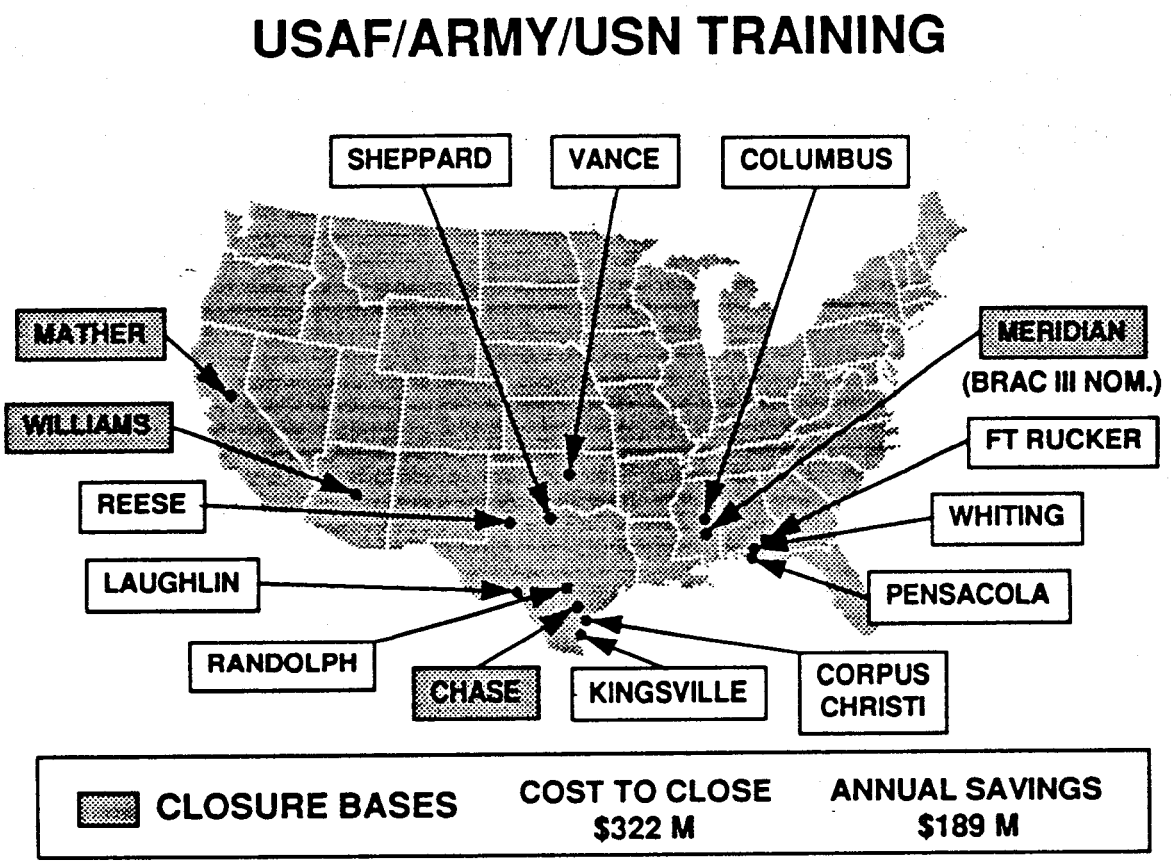


FIGURE 1

The USN capacity for primary student production at their two locations is 1253 per year. Seventy four excess T-34 aircraft are being retired, resulting in 255 used to meet this requirement. There is no excess capacity when compared to the projected FY99 production of 1253 (See Figure 2).

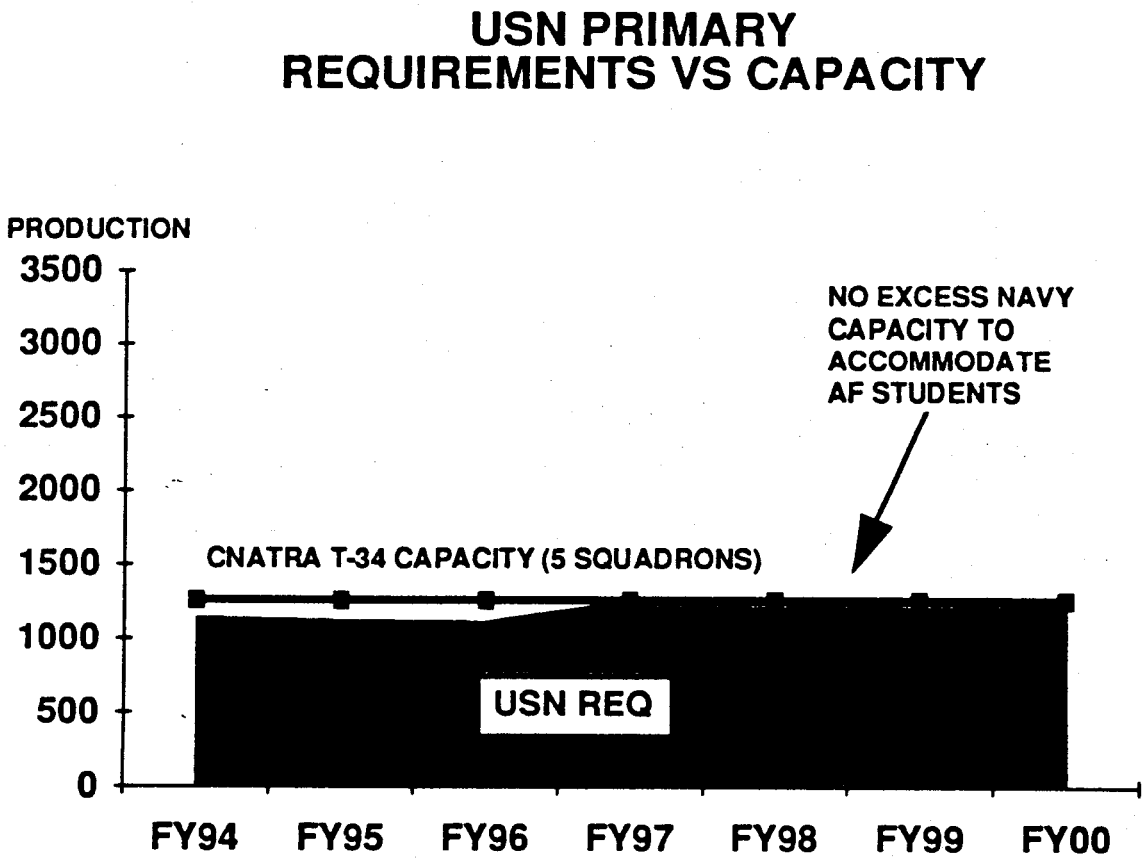


FIGURE 2

The Air Force possesses 307 T-37 aircraft that have been modified via a service life extension program (SLEP) and are located at their four remaining undergraduate pilot training bases. Maximum student production capacity of these assigned aircraft is 1404 per year. The reduced Air Force requirement due to force downsizing in the steady state by FY99 is 1212. This leaves an excess capability to produce only 212 USN pilots at Air Force bases (See Figure 3).

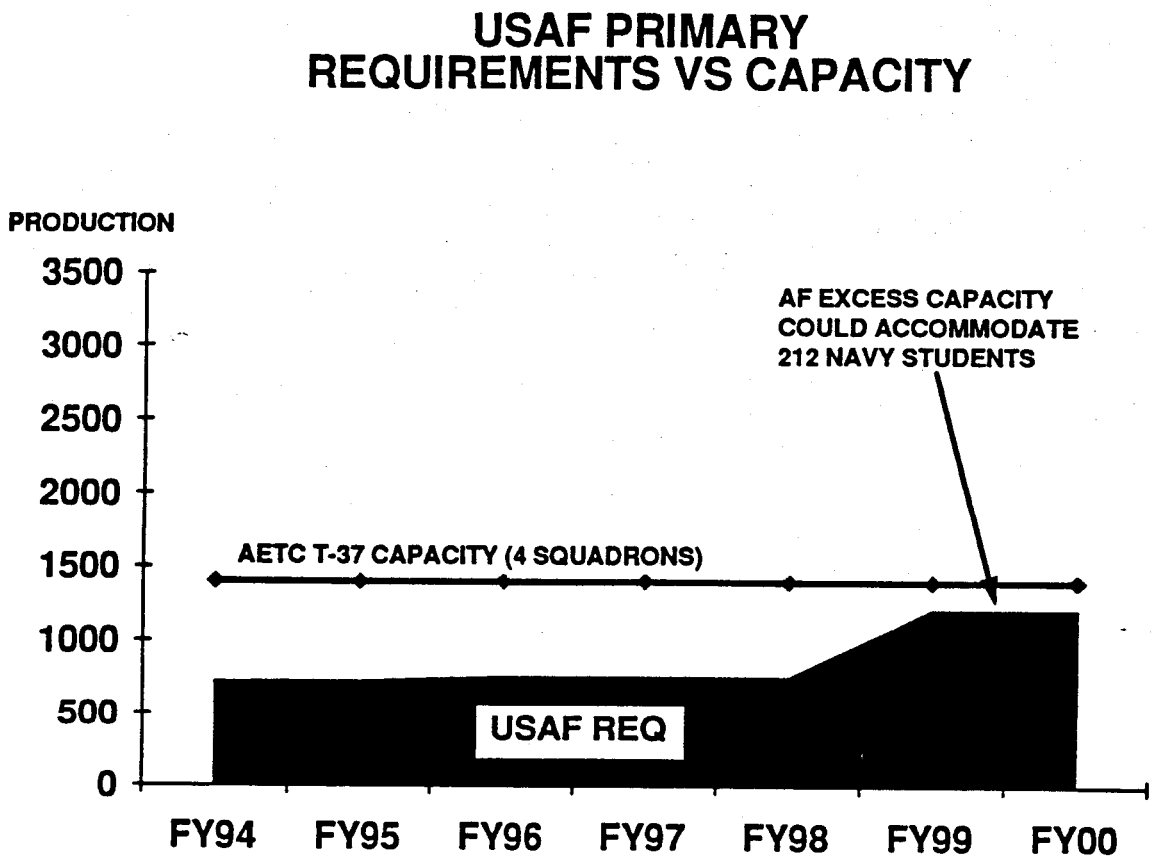


FIGURE 3

JOINT FIXED-WING PRIMARY

The USAF and USN pilot training programs have evolved over the years into similar training philosophies. Basic military flying skills are taught in the primary training phases, followed by service specific training taught in advanced phases. The USAF pilot training program as shown in Figure 4 is transitioning to Specialized Undergraduate Pilot Training (SUPT), where the advanced track splits into the bomber/fighter track and the airlift/tanker track. Reese AFB is the first USAF base transitioning to SUPT, and will be the first USAF base to host and participate in joint primary training.

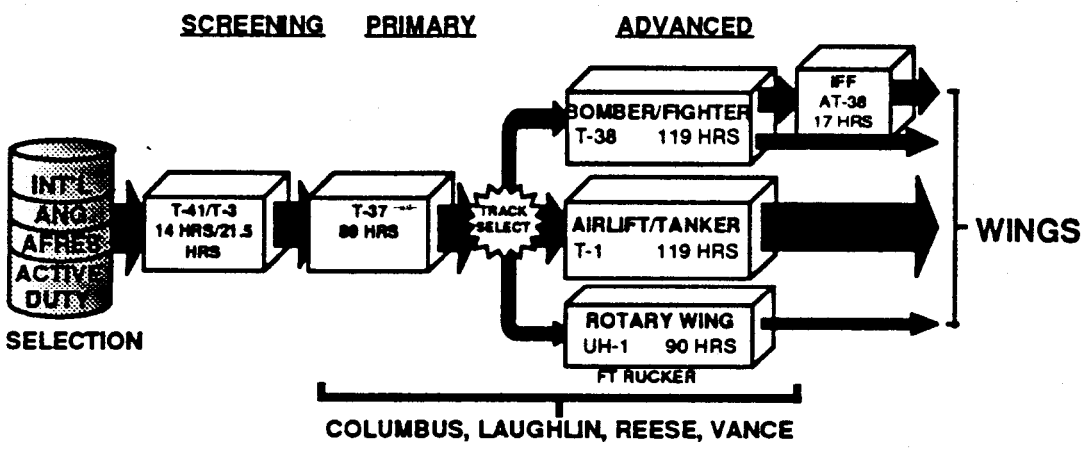


FIGURE 4

The present USN Pilot Training Program consists of a four pipeline system as shown in Figure 5 providing training in four aircraft communities: Strike, Maritime, E-2/C-2, and Helo. [Note: the terms "USN," "Navy," and "Naval" indicate USN, USMC, and USCG students and training.] Each pipeline is divided into three building block levels of training: primary, intermediate, and advanced. The primary phase of all four pipelines is a common syllabus in the T-34 aircraft. Upon completion of primary, student aviators 'pipeline select' and proceed through the pipeline-specific training curriculum. NAS Whiting provides the largest volume of student pilots through the primary phase, and was selected to be the first USN base to host and participate in joint primary training.

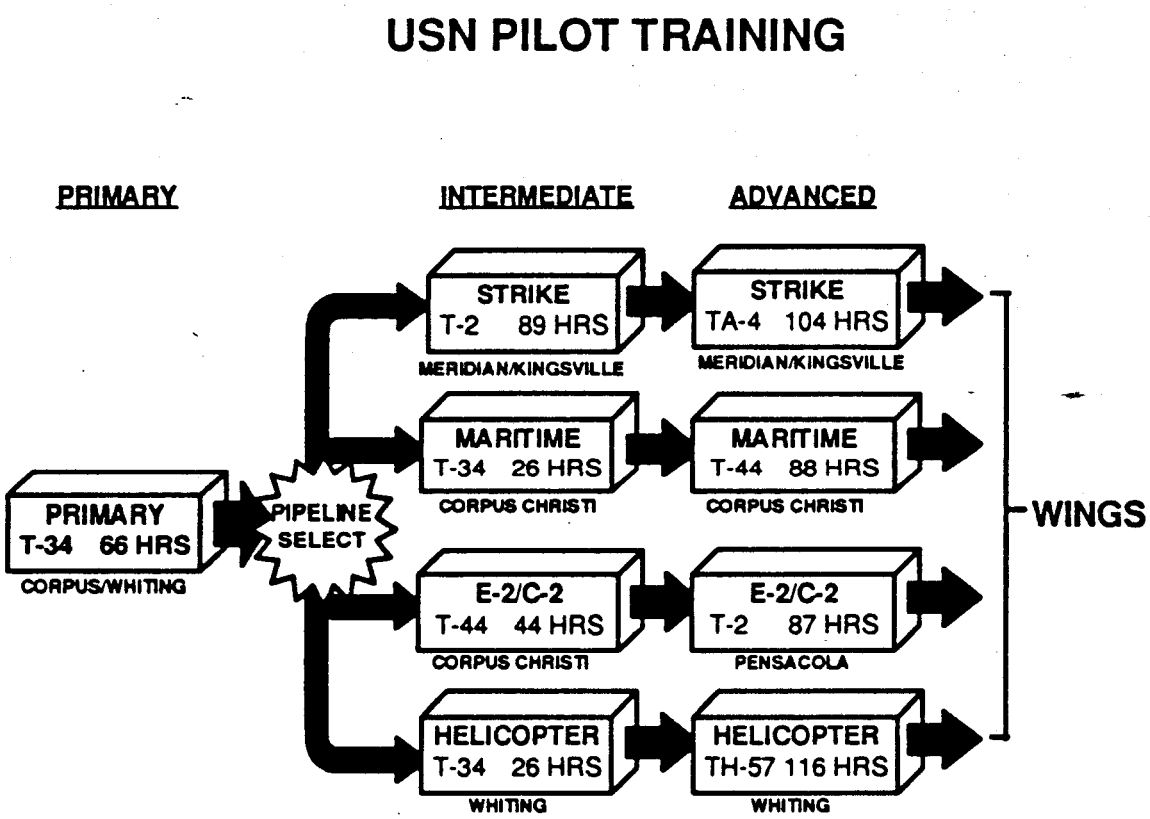


FIGURE 5

In compliance with the Secretary of Defense memo, the following describes the plan to move away from the service-specific training programs outlined above and consolidate primary fixed-wing aircraft training for Air Force, Navy, Marine Corps, Coast Guard, and perhaps Army flight students. This will be achieved using JPATS as shown in Figure 6 and a common syllabus that will be jointly developed as the services begin to train jointly in 1993 and expand the program through subsequent years.

JOINT TRAINING PROJECTION - JPATS

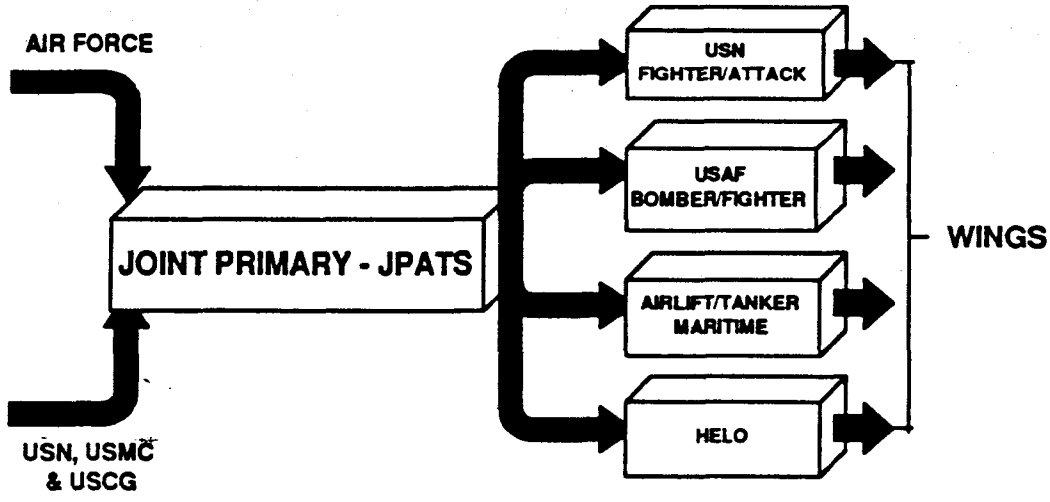


FIGURE 6

Near term instructor and student exchanges will gradually build to two prototype squadrons with alternating USAF and USN/USMC commanders by September 1994. Each squadron is expected to have 30 exchange instructor pilots, and train an annual exchange student load of 100 students by 1998. As directed in the Secretary of Defense memo, advanced training will consist of four pipelines: Navy fighter/attack, Air Force fighter/bomber, Joint airlift/tanker/maritime patrol, and Joint helicopter.

Two interim joint training arrangements will allow immediate joint training and enhance a smooth transition to the fully joint JPATS posture illustrated by Figure 6 .

The USAF-hosted interim joint training at Reese AFB is shown in Figure 7. It will use the current 89 hour T-37 primary curriculum, modified to facilitate Naval pipeline selection at 66 hours. At that point, Naval students selected for the fighter/attack and E2/C-2 pipelines will return to Naval training. Naval students selected for the Maritime and Helicopter pipelines continue with their Air Force counterparts to complete the USAF T-37 curriculum, where Air Force student track selection occurs for the advanced pipelines. Upon completion of T-37 training, both Naval and Air Force students proceed to their advanced training aircraft.

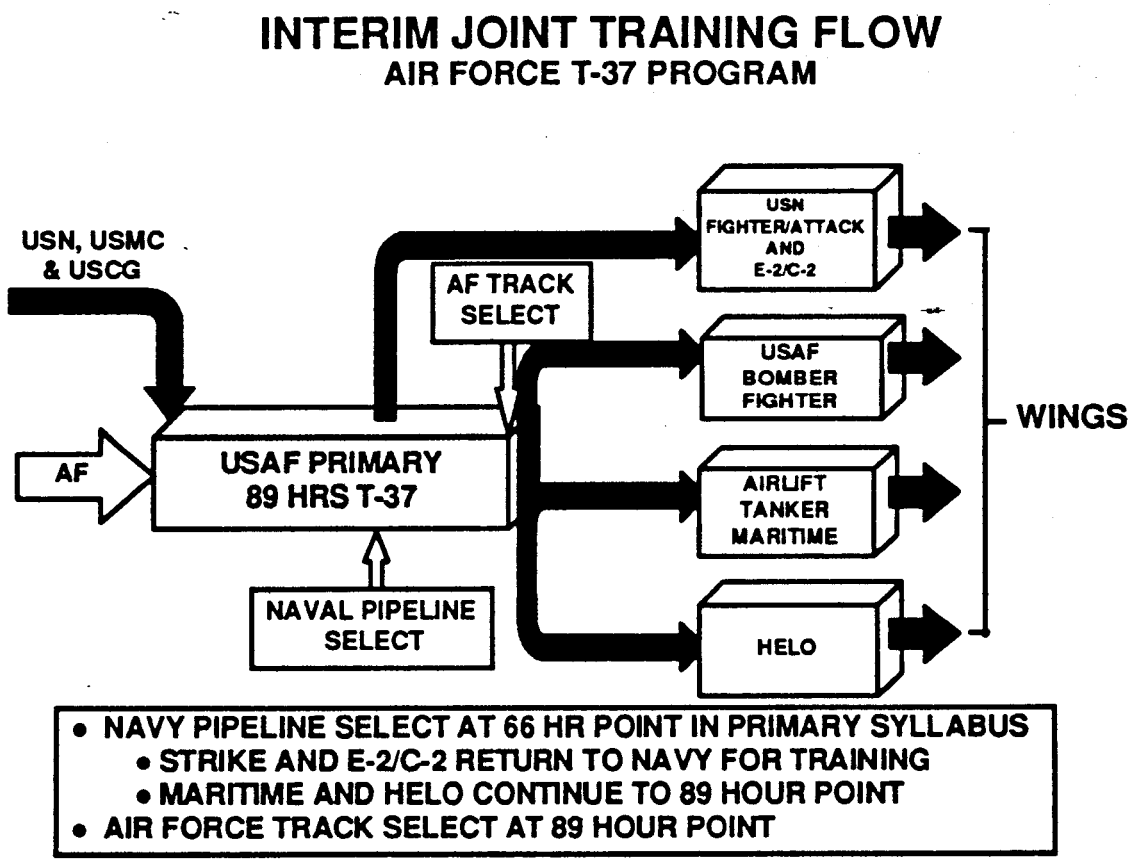


FIGURE 7

The USN-hosted interim joint training flow at NAS Whiting Field is shown in Figure 8. It will use the current 66 hour T-34 primary syllabus. Upon completion of primary training, Naval students pipeline select. Student Naval Aviators selected to the Strike and E-2/C-2 pipelines proceed to their respective intermediate training locations and aircraft. Naval students selected to fly Maritime or Helo pipeline and all Air Force students will continue through the current T-34 intermediate syllabus (26 hours). Upon completion of the intermediate syllabus, Naval students will progress to an advanced pipeline training phase. Air Force students track select upon completion of the T-34 intermediate syllabus and then proceed to advanced training.

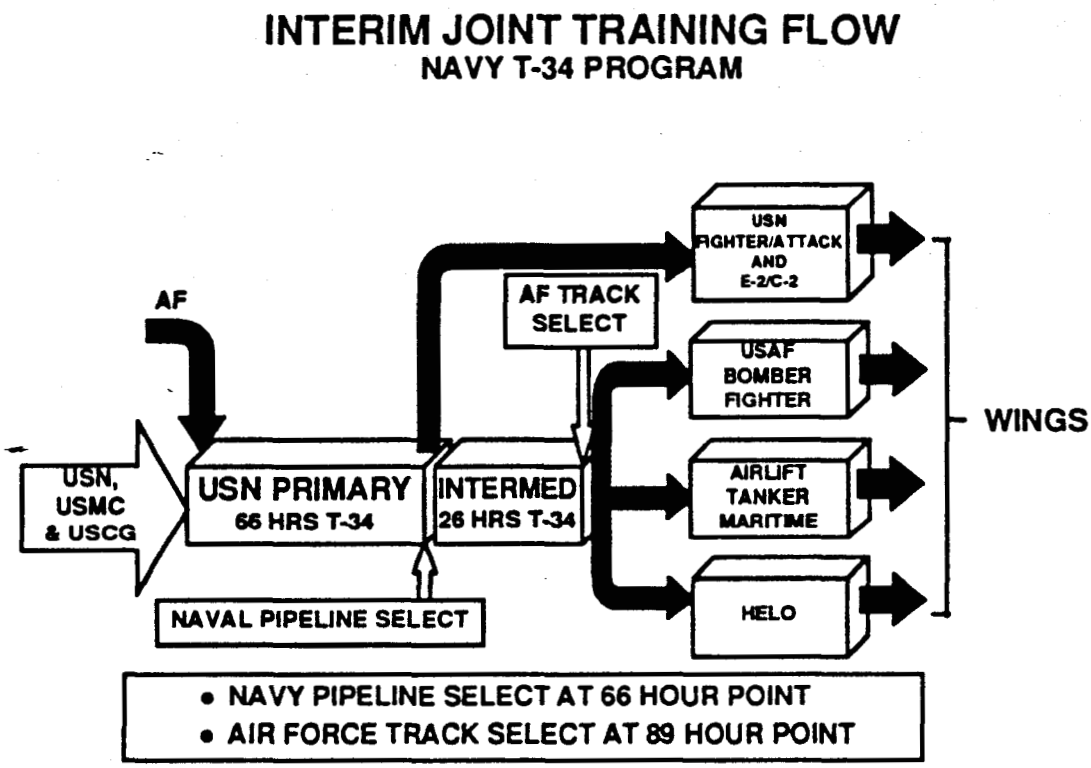


FIGURE 8

The initial prototype joint training squadrons will be established by September 1994. Joint squadron leadership will alternate between USAF and USN/USMC. The 35th Flying Training Squadron (35 FTS) at Reese AFB and Training Squadron 3 (VT-3) at NAS Whiting Field will be the prototype joint primary flight training sites.

Beginning in September 1993, the first instructor pilot exchange will occur. Six experienced USAF instructors will report to VT-3. Six experienced USN instructors will report to 35 FTS. By March 1994, 4 more instructors will exchange, with a continuous exchange rate of 3 instructors each quarter thereafter until 2 full joint prototype squadrons are manned with 30 exchange instructors.

In September 1994, two exchange students from each service will begin training, with gradual growth until September 1998, when 100 exchange student entries will occur annually in prototype squadrons (Figure 9). Additional joint squadrons will ramp up leading to total joint primary training with JPATS full training capability.

STUDENT FLOW PLAN
(PER SQUADRON)

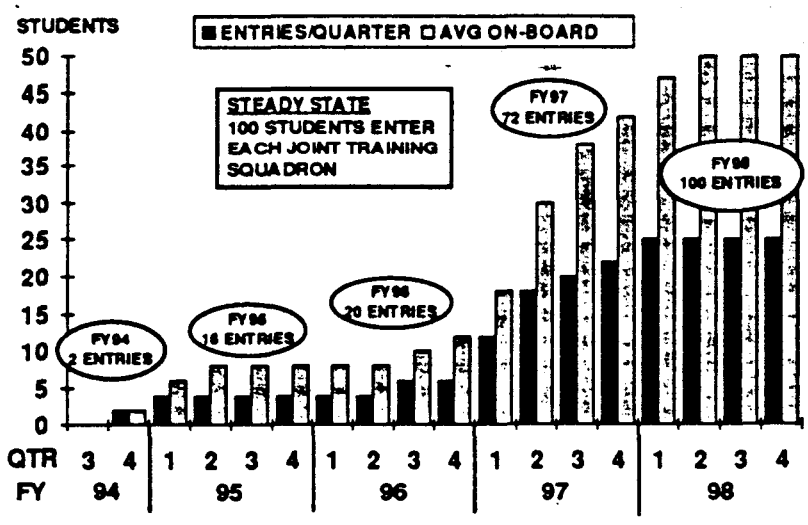


FIGURE 9

The overall plan for initiating joint fixed-wing training will use a three phase approach. The first phase will be the "foot in the door" stage where the instructor/student

exchange begins (FY93 - 94). The second phase will be the "learning as we go" stage where the primary USN and USAF syllabi are modified to accommodate current hardware (FY95 - 96). Finally the last phase will be "full up operation" where the services transition to a common aircraft and syllabus (FY97 - 98). Then based on lessons learned during the growth period, other squadrons will become joint not later than the point at which the JPATS aircraft arrives.

The services have an opportunity to accelerate joint squadrons by modifying the currently programmed beddown sequence to alternate JPATS deliveries to USAF and USN squadrons as shown in Figure 10. This should not change the current acquisition schedule, but would require some funding shifts in both services since the funding is currently front-loaded for USAF deliveries.

JPATS BEDDOWN OPTIONS

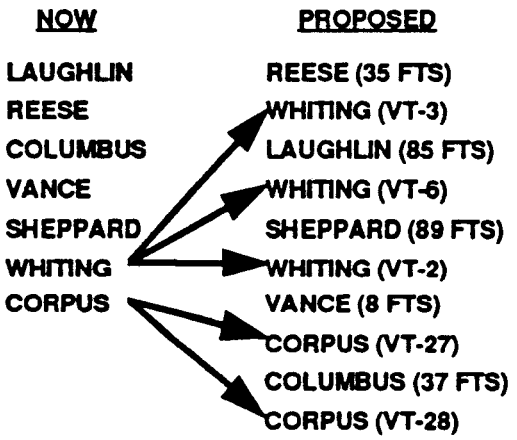


FIGURE 10

JOINT AIRLIFT/TANKER/MARITIME PATROL TRAINING

Undergraduate flight training for airlift/tanker/maritime patrol pilots requires one Navy T-44 squadron and four Air Force T-1A squadrons. SECDEF tasking directs a pipeline for Navy and Air Force airlift/tanker/maritime patrol flight training. Neither service has the capacity to meet the total training requirement. The prototype program will use aircraft and training programs from both the Air Force and Navy in a joint training evaluation. In addition, a review of Army initial fixed-wing transition training requirements was performed. It may be possible to improve quality and cost effectiveness by having the Navy provide fixed-wing multi-engine transition training for Army rotary wing pilots.

Advanced joint fixed-wing training is predicated on turboprop bound students training in T-44 turboprop aircraft and jet bound students training in T-1A jet aircraft. Figures 11 and 12 reflect Air Force and Naval multi-engine tracks. Following a test program in FY94, and assuming that apparent potential for improved turboprop training is realized, Air Force pilots selected for C-130 training could complete advanced undergraduate training at VT-31, NAS Corpus Christi in the T-44 aircraft. Navy pilots selected for E-6 training could complete advanced undergraduate training at 52 FTS, Reese AFB in the T-1A aircraft. Advanced turboprop training, including approximately 50 Air Force C-130 bound students, could be conducted by the Navy. Advanced jet airlift/tanker training, including 25 Navy E-6 bound students, could be conducted by the USAF. Both programs, when fully implemented will also involve a joint instructor force.

USAF C-130/USN E-6 TRACK SELECT

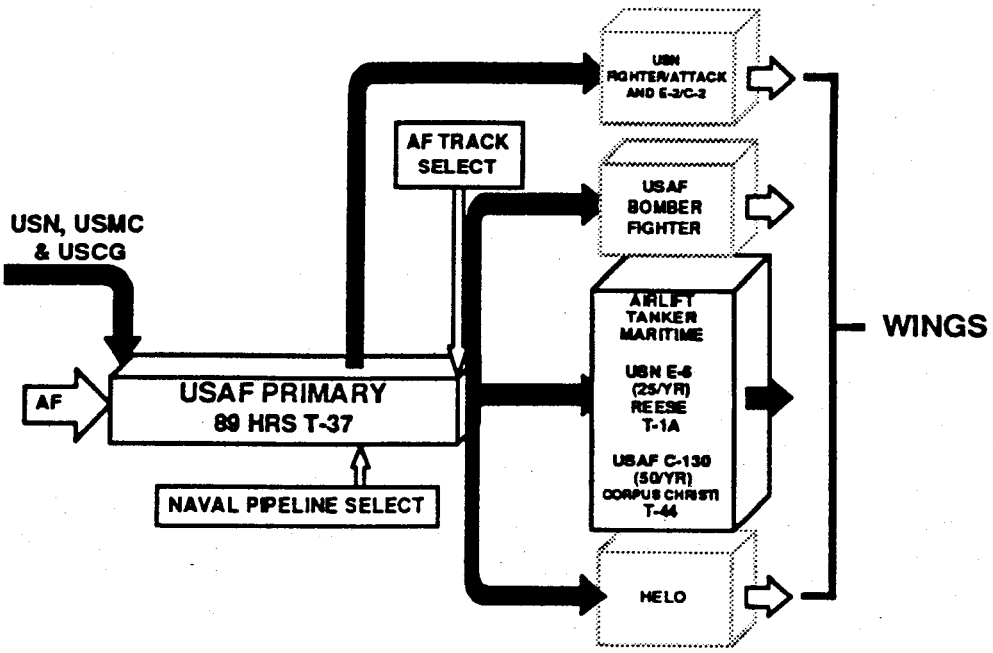


FIGURE 11

USN E-6/USAF C-130 TRACK SELECT

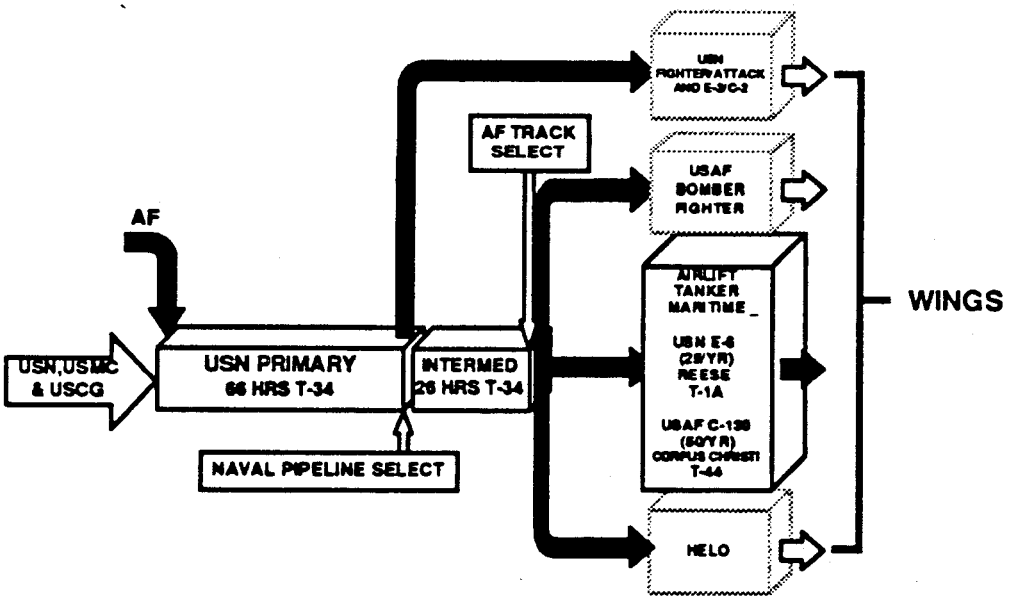


FIGURE 12

The number of exchange instructors within the multi-engine training squadrons will be proportional to the number of exchange students. Three experienced training instructor exchanges will be completed by December 1993. Subsequent instructor exchanges will come from fleet/operational units starting in June 1995.

After the instructor pilot exchanges are in place at 52 FTS and VT-31, syllabi will be evaluated and refined, if necessary, to meet service specific requirements. Further refinement of the syllabi will follow by tracking graduate performance with feedback from follow-on training managers in the C-130 and E-6 prior to full exchange of instructors and students.

Initial student exchanges will start in 1994. As the quality of this initiative is substantiated through graduate evaluation, exchanges will continue until the number of exchange students on board each track/pipeline supports total service requirements in the affected aircraft. The ramp-up of USAF and USN exchange students would be complete by September 1995, barring unforeseen problems.

JOINT NFO/SYSTEMS OFFICER/EWO TRAINING

Like their pilot training counterparts, the USAF and USN navigator training programs mirror the overall pilot training philosophy. Basic military navigation skills are taught in a core or primary phase, followed by service specific training in the intermediate and advanced phases. The current USAF Specialized Undergraduate Navigator Training (SUNT) program is depicted in Figure 13.

USAF NAVIGATOR TRAINING

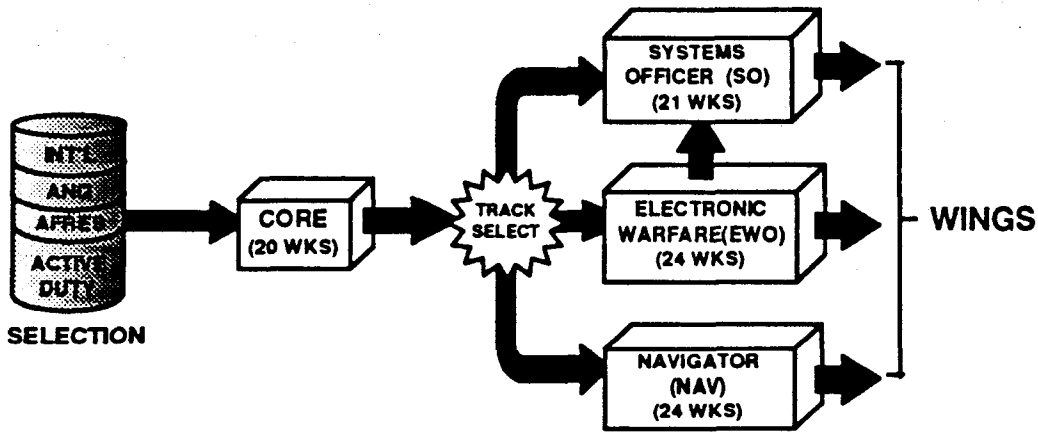


FIGURE 13

The current USN NFO training program at NAS Pensacola is depicted in Figure 14.

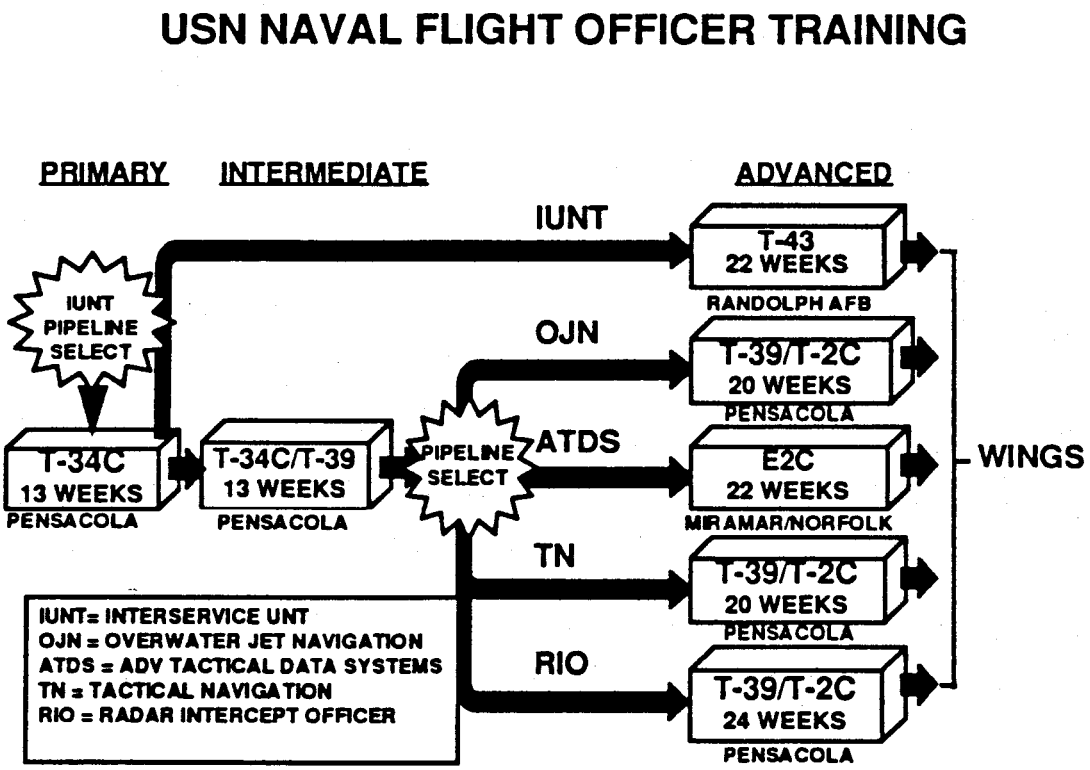


FIGURE 14

The proposed joint Naval Flight Officer (NFO)/systems officer (SO)/electronic warfare officer (EWO) training (Figure 15) would combine undergraduate specialized training to maximize the quality of training and optimize the use of resources. Under the proposal all Air Force SOs and Navy NFOs assigned to strike aircraft could be trained at NAS Pensacola, following a prototype exchange of instructors and students in 1993/4. All USN/USMC navigators and NFOs assigned to transport and land based maritime patrol will continue to train in the Interservice Undergraduate Navigator Training program at Randolph AFB. This joint NFO/SO/EWO training would substantially change USAF SO training. USN NFO training at Pensacola will not significantly change. USN NFO track selection will occur at the same point and advanced NFO graduates will report to their respective Fleet Replacement Squadron (FRS) for aircraft specific training. Refer to Figure 14. Assuming the prototype validates the postulated benefits, the revised program would provide the services with better quality strike and multi-purpose combat navigators for fewer resources expended.

JOINT STRIKE/SO/EWO TRAINING

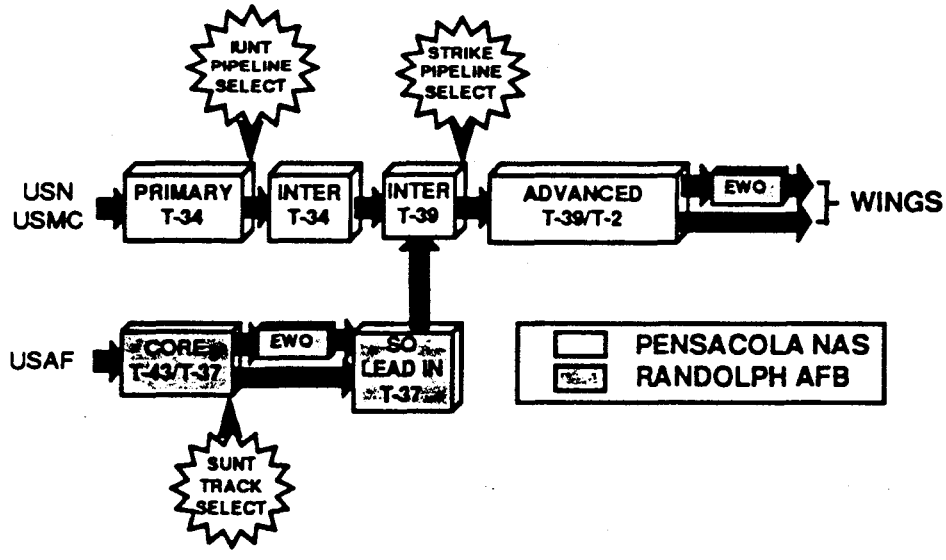


FIGURE 15

In the joint program USAF SO officers would complete core training and receive basic aviation indoctrination and fundamental navigation training at Randolph. After this 22-week course, track selection occurs to determine the location of the USAF students' advanced training. USAF officers selected for training at Pensacola would receive additional training in the T-37 aircraft at Randolph to hone the aircraft skills required at Pensacola. USAF SO students reporting to Pensacola would enter with USN students in the NFO intermediate phase in the T-39 aircraft. From the intermediate phase until graduation, USAF and USN students would receive the same training. Upon completion of the program, USAF and USN students would be assigned to their specific follow-on combat aircraft training.

An additional opportunity to combine electronic warfare training for all USAF SOs/EWOs and USN NFOs occurs with delivery of the USAF's Simulator for Electronic Combat Training in 1995. USN NFOs requiring EW training would complete training at Randolph after their training at Pensacola. This training would take place enroute to the FRS during time currently spent in the USN EW School at Corry Station. USAF officers destined for EW duty in tactical aircraft would receive this same EW training at Randolph prior to going to Pensacola.

There will be an incremental transition to joint NFO/SO/EWO training. This transition will occur with the implementation of a revised USAF SO/EWO syllabus scheduled to begin in July 1994. Some students commencing training after July 1994 will enter the revised course and complete the joint NFO/SO training program at Pensacola. After the program is validated, a full exchange of students will occur.

Joint instructor exchange will begin in September 1993. Initially, two USN NFO instructors will be assigned to the SUNT program at Randolph and two USAF instructors will be assigned to Pensacola. USAF instructor manning at Pensacola will continue to increase until the final number of nine USAF instructors is reached in December 1994.

All land based Navy NFOs are currently trained at Randolph in the Interservice Undergraduate Navigator Training program. The instructor and student ratios of USAF to USN are sufficient to establish this squadron as a joint squadron in October 1994.

Conducting joint NFO/SO training at Pensacola results in significant benefits for both the USAF and USN. The training uses an in-place, proven training system (T-39/T-2 aircraft) which better replicates operational USAF systems officer avionics suites and more effectively meets USAF training requirements in those radar, visual, and instrument navigation skills needed in strike and multi-purpose combat aircraft.

ESTIMATED COSTS AND SAVINGS

This analysis provides a first look at the cost issues for joint training. Analysis shows clearly that cost savings and cost avoidance will primarily accrue as a result of base closures associated with BRAC, and the JPATS single aircraft procurement program. Both additional costs and savings are associated with the following joint flying training areas: primary fixed-wing, airlift/tanker/maritime patrol, and navigator/NFO. All of the cost data in this document are rough order of magnitude (ROM); if this plan meets with SECDEF approval, all costs will be subjected to a more detailed financial analysis.

Both services are in the process of closing a total of three training bases. The Air Force has closed Mather AFB, CA, and Williams AFB, AZ, and the Navy has closed NAS Chase, TX. In addition, NAS Meridian, MS has been nominated for closure. The up front, non-recurring cost to close these bases will be approximately $322M, and the recurring annual savings will be $189M.

Cost savings associated with the JPATS single aircraft procurement program occur in these areas: development, acquisition, the limiting of support facility requirements to one depot and one source of parts/support, and joint management. A one-time savings in development and acquisition cost avoidance would amount to approximately $577M. Operating only one depot for JPATS could save as much as $500K per year. In addition, there are savings for having one source of parts/support, and for the consolidation of operations and logistics services management responsibilities.

Primary fixed-wing training has a mixture of additional costs and savings. There is an additional cost of approximately $430K per year for PCS costs to send USAF students from USN primary training to USAF advanced training. This PCS cost would only apply to USAF students who attend training at NAS Whiting or NAS Corpus Christi. A flying hour savings of $47K per year accrues for USAF students as a result of flying the T-34

aircraft instead of the T-37. These are the only two areas in primary fixed-wing training where the joint initiatives outlined herein had an impact on cost.

Airlift/tanker/maritime patrol training initiatives will also produce both costs and savings. The TDY cost to send USAF students, selected to fly C-130 aircraft, to NAS Corpus Christi for advanced training in the T-44 would amount to approximately $298K per year. There would be a reduced requirement for T-1A aircraft if the USAF were to send its entire C-130 student pilot flow to NAS Corpus Christi for training in the T-44. This reduced requirement would provide a one-time savings of approximately $20M. Flying hour savings that are a result of the differences between the T-44 and the T-1A training programs and the differential in flying hour costs, amount to approximately $1.2M per year.

In the navigator/NFO training program there were five areas that had an impact on costs and savings: the PCS cost of USAF students to Pensacola to complete their SO training; the additional flying hours for USAF students in the T-37, T-39, and T-2 aircraft; the flying hour savings for not flying the T-43 and T-38; the cost of three additional electronic warfare simulator seats at Randolph AFB; and the TDY cost of USN students to Randolph AFB for EWO training. The PCS cost of USAF SO students to Pensacola would be $139K per year. The flying hour cost for flying the T-37, T-39, and T-2 aircraft would amount to approximately $1.2M per year. The flying hour savings for USAF students not flying the T-43 and T-38 aircraft in the SO track at Randolph AFB, TX would amount to $421K per year. The addition of three simulator seats at Randolph AFB, to accommodate USN EWO students, would cost approximately $3.4M, and the TDY cost of USN students to Randolph AFB for EWO training would be $103K per year.

The possible overall savings/costs for this plan would include a one time cost avoidance of approximately $16.6M, with an annual recurring additional cost of $551K Again, these are "first-look" figures. A more rigorous cost scrub will follow Mr. Aspin's

decision on these initiatives, and could be incorporated in subsequent POM development and budget submissions..

SUMMARY

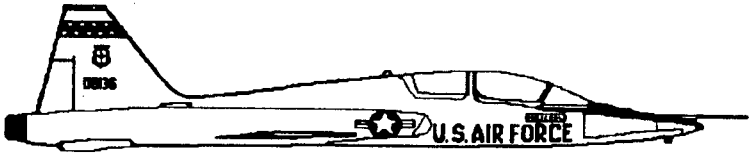
The foregoing plan responds to Secretary of Defense tasking. It reflects interservice agreement toward meeting training objectives, exploitation of best available training, and an aggressive joint focus.

Our commitment to start immediately, learning as we go, will ensure a seamless and effective transition to joint training. Imbedded in this transition is an equally strong commitment to produce more than just pilots and navigators/NFOs. The services will continue to produce the best combat aircrews in the world. The joint training initiatives described will provide new synergistic combat capability built upon the strengths of each services' training systems. This plan confirms the requirement for JPATS as the avenue to true jointness in initial flying training. This study uncovered no roadblocks as to the course described.

The services agree -- joint training is worth the cost.

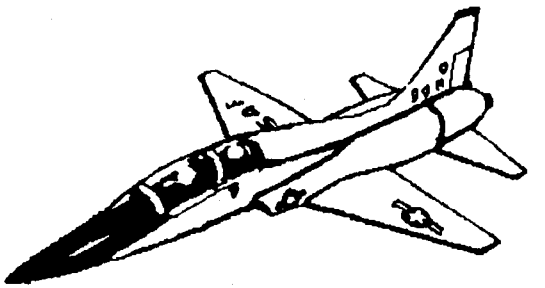
Document Separator

AIR FORCE UNDERGRADUATE FLYING TRAINING



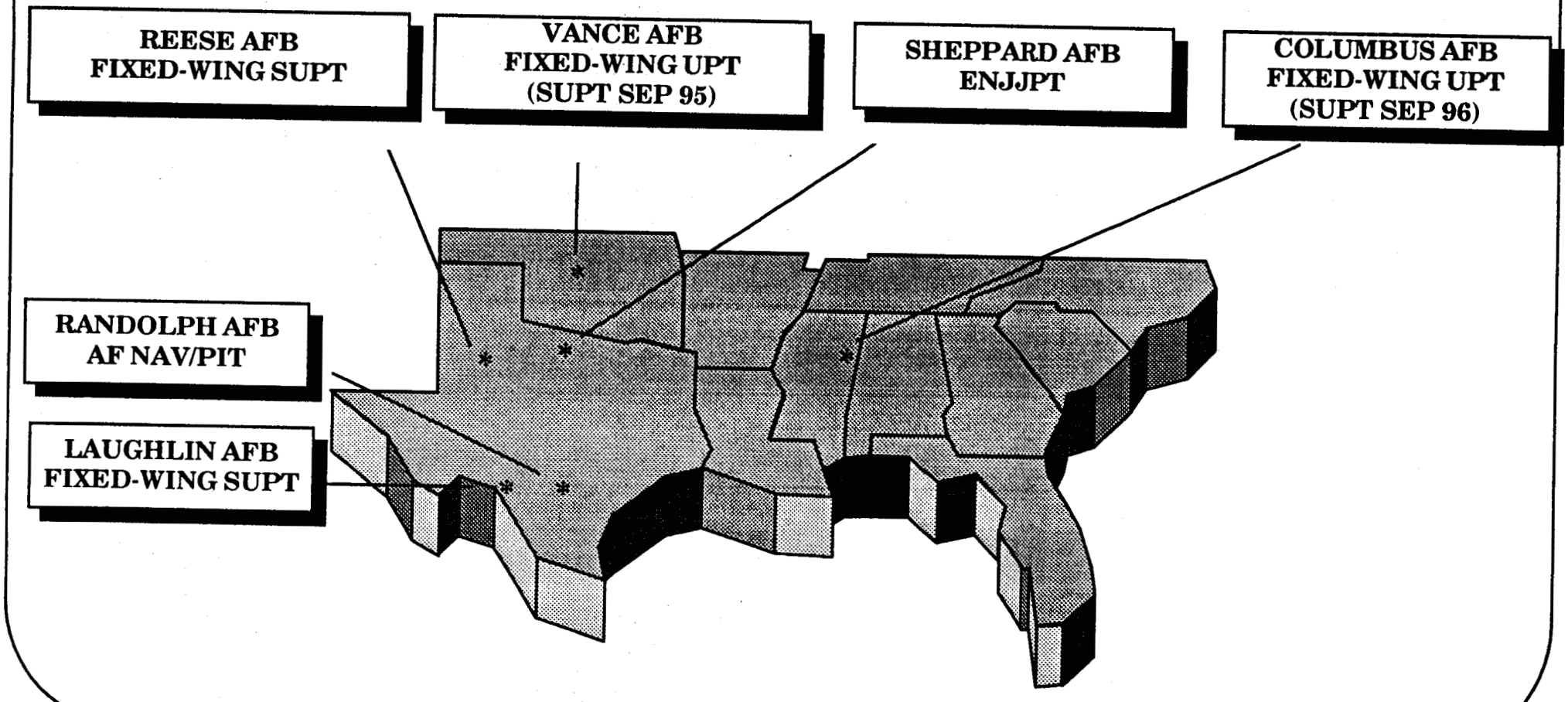
LT COL LEN JARMAN
HQ USAF/XOOT
28 FEB 95

OVERVIEW

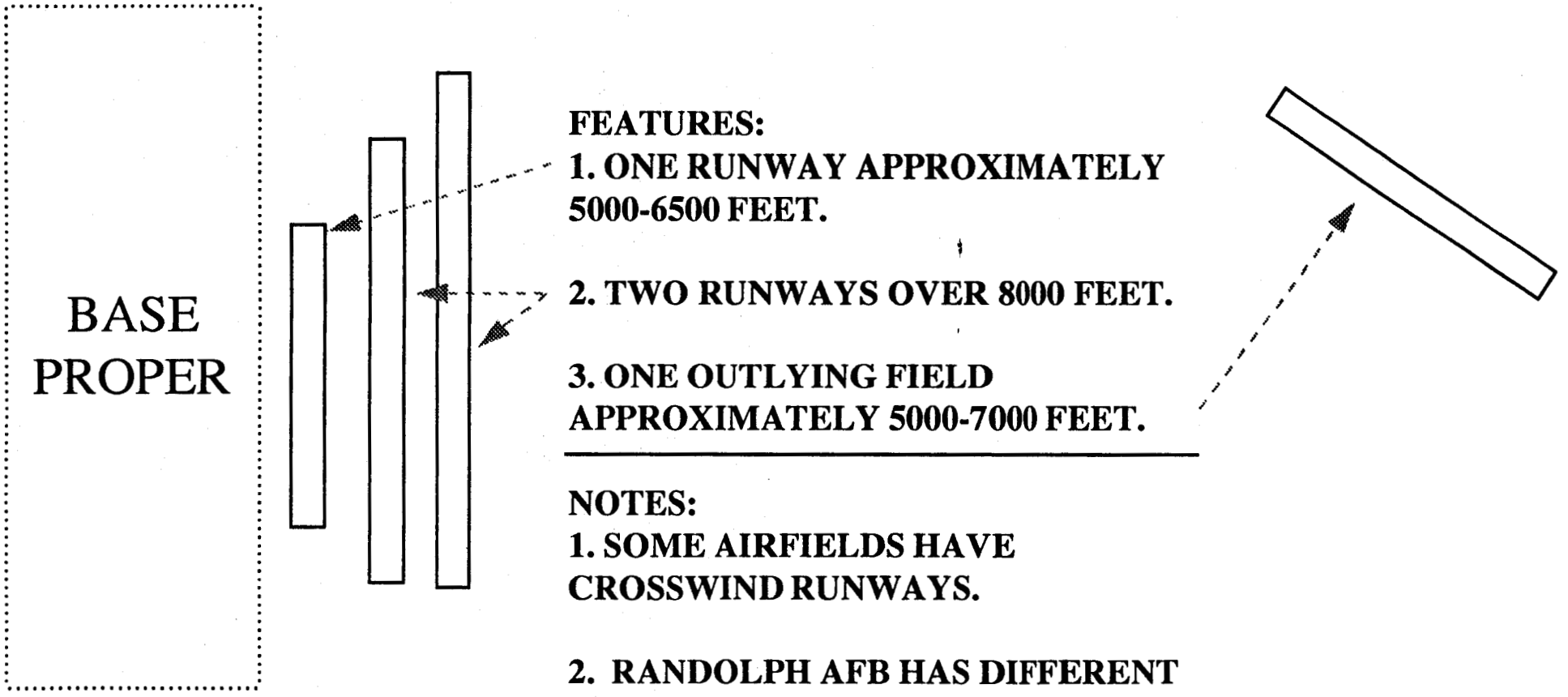


- ***UFT LOCATIONS/TYPICAL BASE***
- ***FIXED-WING PILOT TRAINING AIRCRAFT***
- ***USAF PILOT TRAINING***
- ***JOINT PILOT AND NAVIGATOR/NFO TRAINING***
- ***JOINT PRIMARY AIRCRAFT TRAINING SYSTEM (JPATS) UPDATE***

CURRENT USAF FLYING TRAINING LOCATIONS



TYPICAL USAF PILOT TRAINING BASE



FEATURES:

1. ONE RUNWAY APPROXIMATELY 5000-6500 FEET.

2. TWO RUNWAYS OVER 8000 FEET.

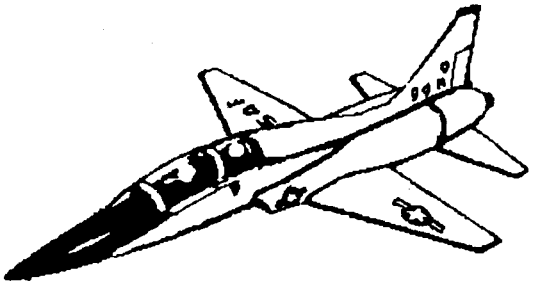
3. ONE OUTLYING FIELD APPROXIMATELY 5000-7000 FEET.

NOTES:

1. SOME AIRFIELDS HAVE CROSSWIND RUNWAYS.

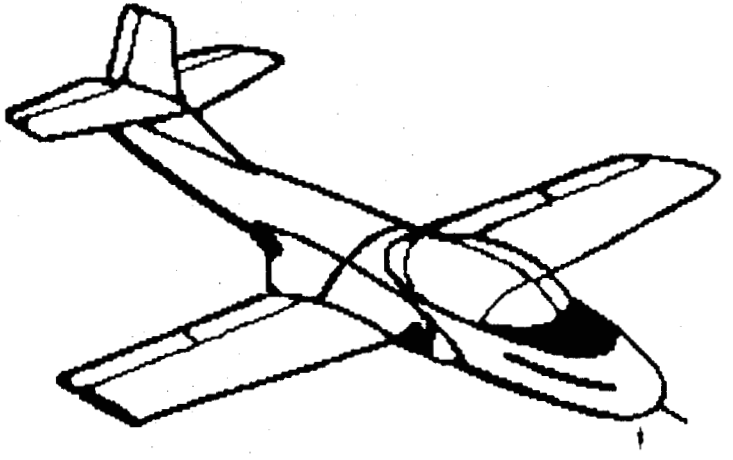
2. RANDOLPH AFB HAS DIFFERENT CONFIGURATION.

OVERVIEW



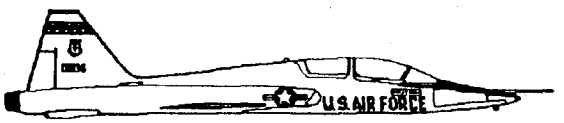
- *UFT LOCATIONS/TYPICAL BASE*
- ***FIXED-WING PILOT TRAINING AIRCRAFT***
- *USAF PILOT TRAINING*
- *JOINT PILOT AND NAVIGATOR/NFO TRAINING*
- *JPATS UPDATE*

PRIMARY TRAINER (T-37)



- ***FIRST AIRCRAFT FLOWN IN UPT***
- ***TWIN-ENGINE JET***
- ***SIDE-BY-SIDE SEATING***
- ***UNPRESSURIZED***
- ***TO BE REPLACED BY JPATS***

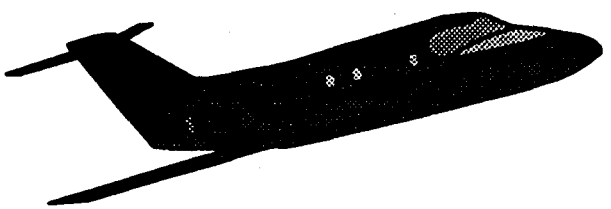
ADVANCED TRAINERS



T-38

- BOMBER-FIGHTER TRAINER
- TWIN-ENGINE SUPERSONIC JET
- TANDEM SEATING

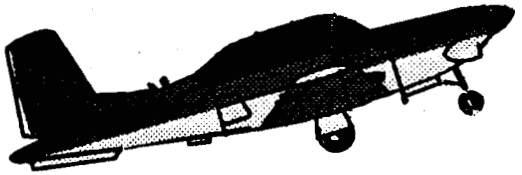
REESE
LAUGHLIN



T-1

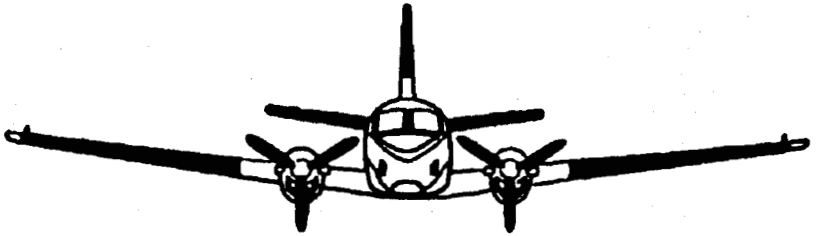
- AIRLIFT-TANKER TRAINER
- TWIN-ENGINE JET
- FLIGHT DECK WITH SIDE-BY-SIDE SEATING AND JUMP SEAT

NAVY AIRCRAFT IN WHICH USAF STUDENTS TRAIN



T-34

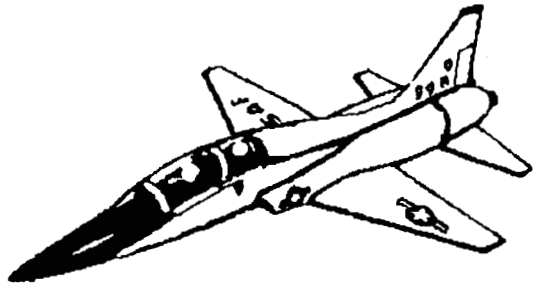
- PRIMARY TRAINER
- SINGLE-ENGINE TURBOPROP
- TANDEM SEATING
- UNPRESSURIZED
- TO BE REPLACED BY JPATS



T-44

- ADVANCED MARITIME PATROL TRAINER
- TWIN-ENGINE TURBOPROP
- FLIGHT DECK WITH SIDE-BY-SIDE SEATING

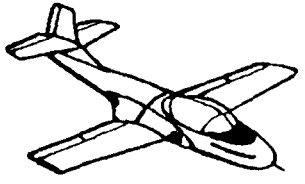
OVERVIEW



- *UFT LOCATIONS/TYPICAL BASE*
- *FIXED-WING PILOT TRAINING AIRCRAFT*
- ***USAF PILOT TRAINING***
- *JOINT PILOT AND NAVIGATOR/NFO TRAINING*
- *JPATS UPDATE*

GENERALIZED UPT

PRIMARY - T-37



T-37
80.9 HRS

ADVANCED - T-38

T-38
108.8 HRS

WINGS

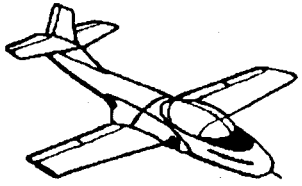
UNIVERSALLY
ASSIGNABLE
PILOT

NOTES:

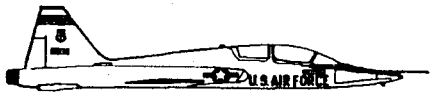
- *ALL TRAINING ACCOMPLISHED AT ONE BASE*
- *BEING REPLACED BY SPECIALIZED UNDERGRADUATE PILOT TRAINING (SUPT)*

EURO-NATO JOINT JET PILOT TRAINING (ENJJPT)--SHEPPARD AFB

PRIMARY - T-37



ADVANCED - T-38



T-37
123 HRS

→

T-38
137 HRS

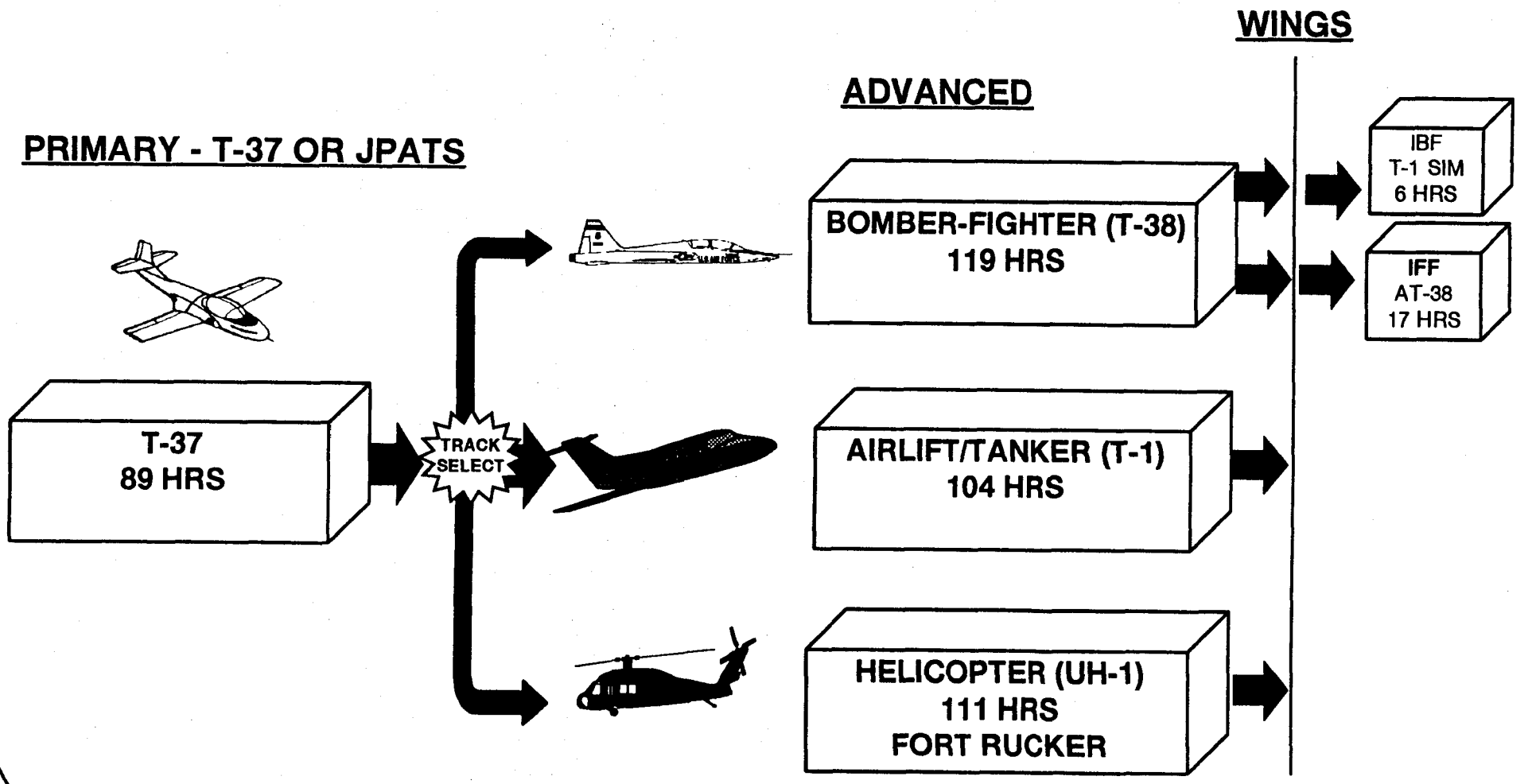
→

WINGS

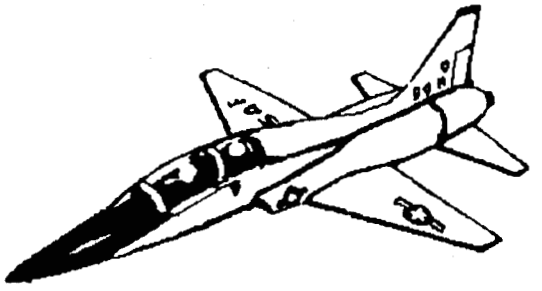
NOTES:

- *FIGHTER-ORIENTED TRAINING (WILL NOT INCORPORATE T-1)*
- *INTERNATIONAL PROGRAM--NOT FOREIGN MILITARY SALES*
- *MEMBER COUNTRIES PAY FOR INFRASTRUCTURE*
- *MEMBER COUNTRIES OWN SOME AIRCRAFT*

SPECIALIZED UPT

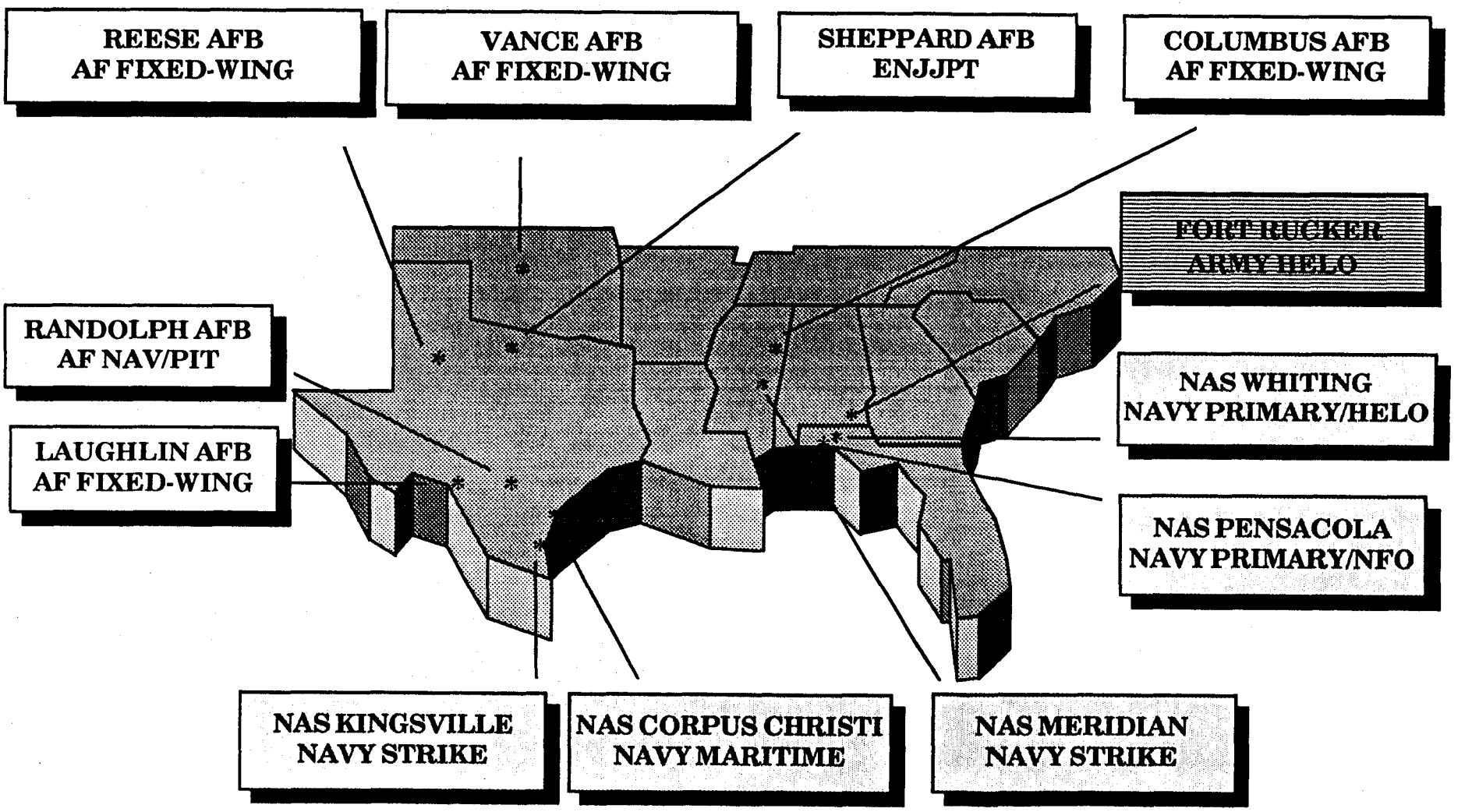


OVERVIEW



- *UFT LOCATIONS/TYPICAL BASE*
- *FIXED-WING PILOT TRAINING AIRCRAFT*
- *USAF PILOT TRAINING*
- ***JOINT PILOT AND NAVIGATOR/NFO TRAINING***
- *JPATS UPDATE*

UFT BASES--ALL SERVICES



JOINT TRAINING: BACKGROUND

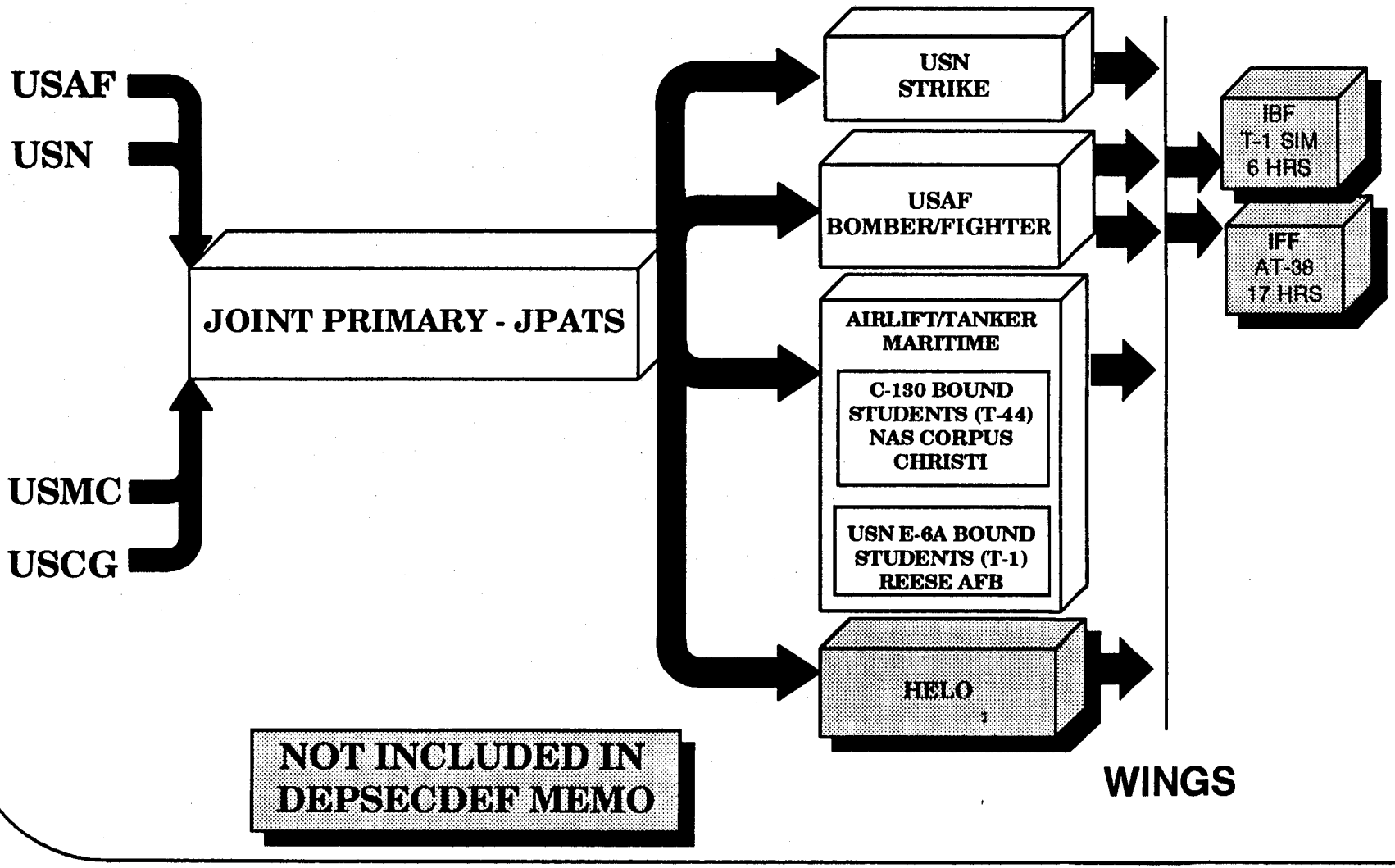
- *APR 93: SECDEF TASKED SECRETARY OF THE AIR FORCE, ASSISTED BY THE SECRETARY OF THE NAVY, TO "CONSOLIDATE INITIAL FIXED-WING AIRCRAFT TRAINING FOR ALL SERVICES AND TRANSITION TO A COMMON PRIMARY TRAINING AIRCRAFT."*
  - *GENERAL OFFICER/FLAG OFFICER GROUP DEVELOPED JOINT FIXED-WING TRAINING PLAN*
  - *EXPANDED TASKING TO INCLUDE ADVANCED PILOT TRAINING AND NAVIGATOR/NAVAL FLIGHT OFFICER (NFO) TRAINING*
  - *SERVICE SECRETARIES APPROVED IN JUL 93*
- *OPERATORS CONTINUED TO REFINE PLAN*
  - *MODIFIED NAVIGATOR/NFO TRAINING*
  - *SERVICE SECRETARIES APPROVED*
- *DEPUTY SECDEF APPROVED FIXED-WING PILOT TRAINING AND NAVIGATOR/NFO TRAINING PLANS IN OCT 95*

JOINT PILOT TRAINING

- ***PRIMARY:***
  - ***35th FTS AT REESE AFB TEXAS AND VT-3 AT NAS WHITING FIELD FL BECAME PROTOTYPE JOINT TRAINING SQUADRONS***
  - ***ROTATING SQUADRON COMMAND***
  - ***BY FY 98: 100 STUDENTS CROSSFLOW ANNUALLY, 24 EXCHANGE INSTRUCTORS***
  - ***OTHER SQUADRONS BECOME JOINT AS THEY TRANSITION TO JPATS***

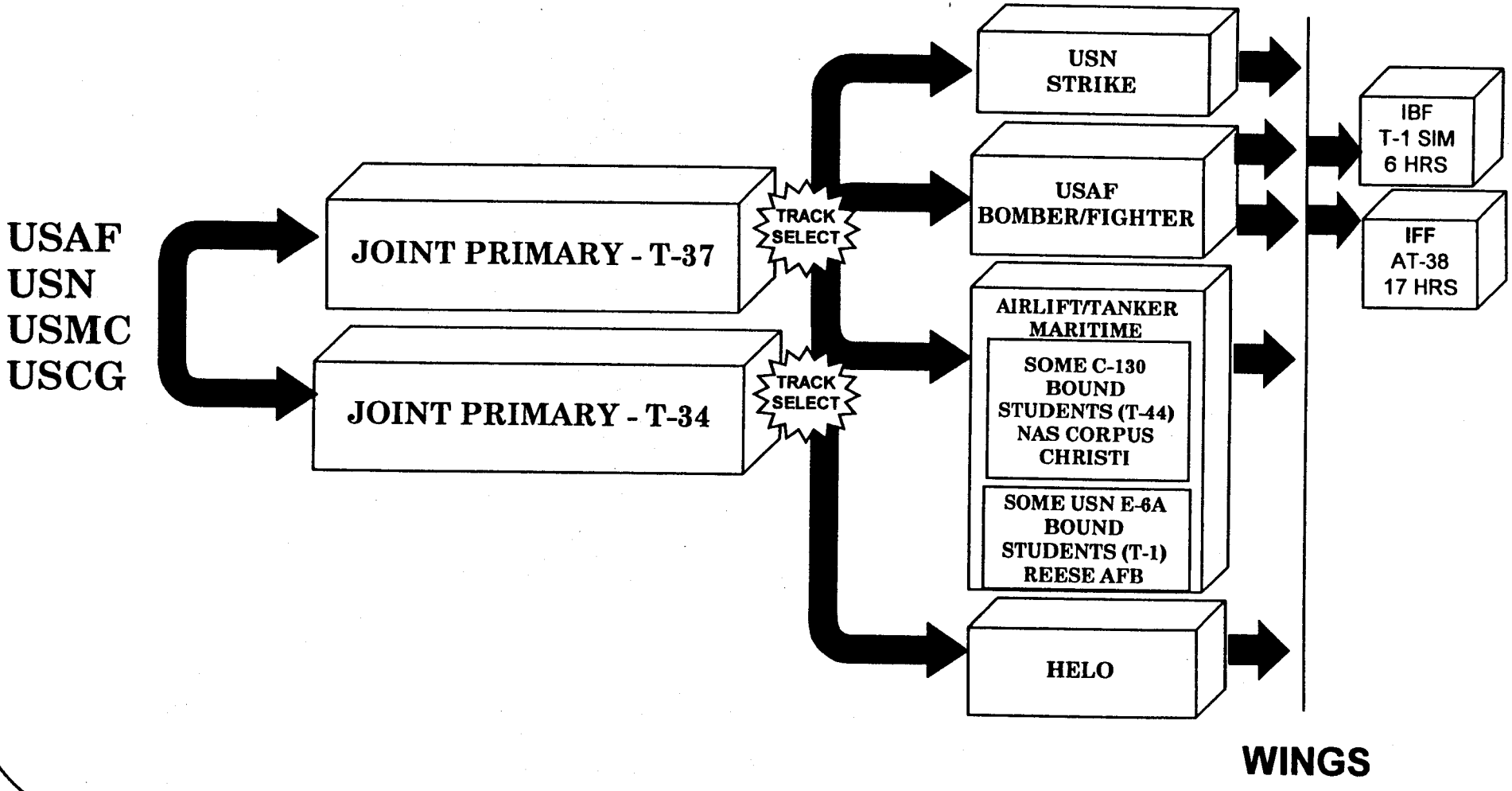
- ***AIRLIFT/TANKER/MARITIME PATROL:***
  - ***STUDENT/INSTRUCTOR EXCHANGE***
  - ***NAVY EVENTUALLY TRAINS USAF TURBOPROP-BOUND STUDENTS (C-130)***
  - ***USAF EVENTUALLY TRAINS NAVY JET-BOUND STUDENTS (E-6)***

JOINT UPT--END GAME

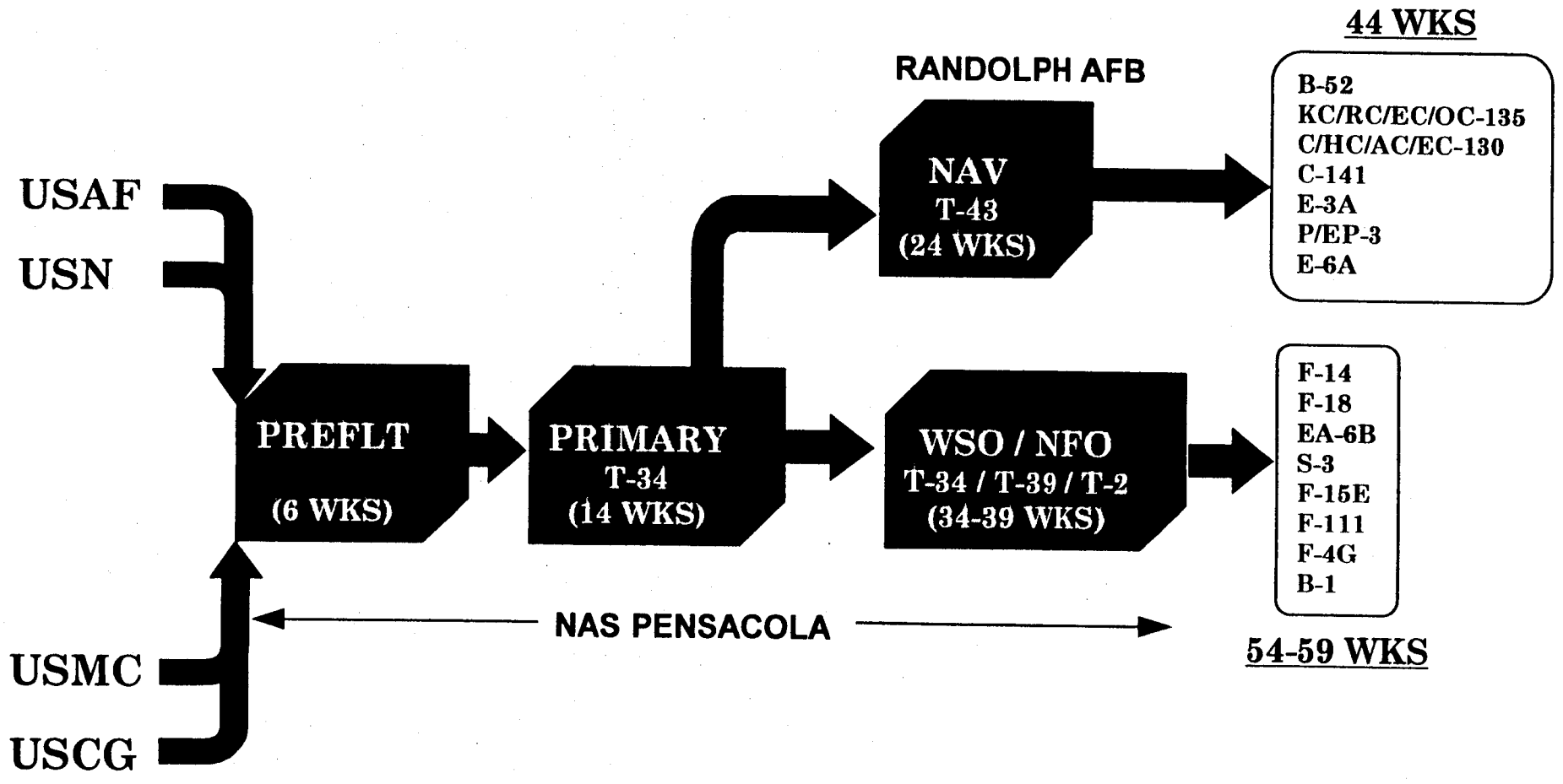


NOT INCLUDED IN DEPSECDEF MEMO

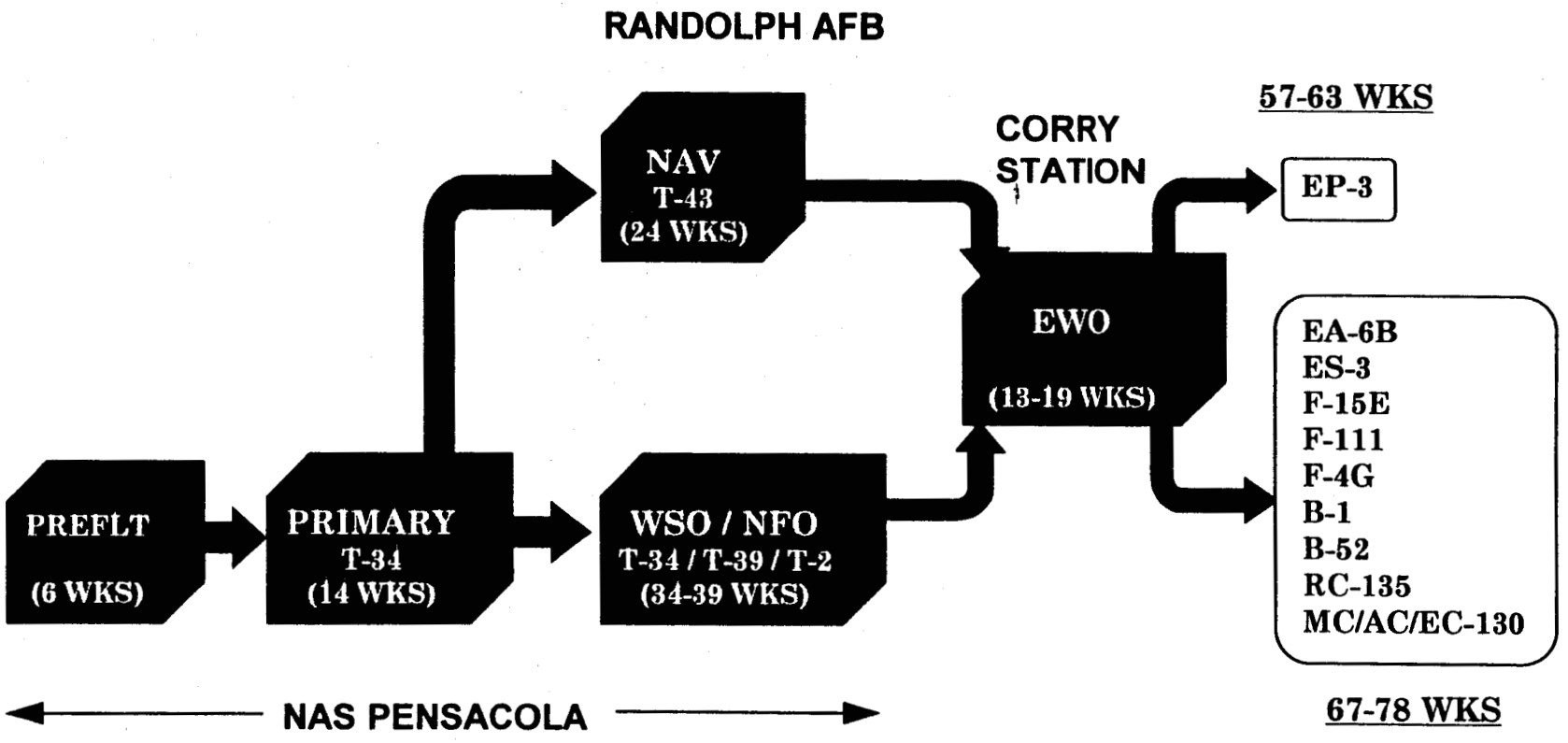
JOINT UPT--CURRENT STATUS



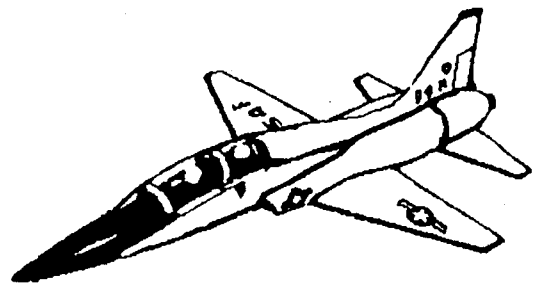
JOINT NAVIGATOR/NFO TRAINING--END GAME



JOINT ELECTRONIC WARFARE OFFICER (EWO) TRAINING--END GAME

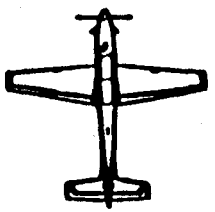
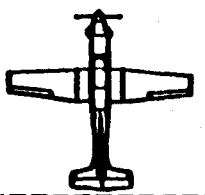
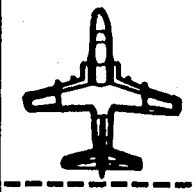
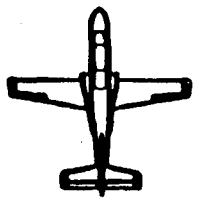
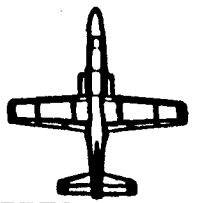
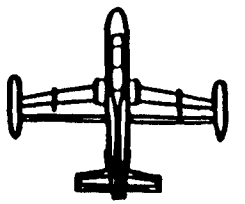


OVERVIEW



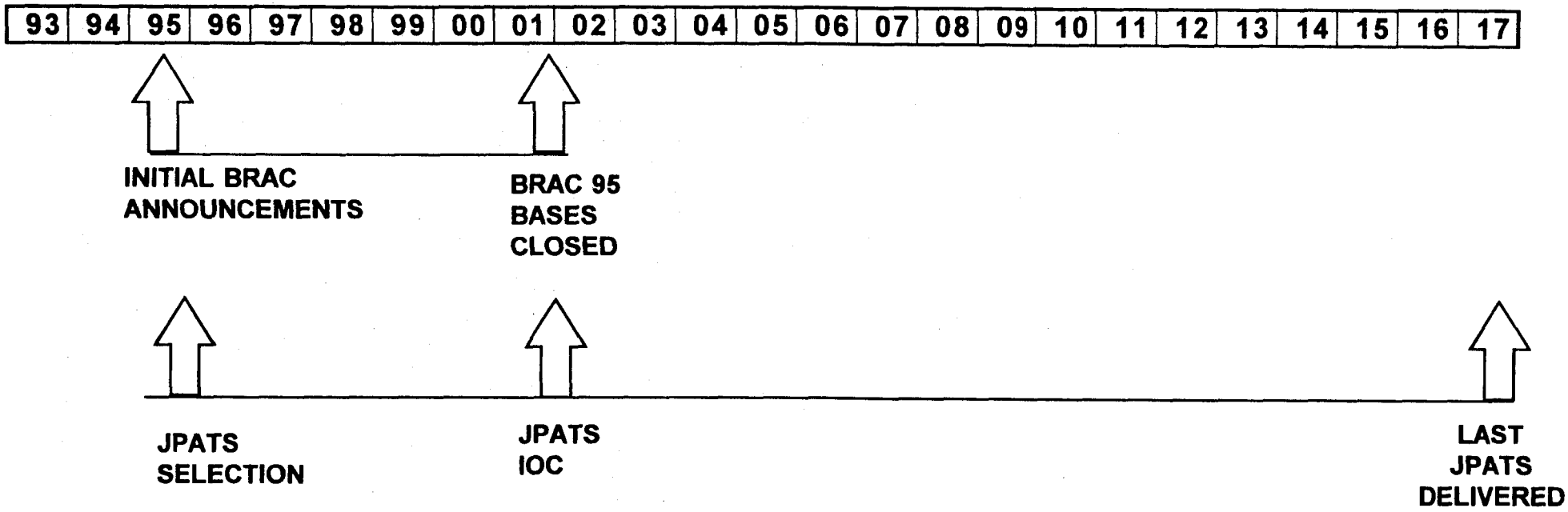
- *UFT LOCATIONS/TYPICAL BASE*
- *FIXED-WING PILOT TRAINING AIRCRAFT*
- *USAF PILOT TRAINING*
- *JOINT PILOT AND NAVIGATOR/NFO TRAINING*
- ***JPATS UPDATE***

JPATS CONTENDERS (T-37/T-34 REPLACEMENT)

	NORTHROP/ EMBRAER SUPER TUCANO BRAZIL	BEECH/ PILATUS PC-9 MK II SWITZERLAND	GRUMMAN/ AGUSTA S.211A ITALY	ROCKWELL/ MBB RANGER 2000 GERMANY	VOUGHT/ FMA PAMPA 2000 ARGENTINA	LOCKHEED/ AERMACCHI MB 339 ITALY	CESSNA CITATIONJET USA
PLANFORM							
	AIRCRAFT DRAWN TO SCALE						
TAKEOFF WEIGHT (lb)	7,040	6,789	6,393	7,900	8,168	10,420	7,400
MAXIMUM SPEED	285	278	375	380	400	475	420
ENGINE(S)	P&W TURBOPROP	P&W TURBOPROP	P&W TURBOFAN	P&W TURBOFAN	GARRETT TURBOFAN	ROLLS-ROYCE TURBOJET	2 WILLIAMS TURBOFANS
MODEL IN PRODUCTION	EMB-312A/F	PC-9	S.211A (LIMITED)	(PROTO)	PAMPA (LOW RATE)	MB 339 (LIMITED)	(PROTO)
APPROX NO. BUILT	570	160	85	2	18	182	2

POTENTIAL GBTS CONTRACTORS: BRITISH AEROSPACE, CAE-LINK, HUGHES TRAINING SYSTEMS, LORAL DEFENSE SYSTEMS, McDONNELL DOUGLAS TRAINING SYSTEMS

JPATS ACQUISITION SCHEDULE



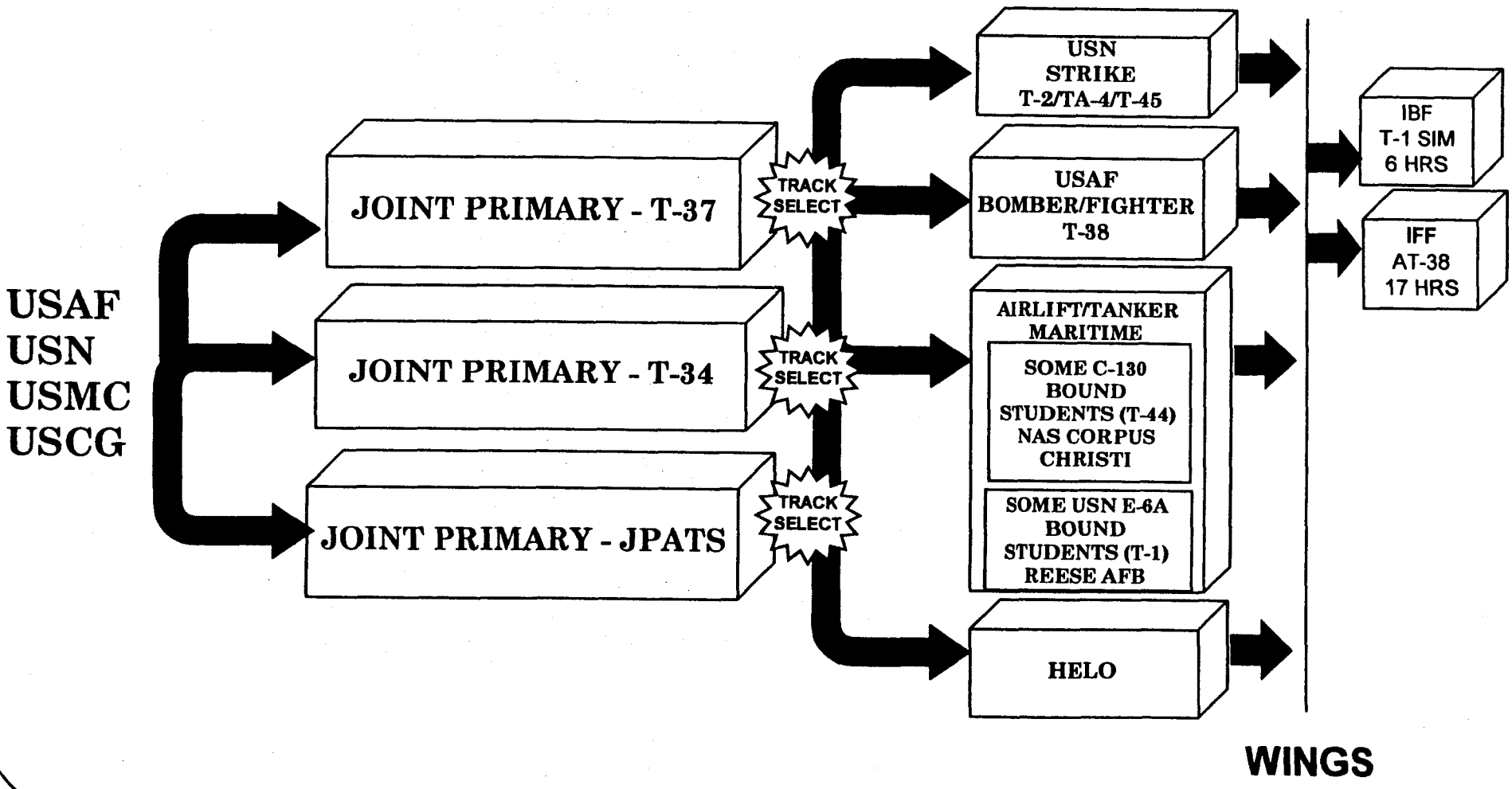
NOTES:

- *711 AIRCRAFT BUY: DOESN'T INCLUDE ALL OF ENJJPT AIRCRAFT*
- *SERIES OF FIRM FIXED-PRICE CONTRACTS EXTENDING 4-5 YEARS EACH*
- *FIRST ORDER WILL BE FOR APPROXIMATELY 140 AIRCRAFT*

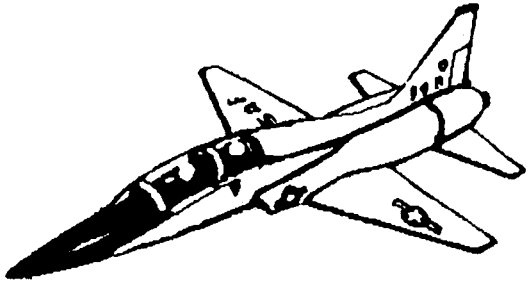
USAF UPT CHANGES SINCE 1973

- *CLOSED OR REALIGNED FIVE UPT BASES*
- *STOPPED TRAINING IRANIANS*
- *ENJJPT TRAINING BEGUN*
- *TWO GENERATIONS OF FLIGHT SIMULATION CHANGES*
- *IFF TRAINING ABSORBED INTO UPT BASES*
- *T-46 TO REPLACE T-37 PURCHASED/CANCELLED*
- *SUPT AND T-1 ACQUISITION*
- *JOINT TRAINING*
- *ROTARY-WING TRAINING CHANGED MULTIPLE TIMES*
- *NAV TRAINING BASE CLOSED*
  - *NAV TRAINING "REALIGNED" THREE TIMES*

JOINT UPT--INTERMEDIATE STATUS WITH JPATS



SUMMARY



- ***JOINT TRAINING IS CENTERPIECE OF UFT***
- ***JPATS IS KEY TO CONSOLIDATED PRIMARY PILOT TRAINING***
- ***TRAINING "VISION" IS STILL GROWING AND DEVELOPING***

Document Separator

BRIEFING FOR BRAC COMMISSION STAFF

BRAC 95
JOINT CROSS SERVICE GROUP TEST AND EVALUATION

27 FEB, 1995

BRIEFING OUTLINE

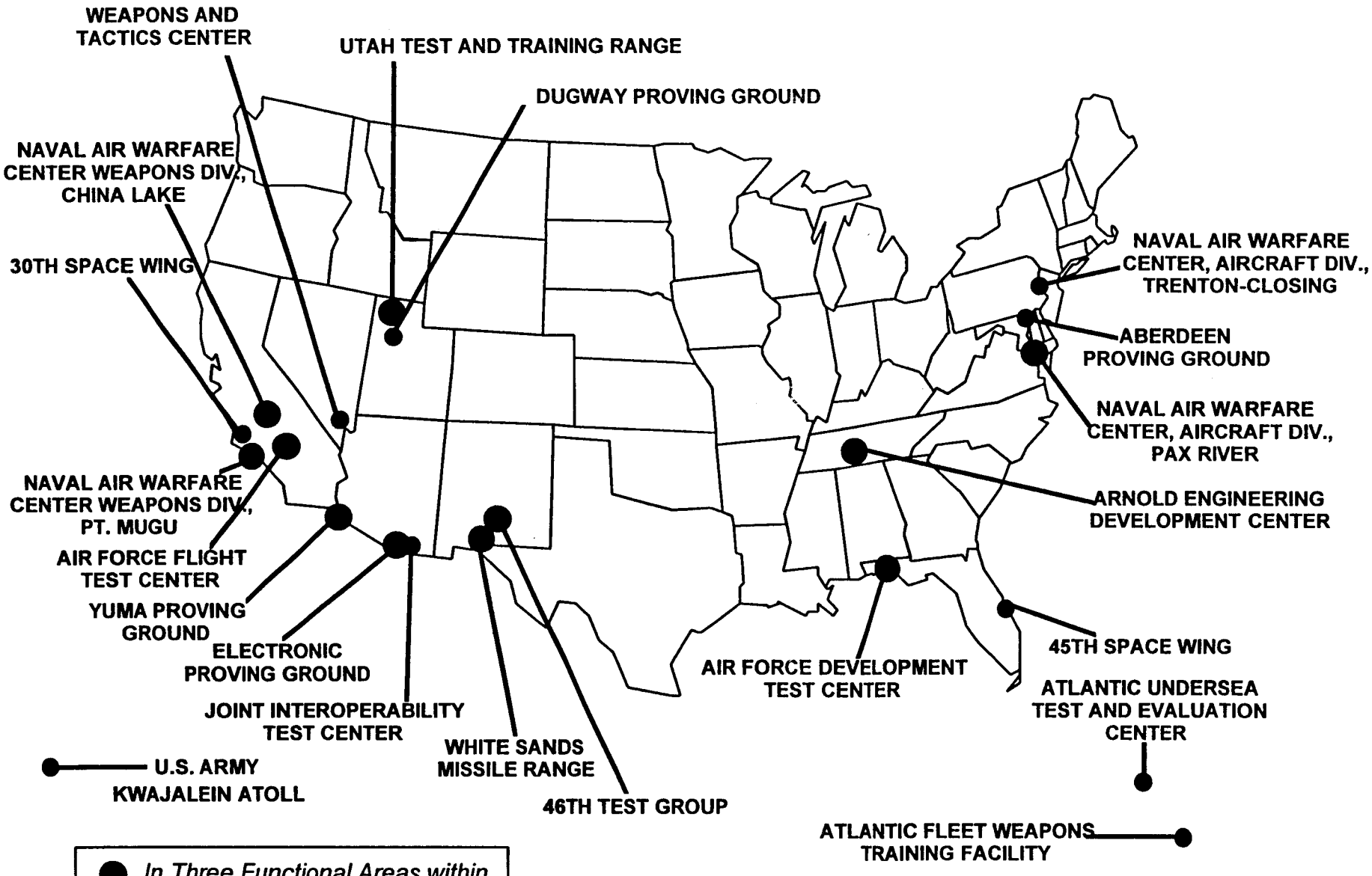
- Review of T&E Infrastructure
- T&E Joint Cross Service Group
- Process and Analyses
- Additional Analysis

DoD T&E INFRASTRUCTURE

- 21 major activities constitute the Major Range and Test Facility Base (MRTFB)
  - Most are T&E activities managed and operated under uniform guidelines
  - Sized, operated and maintained to support all DoD users
  - Available to other users with testing requirements

- Testing capabilities also exist at other bases
  - Non-core T&E sites

Major Range and Test Facility Base (MRTFB)

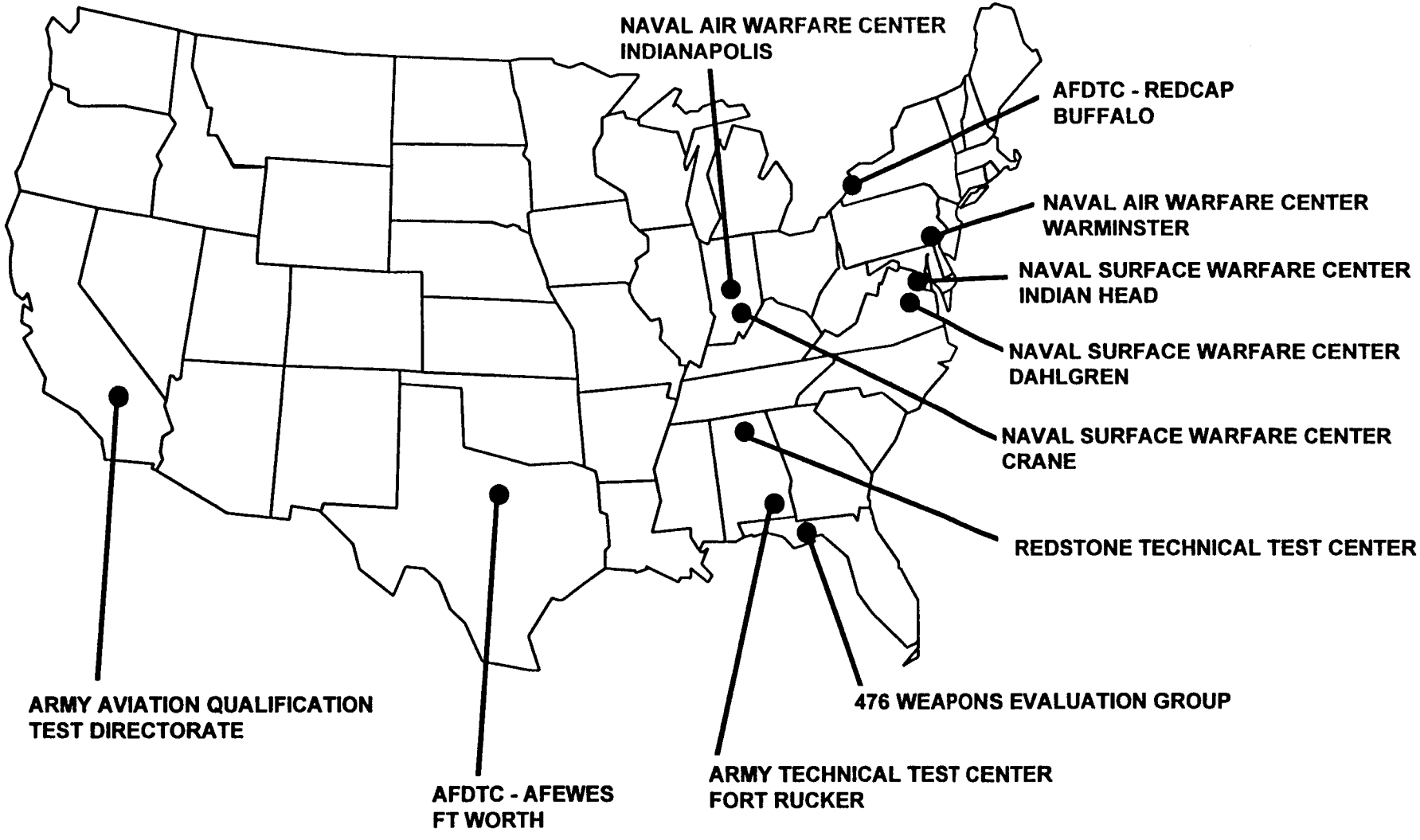


T&E INFRASTRUCTURE

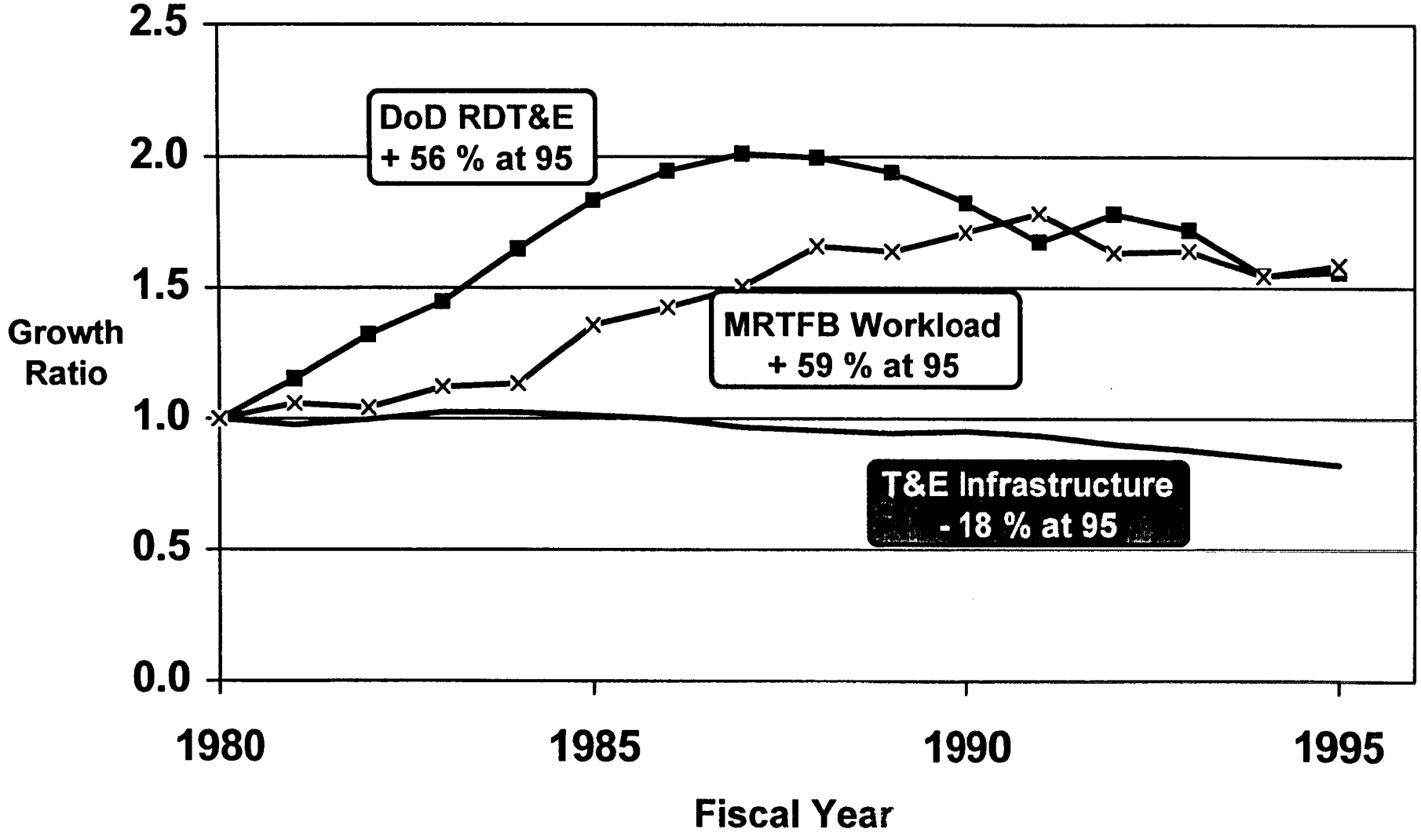
- Large in Land, Sea, and Air Space
  - 7 million land acres (over 50 percent of total DoD land area)
- Costly to replace
  - Replacement value of $ 25 billion
- Active
  - Sites for several thousand test projects per year
- Activity not driven by force structure
  - T&E Infrastructure budget declined during periods of increased DoD budgets

Non-Core T&E Facilities

(in Three Functional Areas within Scope of T&E JCSG Analysis)



DoD TRENDS IN T&E AND RDT&E BUDGETS
SINCE FY1980



1995 COST OF T&E INFRASTRUCTURE

- T&E Infrastructure costs $ 1.7 billion
  - About 15 % of Acquisition Infrastructure
- Acquisition Infrastructure costs $ 12.2 billion
  - About 10.8 % of DoD Infrastructure

T&E Infrastructure cost is 1.5 % of DoD Infrastructure cost

T&E JOINT CROSS SERVICE GROUP

Provide guidance to Military Services and DoD Agencies for the conduct of BRAC 95 T&E Cross-Service Analysis

MEMBERSHIP

- *Co-Chairmen*: DOT&E
  OUSD(A&T), DTSE&E
- *Team Leaders*: DOT&E
  OUSD(A&T), DTSE&E
- *Members*:

Army	Navy
Air Force	DNA
BMDO	DISA
PA&E, OSD	OSD BRAC

- *Observers*: DoD Comptroller
  DoD IG
  Lab Joint Cross Service Group

AREAS SELECTED FOR ANALYSIS

- T&E Functional Areas with commonality among the Military Departments
  - Air Vehicles
  - Electronic Combat
  - Armament/Weapons (excluding surface-to-surface)
- T&E Facility Categories (TFC)
  - Digital Modeling and Simulation
  - Measurement Facilities (further subdivided)
  - Integration Laboratories
  - Hardware in the Loop
  - Installed Systems Test Facilities
  - Open Air Ranges

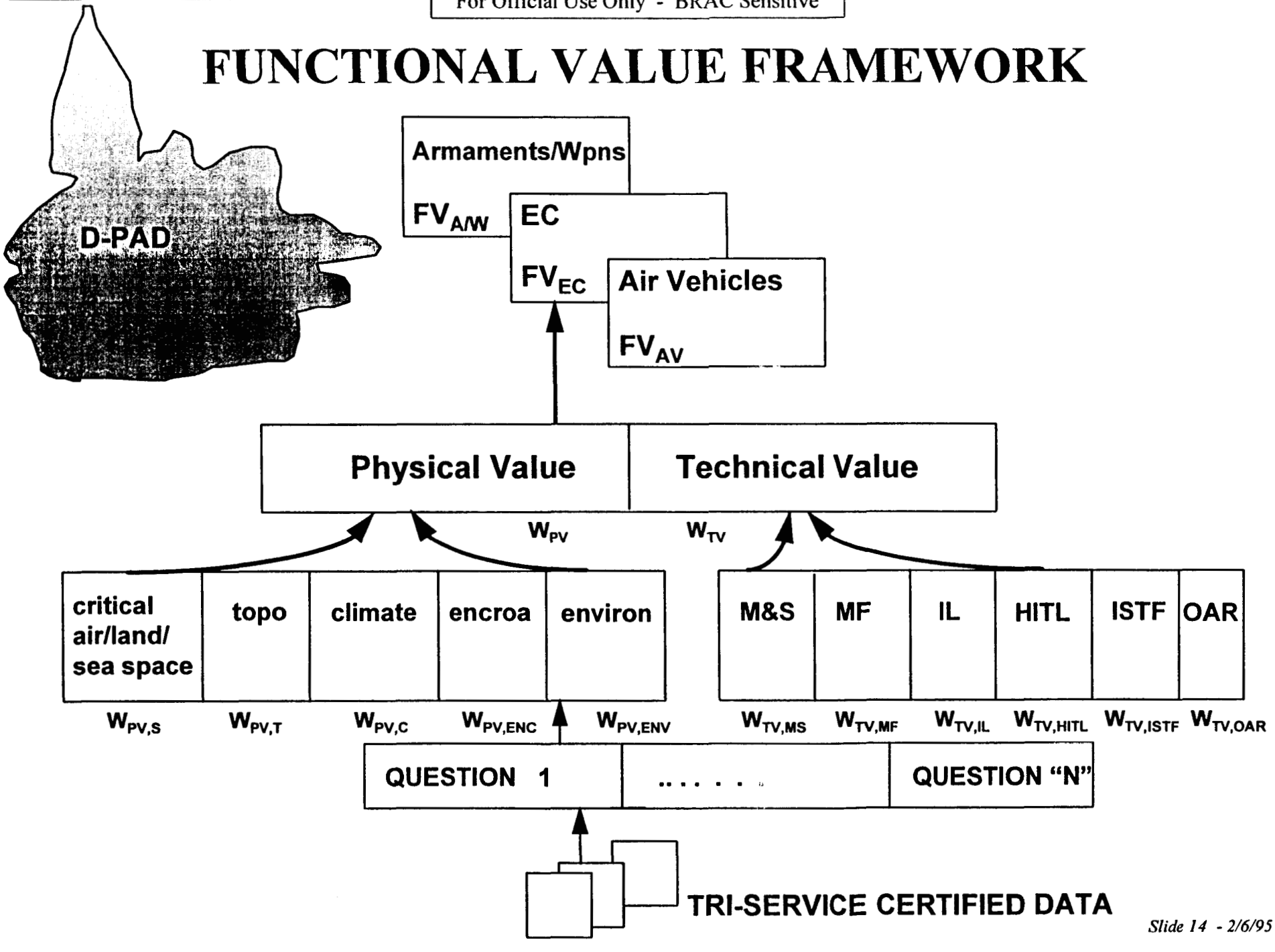
JCSG POLICY IMPERATIVES

- Retain irreplaceable Air, Land, and Sea space
- Retain the capability to satisfy requirements in each test facility category for each functional area, and retain critical backup capability
- Realign/consolidate capabilities, where cost effective, into existing MRTFB activities with open air ranges
- Exclude operational test agencies and dedicated training activities
- Remove from closure or realignment consideration in each functional area, those facilities/capabilities that:
  - Are Military Department unique
  - Have 5% or less of their total workload in that T&E functional area

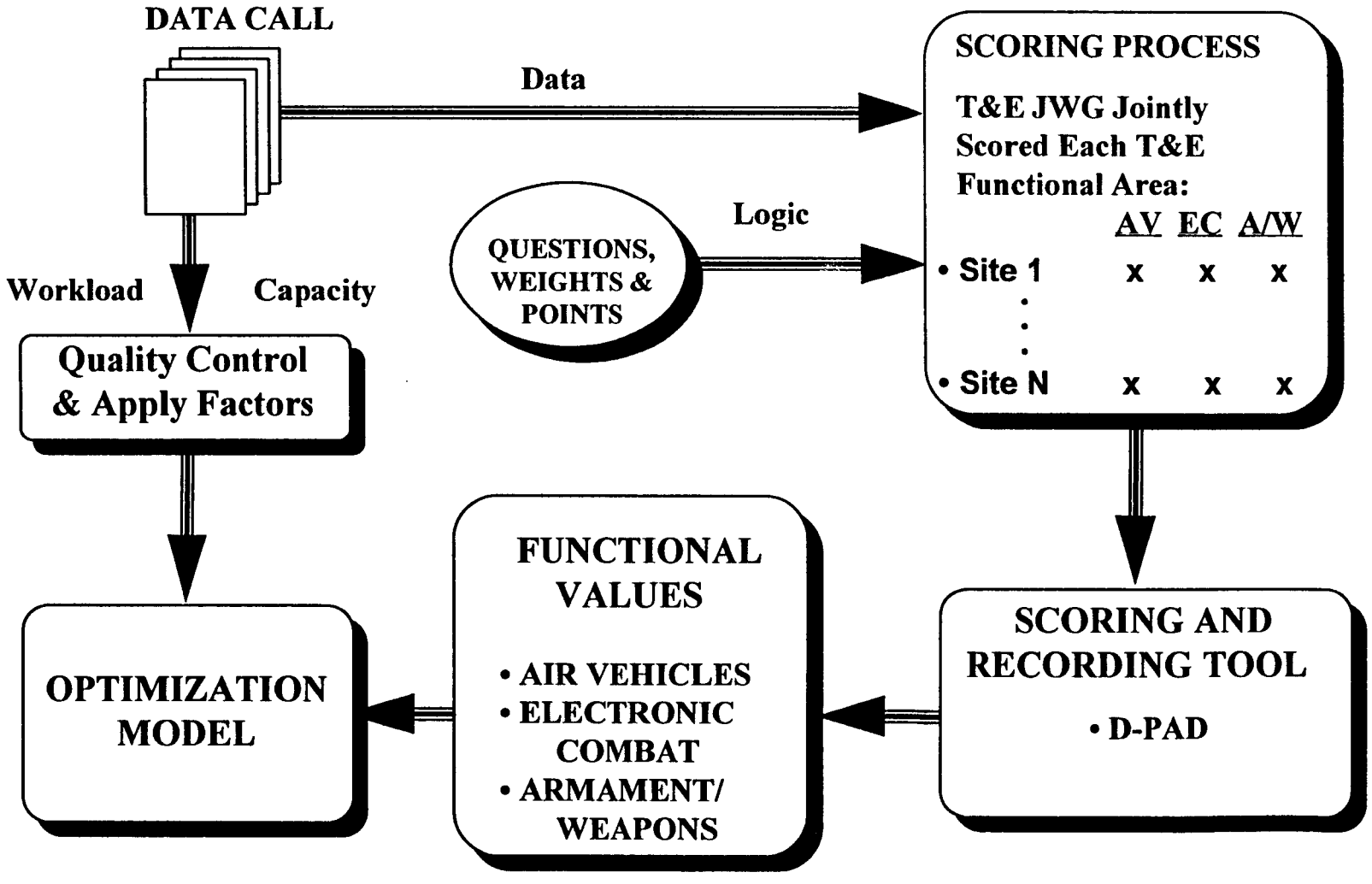
ANALYSIS TERMINOLOGY

- Capacity - the peak annual workload (in test hours) that the test site experienced during the period FY86-FY93
- Workload - the projected workload for FY99-FY01 using outlay rates in FY95 PB (Resulted in 0.72 times average workload in FY92 and FY93)
- Excess Capacity - the capacity minus projected workload
- Functional Value
  - Physical Value - Value of the site considering air, land, sea space as well as varied topography and climates as related to T&E in real-world environments under realistic conditions
  - Technical Value - Value of the site considering man-made assets in terms of their capability to support T&E of current and future weapon systems

FUNCTIONAL VALUE FRAMEWORK



T&E JCSG FUNCTIONAL VALUE SCORING PROCESS



DATA ANALYSIS

Workload and Capacity in Test Hours

All Test Facility Categories - Core and Non-Core Sites

T&E Functional Areas	Workload	Capacity	Excess Capacity
Air Vehicle	319,113	509,612	190,499
Electronic Combat	31,400	64,909	33,509
Armament/ Weapons	280,032	550,595	270,563
Total	630,545	1,125,116	494,571

DATA ANALYSIS

Workload and Capacity in Test Hours

Open Air Ranges - Core and Non-Core Sites

T&E Functional Areas	Workload	Capacity	Excess Capacity
Air Vehicle	27,578	53,761	26,183
Electronic Combat	2,771	5,860	3,089
Armament/ Weapons	31,742	68,857	37,115
Total	62,091	128,478	66,387

DATA ANALYSIS

Workload and Capacity in Test Hours

Non-Core Sites Only

T&E Functional Areas	Workload	Capacity	Excess Capacity	Excess as a % of Total Excess
Air Vehicle	35,282	59,605	24,323	13 %
Electronic Combat	6,954	16,471	9,517	28 %
Armament/ Weapons	35,167	53,469	18,302	7 %
Total	77,403	129,545	52,142	11 %

JCSG POLICY IMPERATIVES

- Retain irreplaceable Air, Land, and Sea space
- Retain the capability to satisfy requirements in each test facility category for each functional area, and retain critical backup capability
- Realign/consolidate capabilities, where cost effective, into existing MRTFB activities with open air ranges
- Exclude operational test agencies and dedicated training activities
- Remove from closure or realignment consideration in each functional area, those facilities/capabilities that:
  - Are Military Department unique
  - Have 5% or less of their total workload in that T&E functional area

JCSG PROPOSAL - CORE REDUCTIONS

- The JCSG Co-Chairs generated for Military Department consideration, additional alternatives to close, realign, or mothball test facilities at the core sites.

- The driving factor in the selections was the excess capacity in the open air range facility category in all three functional areas.

Document Separator

United States General Accounting Office

GAO

Supplement to a Report to the Congress and the Chairman, Defense Base Closure and Realignment Commission

May 1993

MILITARY BASES

Letters and Requests Received on Proposed Closures and Realignments

GAO/NSIAD-93-173S

GAO

United States
General Accounting Office
Washington, D.C. 20548

Comptroller General
of the United States

B-253062

May 25, 1993

To the President of the Senate and the
Speaker of the House of Representatives

The Honorable James Courter
Chairman, Defense Base Closure and
Realignment Commission

This is a supplement to our report entitled Military Bases: Analysis of DOD's Recommendations and Selection Process for Closures and Realignments (GAO/NSIAD-93-173, Apr. 15, 1993).

Many interested parties, including Members of Congress, local government officials, and private citizens, have sent us correspondence on base closures. Several of these letters were from multiple requesters and included attachments of data, analyses, and/or evaluations. Additionally, some were delivered as part of a briefing or explanatory presentation.

In some instances, the letters and material provided useful leads. In other cases, the materials add support to issues we were actively pursuing. We were not able to follow up on many of the issues or points because of the limited time available to us. However, we believe that the letters and materials may be helpful to the Commission as it considers the proposed closures and realignments. Consequently, we are providing all of the letters and materials to the Commission for consideration. Appendix I contains copies of the letters and some of the materials we received.

We are sending copies of this report to the Chairmen, Senate and House Committees on Armed Services and Subcommittees on Defense, Senate and House Committees on Appropriations; individual Members of Congress; and the Secretaries of Defense, the Army, the Navy, and the Air Force. We will also make copies available to others on request.

This supplement was prepared under the direction of Donna M. Heivilin, Director, Defense Management and NASA Issues, who may be reached on (202) 512-8412 if you or your staff have any questions.

for Frank C Conahan

Charles A. Bowsher
Comptroller General
of the United States

Contents

Letter 1

Appendix I Letters and Other Material Received on Proposed Base Closures and Realignments 6

Letter from a private citizen, dated March 13, 1993, regarding the proposed realignment of the Defense Contract Management District Mid-Atlantic in South Philadelphia 6

Letter from the Honorable Ernest F. Hollings, Member of Congress, dated March 15, 1993, regarding the methodology, analytical data, and rationale provided by the Navy to support its base closure and realignment recommendations 9

Letters from the Honorable Sherwood Boehlert, Member of Congress, dated March 23, 1993, regarding cost estimates for base closure and realignment recommendations made by the Air Force 10

Letter from Paul S. Nahm, Base Closure Defense Committee, dated March 24, 1993, regarding the Naval Air Station and Naval Aviation Depot, Alameda, California 14

Letter from Don Perata, Chair, Alameda County Economic Development Advisory Board, dated March 25, 1993, regarding the recommended closure of the Naval Air Station and related facilities in Alameda, California 18

Letter from the Honorable Dianne Feinstein, Member of Congress, dated March 26, 1993, regarding the Navy's analyses pertaining to four bases in California 20

Letter from the Honorable Robert A. Borski, Member of Congress, dated March 31, 1993, regarding the Naval Supply Systems Command's report on the consolidation of the Aviation Supply Office and the Ships Parts Control Center 21

Letter from the Honorable Cliff Stearns, Member of Congress, dated April 1, 1993, regarding the Navy's review of Naval Air Station Cecil Field 22

Letter from Fred Meurer, City Manager, City of Monterey, dated April 2, 1993, regarding the Defense Language Institute at the Presidio of Monterey 26

Letter from Ross Haines, NADEP NORVA Association, dated April 2, 1993, regarding the Department of Defense's recommendation to close NADEP Norfolk 28

Letter from V. Daniel R. Guide, Jr., Ph.D., Assistant Professor of Operations Management, Old Dominion University, dated April 5, 1993, regarding depot capacity, inventory, and lead time 29

Letter from a private citizen, dated April 6, 1993, regarding the proposed closure of the Naval Aviation Depot and Naval Air Station in Alameda, California 31
Letter from a private citizen, dated April 6, 1993, regarding the Naval Aviation Depot and Naval Air Station in Alameda, California 36
Letter from the Honorable Jim Saxton, Member of Congress, dated April 6, 1993, regarding the Air Force's plan to use Plattsburgh as a Mobile Regional Contingency Center 38
Letter from the Honorable Carl Levin, the Honorable Donald W. Riegle, Jr., and the Honorable Nick Smith, Members of Congress, dated April 9, 1993, regarding base closures and realignments recommended by the Defense Logistics Agency 39
Letter from Thomas F.X. Needles, Director, Washington Office, State of Ohio, dated April 13, 1993, regarding the realignment of Air National Guard units 41
Letter from the Honorable George J. Mitchell, Member of Congress, dated April 14, 1993, regarding the Portsmouth Naval Shipyard 45
Letter from the Honorable James P. Moran, Member of Congress, dated, April 15, 1993, and letter from Julian W. Fore, Arthur Andersen & Co., dated April 13, 1993, regarding the Department of Defense's recommendation to realign a portion of the naval commands presently located within the National Capital Region 46
Letter from David R. Mosena, Commissioner, Department of Aviation, City of Chicago, dated April 15, 1993, regarding the Department of Defense's recommendation to close and relocate the military installation at O'Hare International Airport 52
Letter from the Honorable Owen B. Pickett and the Honorable Norman Sisisky, Members of Congress, dated April 20, 1993, regarding the criteria used to disestablish the Norfolk Logistics Systems Business Activity 54

Letters and Other Material Received on Proposed Base Closures and Realignments

13 March 1993

General Accounting Office
441 G St. N. W.
Washington, DC 20548

Dear Comptroller General,

I now work for the Defense Contract Management District Mid-Atlantic (DCMDM) in South Philadelphia. Yesterday, it was announced that our facility was being realigned as a part of the new round of base closures.

I feel angry and betrayed. I'm writing to ask for your support in reversing or modifying the total Philadelphia recommended closures/realignments.

My facility is a District Headquarters for Defense contract administration. Our eastern boundaries cover the states from New Jersey south through the end of Virginia at the North Carolina line. Our western boundaries are from Detroit south to the end of West Virginia. We are the headquarters for the second largest number of contracts and dollars within the current five contract administration Districts. No other existing District office can claim the diversity of contract types, contractors, commodities, and major weapon systems programs. Whatever DoD buys or whatever item is made in the USA, we administer a contract for it somewhere in the Mid-Atlantic District. For example, we administer contracts for tanks, tracked vehicles, trucks, postal vans, helicopters, guidance systems, radars, clothing and textiles, medical supplies, air defense systems, jamming devices, radios, speciality machined goods, studies, think-tank proposals, state of the art technologies, electronic components, aircraft engines, missile guidance systems, warheads, torpedoes - just to name a few. The two offices slated to assume our work don't have even half that range of products and services. We deal with the Fortunes 500 companies like Martin Marietta, General Dynamics, GE, Boeing, IBM, ITT, Westinghouse as well as small and medium sized companies. Our District has always administered the greatest number of cost contracts and has resolved the greatest number of cost accounting standards issues.

I recount these facts and figures to give you a sense of the diverse working knowledge that the DCMDM staff has acquired to be mission successful. About four years, our geography and scope of responsibility quadrupled. We assimilated that increased workload without significant staff increases. In the Philadelphia District staff office, we have always met the challenge of doing more with less without risking quality. We have a proven record of successfully resolving complicated issues to best serve the Government's interest. We have been a driving force behind many successful DLA initiatives. More than half of the DCMDM staff has participated in and conducted projects for our headquarters office in Cameron Station, VA since they lacked the depth of understanding and required technical expertise to do the job.

Page 2 of 3

Our proposed closure is not only an economic loss to the Philadelphia area; but, a loss to the quality and professionalism of government and the Department of Defense. No existing contract administration headquarters can successfully execute oversight responsibilities and lend the needed degree of technical guidance with the span of control which is being proposed by this base closure, particularly with the void of technical knowledge and expertise of the agency headquarters staff at Cameron Station, VA. Further, what is saved in manpower will be lost in travel costs and bad decision making.

There must be a way to reduce needless functions and still retain the current 5 District boundaries. I have several streamlining ideas which are probably too numerous to outline here. I'm willing to elaborate upon request. My ideas include such items as the elimination of the total quality management (TQM) initiatives, all internal monthly reporting systems, the program status database(PSD)system. (By the way, the PSD system is an electronic system to report status on a very limited number (less than 150) programs to OSD. So far, it has cost the agency over $1 million in a software development contract and another $1 million in agency wide resources to support prototyping of the system. After a year and half, the system still doesn't work and it does not provide the detail nor accuracy of the paper system which it has replaced. Another $1 million follow on contract is being contemplated to correct the problems with the current software version.)

I understand that our future was allied with that of our "landlord", Defense Personnel Support Center (DPSC). DPSC's functions as well as the functions of the Defense Industrial Supply Center (DISC) and Aviation Supply Office (ASO) are being moved to New Cumberland and Mechanicsburg, PA. Obviously, those jobs are critical to the national defense. It is just plain stupid, to recreate an organization in a totally different location. No amount of savings will ever justify the collective experience and technical knowledge which is being lost with those planned moves. Moves and consolidation of critical functions just don't improve or retain the quality of those functions. This is a lesson which should have been learned with the consolidation of the DLA finance offices at the Defense Finance and Accounting Center (DFAS) in Columbus, Ohio. DFAS has been paying more prompt payment interest in a typical month that the total prompt payment interest paid annually by all those finances offices whose functions DFAS assumed. Let's not repeat the DFAS debacle. I don't believe the Harrisburg area has several thousand people with the procurement expertise to fill the jobs being moved there. Further, I can't believe the Harrisburg metropolitan area is more depressed than the Philadelphia metropolitan area. In addition to the proposed closure or downsizing of the Navy Yard, Mc Guire Air Force Base, Fort Dix, Willow Grove, DPSC, DCMDM, DISC, and ASO, Philadelphia has been losing private sector jobs at an alarming pace like GE, Campbell's, Mrs. Paul's, Whitman Chocolates. In case you did not recall, Philadelphia is teetering on the edge of bankruptcy. This move might push us over the edge.

I believe that economies could be achieved without losing 9000 jobs in Philadelphia. Further, those economies could be extended nationwide and worldwide if we simply eliminate needless functions. Let's eliminate the frills and all the effort to support the Government bureaucracy. We don't need TQM and fancy computer systems to award and administer defense contracts. Although it is a nice benefit, we don't need to pay 100% of after hours college and graduate courses. We don't need to attend expensive executive seminars. We don't need extensive public affairs staffs and agency human interest magazines. Nor do we need to prepare extensive formal briefings for the executive staff on a regular basis. We don't need duplicate reports, multiple layered management chains, management vision statements, and tactical plans. What we need is to eliminate the Military in the critical DLA decision making processes (since they are never forced to live with the consequences of their bad decisions) and make civilian managers accountable for their actions.

I know this letter is running rather long but I needed to outline the facts fully so you could understand my point of view. I'm willing to provide further details as need. I thank you for your time and I hope you can do something to reverse the base closure decision.

ERNEST F. HOLLINGS
SOUTH CAROLINA

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OFFICE OF TECHNOLOGY ASSESSMENT
NATIONAL OCEAN POLICY STUDY

March 15, 1993

Mr. Charles A. Bowsher
Comptroller General
441 G Street, NW
Room 025
Washington D.C., 20548

Dear Mr. Bowsher:

As you and your staff begin what I know will be a thorough review of the FY 93 proposals for Base Closure, I request that you pay particular attention to the methodology, analytical data, and rationale provided by the Navy to support their recommendations. According to my understanding of the process, the Navy is required to conduct comparative analysis among type installations, which should support their final recommendations. It is my belief that the Navy cannot establish a clear, objective case for a number of their recommendations.

In the case of Naval Shipyards, following the clearly established evaluation requirements, the Navy should be able to present data which shows the Charleston Shipyard less efficient and less valuable than the 7 Shipyards remaining in the Navy inventory. I flatly do not believe that to be the case, and my belief is based on more than parochial opinion. I assert that a one-on-one comparison between the Charleston Shipyard and other comparable shipyards left unaffected in this proposal, will show Charleston's efficiency and economic benefit to the taxpayer to be superior. The supporting data provided to me by the Navy does not make a clear case for their recommendations for Shipyards nor for Naval Stations.

Accordingly, I request that in addition to the overall review you will provide to the Congress, you provide directly to me a summary of your findings concerning the validity of the Navy's justification for its proposals regarding both Shipyards and Naval Stations.

With warmest personal regards, I am

Sincerely,

Ernest F. Hollings

SHERWOOD BOEHLERT
23d District, New York

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March 23, 1992

Mr. Robert Meyers
General Accounting Office
441 G Street, N.W., Room 5100
Washington, D.C. 20548

Dear Bob:

In 1991 the Pentagon submitted the following cost-to-close figures to the Base Closure Commission.

Plattsburgh--$27 million
Barksdale----$198.5 million
Griffiss-----$220.1 million
McGuire--No cost to close since air mobility bases were exempt.

In 1993, the Pentagon submitted the following cost-to-close figures to the Base Closure Commission.

Plattsburgh--$114 million
Barksdale----$567 million
Griffiss-----$416 million
McGuire------$300 million

Please note that the jump in the Plattsburgh figure is over 4 times. The jump in the Barksdale figure is 3 times. Finally, the figure for Griffiss isn't even doubled. The two bases above with the biggest jumps in cost-to-close are the ones the Pentagon has picked to keep open. What makes me suspicious of the Pentagon numbers for 1993 is the fact that in 1991 the low cost-to-close and immediate payback possibilities made these same bases, Barksdale and Plattsburgh, prime targets for closure. Of further interest is the fact that the bases with the biggest jumps in cost-to-close have flying missions, the cheapest things to move. Griffiss AFB, has bombers, tankers, the Rome Lab, the 485th EIG, and NORAD. Except for the flying mission at Griffiss, the remaining facilities are extremely expensive to close. If the Barksdale cost-to-close jumps 3 times, Plattsburgh 4 times, then in essence, the cost-to-close Griffiss should have multiplied at least six fold.

I'm asking the General Accounting Office (GAO) to take a close look at the Pentagon's 1993 cost-to-close figures of the four bases. Something is amiss.

In the Pentagon announcement, the runway at Griffiss is closed and Plattsburgh is named the mobility base of the East. As you know, Griffiss takes care of the deployment of Fort Drum personnel and equipment under the SIOP. If Plattsburgh is to be the mobility base in the East, the extension of the runway at Fort Drum, from 5,000 to 10,000 feet to accommodate airlift aircraft for future deployments, becomes necessary, since Fort Drum personnel and equipment can't go to Plattsburgh (reaction time). The cost of the extension then becomes a part of the cost-to-establish Plattsburgh, as the mobility base. General Carl Franklin, of the Pentagon Base Closure, agreed.

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Page Two
Mr. Robert Meyers, GAO

General Franklin told us at the March 15, 1993 briefing, Griffiss AFB, that the cost of extending the runway at Fort Drum was $23 million. I find that figure to be unbelievably low. Especially in view of the fact that the Fort Drum runway also needs to be strengthened to handle heavy airlift aircraft. Incidentally, General Hall, New York State National Guard, stated that the Guard cannot come over to Griffiss AFB and set up control tower facilities in the time frame required in the SIOP for deployment of Fort Drum units.

I'm asking the GAO to determine the real cost to extend and strengthen the runway at Fort Drum to include taxiway, lighting, etc. required for FAA certification. We are informed that the cost is more like $67 million.

I believe that the Air Force is grossly underestimating the cost it will incur in deploying the Army's 10th Mountain Division swiftly in the event of a national emergency, once Griffiss AFB is closed. Transporting that division is an Air Force mission performed at Griffiss, and in my view the readiness operations and maintenance costs of moving the division quickly have not been made a part of the costs-to-close Griffiss.

In the Pentagon announcement the Air Force proposes to move the 485th Engineering Installations Group from Griffiss AFB, to Hill AFB, Ogden, Utah. As you may know, the 485th EIG is responsible for the engineering and installation of communications equipment throughout the Northern U.S., Canada, Europe, and the Near East. They accomplish 49.5% of the E&I communications equipment of the Air Force. Fifty percent of their workload is overseas. The 485th, at Griffiss, is close to the Pentagon and Andrews AFB, who are two of their prime customers and housed with the Rome Laboratory, the super lab for (C3I). When General Franklin was asked how the move of the 485th EIG to Hill AFB saves the Pentagon money, his response was that the savings to the Pentagon is in the O&M costs of closing the Griffiss runway, removing all support personnel, and fencing in the Rome Laboratory.

It is difficult for me to see how the Air Force is saving money by moving the 485th EIG to Utah. It will now take the engineers at least two days more of travel time, TDY expense, and travel expense, just to get to the same job sites as before. Furthermore, part of the Pentagon announcement has the 1849th Electronics Installation Squadron moving from McClellan AFB to Hill AFB, Utah to consolidate with the 485th EIG. Now that McClellan AFB has been taken off the DOD closure list, this consolidation package has been disrupted.

Can the GAO determine how much more the move and operation (annual basis) of the 485th EIG from Griffiss AFB to Hill AFB will cost the DOD?

Attached is a copy of General Franklin's chart on "Costs to Establish". It is not a cost/benefit analysis; it is a cost analysis. However, even the cost numbers fail to show any relationship to the 1993 Base Closure Report to the Commission (for example the closure cost of Plattsburgh is stated as $25.8 million not $114 million. It is interesting to note that the number of $25.8 million is closer to that used in the 1991 closure study of $27 million and casts into doubt the basis for the new Plattsburgh closure number.

Page Three
Mr. Robert Meyers, GAO

This table doesn't surprise anyone. If, for example, you review the Air Force's methodology for comparison, as presented by General Franklin, it states as one of its criteria: "compare costs of keeping and developing each base to satisfy mission". This, as opposed to comparing costs and benefits. It is possible that major OMB requirements have been violated.

I would like to know if this table or chart forwarded to the Base Closure Commission and the GAO. Does this chart analysis comply with OMB Circular A-94? Can I access the GAO as you audit this financial data? Have base closure requirements been violated?

Finally let me say that I hope that the GAO would analyze the Air Force preference for one base, one mission, one boss, which is the policy driving the closure decisions. The Air Force recently preferred multiple mission bases, such as Griffiss, as the Navy and Army still do, where operations and maintenance costs can be spread over many functions. Griffiss has been a multiple mission base, and what had been one of its chief strengths has now become a major liability, in the eyes of some people within the Air Force, because of the new preference.

With warmest regards,

Sincerely,

Sherwood Boehlert
Member of Congress

SB:pm
enc.

SHERWOOD BOEHLERT
23D DISTRICT, NEW YORK

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ADDENDUM

March 23, 1993

Mr. Robert Meyers
General Accounting Office
441 G Street, N.W., Room 5100
Washington, D.C. 20548

Dear Bob:

I apologize for leaving out one important issue in my earlier correspondence to you today, but I want to bring an important matter to your attention that is contained in the Department of the Air Force Analyses and Recommendations, Volume V.

Please note on page 17, Geographically Key/Mission Essential Exclusions, Kirtland AFB, New Mexico: Supports several irreplaceable research and testing facilities essential to DOD, DOE, and other governmental agencies (Phillips Lab). On page 18, Wright-Patterson AFB, Ohio: Unique combination of organizations and facilities supporting aerospace research, development, and acquisition and Headquarters AFMC (Wright Lab). On page 23, Category/Subcategory Exclusions, Subtitle Industrial/Technical Support Category--Product Center and Laboratory Subcategory: Brooks AFB, Texas, human engineering research (Armstrong Lab).

Three of the four Air Force bases containing the Air Force super labs were excluded from closure/realignment consideration because of the importance of their research activities. Rome Lab, the C3I research and testing facility of the Air Force, did not receive the same treatment. Why? The Air Force, after an exhaustive study, consolidated all of its research activities into 4 super labs with an announcement on November 27, 1990. Rome Lab, Griffiss AFB, is the C3I super lab.

With warmest regards,

Sincerely,

Sherwood Boehlert
Member of Congress

SB:pm

BCDC

Base Closure Defense Committee
Alameda Naval Complex P.O. Box 1704 Alameda, CA 94501

March 24, 1993

Charles A. Bowsher, Comptroller General
U.S. General Accounting Office (GAO)
Washington, D.C. 20548

Subject: Comments on 1993 Navy Base Closure Selection Process - Naval Air Station and Naval Aviation Depot, Alameda

Enclosures: (1) Military Value Matrix for Naval Aviation Depots
(2) Naval Air Systems Command memo AIR 4221A/1091 dated 19 Feb 1991

The following information is provided for GAO's consideration and investigation of the 1993 base closure process. Our organization has worked closely with Alameda County (Calif.) officials over the past three years to articulate the compelling case for retaining the Alameda naval complex. We welcome GAO's involvement in the process and stand ready to assist in any way we can.

1. PROBLEMS WITH OBTAINING DATA.

Attempts to obtain information from the Navy using the contact listed in the Navy's report have been unsuccessful. We were told to request data via the Freedom of Information Act. Thus, the ready availability of closure data is in itself a process problem that needs to be addressed. By the time that interested parties obtain the information needed, the GAO process is over, the Commission hearings are over, and the bases are closed!

We have reviewed the official Navy closure report to the Commission, Analyses and Recommendations (Volume IV) (March 1993). This report, though claiming to be a comprehensive study, fails to provide the specific "matrices" and methods of analysis used to determine the military value of an installation. We were able to obtain enclosure (1), which we believe is the military value matrix used for evaluating Naval Aviation Depots (NADEPs), through other channels. As discussed later on, this matrix contains either outright errors or inappropriate weightings which (1) unfairly lowered NADEP Alameda's military value; and (2) artificially inflated the value of other NADEPs.

2. HISTORICAL BIAS AGAINST ALAMEDA

> **"Instructions received indicate that Alameda reports are to be done in favor of closure."**

The preceding statement, contained in an internal Navy memo (enclosure 2) during the previous closure round (1991), shows the bias against NAS/NADEP Alameda that has existed for some years within certain parts of the Navy establishment.

The exposure of this memo coupled with the lack of documentation or justification on the part of the Navy in 1991, helped result in NAS/NADEP Alameda being removed from the 1991 list submitted to the Closure Commission. This year's list of Bay Area navy bases is nothing but a rerun of the 1990 closure attempt and the aborted 1991 attempt - re-packaged in a new "comprehensive study" wrapping for 1993.

The history of the Navy's attempts to close NAS/NADEP Alameda since 1990 clearly shows an anti-Alameda bias. The 1993 Navy process is documented in its report (Vol. IV). However, what isn't shown in the report is that the same Navy captain that signed enclosure (2) was once again directly involved as the person who coordinated input of data into the Navy's COBRA model.

We do not claim that this individual on his own is responsible for the bias shown against Alameda. Rather, it is obvious that this is coming from much higher within the Navy's chain-of-command, and he was just following orders. **However, it is certainly inappropriate that someone who was knowingly or unknowingly a part of a previous biased effort to close a facility is once again placed "in the loop!"**

3. METHODS OF ANALYSIS AND/OR DATA APPEARS TO HAVE BEEN MANIPULATED

Recent history, coupled with the Navy's admission that it used "military judgement" to select its closure candidates rather than an empirical evaluation of military value and future strategic needs, that causes us to look at the data and process with apprehension. Our review of the data indicates that **facilities were targeted first, and data "made to fit" later.**

For example on page two of the NADEP military value matrix (enclosure (1)), the first two questions of the Cost section are given a point value of 3.7 points each. These questions were not asked in any of the Data Calls requested of the NADEPs, nor is it clear of what specific value the information is to making a closure decision. What is clear is that the questions and the weighting assigned them give the NADEPs at Cherry Point and Jacksonville 7.4 points each out of the "66" and "65" points total each received in being rated the two top NADEPs on "military value."

It is also unclear as to why "Cost" criteria are given high

weights of 3.7 points, while under "Strategic Concerns" there are just three questions weighted at 1.68, 0.20, and 1.68 points respectively. Neither Jacksonville nor Cherry Point is co-located with a deepwater port, nor was the question even considered as a strategic concern.

NAS Alameda, the only certified nuclear carrier homeport on the west coast, somehow receives a lower military value rating than facilities that do not even exist (Everett, WA)!. There is obviously something wrong with a process that rates long-standing strengths such as deepwater ports, adjacent airfield facilities, and nuclear carrier capability as either excess or not of value militarily.

Additional examples are:

1. Alameda closure scenarios contained in the Navy's 1990 and 1991 closure efforts, are now re-introduced in the form of the POM outyear data used to drive 1993 decisions. For example, the NADEP military value matrix question No. 5a correctly gives NADEP Alameda credit for having missile repair capability. Question 5b however, does not give credit in the POM outyears.

POM outyear projections can slant military value analysis for any targeted facility by assuming capability dis-establishment at that site, reducing their workload and thereby diminishing military value. Question 5b had a value of 1.61 points, not given to Alameda.

2. In the Equipment and Facilities section, NADEP Alameda was not given credit for having "...special facilities, equipment, or skills to perform aircraft repairs" (question 4c); engine repairs (question 6c); component repairs (question 7c); or aircraft modifications (10c). These capabilities do indeed exist at NADEP Alameda, and the specific data call responses from NADEP Alameda provided many pages of documentation proving this. An additional 6.43 points should have been credited to NADEP Alameda for these questions.

4. NAVY'S DATA COLLECTION PROCESS WAS FLAWED

Those with the greatest technical knowledge about a facilities unique capabilities and value (the bases themselves) were routinely given just a few days to one week to answer a series of detailed "Data Calls." The data was sent (for Naval Aviation Depots) to Patuxent River MD for further analysis and input, and then on to the the Navy's BSEC.

a. As no information was ever sent back to the facilities being studied on exactly what was said about them, it is not clear as to whether data was either changed, omitted, or added to

present an incorrect picture about a facility's value.

b. The Navy's certification process does not guarantee a fair and impartial process. It instead guaranteed that those who would make the final decision would be the ones who "certified" the data.

c. Though we do not yet have concrete proof, we have been told that data certified at lower levels of the Navy process, **was altered.**

5. LACK OF CIVILIAN REVIEW

An assumption that was inherent in the base closing process was that there would always be a review of military recommendations by the proper civilian authority within both the Department of the Navy and DoD. However, this was not the case for the 1993 round of closures, and was a major factor in the targeting of the Bay Area's Navy facilities.

The change of administrations on January 21 coupled with a moved-up deadline of 22 February to DoD for individual service recommendations provided Navy admirals with the unique opportunity to target Bay Area bases without any civilian oversight to stop them. The Navy's list was submitted directly from Chief of Naval Operations Adm. Kelso to the Secretary of Defense. The "list" was then "leaked" to the New York Times in advance so that Secretary Aspin couldn't remove them without it appearing "political." He couldn't delay the list without risking having no closures take place by missing legal deadlines. Additionally, Secretary Aspin had little or no staff in place to help him review the list and was also in ill health.

Thus, facilities such as Alameda are in danger of being closed with the taxpayers facing a **$2 BILLION** cost to build replacement facilities. Does anyone believe that it is politically "normal" to recommend the closure of all four bases in the district of the Chairman of the House Armed Services Committee? In 1995, the Clinton administration will have had time to place civilian oversight in place to prevent biased lists from being created.

Paul S. Nahm

PAUL S. NAHM

ALAMEDA COUNTY EDAB
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John Woodbury
Green Belt Alliance

March 25, 1993

Mr. Charles A. Bowsher, Comptroller General
General Accounting Office
Washington, D.C. 20548

Dear Mr. Bowsher:

Subject: Comments on 1993 Navy Base Closure Selection Process

Enclosure (1) is provided by the Base Retention Committee of the Alameda County Economic Development Advisory Board (EDAB) for GAO's consideration in their analysis of the Navy's 1993 base closure process. For your information EDAB has been actively involved in base closure issues for several years and is a public/private organization comprised of business, labor, environmental and educational groups as well as Alameda County and all fourteen of its cities.

The enclosure, Shortcomings in the Navy's Analysis of Military Value and Cost Factors Among West Coast Carrier Facilities, itemizes several flaws in the methodology used by the Navy in reaching their recommendation to close NAS Alameda and related facilities. These include: a) the failure to compare the military value of a homeport for nuclear aircraft carriers on a uniform basis; b) inadequate accounting of costs; c) failure to adequately recognize the military value of facilities that do exist; d) giving credit for military value to facilities that don't exist; and, e) lack of an adequate cost comparison between the two West Coast facilities that are the focal point of the Navy's analysis.

Among the scoring discrepancies discovered in the Navy's evaluation of Alameda facilities is the fact that Alameda was given a score of 2 for being able to berth a nuclear aircraft carrier because it is a Naval Air Station, while Everett was given a score of 10 because it is being built as a Naval Station. No credit was given for Alameda's two (2) other licensed homeport berths for nuclear carriers.

If the capability to homeport a nuclear carrier has intrinsic value, Alameda should be evaluated on an equal basis with all other facilities capable of homeporting nuclear carriers and should be given a score of 30 rather than a score of 2.

Steven C. Szalay, County Administrator – Bruce L. Kern, Director of Economic Development
1221 Oak Street, Suite 555, Oakland, CA 94612
Phone: 510-272-6984 Fax: 510-272-3784 or 272-5007

Charles A. Bowsher, page 2

This analysis is preliminary and we continue to refine our information. We will forward additional information as it becomes available. Should you have questions we would be pleased to provide whatever assistance we can. Thank you for your consideration of this matter.

Sincerely,

Don PERATA
Chair EDAB

DP/RGS:0408c
cc: Senator Diane Feinstein
Senator Barbara Boxer
Congressman Ron Dellums
Copeland Hatfield and Lowery

DIANNE FEINSTEIN
CALIFORNIA

United States Senate
WASHINGTON, DC 20510-0504

March 26, 1993

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accouting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

Under the procedures of Title XXIX of National Defense Authorization Act, the General Accounting Office (GAO) plays a critical role in the defense base closure and realignment process. Pursuant to statute, the GAO is directed to monitor and review the analysis done by the Department of Defense (DoD) in its recommendations to the Defense Base Closure and Realignment Commission.

As you know, eight major naval installations have been recommended for closure in California, and an additional two bases (McClellan Air Force Base and the Presidio of Monterey) may also be considered for closure in the near future. As a result of DoD's base closure recommendations, over 100,000 jobs and $4.4 billion in economic activity could be lost in California alone. Closures of these facilities will have a significant adverse impact on the surrounding communities and the entire region.

I have attached two memoranda that describe possible flaws in the Navy's reasoning process as it related to the recommendation to close four Alameda County installations. I urge you to carefully review this information, and suggest that a complete audit of the Navy's data collection and analysis may be warranted.

Thank you, in advance, for your prompt attention to this matter. If I may be of further assistance, please feel free to contact me or Robert Mestman of my staff at (202) 224-2743.

Sincerely,

Dianne Feinstein

DF:ram

Enclosures

ROBERT A. BORSKI
3D DISTRICT, PENNSYLVANIA

COMMITTEES:
PUBLIC WORKS AND TRANSPORTATION
CHAIRMAN—SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

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March 31, 1993

Mr. Robert L. Meyer
Assistant Director for Logistics
General Accounting Office
Room 5102
Washington, DC 20548

Dear Mr. Meyer:

I am writing to request your review of the enclosed report by the Naval Supply Systems Command on the consolidation of the Aviation Supply Office and the Ships Parts Control Center.

As you know, on March 12, the Department of Defense (DOD) recommended the closure of the Aviation Supply Office (ASO), located in my congressional district in Philadelphia, and its relocation to the Ship Parts Control Center (SPCC) in Mechanicsburg, PA. The Department of the Navy claims that this consolidation would save $102.8 million in reduced excess capacity costs over twenty years.

On August 28, 1992, the Naval Supply Systems Command (NAVSUP) was tasked by the Department of the Navy to study the merits of consolidating these two facilities. The report concludes that such consolidation does not make sense both from a readiness and business perspective.

I would greatly appreciate your full review of the data, analysis, and recommendations presented in this report. I believe that such a review is needed to determine whether the Navy accurately assessed the cost-effectiveness of this consolidation in its recommendation to DOD.

I would also like to request a meeting at your earliest convenience between you and my Legislative Director, Mark Vieth, to discuss these matters further.

Thank you for attention to these important matters. If you require any additional information, please call Mr. Vieth at (202) 225-8251.

Sincerely,

ROBERT A. BORSKI
Member of Congress

RAB/mdv
Enclosure

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6TH DISTRICT, FLORIDA

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April 1, 1993

Mr. Robert L. Meyer
Assistant Director of Logistics Issues
U.S. General Accounting Office
441 G Street N.W., Room 5102
Washington, DC 20548

Dear Mr. Meyer:

Thank you for meeting with me and my staff to discuss issues relating to the General Accounting Office review of the Department of the Navy base closure process. I appreciated the opportunity to discuss my concerns regarding the Navy's review of Naval Air Station Cecil Field.

According to Navy spokesmen, the desire to reduce maximum excess capacity throughout that service was the driving force behind the decision to recommend NAS Cecil Field for closure. This recommendation was made in spite of the fact that expensive military construction at receiving facilities would be necessary in order to accommodate units currently stationed at Cecil Field.

We are concerned that no cost analysis of capacity reduction alternatives was performed by the Navy, making it impossible to determine the most truly cost-effective closure strategy. For example, the Navy did not run cost determinations on the alternative of closing Naval Air Station Oceana, in spite of the fact that Oceana scored significantly lower under military value criteria.

Cecil Field possesses facilities for expansion and surge capacity that would be difficult to replicate elsewhere without incurring substantial additional costs to the taxpayer. The base also could easily accept new missions from alternative realignments without significant milcon costs.

While reduction of excess capacity is clearly a step in the process of reducing the cost of defense infrastructure, military value and cost-effectiveness should be the key determinants. A GAO review of the Navy's methodology in recommending the closure of Cecil Field could clarify the questions raised by their recommendation.

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-- 2 --

I have attached a list describing some of the specific concerns that have been raised regarding the proposed closure of Cecil Field. Thank you for your consideration of this request, and I look forward to hearing from you.

Sincerely,

Cliff Stearns
Member of Congress

Enclosure
CS/tdb

APRIL 1, 1993

MEMORANDUM TO MR. ROBERT L. MEYER

FROM: REPRESENTATIVE CLIFF STEARNS

SUBJ: DEPARTMENT OF DEFENSE CLOSURE RECOMMENDATION REGARDING NAVAL AIR STATION CECIL FIELD

Along with Jacksonville's Mayor's Commission on Base Realignment and Closure, I have reviewed the Department of Defense recommendations for closing Naval Air Station Cecil Field as part of the 1993 BRAC process. I would like to request that the GAO review the following points in the Navy's analysis:

o The Navy did not study alternative realignment options to determine the most cost-effective east coast configuration. In view of the requirement to spend hundreds of millions of dollars at receiving facilities to accommodate assets from Cecil Field, other options should have been explored. On the other hand, Cecil Field's existing capacity could absorb all east coast F/A 18's at a single location. No cost analysis of this option were conducted.

o Additionally, the Navy did not analyze the cost-effectiveness and military value results of closing Naval Air Station Oceana in spite of the fact that Oceana's military value was rated 10 points below Cecil Field and the severe civilian encroachment problems already existing at that location.

o In its analysis, the Navy assumes savings of $56.7 million per year for closing Cecil Field. Officials of the Jacksonville's base closure commission have stated the annual operating budget for Cecil Field at $10.3 million. This would result in a return on investment of more than 30 years, as opposed to the 6 years estimated by the Navy.

The factors included in the Jacksonville analysis were fixed costs related strictly to operating Cecil Field: civilian employees, utilities, facility maintainence and vehicle costs. The other costs of operation at Cecil would either be eliminated altogether or replicated elsewhere, resulting in no net savings related to closing Cecil.

o Comments regarding future civilian encroachment at Cecil Field are largely unfounded, particularly compared to already-existing problems at MCAS Cherry Point and NAS Oceana.

The Navy report recognizes, but the BRAC analysis does not adequately address, the environmental, noise, and operational impacts of the proposed realignment on eastern North Carolina. Quoting the Navy report:

"The proposed realignment of F-18 aircraft to MCAS Cherry Point will result in significant noise and other environmental impacts, will result in significantly higher levels of operations over eastern North Carolina, and may jeopardize the current special use airspace proposal for the Cherry 1 and Core MOAs. As a result, significant environmental and legal challenges to increased utilization of MCAS Cherry Point and related assets in North Carolina can be expected."

-- more --

-- 2 --

Also, existing encroachment of businesses and homes around NAS Oceana present a safety hazard to both pilots and people on the ground.

Mayor
JAN ALBERT
Councilmembers
THERESA CANEPA
DON EDGREN
DAVE POTTER
RUTH VREELAND
City Manager
FRED MEURER

April 2, 1993

Robert L. Meyer, Assistant Director
DMN
U.S. General Accounting Office
441 G Street, N.W.
Room 5100
Washington DC 20548

Sir:

Thank you again for speaking with me this morning regarding the Defense Language Institute at the Presidio of Monterey. I am attaching a Fact paper that I have put together as my briefing outline for a meeting scheduled at 3:00 Monday afternoon with the Commission staff and several Commissioners.

Part of my approach is to make the Commission and staff aware of the types of information available to the Secretary of Defense when he made his decision to pull the Presidio and DLI off of the list, as well as to provide them with specific information regarding the Army analysis that we believe to be very faulty.

The Army's proposal was developed without coordination with the General Officer Steering Committee (GOSC), a multi-service general officer group that sets policy direction for DLI, or coordination with the Defense Language Institute itself. As a result, the analysts at TRADOC and Department of Army Headquarters misinterpreted some of the fundamental student load data. This mistreatment of the Training Mission then ripples throughout the analysis in terms of skewing the costs in favor of contracting out and moving to Ft. Huachuca.

Additionally, we believe that the Army's analysis is based on the $37 million proposal by University of Arizona which appears to be a number that is not supported by any analysis, just a statement from the University. Our concern after looking at their presentation, is that they do not understand the full scope of the mission.

Additionally, major capital improvement costs have been left out of Army analysis. The University of Arizona did indicate a willingness to construct facilities, but not for free. Their $37 million mark appears to only address a portion of the language training mission, not the construction costs and not the full range of language training support missions.

Our next issue is that the cost of the DLI mission in Monterey is grossly over inflated. The Army analysis charges DLI with the base operation costs of all Defense activities remaining on Ft. Ord after the 7th Division deactivates, even though DLI's mission needs at Ft. Ord are modest. Most of the proposed activities at Ft. Ord will support other Federal activities, such as the Navy Postgraduate School, the Defense Data Manpower Center, the retired community, et al. The community has argued from the beginning that the Army's requested enclave was far beyond the needs of the military.

In summary, we would appreciate it if your audit would focus on the appropriateness and completeness of the side by side comparison of costs of Ft. Huachuca as compared to the Presidio of Monterey, an analysis of the proposal from the University of Arizona for its adequacy as the basis of comparison with the Army costs, and an audit of the specific mission required facilities at DLI needs that will located at the Presidio or at Ft. Ord.

Sincerely,

Fred Meurer
City Manager

"AN INDUSTRIAL FAMILY"

NNA **THE NADEP NORVA ASSOCIATION**

C/O 1056 Saw Pen Point Trail, Virginia Beach, VA 23455

2 April 1993

Dear Ms. Heivilin,

On behalf of the 4,300 employees at NADEP Norfolk and as a follow-up to your recent visit to the NADEP, I am forwarding some information which you may find useful in your review of the Navy/DoD recommendation to close NADEP Norfolk.

Following the completion of the Defense Depot Maintenance Council's (DDMC) commodity study on engines, NADEP Norfolk prepared a "minority report" to capture the essence of our concern about the validity of the decision to move Norfolk's engine work to Oklahoma City ALC. After sharing our concerns with Congressman Pickett, the Congressman invited Mr. Mike Cocchiola, Executive Director for the Deputy Assistant Commander for Aviation Depots, and Mr. Dan Howard, Assistant Secretary of the Navy, to address some of the NADEP's employees most directly affected by the DDMC decision. Mr. Cocchiola and Mr. Howard explained that the decision to take Norfolk out of the engine business was part of the Navy's master plan which would establish our NADEP as the East Coast center for tactical tailhook aircraft repair and modification. This intent was documented in a series of high level Navy and DoD plans. Furthermore, Mr. Cocchiola and Mr. Howard convinced us that the lost engine work would be offset by new manufacturing work. Based on this information, the NADEP NORVA Association discontinued its challenge to the movement of our engine programs. Based upon recent events it appears that this decision was made prematurely. A copy of our "minority report" is hereby enclosed for your review and consideration.

In reviewing the BSEC/BSAT military value computer model/matrix it became clear that NADEP Norfolk was hurt by the absence of an engine program. As a result, we have prepared a series of questions relating to the decision to move our engine programs to Oklahoma City ALC and the impact of that decision on the military value of NADEP Norfolk. These questions are enclosed as an "Engine Program Point Paper."

We have thoroughly reviewed the Navy's military value matrix and the scores assigned to Norfolk relative to the associated questions. Serious concerns have arisen relative to the way the information our NADEP provided in response to a series of data calls was evaluated. These concerns have been captured in a series of specific questions about the assessment of Norfolk's military value. These, too, are enclosed for your review and consideration.

Finally, a thorough review of the Navy's "Yellow Book" raises still further concerns about the validity of the BSEC/BSAT recommendation to close NADEP Norfolk. These concerns are captured in a paper simply titled "Point Paper" (dated 30 March 1993). This information is also enclosed for your review and consideration.

Very respectfully,

R.C. Haines

Ross Haines

OLD DOMINION UNIVERSITY

College of Business and Public Administration
Graduate School of Business and Public Administration
Norfolk, Virginia 23529-0219
804-683-3488

Mr. Bob Meyer
GAO Auditor
Base Closure and Alignment

5 April 1993

Dear Mr. Meyer:

Mr. Jerry Ghiselli, Naval Aviation Depot Alameda indicated you might be contacting me to discuss the relationships among capacity, inventory and lead time. I did my dissertation research on the benefits of adopting Synchronous Manufacturing/Theory of Constraints at Alameda Aviation Depot. I built two large scale simulation models based on the processes at the engine components division at Alameda. The results have provided me with some insights as the use of capacity and the effect of capacity utilization on lead time and inventory.

I believe that the use of higher levels of capacity, required by the closures of several depots, will drastically increase the lead time required to rework units. This increase in lead time will lead to an increase in the amount of spares required and, as a direct result, higher levels of expense in inventory. The relationship between work-in-process inventory is not a linear relationship. It appears that even relatively small increases in work-in-process lead to large increases in the lead time required for material to flow through a shop. I've experimented with increasing the utilization of capacity in the models I've built and the results indicate a very large increase in lead time. In addition, I've found that this increased utilization makes the depot environment much more complex and difficult to manage.

My work has shown that dramatic reductions in lead time required to rework units at a depot is possible by implementing Synchronous Manufacturing/Theory of Constraints. However, these improvements may well not be possible if capacity is tightly constrained at all depots. By attempting to balance capacity with demand the entire system becomes a capacity constrained resource.

The depot environment is different. The requirements on any firm in remanufacturing/repair operations are more demanding than a traditional job shop. The capacity measurements traditionally used will not provide useful results in this environment.

Old Dominion University is an affirmative action, equal opportunity institution.

I will be glad to provide you with any further information. I can be contacted at the numbers below.

Sincerely,

V. Daniel R. Guide, Jr., Ph.D.
Assistant Professor of Operations Management
College of Business and Public Administration
Old Dominion University
Norfolk, VA 23529

April 6, 1993

Mr. Bob Meyer
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Meyer,

I am writing to you regarding the proposed closure of the Naval Aviation Depot and Naval Air Station in Alameda, California and the **process** of how the Navy arrived at its recommendations. I work at the Naval Aviation Depot, Alameda and my position is that of Chief Engineer and Technical Director. As an educated, trained and experienced engineer and engineering manager, I deal with **facts** when solving problems. It is from this factual sense that I provide the following for your consideration:

1. We responded to numerous data calls from our headquarters. All of these had very short response times. The data pages numbered into the hundreds.

2. It is apparent that the Navy Base Structure Evaluation Committee (BSEC) did not use the data to make their recommendations. Why do I say that?

a. Several questions appeared in the final report that were not part of any data call that we received. For example:

(1) Pg No. 10, Qst Ltr e under Production: "Is the amount of total annual depot level Aircraft Modification work greater than 10% of the DON total?"

Alameda received "0" for this and question 10d (15%), however Alameda is currently performing the Navy's largest aircraft modification program, the EP-3 ARIES II.

(2) Questions 4.c, 6.c, 7.c, and 10.c under Facilities and Equipment ask if the NADEP has "special facilities, equipment, or skills to perform" airframe repairs, engine repairs, component repairs, and aircraft modifications.

Alameda received "0" for all four of these 1.69 point value questions (10.c is 1.36) however NADEP Alameda is currently capable and is currently performing all these functions.

(3) Questions 13.c and 13.d under Cost: Is the actual overhead cost rate applied to direct labor less than $36/hour and is the actual hourly direct labor cost less than $23/hour?

Alameda received "0" on these 3.70 point value (each) questions however these questions were not in any of our data calls.

b. The Naval Air Station, Alameda is currently capable of homeporting several nuclear-powered aircraft carriers. The naval base at Everett, Washington is an incomplete facility and is currently **not** capable of homeporting a nuclear-powered aircraft carrier (CVN). The BSEC made two **erroneous** assumptions.

(1) That Everett is a complete and useable facility. (the Navy has conservatively estimated that it will cost at least $700M to complete Everett)

(2) That all piers are equal. (The Navy's BSEC is apparently unaware of the unique Department of Energy requirements including shore power and support services that are required to properly berth a nuclear-powered aircraft carrier at a pier)

(3) With regard to **strategic** location, it takes a CVN about one hour from NAS Alameda to reach open water outside San Francisco Bay and then about 16 hours to the training area off San Diego. From Everett, it takes 7-8 hours to reach open water followed by a day and a half to reach the San Diego training area. Being in the center of the west coast and near open waters, NAS Alameda is clearly located more strategically than Everett, Washington.

The BSEC concluded by giving Everett **more** points than Alameda for capability to berth nuclear-powered aircraft carriers. This was a major error. It would be interesting to trace the "certification" process of the Everett data.

It is clear to me that the BSEC was unable to reach a decision from the data collected. Instead of calculating "military value", the BSEC used their "military judgement" by taking a map of the United States of America and determining where they would like "things" to be, considering goals like consolidating all training, establishing master jet bases, and looking for major navy concentrations that could be entirely eliminated (these ended up being Charleston, SC and the San Francisco Bay Area). The BSEC then went into the data base and:

(1) looked for capabilities that would justify the retention of the Naval Aviation Depot at Cherry Point, North Carolina and the Naval Aviation Depot at Jacksonville, Florida. The BSEC concluded that Cherry Point has unique "composite repair" capability and Jacksonville has unique "electro-optics" capability. The BSEC failed to recognize that other Naval Aviation Depots perform composite repairs and that the electro-optics equipment at Jacksonville could be easily relocated. The BSEC also concluded that movement of workload from Alameda, Pensacola and Norfolk would significantly increase the military value of the three remaining NADEPs.

(2) used the data base to justify the cost savings of closing the "remaining" facilities.

The remainder of my comments relate to a significant part of the **process** that was overlooked by the BSEC and that is **unique** capabilities and the costs (dollars and loss of readiness) to move these capabilities to other Naval Aviation Depots.

The Naval Aviation Depot, Alameda has a number of **unique** programs and workloads that the Navy is not planning to eliminate. Therefore, these programs and workloads must be moved, at great expense, to other locations. The following is a brief list of these unique programs:

a. Of all six Naval Aviation Depots, Alameda has the **largest** component program. The work involves the depot-level repair of aviation components removed at the organization and intermediate maintenance levels and sent to the depot level (since the O&I levels are not capable to effect the repair). Alameda has unique capability for over 5,000 components, i.e, **capability** currently **does not** exist at the other five Naval Aviation Depots. To move this capability elsewhere would involve:

- relocation/re-installation of industrial plant equipment
- relocation of unique program support and test equipment
- development of new technical work orders at the gaining activity
- relocation of the material spares inventories
- hiring and training of personnel at the gaining activity or moving the NADEP Alameda personnel under Transfer of Function
- probable facility modification and/or MILCON

The above steps are involved in what we call **capability**. The development of **capability** is a very expensive process. The COBRA input, used by the Navy, did not consider the relocation costs for unique programs. For consolidation/ realignment purposes, it would seem that a simple and effective approach would be to examine those Naval Aviation Depots which have the smallest number of unique programs/workloads, because this would translate to the lowest costs to move to another location. Previous navy studies have consistently shown that Naval Aviation Depot, Jacksonville is the lowest cost depot to close, simply because Jacksonville has the smallest (of all six NADEPs) number of unique programs.

b. Alameda is the only overhaul depot for the Navy's S-3 aircraft and T56 and TF-34 engines. All of the above comments about the costs of moving **capability** apply to these major programs. Alameda is also the sole depot for the Air Force TF-34 engine (A-10 aircraft). Again, COBRA did not consider the true costs to relocate these programs (and their **capability**).

c. Alameda is the Navy's Cognizant Field Activity (engineering and logistics center) for the P-3 and S-3 aircraft and the T56 and TF-34 engines. This engineering staff of several hundred performs the vital fleet support functions of in-service engineering, without which, many aircraft would be grounded as unsafe to fly. This cadre of engineers is the Navy's corporate knowledge and history for the above programs. Although most of the P-3 aircraft depot maintenance is now accomplished at Naval Aviation Depot, Jacksonville (a December 1990 decision implemented in 1992 under "single-siting" because Jacksonville had no unique aircraft depot maintenance program), the P-3 Cognizant Field Activity resides at Alameda. Repairs, maintenance instructions for all three levels of maintenance, and major modifications for the P-3 are designed by the Alameda engineers. Recently, my P-3 engineers developed a totally new maintenance concept for the P-3 aircraft. When implemented, the new Phased Depot Maintenance (PDM) will reduce the fleet-level maintenance hours, improve the overall material condition of the P-3, and make the aircraft more available for flight. Our headquarters, the Naval Air Systems Command, has enthusiastically embraced this new PDM concept. In fact, they have directed the other Naval Aviation Depots to review the PDM concepts for application to Navy/Marine aircraft for which they are Cognizant Field Activity.

It is doubtful that this highly experienced staff would relocate. Their aerospace/ aeronautical skills are very marketable. The loss of this corporate knowledge and history would be a major negative impact to the readiness of the P-3 fleet. It would take many years for another Naval Aviation depot to replicate such a required and necessary staff of experienced engineers. This also applies to the S-3 aircraft and T56 and TF-34 Cognizant Field Activity engineering staff.

d. Naval Aviation Depot, Alameda competed with over twenty commercial aerospace companies and one U.S. Air Force Logistics Center (depot) for the task of paint stripping, corrosion treatment and repainting of the Air National Guard F-15 and F-16 aircraft. Naval Aviation Depot, Alameda **won** the competition and has been performing this work for two years. The major reason that the Air National Guard had to contract out this work was that most of the Air National Guard aircraft paint facilities around the United States were not in compliance with environmental regulations and were secured. Naval Aviation Depot, Alameda has aircraft paint stripping, corrosion control, and painting facilities that meet all San Francisco Bay Area, State of California, and Environmental Protection Agency (EPA) pollution abatement regulations. In fact, in June 1992, the EPA formally recognized the Naval Aviation Depot, Alameda for its leadership and accomplishments of reducing paint air emissions by more than 50%. In addition, Naval Aviation Depot, Alameda has a new, environmentally compliant plating facility. This plating facility is state-of-the-art and undoubtedly one of the finest in the United States. It would not make sense (common or fiscal) to abandon these expensive facilities or to endure the cost of building duplicate facilities elsewhere.

e. The Naval Aviation Depot, Alameda is also unique among the six Naval Aviation Depots in that it has a facility designed for the sole purpose of

repairing/modifying tactical missile guidance and control (G&C) sections. This missile G&C workload consists of SPARROW, PHOENIX, and SHRIKE. The Naval Aviation Depot, Alameda has also been selected as the depot for HARM and AMRAAM, with the latter selection conducted under competitive rules. In 1991, a Defense Depot Maintenance Council (DDMC) sponsored study, recommended that all Army, Air Force and Navy tactical missile G&C work be consolidated at Letterkenny Army Depot (LEAD) in Pennsylvania. To my staff of missile engineers, this recommendation made no sense because LEAD did not have the **capability** to perform the work, e.g. no trained people, no equipment, no facilities, etc. However, we were instructed to follow the decision and work with LEAD so they could gain **capability.** We have been doing that, however it is now two years since the recommendation. Following numerous Army, Navy, and Air Force meetings and the development of transition plans, nothing (people or equipment) has moved and no facilities have been modified/constructed at LEAD. In my opinion, many taxpayer dollars have been wasted because of a faulty study recommendation and the failure to recognize the true costs of developing or moving **capability**.

3. All of this capability and workload translates to **capacity**. The Navy's BSEC tried to look at capacity simply by looking at facility square footage by type of work. This is a very simplistic, ineffective approach. I have enclosed portions of minutes from a conference call. Page 6 talks to **capacity**.

4. Finally, I believe that the Navy only scratched the surface in analyzing the "technical centers" listed in Attachment K of the Department of Navy Analyzes and Recommendations (Volume IV) of March 1993. When you consider the hundreds of millions of dollars invested in the industrial NADEPs, it makes more sense to move the technical centers to the NADEPs than to close the NADEPs.

Sincerely,

Thomas E. McFarland

Enclosure:
4 pages of 3/26/93 conference call
minutes among NAVAIRSYSCOM and NADEP
Commanding Officers

6 April 1993

Honorable Charles Bowsher
Comptroller General of the United States
General Accounting Office
441 G St., NW
Washington, D.C. 20548

Dear Mr. Bowsher:

Now that the Department of Defense has published its 1993 list of base closures, I am compelled to inform you why the Naval Aviation Depot and Naval Air Station in Alameda, California should be removed from that list.

With premier corrosion control and component plating facilities amongst all depots and a long-standing, award-winning, dedicated commitment to producing the highest quality products for the Department of Defense, Naval Aviation Depot Alameda stands atop the list of defense industrial complexes.

Only Naval Aviation Depot Alameda performs overhaul of S-3 aircraft and related components. The S-3 is one of the most important support aircraft in Navy carrier air groups. Sustaining both P-3 and S-3 aircraft Cognizant Field Activity (CFA) responsibilities, Naval Aviation Depot Alameda retains nearly all corporate engineering and logistical knowledge for the two aircraft. Many P-3 and S-3 engineering and logistical staff indicate they are reluctant to pull up deep roots in the Bay Area and locate elsewhere if the programs move. This could detrimentally affect P-3 and S-3 aircraft programs.

Many aircraft component repair and overhaul programs are supported only at Naval Aviation Depot Alameda. Many, like the missile program, are performed here at less cost than can be performed elsewhere.

Naval Aviation Depot Jacksonville, Florida was spared from the 1993 list of base closures. However, upon examination of the Naval Aviation Depot corporate economic figures provided by our command, Naval Aviation Depot Jacksonville has had the highest labor cost of all depots for the last two fiscal quarters. Due to locational nature, Naval Aviation Depot Alameda has suffered in the past from high labor costs, but over the last several years we have taken great strides towards reducing our costs and bringing them more in line with the other depots. Such reductions have come through modernization of facilities, reducing overhead, and finding more efficient, cost effective ways to process workload.

The most recent base closure and realignment plan shows that of six original Navy depot level aviation repair facilities, two east coast repair facilities (Naval Aviation Depots Cherry Pt., NC and Jacksonville, FL) and one west coast repair facility (Naval Aviation Depot San Diego, CA) will remain. Considering the hundreds of millions of dollars it would cost to relocate Naval Aviation Depot Alameda programs and build new facilities elsewhere for those programs, the vulnerability the United States Navy will

experience having only one depot level aviation repair site on the west coast, and Naval Aviation Depot Alameda's impressive record on modifying, overhauling, and engineering A-6, S-3, and P-3 aircraft; T-56, J-52, and TF-34 aircraft engines; and the many other components that make Navy aircraft work, I have strong concern that closing Naval Aviation Depot Alameda is neither economically, strategically, nor politically fair to the Bay Area, the state of California, and our nation.

My concerns regarding Naval Air Station Alameda are simple and straight forward. The only way to replace the nuclear aircraft carrier home porting capability, not to mention finding new homes for all the conventional aircraft carriers and other ships home-ported at Alameda, is for the Navy to build new facilities elsewhere. The most recent information I've obtained indicates these facilities would be constructed in San Diego, CA and Everett, WA.

Officials say completion of the yet inoperative Everett complex will cost $500 million and construction of new facilities at San Diego will cost $100-200 million. Judging from past experience, actual costs will probably far exceed these numbers.

Considering Naval Air Station Alameda already has all necessary home-porting facilities, has recently added a large tract of modern Navy housing to accomodate the increasingly large number of Navy families located in Alameda, and the fact that Alameda Navy families have recently indicated they are happy living in the Bay Area and are in no hurry to leave, I must exercise my right as a taxpayer to protest the idea of needlessly spending $1+ billion on new Navy shipyard facilities, new Navy family housing, and other costs associated with closing the Alameda Naval complex.

If the Navy wants more modern facilities for its ships, why don't they just improve the facilities at Alameda? Why doesn't the Navy move the P-3 aircraft squadrons resident at the already closing NAS Moffett Field in Mountain View, CA to NAS Alameda where P-3 engineering, logistics, overhaul, repair, and modification facilities currently exist at the Naval Aviation Depot there? Closing Naval Aviation Depot Alameda and Naval Air Station Alameda won't eliminate the workload performed there. It will just be money spent elsewhere. The Bay Area is strategically one of the best locations the United States has to offer the United States Navy. Operation Desert Storm was a testament to that.

Please do all that you can to enlighten the Base Closure and Realignment Commision and other government policy makers on the issues I have brought forth herein. We must oppose the seemingly insensible idea of closing Naval Aviation Depot Alameda and Naval Air Station Alameda.

Ted E. Price
Aerospace Engineer

H. JAMES SAXTON
3D DISTRICT NEW JERSEY

COMMITTEES
HOUSE ARMED SERVICES
SUBCOMMITTEES
MILITARY ACQUISITION
MILITARY INSTALLATIONS AND FACILITIES

DISTRICT OF COLUMBIA

JOINT ECONOMIC COMMITTEE

Congress of the United States
House of Representatives
Washington, DC 20515-3003

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HUMAN SERVICES
TASK FORCE ON SOCIAL SECURITY AND WOMEN

April 6, 1993

Mr. Bob Meyer
U.S. Gerneral Accounting Office
441 G Street
Room 5102
Washington, D.C. 20548

Dear Mr. Meyer:

I was glad that you and Dave took time out of your busy schedules to meet with Steve Moffitt, Barry Rhoads and me.

I have enclosed several documents that state clearly the problems associated with transporting fuel to Plattsburgh during the Winter.

The Defense Logistics Agency believes that during normal operations there will be a 200 to 300 thousand barrel shortfall of JP-4 during the winter months of normal day to day operations.

No contingencies could be conducted out of Plattsburgh during the winter without its storage tanks being emptied. Therefore, there is no way the Air Force can turn this base into the Mobile Regional Contingency Center as it has planned.

I also believe that by calling General Gray or his staff at McGuire Air Force Base you will find that they have many serious concerns about carrying out the mission in the "north country."

I hope this information is helpful as you prepare your report. If you have any questions regarding the enclosed material, or the information we gave you at my office, please feel free to contact me.

Sincerely,

Jim Saxton
Member of Congress

REPLY TO
☐ 438 CANNON HOUSE OFFICE BUILDING WASHINGTON, DC 20515-3003 (202) 225-4765
☐ 100 HIGH ST., SUITE 301 MT. HOLLY, NJ 08060 (609) 261-8800
☐ 7 HADLEY AVE TOMS RIVER, N.J. 08753 (908) 914-2020
☐ 1 MAINE AVENUE CHERRY HILL, NJ 08002 (609) 428-0520

THIS STATIONERY PRINTED ON PAPER MADE OF RECYCLED FIBERS

United States Senate
WASHINGTON, DC 20510

April 9, 1993

Mr. Charles A. Bowsher
Comptroller General
General Accounting Office
441 G St. NW
Washington, DC 20548

Dear Mr. Bowsher:

We are writing to share our concerns about Defense Logistics Agency's recommendations to the Defense Base Closure and Realignment Commission to disestablish the Defense Logistics Services Center (DLSC) and to relocate the Defense Reutilization and Marketing Service (DRMS), both of which are currently located at the Federal Center in Battle Creek, Michigan.

We believe there are significant errors in the information and assumptions used by the Department of Defense in formulating these recommendations. The Defense Logistics Agency (DLA) did not use the accurate information provided by tenants of the Battle Creek Federal Center in calculating the costs of operations there. DLA has not provided supporting information for its assumptions about costs that would be incurred in Columbus, Ohio if its proposed realignments were implemented. Critical mission requirements and capabilities of the present site were not appropriately weighed by DLA. We believe a more complete and accurate assessment of all costs associated with moving DLSC and DRMS missions would have yielded a very different recommendation.

DLA's recommendations would have a devastating impact on the Battle Creek and Kalamazoo area economies and, if implemented, could result in additional loss of tenants and employees at the Federal Center. Because the analysis supporting DLA's recommendations is so inadequate, implementation might actually result in higher costs to the government and significant disruption in the essential missions of these agencies.

GAO's report on the 1991 BRAC recommendations cited "inaccurate data," "inadequate documentation of decision-making and deliberation," and "improper pre-selection of candidates for closure/realignment" as major problems. All of those factors should be investigated with respect to the DLA's 1993 BRAC recommendations.

Mr. Charles A. Bowsher
April 9, 1993
Page Two

We formally request that you examine at least those issues outlined in the attached questions as you review the work that the Department of Defense has presented to the Base Closure and Realignment Commission.

Thank you for your attention to these concerns.

Sincerely,

Donald W. Riegle, Jr.
United States Senator

Carl Levin
United States Senator

Nick Smith
Member of Congress

enclosure

cc: The Honorable James A. Courter, Chairman
Defense Base Closure and Realignment Commission
1700 North Moore Street, Suite 1425
Arlington, VA 22209

STATE OF OHIO
WASHINGTON OFFICE

GEORGE V. VOINOVICH
GOVERNOR

MIKE DEWINE
LT. GOVERNOR

THOMAS F. X. NEEDLES
DIRECTOR

April 13, 1993

Ted —

As we discussed, the attached material was prepared by our National Guard and we believe it makes a very effective case on behalf of the 178th. I hope Mr. Conahan will review this information prior to his testimony next week.

Many thanks, Ted.

Tom

444 N. Capitol Street, N.W. • Suite 546 • Washington, D.C. 20001 • (202) 624-5844

INFORMATION PAPER ON AIR NATIONAL GUARD
REALIGNMENT AS LOOKED AT BY 1993
BASE CLOSURE EXECUTIVE GROUP (BCEG)

BACKGROUND: Due to high operational costs, Rickenbacker ANGB was identified for closure by the 1991 Base Realignment and Closure (BRAC) Commission.

The two Air National Guard (ANG) and one Air Force Reserve (AF RES) flying units located there were programmed to move to Wright Patterson Air Force Base.

Rickenbacker Airport was subsequently opened to commercial use which presented an option to moving the ANG units.

ANG units typically operate for very low costs on civilian airfields.

Cost studies showed that leaving the ANG units at Rickenbacker as tenants to the newly formed Rickenbacker Port Authority was more cost effective than moving the units to Wright Patterson AFB.

PROBLEM: After Rickenbacker became a civilian airfield, the Governor of Ohio proposed the option of leaving the ANG units at Rickenbacker as tenants.

For unknown reasons, but under the pretense of "excess capacity" at Wright Patterson AFB, the BCEG only explored two options:

1. Move Rickenbacker units to Wright Patterson AFB.
2. Move the Springfield ANG unit to Wright Patterson AFB.

In reality, cost analyses reflect that neither option is cost effective. The payback period in both cases is far beyond 20 years.

ANALYSIS: ANG units on civilian airfields are efficient operations and very inexpensive to operate. Thus, there is not much to be saved in operating costs if a unit is moved onto an active base.

Conversely, moving is expensive. Change always incurs construction costs which are expensive. Closing/activating facilities, and moving people and equipment are also expensive.

One of the eight criteria considered by the BRAC commission requires a return on investment (ROI) of 5 years or less.

Typical ANG cost models reflect ROI's of 20-100 years and up.

ANG COSTS MODELS: This information was obtained from published minutes of 1993 Air Force BCEG meetings.

12 January 1993 -- General Sheppard, NGB/CF, presented a briefing on potential closure and realignment of ANG units.

Assumptions were that ANG units stay within states and move to active Air Force installations.

Since savings would be low (as discussed above), the ANG only evaluated potentially low costs moves. General Sheppard's slides reflected 31 ANG units as possible options.

After assessing each base, the ANG recommended three (3) potential options for further evaluation (Great Falls, MT; McEntire, SC; Lincoln, NE).

General Sheppard also proposed leaving ANG units in the cantonment area at Rickenbacker and the BCEG agreed that all components of this proposal be evaluated.

1 February 1993 -- General Sheppard briefed on ANG excursions developed for the ANG locations identified in the 12 January 1993 meeting.

The ANG developed three excursions moving Great Falls IAP to Malstrom AFB, however, none of them were sufficiently attractive to warrant further consideration.

The ANG prepared two excursions for moving McEntire to Shaw AFB, and they were clearly not effective.

The Lincoln to Offutt excursion appeared to be cost effective and the BCEG directed the ANG to perform a site survey on this excursion.

General Sheppard again recommended leaving the Rickenbacker units in the cantonment area and also stated the ANG would prefer keeping the Guard unit at Springfield. The costs comparison summary only reflected two options:

1. Rickenbacker units to Wright Patterson AFB.
2. Springfield unit to Wright Patterson AFB.

An additional excursion of moving Tucson to Davis Monthan AFB was also reviewed. This move would require $60 million in construction and would never yield a payback.

9 February 1993 -- Lt Colonel Callaghan, AF/XOOR, briefed proposed redirection of moves previously directed by BRAC I and II.

One proposal was for ANG units at Rickenbacker to remain in the cantonment area and the Springfield unit would move to Wright Patterson AFB.

10 February 1993 -- The BCEG reviewed estimates for moving the Springfield unit to Wright Patterson. Estimated costs were $3 million for construction and $1 million to relocate for a total of $4 million. Recurring savings were estimated at approximately $1 million per year.

SUMMARY:

The BCEG reviewed 31 ANG units (locations) for possible relocation to active Air Force bases (did not include Rickenbacker or Springfield).

Various excursions were examined for each proposed ANG move. The excursions looked at various combinations of unit aircraft conversions, and facilities used on the active base (new and/or excessed).

The least costly excursion of all options reviewed assumed:

1. The Guard would convert to KC-135 aircraft at "no cost to BRAC."

2. The Air Force would consolidate KC-135 units to make room for the Guard to minimize construction.

Even with no-cost/min-cost assumptions, the payback on this excursion was six years.

As a separate issue, the BCEG reviewed a redirect of the 1991 BRAC decision on Rickenbacker.

Due to "excess space" at Wright Patterson AFB, the BCEG reviewed Rickenbacker or Springfield to move to Wright Patterson AFB.

Springfield was an obvious less costly option since it was only one unit (Rickenbacker was two) and was much closer (15 miles vs. 65 miles).

FALLACIES:

After a review of 31 ANG units and several excursions for moving, none of the options presented a payback of less than six years. And, this option with a six year payback, assumed no cost to convert a unit from F-16 aircraft to KC-135 aircraft.

The BCEG erred in assuming that "excess space" at Wright Patterson AFB required either Springfield or Rickenbacker to move.

GEORGE J. MITCHELL
MAINE

United States Senate

WASHINGTON, DC 20510-1902

April 14, 1993

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Bowsher:

I am writing to express my strong opposition to any action by the General Accounting Office (GAO), in its report on the Defense Department's 1993 base closure and realignment recommendations, to single out Portsmouth Naval Shipyard as a possible substitute for either of the shipyards recommended for closure.

As you know, under the law the GAO must submit by April 15 a report containing a detailed analysis of the Defense Department's 1993 base closure recommendations and selection process. This must be a fair and balanced review that does not prejudice any particular facility not selected for closure by the Defense Department.

In order to comply with the base closure law, the Navy undertook an analysis of shipyards that was consistent with the approved force structure plan. As a result, it did not consider shipyard closure options that would cause a shortfall in the Navy's capacity to support the workload associated with that force structure. Consequently, it would be counter to the law's requirement for consistency with the force structure plan, and therefore inappropriate, for GAO to suggest possible substitutes to the Defense Department's closure recommendations that would not support the certified workload requirements.

In light of the above, I strongly urge you to ensure that Portsmouth Naval Shipyard is not singled out as a possible substitute for either of the shipyards recommended for closure. Such an action would unfairly prejudice the Commission's review of shipyards and could unduly influence its independent assessment of the Defense Department's recommendations.

I appreciate your immediate personal attention to this very important matter.

Sincerely,

George Mitchell

George J. Mitchell

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House of Representatives
Washington, DC 20515-4608

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8TH DISTRICT OF VIRGINIA

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WASHINGTON, DC 20515-4608
(202) 225-4376

FEDERAL GOVERNMENT
SERVICE TASK FORCE
CO-CHAIRMAN

April 15, 1993

Mr. Charles Bowsher
Comptroller General of the United States
U.S. General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

Attached is a copy of a report delivered to Mr. Robert Myer of the GAO by Julian W. Fore, Office Managing Partner of Arthur Anderson. The letter points out many deficiencies which his firm has found in analyzing the data provided by the Department of Defense in recommending closure or realignment of a large number of DoD activities in the National Capital Region.

Specifically, they have found that the Cost of Base Closing and Realignment Actions (COBRA) model does not accurately determine costs associated with such major cost categories such as mission, personnel, overhead, and construction.

Because the COBRA model is central to the analysis supporting these massive closures and realignments, I believe that this research by Arthur Anderson would be extremely useful as the GAO continues to analyze the Department of Defense's recommendations. If I can provide GAO with any further information, please contact me.

Sincerely,

Jim Moran

James P. Moran

JPM/jjg

ARTHUR ANDERSEN

ARTHUR ANDERSEN & CO. SC

April 13, 1993

US General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Attn: Mr. Robert Myer
Room 5102

Arthur Andersen & Co.

Suite 400
One Thomas Circle NW
Washington DC 20005-5805
202 833 5500
202 833 5515 Fax

Dear Mr. Myer:

As we discussed last week, Arthur Andersen is working on behalf of the Crystal City Consortium, the Office of Congressman Moran, and other interested parties to independently evaluate the analysis conducted by the Department of Defense ("DoD") which resulted in the recommendation to realign a significant portion of the naval commands presently located within the National Capital Region ("NCR"). In particular, our efforts have focused on an evaluation of the Cost of Base Closing and Realignment Actions ("COBRA") analysis as cost savings is reported to be the primary rationale for this realignment.

To date, we have completed the following tasks:

- Familiarized ourselves with the Navy and DoD base closure (and realignment) process and analytic framework.
- Re-created the NCR arithmetic conclusions from the COBRA analysis by loading inputs into the COBRA model. We received both the inputs and the model from the Defense Base Closure and Realignment Commission ("BCC").
- Copied, reviewed, and inventoried all relevant documents from the BCC Library ("BCCL") pertaining to the NCR. We have visited the BCCL several times to ensure we have accessed all available information. In addition, we reviewed other relevant background documents and reports, such as reports on the 1989 and 1991 base closure processes.
- Compared and verified the COBRA inputs with the "Certified Data Calls" obtained from the BCC and other information received from the Navy.
- Performed sensitivity analyses on the results of the COBRA analysis.

Our more general comments include the following:

- The COBRA computer model is a "black box" model. It is nearly impossible to penetrate it to understand its implicit calculations (i.e., the relationship between input and output is not always clear). It is not possible to verify the accuracy of the result, let alone unstated but potentially significant assumptions internal to the model.

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Mr. Robert Myer
- 2 -
April 13, 1993

- Documentation supporting the assumptions to the COBRA analysis is severely lacking. There are numerous "Certified Data Calls", but we found little documentation linking raw information from the data calls to the COBRA analysis (particularly inputs where analysis or judgment is required).

- COBRA was designed for closing or realigning entire military bases or major functions; it was not designed for realigning purely administrative commands; this, we believe, requires a different kind of analysis.

- As applied to the NCR, the COBRA analysis measures the impact of a potential realignment ***and*** a change the method of procuring space. In other words, in the case of the NCR, the COBRA analysis confuses a locational analysis with a lease versus own analysis. There is no ability to disaggregate the results to determine to what extent the locational analysis -- the realignment decision -- separately affects the end result. Moreover, we believe the COBRA model is not as suited to a "lease versus own" analysis.

- The GSA, as well as the Navy, have conducted indepth studies of housing alternatives in the NCR. The proposed realignment is inconsistent with much of that work. There is no reconciliation or explanation of what has come before. This is particularly germane in that basic assumptions -- such as the requirement of individual commands to be located proximate to the Pentagon -- are widely divergent.

What follows are more specific comments, focusing on four of the six major cost categories in the COBRA analysis: mission, personnel, overhead, and construction.

Mission

According to several DoD and BCC sources, "mission costs" include changes in operating costs not identified elsewhere in the model. Rent savings are often included in this category (or in overhead). However, we have not been able to trace prospective rental savings back to DoD-supplied lease cost estimates reportedly taken from Certified Data Calls. The black box nature of the COBRA model prohibits a property-by-property rental rate evaluation. As such, actual costs and market driven escalation rates cannot be traced. Further, the rental rate used in the COBRA analysis is GSA's standard level usage charge ("SLUC"), which bases charges on market lease rates and GSA overhead. These rates are often considerably higher than the actual rental rates charged by the landlord(s). Since this is primarily a transfer of costs between two federal government entities, it is, we believe, inappropriate to integrate this higher rate into the COBRA analysis which has the effect of distorting the results. These costs could approach a stabilized annual premium of between $5.0 million and $10.0 million over market rental rates.

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Mr. Robert Myer
- 3 -
April 13, 1993

Personnel

The recommendations set forth in *Base Realignment and Closing 1993* ("BRAC-93") assume defacto that significant personnel savings can be generated by realigning individual commands, and by implication that these savings can only be realized through a realignment. This results in a total present value savings of approximately $475.0 million (discounted at 7.0 percent), or 80 percent of total BRAC-93 net savings for the NCR. There is no reason to expect that these same savings could not be realized at the current command locations through a re-organization of proximate functions. Our experience in private industry would suggest that "in place" personnel eliminations are entirely achievable.

We find no materials whatsoever to document this conclusion -- that is, that the personnel eliminations can only be achieved by a realignment. In response to a request from Congressman Moran, The Department of the Navy, Office of the Secretary, has indicated that the number of "positions identified as eliminated" came from individual Certified Data Calls. In search of the facts, we reviewed all data calls in the BCCL, including an inventory of data calls received from each command dated March 17, 1993. Only one of these Certified Data Calls related to the NCR, and it provided no support whatsoever for the number of "positions identied as eliminated". In the same correspondence from Congressman Moran, the question was asked, "Does the analysis consider to what extent these eliminations could be implemented in existing locations?" The response was "No". We are left to conclude that no support is available, that the case is not proven, and that cost savings attributable to personnel eliminations cannot be included as economic support for the NCR realignment.

Overhead

Although rental costs are reported to have been incorporated in mission costs, the volume of overhead savings for certain clusters (e.g., Cruitcom, Patuxent River, and SPCC) suggest that rental costs may have also been incorporated in overhead. Therefore, our comments on mission costs also apply to overhead costs. Further, the actual components of overhead costs and savings are unclear. As such, the results cannot be verified.

Construction

The recommendations set forth in BRAC-93 assume that no capital improvements will be required for substantially all of the existing office space which will receive realigned personnel. A field inspection of the space anticipated to accommodate the BRAC-93 realigned personnel indicates that a significant amount of this space is

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Mr. Robert Myer
- 4 -
April 13, 1993

substandard and does not meet current GSA standards. Such space will then require considerable investment prior to occupancy.

For example, approximately 740,000 rentable square feet of office space will be required to accommodate the personnel realigned to the White Oak Facility (3,799 personnel). The COBRA analysis provides for 110,000 rentable square feet of new construction and 80,000 rentable square feet of renovated space. No provisions are made for the 550,000 rentable square feet of remaining office space requirements. Our field inspection indicates that there are 200,000 rentable square feet of existing available space at the facility. This space does not conform with GSA fire safety standards, as it lacks sprinklers, and is reported to contain a considerable amount of asbestos. This space will require additional renovation to comply with Navy office space standards. Additionally, this space will require additional renovations to comply with Navy office space requirements. The remaining 350,000 rentable square feet of office space that will be required at the White Oak facility will require a combination of new construction and renovation. Our preliminary estimate (discounted at 7.0 percent) for these additional construction costs at the White Oak facility is between $50.0 and $70.0 million. Other receiving facilities have similar problems, though of lesser magnitude. We are forced to conclude that construction costs generally are substantially understated.

Beyond the aforementioned, there are items germane to the analysis of a large-scale relocation that were not given adequate consideration. First, the BRAC-93 evaluation of realignment costs did not consider other significant recurring costs, such as commutation costs, which will likely be incurred as a result of commands being relocated farther from the Pentagon and major Navy contractors, even when the efficiencies of collocation, such as at the Patuxent River facility, are considered. Based on surveys previously prepared by GSA and the Navy, our preliminary estimate of the additional cost of commuting to the Pentagon, major Navy contractors, and commercial airports, as well as between the new, more remote commands, may approach $70.0 million (discounted at 7.0 percent). Moreover, the COBRA analysis did not incorporate the productivity losses which are normally attributable to a large-scale relocation. These costs, in our experience, can be quite significant.

Second, the BRAC-93 evaluation of the NCR includes the realignment of 1,607 personnel from Philadelphia to Mechanicsburg, Pennsylvania. Since neither of these facilities are within the NCR, and since the prospective savings of the realignment is $78.0 million (discounted at 7.0 percent,) it obfuscates the savings inherent in the realignment of the SPCC cluster and the NCR commands under consideration.

Third, no credit was given for the Navy's ability to reasonably secure favorable lease rates in today's market. In fact, the manner in which rental rates are calculated (ignoring, for the moment, any GSA subleasing profit) could overstate actual rents today by $3.00 to $4.00 per

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Mr. Robert Myer
- 5 -
April 13, 1993

rentable square foot. It has been our experience that major, high credit tenants typically seek and receive rental rate reductions in today's market in exchange for lease term extension.

Conclusion

There are very significant gaps in the analytic process starting with the collection of data to the conclusions derived from this data. The COBRA model introduces many items, such as the savings from personnel eliminations, which are confusing and potentially lead to erroneous results. The case for a realignment has simply not been made. Further, the up-front costs, represented by the total adjusted construction and moving costs may not be justified when one considers what could be a very long pay back. The basic presumption of this analysis -- that is a predetermined conclusion to realign selected commands from the NCR -- is flawed. In no way have the efficiencies and savings which could be achieved in-place been examined. If the real issue is a lease versus own decision, then the analysis and conclusions presented do not provide the basis for an informed, business-like decision.

* * * * *

I hope this brief summary of our findings is helpful as you finalize your evaluation. I will keep you up-to-date as our evaluation continues. We would welcome the opportunity to meet with you. Please contact me at your convenience if we can be helpful in any way.

Very truly yours,

ARTHUR ANDERSEN & CO.

by Julian W. Fore

Julian W. Fore

cc Governor L. Douglas Wilder
Senator John W. Warner
Senator Charles S. Robb
Congressman James P. Moran
James B. Hunter III

SMZ60230\Myer.L02

City of Chicago
Richard M. Daley, Mayor

Department of Aviation

David R. Mosena
Commissioner

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(312) 744-1399 (FAX)

April 15, 1993

Mr. Robert Meyer
Assistant Director
NSIAAD/DMN
General Accounting Office
44 G Street, N.W., Room 5102
Washington, DC 20548

Dear Mr. Meyer:

As you know, the Base Realignment & Closure Commission is now considering the Department of Defense's recommendation to close and relocate the military installation at O'Hare International Airport. Unlike the vast majority of base closures being considered by the Commission, this recommendation is in response to a proposal by the City of Chicago. As someone involved in evaluating whether the recommendation is in keeping with the intent of the closure legislation, I would like to bring certain pertinent facts about our proposal to your attention.

The Mayor of the City of Chicago made this proposal for two reasons, which I believe demonstrate its uniqueness as well as the responsible nature of the suggested action to the national interest as opposed to a parochial desire.

First, O'Hare is the busiest airport in the world and congestion and delay problems at O'Hare affect the entire national aviation system. The findings of the Chicago Delay Task Force, a jointly commissioned study by the City of Chicago, the Federal Aviation Commission and the airline tenants at O'Hare, determined that over 100,000 hours of delay are incurred annually at O'Hare, substantially more than any other airport in the United States. The direct operating costs associated with this magnitude of delay exceed $188 million annually. The resolution of this problem is particularly critical today in light of the serious financial condition of the nation's airline industry. Operational improvements that can be implemented as a result of the proposed military relocation will play a key role in reducing delay problems at O'Hare and across the country.

Second, the Mayor is committed to aggressively identifying all opportunities to maximize economic development for Chicago. Since the City is the owner of the busiest airport in the world, we must utilize every opportunity for airport-related development in order to provide jobs for the people of the City and the region. The relocation of the existing military installations at O'Hare will permit us to accomplish this goal while at the same time providing an economic stimulus to the new military host community.

April 15, 1993
Page 2

The enclosed materials are intended to demonstrate how the City's proposal is consistent with the intent of base closure legislation and to address some of the specific concerns already raised by some members of the Commission.

The request by the City of Chicago that the military installation located at the world's busiest airport be closed and its current tenants relocated is exactly the type of community recommendation contemplated in Section 2924, of the Base Closure and Realignment Act. The Committee Report accompanying the bill states specifically that:

> "...[in] the painful process of base closure, special consideration ought to be given to communities that actually want their local facility closed." (H.R. Rep. No. 101-665, p.388.)

Regarding the concerns raised by the Defense Finance and Accounting Services (DFAS) analogy, we understand the responsibility that you have to carefully consider the perception among some that our proposal could possibly create a nationwide bidding war for either the retention or closure of military bases. We do not believe that such an interpretation of our proposal is warranted (see attached discussion). Rather, we believe that, in addition to the specific statutory direction authorizing it, our proposal is consistent with the current federal policy of optimizing the use and coordination of our nation's military and civilian air transportation infrastructure. Furthermore, the Commission, unlike a federal, state or local purchasing agency, is not and cannot be, pursuant to its enabling legislation, guided in determining its recommendations to selecting the lowest or highest responsible bidder as the case may be. The Commission will make, as they have in the past, recommendations based upon the eight statutory selection criteria.

We believe that our request warrants the Commission's favorable consideration because it meets their eight criteria for review (see attached discussion) and will benefit all parties involved. Airfield, roadway and commercial development of the site will benefit not only the local economy but also enhance the efficient operation of the national air transportation system. The receiving location will benefit from the economic stimulus brought by the relocated units, and relocation will enable the military to enhance its operational readiness and potential for increased force structure.

I have also enclosed, for your information, an Executive Summary of our recently published economic impact study which I believe powerfully demonstrates the impact of commercial aviation activity at O'Hare International Airport -- 339,300 permanent jobs and more than $13.5 billion personal income annually.

I hope you found this letter and its enclosures helpful. Should you desire further details, please do not hesitate to contact me at 312-744-6886.

Sincerely,

David R. Mosena, Commissioner

Enclosures

OWEN PICKETT
2ND DISTRICT
VIRGINIA

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
WASHINGTON, D.C. 20515

COMMITTEES:
ARMED SERVICES
MERCHANT MARINE & FISHERIES

April 20, 1993

93-1255

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Bowsher:

We are writing this letter to request the assistance of the GAO in evaluating the criteria used to disestablish the Norfolk Logistics Systems Business Activity (NLSBA) pursuant to the Base Closure and Realignment Acts (P.L. 100-526 and P.L. 100-510).

This afternoon, we received the enclosed document from the employees of the NLSBA. Based upon that communication and data we received earlier when touring the facility, we have serious reservations about the cost effectiveness of the recommendations of the Secretary of Defense.

We request that the GAO review the cost effectiveness of the OSD recommendations to the Base Closure and Realignment Commission regarding the NLSBA and military value matrices developed for that facility. We would greatly appreciate it if, as a part of that review, GAO personnel could schedule a site visit of the NLSBA.

Thank you very much for your assistance in this matter. If you have any questions, please be sure and let us know.

Owen B. Pickett
Member of Congress

Norman Sisisky
Member of Congress

WASHINGTON OFFICE:
2430 RAYBURN BUILDING
WASHINGTON, D.C. 20515
(202) 225-4215

VIRGINIA BEACH OFFICE:
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VIRGINIA BEACH, VIRGINIA 23452
(804) 486-3710

NORFOLK OFFICE:
WARD'S CORNER
112 EAST LITTLE CREEK ROAD
NORFOLK, VA 23505
(804) 583-5892

19 April 1993

The Honorable Owen Pickett
2430 Rayburn Building
Washington, D.C. 20515

Dear Mr. Pickett:

On 17 April 1993, you met with a group of employees from the Information Processing Center located at the Norfolk Naval Base, Norfolk, Virginia.

In response to our discussion, we are submitting the following information under enclosure (1) dealing with the concerns that we have with the credited score we received on the MegaCenter selection list.

We are grateful for the support that you have given and will continue to give us.

Sincerely yours,

Bob Parker

BOB PARKER

On behalf of the employees of the Information Processing Center

Encl:
(1) Background/Facility Credited Scores

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MISSION OF THE AIR FORCE TEAM . . .

To provide ***review and analysis*** in an open and fair process to

- Evaluate recommendations made by the Secretary of Defense for closures and realignments of Air Force and associated joint-use bases inside the United States;
- Assist the Commission in determining if the recommendations deviate substantially from the Secretary's force-structure plan and final selection criteria;
- Develop questions and analyze testimony during the Commission's investigative, regional, and "adds/substitution" hearings;
- Provide closure and realignment options to the Commissioners in the event of substantial deviations in the Secretary's list.

To assist the Commission in preparing a report to the President that

- Contains findings, recommendations and conclusions for closures and realignments of bases;
- Ensures the remaining bases can best support the Air Force mission to *control and exploit air and space.*

DEFENSE BASE CLOSURE & REALIGNMENT COMMISSION
1700 NORTH MOORE STREET, SUITE 1425
ARLINGTON, VIRGINIA 22209
(703) 696-0504

MEMORANDUM OF MEETING

DATE: February 10, 1995

TIME: 11:00 a.m.

MEETING WITH: Beaufort County Military Enhancement Committee (BCMEC)

SUBJECT: NAS Beaufort

PARTICIPANTS:

Name/Title/Phone Number:

See attached sheet.

Commission Staff:

David Lyles, Staff Director
Charles Smith, Executive Director/Special Assistant
Madelyn Creedon, General Counsel
Cece Carman, Director of Congressional and Intergovernmental Affairs
Chip Walgren, Manager, State and Local Liaison
Jim Schufreider; Manager, House Liaison
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Ed Brown, Army Team Leader
Frank Cirillo, Air Force Team Leader
Bob Cook, Interagency Issues Team Leader
Jim Owsley, Cross-Service Team Leader
Alex Yellin, Navy Team Leader
Ann Reese; Cross-Service Team
Dick Helmer; Cross-Service Team
Bob Bivins; Interagency Issues Team, Cobra Specialist
Mike Kennedy; Army Team

MEETING PURPOSE:

MILITARY ENHANCEMENT COMMITTEE ATTENDEES
Base Realignment and Closure Commission
February 10, 1995

Mr. W. R. (Skeet) Von Harten, Chairman
Director of Project Planning and Development
Gray Holding Ltd. Partnership

Ms. Jo Anne Mitchell, Executive Director
former Executive Vice President Greater Beaufort Chamber of Commerce;
former Vice President of Government Relations for Commodity Exchange, Inc.

Mr. Jack Baggette, Vice Chairman
Owner, Dependable Drafting, retired Colonel USMC

Mr. Gary Vangysel, Member of subcommittee on Military Value
Manager, Customer Support for McDonnell Douglas, East Coast
retired Colonel USMC

Dr. Ed Seim, Chairman of Subcommittee on Economic Impact
Chairman Emeritus Beaufort County Economic Development Board
former executive, Westinghouse Corporation

Mr. Skip Fink
South Carolina Community Coordinator for Local Government Assistance
retired Colonel USMC

Gen. Keith A. Smith (ret., USMC), volunteer with MEC
former Deputy Chief of Staff for Aviation, Headquarters Marine Corps

Mayor David M. Taub
Mayor of the City of Beaufort, SC

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Executive Secretary (BRAC 95)		Douglas B. Hansen
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	Chief, Base Closure Conversion Agency (AFBDA/DR)	Alan Olsen

As of 19 January 1995

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Mr. James F. O'Bryon
Mr. Thomas R. Julian

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Deputy Director

Room 3E333 — 695-1564

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Mr. Joseph P. Moore
Mrs. Annie M. Powell
Mr. William J. Rustin
Mr. James W. Thomas
Mrs. Marilyn K. Weinley

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Mrs. Jeanne S. James
Mrs. Gloria R. Johnson

695-1565

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Mr. L. H. Frame
Deputy Director

Room 1C730 — 614-2210

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COL Albert P. Brocious, USA
Mr. Thomas W. Carter
Col Gerald P. Christeson, USAF
COL Stephen C. Daly, USA
CAPT David T. Hart, Jr., USN
Mr. Charles F. Horton
Mr. Matthew J. Keough
CAPT Christopher S. Larsen, USN
LtCol Robert M. Newnam, USAF
CAPT Peter A. Scala, USN

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Mrs. Hortensia NMI Day
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697-3891

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Mr. Larry W. Miller
Col Gerald H. Simnacher, USAF

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Mrs. Yvonne E. Jackson

614-2776

C3I SYSTEMS
Mr. George G. Wauer
Acting Deputy Director

Room 1C730 — 614-5408

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Mr. Austin T. Huangfu
LTC Richard E. Overmyer, Jr., USA
Col Wade L. Paton, USAF
Mr. Joseph NMI Ramos, III

SUPPORT
Ms. Edith M. Wabben

697-3895

ORG HDW

DEFENSE BASE CLOSURE & REALIGNMENT COMMISSION
1700 NORTH MOORE STREET, SUITE 1425
ARLINGTON, VIRGINIA 22209
(703) 696-0504

MEMORANDUM OF MEETING

DATE: February 1, 1995

TIME: 2:00

MEETING WITH: Navy Meridian Team

SUBJECT: Meridian NAS

PARTICIPANTS:

Name/Title/Phone Number:

see attached list

Commission Staff:

David Lyles, Staff Director
Charles Smith, Executive Director/Special Assistant
Madelyn Creedon, General Counsel
Cece Carman, Director of Congressional and Intergovernmental Affairs
Chip Walgren, Manager, State and Local Liaison
Jim Schufreider; Manager, House Liaison
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Ed Brown, Army Team Leader
Frank Cirillo, Air Force Team Leader
Bob Cook, Interagency Issues Team Leader
Jim Owsley, Cross-Service Team Leader
Alex Yellin, Navy Team Leader
Ann Reese; Cross-Service Team
Dick Helmer; Cross-Service Team
Bob Bivins; Interagency Issues Team, Cobra Specialist
Mike Kennedy; Army Team

MEETING PURPOSE:

Bill Crawford
Vice President Meridian Community College
Team Leader, Navy Meridian Team

- **Mike Reich**
  East Mississippi Electric Power Association
  Chairman, Regional Navy League
  Member, Navy Meridian Team

- **Brian Dabbs**
  Mississippi Power Company
  Member, Navy Meridian Team

- **C.D. Smith**
  South Central Bell
  President, Meridian Area Navy League
  Member, Navy Meridian Team

- **Jack Douglass**
  Simulator Instructor, Loral Corporation
  U.S. Navy, Retired
  Member, Navy Meridian Team

- **Barry Rhoads**
  Consultant

- **Jackie Arends**
  Consultant

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1700 NORTH MOORE STREET, SUITE 1425
ARLINGTON, VIRGINIA 22209
(703) 696-0504

MEMORANDUM OF MEETING

DATE: February 7, 1995

TIME: 1 p.m.

MEETING WITH: Memphis (TN) Area Delegation

SUBJECT: Memphis NAS & DLA

PARTICIPANTS:

Name/Title/Phone Number:

The Honorable W.W. Herenton: Mayor, City of Memphis
The Honorable Jim Rout: Mayor, Shelby County
Mr. Jim Kelly: Chief Accounting Officer, Shelby County
Col. William E. Freeman: Chairman, Mil. Affairs Council, Shelby County
Mr. James Knipple: Finance Director, City of Millington
Mr. Dave Cooley: President, Memphis Area Chamber of Commerce (C.O.C.)
Mr. John Kelley: Chairman, C.O.C./ 1st Tennessee Bank
Mr. Calvin Anderson: Vice-Chairman - Gov't Affairs, C.O.C.
Mr. Bob Williford: Associate Manager, C.O.C.
Mr. Joe Emison: President, Pickering, Inc.
Mr. Frank Ryburn: Director, Millington Industrial Development
Mr. Lewis Donelson: Partner, Baker, Donelson
Mr. Anthony Caruso: Representative, Federal Express
Mr. Mark Schuermann: Office of Rep. Harold Ford (D-TN)

Commission Staff:

David Lyles, Staff Director
Charles Smith, Executive Director/Special Assistant
Madelyn Creedon, General Counsel
Cece Carman, Director of Congressional and Intergovernmental Affairs
Chip Walgren, Manager, State and Local Liaison
Jim Schufreider; Manager, House Liaison
Ben Borden, Director, Review & Analysis

Ed Brown, Army Team Leader
Frank Cirillo, Air Force Team Leader
*Bob Cook, Interagency Issues Team Leader
Jim Owsley, Cross-Service Team Leader
Alex Yellin, Navy Team Leader
Ann Reese; Cross-Service Team
Dick Helmer; Cross-Service Team
Bob Bivins; Interagency Issues Team, Cobra Specialist
Mike Kennedy; Army Team

MEETING PURPOSE:

Alex Yellin provided the standard Commission briefing. The community initiated detailed discussions concerning the Defense Depot Memphis (DDMT) and the Navy moves resulting from BRAC 95. Concerning DDMT, the community discussed the minority workers employed, the military value of the depot, and their concern that any analysis be conducted on a "level playing field". They provided a handout and discussed a portion of the contents. A copy was placed in the library. Commission staff indicated that, at this point, we don't know exactly how the DLA analysis is being conducted but felt sure that all facilities would be reviewed equally because that is the law. We assured the community group that the commission staff was committed to an impartial review of all DoD data. Concerning the Navy moves resulting from the 1993 commission, the group wanted to know if any changes were contemplated by DoD as a result of political intercession. Alex stated that we did not have any information or insight which would indicate that the Navy is not following the law. rc

Document Separator

Memorandum for the Record

From: Ann Reese

Date: 20 March 1995

During my conversation on 17 March with Jim Potter from Warner Robins AFB, I requested that we include tours of the facilities that will be mothballed or demolished as a result of the base closure recommendations during our base visit. Potter said that we could do that, the facilities that will be mothballed and demolished were identified quite some time ago. I asked if the BRAC recommendations will accelerate the schedule for mothballing or demolition and Potter responded no, no acceleration will be necessary.

Ann Reese 20 March 1995

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE

05 APR 1995

MEMORANDUM FOR THE CHAIRMAN, JOINT CROSS-SERVICE GROUP FOR DEPOT MAINTENANCE

FROM: AF/RT

SUBJECT: BRAC 95 Closure and Realignment Recommendations

Attached is information that expands our previous response to the BRAC Commission staff (reference your 30 March letter to SAF/MI). This information describes the workload transfers in terms of hours, by commodity, to and from each AF Air Logistics Center. In addition, we have correlated the commodities with those developed by the JCSG-DM and indicated the percentage of total workload transferring, per your request.

Please refer questions to Lt Col Barry Pitcher, LGM, DSN 225-5257 or Lt Col Louise Eckhardt, DSN 225-4578.

JAY D. BLUME, JR., Maj Gen, USAF
Special Assistant to the CSAF for
Base Realignment and Transition

Attachment:
ALC Workload Transfers

Ann Reese
696 0550

OPR: AF/LGMM / LTC Pitcher

78-07a (Supplemental): Describe workload transfers in terms of hours, by commodity, to and from each ALC.

Answer: Each commodity or process with transferring workload considered by the AFMC TRC Review is listed in the table below. For each commodity the first line shows the amount of workload transferring to (+) or from (-) each ALC. The second line shows the net workload results after transfers are completed. The Third line identifies the JCSG-DM commodity group associated with these lines of data and the percentage of the total workload shown transferring from that ALC (in the case of workload losses) or the final amount of workload being allocated to each ALC continuing to support that commodity.

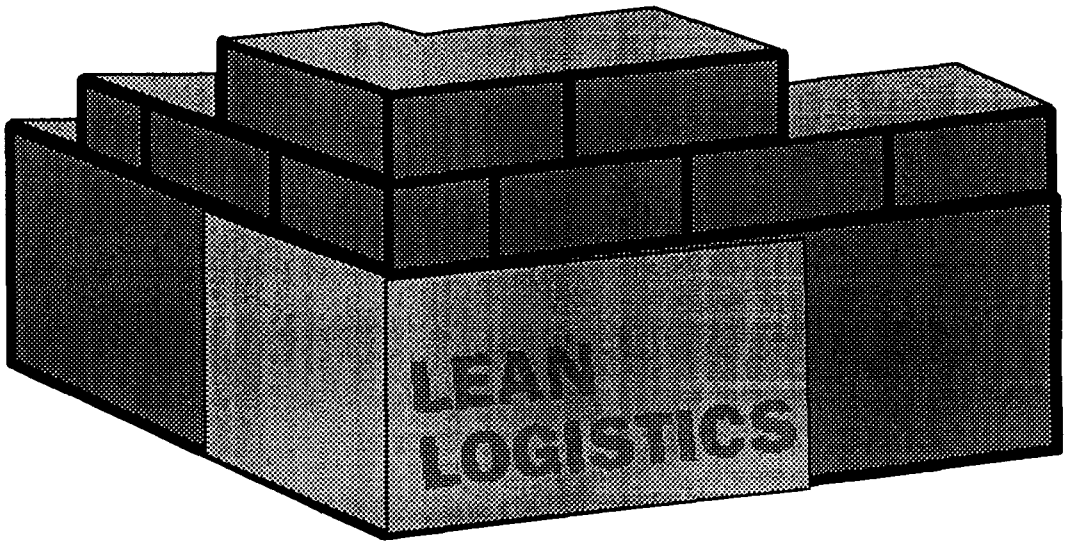
Note: The workloads detailed below reflect the **total** organic workloads **projected for FY 95** based on the latest information available to HQ AFMC on 1 Feb 95. HQ AFMC elected to use these workload projections during their TRC Review process because they were based on the most current data available at that time, and therefore viewed as more accurate than the JCSG-DM data developed in Mar - Sep 94. HQ AFMC is currently finalizing these numbers based on information obtained during site surveys conducted 13 - 31 Mar 95 and is scheduled to provide HQ USAF final updated data on 7 Apr 95.

Commodity	OC-ALC	OO-ALC	SA-ALC	SM-ALC	WR-ALC
IPE Software	-28,000		+28,000		
			200,000		
(SE Software)	*(14%)*		*(100%)*		
ATE Software	0	0	-76,000	-189,000	+265,000
	118,000	268,000	0	0	599,000
(SE Software)	*(12%*	*(27%)*	*(8%)*	*(19%)*	*(61%)*
Avionics	0	0		-131,000	+131,000
	124,000	286,000		0	1,951,000
(Avionics / Electronics)	*(5%)*	*(12%)*		*(6%)*	*(83%)*
Engine Related	0		0		
	461,000		1,003,000		
(Engines, Aircraft)	*(31%)*		*(69%)*		
Sheet Metal Repair	-410,000	+915,000	-110,000	-117,000	-278,000
	0	960,000	0	0	152,000
(Aircraft Structures)	*(37%)*	*(86%)*	*(10%)*	*(11%)*	*(14%)*

Commodity	OC-ALC	OO-ALC	SA-ALC	SM-ALC	WR-ALC
Sheet Metal Mfg	-23,000	+123,000	-28,000	-19,000	-53,000
	0	135,000	0	0	19,000
(Assoc Fab / Man)	*(15%)*	*(88%)*	*(18%)*	*(12%)*	*(12%)*
Instrument/Display	-280,000	-172,000		+477,000	-25,000
	0	9,000		753,000	151,000
(Instruments)	*(31%)*	*(1%)*		*(82%)*	*(17%)*
Composites/Plastics	-83,000	-56,000	-107,000	+474,000	-228,000
	0	0	0	688,000	0
(Aircraft Structures)	*(12%)*	*(8%)*	*(16%)*	*(100%)*	*(33%)*
Tubing Mfg	-6,000	-6,000	-2,000	-6,000	+20,000
	0	0	0	0	29,000
(Assoc Fab / Man)	*(21%)*	*(21%)*	*(7%)*	*(21%)*	*(100%)*
Machine Mfg	+33,000	-71,000	-33,000	-68,000	+139,000
	133,000	0	0	0	321,000
(Assoc Fab / Man)	*(29%)*	*(16%)*	*(7%)*	*(15%)*	*(71%)*
Plating	+44,000	+38,000	0	-38,000	-44,000
	94,000	112,000	227,000	0	16,000
(Assoc Fab / Man)	*(21%)*	*(25%)*	*(51)*	*(8%)*	*(4%)*
Electronic Mfg		-35,000		-10,000	+45,000
		0		0	108,000
(Avionics / Electronics)		*(32%)*		*(9%)*	*(100%)*
Hyd/Pneu	-2,000	-8,000	-5,000	+18,000	-3,000
	0	0	0	396,000	0
(Hyd / Pneumatics	*(.5%)*	*(2%)*	*(1%)*	*(100%)*	*(.7%))*
Electro Mech			-13,000	+16,000	-3,000
			0	125,000	0
(Avionics / Electronics)			*(10%)*	*(100%)*	*(3%)*
Injection Molding		200		+500	
		0		700	
(Assoc Fab / Man)		*(29%)*		*(100%)*	
Foundry Operations		+2,800	+4,200	-7,000	
		8,800	18,200	0	
(Assoc Fab / Man)		*(33%)*	*(67%)*	*(26%)*	

Document Separator

Air Force Lean Logistics



The New Cornerstone

LG41331-1

Lean Logistics Concept

Maximize Operational Capability **By Using High Velocity, Just In Time Processes To Manage Mission and Logistics Uncertainty In-lieu Of Large Inventory Levels. RESULT:**

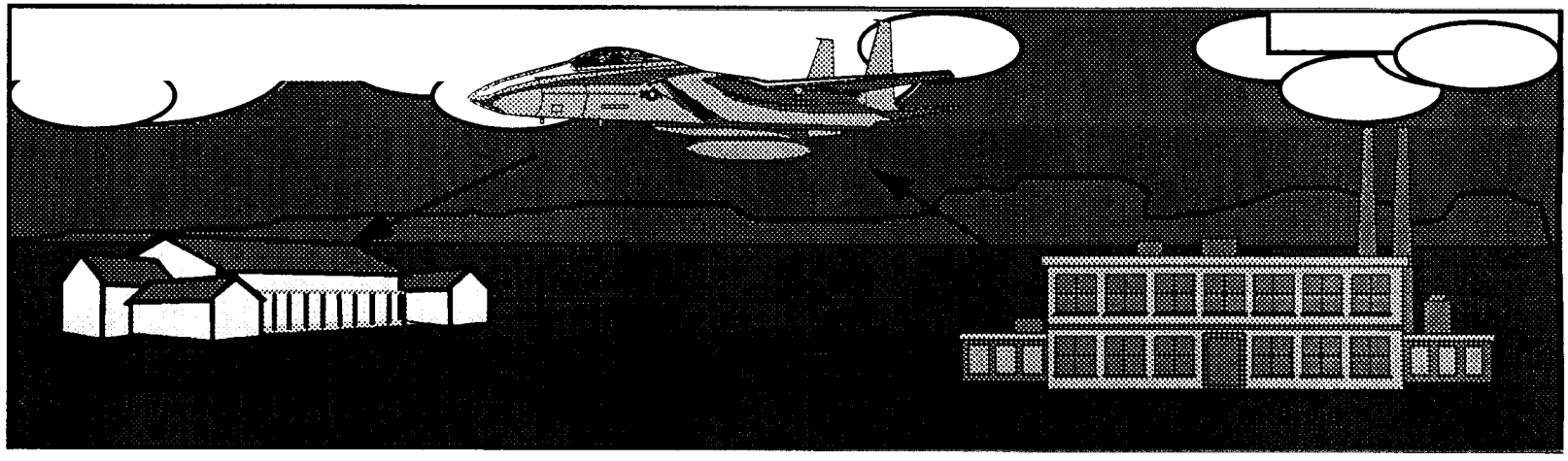
Shorter Cycle Times

Reduced Inventories & Cost

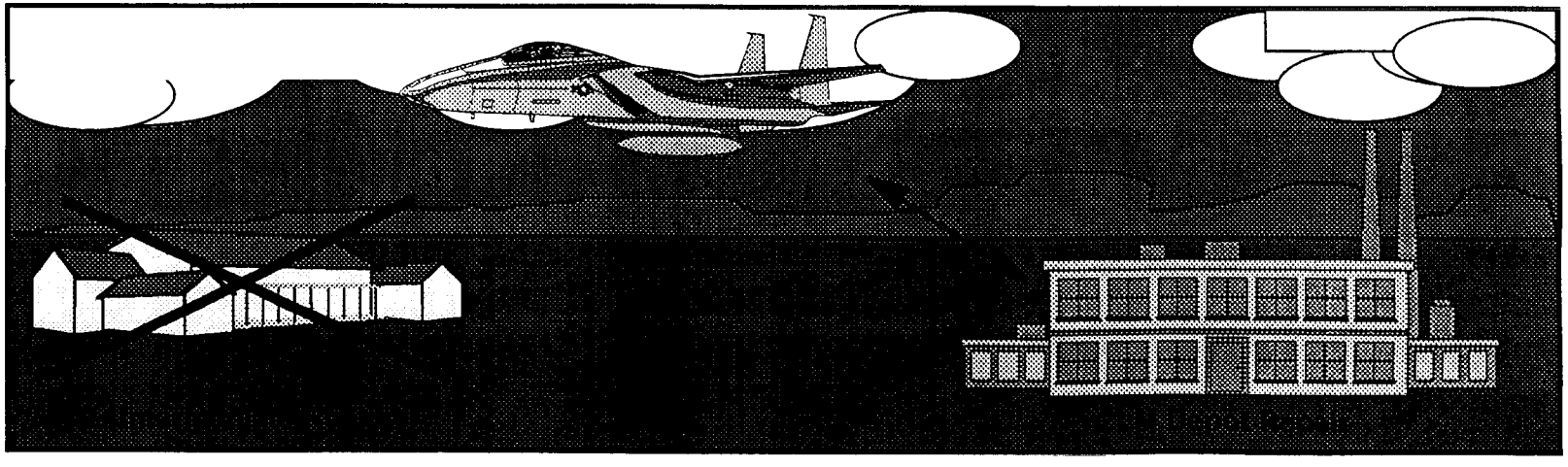
Smaller Mobility Footprint

Three Level vs Two Level Maintenance

3LM

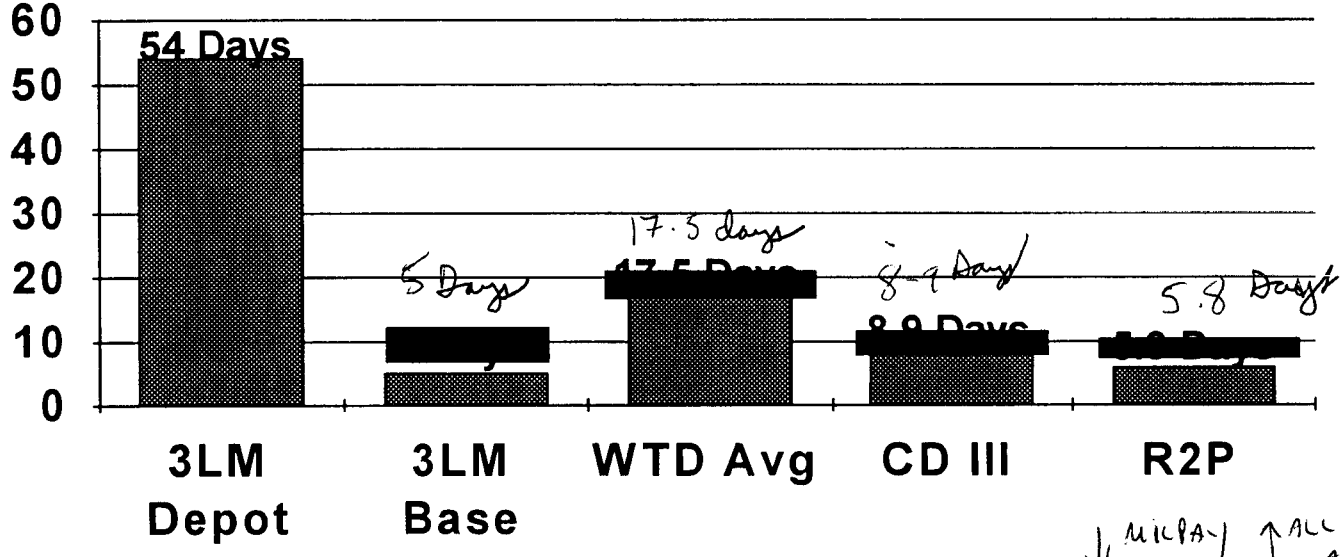


2LM



LG41331-3

2LM Continuous Process Improvements: Pipeline Times



↓ MILPAY ↑ ALL OTHER ACCOUNTS ↑

Savings

NET

- 4430 Manpower spaces = $259M POM reduction
- Intermediate equipment reduced * eliminate
- Mobility footprint reduced

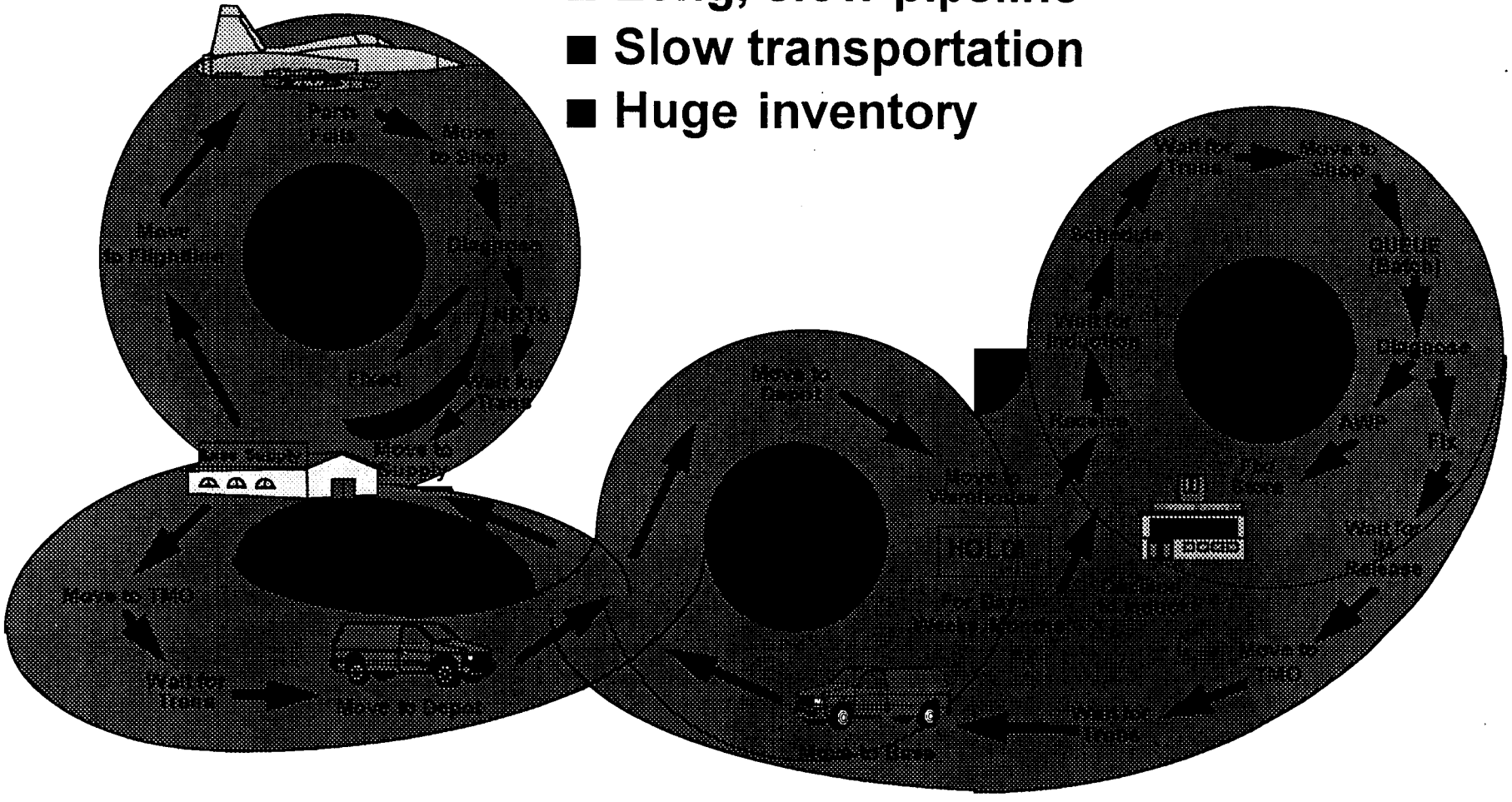
F16/F15/F18

LG41331-6

Personnel vs modernization

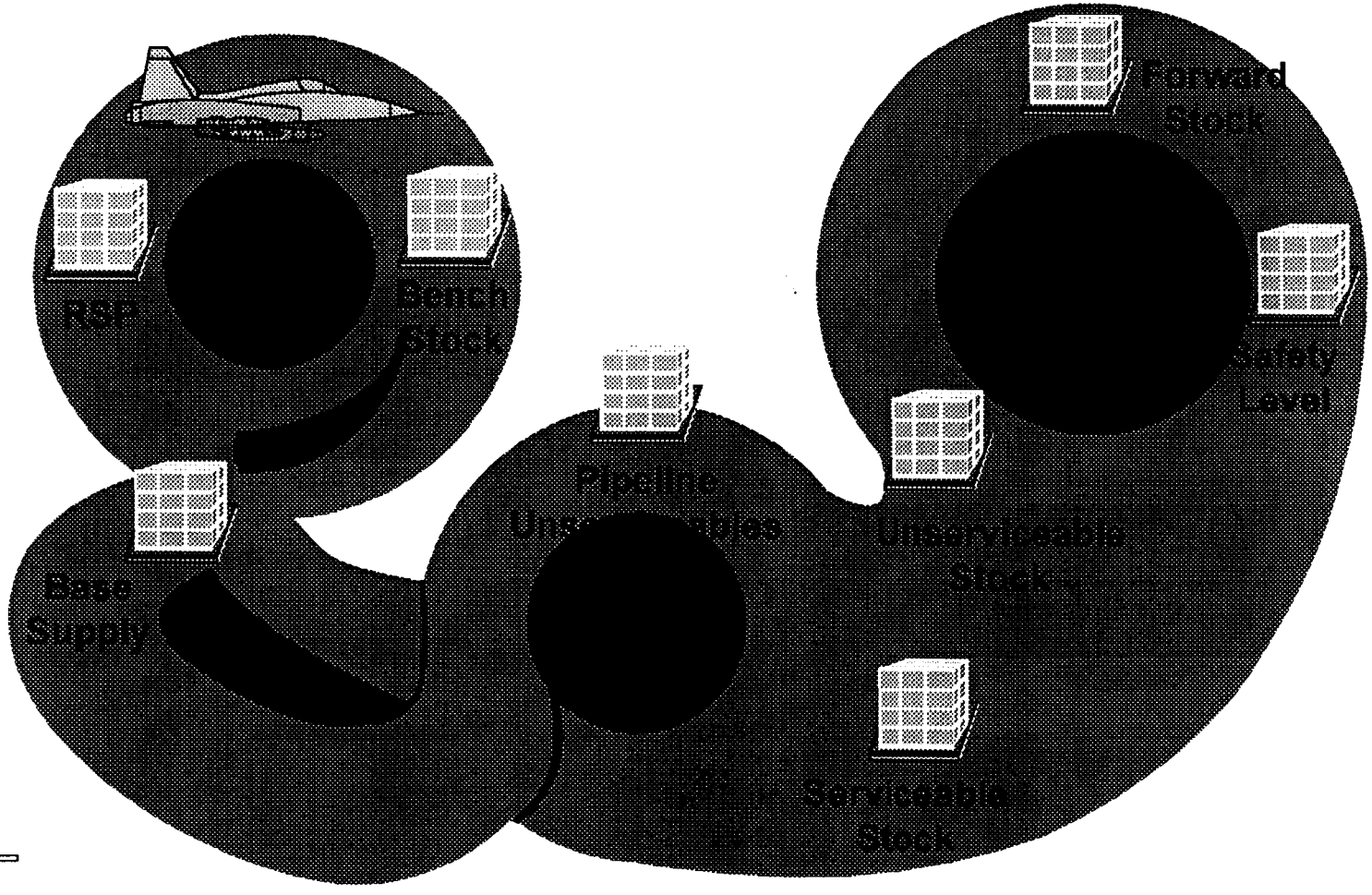
Today's Logistic System

- Long, slow pipeline
- Slow transportation
- Huge inventory



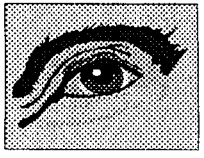
LG41331-10

Today's Logistics Inventory



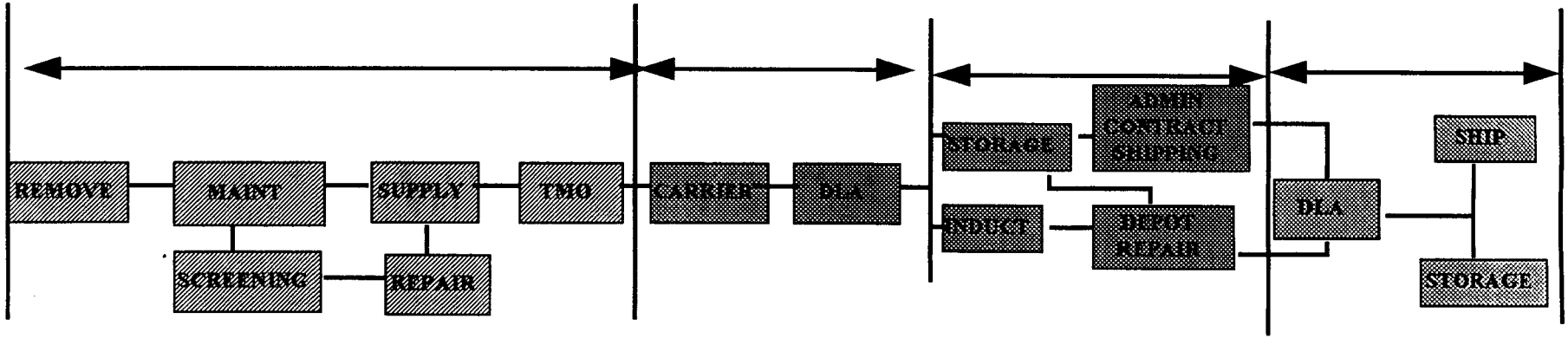
LG41331-11

Baseline Repair Cycle Time



User Visibility

Mar 91 6 Days 16 Days 30 Days 21 Days



73

63

Mar 94 4 Days 14 Days 28 Days 17 Days

- Combined Supply & Trans Functions
- 2LM

- Express Trans
- DLA "Express Table"

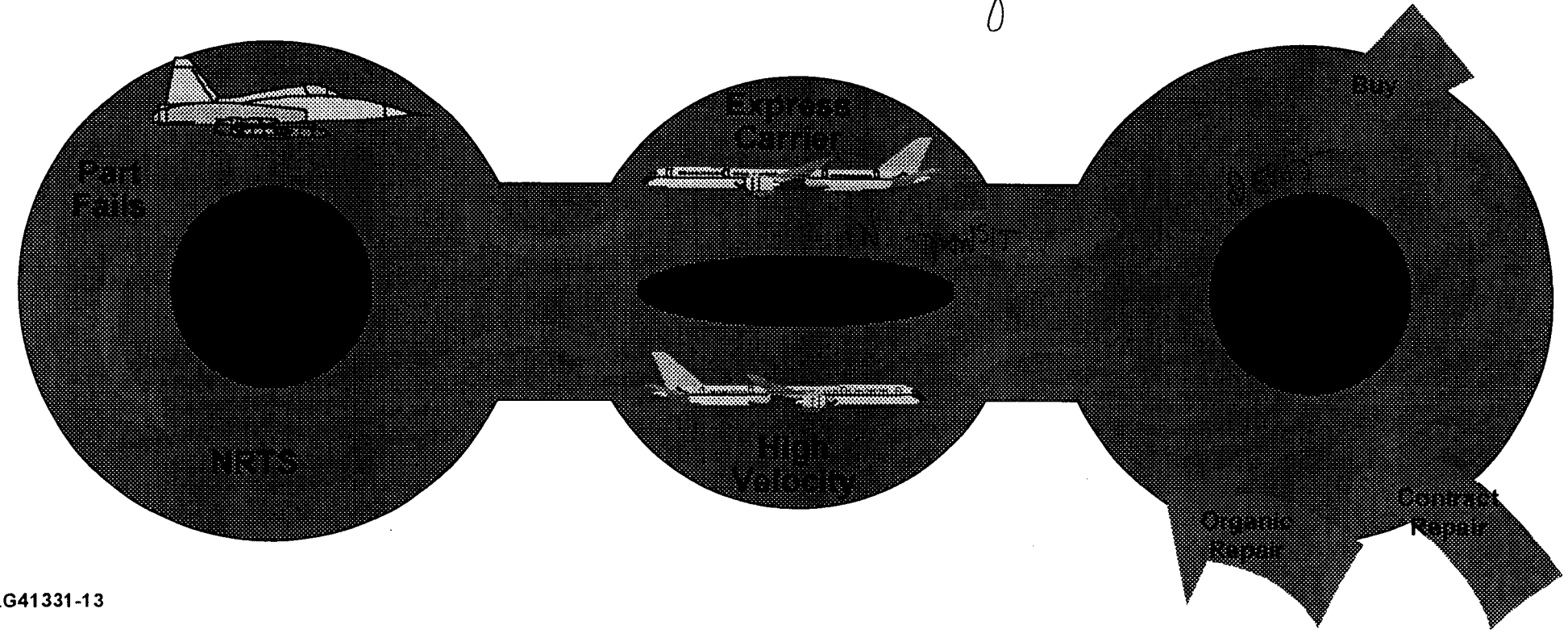
- Direct Induction
- Repair on Demand

LG41331-12

Lean Logistics System

- Short, fast pipeline
- Express transportation
- Right size inventory

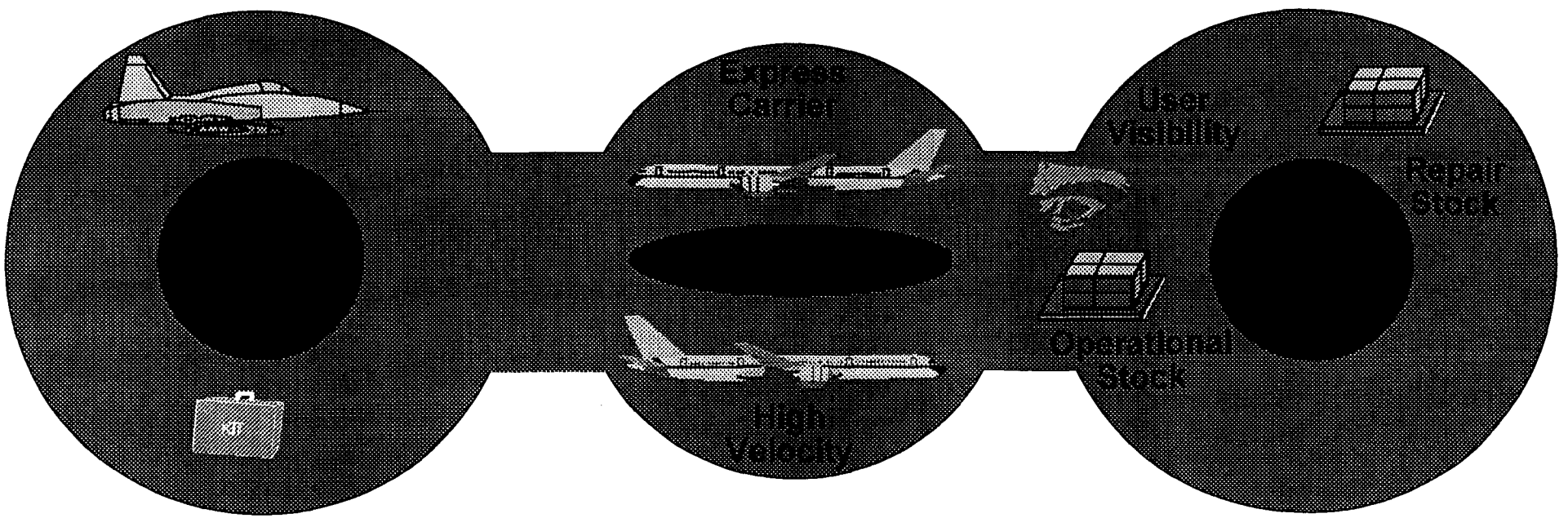
Goal 50% reduction



LG41331-13

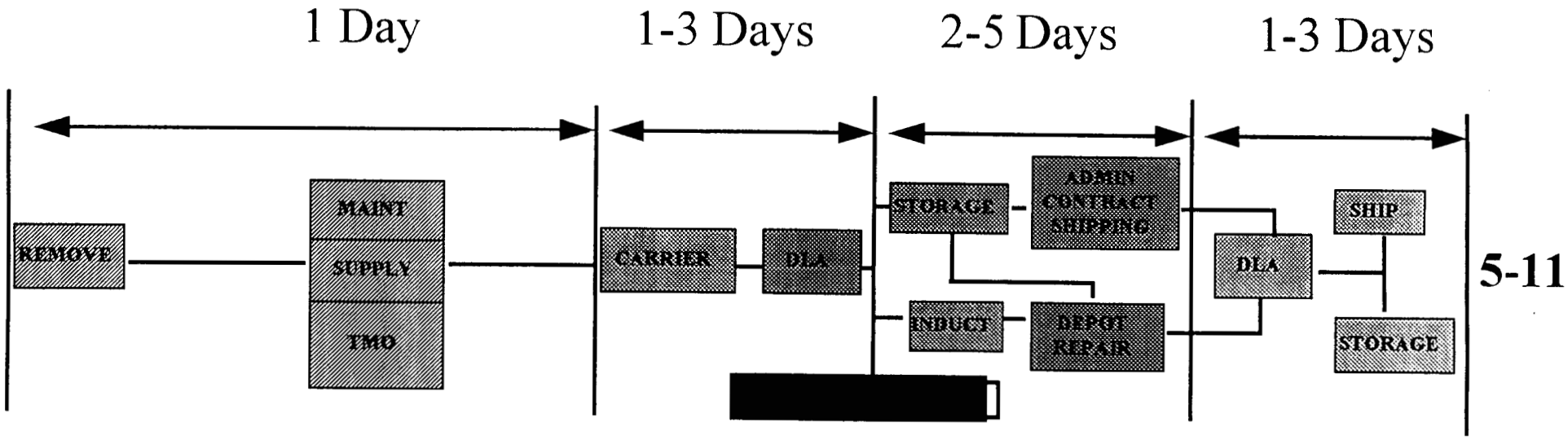
Lean Logistics Inventory

- Right size inventory
- Guaranteed resupply
- Customer directs distribution



LG41331-14

"Lean" Repair Cycle Time

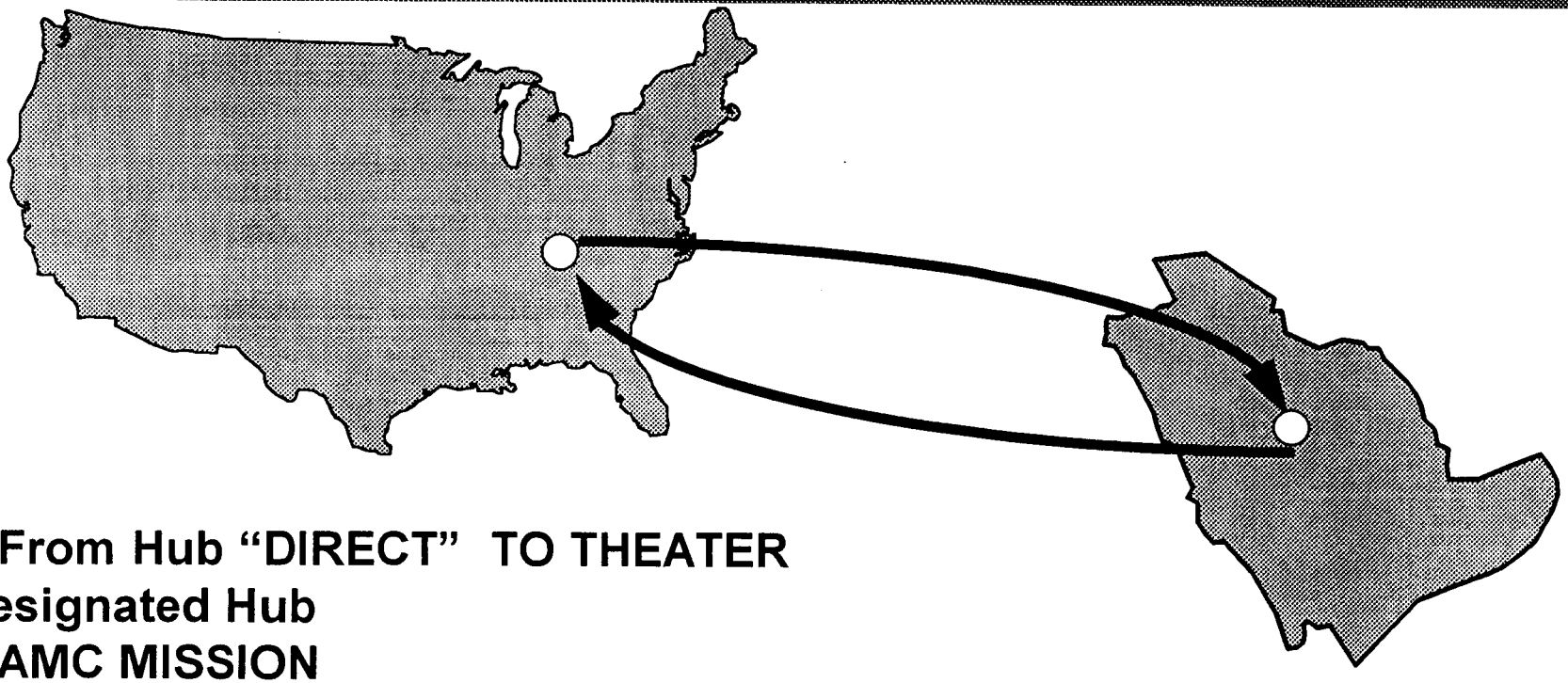


LG41331-15

Peacetime → AMC or command

AMX

Wartime →



✓From Hub "DIRECT" TO THEATER
Designated Hub
✓AMC MISSION
- ✓Organic Aircraft
- ✓CRAF Aircraft

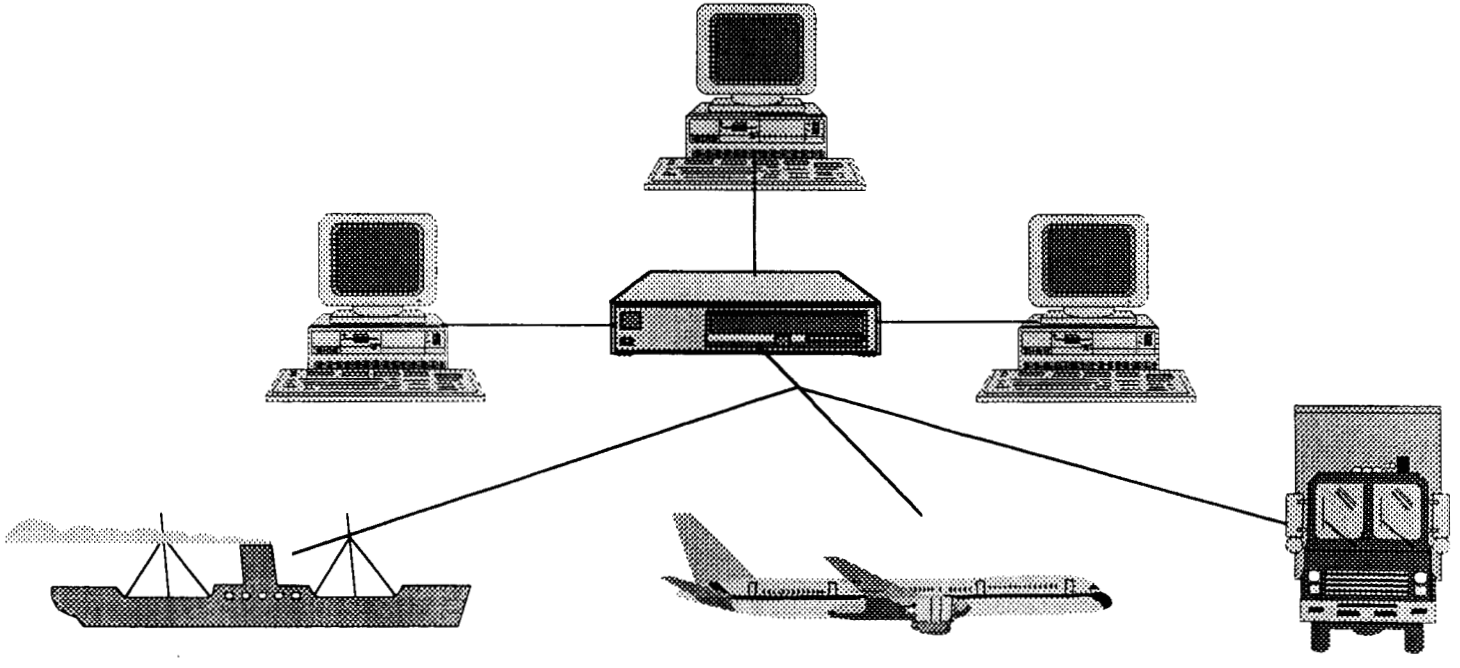
✓CONSERVATION OF MILITARY CAPABILITY

Depots → emergency to release this

LG41331-17

Pipeline Visibility (ATAC-AF)

- Gives managers the capability to manage the pipeline
- Uses current data information systems
- Provides visibility of parts moving through the pipeline



LG41331-20

Lean Logistics Initiatives

- Two Level Maintenance
- C-5 LL Demonstration
- Comm-Electronics LL Conversion
- AFMC Shop Conversions
  - Oxygen Systems Shop - OCALC
  - Radar-Navigation Shop - WRALC
  - F-16 Avionics Consolidation - OOALC

LG41331-22

Summary

- Cycle Times Are Coming Down
- Some LL Initiatives Are Being Institutionalized
- Near Term Demos Will Hasten The Conversion to LL
- The Master Planning Process Will Insure Resolution of Remaining Issues/Questions
- Lots To Do -- "*We Have Hardly Begun*"

Document Separator

FORCE XXI

VELOCITY MANAGEMENT

THE APPROACH TO RE-ENGINEER THE ARMY'S LOGISTICS PROCESS.

FORCE XXI

VELOCITY MANAGEMENT

DEFINITION...

VELOCITY MANAGEMENT IS A CONCEPT THAT ADVOCATES IMPROVED FLOW OF MATERIEL AND INFORMATION THROUGH THE LOGISTICS PROCESS.

RAND CORPORATION

FORCE XXI

VELOCITY MANAGEMENT

AIMS AT...

→ ATTACKING THE LOGISTICS **PROCESS** AND IMPROVES BOTH THE FLOW OF *INFORMATION* AND THE MOVEMENT OF *MATERIEL*.

Automated tracking supply system depot → Kille

FORCE XXI

VELOCITY MANAGEMENT IS..

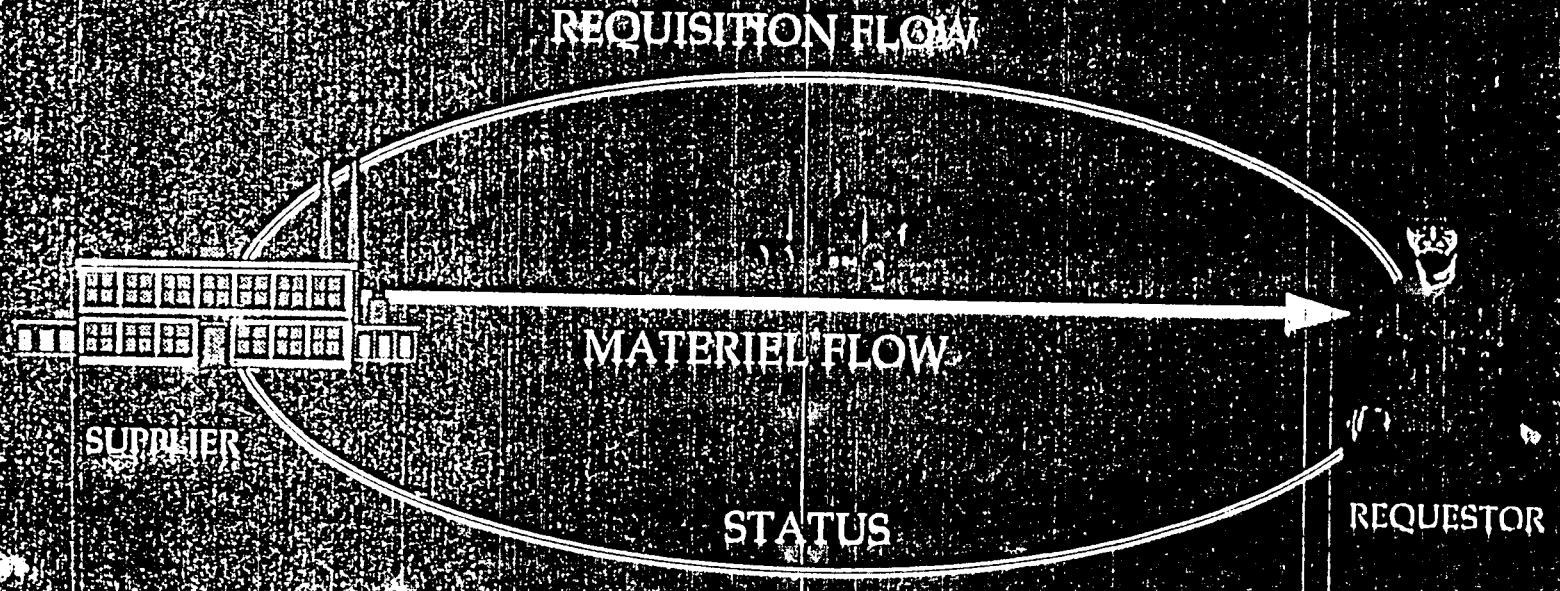
TOTAL ASSET VISIBILITY

SUBSTITUTE VELOCITY FOR MASSIVE INVENTORY

RF TECHNOLOGY

AMS & MRO

SIMPLIFYING THE LOGISTICS PROCESS



FORCE XXI

VELOCITY MANAGEMENT

PILOT IMPLEMENTATION PROGRAM

WHICH PROCESSES...	*WHICH INSTALLATIONS...*
ORDERING	FT. RILEY
REPAIRING	FT. HOOD
SHIPPING	CORPUS CHRISTI
FINANCIAL PROCESS	MARTIN MARIETTA
	ANNISTON

FORCE XXI

VELOCITY MANAGEMENT

PILOT IMPLEMENTATION PROGRAM

WHICH SYSTEMS...

MAJOR COMBAT SYSTEMS	OTHER SELECTED SYSTEMS
APACHE	TADS/PNVS
UH-60	T700 ENGINE
M1A1	POWERPACK
MLRS	FIRE CONTROL
	HEMTT
	SINCGARS
	AVLB
	MHE
	CEV
	M9 ACE

FORCE XXI

VELOCITY MANAGEMENT

METHODOLOGY

PHASE I

KICK-OFF SEMINAR

UNDERSTAND OBJ OF VM

CHANGE AGENTS IDENTIFIED

PHASE II

SELF ASSESSMENT

PROCESS SYSTEMS CHANGES IDENTIFIED

PHASE III

CAS CONDUCT PROCESS ANALYSIS

CAS GO TO FT HOOD TO WALK THROUGH THE PROCESS

PHASE IV

CONDUCT SLC SEMINAR TO PRESENT RECOMMENDATIONS

BEGIN SHORT TERM PROCESS CHANGES

PHASE V

BEGIN LONG TERM PROCESS CHANGES

SCHOOL HOUSE BEGINS TEACHING PROCESS

PILOT IMPLEMENTATION PROGRAM AT FORT HOOD

VELOCITY MANAGEMENT

FORCE XXI

BUSINESS PRACTICES

CUSTOMER FOCUS

VELOCITY MANAGEMENT

BATTLEFIELD DISTRIBUTION

✓IMPROVED PROCESSES
✓STREAMLINED FLOW
✓RAPID DELIVERY
✓ INTRANSIT VISIBILITY

HIGH OPTEMPO

REPAIR CYCLE TIME

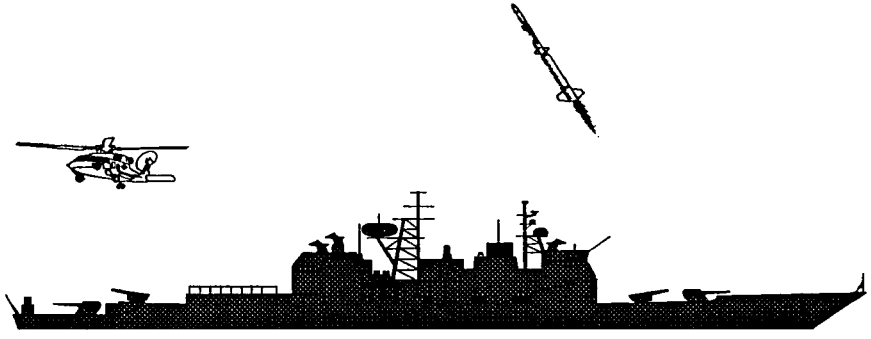
ORDER SHIP TIME

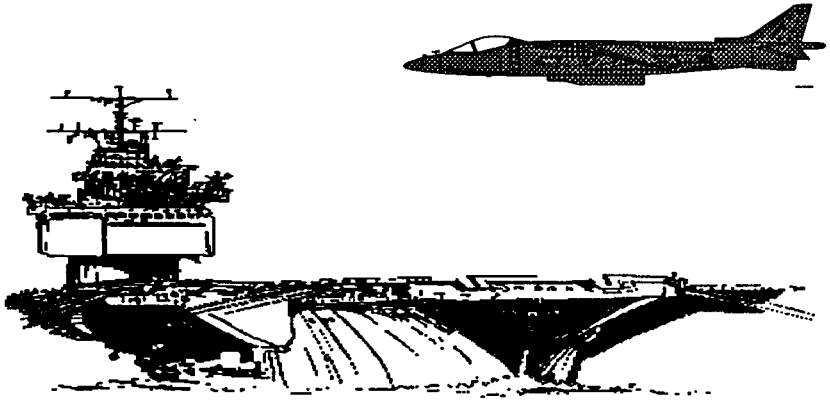
Document Separator

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

BRIEF TO THE
BRAC COMMISSION STAFF
17 FEBRUARY 1995





RADM JIM TAYLOR
CHAIRMAN
MAINTENANCE SUPPORT QMB

DATE: 16FEB95

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

I. REQUIREMENT

II. RESPONSE

III. PLAN

IV. STATUS

V. ISSUES / BOUNDARY CONDITIONS

VI. BRAC ASPECTS

VII. GOALS SUMMARY

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

REQUIREMENT

waiver for ship yards

"SERVICES SHOULD REDUCE EXCESS MAINTENANCE RESOURCES AND CAPACITY WHILE MAINTAINING REQUIRED READINESS LEVELS. FOCUS SHOULD BE ON REGIONALIZING AND CONSOLIDATING MAINTENANCE FUNCTIONS, INCLUDING CROSS-SERVICING SUCH FUNCTIONS WHERE APPROPRIATE."

(DPG PAGE 61)

"STREAMLINE LOGISTICS INFRASTRUCTURE."

(DoD STRATEGIC LOGISTIC PLAN GOAL #3)

"THE USER/CONSUMER SEES ONLY A SINGLE, ACCESSIBLE, RESPONSIBLE PROVIDER."

(FLEET SUPPORT QMB KEY ACCOMPLISHMENT #2)

REGIONAL NAVAL MAINTENANCE

MAINTENANCE STRATEGY REQUIRES:

- RESPONSIVE ORGANIC INDUSTRIAL CAPACITY TARGETTED TO CORE
- KEPT LEVEL LOADED
- WORK FORCE WHICH CAN FLEX TO MEET WORKLOAD / OPERATIONAL SCHEDULE
- CAPABLE PRIVATE SECTOR

HENCE, REGIONAL MAINTENANCE

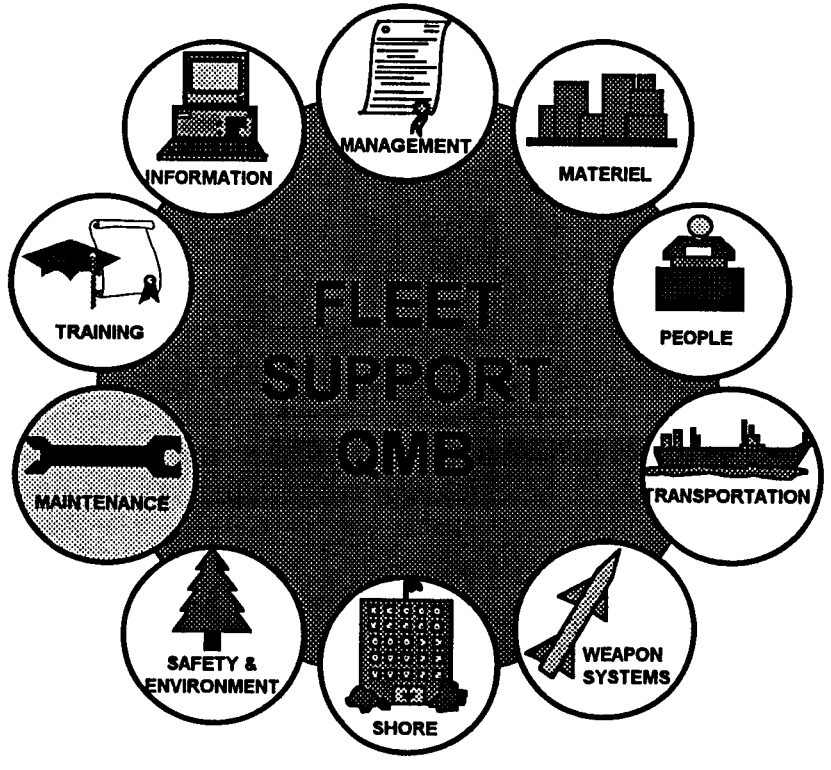
REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

TOTAL QUALITY LEADERSHIP

CNO
ESC

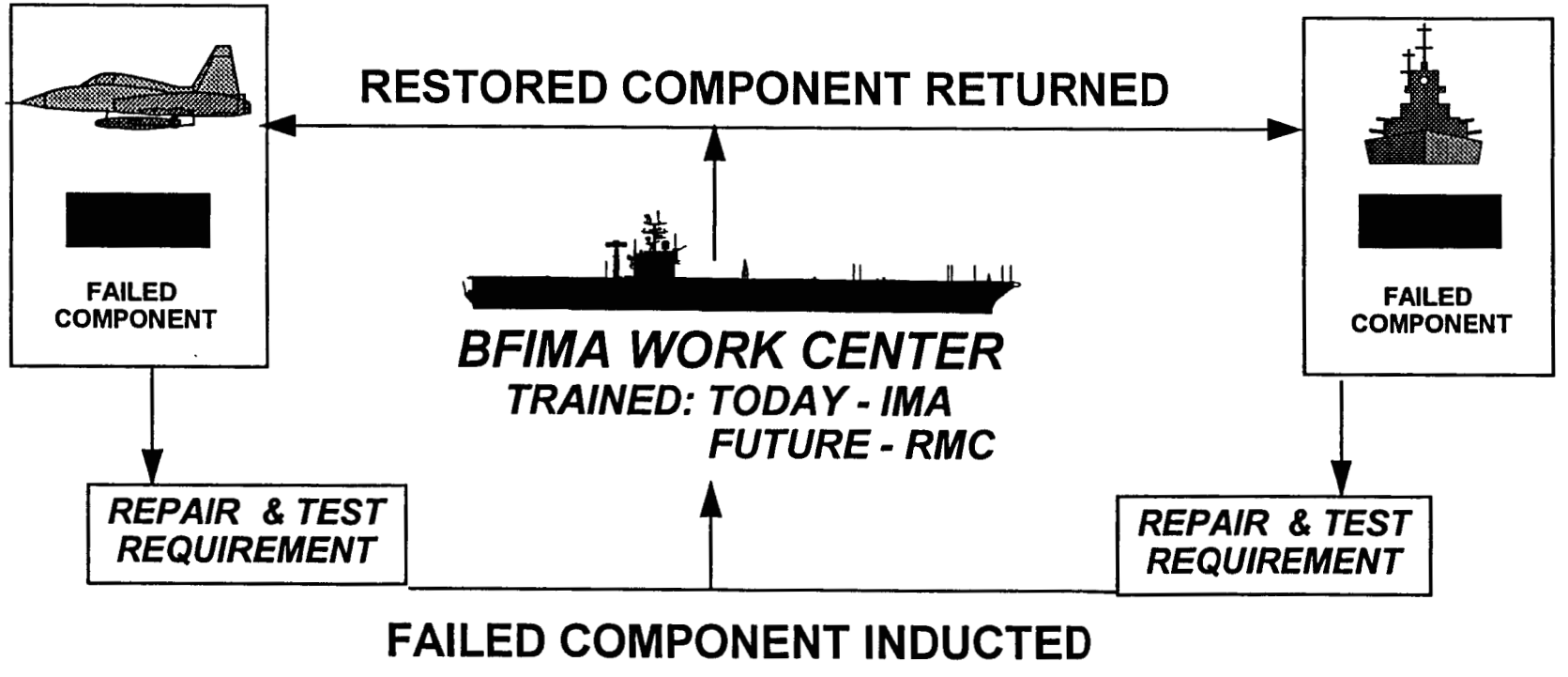
QMBs
- Information
- Roles & Missions
- Environment
- Fleet Support
- Quality of Life
- Jointness
- Budget



REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

TODAY'S BATTLE FORCE IMA

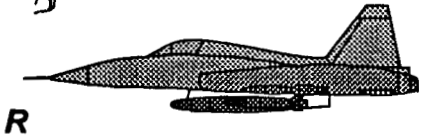


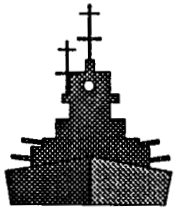
REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

point here
work @ intermediate
industry
support (should include spare parts???)

ASHORE NAVAL MAINTENANCE OBJECTIVES





RESTORED COMPONENT

FAILED COMPONENT

- ELIMINATE EXCESS INFRASTRUCTURE
- IMPROVE MAINTENANCE PROCESS
- INTEGRATE SUPPLY AND MAINTENANCE
- COMPATIBLE ADP
- MILPERS TRAINED BY DEPOT ARTISANS
- PRESERVE:
  - SYSCOM TECHNICAL CONTROL
  - LIFE CYCLE SUPPORT
  - RESPONSIVENESS TO FLEET
  - READINESS OF FLEET

FAILED COMPONENT

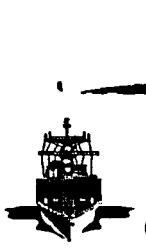
RESTORED COMPONENT

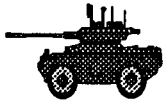
REGIONAL MAINTENANCE CENTER

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

FLEET MAINTENANCE END STATE





OUTSIDE SHOP
PEOPLE & MATERIAL

OUTSIDE SHOP
PEOPLE & MATERIAL

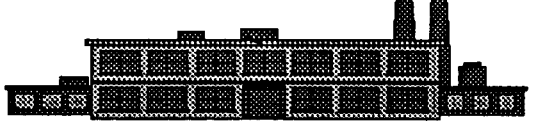
NAVAIRSTA
ON-ACFT TROUBLE SHOOTERS
ON-ACFT COMPONENT EXCHANGE
SEAOPDET MANNING POOL

OUTSIDE SHOP
PEOPLE & MATERIAL

NAVSTA WATERFRONT
ON-SHIP ALTERATION TEAMS
ON-SHIP REPAIR TEAMS
ON-SHIP TROUBLE SHOOTERS
O-LEVEL PLUS

MARCOR/PWC
ON-PLATFORM REPAIR
INSPECT & REPORT
COMPONENT EXCHANGE

INSIDE SHOP
FACILITY & EQUIPMENT



INSIDE SHOP INTENSIVE
LEVEL LOADED TO CAPACITY
PLATFORM OVERHAUL/SDLM

(Sailors work side by side w/ civilians in shops so that they can train)

CONSOLIDATED INDUSTRIAL OPS
CIV / MIL MIX

DATE: 16FEB95

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

PRECEPTS
(APPROVED: 15AUG94 CINC's CONF)

- SINGLE REGIONAL MAINTENANCE POINT OF CONTACT
- REGIONAL INDUSTRIAL CONSOLIDATION
- INTEGRATED CIVILIAN AND MILITARY WORK FORCE
- DUAL REPORTING BY MAINTENANCE COMMANDERS
  - FLEET
  - SYSCOM
- COMMON SUPPORT SYSTEM
- SYSTEMS COMMANDER RETAIN TECHNICAL AUTHORITY

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

PHASED EXECUTION

NAVOP 06/94 CNO 282136ZMAR94

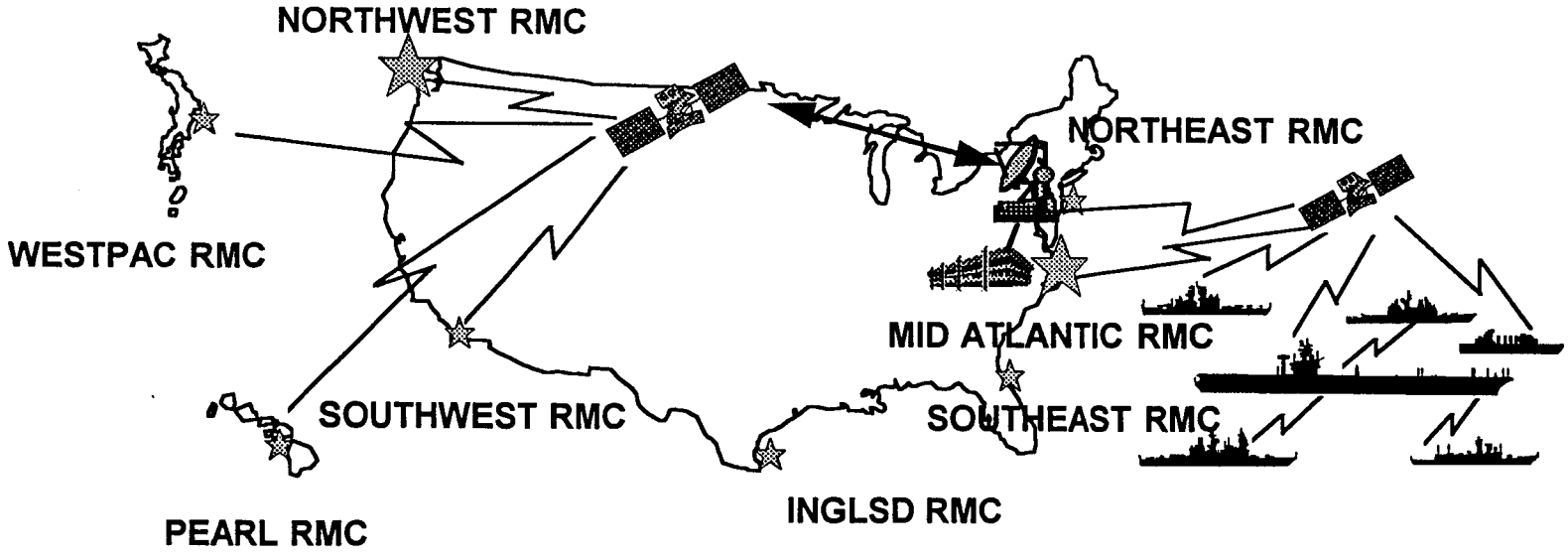
- **PHASE ONE FY95-99**
  - MAINTENANCE CENTERS OF EXCELLENCE PROTOTYPES
  - I-LEVEL CONSOLIDATION / INTEGRATION
  - RIGHT-SIZE ENGINEERING TECH SUPPORT
  - REGIONALIZE INTEGRATED SUPPLY OPERATIONS-FISC
- **PHASE TWO FY96-99**
  - I AND D-LEVEL CONSOLIDATION / INTEGRATION
  - REGIONAL MAINTENANCE CENTER
- **PHASE THREE FY97-99**
  - SINGLE MAINTENANCE PROCESS
  - COMMON BUSINESS PRACTICES
  - INTEGRATED INFORMATION MGMT SYSTEM

barriers to integration
info systems
supply support
budgets

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

REGIONAL MAINTENANCE CENTERS



PACIFIC FLEET

PEARL HARBOR
SOUTHWEST
✓ NORTHWEST
WESTPAC

ATLANTIC FLEET

NORTHEAST
✓ MID ATLANTIC
SOUTHEAST
INGLESIDE

✓ AUTHORIZED FOR FY96 STAND-UP

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

REGIONAL PARTICIPANTS
MIDDLE ATLANTIC

- **INDUSTRIAL HUB**
  - NORFOLK NAVAL SHIPYARD
  - NADEP CHERRY POINT
  - SUPSHIP PORTSMOUTH
  - SUPSHIP NEWPORT NEWS
- **SUB / SHIP IMA**
  - SIMA NORFOLK Surface
  - SIMA LITTLE CREEK
  - SIMA PORTSMOUTH activities that do non-work
  - ACU 2 (RPR DEPT)
  - ACU 4 (RPR DEPT)
  - RSG NORFOLK
  - NAVSTA NORFOLK
- **AVIATION IMA**
  - NAS OCEANA (AIMD)
  - NAS NORFOLK (AIMD)
- **NAVAL WEAPONS STATION**
  - NAVWEPSTA YORKTOWN
  - NOC EAST
- **PWC**
  - PWC NORFOLK
  - PWC YORKTOWN
- **MSC**
  - MSC MIDLANT

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

REGIONAL PARTICIPANTS MIDDLE ATLANTIC (CONT)

- **FISC**
  - FISC NORFOLK
- **TECHNICAL**
  - FTSCLANT
  - NSYDITS
  - PERA SURFACE
  - NSWC DET DAM NECK
  - NICE EAST
- **OPERATIONAL**
  - COMNAVBASE NORFOLK

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

FLEET HIGHLIGHTS

AT SEA

- BATTLE FORCE IMA
- MRMS (SHIP)/ NALCOMIS(AIR) AIS INTERFACE (CVN 70 & 73)
- FLEET TECHNICAL SUPPORT CENTER
  - LANT (01 OCT 93)
  - PAC (01 OCT 94)

PACNORWEST REGION

- REGIONAL MAINTENANCE CENTER (PH I) STOOD UP
- PUMP REPAIR CONSOLIDATION (I-D) (PAC PROTOTYPE)
- PERISCOPE REPAIR CONSOLIDATION (I-D)
- CIRCUIT BREAKER REPAIR CONSOLIDATION (I-D)

REGIONAL NAVAL MAINTENANCE

SAN DIEGO REGION

- DIESEL ENGINE CONSOLIDATION (I-I)
- CALIBRATION CONSOLIDATION (I-I)(D-I)
- SMALL BOAT REPAIR CONSOLIDATION (I-I)
- FOUNDRY STUDY INPROGRESS (NADEP NI OR PSNS)

PEARL HARBOR REGION

- SURF/ SUB IMA INTEGRATION/CONSOLIDATION (I-I)
- DRYDOCK LEASE FROM PHNSY (D-I)
- CONTROLLED INDUSTRIAL FACILIY (I-D)
- 2M / ATE MULTI-SERVICE FACILITY (NAVY/ARMY/AIR NAT GUARD/COAST GUARD)

REGIONAL NAVAL MAINTENANCE

MID ATLANTIC REGION

- MOTOR REWIND / MACHINE SHOP CONSOLIDATIONS (I-D) (LANT PROTOTYPE)
- AVIONICS/ELEX, GAS TURBINE CONSOLIDATIONS (AIR I-SURF I)
- INTEGRATED MAINTENANCE ASSIST TEAM NNSY AUGMENTS SUBLANT IMAs (D-I)
- MATERIALS LAB CONSOLIDATION (I-I)(D-I)
- SMALL BOAT REPAIR CONSOLIDATION (I-I)
- CORROSION CONTROL CONSOLIDATION (I-I)

SOUTHEAST REGION

- SSBN ACCUMULATORS PLATED AT NADEP
- OPTICAL CONSOLIDATION AT TRF (SURF I-SUB I)
- CALIBRATION CONSOLIDATION (AIR I-SURF I)
- AIR REDUCER REPAIR (TRF SUPPORT SURF)

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

INGLESIDE REGION

- CALIBRATION INTERSERVICE WITH CORPUS CHRISTI ARMY DEPOT

NORTHEAST REGION

- CALIBRATION CONSOLIDATION (STUDY)
- PERISCOPE REPAIR CONSOLIDATION (STUDY)
- MOTOR REPAIR CONSOLIDATION (STUDY)

TOTALS
98 PILOTS/STUDIES - 37 STARTED

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

ISSUES

- **MAINTENANCE METHODOLOGIES**
  - AVIATION: REPLACE COMPONENT / REPAIR FOR STOCK
  - SURFACE: REMOVE/REPAIR/REINSTALL COMPONENT
  - AVIATION DOCUMENTS MAINTENANCE COMPLETIONS
  - SURFACE DOCUMENTS MAINTENANCE DEFERRALS

ACTION — *INTEGRATED FLEET MAINTENANCE MODEL ADDRESSING*

- **FINANCIAL**
  - DEPOTS / TRF / SRF / IMA FUNDED DIFFERENTLY WITH DIFFERENT ACCOUNTING REQUIREMENTS
  - CUSTOMER DOES NOT SEE FULL COST OF I-LEVEL

ACTION — *NAVCOMPT ASSISTING*

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

building bridges between systems
BAIM is the chosen
migration system

- **AIS**
  - NALCOMIS/MRMS/LDS/BAIM/.....
  - NO SINGLE POINT OF CONTROL
  - DIFFERENT FUNCTIONS

ACTION *INFORMATION SUPPORT QMB REGIONAL MAINTENANCE AIS PAT*

- **MAINTENANCE WEDGE**
  - $1.28 BILLION 1995-2000
  - $200 MILLION 1995

ACTION *CONSOLIDATION + PROCESS IMPROVEMENT*

REGIONAL NAVAL MAINTENANCE

MAINTENANCE
SUPPORT
QMB

BOUNDARY CONDITIONS

- CONGRESSIONAL
  - BUDGET
  - BRAC
  - 60 / 40 LEGISLATION
  - FULL TIME EQUIVALENT (FTE) CEILING
- DEPARTMENT OF DEFENSE
  - DoD CORE
  - JOINT INITIATIVES
  - DBOF IMPROVEMENT PROGRAM
- NAVY
  - SEA / SHORE ROTATION
  - FLEET REORGANIZATION
  - TENDER PLAN

how many ~~sailors~~ does this drive you to in Intermediate levels

REGIONAL NAVAL MAINTENANCE

BRAC ASPECTS

- BRAC IS BOUNDARY CONDITION
- REGIONAL MAINTENANCE INITIATIVE HAS MADE NO IRREVERSIBLE DECISIONS
- ASN (RDA) GUIDANCE ACKNOWLEDGED REGIONAL MAINTENANCE
- BRAC DECISION WILL CLARIFY REGIONAL MAINTENANCE CAPABILITIES

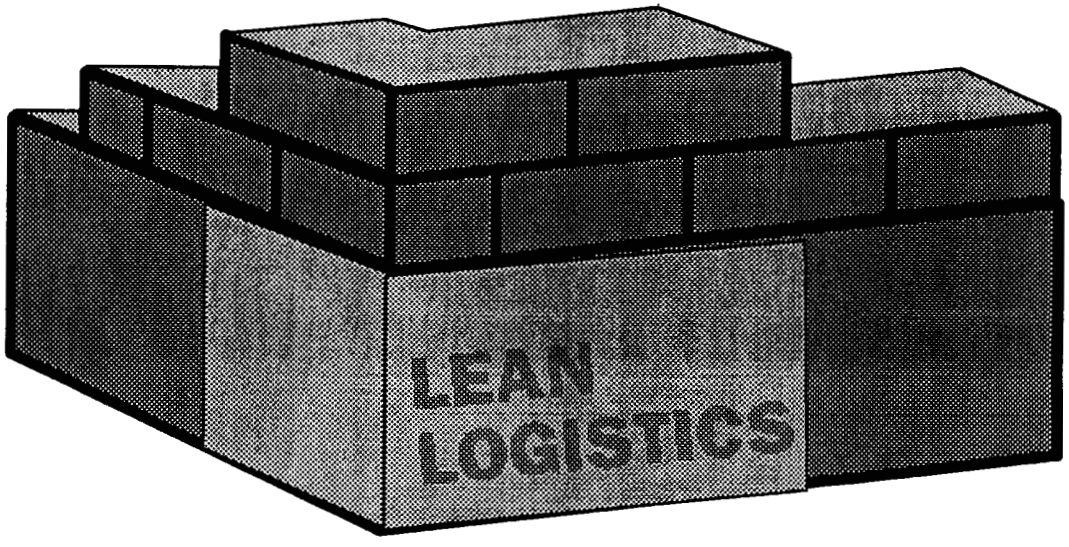
REGIONAL NAVAL MAINTENANCE

GOALS SUMMARY

- MEET THE WEDGE THROUGH EXCESS ELIMINATION PLUS PROCESS IMPROVEMENT
- INTEGRATED MAINTENANCE TRAINING - BFIMA / REGIONAL REPAIR CENTERS
- SINGLE RESPONSIBLE, ACCOUNTABLE, ACCESSIBLE PROVIDER OF MAINTENANCE IN EACH REGION

Document Separator

Air Force Lean Logistics



The New Cornerstone

LG41331-1

Lean Logistics Concept

Maximize Operational Capability **By Using High Velocity, Just In Time Processes To Manage Mission and Logistics Uncertainty In-lieu Of Large Inventory Levels. RESULT:**

Shorter Cycle Times

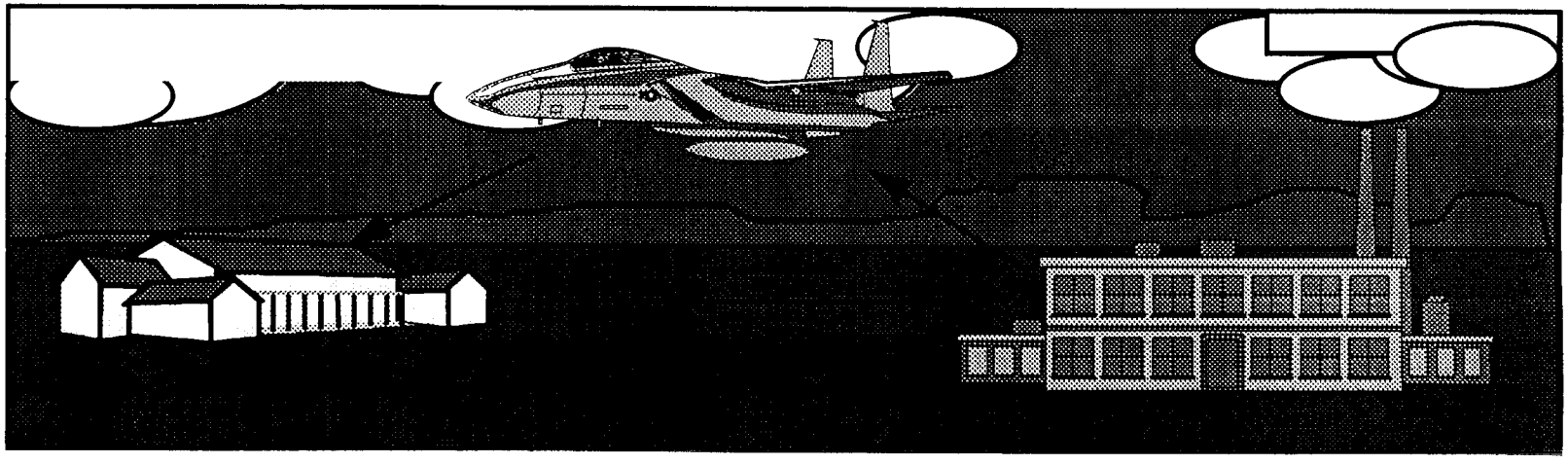
Reduced Inventories & Cost

Smaller Mobility Footprint

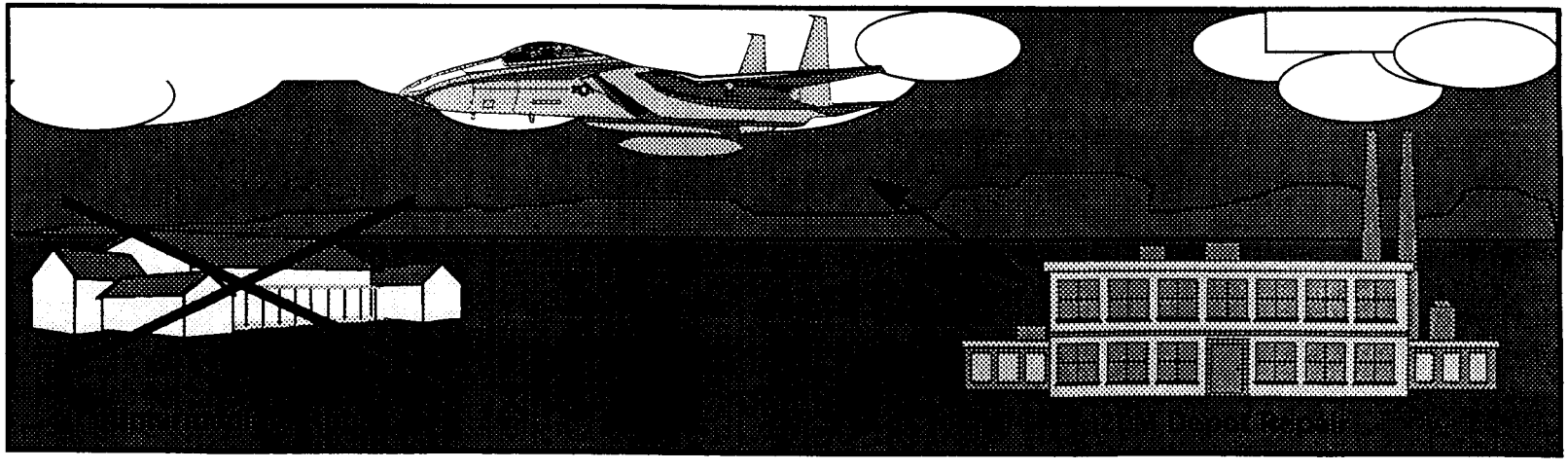
LG41331-2

Three Level vs Two Level Maintenance

3LM

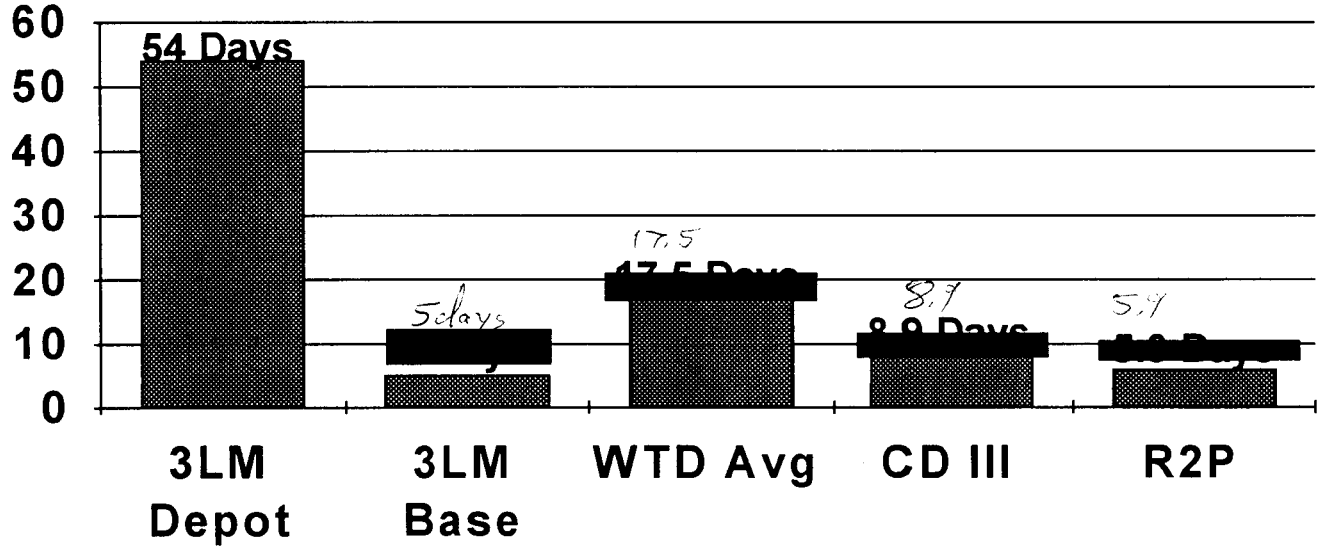


2LM



LG41331-3

2LM Continuous Process Improvements: Pipeline Times



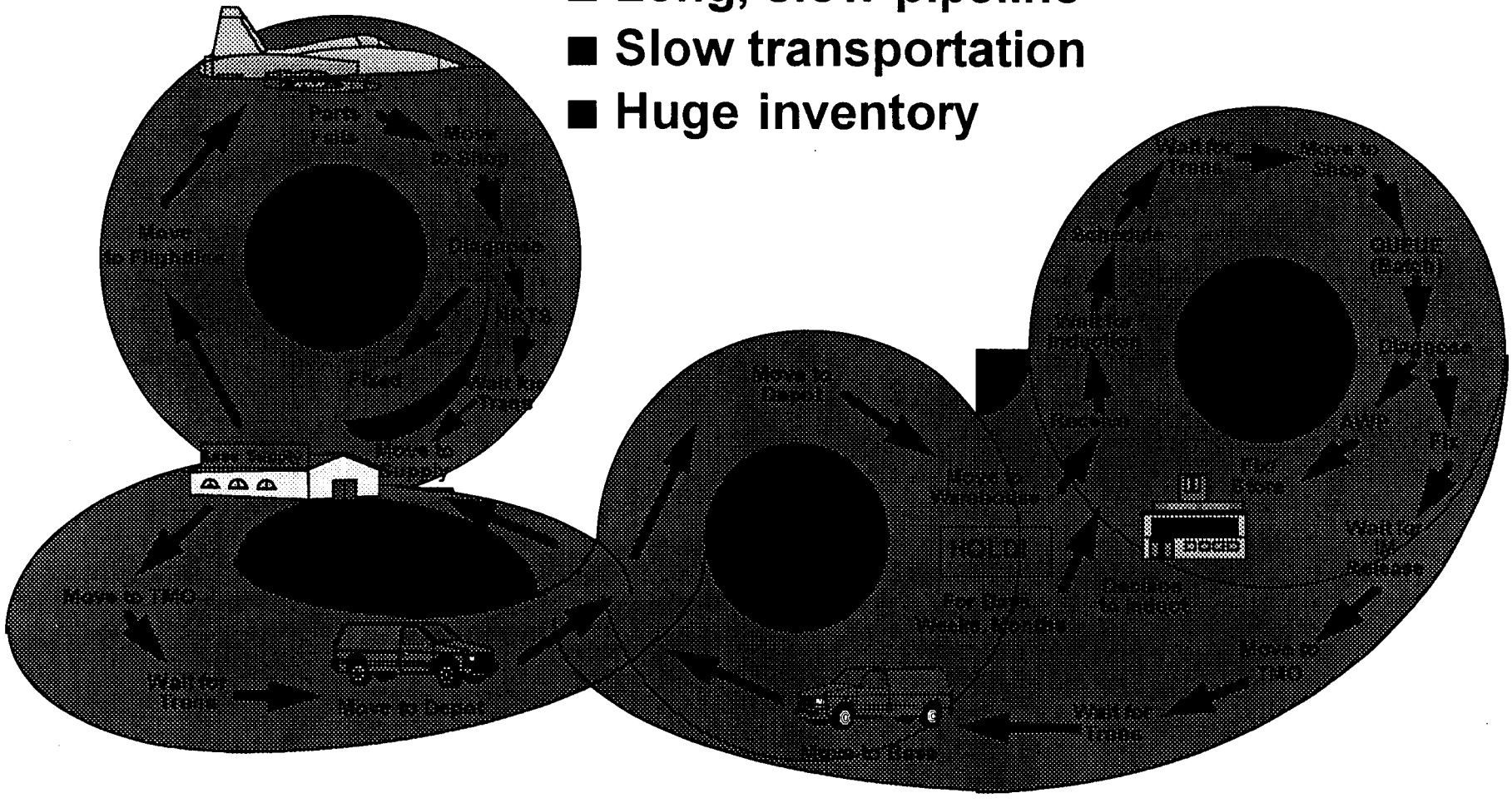
Savings

- 4430 Manpower spaces = $259M POM reduction
- Intermediate equipment reduced
- Mobility footprint reduced

LG41331-6

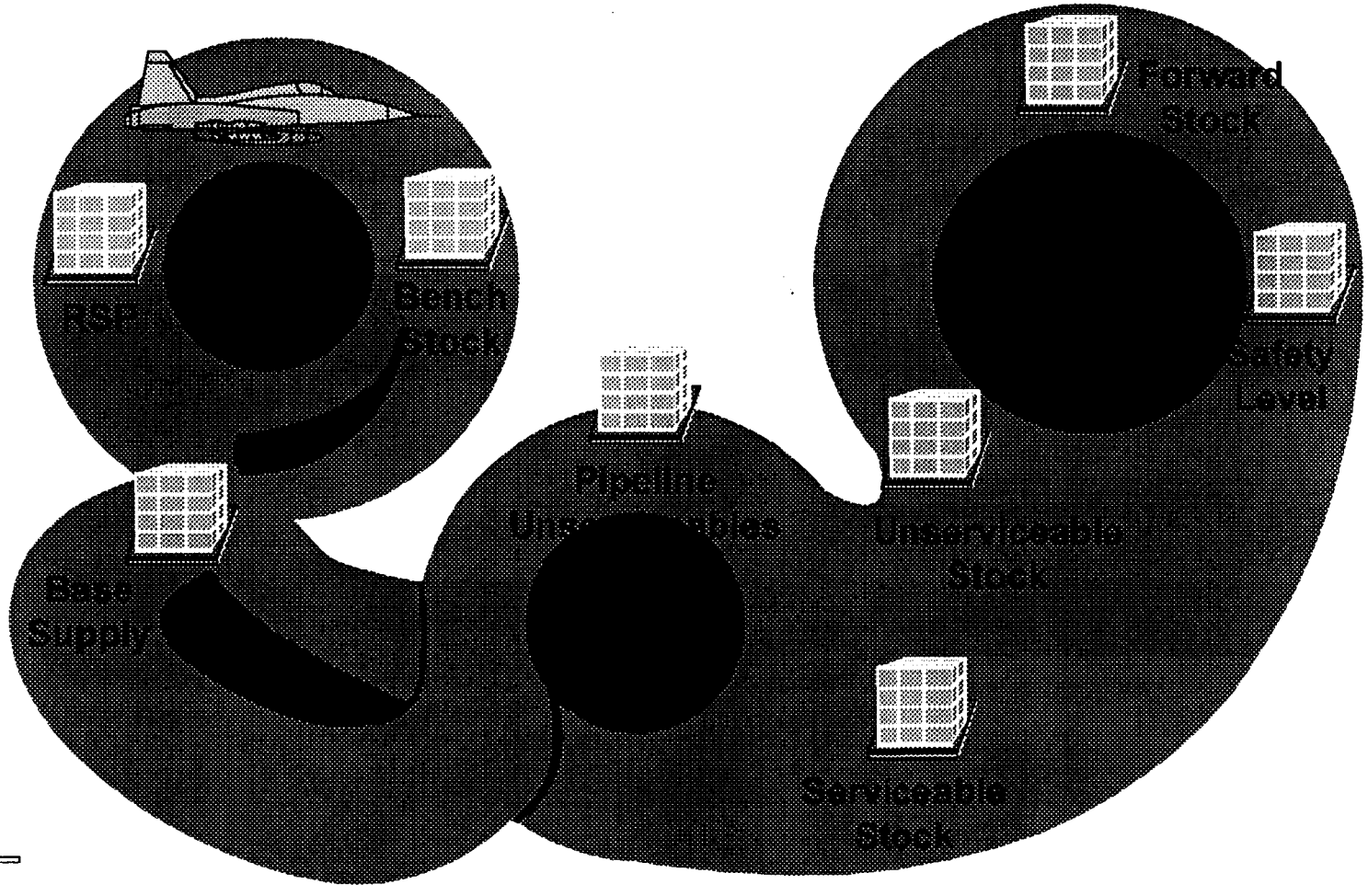
Today's Logistic System

- Long, slow pipeline
- Slow transportation
- Huge inventory



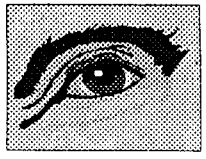
LG41331-10

Today's Logistics Inventory



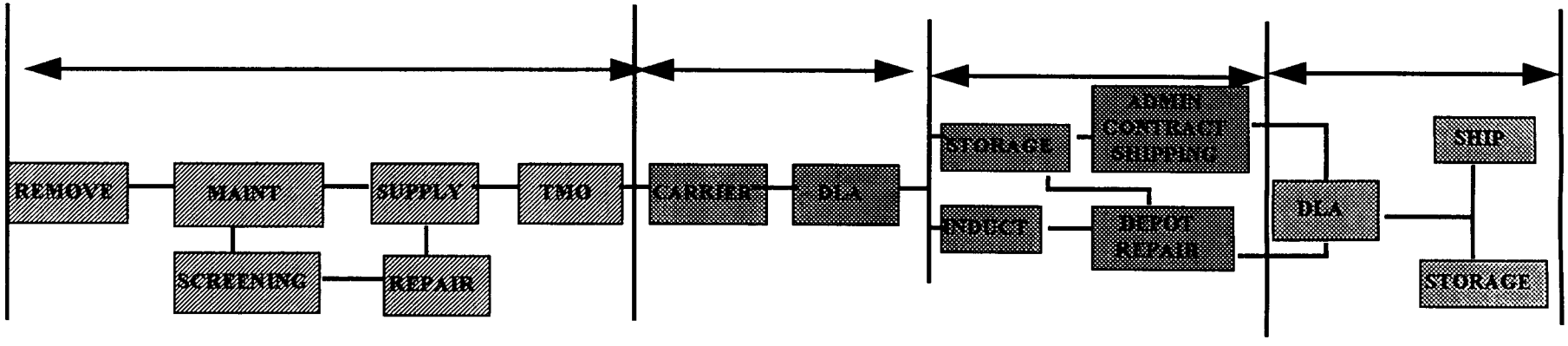
LG41331-11

Baseline Repair Cycle Time



User Visibility

Mar 91 6 Days 16 Days 30 Days 21 Days



73

63

Mar 94 4 Days 14 Days 28 Days 17 Days

- Combined Supply & Trans Functions
- 2LM

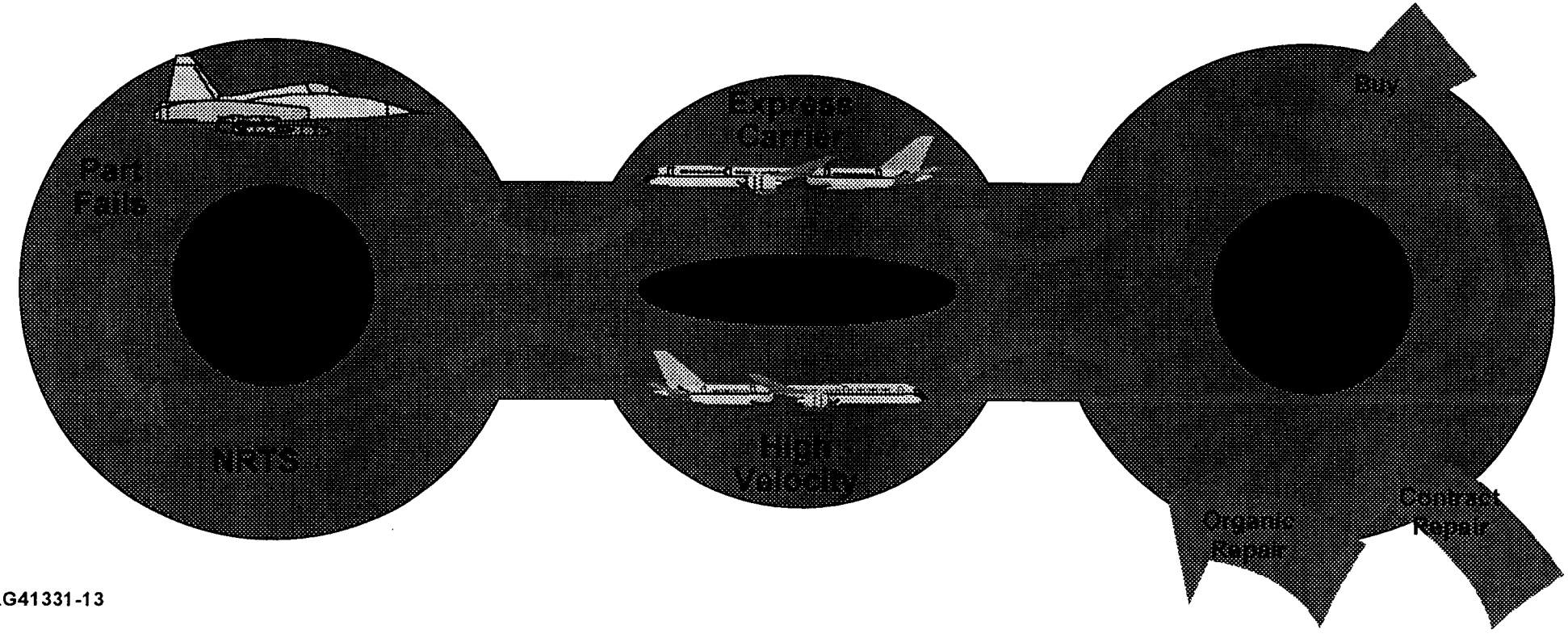
- Express Trans
- DLA "Express Table"

- Direct Induction
- Repair on Demand

LG41331-12

Lean Logistics System

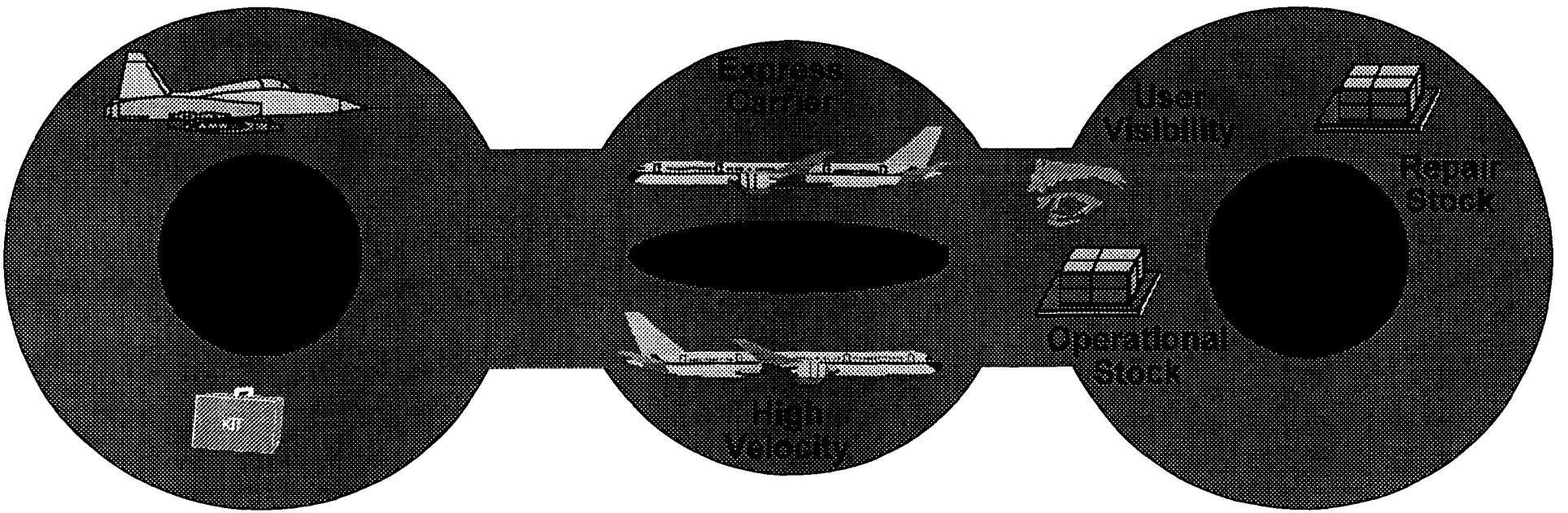
- Short, fast pipeline
- Express transportation
- Right size inventory



LG41331-13

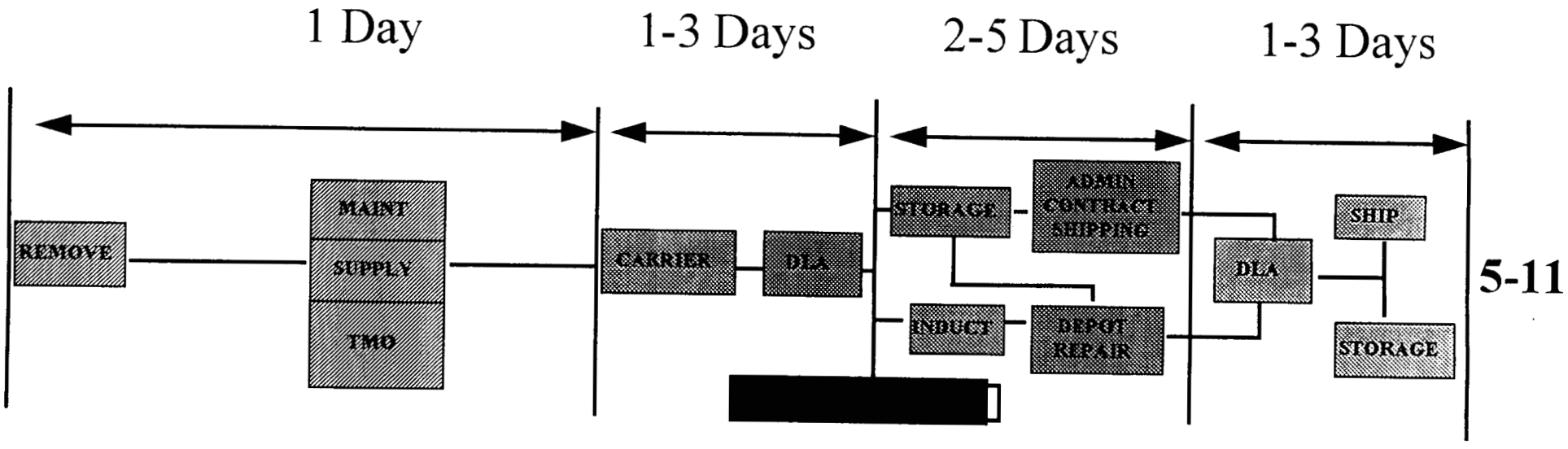
Lean Logistics Inventory

- Right size inventory
- Guaranteed resupply
- Customer directs distribution



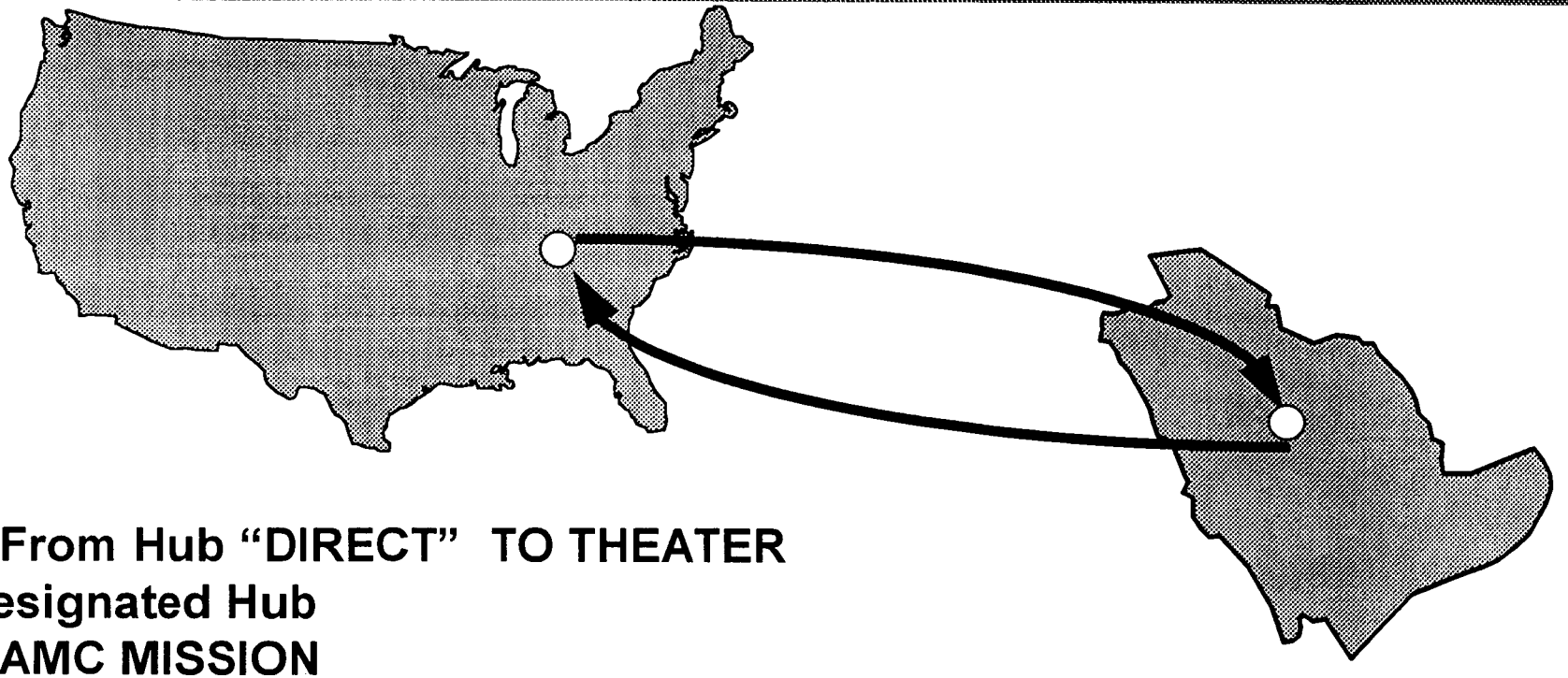
LG41331-14

"Lean" Repair Cycle Time



LG41331-15

AMX



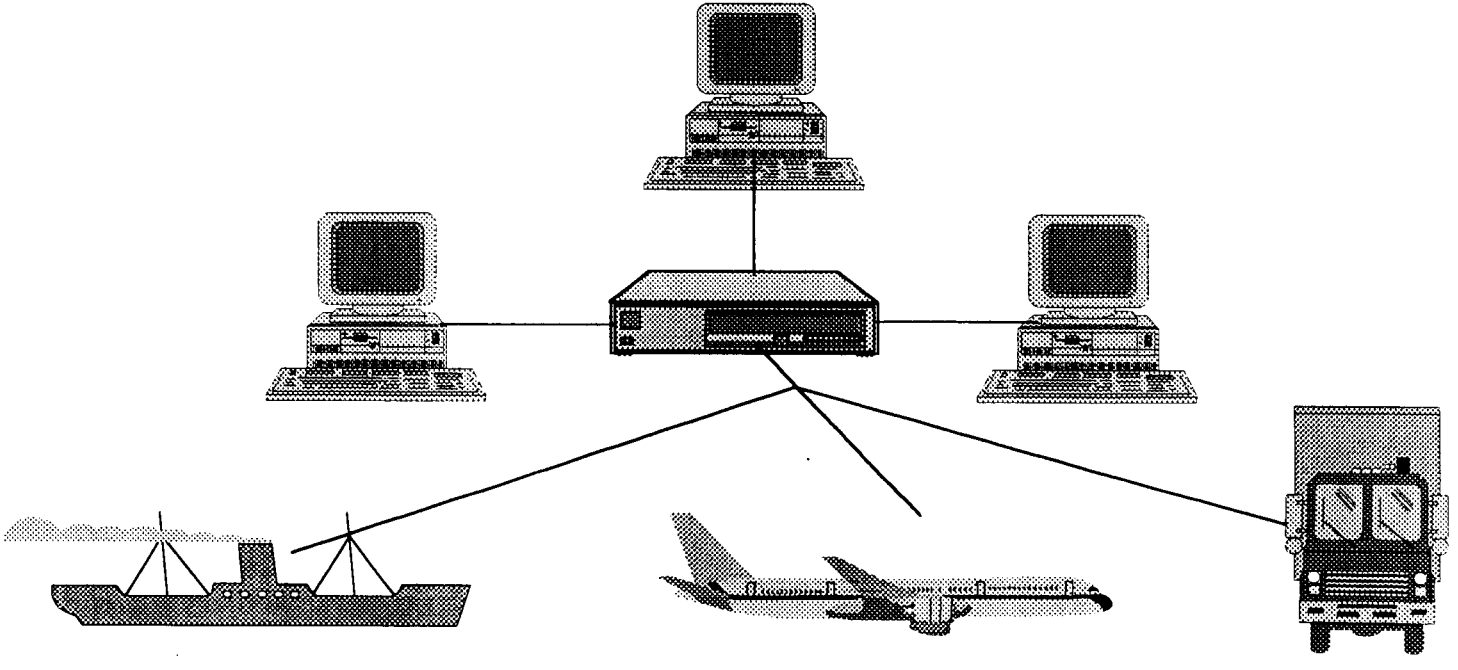
✓From Hub "DIRECT" TO THEATER
Designated Hub
✓AMC MISSION
- ✓Organic Aircraft
- ✓CRAF Aircraft

✓CONSERVATION OF MILITARY CAPABILITY

LG41331-17

Pipeline Visibility (ATAC-AF)

- Gives managers the capability to manage the pipeline
- Uses current data information systems
- Provides visibility of parts moving through the pipeline



LG41331-20

Lean Logistics Initiatives

- Two Level Maintenance
- C-5 LL Demonstration
- Comm-Electronics LL Conversion
- AFMC Shop Conversions
  - Oxygen Systems Shop - OCALC
  - Radar-Navigation Shop - WRALC
  - F-16 Avionics Consolidation - OOALC

Summary

- Cycle Times Are Coming Down
- Some LL Initiatives Are Being Institutionalized
- Near Term Demos Will Hasten The Conversion to LL
- The Master Planning Process Will Insure Resolution of Remaining Issues/Questions
- Lots To Do -- "*We Have Hardly Begun*"

Document Separator

RDT&E PROGRAMS (R-1)

Department of Defense Budget for Fiscal Years 1996 and 1997

February 1995

Preface

The R. D. T. & E. Programs (R-1) exhibit is derived from and consistent with the DoD Future Years Defense Program R. D. T. & E. Annex data base.

The R-1 is provided annually to the DoD oversight committees of the Congress coincident with the transmittal by the President of the Budget of the United States Government. It is accompanied by an automated data base submission to the House Committee on Administration for input to the House Information System. This document is also provided to OASD(PA) for use by non-DoD activities.

Office of the Under Secretary of Defense (Comptroller)

TABLE OF CONTENTS

	PAGE
DoD Component Summary	II & III
Army	
Army Summary	A-I
Army R-1 Detail	A-1 through A-10
Navy	
Navy Summary	N-I
Navy R-1 Detail	N-1 through N-10
Air Force	
Air Force Summary	F-I
Air Force R-1 Detail	F-1 through F-12
Defense Agencies	
Defense Agency Summary	D-I & D-II
Defense Agency R-1 Detail	D-1 through D-8
Director, Test and Evaluation Summary	D - 9
Director, Test and Evaluation R-1 Detail	D-10
Director, Operational Test and Evaluation Summary	D-11
Director, Operational Test and Evaluation R-1 Detail	D-12
Individual Defense Agency R-1 Detail	D-13 through D-31

Department of Defense
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary By Appropriation				
Research Development Test & Eval Army	5,413,470	5,481,413	4,444,175	4,240,968
Research Development Test & Eval Navy	8,191,391	8,694,768	8,204,530	7,716,920
Research Development Test & Eval AF	12,177,830	12,057,417	12,598,439	11,655,554
Research Development Test & Eval Defwide	8,680,495	9,025,453	8,802,881	8,750,162
Director of Test & Eval Defense	231,757	233,142	259,341	267,029
Director of Operational Test & Evaluation	11,450	22,962	22,587	22,978
Total Research, Development, Test & Evaluation	34,706,393	35,515,155	34,331,953	32,653,611

Department of Defense
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Budget Activities				
Basic Research	1,167,211	1,227,021	1,213,918	1,266,784
Exploratory Development	2,690,516	3,069,940	2,816,061	2,956,934
Advanced Development	6,208,230	4,339,424	3,796,157	3,795,610
Demonstration and Validation	2,696,592	4,324,990	4,229,027	4,000,429
Engineering and Manufacturing Development	7,334,269	8,930,372	8,759,104	8,837,435
RDT&E Management Support	3,367,685	3,435,590	3,305,088	3,214,270
Operational Systems Development	11,241,890	10,187,818	10,212,598	8,582,149
Total Research, Development, Test & Evaluation	34,706,393	35,515,155	34,331,953	32,653,611
Summary Recap of FYDP Programs				
Strategic Forces	290,024	146,022	132,336	104,734
General Purpose Forces	3,618,569	3,673,889	3,266,084	2,427,472
Intelligence and Communications	6,731,404	5,953,564	6,363,521	5,622,297
Airlift/Sealift	22,037	23,006	18,096	5,067
Research and Development (FYDP Program 6)	23,424,061	25,478,608	24,377,842	24,333,444
Central Supply and Maintenance	329,298	30,392	23,089	22,497
Training Medical and Other	1,885	1,472	1,139	1,954
Administration and Assoc Activities	6,145	5,655	5,827	5,917
Support of Other Nations	1,869	1,915	3,713	3,762
Special Operations Forces	281,101	200,632	140,306	126,467

ARMY

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Budget Activities				
Basic Research	199,481	223,855	204,620	212,168
Exploratory Development	621,125	633,666	434,097	473,224
Advanced Development	515,889	790,823	487,756	484,343
Demonstration and Validation	540,678	450,722	477,168	487,404
Engineering and Manufacturing Development	1,679,302	1,617,875	1,059,315	1,051,543
RDT&E Management Support	1,227,847	1,193,978	1,172,664	1,046,954
Operational Systems Development	629,148	570,494	608,555	485,332
Total Research Development Test & Eval Army	5,413,470	5,481,413	4,444,175	4,240,968
Summary Recap of FYDP Programs				
General Purpose Forces	380,068	430,959	471,080	375,417
Intelligence and Communications	165,513	81,733	68,689	56,218
Research and Development (FYDP Program 6)	4,825,635	4,968,721	3,904,406	3,809,333
Central Supply and Maintenance	41,884			
Administration and Assoc Activities	370			
Total Research Development Test & Eval Army	5,413,470	5,481,413	4,444,175	4,240,968

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
1	0601101A	In-House Laboratory Independent Research	1	10,778	13,532	14,340	15,028	U
2	0601102A	Defense Research Sciences	1	183,085	201,706	127,565	135,285	U
3	0601104A	University and Industry Research Centers	1	5,618	8,617	62,715	61,855	U
	Basic Research			199,481	223,855	204,620	212,168	
4	0602104A	TRACTOR ROSE	2	5,624	7,488	2,618	2,190	U
5	0602105A	Materials Technology	2	19,370	24,913	10,176	10,872	U
6	0602120A	Sensors and Electronic Survivability	2	33,124	26,973	21,918	23,879	U
7	0602122A	TRACTOR HIP	2	13,699	11,355	5,885	9,563	U
8	0602211A	Aviation Technology	2	34,570	19,962	20,381	26,045	U
9	0602270A	EW Technology	2	20,656	18,122	15,311	14,970	U
10	0602303A	Missile Technology	2	22,674	23,520	17,985	22,607	U
11	0602307A	Laser Weapons Technology	2	4,000	3,945			U
12	0602308A	Modeling and Simulation	2	9,845	58,230	23,770	30,764	U
13	0602601A	Combat Vehicle and Automotive Technology	2	37,933	33,506	39,207	38,288	U
14	0602618A	Ballistics Technology	2	29,478	25,710	28,126	33,995	U
15	0602622A	Chemical, Smoke and Equipment Defeating Technolog	2	39,554	31,646	1,891	1,990	U
16	0602623A	Joint Service Small Arms Program	2	3,393	5,688	5,114	4,839	U
17	0602624A	Weapons and Munitions Technology	2	34,845	36,209	23,968	24,251	U
18	0602705A	Electronics and Electronic Devices	2	22,027	24,004	17,525	17,555	U

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
19	0602709A	Night Vision Technology	2	18,852	19,326	17,086	17,175	U
20	0602716A	Human Factors Engineering Technology	2	15,860	14,265	12,534	15,012	U
21	0602720A	Environmental Quality Technology	2	53,093	45,663	21,304	24,164	U
22	0602727A	Non-System Training Device Technology	2	4,371				U
23	0602782A	Command, Control, Communications Technology	2	10,360	16,827	15,726	16,251	U
24	0602783A	Computer and Software Technology	2	6,340	4,529	3,992	4,342	U
25	0602784A	Military Engineering Technology	2	39,559	40,813	35,220	37,729	U
26	0602785A	Manpower/Personnel/Training Technology	2	13,181	10,031	7,500	10,055	U
27	0602786A	Logistics Technology	2	30,472	34,110	28,036	27,530	U
28	0602787A	Medical Technology	2	94,054	94,063	56,658	56,973	U
29	0602788A	TRACTOR FLOP	2	1,536	412			U
30	0602789A	ARMY Artificial Intelligence Technology	2	2,655	2,356	2,166	2,185	U
	Exploratory Development			621,125	633,666	434,097	473,224	
31	0603001A	Logistics Advanced Technology	3	11,186	14,900	10,569	13,279	U
32	0603002A	Medical Advanced Technology	3	111,666	252,543	11,760	12,099	U
33	0603003A	Aviation Advanced Technology	3	42,693	52,062	48,593	42,987	U
34	0603004A	Weapons and Munitions Advanced Technology	3	26,583	32,122	18,518	20,558	U
35	0603005A	Combat Vehicle and Automotive Advanced Technology	3	39,318	61,346	30,616	32,570	U
36	0603006A	Command, Control, Communications Advanced Technology	3	7,786	16,829	16,922	20,885	U

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
37	0603007A	Manpower, Personnel and Training Advanced Technology	3	8,093	5,100	4,826	4,635	U
38	0603009A	TRACTOR HIKE	3	4,279	5,326	14,588	17,688	U
39	0603012A	TRACTOR HOLE	3	11,463	7,039			U
40	0603013A	TRACTOR DIRT	3	1,857	1,642	1,805	3,434	U
41	0603017A	TRACTOR RED	3	15,377	10,029	5,663	5,278	U
42	0603020A	TRACTOR ROSE	3	6,683	6,354	4,513	3,229	U
43	0603105A	Acquired Immune Deficiency Syndrome (AIDS) Research	3	32,892	30,345	2,946	3,006	U
44	0603122A	TRACTOR HIP	3		4,538			U
45	0603238A	Global Surveillance/Air Defense/Precision Strike Technology Demonstratio	3	20,552	40,198	39,824	39,998	U
46	0603270A	EW Technology	3	32,048	6,743	4,022	6,489	U
47	0603313A	Missile and Rocket Advanced Technology	3	45,053	77,212	123,913	112,429	U
48	0603322A	TRACTOR CAGE	3	9,298	17,261	8,530	8,085	U
49	0603606A	Landmine Warfare and Barrier Advanced Technology	3	9,827	21,612	18,820	15,649	U
50	0603607A	Joint Service Small Arms Program	3	7,405	7,163	4,487	5,381	U
51	0603654A	Line-Of-Sight, Antitank (LOSAT)	3	5,122	4,871	14,727	18,707	U
52	0603710A	Night Vision Advanced Technology	3	33,324	33,177	37,969	37,193	U
53	0603734A	Military Engineering Advanced Technology	3	2,865	12,656	12,380	13,713	U
54	0603759A	Chemical Biological Defense and Smoke Advanced Technology	3	2,591	196			U
55	0603771A	Industrial Preparedness Manufacturing Technology	3		35,335	17,776	17,284	U
56	0603772A	Advanced Tactical Computer Science and Technology	3	27,928	34,224	33,989	29,767	U
	Advanced Development			515,889	790,823	487,756	484,343	

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
57	0603018A	TRACTOR TREAD	4	11,814	20,132	14,930	2,494	U
58	0603019A	TRACTOR DUMP	4	18,647	15,574	15,025	13,931	U
59	0603308A	Army Missile Defense Systems Integration (Dem/Val	4			2,985	2,985	U
60	0603604A	Nuclear Munitions - Adv Dev	4	1,972				U
61	0603617A	Non-Line of Sight (N-LOS)	4	24,630				U
62	0603619A	Landmine Warfare and Barrier - Adv Dev	4	21,148	23,562	32,839	17,044	U
63	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	4	5,068	2,789	3,248	6,567	U
64	0603639A	Armament Enhancement Initiative	4			61,491	64,420	U
65	0603640A	Artillery Propellant Development	4	30,060	25,588	10,946		U
66	0603645A	Armored System Modernization - Adv Dev	4	145,624	172,390	201,513	267,885	U
67	0603647A	TRACTOR DIRT	4	261	410			U
68	0603649A	Engineer Mobility Equipment Advanced Development	4	29,070	15,726	5,615		U
69	0603653A	Advanced Tank Armament System (ATAS)	4		4,940	9,955	9,979	U
70	0603713A	Army Data Distribution System	4	19,356	5,399	6,694	9,787	U
71	0603730A	Tactical Surveillance System - Adv Dev	4	15,140	11,717			U
72	0603745A	Tactical Electronic Support Systems - Adv Dev	4	4,296	1,695	2,937	2,096	U
73	0603746A	Single Channel Ground and Airborne Radio System (SINCGARS) Adv Dev	4	2,461				U
74	0603747A	Soldier Support and Survivability	4	11,720	11,636	33,848	16,481	U
75	0603760A	Distributive Interactive Simulations (DIS) - Advanced Development	4		8,385			U
76	0603766A	Tactical Electronic Surveillance System - Adv Dev	4	15,069	14,815	28,369	26,913	U

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
77	0603774A	Night Vision Systems Advanced Development	4	4,694	2,678	2,960	2,919	U
78	0603801A	Aviation - Adv Dev	4	15,480	16,647	8,430	8,666	U
79	0603802A	Weapons and Munitions - Adv Dev	4	752	1,246			U
80	0603804A	Logistics and Engineer Equipment - Adv Dev	4	13,609	14,664	7,427	7,851	U
81	0603805A	Combat Service Support Computer System Evaluation and Analysis	4	21,525	18,635	13,969	13,581	U
82	0603806A	NBC Defense System-Adv Dev	4	36,131	15,072			U
83	0603807A	Medical Systems - Adv Dev	4	21,480	16,439	10,576	10,571	U
84	0603851A	TRACTOR CAGE (Dem/Val)	4			3,411	3,234	U
85	0603889A	Counterdrug RDT&E Projects	4	1,749				U
86	0604814A	Sense and Destroy Armament Missile - Eng Dev	4	13,600				U
	Demonstration and Validation			540,678	450,722	477,168	487,404	
87	0604018A	TRACTOR TREAD	5				26,369	U
88	0604201A	Aircraft Avionics	5	7,358	14,238	22,044	2,037	U
89	0604220A	Armed, Deployable OH-58D	5			726	1,194	U
90	0604223A	Comanche	5	365,185	488,567	199,103	298,609	U
91	0604270A	EW Development	5	83,070	91,914	65,222	72,379	U
92	0604315A	Tri-Service Standoff Attack Missile	5	38,330	19,421			U
93	0604321A	All Source Analysis System	5	8,417	42,049	52,698	37,428	U
94	0604325A	Advanced Missile System-Heavy	5			995	1,493	U

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
95	0604328A	TRACTOR CAGE	5				1,617	U
96	0604604A	Medium Tactical Vehicles	5	8,736	6,452			U
97	0604609A	Smoke, Obscurant and Target Defeating Sys-Eng Dev	5	17,140	3,703	2,000		U
98	0604611A	JAVELIN	5	47,205	34,268			U
99	0604619A	Landmine Warfare	5	23,272	33,356	31,028	18,253	U
100	0604622A	Heavy Tactical Vehicles	5	2,437				U
101	0604633A	Air Traffic Control	5	1,965	7,766	1,813	1,838	U
102	0604640A	Advanced Command and Control Vehicle (AC2V)	5	10,525	31,676	18,238	6,866	U
103	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	5				2,985	U
104	0604642A	Light Tactical Wheeled Vehicles	5			2,187	896	U
105	0604645A	Armored Systems Modernization (ASM)-Eng. Dev.	5	89,489	62,267	38,465	20,744	U
106	0604649A	Engineer Mobility Equipment Development	5	16,240	12,106	21,831	14,384	U
107	0604710A	Night Vision Systems - Eng Dev	5	41,328	42,803	39,697	39,295	U
108	0604713A	Combat Feeding, Clothing, and Equipment	5	27,008	24,719	17,959	67,971	U
109	0604715A	Non-System Training Devices - Eng Dev	5	57,004	47,029	55,303	53,343	U
110	0604716A	Terrain Information - Eng Dev	5	9,375	10,213	9,011	7,630	U
111	0604726A	Integrated Meteorological Support System	5	936				U
112	0604740A	Tactical Surveillance System - Eng Dev	5	37,534	2,093			U
113	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	5	17,526	28,136	22,030	21,143	U
114	0604746A	Automatic Test Equipment Development	5	19,926	15,512	5,437	2,878	U

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
115	0604760A	Distributive Interactive Simulations (DIS) - Engineering Development	5		6,412			U
116	0604766A	Tactical Electronic Surveillance System - Eng Dev	5	47,470	28,065	24,699	15,302	U
117	0604768A	TRACTOR BAT	5	121,894	117,526	193,303	185,974	U
118	0604770A	Joint Surveillance/Target Attack Radar System	5	29,415	39,655	18,771	7,884	U
119	0604778A	Positioning Systems Development	5	4,455	3,797	460	449	U
120	0604780A	Combined Arms Tactical Trainer (CATT)	5	50,801	51,375	59,475	20,669	U
121	0604801A	Aviation - Eng Dev	5	8,221	4,650	5,142	6,899	U
122	0604802A	Weapons and Munitions - Eng Dev	5	20,865	16,900	15,928	14,607	U
123	0604804A	Logistics and Engineer Equipment - Eng Dev	5	22,397	21,970	20,756	19,150	U
124	0604805A	Command, Control, Communications Systems - Eng De	5	8,971	11,237	13,432	13,842	U
125	0604806A	NBC Defense System-Eng Dev	5	42,455	19,510			U
126	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	5	15,665	12,389	4,738	4,961	U
127	0604808A	Landmine Warfare/Barrier - Eng Dev	5	2,912	7,689	7,382	20,429	U
128	0604814A	Sense and Destroy Armament Missile - Eng Dev	5	28,408	41,395	16,617	3,626	U
129	0604816A	LONGBOW - Eng Dev	5	271,103	169,048	23,590	4,080	U
130	0604817A	Non-Cooperative Target Recognition - Eng Dev	5	33,627	18,424	30,466	17,359	U
131	0604818A	Army Tactical Command & Control Systems (ATCCS) Eng Dev	5	23,976	18,694	18,769	16,960	U
132	0604820A	Radar Development	5	16,661	10,851			U
		Engineering and Manufacturing Development		1,679,302	1,617,875	1,059,315	1,051,543	

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
133	0604256A	Threat Simulator Development	6	19,643	19,866	14,397	12,870	U
134	0604258A	Target Systems Development	6	16,936	13,929	14,292	11,393	U
135	0604759A	Major T&E Investment	6	31,803	49,853	66,874	44,122	U
136	0605103A	Rand Arroyo Center	6	17,252	15,838	21,872	22,355	U
137	0605104A	Los Alamos Meson Physics Facility	6	14,767	19,729			U
138	0605301A	Army Kwajalein Atoll	6	168,832	162,174	149,769	143,798	U
139	0605502A	Small Business Innovative Research	6	68,830				U
140	0605601A	Army Test Ranges and Facilities	6	144,783	154,529	147,330	146,464	U
141	0605602A	Army Technical Test Instrumentation and Targets	6	23,396	31,545	27,600	23,980	U
142	0605604A	Survivability/Lethality Analysis	6	31,907	37,523	34,535	33,695	U
143	0605605A	DOD High Energy Laser Test Facility	6	24,471	24,474	3,000		U
144	0605606A	Aircraft Certification	6			2,976	2,984	U
145	0605702A	Meteorological Support to RDT&E Activities	6	17,552	12,379	6,660	6,486	U
146	0605706A	Materiel Systems Analysis	6	19,376	18,971	17,864	14,434	U
147	0605709A	Exploitation of Foreign Items	6	18,471	11,867	8,869	7,541	U
148	0605710A	Joint Nuclear Biological Chemical Test, Assessment and Survivabilit	6	7,048	4,714			U
149	0605712A	Support of Operational Testing	6	51,592	31,637	46,491	50,110	U
150	0605801A	Programwide Activities	6	97,374	95,614	63,649	55,365	U
151	0605802A	International Cooperative Research and Developmen	6	1,700	1,615	1,606	1,609	U
152	0605803A	Technical Information Activities	6	11,672	12,994	16,401	17,072	U

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
153	0605805A	Munitions Standardization, Effectiveness and Safety	6	23,611	14,306	6,903	1,908	U
154	0605810A	RDT&E Support for Nondevelopmental Items	6	5,561	3,482			U
155	0605853A	Environmental Conservation	6			2,533	1,649	U
156	0605854A	Pollution Prevention	6			13,005	8,807	U
157	0605856A	Environmental Compliance	6	46,219	50,987	66,101	48,876	U
158	0605876A	Minor Construction (RPM) - RDT&E	6	2,093	5,709	5,497	4,407	U
159	0605878A	Maintenance and Repair (RPM) - RDT&E	6	62,729	81,060	95,696	65,530	U
160	0605896A	Base Operations - RDT&E	6	275,768	295,691	329,978	312,953	U
161	0605898A	Management Headquarters (Research and Development	6	24,091	23,492	8,766	8,546	U
162	0909999A	Financing for Cancelled Account Adjustments	6	370				U
	RDT&E Management Support			1,227,847	1,193,978	1,172,664	1,046,954	
163	0603778A	MLRS Product Improvement Program	7	41,683	57,802	68,786	53,697	U
164	0203726A	Adv Field Artillery Tactical Data System	7	43,162	48,080	39,422	38,785	U
165	0203735A	Combat Vehicle Improvement Programs	7	107,856	109,778	197,669	170,427	U
166	0203740A	Maneuver Control System	7	28,664	37,158	38,327	33,991	U
167	0203744A	Aircraft Modifications/Product Improvement Programs	7	9,500	5,072	2,326	199	U
168	0203752A	Aircraft Engine Component Improvement Program	7	6,461	7,435	3,012	3,025	U
169	0203758A	Digitization	7	19,690	82,727	88,567	80,631	U
170	0203801A	Missile/Air Defense Product Improvement Program	7	66,430	37,119	17,069	16,392	U

Department of the Army
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
171	0203802A	Other Missile Product Improvement Programs	7	66,986	67,365	57,949	6,348	U
172	0203806A	TRACTOR RIG	7	4,186	2,650	3,215	3,265	U
173	0203808A	TRACTOR CARD	7	10,942	14,369	10,156	7,122	U
174	0208010A	Joint Tactical Communications Program (TRI-TAC)	7	16,191	19,206	13,368	15,232	U
175	0301359A	Special Army Program	7	8,168	6,866	8,690	12,349	U
176	0303140A	Information Systems Security Program	7	6,950	7,585	3,644	3,247	U
177	0303142A	SATCOM Ground Environment	7	133,757	67,282	56,355	40,622	U
178	0303152A	World-Wide Military Command and Control Systems, Information System	7	8,513				U
179	0305127A	Foreign Counterintelligence Activities	7	485				U
180	0305150A	Air Reconnaissance Low	7	7,640				U
181	0708045A	End Item Industrial Preparedness Activities	7	41,884				U
		Operational Systems Development		629,148	570,494	608,555	485,332	
Total		Research Development Test & Eval Army		5,413,470	5,481,413	4,444,175	4,240,968	

NAVY

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Budget Activities				
Basic Research	402,466	417,974	402,001	418,851
Exploratory Development	445,642	511,310	478,770	518,268
Advanced Development	418,109	539,137	500,255	533,302
Demonstration and Validation	1,689,159	1,526,638	1,587,397	1,738,171
Engineering and Manufacturing Development	1,710,724	2,290,127	2,379,735	2,208,505
RDT&E Management Support	758,961	751,488	587,940	583,303
Operational Systems Development	2,766,330	2,658,094	2,268,432	1,716,520
Total Research Development Test & Eval Navy	8,191,391	8,694,768	8,204,530	7,716,920
Summary Recap of FYDP Programs				
Strategic Forces	122,251	137,416	93,694	86,415
General Purpose Forces	1,988,075	1,902,086	1,552,322	1,049,717
Intelligence and Communications	515,375	618,592	622,416	580,388
Research and Development (FYDP Program 6)	5,425,061	6,036,674	5,936,098	6,000,400
Central Supply and Maintenance	140,629			
Total Research Development Test & Eval Navy	8,191,391	8,694,768	8,204,530	7,716,920

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
1	0601152N	In-House Independent Laboratory Research	1	16,798	17,088	16,084	17,152	U
2	0601153N	Defense Research Sciences	1	385,668	400,886	385,917	401,699	U
	Basic Research			402,466	417,974	402,001	418,851	
3	0602111N	Surface/Aerospace Surveillance and Weapons Technology	2	32,158	36,388	32,658	35,387	U
4	0602121N	Surface Ship Technology	2	30,700	35,059	36,786	42,430	U
5	0602122N	Aircraft Technology	2	21,690	28,622	22,238	26,328	U
6	0602131M	Marine Corps Landing Force Technology	2	17,005	16,774	17,623	18,040	U
7	0602232N	Command, Control, and Communications Technology	2	50,471	60,546	60,090	65,540	U
8	0602233N	Readiness, Training, and Environmental Quality Technology	2	41,038	50,089	40,511	42,122	U
9	0602234N	Materials, Electronics and Computer Technology	2	77,723	93,623	74,849	86,515	U
10	0602270N	Electronic Warfare Technology	2	14,637	17,176	18,341	20,836	U
11	0602314N	Undersea Surveillance Weapon Technology	2	53,953	49,648	51,182	53,966	U
12	0602315N	Mine Countermeasures, Mining and Special Warfare	2	23,347	37,475	43,384	44,303	U
13	0602435N	Oceanographic and Atmospheric Technology	2	43,854	53,304	45,526	47,280	U
14	0602633N	Undersea Warfare Weaponry Technology	2	39,066	32,606	35,582	35,521	U
	Exploratory Development			445,642	511,310	478,770	518,268	
15	0603217N	Air Systems and Weapons Advanced Technology	3	37,270	26,097	17,082	24,377	U
16	0603238N	Precision Strike and Air Defense	3	32,329	36,932	64,502	67,423	U
17	0603270N	Advanced Electronic Warfare Technology	3	12,617	14,468	14,532	16,844	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
18	0603508N	Ship Propulsion System	3	18,532	60,266	43,544	52,010	U
19	0603640M	Marine Corps Advanced Technology Demonstration (ATD)	3	26,944	24,333	25,896	26,738	U
20	0603706N	Medical Development	3	54,529	56,620	27,754	18,166	U
21	0603707N	Manpower, Personnel and Training Adv Tech Dev	3	16,997	18,493	17,797	20,048	U
22	0603712N	Environmental Quality and Logistics Advanced Technology	3	15,186	22,010	21,504	22,474	U
23	0603747N	Undersea Warfare Advanced Technology	3	71,362	61,301	51,816	57,525	U
24	0603771N	Industrial Preparedness Manufacturing Technology	3		86,118	41,251	37,609	U
25	0603782N	Shallow Water MCM Demos	3	43,739	40,989	50,958	50,958	U
26	0603792N	Advanced Technology Transition	3	85,894	71,668	96,825	108,423	U
27	0603794N	C3 Advanced Technology	3	2,710	19,842	26,794	30,707	U
	Advanced Development			418,109	539,137	500,255	533,302	
28	0603207N	Air/Ocean Tactical Applications	4	16,031	16,512	16,621	16,523	U
29	0603208N	Training System Aircraft	4	31,821	4,010	3,069	4,005	U
30	0603216N	Aviation Survivability	4	21,068	15,892	7,477	8,166	U
31	0603254N	ASW Systems Development	4	34,512	29,646	30,202	30,762	U
32	0603261N	Tactical Airborne Reconnaissance	4	32,540	45,840	18,924	17,737	U
33	0603382N	Advanced Combat Systems Technology	4		3,342	2,803	4,254	U
34	0603451N	Tactical Space Operations	4		2,177	1,383	1,326	U
35	0603502N	Surface and Shallow Water Mine Countermeasures	4	44,741	42,173	54,527	53,424	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
36	0603504N	Advanced Submarine Combat Systems Development	4	22,608	22,990	21,281	20,610	U
37	0603506N	Surface Ship Torpedo Defense	4	33,910	20,460	10,049	7,758	U
38	0603512N	Carrier Systems Development	4	11,061	15,193	16,164	16,082	U
39	0603513N	Shipboard System Component Development	4	27,485	25,930	16,804	13,723	U
40	0603514N	Ship Combat Survivability	4	17,121	14,443	11,649	10,027	U
41	0603525N	PILOT FISH	4	26,290	33,722	78,960	96,753	U
42	0603536N	RETRACT JUNIPER	4	32,195	19,650	10,002	23,100	U
43	0603542N	Radiological Control	4	3,254	3,442	3,202	3,060	U
44	0603553N	Surface ASW	4		6,572	6,655	5,972	U
45	0603561N	Advanced Submarine System Development	4	140,424	81,394	35,748	31,602	U
46	0603562N	Submarine Tactical Warfare Systems	4	6,314	7,321	5,070	4,386	U
47	0603563N	Ship Concept Advanced Design	4	14,243	28,806	16,736	15,511	U
48	0603564N	Ship Preliminary Design & Feasibility Studies	4	34,533	31,119	9,708	8,313	U
49	0603570N	Advanced Nuclear Power Systems	4	136,537	126,185	141,835	136,004	U
50	0603573N	Advanced Surface Machinery Systems	4	81,954	37,950	39,156	34,699	U
51	0603576N	CHALK EAGLE	4	69,465	57,825	114,175	154,299	U
52	0603582N	Combat System Integration	4	7,437	7,380	5,414	7,180	U
53	0603609N	Conventional Munitions	4	37,401	40,965	31,537	32,304	U
54	0603610N	Advanced Warhead Development (MK-50)	4	15,821		2,993	2,996	U
55	0603611M	Marine Corps Assault Vehicles	4	21,192	34,499	34,157	33,170	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
56	0603612M	Marine Corps Mine/Countermeasures Systems - Adv Dev	4	645	6,434	2,470	3,185	U
57	0603634N	Electromagnetic Effects Protection Development	4	2,443				U
58	0603635M	Marine Corps Ground Combat/Support System	4	24,271	23,168	46,733	51,417	U
59	0603654N	Joint Service Explosive Ordnance Development	4	8,981	8,362	7,298	7,020	U
60	0603709N	Advanced Marine Biological System	4	3,387	3,478			U
61	0603711N	Fleet Tactical Development	4	4,464	4,573	4,268	3,505	U
62	0603713N	Ocean Engineering Technology Development	4	11,672	13,747	5,166	5,267	U
63	0603721N	Environmental Protection	4	52,853	49,239	65,947	55,311	U
64	0603724N	Navy Energy Program	4	4,282	9,028	1,976	2,019	U
65	0603725N	Facilities Improvement	4	1,368	2,493	1,803	893	U
66	0603734N	CHALK CORAL	4	71,162	67,216	71,085	71,199	U
67	0603746N	RETRACT MAPLE	4	95,376	99,186	82,932	100,994	U
68	0603748N	LINK PLUMERIA	4	39,083	29,028	17,879	32,611	U
69	0603751N	RETRACT ELM	4	57,149	36,826	32,561	27,671	U
70	0603755N	Ship Self Defense	4	279,999	217,467	245,620	249,806	U
71	0603763N	Warfare Systems Architecture and Engineering	4	4,196	6,724			U
72	0603785N	Combat Systems Oceanographic Performance Assessment	4	19,594	19,637	16,042	15,411	U
73	0603787N	Special Processes	4	29,114	32,301	72,251	85,544	U
74	0603795N	Gun Weapon System Technology	4	25,200	19,075	12,028	27,601	U
75	0603800N	Joint Advanced Strike Technology - Dem/Val	4	29,663	98,272	149,295	199,305	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
76	0604707N	Space and Electronic Warfare (SEW) Architecture/ Engineering Support	4	4,299	4,946	5,742	5,666	U
	Demonstration and Validation			1,689,159	1,526,638	1,587,397	1,738,171	
77	0603889N	Counterdrug RDT&E Projects	5	1,907				U
78	0604212N	ASW and Other Helo Development	5	80,091	88,296	91,803	93,146	U
79	0604214N	AV-8B Aircraft - Eng Dev	5	12,831	10,617	11,309	6,362	U
80	0604215N	Standards Development	5	13,366	15,332	10,567	23,011	U
81	0604217N	S-3 Weapon System Improvement	5	4,087	13,586	12,872	5,404	U
82	0604218N	Air/Ocean Equipment Engineering	5	4,926	5,374	6,182	6,426	U
83	0604221N	P-3 Modernization Program	5	5,055	4,995	1,945	2,801	U
84	0604231N	Tactical Command System	5	30,825	34,688	27,389	27,030	U
85	0604261N	Acoustic Search Sensors	5	28,915	18,416	9,680	10,286	U
86	0604262N	V-22A	5	9,793	452,721	762,548	580,929	U
87	0604264N	Air Crew Systems Development	5	14,512	13,994	9,788	14,915	U
88	0604265N	Air Launched Saturation System (ALSS)	5	1,930				U
89	0604270N	EW Development	5	113,286	101,927	87,440	112,512	U
90	0604301N	MK 92 Fire Control System Upgrade	5	1,051	1,711			U
91	0604307N	AEGIS Combat System Engineering	5	102,632	90,907	105,683	98,360	U
92	0604312N	Tri-Service Standoff Attack Missile	5	74,584	65,660			U
93	0604366N	Standard Missile Improvements	5	62,272	16,796	8,572	1,980	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
94	0604372N	New Threat Upgrade	5	1,610	1,316			U
95	0604373N	Airborne MCM	5	31,169	19,752	42,226	49,869	U
96	0604503N	SSN-688 and Trident Modernization	5	56,330	40,507	70,315	79,537	U
97	0604504N	Air Control	5	9,809	7,845	7,815	8,859	U
98	0604507N	Enhanced Modular Signal Processor	5	13,173	11,541	8,342	5,294	U
99	0604512N	Shipboard Aviation Systems	5	1,388	1,521	11,343	9,647	U
100	0604516N	Ship Survivability	5	10,168	8,484	4,907	4,284	U
101	0604518N	Combat Information Center Conversion	5	11,359	13,321	15,859	10,524	U
102	0604524N	Submarine Combat System	5	84,547	84,681	43,302	16,461	U
103	0604558N	New Design SSN	5	236,458	228,839	347,415	415,017	U
104	0604561N	SSN-21 Developments	5	73,742	65,161	83,503	97,805	U
105	0604562N	Submarine Tactical Warfare System	5	33,846	24,330	38,479	32,070	U
106	0604567N	Ship Contract Design/ Live Fire T&E	5	41,818	155,790	17,994	15,094	U
107	0604574N	Navy Tactical Computer Resources	5	14,867	18,164	5,499	8,256	U
108	0604601N	Mine Development	5	5,581	3,161	3,045	2,762	U
109	0604603N	Unguided Conventional Air-Launched Weapons	5	27,584	77,376	40,517	35,729	U
110	0604610N	Lightweight Torpedo Development	5	8,899	10,876	22,027	16,688	U
111	0604612M	Marine Corps Mine Countermeasures Systems - Eng Dev	5	2,659	420	263	2,914	U
112	0604618N	Joint Direct Attack Munition	5	8,394	25,860	37,832	36,576	U
113	0604654N	Joint Service Explosive Ordnance Development	5	6,196	6,242	5,408	5,221	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
114	0604703N	Personnel, Training, Simulation, and Human Factor	5	1,057	1,117	1,043	1,040	U
115	0604710N	Navy Energy Program	5	3,100	3,156	2,628	2,557	U
116	0604719M	Marine Corps Command/Control/Communications Systems	5	21,156	10,250	15,380	12,275	U
117	0604721N	Battle Group Passive Horizon Extension System	5	24,035	18,078	7,600	4,995	U
118	0604727N	Joint Standoff Weapon Systems	5	83,354	115,998	81,837	89,344	U
119	0604755N	Ship Self Defense	5	132,569	221,649	165,997	156,932	U
120	0604761N	Intelligence Engineering	5	341	3,941			U
121	0604771N	Medical Development	5	3,731	1,681	3,402	3,236	U
122	0604777N	Navigation/ID System	5	75,966	67,120	56,472	61,847	U
123	0604784N	Distributed Surveillance System	5	123,755	106,930	93,507	40,510	U
	Engineering and Manufacturing Development			1,710,724	2,290,127	2,379,735	2,208,505	
124	0604256N	Threat Simulator Development	6	29,435	27,612	25,911	27,037	U
125	0604258N	Target Systems Development	6	29,560	26,516	24,364	26,429	U
126	0604759N	Major T&E Investment	6	51,862	51,810	46,586	43,968	U
127	0605152N	Studies and Analysis Support - Navy	6	3,514	5,613	9,281	9,443	U
128	0605154N	Center for Naval Analyses	6	43,260	43,348	44,429	44,505	U
129	0605155N	Fleet Tactical Development	6	4,296	4,332	2,620	3,128	U
130	0605502N	Small Business Innovative Research	6	78,040	112,754			U
131	0605804N	Technical Information Services	6	14,330	4,698	2,027	1,946	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
132	0605853N	Management, Technical & International Support	6	7,787	9,291	20,371	19,063	U
133	0605856N	Strategic Technical Support	6	3,610	2,221	3,584	3,621	U
134	0605861N	RDT&E Science and Technology Management	6	63,776	62,743	61,001	59,571	U
135	0605862N	RDT&E Instrumentation Modernization	6	41,978	8,591	8,278	8,089	U
136	0605863N	RDT&E Ship and Aircraft Support	6	74,724	80,524	63,232	66,210	U
137	0605864N	Test and Evaluation Support	6	275,815	282,115	245,911	236,824	U
138	0605865N	Operational Test and Evaluation Capability	6	8,190	8,477	5,675	6,403	U
139	0605866N	Navy Space and Electronic Warfare (SEW) Support	6	4,006	3,321	3,638	3,647	U
140	0605867N	SEW Surveillance/Reconaissance Support	6	13,473	11,541	12,134	12,341	U
141	0605871M	Marine Corps Tactical Exploitation of National Capabilities	6	4,809	758	2,984	3,063	U
142	0605873M	Marine Corps Program Wide Support	6	6,496	5,223	5,914	8,015	U
	RDT&E Management Support			758,961	751,488	587,940	583,303	
143	0101221N	Strategic Sub & Weapons System Support	7	30,311	28,811	39,511	47,076	U
144	0101224N	SSBN Security Technology Program	7	44,388	34,200	25,078	27,732	U
145	0101226N	Submarine Acoustic Warfare Development	7	16,529	535	7,937	10,883	U
146	0101402N	Navy Strategic Communications	7	30,325	73,065	20,416		U
147	0102427N	Naval Space Surveillance	7	698	805	752	724	U
148	0204136N	F/A-18 Squadrons	7	1,454,087	1,312,575	919,484	366,290	U
149	0204152N	E-2 Squadrons	7	18,081	51,279	52,965	71,338	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 1994	FY 1995	FY 1996	FY 1997	Sec
150	0204163N	Fleet Telecommunications (Tactical)	7	32,582	35,931	24,032	20,815	U
151	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	7	43,563	83,963	141,440	182,276	U
152	0204311N	Integrated Surveillance System	7	73,222	41,404	16,440	17,557	U
153	0204413N	Amphibious Tactical Support Units	7	2,929	4,272	4,364	2,022	U
154	0204571N	Consolidated Training Systems Development	7	38,114	58,139	48,058	38,466	U
155	0205601N	HARM Improvement	7			3,348	4,226	U
156	0205604N	Tactical Data Links	7	38,991	31,310	54,869	47,811	U
157	0205620N	Surface ASW Combat System Integration	7	22,710	15,679	9,955	6,051	U
158	0205632N	MK-48 ADCAP	7	26,669	26,954	22,214	13,824	U
159	0205633N	Aviation Improvements	7	72,423	63,294	66,875	61,858	U
160	0205658N	Navy Science Assistance Program	7	6,593	7,071	6,036	5,737	U
161	0205667N	F-14 Upgrade	7	15,004	40,646	44,490	37,125	U
162	0205675N	Operational Nuclear Power Systems	7	57,736	58,668	58,065	57,576	U
163	0206313M	Marine Corps Communications Systems	7	4,670	6,821	3,250	5,447	U
164	0206623M	Marine Corps Ground Combat/Supporting Arms System	7	22,224	21,118	13,386	12,432	U
165	0206624M	Marine Corps Combat Services Support	7	1,805	2,328	3,915	6,153	U
166	0206625M	Marine Corps Intelligence/Electronics Warfare Systems	7	18,114	8,183	5,131	4,961	U
167	0206626M	Marine Corps Command/Control/Communications Systems	7	38,558	16,803	19,793	22,533	U
168	0207161N	Tactical AIM Missiles	7			29,721	60,304	U
169	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	7		15,648	4,491	4,915	U

Department of the Navy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
170	0301327N	Technical Reconnaissance and Surveillance	7					U
171	0303109N	Satellite Communications	7	51,199	43,345	38,472	37,931	U
172	0303140N	Information Systems Security Program	7	21,136	18,514	25,848	29,521	U
173	0304111N	Special Activities	7					U
174	0305160N	Defense Meteorological Satellite Program (DMSP)	7	13,371	13,524	18,416	1,231	U
175	0708011N	Industrial Preparedness	7	140,629				U
	Operational Systems Development			2,766,330	2,658,094	2,268,432	1,716,520	
Total	Research Development Test & Eval Navy			8,191,391	8,694,768	8,204,530	7,716,920	

AIR FORCE

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Budget Activities				
Basic Research	225,478	239,666	239,893	247,194
Exploratory Development	601,135	693,039	671,738	657,951
Advanced Development	470,003	565,686	494,714	486,175
Demonstration and Validation	235,340	420,117	431,391	527,629
Engineering and Manufacturing Development	3,896,329	4,571,484	4,640,696	4,379,472
RDT&E Management Support	924,445	796,747	846,379	846,151
Operational Systems Development	5,825,100	4,770,678	5,273,628	4,510,982
Total Research Development Test & Eval AF	12,177,830	12,057,417	12,598,439	11,655,554
Summary Recap of FYDP Programs				
Strategic Forces	167,773	8,606	38,642	18,319
General Purpose Forces	1,215,071	1,307,169	1,217,144	977,369
Intelligence and Communications	4,285,755	3,274,946	3,741,055	3,208,963
Airlift/Sealift	22,037	23,006	18,096	5,067
Research and Development (FYDP Program 6)	6,352,730	7,404,256	7,549,734	7,411,706
Central Supply and Maintenance	124,935	30,392	23,089	22,497
Training Medical and Other	1,885	1,472	1,139	1,954
Administration and Assoc Activities	5,775	5,655	5,827	5,917
Support of Other Nations	1,869	1,915	3,713	3,762
Total Research Development Test & Eval AF	12,177,830	12,057,417	12,598,439	11,655,554

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
1	0601101F	In-House Laboratory Independent Research	1	716				U
2	0601102F	Defense Research Sciences	1	224,762	239,666	239,893	247,194	U
	Basic Research			225,478	239,666	239,893	247,194	
3	0602101F	Geophysics	2	35,064				U
4	0602102F	Materials	2	69,366	68,779	74,534	73,321	U
5	0602201F	Aerospace Flight Dynamics	2	59,033	59,715	66,268	64,254	U
6	0602202F	Human Systems Technology	2	47,001	47,156	90,311	87,841	U
7	0602203F	Aerospace Propulsion	2	72,408	73,014	78,592	77,901	U
8	0602204F	Aerospace Avionics	2	65,578	66,601	74,256	73,561	U
9	0602205F	Personnel, Training and Simulation	2	26,231	33,097			U
10	0602206F	Civil Engineering and Environmental Quality	2	5,715	6,412			U
11	0602269F	Hypersonic Technology Program	2		44,760	19,900	19,901	U
12	0602302F	Rocket Propulsion and Astronautics Technology	2	50,435				U
13	0602601F	Advanced Weapons	2	46,859	158,315	124,446	121,764	U
14	0602602F	Conventional Munitions	2	34,140	43,627	44,954	43,830	U
15	0602702F	Command Control and Communications	2	89,305	91,563	98,477	95,578	U
	Exploratory Development			601,135	693,039	671,738	657,951	
16	0603106F	Logistics Systems Technology	3	14,589	14,715	17,960	19,465	U
17	0603112F	Advanced Materials for Weapon Systems	3	21,883	19,972	23,283	24,018	U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
18	0603202F	Aerospace Propulsion Subsystems Integration	3	26,452	29,408	29,818	29,149	U
19	0603203F	Advanced Avionics for Aerospace Vehicles	3	25,077	27,983	32,131	31,013	U
20	0603205F	Aerospace Vehicle Technology	3	12,860	6,643	10,793	10,150	U
21	0603211F	Aerospace Structures	3	12,390	12,064	13,269	12,828	U
22	0603216F	Aerospace Propulsion and Power Technology	3	35,901	36,579	41,779	41,222	U
23	0603227F	Personnel, Training and Simulation Technology	3	8,120	8,889	8,930	7,695	U
24	0603231F	Crew Systems and Personnel Protection Technology	3	12,609	17,332	18,953	19,081	U
25	0603238F	Global Surveillance	3		1,975	2,483	2,582	U
26	0603245F	Advanced Fighter Technology Integration	3	1,278	8,999	12,491	11,710	U
27	0603250F	Lincoln Laboratory	3	17,195	11,915			U
28	0603253F	Advanced Avionics Integration	3	3,421	16,765	20,421	19,763	U
29	0603269F	National Aero Space Plane Technology Program	3	38,656				U
30	0603270F	EW Technology	3	22,819	17,845	25,079	25,091	U
31	0603302F	Space and Missile Rocket Propulsion	3	11,564	16,492	15,203	14,441	U
32	0603311F	Ballistic Missile Technology	3	20,495	4,939	3,085	3,184	U
33	0603319F	Airborne Laser Technology	3	1,881				U
34	0603401F	Advanced Spacecraft Technology	3	19,900	48,291	32,627	36,443	U
35	0603410F	Space Systems Environmental Interactions Technology	3	3,531	4,148	3,479	3,280	U
36	0603428F	Space Subsystems Technology	3	7,845	8,000			U
37	0603601F	Conventional Weapons Technology	3	16,567	30,652	31,637	30,278	U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
38	0603605F	Advanced Radiation Technology	3	91,115	93,590	47,919	46,624	U
39	0603707F	Weather Systems Technology	3	4,317	4,983	4,577	4,378	U
40	0603723F	Civil and Environmental Engineering Technology	3	12,906	9,678	9,835	9,713	U
41	0603726F	C3I Subsystem Integration	3	8,547	10,814	12,008	10,971	U
42	0603728F	Advanced Computing Technology	3	9,012	9,013	11,005	10,076	U
43	0603771F	Industrial Preparedness Manufacturing Technology	3		83,311	53,332	51,841	U
44	0603789F	C3 Advanced Development	3	9,073	10,691	12,617	11,179	U
	Advanced Development			470,003	565,686	494,714	486,175	
45	0603111F	Meridian	4					U
46	0603260F	Intelligence Advanced Development	4	5,917	5,069	5,109	5,109	U
47	0603307F	Air Base Operability Advanced Development	4	3,645	2,282			U
48	0603319F	Airborne Laser Technology	4		19,677	19,954	19,954	U
49	0603402F	Space Test Program	4	41,473	66,619			U
50	0603430F	Advanced MILSATCOM	4		22,051	30,038	34,816	U
51	0603434F	National Polar-orbiting Operational Environmental Satellite System - Dem	4		7,504	23,861	41,550	U
52	0603438F	Satellite Systems Survivability	4	4,245	1,940			U
53	0603440F	Brilliant Eyes	4	136,919				U
54	0603441F	Space Based Infrared Architecture (SBIR) - Dem/Va	4		114,032	130,744	126,369	U
55	0603617F	Command, Control, and Communication Applications	4	9,107	5,309	6,437	7,902	U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
56	0603714F	DoD Physical Security Equipment - Exterior	4	486				U
57	0603742F	Combat Identification Technology	4	27,507	13,057	4,571	4,425	U
58	0603800F	Joint Advanced Strike Technology - Dem/Val	4		85,258	151,186	199,831	U
59	0603801F	Special Programs	4					U
60	0603831F	Classified Programs	4					U
61	0603851F	Intercontinental Ballistic Missile - Dem/Val	4		42,617	20,265	30,638	U
62	0603852F	C-130J - Dem/Val	4		4,936			U
63	0603853F	Evolved Expendable Launch Vehicle (EELV) Program Dem/Val	4		29,766	39,226	57,035	U
	Demonstration and Validation			235,340	420,117	431,391	527,629	
64	0604201F	Aircraft Avionics Equipment Development	5	6,224	4,771	16,892	23,529	U
65	0604212F	Aircraft Equipment Development	5	5				U
66	0604218F	Engine Model Derivative Program (EMDP)	5	841	753	756	739	U
67	0604222F	Nuclear Weapons Support	5	5,365	5,609	4,822	4,855	U
68	0604226F	B-1B	5	48,432	73,313	173,838	150,620	U
69	0604227F	Training Systems Development	5	19,485	13,955	8,786	4,650	U
70	0604231F	C-17 Program	5	230,416	188,077	85,753	15,695	U
71	0604233F	Specialized Undergraduate Pilot Training	5	5,184	37,025	63,042	100,417	U
72	0604237F	Variable Stability In-Flight Simulator Test Aircraft	5	5,738	2,027			U
73	0604239F	F-22 EMD	5	2,058,804	2,325,292	2,138,718	1,957,067	U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
74	0604240F	B-2 Advanced Technology Bomber	5	776,323	384,080	623,616	446,225	U
75	0604243F	Manpower, Personnel and Training Development	5	4,756	4,552	5,300	5,174	U
76	0604249F	Night/Precision Attack	5	1,490	21,436	8,708	4,803	U
77	0604268F	Aircraft Engine Component Improvement Program	5	100,142	94,356			U
78	0604270F	EW Development	5	116,498	117,961	50,203	84,111	U
79	0604321F	Combat Intelligence System -EMD	5	2,065	8,476	3,938	2,035	U
80	0604441F	Space Based Infrared Architecture (SBIR) - EMD	5		102,136	152,219	198,982	U
81	0604479F	Milstar LDR/MDR Satellite Communications	5		598,087	649,666	744,990	U
82	0604480F	Global Positioning System Block IIF	5			19,699	38,901	U
83	0604600F	Munitions Dispenser Development	5			53,254	58,914	U
84	0604601F	Chemical/Biological Defense Equipment	5	9,628	7,470			U
85	0604602F	Armament/Ordnance Development	5	11,116	18,648	8,075	3,815	U
86	0604604F	Submunitions	5	3,738	28,367	4,953	5,105	U
87	0604609F	R&M Maturation/Technology Insertion	5	18,434	8,735			U
88	0604617F	Air Base Operability	5	10,739	5,518	9,692	3,064	U
89	0604618F	Joint Direct Attack Munition	5	65,292	66,851	92,161	85,907	U
90	0604703F	Aeromedical/Chemical Defense Systems	5	9,999	8,055	6,235	6,193	U
91	0604704F	Common Support Equipment Development	5	4,551	1,588	1,167	613	U
92	0604706F	Life Support Systems	5	10,749	4,969	4,035	3,983	U
93	0604707F	Weather Systems - Eng Dev	5	9,054				U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
94	0604708F	Civil, Fire, Environmental, Shelter Engineering	5	4,382	3,146	2,737	2,835	U
95	0604711F	Systems Survivability (Nuclear Effects)	5	3,469		37	38	U
96	0604727F	Joint Standoff Weapons Systems	5	23,143	55,355	44,025	19,562	U
97	0604733F	Surface Defense Suppression	5	1,861	941			U
98	0604735F	Combat Training Ranges	5	15,446	13,947	10,418	16,098	U
99	0604740F	Computer Resource Technology Transition (CRTT)	5	13,672	20,855	2,166	2,048	U
100	0604750F	Intelligence Equipment	5	2,753	2,603	1,294	1,268	U
101	0604754F	Joint Tactical Information Distribution System (JTIDS)	5	13,066	11,190	10,146	9,594	U
102	0604770F	Joint Surveillance/Target Attack Radar System (JSTARS)	5	278,807	172,260	169,702	200,382	U
103	0604779F	Joint Interoperability of Tactical Command & Control Systems (JINTACCS)	5	4,662	1,956	6,356	6,261	U
104	0604851F	Intercontinental Ballistic Missile - EMD	5		136,469	192,719	162,213	U
105	0303606F	UHF Satellite Communications	5		20,655	15,568	8,786	U
	Engineering and Manufacturing Development			3,896,329	4,571,484	4,640,696	4,379,472	
106	0603402F	Space Test Program	6			57,710	36,120	U
107	0604256F	Threat Simulator Development	6	41,152	40,417	53,377	48,171	U
108	0604258F	Target Systems Development	6	9,882	7,488	5,362	5,234	U
109	0604759F	Major T&E Investment	6	47,234	51,056	37,879	36,229	U
110	0605101F	RAND Project Air Force	6	24,000	24,039	25,924	26,571	U
111	0605306F	Ranch Hand II Epidemiology Study	6	3,686	3,156	3,139	9,709	U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
112	0605502F	Small Business Innovative Research	6	119,550				U
113	0605708F	Navigation/Radar/Sled Track Test Support	6	29,347	29,554			U
114	0605712F	Initial Operational Test & Evaluation	6	27,056	33,004	24,506	26,921	U
115	0605807F	Test and Evaluation Support	6	379,871	365,365	454,067	458,335	U
116	0605808F	Development Planning	6	6,724	5,870	6,745	6,764	U
117	0605853F	Environmental Conservation	6			14,169	14,070	U
118	0605854F	Pollution Prevention	6			14,046	21,361	U
119	0605856F	Environmental Compliance	6	39,355	42,371	26,423	26,229	U
120	0605860F	Rocket Systems Launch Program (RSLP)	6			5,949	6,126	U
121	0605863F	RDT&E Aircraft Support	6	37,436	34,476			U
122	0605876F	Minor Construction (RPM) - RDT&E	6	4,245	3,243			U
123	0605878F	Maintenance and Repair (RPM) - RDT&E	6	45,019	51,183			U
124	0605896F	Base Operations - RDT&E	6	109,888	105,525	117,083	124,311	U
	RDT&E Management Support			924,445	796,747	846,379	846,151	
125	0603107F	Technical Evaluation System	7					U
126	0603110F	Special Evaluation System	7					U
127	0604268F	Aircraft Engine Component Improvement Program	7			103,700	105,600	U
128	0101113F	B-52 Squadrons	7	6,167		16,505	7,457	U
129	0101120F	Advanced Cruise Missile	7	20,978		7,060		U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
130	0101213F	Minuteman Squadrons	7	127,916				U
131	0102325F	Joint Surveillance System	7	3,024	2,719	4,711	4,400	U
132	0102411F	North Atlantic Defense System	7	7,159	3,852	9,351	5,532	U
133	0102412F	North Warning System (NWS)	7	2,529	2,035	1,015	930	U
134	0207129F	F-111 Squadrons	7	9,638	4,667	597		U
135	0207133F	F-16 Squadrons	7	59,715	137,129	175,600	152,785	U
136	0207134F	F-15E Squadrons	7	63,568	107,377	171,337	130,061	U
137	0207136F	Manned Destructive Suppression	7	4,284	37,014	2,908		U
138	0207141F	F-117A Squadrons	7	6,122		3,881	12,478	U
139	0207160F	Tri-Service Standoff Attack Missile	7	263,681	134,083			U
140	0207161F	Tactical AIM Missiles	7		44	20,082	31,088	U
141	0207163F	Advanced Medium Range Air-to-Air Missile (AMRAAM)	7	65,807	69,943	42,311	49,232	U
142	0207217F	Follow-On Tactical Reconnaissance System	7	6,318				U
143	0207247F	AF TENCAP	7	14,410	20,464	21,966	21,079	U
144	0207248F	Special Evaluation Program	7	118,804	116,970	87,184	51,530	U
145	0207411F	Overseas Air Weapon Control System	7	14,970				U
146	0207412F	Theater Air Control Systems	7	27,671	6,922	290	651	U
147	0207417F	Airborne Warning and Control System (AWACS)	7	83,233	83,980	96,696	38,753	U
148	0207419F	Tactical Airborne Command and Control Systems	7		2,676	2,093	358	U
149	0207422F	Deployable C3 Systems	7		2,581			U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
150	0207423F	Advanced Communications Systems	7	369	454	1,934	1,908	U
151	0207424F	Evaluation and Analysis Program	7	73,688	72,084	77,688	71,504	U
152	0207431F	Combat Air Intelligence System Activities	7					U
153	0207433F	Advanced Program Technology	7	123,596	161,508	157,397	144,341	U
154	0207438F	Theater Battle Management (TBM) C4I	7	12,864	29,097	24,813	25,748	U
155	0207579F	Advanced Systems Improvements	7	121,856	119,531	105,548	27,961	U
156	0207590F	Seek Eagle	7	14,719	15,808	17,390	18,059	U
157	0207591F	Advanced Program Evaluation	7	89,682	128,481	140,571	130,461	U
158	0207601F	USAF Wargaming and Simulation	7	10,829	13,593	19,762	25,624	U
159	0208006F	Mission Planning Systems	7	23,546	14,170	20,585	19,386	U
160	0208021F	Electronic Combat Support	7					U
161	0208060F	Theater Missile Defenses	7		27,004	25,102	22,986	U
162	0301310F	Foreign Technology Division	7					U
163	0301313F	Defense Dissemination Program	7					U
164	0301314F	IR/EO/DEW Processing and Exploitation	7					U
165	0301315F	Missile and Space Technical Collection	7					U
166	0301317F	SENIOR YEAR Operations	7					U
167	0301324F	FOREST GREEN	7					U
168	0303110F	Defense Satellite Communications System	7	19,857	14,497	32,555	26,693	U
169	0303131F	Minimum Essential Emergency Communications Network (MEECN)	7	3,885	33,803	15,777	12,937	U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
170	0303140F	Information Systems Security Program	7	16,131	11,603	11,261	8,980	U
171	0303144F	Electromagnetic Compatibility Analysis Center (ECAC)	7	9,767	9,163			U
172	0303601F	Milstar Satellite Communications System	7	904,027	18,050	42,591	8,852	U
173	0303605F	Satellite Communications Terminals	7	1,169	1,739			U
174	0304111F	Special Activities	7					U
175	0305110F	Satellite Control Network	7	78,884	80,833	89,717	95,435	U
176	0305111F	Weather Service	7		20,710	5,771	5,308	U
177	0305114F	Air Traffic Control, Approach, and Landing System (ATCALS)	7	8,427	7,103	3,968	4,007	U
178	0305119F	Medium Launch Vehicles	7	69,545	20,535	21,898	16,323	U
179	0305124F	Special Applications Program	7					U
180	0305128F	Security and Investigative Activities	7			299	299	U
181	0305137F	National Airspace System (NAS) Plan	7	14,441	30,126	13,759	17,238	U
182	0305138F	Upper Stage Space Vehicles	7	4,054	3,624	3,554	3,303	U
183	0305142F	Applied Technology and Integration	7					U
184	0305144F	Titan Space Launch Vehicles	7	263,540	150,889	140,514	148,656	U
185	0305145F	Arms Control Implementation	7	8,457	3,417	998	1,728	U
186	0305158F	CONSTANT SOURCE	7	3,076	3,191	3,089	3,054	U
187	0305160F	Defense Meteorological Satellite Program (DMSP)	7	24,265	20,537	21,464	19,407	U
188	0305164F	NAVSTAR Global Positioning System (User Equipment	7	15,976	9,621	17,371	14,891	U
189	0305165F	NAVSTAR Global Positioning System (Space and Control Segments)	7	36,825	36,027	26,921	31,434	U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
190	0305172F	Combined Advanced Applications	7					U
191	0305181F	Western Space Launch Facility (WSLF)	7	3,345				U
192	0305182F	Eastern Space Launch Facility (ESLF)	7	49,852	42,244	52,272	37,893	U
193	0305887F	Electronic Combat Intelligence Support	7	1,962	1,830			U
194	0305892F	Special Analysis Activities	7					U
195	0305905F	Improved Space Based TW/AA	7	105,703				U
196	0305906F	NCMC - TW/AA System	7	132,576	129,038	60,897	27,895	U
197	0305910F	SPACETRACK	7	55,086	53,824	35,583	12,139	U
198	0305911F	Defense Support Program	7	46,898	66,116	43,672	38,819	U
199	0305913F	NUDET Detection System	7	10,331	10,030	16,277	21,283	U
200	0401119F	C-5 Airlift Squadrons	7				793	U
201	0401218F	KC-135s	7	11,540	23,006	12,727	793	U
202	0401840F	AMC Command and Control System	7	10,497				U
203	0404102F	Aerospace Rescue and Recovery	7			5,369	3,481	U
204	0701111F	Supply Depot Operations (Non-IF)	7	1,863				U
205	0702207F	Depot Maintenance (Non-IF)	7	1,792	2,076	1,464	1,495	U
206	0708011F	Industrial Preparedness	7	72,435				U
207	0708012F	Logistics Support Activities	7	6,203	5,742			U
208	0708026F	Productivity, Reliability, Availability, Maintain. Prog Ofc (PRAMPO)	7	17,946	6,732	15,719	15,340	U
209	0708054F	Pollution Prevention	7	24,696	15,842			U

Department of the Air Force
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
210	0708611F	Support Systems Development	7			5,906	5,662	U
211	0804734F	Cryptologic/SIGINT-Related Skill Training	7	1,885	1,472	1,139	1,954	U
212	0901218F	Civilian Compensation Program	7	5,775	5,655	5,827	5,917	U
213	1001004F	International Activities	7	1,869	1,915	3,713	3,762	U
	Operational Systems Development			5,825,100	4,770,678	5,273,628	4,510,982	
Total	Research Development Test & Eval AF			12,177,830	12,057,417	12,598,439	11,655,554	

DEFENSE WIDE

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Budget Activities				
Basic Research	339,786	345,526	367,404	388,571
Exploratory Development	1,022,614	1,231,925	1,231,456	1,307,491
Advanced Development	4,804,229	2,443,778	2,313,432	2,291,790
Demonstration and Validation	231,415	1,927,513	1,733,071	1,247,225
Engineering and Manufacturing Development	47,914	450,886	679,358	1,197,915
RDT&E Management Support	213,225	437,273	416,177	447,855
Operational Systems Development	2,021,312	2,188,552	2,061,983	1,869,315
Total Research Development Test & Eval Defwide	8,680,495	9,025,453	8,802,881	8,750,162
Summary Recap of FYDP Programs				
General Purpose Forces	35,355	33,675	25,538	24,969
Intelligence and Communications	1,764,761	1,978,293	1,931,361	1,776,728
Research and Development (FYDP Program 6)	6,577,428	6,812,853	6,705,676	6,821,998
Central Supply and Maintenance	21,850			
Special Operations Forces	281,101	200,632	140,306	126,467
Total Research Development Test & Eval Defwide	8,680,495	9,025,453	8,802,881	8,750,162

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Defensewide				
Defense Mapping Agency	67,600	76,311	80,131	83,932
Special Operations Command	281,101	200,632	140,306	126,467
Chemical and Biological Defense Program		26,900	243,017	268,688
Ballistic Missile Defense Organization	2,605,089	2,467,593	2,442,199	2,483,619
Office of Secretary/Defense	1,162,853	1,923,214	1,602,059	1,592,078
Advanced Research Projects Agcy	2,648,563	2,731,867	2,639,234	2,572,339
National Security Agency				
Defense Nuclear Agency	274,929	255,001	252,974	262,649
Defense Support Project Office	381,036	46,715	59,183	59,588
Joint Chiefs of Staff	10,693	4,159	1,784	1,485
Defense Information Systems Agency	88,634	82,177	66,356	64,449
Defense Intelligence Agency				
Central Imagery Office				
Defense Logistics Agency	37,131	77,084	81,548	84,658
Defense Investigative Service				
Total Research Development Test & Eval Defwide	8,680,495	9,025,453	8,802,881	8,750,162

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
1	0601101D	In-House Laboratory Independent Research	1	2,257	2,331	3,551	2,265	U
2	0601101E	Defense Research Sciences	1	85,889	87,552	89,732	92,521	U
3	0601103D	University Research Initiatives	1	240,155	249,734	236,165	247,047	U
4	0601110D	Focused Research Initiatives	1	11,485	5,909	14,009	21,062	U
5	0601384BP	Chemical and Biological Defense Program	1			23,947	25,676	U
	Basic Research			339,786	345,526	367,404	388,571	
6	0602160D	Counterproliferation Support	2			9,952		U
7	0602173C	Support Technologies/Follow-on Technologies	2		81,406	93,308	105,313	U
8	0602227D	Exploratory Development Medical Free Electron Laser	2	20,389	23,385	13,258	24,661	U
9	0602228D	Historically Black Colleges and Universities	2		22,540	14,779	15,095	U
10	0602234D	(HBCU) Science and Engineer Lincoln Laboratory Research Program	2			19,903	21,099	U
11	0602301E	Computing Systems and Communications Technology	2	321,216	388,991	403,875	384,777	U
12	0602384BP	Chemical and Biological Defense Program	2		10,000	60,665	55,270	U
13	0602702E	Tactical Technology	2	90,053	121,667	113,168	124,649	U
14	0602708E	Integrated Command and Control Technology	2	84,490	81,554	48,000	67,603	U
15	0602712E	Materials and Electronics Technology	2	261,174	274,114	226,045	269,658	U
16	0602715H	Defense Nuclear Agency	2	234,226	218,938	219,003	230,724	U
17	0602787D	Medical Technology	2	9,265	7,643	7,501	6,532	U
18	0305108K	Command and Control Research	2	1,801	1,687	1,999	2,110	U
	Exploratory Development			1,022,614	1,231,925	1,231,456	1,307,491	

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
19	0603002D	Medical Advanced Technology	3	11,027	4,046	4,088	3,536	U
20	0603104D	Explosives Demilitarization Technology	3	17,946	4,009			U
21	0603122D	Counterterror Technical Support	3	5,905	8,228	12,044	6,033	U
22	0603160D	Counterproliferation Support - Adv Dev	3		25,600	55,331	56,928	U
23	0603173C	Support Technologies/Follow-on Technologies - Advanced Technology Devel	3		134,628	79,387	87,823	U
24	0603215C	Limited Defense System	3	562,331				U
25	0603216C	Theater Missile Defense Advanced Development	3	1,476,307				U
26	0603218C	Research and Support Activities	3	524,354				U
27	0603225D	Joint DoD-DoE Munitions Technology Development	3	17,160	24,143	16,799	16,989	U
28	0603226E	Experimental Evaluation of Major Innovative Technologies	3	599,914	671,792	618,005	595,873	U
29	0603384BP	Chemical and Biological Defense Program - Advanced Development	3			25,684	36,644	U
30	0603569E	Advanced Submarine Technology	3	43,839	32,381	7,473	9,942	U
31	0603570D	Defense Laboratory Partnership Program	3		70,550	16,106	25,540	U
32	0603570E	Defense Reinvestment	3	495,502	443,196	500,000	400,000	U
33	0603704D	Special Technical Support	3	18,735	10,061	18,187	17,576	U
34	0603711H	Verification Technology Demonstration	3	40,703	36,063	33,971	31,925	U
35	0603716D	Strategic Environmental Research Program	3	158,457	55,137	58,435	95,371	U
36	0603724D	Biological Defense - Advanced Development	3	9,572	52,305			U
37	0603725D	Computers & Communications to Reduce Medical Cost	3	2,917				U
38	0603726D	Joint Technology Insertion Program	3			4,976	4,976	U

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
39	0603736D	CALS Initiative	3	8,461	13,886	6,545	6,461	U
40	0603738D	Cooperative DoD/VA Medical Research	3	19,446	44,533			U
41	0603739E	Advanced Electronics Technologies	3	377,801	409,763	419,863	443,458	U
42	0603744E	Advanced Simulation	3	27,107	29,537	5,799	14,614	U
43	0603745E	Semiconductor Manufacturing Technology	3	89,000	89,227	89,554		U
44	0603746E	Maritime Technology	3	38,750	52,000	49,657	49,708	U
45	0603747E	Electric Vehicles	3	46,250	15,000			U
46	0603748E	Natural Gas Vehicles	3	15,000				U
47	0603749E	Earth Conservancy	3	10,000				U
48	0603750D	Advanced Concept Technology Demonstrations	3		31,741	63,251	80,734	U
49	0603755D	High Performance Computing Modernization Program	3	44,119	65,059	89,682	116,878	U
50	0603756D	Consolidated DoD Software Initiative	3	22,036	24,492			U
51	0603771S	Industrial Preparedness Manufacturing Technology	3		19,650	7,007	6,967	U
52	0603800E	Joint Advanced Strike Technology - Dem/Val	3			30,675	80,925	U
53	0603832D	Joint Wargaming Simulation Management Office	3	72,467	54,390	77,690	79,750	U
54	0303132G	Global Grid Communications	3					U
55	0304211G	National Activities	3					U
56	0305166G	Special Development	3					U
57	0305889E	Counterdrug Intelligence Support	3	30,123				U
	Advanced Development			4,804,229	2,443,778	2,313,432	2,291,790	

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
58	0603228D	Physical Security Equipment	4	20,091	27,665	20,092	21,615	U
59	0603708D	Integrated Diagnostics	4	10,046	11,483	10,266	10,244	U
60	0603709D	Joint Robotics Program	4	26,294	23,115	17,382	17,941	U
61	0603714D	Advanced Sensor Applications Program	4	38,521	31,698	25,923	26,641	U
62	0603715D	AIM-9 Consolidated Program	4	23,951	48,681			U
63	0603734J	Island Sun Support	4		2,770	1,584	1,285	U
64	0603790D	NATO Research and Development	4	46,380	34,832	45,642	55,201	U
65	0603851D	Environmental Security Technical Certification Program	4		43,923	14,939	14,884	U
66	0603861C	Theater High-Altitude Area Defense System - TMD - Dem/Val	4		452,321	576,327	72,188	U
67	0603862C	Theater Missile Defense Ground Based Radar (GBR-T) - Dem/Val	4		171,828			U
68	0603863C	HAWK Upgrades Theater Missile Defense Acquisition - Dem/Val	4		25,984	23,188		U
69	0603864C	Battle Management and C4I for TMD Acquisition - Dem/Val	4		19,989	24,231	24,425	U
70	0603867C	Navy Lower Tier TMD Acquisition - Dem/Val	4		139,676			U
71	0603868C	Navy Upper Tier TMD - Dem/Val	4		68,450	30,442	33,400	U
72	0603869C	CORPS Surface-to-Air Missile - TMD - Dem/Val	4		14,971	30,442	33,400	U
73	0603870C	Boost Phase Intercept Theater Missile Defense Acquisition - Dem/Val	4		40,000	49,061	44,300	U
74	0603871C	National Missile Defense - Dem/Val	4		389,988	370,621	399,038	U
75	0603872C	Other Theater Missile Defense/Follow-on TMD Activities Acquisition - De	4		380,139	460,470	449,908	U
76	0603884BP	Chemical and Biological Defense Program - Dem/Val	4			32,461	42,755	U
77	0604225C	Theater Missile Defense Acquisition EMD Programs	4	42,097				U

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
78	0604705D	Mobile Offshore Base Analysis	4	16,529				U
79	0201135J	CINC C2 Initiatives	4	7,506				U
	Demonstration and Validation			231,415	1,927,513	1,733,071	1,247,225	
80	0604160D	Counterproliferation Support - EMD	5		2,000	2,786	2,787	U
81	0604384BP	Chemical and Biological Defense Program - EMD	5		15,200	95,324	102,938	U
82	0604771D	Joint Tactical Information Distribution System (JTIDS)	5	47,500	83,469	62,068	46,784	U
83	0604861C	Theater High-Altitude Area Defense System - TMD - EMD	5				664,000	U
84	0604864C	Battle Management and C4I for TMD Acquisition - EMD	5		534	14,301	17,976	U
85	0604865C	Patriot PAC-3 Theater Missile Defense Acquisition - EMD	5		275,683	247,921	160,070	U
86	0604866C	ERINT/Patriot PAC-3 Risk Reduction - TMD - EMD	5		74,000	19,485	9,760	U
87	0604867C	Navy Lower Tier TMD Acquisition - EMD	5			237,473	193,600	U
88	0604889K	Counterdrug Engineering and Manufacturing Development Projects	5	414				U
	Engineering and Manufacturing Development			47,914	450,886	679,358	1,197,915	
89	0603710D	Classified Program - C3I	6	4,494	8,002	2,510	2,430	U
90	0603712S	Generic Logistics R&D Technology Demonstrations	6			16,800	18,600	U
91	0605104D	Technical Studies, Support and Analysis	6	25,079	24,372	39,302	39,019	U
92	0605110D	Technical Support to USD(A)--Critical Technology	6	1,711	2,630	2,651	2,884	U
93	0605114E	BLACK LIGHT	6	4,875	4,875	4,745	4,730	U
94	0605117D	Foreign Material Acquisition and Exploitation	6	98,583	103,731	46,338	46,088	U

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
95	0605129D	Technical Assistance	6			4,927	5,031	U
96	0605160D	Counterproliferation Support	6		4,831	6,468	6,967	U
97	0605218C	Ballistic Missile Defense RDT&E Program Management and Support	6		197,996	185,542	188,418	U
98	0605384BP	Chemical and Biological Defense Program	6		1,700	4,936	5,405	U
99	0605502D	Small Business Innovative Research	6	12,297				U
100	0605790D	Small Business Innovative Research Administration	6		1,484	1,574	1,711	U
101	0605798S	Defense Support Activities	6	15,281	14,679	14,752	14,410	U
102	0605801S	Defense Technical Information Center	6		42,755	42,989	44,681	U
103	0605898E	Management Headquarters (Research and Development	6	27,580	30,218	32,643	33,881	U
104	0305154D	Defense Airborne Reconnaissance Program	6			10,000	33,600	U
105	0305889D	Counterdrug Intelligence Support	6	1,475				U
106	0708011S	Industrial Preparedness	6	21,850				U
	RDT&E Management Support			213,225	437,273	416,177	447,855	
107	0201135J	CINC C2 Initiatives	7	1,192	1,389	200	200	U
108	0208045K	C3 Interoperability (Joint Tactical C3 Agency)	7	26,657	32,286	25,338	24,769	U
109	0301011G	Cryptologic Activities	7					U
110	0301301L	General Defense Intelligence Program	7					U
111	0302016K	National Military Command System-Wide Support	7	3,972	3,623	2,153	2,144	U
112	0302019K	Joint/Defense Information Systems Engineering and Integration	7	10,601	9,725	5,138	4,954	U

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
113	0303126K	Long-Haul Communications (DCS)	7	38,500	27,629	20,538	19,368	U
114	0303127K	Support of the National Communications System	7	3,864	4,229	4,062	4,042	U
115	0303131K	Minimum Essential Emergency Communications Network (MEECN)	7	2,825	2,998	2,269	2,179	U
116	0303140D	Information Systems Security Program	7			23,884	11,027	U
117	0303140G	Information Systems Security Program	7					U
118	0303153K	Joint Spectrum Center	7			4,859	4,883	U
119	0303154J	WWMCCS ADP Modernization	7	1,995				U
120	0305098L	Defense Support Activity - IPSG	7					U
121	0305106LC	Consolidated Imagery Activities	7					U
122	0305107LC	Tactical Imagery Activities	7					U
123	0305127V	Foreign Counterintelligence Activities	7					U
124	0305139B	DMA Mapping, Charting, and Geodesy (MC&G) Production System Improveme	7	56,792	56,763	80,131	83,932	U
125	0305141D	Joint Remotely Piloted Vehicles Program	7	81,814				U
126	0305154D	Defense Airborne Reconnaissance Program	7		655,269	515,148	391,246	U
127	0305154G	Defense Airborne Reconnaissance Program	7					U
128	0305154I	Defense Airborne Reconnaissance Program	7	334,519				U
129	0305157I	Land Remote Sensing Satellite System	7	34,506				U
130	0305159B	Defense Reconnaissance Support Activities	7	10,808	19,548			U
131	0305159G	Defense Reconnaissance Support Activities	7					U
132	0305159I	Defense Reconnaissance Support Activities	7	12,011	46,715	59,183	59,588	U

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
133	0305190D	C3I Intelligence Programs	7	16,289	16,307	7,907	7,445	U
134	0305884L	Intelligence Planning and Review Activities	7					U
135	0305885G	Tactical Cryptologic Activities	7					U
136	0305889G	Counterdrug Intelligence Support	7					U
137	0305898L	Management Headquarters (Auxiliary Forces)	7					U
138	1160401BB	Special Operations Technology Development	7	6,744	5,511	4,090	6,554	U
139	1160402BB	Special Operations Advanced Technology Developmen	7	27,098	13,462	13,288	14,247	U
140	1160404BB	Special Operations Tactical Systems Development	7	217,750	156,629	101,602	80,789	U
141	1160405BB	Special Operations Intelligence Systems Development	7	6,686	2,932	2,901	3,443	U
142	1160407BB	SOF Medical Technology Development	7	1,310	1,782	1,891	2,377	U
143	1160408BB	SOF Operational Enhancements	7	21,513	20,316	16,534	19,057	U
		Operational Systems Development		2,021,312	2,188,552	2,061,983	1,869,315	
Total		Research Development Test & Eval Defwide		8,680,495	9,025,453	8,802,881	8,750,162	

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Budget Activities				
RDT&E Management Support	231,757	233,142	259,341	267,029
Total Director of Test & Eval Defense	231,757	233,142	259,341	267,029
Summary Recap of FYDP Programs				
Research and Development (FYDP Program 6)	231,757	233,142	259,341	267,029
Total Director of Test & Eval Defense	231,757	233,142	259,341	267,029

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0450 D Director of Test & Eval Defense

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
1	0604940D	Central Test and Evaluation Investment Development (CTEIP)	6	100,523	101,606	119,714	127,345	U
2	0605130D	Foreign Comparative Testing	6	32,913	39,741	34,062	33,853	U
3	0605131D	Live Fire Testing	6	7,499				U
4	0605804D	Development Test and Evaluation	6	90,822	91,795	105,565	105,831	U
	RDT&E Management Support			231,757	233,142	259,341	267,029	
Total	Director of Test & Eval Defense			231,757	233,142	259,341	267,029	

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Summary

Date: FEB 1995

	Thousands of Dollars			
	FY 1994	FY 1995	FY 1996	FY 1997
Summary Recap of Budget Activities				
RDT&E Management Support	11,450	22,962	22,587	22,978
Total Director of Operational Test & Evaluation	11,450	22,962	22,587	22,978
Summary Recap of FYDP Programs				
Research and Development (FYDP Program 6)	11,450	22,962	22,587	22,978
Total Director of Operational Test & Evaluation	11,450	22,962	22,587	22,978

Defensewide
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0460 D Director of Operational Test & Evaluation

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
1	0605118D	Operational Test and Evaluation	6	11,450	12,501	12,183	12,576	U
2	0605131D	Live Fire Testing	6		10,461	10,404	10,402	U
	RDT&E Management Support			11,450	22,962	22,587	22,978	
Total	Director of Operational Test & Evaluation			11,450	22,962	22,587	22,978	

Defense Mapping Agency
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
122	0305139B	DMA Mapping, Charting, and Geodesy (MC&G) Production System Improveme	7	56,792	56,763	80,131	83,932	U
128	0305159B	Defense Reconnaissance Support Activities	7	10,808	19,548			U
		Operational Systems Development		67,600	76,311	80,131	83,932	
Total		Defense Mapping Agency		67,600	76,311	80,131	83,932	

Special Operations Command
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
136	1160401BB	Special Operations Technology Development	7	6,744	5,511	4,090	6,554	U
137	1160402BB	Special Operations Advanced Technology Developmen	7	27,098	13,462	13,288	14,247	U
138	1160404BB	Special Operations Tactical Systems Development	7	217,750	156,629	101,602	80,789	U
139	1160405BB	Special Operations Intelligence Systems Development	7	6,686	2,932	2,901	3,443	U
140	1160407BB	SOF Medical Technology Development	7	1,310	1,782	1,891	2,377	U
141	1160408BB	SOF Operational Enhancements	7	21,513	20,316	16,534	19,057	U
	Operational Systems Development			281,101	200,632	140,306	126,467	
Total	Special Operations Command			281,101	200,632	140,306	126,467	

Chemical and Biological Defense Program
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
5	0601384BP	Chemical and Biological Defense Program	1			23,947	25,676	U
	Basic Research					23,947	25,676	
12	0602384BP	Chemical and Biological Defense Program	2		10,000	60,665	55,270	U
	Exploratory Development				10,000	60,665	55,270	
29	0603384BP	Chemical and Biological Defense Program - Advanced Development	3			25,684	36,644	U
	Advanced Development					25,684	36,644	
74	0603884BP	Chemical and Biological Defense Program - Dem/Val	4			32,461	42,755	U
	Demonstration and Validation					32,461	42,755	
79	0604384BP	Chemical and Biological Defense Program - EMD	5		15,200	95,324	102,938	U
	Engineering and Manufacturing Development				15,200	95,324	102,938	
96	0605384BP	Chemical and Biological Defense Program	6		1,700	4,936	5,405	U
	RDT&E Management Support				1,700	4,936	5,405	
Total	Chemical and Biological Defense Program				26,900	243,017	268,688	

Ballistic Missile Defense Organization
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
7	0602173C	Support Technologies/Follow-on Technologies Exploratory Development	2		81,406	93,308	105,313	U
	Exploratory Development				81,406	93,308	105,313	
23	0603173C	Support Technologies/Follow-on Technologies - Advanced Technology Devel	3		134,628	79,387	87,823	U
24	0603215C	Limited Defense System	3	562,331				U
25	0603216C	Theater Missile Defense Advanced Development	3	1,476,307				U
26	0603218C	Research and Support Activities	3	524,354				U
	Advanced Development			2,562,992	134,628	79,387	87,823	
64	0603861C	Theater High-Altitude Area Defense System - TMD - Dem/Val	4		452,321	576,327	72,188	U
65	0603862C	Theater Missile Defense Ground Based Radar (GBR-T) - Dem/Val	4		171,828			U
66	0603863C	HAWK Upgrades Theater Missile Defense Acquisition - Dem/Val	4		25,984	23,188		U
67	0603864C	Battle Management and C4I for TMD Acquisition - Dem/Val	4		19,989	24,231	24,425	U
68	0603867C	Navy Lower Tier TMD Acquisition - Dem/Val	4		139,676			U
69	0603868C	Navy Upper Tier TMD - Dem/Val	4		68,450	30,442	33,400	U
70	0603869C	CORPS Surface-to-Air Missile - TMD - Dem/Val	4		14,971	30,442	33,400	U
71	0603870C	Boost Phase Intercept Theater Missile Defense Acquisition - Dem/Val	4		40,000	49,061	44,300	U
72	0603871C	National Missile Defense - Dem/Val	4		389,988	370,621	399,038	U
73	0603872C	Other Theater Missile Defense/Follow-on TMD Activities Acquisition - De	4		380,139	460,470	449,908	U
75	0604225C	Theater Missile Defense Acquisition EMD Programs	4	42,097				U
	Demonstration and Validation			42,097	1,703,346	1,564,782	1,056,659	

Ballistic Missile Defense Organization
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
81	0604861C	Theater High-Altitude Area Defense System - TMD - EMD	5				664,000	U
82	0604864C	Battle Management and C4I for TMD Acquisition - EMD	5		534	14,301	17,976	U
83	0604865C	Patriot PAC-3 Theater Missile Defense Acquisition - EMD	5		275,683	247,921	160,070	U
84	0604866C	ERINT/Patriot PAC-3 Risk Reduction - TMD - EMD	5		74,000	19,485	9,760	U
85	0604867C	Navy Lower Tier TMD Acquisition - EMD	5			237,473	193,600	U
	Engineering and Manufacturing Development				350,217	519,180	1,045,406	
95	0605218C	Ballistic Missile Defense RDT&E Program Management and Support	6		197,996	185,542	188,418	U
	RDT&E Management Support				197,996	185,542	188,418	
Total	Ballistic Missile Defense Organization			2,605,089	2,467,593	2,442,199	2,483,619	

Office of Secretary/Defense
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 1994	FY 1995	FY 1996	FY 1997	Sec
1	0601101D	In-House Laboratory Independent Research	1	2,257	2,331	3,551	2,265	U
3	0601103D	University Research Initiatives	1	240,155	249,734	236,165	247,047	U
4	0601110D	Focused Research Initiatives	1	11,485	5,909	14,009	21,062	U
	Basic Research			253,897	257,974	253,725	270,374	
6	0602160D	Counterproliferation Support	2			9,952		U
8	0602227D	Medical Free Electron Laser	2	20,389	23,385	13,258	24,661	U
9	0602228D	Historically Black Colleges and Universities (HBCU) Science and Engineer	2		22,540	14,779	15,095	U
10	0602234D	Lincoln Laboratory Research Program	2			19,903	21,099	U
17	0602787D	Medical Technology	2	9,265	7,643	7,501	6,532	U
	Exploratory Development			29,654	53,568	65,393	67,387	
19	0603002D	Medical Advanced Technology	3	11,027	4,046	4,088	3,536	U
20	0603104D	Explosives Demilitarization Technology	3	17,946	4,009			U
21	0603122D	Counterterror Technical Support	3	5,905	8,228	12,044	6,033	U
22	0603160D	Counterproliferation Support - Adv Dev	3		25,600	55,331	56,928	U
27	0603225D	Joint DoD-DoE Munitions Technology Development	3	17,160	24,143	16,799	16,989	U
31	0603570D	Defense Laboratory Partnership Program	3		70,550	16,106	25,540	U
33	0603704D	Special Technical Support	3	18,735	10,061	18,187	17,576	U
35	0603716D	Strategic Environmental Research Program	3	158,457	55,137	58,435	95,371	U
36	0603724D	Biological Defense - Advanced Development	3	9,572	52,305			U

Office of Secretary/Defense
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
37	0603725D	Computers & Communications to Reduce Medical Cost	3	2,917				U
38	0603726D	Joint Technology Insertion Program	3			4,976	4,976	U
39	0603736D	CALS Initiative	3	8,461	13,886	6,545	6,461	U
40	0603738D	Cooperative DoD/VA Medical Research	3	19,446	44,533			U
48	0603750D	Advanced Concept Technology Demonstrations	3		31,741	63,251	80,734	U
49	0603755D	High Performance Computing Modernization Program	3	44,119	65,059	89,682	116,878	U
50	0603756D	Consolidated DoD Software Initiative	3	22,036	24,492			U
53	0603832D	Joint Wargaming Simulation Management Office	3	72,467	54,390	77,690	79,750	U
	Advanced Development			408,248	488,180	423,134	510,772	
56	0603228D	Physical Security Equipment	4	20,091	27,665	20,092	21,615	U
57	0603708D	Integrated Diagnostics	4	10,046	11,483	10,266	10,244	U
58	0603709D	Joint Robotics Program	4	26,294	23,115	17,382	17,941	U
59	0603714D	Advanced Sensor Applications Program	4	38,521	31,698	25,923	26,641	U
60	0603715D	AIM-9 Consolidated Program	4	23,951	48,681			U
62	0603790D	NATO Research and Development	4	46,380	34,832	45,642	55,201	U
63	0603851D	Environmental Security Technical Certification Program	4		43,923	14,939	14,884	U
76	0604705D	Mobile Offshore Base Analysis	4	16,529				U
	Demonstration and Validation			181,812	221,397	134,244	146,526	
78	0604160D	Counterproliferation Support - EMD	5		2,000	2,786	2,787	U

Office of Secretary/Defense
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
80	0604771D	Joint Tactical Information Distribution System (JTIDS)	5	47,500	83,469	62,068	46,784	U
	Engineering and Manufacturing Development			47,500	85,469	64,854	49,571	
87	0603710D	Classified Program - C3I	6	4,494	8,002	2,510	2,430	U
89	0605104D	Technical Studies, Support and Analysis	6	25,079	24,372	39,302	39,019	U
90	0605110D	Technical Support to USD(A)--Critical Technology	6	1,711	2,630	2,651	2,884	U
92	0605117D	Foreign Material Acquisition and Exploitation	6	98,583	103,731	46,338	46,088	U
93	0605129D	Technical Assistance	6			4,927	5,031	U
94	0605160D	Counterproliferation Support	6		4,831	6,468	6,967	U
97	0605502D	Small Business Innovative Research	6	12,297				U
98	0605790D	Small Business Innovative Research Administration	6		1,484	1,574	1,711	U
102	0305154D	Defense Airborne Reconnaissance Program	6			10,000	33,600	U
103	0305889D	Counterdrug Intelligence Support	6	1,475				U
	RDT&E Management Support			143,639	145,050	113,770	137,730	
114	0303140D	Information Systems Security Program	7			23,884	11,027	U
123	0305141D	Joint Remotely Piloted Vehicles Program	7	81,814				U
124	0305154D	Defense Airborne Reconnaissance Program	7		655,269	515,148	391,246	U
131	0305190D	C3I Intelligence Programs	7	16,289	16,307	7,907	7,445	U
	Operational Systems Development			98,103	671,576	546,939	409,718	
Total	Office of Secretary/Defense			1,162,853	1,923,214	1,602,059	1,592,078	

Advanced Research Projects Agcy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
2	0601101E	Defense Research Sciences	1	85,889	87,552	89,732	92,521	U
	Basic Research			85,889	87,552	89,732	92,521	
11	0602301E	Computing Systems and Communications Technology	2	321,216	388,991	403,875	384,777	U
13	0602702E	Tactical Technology	2	90,053	121,667	113,168	124,649	U
14	0602708E	Integrated Command and Control Technology	2	84,490	81,554	48,000	67,603	U
15	0602712E	Materials and Electronics Technology	2	261,174	274,114	226,045	269,658	U
	Exploratory Development			756,933	866,326	791,088	846,687	
28	0603226E	Experimental Evaluation of Major Innovative Technologies	3	599,914	671,792	618,005	595,873	U
30	0603569E	Advanced Submarine Technology	3	43,839	32,381	7,473	9,942	U
32	0603570E	Defense Reinvestment	3	495,502	443,196	500,000	400,000	U
41	0603739E	Advanced Electronics Technologies	3	377,801	409,763	419,863	443,458	U
42	0603744E	Advanced Simulation	3	27,107	29,537	5,799	14,614	U
43	0603745E	Semiconductor Manufacturing Technology	3	89,000	89,227	89,554		U
44	0603746E	Maritime Technology	3	38,750	52,000	49,657	49,708	U
45	0603747E	Electric Vehicles	3	46,250	15,000			U
46	0603748E	Natural Gas Vehicles	3	15,000				U
47	0603749E	Earth Conservancy	3	10,000				U
52	0603800E	Joint Advanced Strike Technology - Dem/Val	3			30,675	80,925	U
55	0305889E	Counterdrug Intelligence Support	3	30,123				U
	Advanced Development			1,773,286	1,742,896	1,721,026	1,594,520	

Advanced Research Projects Agcy
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
91	0605114E	BLACK LIGHT	6	4,875	4,875	4,745	4,730	U
101	0605898E	Management Headquarters (Research and Development	6	27,580	30,218	32,643	33,881	U
	RDT&E Management Support			32,455	35,093	37,388	38,611	
Total	Advanced Research Projects Agcy			2,648,563	2,731,867	2,639,234	2,572,339	

National Security Agency
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
54	0303132G	Global Grid Communications	3					U
55	0304211G	National Activities	3					U
56	0305166G	Special Development	3					U
	Advanced Development							
109	0301011G	Cryptologic Activities	7					U
117	0303140G	Information Systems Security Program	7					U
127	0305154G	Defense Airborne Reconnaissance Program	7					U
131	0305159G	Defense Reconnaissance Support Activities	7					U
135	0305885G	Tactical Cryptologic Activities	7					U
136	0305889G	Counterdrug Intelligence Support	7					U
	Operational Systems Development							
Total	National Security Agency							

Defense Nuclear Agency
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
16	0602715H	Defense Nuclear Agency	2	234,226	218,938	219,003	230,724	U
	Exploratory Development			234,226	218,938	219,003	230,724	
34	0603711H	Verification Technology Demonstration	3	40,703	36,063	33,971	31,925	U
	Advanced Development			40,703	36,063	33,971	31,925	
Total	Defense Nuclear Agency			274,929	255,001	252,974	262,649	

Defense Support Project Office
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
126	0305154I	Defense Airborne Reconnaissance Program	7	334,519				U
127	0305157I	Land Remote Sensing Satellite System	7	34,506				U
130	0305159I	Defense Reconnaissance Support Activities	7	12,011	46,715	59,183	59,588	U
	Operational Systems Development			381,036	46,715	59,183	59,588	
Total	Defense Support Project Office			381,036	46,715	59,183	59,588	

Joint Chiefs of Staff
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
61	0603734J	Island Sun Support	4		2,770	1,584	1,285	U
77	0201135J	CINC C2 Initiatives	4	7,506				U
	Demonstration and Validation			7,506	2,770	1,584	1,285	
105	0201135J	CINC C2 Initiatives	7	1,192	1,389	200	200	U
117	0303154J	WWMCCS ADP Modernization	7	1,995				U
	Operational Systems Development			3,187	1,389	200	200	
Total	Joint Chiefs of Staff			10,693	4,159	1,784	1,485	

Defense Information Systems Agency
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
18	0305108K	Command and Control Research	2	1,801	1,687	1,999	2,110	U
	Exploratory Development			1,801	1,687	1,999	2,110	
86	0604889K	Counterdrug Engineering and Manufacturing Development Projects	5	414				U
	Engineering and Manufacturing Development			414				
106	0208045K	C3 Interoperability (Joint Tactical C3 Agency)	7	26,657	32,286	25,338	24,769	U
109	0302016K	National Military Command System-Wide Support	7	3,972	3,623	2,153	2,144	U
110	0302019K	Joint/Defense Information Systems Engineering and Integration	7	10,601	9,725	5,138	4,954	U
111	0303126K	Long-Haul Communications (DCS)	7	38,500	27,629	20,538	19,368	U
112	0303127K	Support of the National Communications System	7	3,864	4,229	4,062	4,042	U
113	0303131K	Minimum Essential Emergency Communications Network (MEECN)	7	2,825	2,998	2,269	2,179	U
116	0303153K	Joint Spectrum Center	7			4,859	4,883	U
	Operational Systems Development			86,419	80,490	64,357	62,339	
Total	Defense Information Systems Agency			88,634	82,177	66,356	64,449	

Defense Intelligence Agency
FY 1996/1997 R D T & E Program

Appropriation: 0400 D Research Development Test & Eval Defwide

Exhibit R-1

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
			Thousands of Dollars					
108	0301301L	General Defense Intelligence Program	7					U
118	0305098L	Defense Support Activity - IPSG	7					U
132	0305884L	Intelligence Planning and Review Activities	7					U
135	0305898L	Management Headquarters (Auxiliary Forces)	7					U
		Operational Systems Development		---	---	---	---	
Total		Defense Intelligence Agency		---	---	---	---	

Central Imagery Office
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
119	0305106LC	Consolidated Imagery Activities	7					U
120	0305107LC	Tactical Imagery Activities	7					U
		Operational Systems Development						
Total		Central Imagery Office						

Defense Logistics Agency
FY 1996/1997 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Defwide

Date: FEB 1995

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
51	0603771S	Industrial Preparedness Manufacturing Technology	3		19,650	7,007	6,967	U
	Advanced Development				19,650	7,007	6,967	
88	0603712S	Generic Logistics R&D Technology Demonstrations	6			16,800	18,600	U
99	0605798S	Defense Support Activities	6	15,281	14,679	14,752	14,410	U
100	0605801S	Defense Technical Information Center	6		42,755	42,989	44,681	U
104	0708011S	Industrial Preparedness	6	21,850				U
	RDT&E Management Support			37,131	57,434	74,541	77,691	
Total	Defense Logistics Agency			37,131	77,084	81,548	84,658	

Defense Investigative Service
FY 1996/1997 R D T & E Program

Exhibit R-1

Date: FEB 1995

Appropriation: 0400 D Research Development Test & Eval Defwide

Line No	Program Element Number	Item	Act	FY 1994	FY 1995	FY 1996	FY 1997	Sec
				Thousands of Dollars				
121	0305127V	Foreign Counterintelligence Activities	7					U
		Operational Systems Development						
Total		Defense Investigative Service						

Document Separator

DEPARTMENT OF DEFENSE

NEWS RELEASE

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FY 1996-97 DEFENSE BUDGET

President Clinton today released his Fiscal Year (FY) 1996-97 defense budget, which Secretary of Defense William J. Perry said strongly supports his two most important initiatives: readiness and quality of life. For 1996 the request seeks $246.0 billion in budget authority and $250.0 billion in outlays for the Department of Defense (DoD).

In detailing the spending plan, Secretary Perry noted that full funding for his initiatives was made possible in December, when President Clinton added $25 billion to defense spending over the next six years. "This higher topline enabled us to fund our plans to provide high readiness, full military pay increases, better quality of life, and prudent weapons modernization," Dr. Perry said.

The FY 1996-97 budget begins implementation of DoD's FY 1996-2001 Future Years Defense Program (FYDP). Last summer when preparing its FYDP, the Department faced a potential shortfall of $49 billion between the likely cost of the FYDP and the projected defense topline for FY 1996-2001. This shortfall was eliminated by the $25 billion added by the President, $12 billion saved because of lower inflation estimates, and a net of $12 billion that DoD cut from lower priority programs.

The new budget and FYDP culminate a year-long DoD assessment of defense strategy, force structure, priorities, and programs. The assessment validated the primary recommendations of the Department's 1993 Bottom-Up Review (BUR). However, this year's budget contains important differences compared to last year's--for example, full military pay raises authorized under current law. In explaining his spending priorities, Secretary Perry said, "People come first."

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The new budget plans also begin the "recapitalization" of U.S. forces--that is, the modernization of weapons and equipment, after several years in which the Department lived off its Cold War stocks of equipment. Budget authority for procurement will end its 10-year real decline in FY 1996 and then increase nearly 50 percent by FY 2001. Providing for greater modernization was a major consideration in the President's decision to increase the defense budget.

DEFENSE DRAWDOWN IS NEARLY COMPLETE

BUR-based defense plans and funding projected in the President's budget support a defense posture sufficient to protect U.S. interests worldwide and preserve America's crucial global leadership role. More specifically, the post-Cold War U.S. defense strategy requires combat-ready forces that will be capable of fighting and winning two nearly simultaneous major conflicts. If some U.S. forces are engaged in a major regional conflict, the remaining forces must be sufficient to deter other potential aggressors from taking advantage of the situation. If deterrence fails, these remaining forces will be needed to defeat the aggression. Further, a defense posture designed to deal with two major regional conflicts provides a hedge against the possibility that a future adversary might one day confront this nation with a larger-than-expected threat.

The drawdown of forces to the level called for by the new defense strategy will be nearly complete by the end of FY 1996. At that time, DoD will have reduced active military personnel and force levels by over 30 percent since the beginning of FY 1990, the fiscal year in which the Berlin Wall fell. Highlights of force structure changes by fiscal year, and the DoD goal are:

Force Structure Changes

	1990	1995	1996	1997	Goal
Army--active divisions	18	12	10	10	10
Reserve Component brigades*	57	48	47	42	42
Marine Corps divisions (3 active/1 reserve)	4	4	4	4	4
Battle forces ships	546	373	365	358	346
Aircraft carriers-active	15	11	11	11	11
Training/reserve carriers	1	1	1	1	1
Carrier air wings-active	13	10	10	10	10
Reserve air wings	2	1	1	1	1
Fighter wing equivalents-active	24	13	13	13	13
Reserve	12	8	7	7	7

*An approximate equivalent. The BUR plan calls for 15 enhanced readiness brigades, a goal that DoD will begin to reach in FY 1996. Backing up this force will be an Army National Guard strategic reserve of 8 divisions (24 brigades), 2 separate brigades, and a scout group.

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Reflecting cuts in forces and infrastructure, personnel end strength will fall well below FY 1987 post-Vietnam peaks:

	FY 1987	FY 1995	FY 1996	1987-96 Change
Active military	2,174,200	1,523,300	1,485,200	-32%
Guard and Reserve	1,150,900	965,000	927,100	-19%
DoD civilians	1,133,100	866,900	828,600	-27%

By FY 1999 active military end strength will level off at about 1,445,000. DoD civilian end strength will continue its sharp decline--to 729,000 in FY 2001, 32 percent below FY 1990.

America's defense drawdown has been carried out without harming quality and morale. The involuntary release of personnel has been minimized through the use of incentives and careful personnel management. Military promotion opportunities have been relatively constant. Personnel quality has risen, as reflected by standardized tests, percentages of high school graduates, and recruiting success. By virtually every measure, the restructuring of the U.S. defense posture has been a remarkable success. Moreover, during this time of historic adjustment, America's armed forces fought and won the Persian Gulf war, executed complex humanitarian and contingency operations, and all the while sustained the high readiness and vigilance needed to ensure U.S. security. An extraordinary record.

READINESS IS PROTECTED

In formulating the new budget and FYDP, Secretary Perry accorded the highest priority to preserving force readiness and the quality of life of military personnel and their families.

Readiness essentials like training and maintenance are funded primarily in Operation and Maintenance (O&M) accounts. O&M budget authority in FY 1996 is about the same as FY 1995, and declines slightly in FY 1997. Readiness can be protected in spite of this decline because of force reductions and the streamlining of DoD infrastructure and overhead. O&M funding will remain fully sufficient to sustain high operations and training rates, prudent equipment and real property maintenance, and other determinants of readiness.

The FY 1996-97 budget maintains traditionally high rates for the operating tempo (OPTEMPO) of active U.S. forces. Army training rates will hold at 14.5 flying hours per month per tactical aircrew and 800 miles per year for tanks. Navy steaming days per quarter will remain at 50.5 and 29 days for deployed and non-deployed fleets, respectively. Navy flying hours per crew per month hold at 24 hours. Flying hours per month for active Air Force tactical aircrews will stay at about 20 hours.

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The readiness of U.S. forces cannot be judged simply by O&M funding and operating tempo measures. Ultimately readiness must be judged by the military leaders who are responsible for it--from front-line commanders up to the Defense Department's senior leadership. Before completing his FY 1996-97 budget request, Secretary Perry asked the Secretary and Service Chief of each military department if the plan enables U.S. forces to remain ready. They said that the requested funding is sufficient so long as any unbudgeted DoD costs for contingency operations are paid for without draining readiness accounts.

In the last quarter of FY 1994, readiness suffered because already strained O&M funds had to be diverted to pay DoD costs for unbudgeted contingency operations in Rwanda, Haiti, and elsewhere. Supplemental appropriations, congressional approval of reprogramming requests, and some of the operations' bills themselves occurred too late in the fiscal year to prevent this diversion of funds. For FY 1995 President Clinton is requesting a supplemental appropriation that should--assuming no new major contingencies emerge--obviate the need to consume funds needed for readiness. The Administration also is requesting authority that will enable it to avoid diverting money from readiness to pay for unbudgeted contingency operations late in the fiscal year.

Reserve Components

The National Guard and Reserve will continue to execute the plan to downsize in FY 1996-97. Only those units needed to support current defense strategy are being retained, but the role of Reserve Component forces is as important as ever. Under the "Mission Readiness" concept, readiness funding for Guard and Reserve units will be directly determined by how early in a crisis they are scheduled to deploy. Proposed funding also supports greater use of the Guard and Reserve for peacetime operations, to help prevent excessive strain on active forces; an added benefit is more realistic training for reservists, creating a double payoff for the dollars spent.

QUALITY OF LIFE IS SUPPORTED

Providing a good quality of life (QOL) for service members and their families is both the right thing to do and crucial to sustaining the readiness of U.S. forces. Reflecting this conviction, the new budget funds the full military pay raises provided for under law. In addition, Secretary Perry has added $2.7 billion over the next six years for family and bachelor housing; cost-of-living and housing allowances; child care; family assistance; and morale, welfare, and recreation programs. This action supplements already strong DoD quality-of-life programs.

To enhance quality of life, the new budget supports:

- Full by-law military pay raises of 2.4 percent for FY 1996 and 3.1 percent for FY 1997.
- A new allowance for military families living in high cost areas. About 30,000 people will benefit.
- The first step in a phased plan to restore the Basic Allowance for Quarters to the DoD objective level of 85 percent of average housing costs. Benefits 700,000 people in off-base housing.
- $800 million in voluntary separation programs for military personnel.
- Full protection of commissary benefits.
- Payment of the Basic Allowance for Subsistence (about $200 per month) for most married service members deployed on operational missions. Previous policy prohibited such payments to enlisted members.
- Over 49,000 new or renovated living spaces for single service members and over 28,000 new or renovated quarters for families, during the next six years. For living facilities, DoD will invest $4 billion for new construction and $2 billion for renovation.
- A 23 percent increase in child care spaces by FY 1997. For FY 1995-96, 20 child care centers will be constructed or expanded, for $56 million.
- In FY 1995-96, 18 new recreation centers, chapels, and fitness centers, requiring $108 million.
- Increased resources for family assistance.

Beyond these traditional concerns, Secretary Perry recognizes that quality of life can deteriorate when military people spend excessive time away from their home station--such as for lengthy contingency operations. He is taking steps to ensure that DoD standards for length of deployments for service members are maintained, except for unavoidable circumstances. For example, Secretary Perry has ordered the greater use of reserve forces to relieve active duty units that have excessive commitments.

RECAPITALIZATION IS BEGINNING

To ensure that U.S. weapons will remain qualitatively superior to future adversaries, the new FYDP begins the recapitalization of America's armed forces--an undertaking that will continue well into the next century. Real increases in procurement funding will start in FY 1997 and continue through the FYDP period. Adjusted for inflation, budget authority for procurement in FY 2001 is projected to be 47 percent higher than in FY 1996.

Requested budget authority for procurement in FY 1996 is $39.4 billion--which, adjusting for inflation, is a decline of 71 percent from FY 1985 and the lowest level since 1950. The deepest cuts in procurement have come since the fall of the Berlin Wall in November 1989. During FY 1991-96 deep procurement cuts could be made without endangering the superiority of U.S. forces because of the significant modernization of them during the 1980s and the collapse of the Soviet military threat. Additionally, as the force structure came down, the remaining units could be equipped with modern systems already fielded.

America's armed forces must now begin a new phase of modernization. Some systems--like C-141 aircraft--are reaching the end of their service life. Others have not benefited from advances in electronics, lasers, materials, and other technologies.

Much of DoD's recapitalization will focus on upgrading the capabilities of some existing weapons, weapons platforms, and supporting systems. But recapitalization also will include developing and fielding totally new systems.

The FY 1996-97 budget provides for the procurement of:

- Aircraft: Remanufactured AV-8B Harrier, C-17, F/A-18C/D, and F/A-18E/F, plus the E-8 Joint STARS surveillance aircraft.
- Helicopters: UH-60 and Apache Longbow modifications.
- Missiles: Javelin, Hellfire, Patriot (PAC-3), Tomahawk, and Trident II missiles.
- Land systems: upgraded M1 tanks and Bradley fighting vehicles, Paladin Howitzer upgrade, and new Armored Gun System.
- Ships: Aegis destroyers and the third Seawolf submarine.

Major research and development (R&D) efforts in the new budget and FYDP include: Advanced Field Artillery System, theater ballistic missile Defense, Comanche helicopter (prototype program), New Attack Submarine, V-22 Osprey aircraft, F-22 Advance Tactical Fighter, MILSTAR, JAST, and various precision munitions.

The recapitalization of U.S. forces is part of a broader challenge aimed at improving their capabilities, flexibility, and lethality. For the planned force structure to be sufficient to support the U.S. defense strategy, a series of critical force enhancements are necessary. These are geared especially toward ensuring that our forces will be able to bring substantial firepower to a regional conflict in its opening stages and quickly halt aggression. The new budget and FYDP support enhancements to: munitions and sensors, battlefield surveillance, long-range bombers, carrier-based air power, strategic airlift and sealift, overseas prepositioning, and Army Reserve Component readiness.

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OTHER DEFENSE BUDGET AND FYDP HIGHLIGHTS

Defense Topline

The DoD request of $246.0 billion in FY 1996 is, in real terms, 39 percent below FY 1985, the peak year for inflation-adjusted DoD budget authority since the Korean War. Under the President's budget, by FY 1997 the cumulative real decline since FY 1985 will reach 41 percent. Reflecting recapitalization efforts, in FY 1998-99 DoD budget authority will increase about enough to keep pace with inflation, then receive moderate real increases in FY 2000 and FY 2001, primarily because of higher funding for procurement. (See attached chart.) DoD outlays as a share of America's Gross Domestic Product (GDP) will fall to 3.1 percent in FY 1997, half the 6.2 percent of the mid-1980s.

Nuclear Threat Reduction and Ballistic Missile Defense

A top priority of the Clinton Administration is preventing the reemergence of the nuclear threat that attended the Cold War. There are still about 25,000 nuclear weapons in Russia and three other Soviet republics. Today the Department is focused on helping Ukraine, Belarus, and Kazakhstan eliminate the Soviet nuclear weapons on their soil, and assisting Russia to reduce its arsenal. U.S. resources and expertise are helping to dismantle weapons and delivery systems, as well as the rest of the nuclear weapons complex.

A related concern is the spread of nuclear, biological, chemical, and missile capabilities, which pose a growing threat to U.S. global interests. Preventing this proliferation is a paramount DoD objective.

America also must ensure that other nations do not mount a ballistic missile threat against U.S. forces or those of our close allies. To that end, DoD budget plans support the rapid development and deployment of theater missile defenses. This focus on theater missiles addresses the immediate threat to U.S. forces deployed throughout the world, and provides a hedge against the emergence of a strategic ballistic missile threat to the United States. The new budget requests $2.9 billion for the Ballistic Missile Defense program for FY 1996.

DoD's New Technology and Industrial Strategy

With the end of the Cold War, the resulting sharp reductions in defense spending, and the surge of commercial technological innovation, DoD can no longer afford to maintain defense-unique technologies, capabilities, and industries--to ensure the superiority of U.S. forces. Many leading-edge technologies that will be critical to success on future battlefields (e.g., electronics and communications) are available more cheaply and

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readily through commercial firms. As a result, DoD must increasingly rely on commercial technologies, products, and processes--which are termed "dual-use" when adapted for defense applications. Dual-use also includes adaptation of defense technologies into commercial products, which can create economies of scale for both commercial and defense products.

DoD is pursuing numerous initiatives to advance this new strategy. The Department is working to reform its acquisition system; reduce the use of military-unique specifications; consider commercial technologies and products, when developing new systems; seek integration of defense and commercial production; and increase research and development (R&D) of dual-use technologies.

The cornerstone of this dual-use philosophy is the Technology Reinvestment Program (TRP), funded at $500 million for FY 1996. TRP, along with other dual-use technology investments, is substantially contributing to the vitally needed integration of the military-commercial industrial base.

Streamlining infrastructure and BRAC

Streamlining the U.S. defense infrastructure (bases, facilities, and support organizations) is a critical part of post-Cold War restructuring. It requires major reductions to infrastructure, as well as realignments to achieve optimum effectiveness and efficiency. As it has drawn down, DoD has simultaneously reduced its overseas facilities. For domestic facilities, much progress was made through the base realignment and closure (BRAC) process in 1988, 1991, and 1993. These three BRAC rounds approved the closure of 70 major bases and are projected to save $6.6 billion during their overlapping 6-year implementation periods (FY 1990-99). To date, 33 of these bases have been closed. Once implementation of BRAC I through III is complete, annual savings will be $4.5 billion.

The BRAC process for 1995 is the last one authorized under public law, and DoD recommendations to the BRAC Commission are due by March 1.

Environmental Programs

With $5.0 billion requested for FY 1996, DoD environmental programs support the readiness of U.S. forces by protecting military personnel and their families from environmental, safety, and health hazards. The programs ensure the usefulness and long-term viability of DoD lands and facilities. Major environmental priorities include actions to achieve compliance with existing laws and regulations, pollution prevention, and cleanup of past contamination.

- End -

NATIONAL DEFENSE TOPLINE
(Current $ Billions)

	1995	1996	1997	1998	1999	2000	2001
BUDGET AUTHORITY							
DoD military - 051	252.6	246.0	242.8	249.7	256.3	266.2	276.6
DoE & other	10.9	11.8	10.6	9.9	9.9	9.9	9.9
Total national defense	263.5	257.8	253.4	259.6	266.3	276.0	286.5
% Real change	**-1.9**	**-5.3**	**-4.1**	**-0.1**	**-0.2**	**+1.1**	**+1.2**
OUTLAYS							
DoD military - 051	260.2	250.0	246.1	244.2	249.6	257.9	261.6
DoE & other	11.4	11.4	10.9	10.3	10.0	9.9	9.9
Total national defense	271.6	261.4	257.0	254.5	259.7	267.8	271.5
% Real change	**-5.4**	**-6.6**	**-4.4**	**-3.6**	**-0.6**	**+0.6**	**-1.2**

Document Separator

PROCUREMENT PROGRAMS (P-1)

Department of Defense Budget for Fiscal Years 1996 and 1997

February 1995

Preface

The Procurement Programs (P-1) exhibit is derived from and consistent with the DoD Future Years Defense Program Procurement Annex data base.

The P-1 is provided annually to the DoD oversight committees of the Congress coincident with the transmittal by the President of the Budget of the United States Government. It is accompanied by an automated data base submission to the House Committee on Administration for input to the House Information System. This document is also provided to OASD(PA) for use by non-DoD activities.

Office of the Under Secretary of Defense (Comptroller)

TABLE OF CONTENTS

	PAGE
DoD Component Summary	ii
Army	
Table of Contents	A-i
Appropriation Summary	A-1 through A-36
P-1 Detail	
Navy	
Table of Contents	N-i
Appropriation Summary	N-1 through N-53
P-1 Detail	
Air Force	
Table of Contents	F-i
Appropriation Summary	F-1 through F-35
P-1 Detail	
Defense Agencies	
Table of Contents	D-i
Appropriation Summary	D-1 through D-17
P-1 Detail	

DEPARTMENT OF DEFENSE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION	FY 1994	FY 1995	FY 1996	FY 1997
AIRCRAFT PROCUREMENT, ARMY	1,304.8	1,055.7	1,223.1	843.4
MISSILE PROCUREMENT, ARMY	1,079.7	808.1	676.4	717.8
PROCUREMENT OF W&TCV, ARMY	887.2	1,143.8	1,299.0	1,261.7
PROCUREMENT OF AMMUNITION, ARMY	726.6	1,172.9	795.0	830.6
OTHER PROCUREMENT, ARMY	2,895.5	2,697.4	2,256.6	2,198.7
TOTAL ARMY	6,893.8	6,878.0	6,250.1	5,852.2
AIRCRAFT PROCUREMENT, NAVY	5,488.8	4,599.8	3,886.5	6,885.2
WEAPONS PROCUREMENT, NAVY	2,947.6	2,083.4	1,787.1	1,714.3
PROCUREMENT OF AMMUNITION, NAVY & MARINE CORP		414.8		
SHIPBUILDING & CONVERSION, NAVY	4,195.2	6,574.5	5,051.9	3,941.6
OTHER PROCUREMENT, NAVY	2,894.7	3,274.3	2,396.1	3,124.4
PROCUREMENT, MARINE CORPS	442.9	418.2	474.1	687.9
TOTAL NAVY	15,969.3	17,365.0	13,595.7	16,353.5
AIRCRAFT PROCUREMENT, AIR FORCE	6,447.7	6,307.3	6,183.9	6,576.9
PROCUREMENT OF AMMUNITION, AIR FORCE		286.4		
MISSILE PROCUREMENT, AIR FORCE	3,718.1	3,622.1	3,647.7	4,422.6
OTHER PROCUREMENT, AIR FORCE	7,600.4	6,923.6	6,804.7	6,904.6
TOTAL AIR FORCE	17,766.2	17,139.4	16,636.3	17,904.1
PROCUREMENT, DEFENSE-WIDE	1,800.5	2,049.7	2,179.9	2,525.0
NATIONAL GUARD & RESERVE EQUIPMENT	1,168.3	794.4		
DEFENSE PRODUCTION ACT PURCHASES	200.0			
CHEM AGENTS & MUNITIONS DESTRUCTION, DEF	372.9	575.4	746.7	828.7
GRAND TOTAL DEPARTMENT OF DEFENSE	44,171.0	44,801.9	39,408.7	43,463.5

* ITEMS UNDER $50,000

TABLE OF CONTENTS

	PAGE
Army Appropriation Summary	A-i
Aircraft Procurement, Army	
Budget Activity Summary	A-1
Detail by Line Item	A-2 through A-5
Missile Procurement, Army	
Budget Activity Summary	A-6
Detail by Line Item	A-7 through A-9
Procurement of Weapons and Tracked Combat Vehicles, Army	
Budget Activity Summary	A-10
Detail by Line Item	A-11 through A-14
Procurement of Ammunition, Army	
Budget Activity Summary	A-15
Detail by Line Item	A-16 through A-20
Other Procurement, Army	
Budget Activity Summary	A-21
Detail by Line Item	A-22 through A-36

DEPARTMENT OF THE ARMY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION	FY 1994	FY 1995	FY 1996	FY 1997
AIRCRAFT PROCUREMENT, ARMY	1,304.8	1,055.7	1,223.1	843.4
MISSILE PROCUREMENT, ARMY	1,079.7	808.1	676.4	717.8
PROCUREMENT OF W&TCV, ARMY	887.2	1,143.8	1,299.0	1,261.7
PROCUREMENT OF AMMUNITION, ARMY	726.6	1,172.9	795.0	830.6
OTHER PROCUREMENT, ARMY	2,895.5	2,697.4	2,256.6	2,198.7
TOTAL	6,893.8	6,878.0	6,250.1	5,852.2

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: AIRCRAFT PROCUREMENT, ARMY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. AIRCRAFT	689.3	404.9	363.0	48.6
02. MODIFICATION OF AIRCRAFT	456.6	471.0	648.3	614.6
03. SPARES AND REPAIR PARTS	52.8	46.9	49.2	44.1
04. SUPPORT EQUIPMENT AND FACILITIES	106.2	132.9	162.5	136.1
TOTAL	1,304.8	1,055.7	1,223.1	843.4

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2031A AIRCRAFT PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
	BUDGET ACTIVITY 01: AIRCRAFT											
	FIXED WING											
1	ARL (TIARA)		18,403,000	1	42.1			1	18.4		24.7	U
2	C21A AIRCRAFT			1	5.5							U
3	C-XX (MEDIUM RANGE) AIRCRAFT						10.9					U
4	GUARDRAIL COMMON SENSOR (TIARA)	A		1	17.2				6.0		6.2	U
	ROTARY											
5	TOTAL PACKAGE FIELDING				.1		.4					U
6	AH-64 ATTACK HELICOPTER (APACHE)			10	167.6		77.1		3.3			U
7	UH-60 BLACKHAWK (MYP)		8,767,350	63	(410.5)	60	(427.1)	60	(526.0)		(17.7)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-157.6)		(-180.5)		(-191.2)			
					252.9		246.6		334.9		17.7	
8	UH-60 BLACKHAWK (MYP) ADVANCE PROCUREMENT (CY)				174.7		69.5					U
9	HELICOPTER NEW TRAINING			35	29.3		.5		.5			U
	TOTAL AIRCRAFT				689.3		404.9		363.0		48.6	

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2031A AIRCRAFT PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 02: MODIFICATION OF AIRCRAFT												
MODIFICATION OF AIRCRAFT												
10	TRACTOR DEW				*							U
11	GUARDRAIL MODS (TIARA)				111.3				49.0		33.5	U
12	AH1F MODS				3.9		4.3		2.2		1.9	U
13	AH-64 MODS	A			35.4		51.9		53.6		48.0	U
14	CH-47 CARGO HELICOPTER MODS (MYP)				15.4		14.2		14.1		16.6	U
15	C-12 CARGO AIRPLANE MODS								.7		.7	U
16	OH-58 MODS				4.4		1.1		2.9		1.2	U
17	C-20 AIRCRAFT MODS				1.0		.9		.9		.9	U
18	LONGBOW								(421.4)		(391.2)	U
	LESS: ADVANCE PROCUREMENT (PY)								(-79.4)		(-12.9)	
									342.0		378.3	
19	LONGBOW ADVANCE PROCUREMENT (CY)						79.4		12.9		17.1	U
20	UH-1 MODS				9.1		8.3		5.0		5.0	U
21	UH-1 HUEY SLEP	A			15.0							U
22	UH-60 MODS				22.3		25.7		19.3		20.6	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2031A AIRCRAFT PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
23	KIOWA WARRIOR				226.2		217.2		71.3		10.6	U
24	EH-60 QUICKFIX MODS				.5		38.9		38.0		37.2	U
25	AIRBORNE AVIONICS				8.7		18.9		30.4		35.7	U
26	ASE MODS				2.5		8.1		4.2		5.5	U
27	MODIFICATIONS < $2.0M				1.0		1.8		1.9		1.9	U
TOTAL MODIFICATION OF AIRCRAFT					456.6		471.0		648.3		614.6	
BUDGET ACTIVITY 03: SPARES AND REPAIR PARTS												
28	SPARES AND REPAIR PARTS				52.8		46.9		49.2		44.1	U
TOTAL SPARES AND REPAIR PARTS					52.8		46.9		49.2		44.1	
BUDGET ACTIVITY 04: SUPPORT EQUIPMENT AND FACILITIES												
29	AIRCRAFT SURVIVABILITY EQUIPMENT				28.0		44.3		22.3			U
	OTHER SUPPORT											
30	AIRBORNE COMMAND & CONTROL								4.0		20.3	U
31	AVIONICS SUPPORT EQUIPMENT				28.9		30.1		22.2		7.8	U
32	TRAINING DEVICES	A					14.0		37.2		7.6	U
33	COMMON GROUND EQUIPMENT				21.1		18.4		30.5		32.1	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2031A AIRCRAFT PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
34	AVIATION LIFE SUPPORT EQUIPMENT (ALSE)				7.2		8.8		9.7		9.6	U
35	AIR TRAFFIC CONTROL				10.8		8.7		8.2		6.4	U
36	INDUSTRIAL FACILITIES				2.4		2.8		2.8		2.2	U
37	AIRBORNE COMMUNICATIONS				7.4		5.7		25.6		50.1	U
38	CLOSED ACCOUNT ADJUSTMENT				.5							U
TOTAL SUPPORT EQUIPMENT AND FACILITIES					106.2		132.9		162.5		136.1	
TOTAL AIRCRAFT PROCUREMENT, ARMY					1,304.8		1,055.7		1,223.1		843.4	

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: MISSILE PROCUREMENT, ARMY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
02. OTHER MISSILES	937.7	689.4	583.0	632.4
03. MODIFICATION OF MISSILES	79.0	71.0	68.4	59.4
04. SPARES AND REPAIR PARTS	43.4	34.4	11.8	13.2
05. SUPPORT EQUIPMENT AND FACILITIES	19.6	13.3	13.2	12.7
TOTAL	1,079.7	808.1	676.4	717.8

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2032A MISSILE PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
	BUDGET ACTIVITY 02: OTHER MISSILES											
	SURFACE-TO-AIR MISSILE SYSTEM											
1	HAWK SYSTEM SUMMARY	A			2.7		.3					U
2	PATRIOT SYSTEM SUMMARY	A			40.6		8.8		5.1		3.0	U
3	STINGER SYSTEM SUMMARY	A			23.8							U
4	AVENGER SYSTEM SUMMARY			144	(167.7)		(46.2)		(31.4)		(6.8)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-32.5)		(-32.5)					
					135.2		13.7		31.4		6.8	
	AIR-TO-SURFACE MISSILE SYSTEM											
5	HELLFIRE SYS SUMMARY	A	595,056	1417	66.8	1245	132.7	352	209.5	1056	281.4	U
	ANTI-TANK/ASSAULT MISSILE SYSTEM											
6	JAVELIN (AAWS-M) SYSTEM SUMMARY		307,770	703	(225.6)	872	(212.6)	557	(171.4)	994	(168.2)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-18.3)							
					207.3		212.6		171.4		168.2	
7	TOW 2 SYSTEM SUMMARY	A		2000	67.8	1503	37.2		7.4		9.5	U
8	MLRS ROCKET				78.4		25.9		3.1	834	25.4	U
9	MLRS LAUNCHER SYSTEMS			34	169.5	20	143.1		48.2		39.5	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2032A MISSILE PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
10	ARMY TACTICAL MSL SYS (ATACMS) - SYS	B	1,175,505	255	(167.5)	148	(115.0)	91	(107.0)	95	(98.7)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-21.9)							
					145.6		115.0		107.0		98.7	
TOTAL OTHER MISSILES					937.7		689.4		583.0		632.4	
BUDGET ACTIVITY 03: MODIFICATION OF MISSILES												
MODIFICATIONS												
11	PATRIOT MODS				18.5		26.0		7.0		11.9	U
12	STINGER MODS				9.6		5.0		10.1		10.1	U
13	AVENGER MODS				9.3		10.8					U
14	TOW MODS				10.8				33.4		32.1	U
15	MLRS MODS				28.9		29.3		18.0		5.3	U
16	MODIFICATIONS LESS THAN $2.0M				1.9							U
TOTAL MODIFICATION OF MISSILES					79.0		71.0		68.4		59.4	
BUDGET ACTIVITY 04: SPARES AND REPAIR PARTS												
17	SPARES AND REPAIR PARTS				43.4		34.4		11.8		13.2	U
TOTAL SPARES AND REPAIR PARTS					43.4		34.4		11.8		13.2	

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2032A MISSILE PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 05: SUPPORT EQUIPMENT AND FACILITIES												
18	AIR DEFENSE TARGETS				14.8		8.2		6.8		6.4	U
19	ITEMS LESS THAN $2.0M (MISSILES)				1.0		1.4		1.0		1.0	U
20	MISSILE DEMILITARIZATION								1.7		1.6	U
21	PRODUCTION BASE SUPPORT				3.8		3.6		3.7		3.6	U
22	CLOSED ACCOUNT ADJUSTMENTS				*							U
TOTAL SUPPORT EQUIPMENT AND FACILITIES					19.6		13.3		13.2		12.7	
TOTAL MISSILE PROCUREMENT, ARMY					1,079.7		808.1		676.4		717.8	

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: PROCUREMENT OF W&TCV, ARMY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. TRACKED COMBAT VEHICLES	781.0	980.9	1,241.3	1,194.3
02. WEAPONS AND OTHER COMBAT VEHICLES	106.3	162.9	23.4	26.0
03. SPARE AND REPAIR PARTS			34.3	41.3
TOTAL	887.2	1,143.8	1,299.0	1,261.7

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2033A PROCUREMENT OF W&TCV, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01: TRACKED COMBAT VEHICLES												
TRACKED COMBAT VEHICLES												
1	ABRAMS TRNG DEV MOD				4.8		1.0		3.1		3.3	U
2	BRADLEY FIGHTING VEHICLE FAMILY (MYP)	A			56.9		14.0					U
3	BRADLEY BASE SUSTAINMENT	B			201.6		144.4		138.3		131.7	U
4	BRADLEY FVS TRAINING DEVICES	A									.6	U
5	BRADLEY FVS TRAINING DEVICES (MOD)	A			3.3		1.9		1.9		.9	U
6	ABRAMS TANK TRAINING DEVICES	A			24.6		17.0		6.3		13.1	U
7	ARMORED GUN SYSTEM (AGS)	B	5,444,269		8.2			26	141.6	42	182.2	U
8	M1 ABRAMS TANK SERIES (MYP)	A			20.2		21.9					U
9	COMMAND & CONTROL VEHICLE	B								6	30.2	U
MODIFICATION OF TRACKED COMBAT VEHICLES												
10	CARRIER, MOD				6.2		50.7		48.1		28.3	U
11	BFVS SERIES (MOD)				29.9		82.2		74.3		86.8	U
12	HOWITZER, MED SP FT 155MM M109A6 (MOD)	A			155.3		226.0		220.2		27.5	U
13	HOWITZER, MED SP FT 155MM M109A5 (MOD)	A			15.5		1.3		.1		.1	U
14	FAASV PIP TO FLEET	A			23.0		9.9		4.1		2.0	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2033A PROCUREMENT OF W&TCV, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
15	IMPROVED RECOVERY VEHICLE (M88 MOD)	B			31.2		36.9		23.5		29.9	U
16	BREACHER SYSTEM (MOD)	B									74.8	U
17	HEAVY ASSAULT BRIDGE (HAB) SYS (MOD)	B							15.1		47.0	U
18	ARMORED VEH LAUNCH BRIDGE (AVLB) (MOD)	A			6.9							U
19	M1 ABRAMS TANK (MOD)				49.0		36.0		77.1		53.0	U
20	ABRAMS UPGRADE PROGRAM	A			(303.0)		(119.9)		(393.9)		(463.3)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-196.6)				(-53.0)		(-133.0)	
					106.4		119.9		340.9		330.3	
21	ABRAMS UPGRADE PROGRAM ADVANCE PROCUREMENT (CY)						53.0		133.0		138.0	U
22	ABRAMS UPGRADE PROGRAM (MCR)						108.0					U
23	MODIFICATIONS LESS THAN $2.0M (TCV-WTCV				.1		.3		.6		1.1	U
	SUPPORT EQUIPMENT AND FACILITIES											
24	SPARES AND REPAIR PARTS				12.3		5.1					U
25	ITEMS LESS THAN $2.0M (TCV-WTCV)				.1		.2		.2		.1	U
26	TANK ENGINE INDUSTRIAL BASE						35.0					U
27	PRODUCTION BASE SUPPORT (TCV-WTCV)				23.5		14.4		11.6		11.7	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2033A PROCUREMENT OF W&TCV, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
28	REGIONAL MAINTENANCE TRAINING SITES-EQU				2.1		1.7		1.5		1.4	U
	TOTAL TRACKED COMBAT VEHICLES				781.0		980.9		1,241.3		1,194.3	
	BUDGET ACTIVITY 02: WEAPONS AND OTHER COMBAT VEHICLES											
	WEAPONS AND OTHER COMBAT VEHICLES											
29	PERSONAL DEFENSE WEAPON (ROLL)	A			1.0	18750	7.5					U
30	HOWITZER, LIGHT, TOWED, 105MM, M119	A			4.3		.2					U
31	MACHINE GUN, 5.56MM (SAW)	A		5854	20.2	8705	22.5					U
32	GRENADE LAUNCHER, AUTO, 40MM, MK19-3	A		1800	32.2	1500	33.7					U
33	MORTAR, 120MM	A		125	16.9	110	13.9		3.0			U
34	M16 RIFLE	A				20473	10.0					U
35	5.56 CARBINE M4	A		22985	11.3	15892	11.1					U
	MODIFICATION OF WEAPONS AND OTHER COMBA											
36	M4 CARBINE MODS								.9		2.2	U
37	SQUAD AUTOMATIC WEAPON (MOD)				.7		6.7					U
38	M16 RIFLE MODS				2.0		.6		2.8		5.8	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2033A PROCUREMENT OF W&TCV, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
39	MODIFICATIONS LESS THAN $2.0M (WOCV-WTC				4.0		2.7		1.4		1.5	U
	SUPPORT EQUIPMENT AND FACILITIES											
40	SPARES AND REPAIR PARTS				*		34.2					U
41	ITEMS LESS THAN $2.0M (WOCV-WTCV)				2.1		2.2		1.2		1.8	U
42	PRODUCTION BASE SUPPORT (WOCV-WTCV)				5.6		10.3		6.0		4.5	U
43	INDUSTRIAL PREPAREDNESS				5.9		7.4		5.6		7.7	U
44	SMALL ARMS (SOLDIER ENH PROG)								2.4		2.5	U
	TOTAL WEAPONS AND OTHER COMBAT VEHICLES				106.3		162.9		23.4		26.0	
	BUDGET ACTIVITY 03: SPARE AND REPAIR PARTS											
	SPARES											
45	SPARES AND REPAIR PARTS (WTCV)								34.3		41.3	U
	TOTAL SPARE AND REPAIR PARTS								34.3		41.3	
	TOTAL PROCUREMENT OF W&TCV, ARMY				887.2		1,143.8		1,299.0		1,261.7	

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: PROCUREMENT OF AMMUNITION, ARMY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. AMMUNITION	495.8	857.2	590.4	702.2
02. AMMUNITION PRODUCTION BASE SUPPORT	230.8	315.7	204.6	128.5
TOTAL	726.6	1,172.9	795.0	830.6

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2034A PROCUREMENT OF AMMUNITION, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01: AMMUNITION												
SMALL/MEDIUM CAL AMMUNITION												
1	CTG, 5.56MM, ALL TYPES	A			25.0		81.5		58.6		38.7	U
2	CTG, 7.62MM, ALL TYPES	A			13.5		24.9		2.6		7.5	U
3	CTG, 9MM, ALL TYPES	A			2.5		2.8		3.8		3.3	U
4	CTG, .50 CAL, ALL TYPES	A			26.6				27.6	757	31.6	U
5	CTG, 20MM, ALL TYPES	A					1.2				3.2	U
6	CTG, 25MM, ALL TYPES	A			30.5		44.6		35.1		55.8	U
7	CTG, 30MM, ALL TYPES	A			.9		20.1		4.3		11.3	U
8	CTG, 40MM, ALL TYPES	A					32.9		40.3		35.8	U
MORTAR AMMUNITION												
9	CTG MORTAR 60MM 1/10 PRAC M766	A		5	3.2	2	3.3					U
10	CTG MORTAR 60MM ILLUM M721	A	420,032			26	10.6	31	13.0	10	4.4	U
11	CTG MORTAR 81MM PRAC 1/10 RANGE M880	A				4	3.9					U
12	CTG MORTAR 120MM FULL RANGE PRACTICE XM	B	417,066					45	18.8	53	19.1	U
13	CTG MORTAR 120MM HE XM933 W/PD FUZE	A				48	29.8					U

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DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2034A PROCUREMENT OF AMMUNITION, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
14	CTG MORTAR 120MM SMOKE XM929 W/MO FUZE	B	1,084,181		4.8	17	21.5	44	47.7	9	10.1	U
	TANK AMMUNITION											
15	CTG TANK 35MM SUBCAL PRAC M968	A			.7							U
16	CTG 120MM APFSDS-T M829A2	A		24	86.1	24	81.9			24	82.6	U
17	CTG 120MM HEAT-MP-T M830A1	A		20	57.2	13	44.3					U
18	CTG TANK 120MM TP-T M831/M831A1	A	717,073	59	29.1	42	29.6	41	29.4	48	30.6	U
19	CTG TANK 120MM TPCSDS-T M865	A	669,419	118	54.5	128	83.0	136	91.0	146	87.2	U
	ARTILLERY AMMUNITION											
20	CTG ARTY 75MM BLANK M337A1	A	36,754					102	3.7			U
21	CTG ARTY 105MM DPICM XM915									7	20.0	U
22	CTG ARTY 105MM HERA M913	A				24	21.3					U
23	PROJ ARTY 155MM SMOKE WP M825	A							10.6		15.6	U
24	PROJ ARTY 155MM HE M795	A	493,866			79	53.6	75	37.0			U
25	PROJ ARTY 155MM SADARM XM898	B	315,376			80	24.8	77	24.3	336	62.4	U

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DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2034A PROCUREMENT OF AMMUNITION, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
26	PROJ ARTY 155MM PRAC M804	A		41	10.0							U
	MINES											
27	MINE, TRAINING, ALL TYPES	A			2.5		5.4		3.9		2.0	U
28	MINE AT/AP M87 (VOLCANO)	A				17	43.9					U
29	WIDE AREA MINE		111,940					134	15.0	285	20.0	U
	ROCKETS											
30	BUNKER DEFEATING MUNITION (BDM)	B					7.7					U
31	ROCKET, HYDRA 70, ALL TYPES	A			54.6		107.1		28.1		82.7	U
	OTHER AMMUNITION											
32	DEMOLITION MUNITIONS, ALL TYPES	A			4.6		40.3		26.3		10.1	U
33	GRENADES, ALL TYPES	B			12.2		5.0		27.5		25.1	U
34	SIGNALS, ALL TYPES	B			2.2		.7		18.3		11.7	U
35	SIMULATORS, ALL TYPES	B			5.3		9.3		6.1		8.0	U
	MISCELLANEOUS											
36	AMMO COMPONENTS, ALL TYPES	A			7.9		5.2		4.1		6.1	U
37	M483 TO M864 CONVERSION				25.0							U
38	UPGRADE/IMPROVEMENT OF AT4				15.0							U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2034A PROCUREMENT OF AMMUNITION, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
39	CAD/PAD ALL TYPES	A			9.3		7.0		3.5		4.0	U
40	ITEMS LESS THAN $2 MILLION	A			.8		.8		.9		1.0	U
41	EOD EXPLOSIVE ITEMS	A			1.3							U
42	AMMUNITION PECULIAR EQUIPMENT	A			5.0		4.6		5.0		7.0	U
43	FIRST DESTINATION TRANSPORTATION (AMMO)	A			5.4		4.7		3.9		5.4	U
TOTAL AMMUNITION					495.8		857.2		590.4		702.2	
BUDGET ACTIVITY 02: AMMUNITION PRODUCTION BASE SUPPORT												
PRODUCTION BASE SUPPORT												
44	PROVISION OF INDUSTRIAL FACILITIES				49.0		59.6		41.9		31.9	U
45	COMPONENTS FOR PROVE-OUT				2.1		2.2		1.5		1.1	U
46	LAYAWAY OF INDUSTRIAL FACILITIES				48.0		85.6		13.7		13.5	U
47	PROVING GROUND MODERNIZATION				1.4		1.4					U
48	MAINTENANCE OF INACTIVE FACILITIES				52.4		47.8		51.3		50.3	U
49	CONVENTIONAL AMMO DEMILITARIZATION				70.5		109.2		96.3		31.6	U
50	FLEXIBLE MANUFACTURING CENTERS				7.5		9.9					U
TOTAL AMMUNITION PRODUCTION BASE SUPPORT					230.8		315.7		204.6		128.5	

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2034A PROCUREMENT OF AMMUNITION, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
	TOTAL PROCUREMENT OF AMMUNITION, ARMY				726.6		1,172.9		795.0		830.6	

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: OTHER PROCUREMENT, ARMY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. TACTICAL AND SUPPORT VEHICLES	751.9	583.2	127.8	264.1
02. COMMUNICATIONS AND ELECTRONICS EQUIPMENT	1,710.4	1,584.7	1,691.4	1,388.2
03. OTHER SUPPORT EQUIPMENT	433.2	529.6	351.2	481.2
04. SPARE AND REPAIR PARTS			86.1	65.2
TOTAL	2,895.5	2,697.4	2,256.6	2,198.7

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01: TACTICAL AND SUPPORT VEHICLES												
	TACTICAL VEHICLES											
1	TACTICAL TRAILERS/DOLLY SETS	A			14.4		35.4		13.8		14.1	U
2	SEMITRAILER FB BB/CONT TRANS 22 1/2 T	A								35	2.0	U
3	SEMITRAILER, TANK, 5000G	A				7	.7					U
4	SEMITRAILER VAN CGO SUPPLY 12T 4WHL M12	A	54,810	10	1.6	101	4.8	58	3.2	198	8.6	U
5	HI MOB MULTI-PURP WHLD VEH (HMMWV)(MYP)		105,659	5836	246.8	1325	117.7	546	57.7	226	52.7	U
6	FAMILY OF MEDIUM TACTICAL VEH (MYP)			219	29.0	3461	386.0		39.7			U
7	HEAVY EQUIPMENT TRANSPORTER SYS										89.4	U
8	FAMILY OF HEAVY TACTICAL VEHICLES (MYP)			932	402.7		16.3		.6		80.6	U
9	ARMORED SECURITY VEHICLES (COMBAT SPT)									21	9.6	U
10	MEDIUM TRUCK EXTENDED SVC PGM(ESP) (PRE			241	17.6							U
11	MODIFICATION OF IN SVC EQUIP				25.1		11.7		2.8		2.8	U
12	ITEMS LESS THAN $2.0M (TAC VEH)				1.4		.4		.2		.2	U
	NON-TACTICAL VEHICLES											
13	PASSENGER CARRYING VEHICLES		24,243	16	.3			41	1.0			U
14	GENERAL PURPOSE VEHICLES				2.7				1.0			U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
15	SPECIAL PURPOSE VEHICLES				4.3				1.0			U
	SUPPORT EQUIPMENT AND FACILITIES											
16	SYSTEM FIELDING SUPPORT PEO				2.1		5.4		4.2		1.4	U
17	PROJECT MANAGEMENT SUPPORT				1.9		2.5		.7		.6	U
18	SYSTEM FIELDING SUPPORT (TACOM)				2.1		2.1		2.0		2.0	U
19	SPARES AND REPAIR PARTS				.1							U
TOTAL TACTICAL AND SUPPORT VEHICLES					751.9		583.2		127.8		264.1	
BUDGET ACTIVITY 02: COMMUNICATIONS AND ELECTRONICS EQUIPMENT												
	COMM - JOINT COMMUNICATIONS											
20	JCSE EQUIPMENT (USREDCOM)				1.0		1.8		2.3		2.5	U
	COMM - SATELLITE COMMUNICATIONS											
21	DEFENSE SATELLITE COMMUNICATIONS SYSTEM				77.6		103.8		78.2		99.9	U
22	SAT TERM, EMUT		28,313	275	9.6	500	15.0	618	17.5	473	13.4	U
23	NAVSTAR GLOBAL POSITIONING SYSTEM	B	2,163	14318	32.4	14517	32.1	15025	32.5	14026	31.5	U
24	GROUND COMMAND POST						5.9		1.0		1.0	U
25	SMART-T								66.7		59.4	U
26	SCAMP								25.8		32.5	U

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DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
27	MOD OF IN-SVC EQUIP (TAC SAT)				19.8		6.3		4.2		5.7	U
	COMM - COMBAT SUPPORT COMM											
28	MSE MOD IN SERVICE						33.3		14.7		18.7	U
	COMM - C3 SYSTEM											
29	COMMAND CENTER IMPROVEMENT PROG (CCIP)				3.6		3.6		.9		.9	U
30	SOUTHCOM C3 UPGRADE								11.4		5.0	U
31	STD THEATER CMD & CONTROL SYS (STACCS)	A			5.2		12.0		14.5		15.2	U
	COMM - COMBAT COMMUNICATIONS											
32	ARMY DATA DISTRIBUTION SYSTEM (ADDS)	B			37.0		9.5		20.0		10.3	U
33	MOBILE SUBSCRIBER EQUIP (MSE)	A			42.8				3.5		6.7	U
34	SINCGARS FAMILY	A			352.1		364.8		310.6		208.4	U
35	SW ASIA COMM INFRASTRUCTURE				1.5							U
36	EAC COMMUNICATIONS	A			50.2		49.5		5.9		4.3	U
37	MOD OF IN-SVC EQUIP (EAC COMM)	A			11.3		11.7		11.6		10.4	U
38	TAC RADIO		35,432					700	24.8	1400	32.9	U

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DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

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39	C-E CONTINGENCY/FIELDING EQUIP				12.3		8.5		5.1		2.6	U
	INFORMATION SECUTITY											
40	TSEC - INFORMATION SYSTEM SECURITY	A			56.9		13.0		11.1		11.1	U
41	TSEC - JCSE EQIP						.5					U
	COMM - LONG HAUL COMMUNICATIONS											
42	TERRESTRIAL TRANSMISSION						.9		9.6		1.3	U
43	BASE SUPPORT COMMUNICATIONS						.6		2.2		1.1	U
44	DEFENSE DATA NETWORK (DDN)				3.0		2.7		4.9		2.2	U
45	ELECTROMAG COMP PROG (EMCP)				.3		.9		.5		.5	U
46	WW TECH CON IMP PROG (WWTCIP)				.2		.2		4.8		.8	U
	COMM - BASE COMMUNICATIONS											
47	INFORMATION SYSTEMS				32.7		22.3		64.1		24.9	U
48	DEFENSE MESSAGE SYSTEM (DMS)				5.2		16.4		8.0		6.0	U
49	LOCAL AREA NETWORK (LAN)				17.5		22.5		61.5		18.4	U

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DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

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50	PENTAGON TELECOM CTR (PTC)				3.5		3.1		2.7		19.6	U
	ELECT EQUIP - NAT FOR INT PROG (NFIP)											
51	FOREIGN COUNTERINTELLIGENCE PROG (FCI)				.3		.2		.5		.5	U
52	GENERAL DEFENSE INTELL PROG (GDIP)				33.6		31.1		29.4		21.9	U
53	ITEMS LESS THAN $2.0M (INTEL SPT) - TIA				3.6		1.4		2.8		2.2	U
	ELECT EQUIP - TACT INT REL ACT (TIARA)											
54	ALL SOURCE ANALYSIS SYS (ASAS) (TIARA)	B			33.9		23.4		9.9		7.9	U
55	COMMANDERS TACTICAL TERM (CTT) (TIARA)	B	342,848	2	6.5	17	11.6	33	11.3	58	14.6	U
56	HF COMINT SYSTEM (TIARA)	B		1	21.8							U
57	IEW - GND BASE COMMON SENSORS (TIARA)	B					58.4		46.9		46.6	U
58	DEFENSE AIRBORNE RECONN PROGRAM (DARP)				1.9		2.4					U
59	JOINT STARS (ARMY) (TIARA)	B			57.8		55.2		83.0		89.9	U
60	DIGITAL TOPOGRAPHIC SPT SYS (DTSS) (TIA	B	1,390,800		10.4	14	7.8	5	7.0	3	6.7	U
61	DRUG INTERDICTION PROGRAM (DIP) (TIARA)				10.6							U
62	TACTICAL EXPLOITATION OF NATIONAL CAPAB				7.7		4.6		4.6		1.8	U
63	JOINT TACTICAL GROUND STATION	B							30.9			U
64	TROJAN (TIARA)	B			11.6		22.2		19.3		3.7	U

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DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

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65	MOD OF IN-SVC EQUIP (INTEL SPT) (TIARA)				15.8		15.2		19.5		16.8	U
66	ITEMS LESS THAN $2.0M (TIARA)								.5		.5	U
	ELECT EQUIP - ELECTRONIC WARFARE (EW)											
67	MOD OF IN-SVC EQUIP (EW)				8.0							U
68	COUNTERINTELLIGENCE/SECURITY COUNTERMEA				2.4		1.8		2.6		1.7	U
	ELECT EQUIP - TACTICAL SURV. (TAC SURV)											
69	LT SPEC DIV INTERIM SENSOR (LSDIS)				1.9		1.9					U
70	FAAD GBS		5,584,750		7.9		63.9	8	44.7	15	53.3	U
71	NIGHT VISION DEVICES	A			87.9		80.0		77.1		81.8	U
72	PHYSICAL SECURITY SYSTEMS				11.1		10.1					U
73	ARTILLERY ACCURACY EQUIP				12.7		9.4		12.4		4.8	U
74	MOD OF IN-SVC EQUIP (TAC SURV)	B			35.7		4.6		26.9		15.7	U
75	LIGHTWEIGHT LEADER COMPUTER (LLC)	A									6.8	U
76	COMPUTER BALLISTICS: MORTAR XM-23	A							5.0		4.1	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
77	INTEGRATED MET SYS SENSORS (IMETS) - TI		585,750		3.8	12	7.0	12	7.0	6	3.3	U
	ELECT EQUIP - TACTICAL C2 SYSTEMS											
78	ADV FIELD ARTILLERY TACT DATA SYS (AFAT	B	139,805	146	4.4	116	8.1	221	30.9	222	34.9	U
79	FIRE SUPPORT ADA CONVERSION	A		300	18.0	289	11.5					U
80	INITIAL FIRE SPT AUTOMATIC SYSTEM (IFSA	A		21	21.4							U
81	CMBT SVC SUPT CONTROL SYS (CSSCS)		203,965			42	6.0	29	5.9	35	6.0	U
82	CORPS/THEATER ADP SVC CTR (CTASC)	B			1.8		2.0					U
83	FAAD C2	A	6,588,400		13.3	1	14.2	5	32.9	5	38.2	U
84	FORWARD ENTRY DEVICE (FED)	B			21.9		.1					U
85	COMMON HARDWARE SOFTWARE	A			18.0							U
86	LIFE CYCLE SOFTWARE SUPPORT (LCSS)				1.8		1.7		2.1		2.1	U
87	LOGTECH	B			3.5		4.6		4.5		4.6	U
88	ISYSCON EQUIPMENT				.1				13.2		10.2	U
89	MANEUVER CONTROL SYSTEM (MCS)	A	90,842					152	13.8	165	15.9	U
90	STAMIS TACTICAL COMPUTERS (STACOMP)	A	12,822		31.6		21.7	1830	23.5	1861	24.0	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
91	STANDARD INTEGRATED CMD POST SYSTEM						9.5		28.9		27.4	U
	ELECT EQUIP - AUTOMATION											
92	AUTOMATED DATA PROCESSING EQUIP				46.8		83.4		132.8		122.3	U
93	RESERVE COMPONENT AUTOMATION SYS (RCAS)				184.6		163.5		83.2		25.4	U
	ELECT EQUIP - AUDIO VISUAL SYS (A/V)											
94	AFRTS				3.4		3.0		2.6		.4	U
95	ITEMS LESS THAN $2.0M (A/V)				6.0		3.8		5.1		2.9	U
	ELECT EQUIP-TEST MEAS&DIAG EQUIP (TMDE)											
96	CALIBRATION SETS EQUIPMENT	A			14.7		10.3		11.5		11.6	U
97	INTEGRATED FAMILY OF TEST EQUIP (IFTE)	B			57.8		62.3		26.4		20.1	U
98	TMDE MODERNIZATION (TMOD)	A			15.3		11.1		9.5		8.6	U
	ELECT EQUIP - SUPPORT											
99	INITIAL SPARES - PEO CCS				11.0							U
100	INITIAL SPARES - PEO COMM				28.0							U
101	INITIAL SPARES - PEO IEW				19.1							U
102	INITIAL SPARES - PEO STAMIS				.7							U
103	INITIAL SPARES - NON PEO				13.6							U

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DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
104	ARMY PRINTING AND BINDING EQUIPMENT	A			4.2							U
105	INSTALLATION C4 UPGRADE (ICU)				5.2		2.3		1.8		1.2	U
106	PRODUCTION BASE SUPPORT (C-E)				1.8		12.8		.7		.7	U
	TOTAL COMMUNICATIONS AND ELECTRONICS EQUIPMENT				1,710.4		1,584.7		1,691.4		1,388.2	
	BUDGET ACTIVITY 03: OTHER SUPPORT EQUIPMENT											
	CHEMICAL DEFENSIVE EQUIPMENT											
107	SIMP COLL PROT EQUIP M20	A		134	1.5							U
108	COLL PROT EQUIP, NBC TEMPER, TENT M28	A			4.4		10.2					U
109	MASK, PROTECTIVE, NBC M40/M42	A			34.5		24.9					U
110	REMOTE SENSING CHEMICAL AGENT ALARM XM2	B				156	18.8					U
111	IMPROVED CHEMICAL AGENT MONITOR	A					1.2					U
112	AUTO CHEMICAL AGENT ALARM (ACADA), XM22	B				160	5.5					U
113	DECONTAMINATE APP PWR DR LT WT M17	A		515	7.2							U
114	GEN SMK MECH:MTRZD DUAL PURP XM56	A		12	4.9	60	12.4			70	13.0	U
115	GENERATOR, SMOKE, MECH XM58	A	373,470					34	12.7	34	12.1	U
116	GEN SET, SMOKE, MECH: PUL JET,XM157	A	30,670					170	5.2	118	3.6	U
117	RADIATION MONITORING SYSTEM (OPA-3)				8.3							U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
118	JOINT BIOLOGICAL DEFENSE PROGRAM						20.4					U
	BRIDGING EQUIPMENT											
119	RIBBON BRIDGE								3.8		4.5	U
	ENGINEER (NON-CONSTRUCTION) EQUIPMENT											
120	DISPENSER, MINE M139	A		166	15.9	179	16.2		1.0	35	4.3	U
121	METALLIC MINE DETECTOR, VEHICLE MOUNTED	B								21	6.8	U
	COMBAT SERVICE SUPPORT EQUIPMENT											
122	AIR CONDITIONERS VARIOUS SIZE/CAPACITY	A			6.1		3.0		3.2		1.5	U
123	STANDARD INTEGRATED CMD POST SYSTEM	B			20.3							U
124	CHEM/BIO PROTECTIVE SHELTER	B				29	7.0					U
125	SPACE HEATER	A	4,965			564	2.8	290	1.4	485	2.4	U
126	SOLDIER ENHANCEMENT				9.2							U
127	FORCE PROVIDER	A	6,137,500			2	10.7	2	12.3	2	12.1	U
128	REFRIGERATION EQUIPMENT	A					2.2		2.6		5.5	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
129	ITEMS LESS THAN $2.0M (CSS-EQ)	A			2.8		4.4		2.2		2.8	U
	PETROLEUM EQUIPMENT											
130	LAB PETROLEUM MODULAR BASE	A	2,786,000			1	2.3	1	2.8			U
131	INLAND PETROLEUM DISTRIBUTION SYSTEM	A			.3		3.7		1.1		1.1	U
132	HEMTT AVIATION REFUELING SYSTEM	A	26,000			113	3.0	21	.5			U
133	ITEMS LESS THAN $2.0M (POL)	A			11.1		8.6		5.5		9.0	U
	WATER EQUIPMENT											
134	FWD AREA WTR POINT SUP SYSTEM	A	18,189			155	2.7	148	2.7			U
135	SMALL MOBILE WATER CHILLER (SMWC)	A	10,214			185	1.9	387	4.0			U
136	ITEMS LESS THAN $2.0M (WATER EQ)	A			4.1		3.0		2.4		3.1	U
	MEDICAL EQUIPMENT											
137	COMBAT SUPPORT MEDICAL				20.8		19.2		14.3		16.5	U
	MAINTENANCE EQUIPMENT											
138	SHOP EQ CONTACT MAINTENANCE TRK MTD (MY	A	25,042			118	2.8	71	1.8	66	1.8	U
139	TOOL OUTFIT HYDRAULIC REPAIR 3/4 TRL MT	A				23	2.1					U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
140	ITEMS LESS THAN $2.0M (MAINT EQ)	A			7.0		1.1		1.5		1.4	U
	CONSTRUCTION EQUIPMENT											
141	COMPACTOR HI-SPEED TAMP SELF PROP (CCE)	A		109	13.4							U
142	ROLLER, VIBRATORY, SELF-PROPELLED (CCE)	A	151,382			31	5.8	47	7.1			U
143	DEPLOYABLE UNIVERSAL COMBAT EARTH MOVER		552,111					18	9.9	15	8.0	U
144	CRANE, WHEEL MTD, 25T, 3/4 CU YD, RT	A	283,857					7	2.0	7	2.0	U
145	ITEMS LESS THAN $2.0M (CONST EQUIP)	A			4.0		3.4		2.0		.4	U
	RAIL FLOAT CONTAINERIZATION EQUIPMENT											
146	PUSHER TUG, SMALL	B	3,576,000					1	3.6	2	7.2	U
147	FLOATING CRANE, 100-250 TON	B								1	14.9	U
148	CAUSEWAY SYSTEMS	A					1.0					U
149	RAILWAY CAR, FLAT, 100 TON	A	49,441	187	15.1	241	11.5	238	11.8	297	15.0	U
150	ITEMS LESS THAN $2.0M (FLOAT/RAIL)	A			2.0		2.2		3.6		6.0	U
	GENERATORS											

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
151	GENERATORS AND ASSOCIATED EQUIP	A			24.8		25.2		13.8		15.7	U
	MATERIAL HANDLING EQUIPMENT											
152	TRUCK, FORK LIFT, DE, PT, RT, 50000 LB	A	331,151					33	10.9			U
153	ALL TERRAIN LIFTING ARTICULATING SYSTEM		128,598					112	14.4	157	16.6	U
154	ITEMS LESS THAN $2.0M (MHE)	A			5.8		4.7		2.8		2.8	U
	TRAINING EQUIPMENT											
155	COMBAT TRAINING CENTERS SUPPORT				22.9		21.1		22.2		5.6	U
156	TRAINING DEVICES, NONSYSTEM				78.8		85.3		71.6		102.7	U
157	SIMNET/CLOSE COMBAT TACTICAL TRAINER	A					31.8		30.7		88.5	U
158	FIRE SUPPORT COMBINED ARMS TACTICAL TRA	B									22.2	U
	OTHER SUPPORT EQUIPMENT											
159	RECONFIGURABLE SIMULATORS	B							12.6		16.8	U
160	PHYSICAL SECURITY SYSTEMS (OPA3)	A							6.2		6.2	U
161	SYSTEM FIELDING SUPPORT (OPA-3)				19.2		13.9		10.0		14.0	U
162	BASE LEVEL COM'L EQUIPMENT				17.3		8.0					U
163	ARMS CONTROL COMPLIANCE				4.8		3.5					U
164	COMBINED DEFENSE IMPROVEMENT PROJECT (C				.2		3.1					U

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
165	MODIFICATION OF IN-SVC EQUIPMENT (OPA-3				40.9		36.2		21.9		15.3	U
166	PRODUCTION BASE SUPPORT (OTH)				9.9		1.9		1.8		2.0	U
167	INDUSTRIAL MODERNIZATION INCENTIVE PROG				*							U
168	SPECIAL EQUIPMENT FOR USER TESTING				4.9		10.4		9.2		14.1	U
169	ITEMS LESS THAN $2.0M (OTH SPT EQ)				1.0							U
170	OPA INITIAL SPARES						68.0					U
171	TRACTOR VAPOR								2.2		4.0	U
172	NATURAL GAS UTILIZATION				10.0		2.5					U
173	CLOSED ACCOUNT ADJUSTMENTS				*							U
TOTAL OTHER SUPPORT EQUIPMENT					433.2		529.6		351.2		481.2	
BUDGET ACTIVITY 04: SPARE AND REPAIR PARTS												
OPA1												
174	INITIAL SPARES - TSV	A							1.1		.1	U
OPA2												

* ITEMS UNDER $50,000

DEPARTMENT OF THE ARMY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 2035A OTHER PROCUREMENT, ARMY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
175	INITIAL SPARES - C&E	A							83.0		63.0	U
	OPA3											
176	INITIAL SPARES - OTHER SUPPORT EQUIP	A							2.0		2.1	U
	TOTAL SPARE AND REPAIR PARTS								86.1		65.2	
	TOTAL OTHER PROCUREMENT, ARMY				2,895.5		2,697.4		2,256.6		2,198.7	

* ITEMS UNDER $50,000

NAVY

TABLE OF CONTENTS

	PAGE
Navy Appropriation Summary	N-i
Aircraft Procurement, Navy	
Budget Activity Summary	N-1
Detail by Line Item	N-2 through N-7
Weapons Procurement, Navy	
Budget Activity Summary	N-8
Detail by Line Item	N-9 through N-15
Procurement of Ammunition, Navy and Marine Corps	
Budget Activity Summary	N-16
Detail by Line Item	N-17 through N-19
Shipbuilding and Conversion, Navy	
Budget Activity Summary	N-20
Detail by Line Item	N-21 through N-23
Other Procurement, Navy	
Budget Activity Summary	N-24
Detail by Line Item	N-25 through N-43
Procurement, Marine Corps	
Budget Activity Summary	N-44
Detail by Line Item	N-45 through N-53

DEPARTMENT OF THE NAVY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION	FY 1994	FY 1995	FY 1996	FY 1997
AIRCRAFT PROCUREMENT, NAVY	5,488.8	4,599.8	3,886.5	6,885.2
WEAPONS PROCUREMENT, NAVY	2,947.6	2,083.4	1,787.1	1,714.3
PROCUREMENT OF AMMUNITION, NAVY & MARINE CORP		414.8		
SHIPBUILDING & CONVERSION, NAVY	4,195.2	6,574.5	5,051.9	3,941.6
OTHER PROCUREMENT, NAVY	2,894.7	3,274.3	2,396.1	3,124.4
PROCUREMENT, MARINE CORPS	442.9	418.2	474.1	687.9
TOTAL	15,969.3	17,365.0	13,595.7	16,353.5

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: AIRCRAFT PROCUREMENT, NAVY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. COMBAT AIRCRAFT	2,571.7	1,611.5	1,302.9	3,641.8
03. TRAINER AIRCRAFT	290.0	245.4	316.1	346.9
04. OTHER AIRCRAFT	222.6	40.5	23.8	
05. MODIFICATION OF AIRCRAFT	1,012.2	1,287.1	1,005.6	1,481.7
06. AIRCRAFT SPARES AND REPAIR PARTS	829.7	891.9	784.8	943.8
07. AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES	562.6	523.4	453.4	471.0
TOTAL	5,488.8	4,599.8	3,886.5	6,885.2

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1506N AIRCRAFT PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01:	COMBAT AIRCRAFT											
	COMBAT AIRCRAFT											
1	EA-6B/REMFG (ELECTRONIC WARFARE) PROWLE	B			77.6							U
2	AV-8B (V/STOL)HARRIER	A	40,895,500	4	(121.6)	4	(129.9)	4	(163.6)	12	(367.0)	U
	LESS: ADVANCE PROCUREMENT (PY)						(-15.0)		(-15.4)		(-21.6)	
					121.6		114.9		148.2		345.4	
3	AV-8B (V/STOL)HARRIER ADVANCE PROCUREMENT (CY)				15.0		15.4		21.6		23.8	U
4	F/A-18C/D (FIGHTER) HORNET	A	57,841,750	36	(1591.5)	24	(1059.7)	12	(694.1)		(49.5)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-110.0)		(-127.7)		(-84.2)			
					1481.5		932.0		609.9		49.5	
5	F/A-18C/D (FIGHTER) HORNET ADVANCE PROCUREMENT (CY)				127.7		84.2					U
6	F/A-18E/F (FIGHTER) HORNET	B								12	(2183.2)	U
	LESS: ADVANCE PROCUREMENT (PY)										(-236.9)	
											1946.3	
7	F/A-18E/F (FIGHTER) HORNET ADVANCE PROCUREMENT (CY)								236.9		306.3	U
8	CH/MH-53E (HELICOPTER) SUPER STALLION	A		12	(337.5)		(34.3)				(20.3)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-46.8)							
					290.7		34.3				20.3	

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1506N AIRCRAFT PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
9	V-22 (MEDIUM LIFT)	B								4	(628.9)	U
	LESS: ADVANCE PROCUREMENT (PY)										(-48.0)	
					-------		-------		-------		-------	
											580.8	
10	V-22 (MEDIUM LIFT) ADVANCE PROCUREMENT (CY)								48.0		60.0	U
11	AH-1W (HELICOPTER) SEA COBRA	A		12	139.2	12	140.7		10.4		4.0	U
12	SH-60B (ASW HELICOPTER) SEAHAWK	A		7	(245.7)				(13.7)		(13.0)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-30.0)							
					-------		-------		-------		-------	
					215.7				13.7		13.0	
13	SH-60F CV (ASW HELICOPTER)	A			(98.0)		(7.5)					U
	LESS: ADVANCE PROCUREMENT (PY)				(-33.0)							
					-------		-------		-------		-------	
					65.0		7.5					
14	E-2C (EARLY WARNING) HAWKEYE	A	70,863,000			4	(278.8)	3	(212.6)	4	(290.6)	U
	LESS: ADVANCE PROCUREMENT (PY)						(-37.8)		(-41.4)		(-43.0)	
					-------		-------		-------		-------	
							241.1		171.2		247.5	
15	E-2C (EARLY WARNING) HAWKEYE ADVANCE PROCUREMENT (CY)				37.8		41.4		43.0		44.9	U
					-------		-------		-------		-------	
TOTAL COMBAT AIRCRAFT					2,571.7		1,611.5		1,302.9		3,641.8	

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1506N AIRCRAFT PROCUREMENT, NAVY

DATE: FEB 1995

MILLIONS OF DOLLARS

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
	BUDGET ACTIVITY 03: TRAINER AIRCRAFT											
16	T-45TS (TRAINER) GOSHAWK	B	26,428,583	12	(284.6)	12	(245.2)	12	(317.1)	12	(349.4)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-25.3)		(-30.8)		(-31.0)		(-29.9)	
					259.2		214.5		286.2		319.5	
17	T-45TS (TRAINER) GOSHAWK ADVANCE PROCUREMENT (CY)				30.8		31.0		29.9		27.4	U
	TOTAL TRAINER AIRCRAFT				290.0		245.4		316.1		346.9	
	BUDGET ACTIVITY 04: OTHER AIRCRAFT											
18	HH-60H (HELICOPTER)	A		17	222.6		40.5		23.8			U
	TOTAL OTHER AIRCRAFT				222.6		40.5		23.8			
	BUDGET ACTIVITY 05: MODIFICATION OF AIRCRAFT											
19	A-6 SERIES	A			5.5							U
20	EA-6 SERIES	A			23.1		38.5				59.4	U
21	AV-8 SERIES	A			22.7		22.8		16.0		20.4	U
22	F-14 SERIES	A			95.9		132.4		59.0		169.7	U
23	ADVERSARY	A					.2		.2		.1	U
24	ES-3 SERIES	A			12.2		19.2		20.6		11.6	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1506N AIRCRAFT PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
25	F-18 SERIES	A			58.5		95.4		91.6		206.5	U
26	H-46 SERIES	A			77.4		95.2		83.7		29.8	U
27	H-53 SERIES	A			30.3		53.4		46.2		52.4	U
28	SH-60 SERIES	A			38.3		59.4		66.8		85.9	U
29	H-1 SERIES	A			52.3		103.1		54.5		69.0	U
30	H-3 SERIES	A			2.7		3.8		7.0		5.7	U
31	EP-3 SERIES	A			34.2		21.6		32.4		37.8	U
32	P-3 SERIES	A			135.9		103.5		178.6		204.1	U
33	S-3 SERIES	A			16.4		50.5		40.2		42.4	U
34	E-2 SERIES	A			113.3		185.8		19.6		96.2	U
35	TRAINER A/C SERIES	A			12.3		.3		.7		3.7	U
36	C-130 SERIES	A			13.3		17.3		6.9		6.9	U
37	FEWSG	A			11.5		8.9		.6		.5	U
38	CARGO/TRANSPORT A/C SERIES	A			18.6		23.3		31.4		41.0	U
39	E-6 SERIES	A			62.8		89.8		112.9		112.9	U
40	EXECUTIVE HELICOPTERS SERIES	A			45.3		37.8		36.0		31.2	U
41	T-45 SERIES	A					6.3		4.9		32.3	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1506N AIRCRAFT PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
42	POWER PLANT CHANGES	A			11.7		13.5		17.5		13.2	U
43	MISC FLIGHT SAFETY CHANGES	A			*		.2		.2		.2	U
44	COMMON ECM EQUIPMENT	A			45.0		20.5		4.2		42.0	U
45	COMMON AVIONICS CHANGES	A			72.9		84.4		73.9		106.5	U
TOTAL MODIFICATION OF AIRCRAFT					1,012.2		1,287.1		1,005.6		1,481.7	
BUDGET ACTIVITY 06: AIRCRAFT SPARES AND REPAIR PARTS												
46	SPARES AND REPAIR PARTS	A			829.7		891.9		784.8		943.8	U
TOTAL AIRCRAFT SPARES AND REPAIR PARTS					829.7		891.9		784.8		943.8	
BUDGET ACTIVITY 07: AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES												
47	COMMON GROUND EQUIPMENT	A			425.3		395.3		367.0		396.5	U
48	AIRCRAFT INDUSTRIAL FACILITIES	A			37.9		38.1		30.7		27.6	U
49	WAR CONSUMABLES	A			17.8		18.4		20.2		19.6	U
50	OTHER PRODUCTION CHARGES	A			46.2		50.0		21.9		17.3	U
51	SPECIAL SUPPORT EQUIPMENT	A			18.5		18.0		11.7		7.6	U
52	FIRST DESTINATION TRANSPORTATION	A			4.2		3.6		1.9		2.4	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1506N AIRCRAFT PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
53	CANCELLED ACCOUNT ADJUSTMENTS	A			12.8							U
	TOTAL AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES				562.6		523.4		453.4		471.0	
	TOTAL AIRCRAFT PROCUREMENT, NAVY				5,488.8		4,599.8		3,886.5		6,885.2	

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: WEAPONS PROCUREMENT, NAVY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. BALLISTIC MISSILES	1,108.3	674.0	520.6	357.2
02. OTHER MISSILES	1,277.3	1,102.4	839.8	883.0
03. TORPEDOES AND RELATED EQUIPMENT	279.4	183.7	118.7	150.1
04. OTHER WEAPONS	63.3	71.2	43.4	52.5
05. OTHER ORDNANCE	158.7		200.7	217.5
06. SPARES AND REPAIR PARTS	60.6	52.0	64.0	54.1
TOTAL	2,947.6	2,083.4	1,787.1	1,714.3

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1507N WEAPONS PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
				MILLIONS OF DOLLARS								
	BUDGET ACTIVITY 01: BALLISTIC MISSILES											
	BALLISTIC MISSILES											
1	TRIDENT I	A			7.6		7.7					U
2	TRIDENT II	A	57,232,000	24	(1125.3)	18	(691.1)	6	(343.4)	7	(316.7)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-143.0)		(-79.7)		(-16.0)		(-17.4)	
					982.3		611.4		327.4		299.3	
3	TRIDENT II											
	ADVANCE PROCUREMENT (CY)				116.3		54.7		190.9		55.7	U
	(FY 1994 FOR FY 1995) (MEMO)				(51.5)							
	(FY 1994 FOR FY 1996) (MEMO)				(1.3)							
	(FY 1994 FOR FY 1997) (MEMO)				(1.4)							
	(FY 1994 FOR FY 1998) (MEMO)				(1.4)							
	(FY 1994 FOR FY 1999) (MEMO)				(1.4)							
	(FY 1994 FOR FY 2001) (MEMO)				(59.4)		(28.4)		(189.9)		(48.3)	
	(FY 1995 FOR FY 1996) (MEMO)						(6.1)					
	(FY 1995 FOR FY 1997) (MEMO)						(6.2)					
	(FY 1995 FOR FY 1998) (MEMO)						(.3)					
	(FY 1995 FOR FY 1999) (MEMO)						(13.7)					
	(FY 1996 FOR FY 1997) (MEMO)								(1.0)			
	(FY 1997 FOR FY 1998) (MEMO)										(7.4)	
	SUPPORT EQUIPMENT AND FACILITIES											
4	MISSILE INDUSTRIAL FACILITIES	A			2.2		.2		2.2		2.2	U
	TOTAL BALLISTIC MISSILES				1,108.3		674.0		520.6		357.2	

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1507N WEAPONS PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 02:	OTHER MISSILES											
	STRATEGIC MISSILES											
5	TOMAHAWK	A	986,140	216	257.5	217	240.6	164	161.7	164	152.0	U
	TACTICAL MISSILES											
6	AMRAAM	A	710,356	75	57.6	106	80.6	115	81.7	220	131.0	U
7	HARPOON	A	1,545,600	75	86.0	58	68.2	30	46.4	15	25.6	U
8	JSOW	B							26.2	126	76.2	U
9	STANDARD MISSILE	A	1,533,377	202	214.1	202	247.3	151	231.5	116	215.4	U
10	RAM	A	300,904	180	53.3	240	63.1	230	69.2	235	71.3	U
11	HELLFIRE	A		1931	83.8							U
12	AERIAL TARGETS	A			113.0		121.4		68.6		87.6	U
13	DRONES AND DECOYS	A			17.5		9.9					U
14	OTHER MISSILE SUPPORT	A			9.8		8.8		22.2		25.0	U
	MODIFICATION OF MISSILES											
15	TOMAHAWK MODS	A			15.4		17.3		.7		7.4	U
16	SPARROW MODS	A			26.8		12.7		4.3		32.3	U
17	SIDEWINDER MODS	A			18.2		3.5		17.9		1.4	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1507N WEAPONS PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
				MILLIONS OF DOLLARS								
18	HARPOON MODS	A					6.4		4.4		2.8	U
19	HARM MODS	A			104.3							U
20	STANDARD MISSILES MODS	A			8.3		32.4		35.1		32.9	U
	SUPPORT EQUIPMENT AND FACILITIES											
21	WEAPONS INDUSTRIAL FACILITIES	A			37.5		51.2		13.1		10.7	U
22	FLEET SATELLITE COMM (MYP)	A			167.1		124.6		51.8		5.7	U
	ORDNANCE SUPPORT EQUIPMENT											
23	ORDNANCE SUPPORT EQUIPMENT	A			6.9		14.5		5.0		5.7	U
	TOTAL OTHER MISSILES				1,277.3		1,102.4		839.8		883.0	
	BUDGET ACTIVITY 03: TORPEDOES AND RELATED EQUIPMENT											
	TORPEDOES AND RELATED EQUIPMENT											
24	MK-48 ADCAP TORPEDO (MYP)	A		108	(126.9)							U
	LESS: ADVANCE PROCUREMENT (PY)				(-28.1)							
					98.8							
25	MK-50 ALWT	A			33.0							U
26	ASW TARGETS	A			6.1		10.9		.7		5.9	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1507N WEAPONS PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
27	VERTICAL LAUNCHED ASROC (VLA)	B		73	(52.9)	40	(21.9)					U
	LESS: ADVANCE PROCUREMENT (PY)				(-10.4)							
					42.5		21.9					
	MOD OF TORPEDOES AND RELATED EQUIP											
28	MK-46 TORPEDO MODS	A			27.9		2.6		3.6		3.3	U
29	MK-48 TORPEDO ADCAP MODS	A					52.0		61.0		88.8	U
30	QUICKSTRIKE MINE	B			1.0							U
	SUPPORT EQUIPMENT											
31	TORPEDO SUPPORT EQUIPMENT	A			37.6		67.2		31.2		29.1	U
32	ASW RANGE SUPPORT	A			26.0		23.5		18.1		19.7	U
	DESTINATION TRANSPORTATION											
33	FIRST DESTINATION TRANSPORTATION	A			6.4		5.7		4.0		3.3	U
	TOTAL TORPEDOES AND RELATED EQUIPMENT				279.4		183.7		118.7		150.1	

BUDGET ACTIVITY 04: OTHER WEAPONS

GUNS AND GUN MOUNTS

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1507N WEAPONS PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
34	SMALL ARMS AND WEAPONS	A			.8		11.7		.9		.9	U
	MODIFICATION OF GUNS AND GUN MOUNTS											
35	CIWS MODS	A			51.7		49.3		37.3		45.9	U
36	5/54 GUN MOUNT MODS	A			6.0		6.5		2.6		3.3	U
37	MK-75 76MM GUN MOUNT MODS	A			2.8		2.1		.9		.7	U
38	MODS UNDER $2 MILLION	A			1.4		1.7		1.6		1.7	U
	OTHER											
39	CANCELLED ACCOUNT ADJUSTMENTS	A			.5							U
	TOTAL OTHER WEAPONS				63.3		71.2		43.4		52.5	
	BUDGET ACTIVITY 05: OTHER ORDNANCE											
	AIR LAUNCHED ORDNANCE											
40	GENERAL PURPOSE BOMBS	A			37.0				46.1		36.8	U
41	2.75 INCH ROCKETS	A			13.3				14.8		13.4	U
42	MACHINE GUN AMMUNITION	A			1.5				11.5		9.1	U
43	PRACTICE BOMBS	A			14.3				11.2		17.0	U
44	CARTRIDGES & CART ACTUATED DEVICES	A							18.0		23.2	U
45	AIRCRAFT ESCAPE ROCKETS	A							10.6		8.9	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1507N WEAPONS PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
46	AIR EXPENDABLE COUNTERMEASURES	A							22.8		30.2	U
47	MARINE LOCATION MARKERS	A							.9		.7	U
48	JATOS	A							4.9		4.8	U
	SHIP ORDNANCE											
49	5 INCH/54 GUN AMMUNITION	A			49.9				21.5		30.3	U
50	CIWS AMMUNITION	A			1.7				.1			U
51	76MM GUN AMMUNITION	A			5.5				6.4		6.2	U
52	OTHER SHIP GUN AMMUNITION	A			16.9				5.1		4.8	U
	OTHER ORDNANCE											
53	SMALL ARMS & LANDING PARTY AMMO	A			9.4				5.8		3.6	U
54	PYROTECHNIC AND DEMOLITION	A			9.3				11.3		13.5	U
55	MINE NEUTRALIZATION DEVICES	A							.8		6.3	U
56	SHIP EXPENDABLE COUNTERMEASURES	A							8.9		8.9	U
TOTAL OTHER ORDNANCE					158.7				200.7		217.5	

BUDGET ACTIVITY 06: SPARES AND REPAIR PARTS

SPARES AND REPAIR PARTS

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

DATE: FEB 1995

APPROPRIATION: 1507N WEAPONS PROCUREMENT, NAVY

MILLIONS OF DOLLARS

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
57	SPARES AND REPAIR PARTS	A			60.6		52.0		64.0		54.1	U
	TOTAL SPARES AND REPAIR PARTS				60.6		52.0		64.0		54.1	
	TOTAL WEAPONS PROCUREMENT, NAVY				2,947.6		2,083.4		1,787.1		1,714.3	

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: PROCUREMENT OF AMMUNITION, NAVY & MARINE CORP

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. PROC AMMO, NAVY		279.6		
02. PROC AMMO, MC		135.3		
TOTAL		414.8		

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1508N PROCUREMENT OF AMMUNITION, NAVY & MARINE CORP

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01:	PROC AMMO, NAVY											
	NAVY AMMUNITION											
1	GENERAL PURPOSE BOMBS	A					55.1					U
2	2.75 INCH ROCKETS	A					14.4					U
3	MACHINE GUN AMMUNITION	A					14.1					U
4	PRACTICE BOMBS	A					12.7					U
5	CARTRIDGES & CART ACTUATED DEVICES	A					14.8					U
6	AIRCRAFT ESCAPE ROCKETS	A					9.9					U
7	AIR EXPENDABLE COUNTERMEASURES	A					14.0					U
8	MARINE LOCATION MARKERS	A					.8					U
9	DEFENSE NUCLEAR AGENCY MATERIAL	A					.1					U
10	JATOS	A					1.8					U
	NAVY AMMUNITION											
11	5 INCH/54 GUN AMMUNITION	A					68.5					U
12	CIWS AMMUNITION	A					2.5					U
13	76MM GUN AMMUNITION	A					13.8					U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1508N PROCUREMENT OF AMMUNITION, NAVY & MARINE CORP

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
14	OTHER SHIP GUN AMMUNITION	A					15.0					U
	NAVY AMMUNITION											
15	SMALL ARMS & LANDING PARTY AMMO	A					14.1					U
16	PYROTECHNIC AND DEMOLITION	A					15.4					U
17	MINE NEUTRALIZATION DEVICES	A					3.5					U
18	SHIP EXPENDABLE COUNTERMEASURES	A					9.1					U
TOTAL PROC AMMO, NAVY							279.6					
BUDGET ACTIVITY 02: PROC AMMO, MC												
	MARINE CORPS AMMUNITION											
19	5.56 MM, ALL TYPES	A					7.1					U
20	7.62 MM, ALL TYPES	A					*					U
21	.50 CALIBER	A					6.8					U
22	40 MM, ALL TYPES	A					12.3					U
23	60 MM HE M888	A					15.9					U
24	81 MM HE	A					15.6					U
25	81 MM SMOKE SCREEN	A					4.3					U
26	81MM ILLUMINATION (M853)	A					13.9					U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

DATE: FEB 1995

APPROPRIATION: 1508N PROCUREMENT OF AMMUNITION, NAVY & MARINE CORP

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
27	120MM TPCSDS-T M865	A					10.2					U
28	120 MM TP-T M831	A					4.9					U
29	FUZE, ET, XM762	A					17.1					U
30	CTG 25MM, ALL TYPES	A					8.8					U
31	9 MM ALL TYPES	A					1.9					U
32	ROCKETS, ALL TYPES	A					2.2					U
33	AMMO MODERNIZATION	A					8.9					U
	MARINE CORPS AMMUNITION						5.5					U
34	ITEMS LESS THAN $2 MIL	A					135.3					
	TOTAL PROC AMMO, MC						414.8					
	TOTAL PROCUREMENT OF AMMUNITION, NAVY & MARINE CORP											

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: SHIPBUILDING & CONVERSION, NAVY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
02. OTHER WARSHIPS	2,669.0	6,148.9	4,603.2	3,473.3
03. AMPHIBIOUS SHIPS	953.8	49.6		
04. MINE WARFARE AND PATROL SHIPS	123.6			
05. AUXILIARIES, CRAFT, AND PRIOR-YEAR PROGRAM COSTS	448.9	375.9	448.7	468.2
TOTAL	4,195.2	6,574.5	5,051.9	3,941.6

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1611N SHIPBUILDING & CONVERSION, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
				MILLIONS OF DOLLARS								
BUDGET ACTIVITY 02:	OTHER WARSHIPS											
OTHER WARSHIPS												
1	CARRIER REPLACEMENT PROGRAM	A				1	(4298.3)					U
	LESS: ADVANCE PROCUREMENT (PY)						(-829.4)					
							3468.9					
2	SSN-21	A	1876,102,000		(197.8)			1	(1876.1)			U
	LESS: ADVANCE PROCUREMENT (PY)				(-197.8)				(-368.6)			
									1507.5			
3	NEW SSN											
	ADVANCE PROCUREMENT (CY)								704.5		299.8	U
4	CVN REFUELING OVERHAULS											
	ADVANCE PROCUREMENT (CY)				31.1		38.1		222.0		316.5	U
	(FY 1994 FOR FY 1998) (MEMO)				(31.1)							
	(FY 1995 FOR FY 1998) (MEMO)						(38.1)					
	(FY 1996 FOR FY 1998) (MEMO)								(222.0)			
	(FY 1997 FOR FY 1998) (MEMO)										(316.5)	
5	CGN REFUELING OVERHAULS	A			(2.8)				(1.7)			U
	LESS: ADVANCE PROCUREMENT (PY)				(-2.8)				(-1.7)			

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1611N SHIPBUILDING & CONVERSION, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
6	DDG-51	A	1081,228,500	3	(2673.8)	3	(2642.0)	2	(2162.5)	3	(2851.8)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-35.9)						(-4.5)	
					2637.9		2642.0		2162.5		2847.3	
7	DDG-51											
	ADVANCE PROCUREMENT (CY)								6.8		9.8	U
	(FY 1996 FOR FY 1997) (MEMO)								(4.5)			
	(FY 1996 FOR FY 1998) (MEMO)								(2.3)			
	(FY 1997 FOR FY 1998) (MEMO)										(.7)	
	(FY 1997 FOR FY 1999) (MEMO)										(4.5)	
	(FY 1997 FOR FY 2001) (MEMO)										(4.6)	
TOTAL OTHER WARSHIPS					2,669.0		6,148.9		4,603.2		3,473.3	
BUDGET ACTIVITY 03: AMPHIBIOUS SHIPS												
8	LHD-1 AMPHIBIOUS ASSAULT SHIP (MYP)	A		1	(1206.9)							U
	LESS: ADVANCE PROCUREMENT (PY)				(-303.1)							
					903.8							
9	LHD-1 AMPHIBIOUS ASSAULT SHIP (MYP)											
	ADVANCE PROCUREMENT (CY)				50.0		49.6					U
	(FY 1994 FOR FY 2001) (MEMO)				(50.0)		(49.6)					
TOTAL AMPHIBIOUS SHIPS					953.8		49.6					

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1611N SHIPBUILDING & CONVERSION, NAVY

DATE: FEB 1995

MILLIONS OF DOLLARS

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 04: MINE WARFARE AND PATROL SHIPS												
10	MCS CONV	A		1	123.6							U
TOTAL MINE WARFARE AND PATROL SHIPS					123.6							
BUDGET ACTIVITY 05: AUXILIARIES, CRAFT, AND PRIOR-YEAR PROGRAM COSTS												
11	AE(C)	A	31,065,000			1	30.3	2	62.1	4	94.3	U
12	OCEANOGRAPHIC SHIPS	A		2	113.9							U
13	SERVICE CRAFT	A			29.0		5.6		17.0		35.0	U
14	OUTFITTING	A			210.9		157.0		144.8		176.1	U
15	POST DELIVERY	A			89.3		155.3		175.0		160.4	U
16	AFS (C)	A	23,548,000			1	22.7	2	47.1			U
17	FIRST DESTINATION TRANSPORTATION	A			5.8		3.9		2.7		2.5	U
18	SSN MAIN STEAM CONDENSERS	A					1.0					U
TOTAL AUXILIARIES, CRAFT, AND PRIOR-YEAR PROGRAM COSTS					448.9		375.9		448.7		468.2	
TOTAL SHIPBUILDING & CONVERSION, NAVY					4,195.2		6,574.5		5,051.9		3,941.6	

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: OTHER PROCUREMENT, NAVY

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. SHIPS SUPPORT EQUIPMENT	550.8	795.8	644.1	993.3
02. COMMUNICATIONS AND ELECTRONICS EQUIPMENT	1,047.7	1,166.8	726.3	981.1
03. AVIATION SUPPORT EQUIPMENT	228.0	224.9	168.3	195.3
04. ORDNANCE SUPPORT EQUIPMENT	332.0	414.0	432.8	493.1
05. CIVIL ENGINEERING SUPPORT EQUIPMENT	86.3	86.3	48.1	55.0
06. SUPPLY SUPPORT EQUIPMENT	104.6	104.2	87.1	74.7
07. PERSONNEL AND COMMAND SUPPORT EQUIPMENT	215.8	193.4	79.2	125.7
08. SPARES AND REPAIR PARTS	329.4	289.0	210.2	206.3
TOTAL	2,894.7	3,274.3	2,396.1	3,124.4

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01:	SHIPS SUPPORT EQUIPMENT											
	SHIP PROPULSION EQUIPMENT											
1	LM-2500 GAS TURBINE	A			6.9		7.1		8.0		8.4	U
2	ALLISON 501K GAS TURBINE	A			2.1		7.0		7.1		6.6	U
3	STEAM PROPULSION IMPROVEMENT	A			.4		.3		.8		.4	U
4	OTHER PROPULSION EQUIPMENT	A			3.1		4.3		3.2		5.3	U
	GENERATORS											
5	OTHER GENERATORS	A			8.1		5.7		7.8		.7	U
	PUMPS											
6	OTHER PUMPS	A			.1				1.0		2.1	U
7	SUBMARINE PUMP RETROFIT KITS	A			1.0		1.0					U
	AIR COMPRESSORS											
8	HIGH PRESSURE AIR COMPRESSORS	A			*		.2					U
	PROPELLERS											
9	SUBMARINE PROPELLERS	A					1.9				44.7	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
10	OTHER PROPELLERS AND SHAFTS	A			1.8		1.8		1.5		3.5	U
	NAVIGATION EQUIPMENT											
11	ELEC SUSPENDED GYRO NAVIGATOR	A			2.1		5.8		4.1		5.0	U
12	OTHER NAVIGATION EQUIPMENT	A			10.4		19.4		17.7		29.9	U
	UNDERWAY REPLENISHMENT EQUIPMENT											
13	UNDERWAY REPLENISHMENT EQUIPMENT	A			12.9		19.9		14.0		20.0	U
	PERISCOPES											
14	SUB PERISCOPES & IMAGING EQUIP	A			13.7		22.3		24.2		38.9	U
	OTHER SHIPBOARD EQUIPMENT											
15	FIREFIGHTING EQUIPMENT	A			24.1		16.3		19.7		19.8	U
16	COMMAND AND CONTROL SWITCHBOARD	A			3.4		4.3		4.7		4.4	U
17	POLLUTION CONTROL EQUIPMENT	B			16.1		60.3		104.5		171.9	U
18	SUBMARINE SILENCING EQUIPMENT	A			4.4		12.4		4.5			U
19	SURFACE SHIP SILENCING EQUIPMENT	A					.2					U
20	SUBMARINE BATTERIES	A			8.6		9.5		7.3		11.4	U
21	SSN21 CLASS SUPPORT EQUIPMENT	A							5.0		8.0	U
22	STRATEGIC PLATFORM SUPPORT EQUIP	A			15.2		15.2		4.5		4.6	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
23	DSSP EQUIPMENT	A			3.3		4.0		6.6		6.3	U
24	MINESWEEPING EQUIPMENT	A			13.9				13.0		3.5	U
25	HM&E ITEMS UNDER $2 MILLION	A			21.8		32.9		43.4		43.2	U
26	LASER ARTICULATION ROBOTIC SYSTEM (LARS	A					6.9					U
27	SURFACE IMA	A			6.7		4.2		1.4		2.0	U
28	DEGAUSSING EQUIPMENT	A			*							U
29	RADIOLOGICAL CONTROLS	A			.5		.2		.2		.2	U
30	MINI/MICROMINI ELECTRONIC REPAIR	A			3.3		1.2		1.0		1.0	U
31	SUBMARINE LIFE SUPPORT SYSTEM	A			1.3		1.1					U
	REACTOR PLANT EQUIPMENT											
32	REACTOR POWER UNITS	A					167.9				244.9	U
33	REACTOR COMPONENTS	A			180.0		178.8		187.9		193.6	U
	OCEAN ENGINEERING											
34	DIVING AND SALVAGE EQUIPMENT	A			8.3		10.0		8.2		10.5	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

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35	NAVAL SPECIAL WARFARE EQUIPMENT	B			5.5		5.2		4.8		5.5	U
	SMALL BOATS											
36	STANDARD BOATS	A			9.3		9.6		8.1		6.6	U
	TRAINING EQUIPMENT											
37	OTHER SHIPS TRAINING EQUIPMENT	A			.5		.8		5.4		1.5	U
	PRODUCTION FACILITIES EQUIPMENT											
38	PRODUCTION SUPPORT FACILITIES	A			5.2		6.1		3.3		1.1	U
39	OPERATING FORCES IPE	A			7.9		6.3		.8		2.3	U
	OTHER SHIP SUPPORT											
40	NUCLEAR ALTERATIONS	A			99.1		145.8		120.5		85.4	U
41	FLEET MODERNIZATION PROGRAM	A			50.0							U
TOTAL SHIPS SUPPORT EQUIPMENT					550.8		795.8		644.1		993.3	
BUDGET ACTIVITY 02:	COMMUNICATIONS AND ELECTRONICS EQUIPMENT											
	SHIP RADARS											
42	AN/SPS-40	A					1.7					U
43	AN/SPS-48	A			12.8		9.6		2.2		14.3	U
44	AN/SPS-49	A			18.0		12.3		10.0		12.9	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

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45	AN/SYS-()	A					.5		.3		.5	U
46	MK-23 TARGET ACQUISITION SYSTEM	A			11.8		9.5		5.3		5.3	U
47	RADAR SUPPORT	A			7.8		12.9		.5		5.0	U
48	SURFACE ELECTRO-OPTICAL SYSTEM	B					7.1		3.5		10.4	U
	SHIP SONARS											
49	SURFACE SONAR SUPPORT EQUIPMENT	A			5.1		5.5		9.3		9.1	U
50	AN/SQQ-89 SURF ASW COMBAT SYSTEM	A			94.8		85.2		30.3		30.3	U
51	SSN ACOUSTICS	A			57.9		56.2		42.3		42.1	U
52	SURFACE SONAR WINDOWS AND DOME	A			10.8		10.0					U
53	SONAR SUPPORT EQUIPMENT	A			11.8		14.6		25.8		20.9	U
54	SONAR SWITCHES AND TRANSDUCERS	A			13.5		22.4		9.1		13.2	U
55	FBM SYSTEM SONARS	A			1.3							U
	ASW ELECTRONIC EQUIPMENT											
56	SUBMARINE ACOUSTIC WARFARE SYSTEM	A			16.1		22.5		8.0		16.1	U
57	SSTD	A			12.0		31.7		13.8		10.2	U
58	ACOUSTIC COMMUNICATIONS	A			.2		.2		.2		.2	U
59	SOSUS	A			41.9		20.5		19.7		27.6	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
60	AN/SQR-18 TOWED ARRAY SONAR	A			6.0							U
61	SURTASS	A			9.6		8.6		18.5		17.7	U
62	ASW OPERATIONS CENTER	A			6.6		3.3		8.4		10.6	U
63	CARRIER ASW MODULE	A			6.4		4.8		.2		.1	U
	ELECTRONIC WARFARE EQUIPMENT											
64	AN/SLQ-32	A					53.5		19.1		16.7	U
65	AN/WLR-1	A			3.7		6.8		2.9		.2	U
66	AN/WLR-8	A					*					U
67	ICAD SYSTEMS	A			.9		1.7		1.4		1.6	U
68	EW SUPPORT EQUIPMENT	A			2.9		9.0		8.4		7.3	U
69	C-3 COUNTERMEASURES	A					39.2		9.5		9.1	U
	RECONNAISSANCE EQUIPMENT											
70	COMBAT DF	A			6.7		.8		5.0		11.5	U
71	OUTBOARD	A			9.4		15.2		1.5		.3	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

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72	BATTLE GROUP PASSIVE HORIZON EXTEN	B									63.4	U
	SUBMARINE SURVEILLANCE EQUIPMENT											
73	AN/WLQ-4	A			2.3		6.0		3.0		6.2	U
74	SUBMARINE SUPPORT EQUIPMENT PROG	A			7.5		7.5		4.4		7.3	U
	OTHER SHIP ELECTRONIC EQUIPMENT											
75	NAVY TACTICAL DATA SYSTEM	A			66.7		32.7		.3		20.5	U
76	TACTICAL FLAG COMMAND CENTER	A			38.8		21.7		15.3		31.7	U
77	NAVAL TACTICAL COMMAND SUPPORT SYSTEM (	A					42.9		31.4		34.7	U
78	LINK 16 HARDWARE	A			9.2		40.8		15.5		22.1	U
79	MINESWEEPING SYSTEM REPLACEMENT	A			49.2		46.1		5.0		15.0	U
80	SHALLOW WATER MCM	B							.4		4.3	U
81	EMSP (MYP)	A			46.6		35.4		26.1			U
82	NAVSTAR GPS RECEIVERS	A			4.8		15.5		1.5		5.0	U
83	HF LINK-11 DATA TERMINALS	A							3.6		3.0	U
84	ARMED FORCES RADIO AND TV	A			6.0		4.4		3.5		3.5	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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85	STRATEGIC PLATFORM SUPPORT EQUIP	A			41.2		15.7		10.0		6.3	U
	TRAINING EQUIPMENT											
86	OTHER SPAWAR TRAINING EQUIPMENT	A			3.3				2.3		1.2	U
87	OTHER TRAINING EQUIPMENT	A			12.8		12.6		11.6		16.8	U
	AVIATION ELECTRONIC EQUIPMENT											
88	MATCALS	A			1.4		4.3		1.6		4.3	U
89	SHIPBOARD AIR TRAFFIC CONTROL	B			6.8		7.8		7.7		14.6	U
90	AUTOMATIC CARRIER LANDING SYSTEM	A			9.4		11.7		6.7		17.6	U
91	NATIONAL AIR SPACE SYSTEM	B									2.0	U
92	TACAN	A					1.0		*		2.4	U
93	AIR STATION SUPPORT EQUIPMENT	A			7.8		5.8		5.8		10.2	U
94	MICROWAVE LANDING SYSTEM	A			5.0		1.4		.5		7.5	U
95	FACSFAC	A			8.0		7.0		6.4		7.8	U
96	ID SYSTEMS	A			6.2		10.1		10.2		6.1	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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97	SURFACE IDENTIFICATION SYSTEMS	A					5.6		10.2		7.6	U
	OTHER SHORE ELECTRONIC EQUIPMENT											
98	TADIX-B	A			5.3		11.0		4.5		1.9	U
99	NAVAL SPACE SURVEILLANCE SYSTEM	A			2.4							U
100	NATIONAL IMAGERY SUPPORT	A							1.3		4.1	U
101	NCCS ASHORE	A			12.5		12.1		7.7		5.7	U
102	RADIAC	A			6.9		6.2		4.9		4.3	U
103	GPETE	A			18.3		15.5		13.5		11.0	U
104	INTEG COMBAT SYSTEM TEST FACILITY	A			5.5		2.9		6.2		5.2	U
105	CALIBRATION STANDARDS	A			5.1		4.4		2.4		2.4	U
106	EMI CONTROL INSTRUMENTATION	A			10.3		2.7		5.9		6.1	U
107	SHORE ELEC ITEMS UNDER $2 MILLION	A			9.8		7.1		8.6		5.1	U
	SHIPBOARD COMMUNICATIONS											
108	SHIPBOARD TACTICAL COMMUNICATIONS	A			8.4		33.3		6.6		12.5	U
109	PORTABLE RADIOS	A			18.4		2.0		1.4		2.0	U
110	SINCGARS	A			7.2		12.6		3.1		4.8	U
111	SHIP COMMUNICATIONS AUTOMATION	A			27.4		28.1		6.1		18.3	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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112	SHIP COMM ITEMS UNDER $2 MILLION	A			8.3		10.9		11.1		11.3	U
	SUBMARINE COMMUNICATIONS											
113	SHORE LF/VLF COMMUNICATIONS	A			3.6		3.8		4.3		10.6	U
114	SUBMARINE COMMUNICATION EQUIPMENT	A			5.1		16.4		18.0		43.1	U
	SATELLITE COMMUNICATIONS											
115	SATCOM SHIP TERMINALS	A			82.5		116.1		98.1		116.8	U
116	SATCOM SHORE TERMINALS	A			25.1		8.8		12.2		14.5	U
	SHORE COMMUNICATIONS											
117	JCS COMMUNICATIONS EQUIPMENT	A			1.3		1.5		1.6		2.1	U
118	ELECTRICAL POWER SYSTEMS	A			1.4		1.5					U
119	SHORE HF COMMUNICATIONS	A							.8			U
120	WWMCCS COMMUNICATIONS EQUIPMENT	A					2.2		2.4		1.8	U
121	NAVAL SHORE COMMUNICATIONS	A			15.3		24.8		34.2		29.4	U
	CRYPTOGRAPHIC EQUIPMENT											
122	SECURE VOICE SYSTEM	A			29.6		12.8		4.2		18.0	U
123	SECURE DATA SYSTEM	A			4.4		7.9		8.6		16.9	U
124	KEY MANAGEMENT SYSTEMS	A			13.2		11.3		12.9		14.4	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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125	SIGNAL SECURITY	A			.3							U
126	CRYPTOGRAPHIC ITEMS UNDER $2 MILL	A			3.1		2.8					U
	CRYPTOLOGIC EQUIPMENT											
127	CRYPTOLOGIC COMMUNICATIONS EQUIP	A			1.8		4.9		5.9		2.1	U
128	CRYPTOLOGIC ITEMS UNDER $2 MILLION	A			2.7							U
129	CRYPTOLOGIC FIELD TRAINING EQUIP	A			.5							U
	OTHER ELECTRONIC SUPPORT											
130	ELEC ENGINEERED MAINT (NAVSEA)	A			3.8							U
131	ELECT ENGINEERED MAINTENANCE	A					2.1		1.8		2.4	U
	DRUG INTERDICTION SUPPORT											
132	OTHER DRUG INTERDICTION SUPPORT	A			7.3							U
	TOTAL COMMUNICATIONS AND ELECTRONICS EQUIPMENT				1,047.7		1,166.8		726.3		981.1	
	BUDGET ACTIVITY 03: AVIATION SUPPORT EQUIPMENT											
	SONOBUOYS											
133	AN/SSQ-36 (BT)	A			3.2		2.3				1.1	U
134	AN/SSQ-53 (DIFAR)	A			37.1				8.9		14.7	U
135	AN/SSQ-62 (DICASS)	A					22.3					U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
136	AN/SSQ-110 (EER)	A			.4		37.0					U
137	AN/SSQ-86 (DLC)	A					2.4					U
138	SIGNAL, UNDERWATER SOUND (SUS)	A									1.2	U
	AIR LAUNCHED ORDNANCE											
139	CARTRIDGES & CART ACTUATED DEVELOP	A			17.3							U
140	AIRCRAFT ESCAPE ROCKETS	A			7.0							U
141	AIR EXPENDABLE COUNTERMEASURES	A			22.7							U
142	MARINE LOCATION MARKERS	A			.7							U
143	DEFENSE NUCLEAR AGENCY MATERIAL	A			*							U
144	JATOS	A			7.7							U
	AIRCRAFT SUPPORT EQUIPMENT											
145	WEAPONS RANGE SUPPORT EQUIPMENT	A			57.4		60.6		40.3		38.4	U
146	EXPEDITIONARY AIRFIELDS	A			2.3		4.5		4.9		5.4	U
147	AIRCRAFT REARMING EQUIPMENT	A			6.3		8.7		7.5		11.1	U
148	CATAPULTS & ARRESTING GEAR	A			5.2		35.6		15.9		31.1	U
149	METEOROLOGICAL EQUIPMENT	A			14.7		21.2		20.2		18.2	U
150	OTHER PHOTOGRAPHIC EQUIPMENT	A			1.0		.8		.7		.8	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
151	AVIATION LIFE SUPPORT	A			7.3		10.8		17.7		16.9	U
152	AIRBORNE MINE COUNTERMEASURES	A			7.1		.3		19.5		20.5	U
153	LAMPS MK III SHIPBOARD EQUIPMENT	A			4.6		6.1		17.9		16.4	U
154	REWSON PHOTOGRAPHIC EQUIPMENT	A			1.7		.6		.6		1.0	U
155	JSIPS-N	A			3.5							U
156	STOCK SURVEILLANCE EQUIPMENT	A			1.3		1.4		1.5		1.8	U
157	OTHER AVIATION SUPPORT EQUIPMENT	A			19.6		10.3		12.6		16.9	U
	TOTAL AVIATION SUPPORT EQUIPMENT				228.0		224.9		168.3		195.3	
	BUDGET ACTIVITY 04: ORDNANCE SUPPORT EQUIPMENT											
	SHIP GUN SYSTEM EQUIPMENT											
158	GUN FIRE CONTROL EQUIPMENT	A			1.1		3.2		4.1		18.8	U
	SHIP MISSILE SYSTEMS EQUIPMENT											
159	MK-92 FIRE CONTROL SYSTEM	A			1.2		6.6		.7		5.4	U
160	HARPOON SUPPORT EQUIPMENT	A			3.4		4.0		3.0		2.1	U
161	TARTAR SUPPORT EQUIPMENT	A			21.8		35.7					U
162	POINT DEFENSE SUPPORT EQUIPMENT	A			77.6		62.6					U
163	AIRBORNE ECM/ECCM	A			1.1		1.1		.5		.5	U

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

DATE: FEB 1995

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164	ENGAGEMENT SYSTEMS SUPPORT	A							25.0		15.8	U
165	NATO SEASPARROW	A							6.6		5.9	U
166	RAM GMLS	A							50.0		57.6	U
167	SHIP SELF DEFENSE SYSTEM	B							15.6		18.8	U
168	AEGIS SUPPORT EQUIPMENT	A			29.3		36.4		64.3		34.9	U
169	SURFACE TOMAHAWK SUPPORT EQUIPMENT	A			48.2		60.2		71.3		95.6	U
170	SUBMARINE TOMAHAWK SUPPORT EQUIP	A			.8		10.1		1.4		5.4	U
171	VERTICAL LAUNCH SYSTEMS	A			5.1		26.3		10.6		54.2	U
	FBM SUPPORT EQUIPMENT											
172	STRATEGIC PLATFORM SUPPORT EQUIP	A			1.2		4.7					U
173	STRATEGIC MISSILE SYSTEMS EQUIP	A			75.5		81.9		106.2		90.9	U
	ASW SUPPORT EQUIPMENT											
174	MK-117 FIRE CONTROL SYSTEM	A			14.4		19.5		12.9		29.2	U
175	SUBMARINE ASW SUPPORT EQUIPMENT	A			6.0		9.7		6.7		10.9	U
176	SURFACE ASW SUPPORT EQUIPMENT	A			13.2		15.8		8.2		6.2	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

DATE: FEB 1995

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177	ASW RANGE SUPPORT EQUIPMENT	A			7.6		6.3		5.1		5.3	U
	OTHER ORDNANCE SUPPORT EQUIPMENT											
178	EXPLOSIVE ORDNANCE DISPOSAL EQUIP	B			4.6		6.7		9.7		7.7	U
179	UNMANNED SEABORNE TARGET	A					4.8		4.3			U
180	ANTI-SHIP MISSILE DECOY SYSTEM	A					1.4		15.2		16.1	U
181	INDUSTRIAL FACILITIES (CALIBRATION EQUI	A			2.3		7.1		5.3		4.6	U
182	STOCK SURVEILLANCE EQUIPMENT	A			1.7		1.7		1.5		1.5	U
183	OTHER ORDNANCE TRAINING EQUIPMENT	A			.7							U
	OTHER EXPENDABLE ORDNANCE											
184	FLEET MINE SUPPORT EQUIPMENT	A			9.4		8.0		4.5		5.7	U
185	MINE NEUTRALIZATION DEVICES	A			4.0							U
186	DEFENSE NUCLEAR AGENCY MATERIAL	A			*							U
187	SHIP EXPENDABLE COUNTERMEASURE	A			1.9							U
	TOTAL ORDNANCE SUPPORT EQUIPMENT				332.0		414.0		432.8		493.1	
	BUDGET ACTIVITY 05: CIVIL ENGINEERING SUPPORT EQUIPMENT											
	CIVIL ENGINEERING SUPPORT EQUIPMENT											
188	PASSENGER CARRYING VEHICLES	A	13,525	399	5.4	114	2.7	213	2.9	207	2.5	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
189	SPECIAL PURPOSE VEHICLES	A			19.4		8.6		6.3		4.6	U
190	GENERAL PURPOSE TRUCKS	A			10.6		10.4		7.0		6.2	U
191	TRAILERS/TRUCK TRACTORS	A			5.7		3.0		1.3		1.1	U
192	EARTH MOVING EQUIPMENT	A			3.2		4.8		2.3		1.2	U
193	CONSTRUCTION & MAINTENANCE EQUIP	A			3.9		2.0		1.3		.7	U
194	FIRE FIGHTING EQUIPMENT	A			.4		2.3		2.2		1.8	U
195	WEIGHT HANDLING EQUIPMENT	A			.6		1.6		1.0		1.0	U
196	AMPHIBIOUS EQUIPMENT	A			2.6		2.8		3.0		3.3	U
197	COMBAT CONSTRUCTION SUPPORT EQUIP	A			2.0		2.7		1.0		.9	U
198	MOBILE UTILITIES SUPPORT EQUIPMENT	A			1.9		2.2		.7		.9	U
199	COLLATERAL EQUIPMENT	A			4.8		4.8		.6		.4	U
200	OCEAN CONSTRUCTION EQUIPMENT	A			.9		.5		.1		.1	U
201	FLEET MOORINGS	A			*							U
202	POLLUTION CONTROL EQUIPMENT	A			13.0		29.8		18.1		30.3	U
203	OTHER CIVIL ENG SUPPORT EQUIPMENT	A			2.0		.3		.1		.1	U
204	NATURAL GAS UTILIZATION EQUIPMENT	A			10.0		7.9					U
	TOTAL CIVIL ENGINEERING SUPPORT EQUIPMENT				86.3		86.3		48.1		55.0	

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 06:	SUPPLY SUPPORT EQUIPMENT											
205	FORKLIFT TRUCKS	A			13.5		10.8		3.8		3.5	U
206	OTHER MATERIALS HANDLING EQUIPMENT	A			3.5		3.9		1.6		2.2	U
207	OTHER SUPPLY SUPPORT EQUIPMENT	A			6.4		3.1		*			U
208	FIRST DESTINATION TRANSPORTATION	A			10.7		11.6		6.8		8.3	U
209	SPECIAL PURPOSE SUPPLY SYSTEMS	A			70.4		74.8		74.9		60.8	U
	TOTAL SUPPLY SUPPORT EQUIPMENT				104.6		104.2		87.1		74.7	
BUDGET ACTIVITY 07:	PERSONNEL AND COMMAND SUPPORT EQUIPMENT											
210	SUBMARINE SONAR TRAINERS	A					3.1					U
211	SURFACE COMBAT SYSTEM TRAINERS	A			.7		3.6		.7		.4	U
212	SHIP SYSTEM TRAINERS	A					*					U
213	TRAINING SUPPORT EQUIPMENT	A			3.2		1.1		2.6		2.0	U
214	TRAINING DEVICE MODIFICATIONS	A			33.0		19.3		22.0		23.4	U
	COMMAND SUPPORT EQUIPMENT											
215	COMMAND SUPPORT EQUIPMENT	A			16.9		35.9		33.3		57.3	U
216	EDUCATION SUPPORT EQUIPMENT	A			7.3		10.3		.4		10.5	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

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217	MEDICAL SUPPORT EQUIPMENT	A			6.1		2.9		7.5		6.1	U
218	INTELLIGENCE SUPPORT EQUIPMENT	A			33.5		33.3					U
219	ITEMS UNDER $2 MILLION	A					.2					U
220	OPERATING FORCES SUPPORT EQUIPMENT	A			19.1		15.7					U
221	NAVAL RESERVE SUPPORT EQUIPMENT	A			.8		4.2		.6		1.1	U
222	ENVIRONMENTAL SUPPORT EQUIPMENT	A			11.8		11.5		.6		.5	U
223	PHYSICAL SECURITY EQUIPMENT	A			12.3		7.3		4.6		2.8	U
224	INDUSTRIAL DEPOT MAINTENANCE EQUIP	A							7.0		21.6	U
	COMPUTER ACQUISITION PROGRAM											
225	COMPUTER ACQUISITION PROGRAM	A			66.3		45.0					U
	OTHER											
226	CANCELLED ACCOUNT ADJUSTMENTS	A			5.0							U
	TOTAL PERSONNEL AND COMMAND SUPPORT EQUIPMENT				215.8		193.4		79.2		125.7	

BUDGET ACTIVITY 08: SPARES AND REPAIR PARTS

SPARES AND REPAIR PARTS

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

DATE: FEB 1995

APPROPRIATION: 1810N OTHER PROCUREMENT, NAVY

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227	SPARES AND REPAIR PARTS	A			329.4		289.0		210.2		206.3	U
	TOTAL SPARES AND REPAIR PARTS				329.4		289.0		210.2		206.3	
	TOTAL OTHER PROCUREMENT, NAVY				2,894.7		3,274.3		2,396.1		3,124.4	

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DEPARTMENT OF THE NAVY

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: PROCUREMENT, MARINE CORPS

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. AMMUNITION	72.6		110.9	93.9
02. WEAPONS AND COMBAT VEHICLES	82.7	30.3	39.1	35.0
03. GUIDED MISSILES AND EQUIPMENT	36.4	49.9	31.0	41.5
04. COMMUNICATIONS AND ELECTRONICS EQUIPMENT	126.8	196.3	166.6	362.9
05. SUPPORT VEHICLES	38.3	27.8	24.1	24.9
06. ENGINEER AND OTHER EQUIPMENT	54.3	76.6	50.6	83.0
07. SPARES AND REPAIR PARTS	31.8	37.3	52.0	46.8
TOTAL	442.9	418.2	474.1	687.9

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01: AMMUNITION												
AMMUNITION												
1	5.56 MM, ALL TYPES	A			1.2				28.5		22.9	U
2	7.62 MM, ALL TYPES	A							2.1		8.5	U
3	LINEAR CHARGES, ALL TYPES	A			*						5.1	U
4	.50 CALIBER	A			.8				8.6		8.6	U
5	40 MM, ALL TYPES	A			5.9				3.9		3.0	U
6	60 MM HE M888	A							9.9		6.0	U
7	81 MM HE	A			17.4				4.7		2.0	U
8	81 MM SMOKE SCREEN	A							5.4		3.0	U
9	120MM TPCSDS-T M865	A			2.7				8.9		8.5	U
10	120 MM TP-T M831	A			4.4				3.3		4.4	U
11	FUZE, ET, XM762	A			14.0							U
12	FUZE, ET, XM767	A			4.3							U
13	CTG 25MM, ALL TYPES	A			2.4				6.7		4.6	U
14	9 MM ALL TYPES	A			1.9				3.0		2.4	U
15	MINES, ALL TYPES	A			3.2						1.7	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

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16	GRENADES, ALL TYPES	A							.5		2.0	U
17	ROCKETS, ALL TYPES	A			1.9				7.0			U
18	AMMO MODERNIZATION	A			7.8				9.6		9.5	U
	OTHER SUPPORT											
19	ITEMS LESS THAN $2 MIL	A			4.8				8.7		1.7	U
	TOTAL AMMUNITION				72.6				110.9		93.9	
	BUDGET ACTIVITY 02: WEAPONS AND COMBAT VEHICLES											
	TRACKED COMBAT VEHICLES											
20	AAV7A1 PIP	A			2.4		3.0		11.8		14.6	U
21	LAV PIP	A			6.6		23.3		23.3		15.8	U
22	LIGHT ARMORED VEHICLE	A		17	68.8							U
23	MODIFICATION KITS (TRKD VEH)	A			1.0		3.5		3.3		3.8	U
24	ITEMS UNDER $2M (TRKD VEH)	A							.1		.1	U
	ARTILLERY AND OTHER WEAPONS											
25	MOD KITS (ARTILLERY)	A			3.9		.5		.5		.5	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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26	ITEMS UNDER $2M (ALL OTHER)	A							.1		.1	U
	TOTAL WEAPONS AND COMBAT VEHICLES				82.7		30.3		39.1		35.0	
	BUDGET ACTIVITY 03: GUIDED MISSILES AND EQUIPMENT											
	GUIDED MISSILES											
27	HAWK MOD	A			2.4				3.0		2.9	U
28	AAWS-MEDIUM	B								33	22.7	U
29	PEDESTAL MOUNTED STINGER (PMS) (MYP)	A		24	23.8	81	49.8		25.8		13.9	U
	OTHER SUPPORT											
30	MODIFICATION KITS	A			10.1		.1		2.0		1.9	U
31	ITEMS LESS THAN $2 MILLION	A							.1		.1	U
	TOTAL GUIDED MISSILES AND EQUIPMENT				36.4		49.9		31.0		41.5	
	BUDGET ACTIVITY 04: COMMUNICATIONS AND ELECTRONICS EQUIPMENT											
	MANPACK RADIOS											
32	MANPACK RADIOS AND EQUIP	A					1.8		9.7		5.5	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

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33	GPS	A			*							U
	VEHICLE MOUNTED RADIOS AND EQUIPMENT											
34	VEHICLE MTD RADIOS & EQUIP (MYP)	A			1.1							U
35	TSC-96 PIP FLEET SATCOM TERMINAL	A		4	1.7	1	.5					U
	TELEPHONE AND TELETYPE EQUIPMENT											
36	UNIT LEVEL CIRCUIT SWITCH (ULCS)	A			1.7						13.1	U
37	TACT COMM CENTER EQUIP	A		26	*							U
38	TACTICAL DATA NETWORK	A									21.3	U
39	JOINT TACT INFO DIST SYS (CL I)	B			1.4		8.7		5.4		5.8	U
40	GROUND MOBILE FORCES	A									7.7	U
	REPAIR AND TEST EQUIPMENT											
41	AUTO TEST EQUIP SYS	A					4.7		9.7		27.7	U
42	ELECTRONIC TEST EQUIP (TEL)	A			11.1		4.4		6.2		8.9	U
	OTHER COMM/ELEC EQUIPMENT											

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

MILLIONS OF DOLLARS

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43	SINGLE CHAN GRD & AIR RADIO	A			37.0		56.6		48.0		53.0	U
	OTHER SUPPORT (TEL)											
44	MODIFICATION KITS (TEL)	A			3.6		1.1		1.1		1.1	U
45	ITEMS LESS THAN $2M (TEL)	A			1.9		1.6		1.4		1.7	U
	COMMAND AND CONTROL SYSTEM (NON-TEL)											
46	POS LOCATING RPTG SYSTEM (PLRS)	A			*		3.1				20.0	U
47	TACTICAL AIR OPER MODULE (TAOM)	A			2.2		3.6		2.4		6.2	U
48	ADVANCED TACT AIR COMMAND CENTER	B			9.6				7.2			U
49	MARINE TACTICAL C2	A			2.7		8.5					U
50	MULTI-SERV ADF FIELD ART TACTICAL DATA	B	64,574	271	9.7	137	5.1	188	12.1	186	11.9	U
51	TACTICAL COMBAT OPERATIONS SYS	A							11.0		21.4	U
	INTELL/COMM EQUIPMENT (NON-TEL)											
52	AN/TPQ-36 FIRE FINDER RADAR UPGRADE	A									31.7	U
53	METEOROLOGICAL SYSTEMS	A	484,714			14	6.5	7	3.4			U
54	INTELLIGENCE SUPPORT EQUIPMENT	A			15.3		33.3		6.3		17.2	U
55	MOD KITS (INTEL)	A					.1		.9		.9	U

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DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

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56	ITEMS LESS THAN $2M (INTELL)	A			2.2		.1		1.8			U
	REPAIR AND TEST EQUIPMENT (NON-TEL)											
57	ELECTRONIC TMDE REPAIR FACILITY	A		4	.5	4	.7					U
58	MECH TEST TMDE	A			.9		.9		3.0		3.2	U
59	SHOP SET ELECT AN/GRM-32	A									10.1	U
	OTHER COMM/ELEC EQUIPMENT (NON-TEL)											
60	NIGHT VISION EQUIPMENT	A			12.4		39.4		2.3		11.5	U
61	ADP EQUIPMENT	A			9.5		12.8		22.8		28.9	U
	OTHER SUPPORT (NON-TEL)											
62	MARINE ENHANCEMENT PROGRAM	A							3.4		3.3	U
63	TEST CALIB & MAINT SPT	A			1.1		1.5					U
64	MODIFICATION KITS (NONTEL)	A			1.3		1.1		6.7		49.0	U
65	ITEMS LESS THAN $2M (NONTEL)	A							1.5		1.9	U
	TOTAL COMMUNICATIONS AND ELECTRONICS EQUIPMENT				126.8		196.3		166.6		362.9	
	BUDGET ACTIVITY 05: SUPPORT VEHICLES											
	ADMINISTRATIVE VEHICLES											
66	COMMERCIAL PASSENGER VEHICLES	A	14,556	96	1.7	103	1.8	194	2.8	184	2.9	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
67	COMMERCIAL CARGO VEHICLES	A			11.3		7.6		9.8		10.1	U
	TACTICAL VEHICLES											
68	5/4T TRUCK HMMWV (MYP)	A									5.1	U
69	LOGISTICS VEHICLE SYSTEM	A		81	12.1	67	11.1					U
70	TRAILERS	A			1.3		2.8		4.9		5.1	U
	OTHER SUPPORT											
71	MODIFICATION KITS	A			12.0		4.5		6.5		1.6	U
72	ITEMS LESS THAN $2 MIL	A							.1		.1	U
	TOTAL SUPPORT VEHICLES				38.3		27.8		24.1		24.9	
	BUDGET ACTIVITY 06: ENGINEER AND OTHER EQUIPMENT											
	ENGINEER AND OTHER EQUIPMENT											
73	ENVIRONMENTAL CONTROL EQUIP ASSORT	A			2.0		2.2		2.3		2.5	U
74	TACTICAL FUEL SYSTEM (TFS) EQUIP	B			1.1							U
75	POWER EQUIPMENT ASSORTED	A			2.4		2.6		2.4		3.6	U
76	MINE/COUNTERMEASURES SYSTEM	B								811	19.9	U
77	AUTOMATIC BUILDING MACHINES	A		9	1.8							U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
78	CANCELLED ACCOUNT ADJUSTMENTS	A			3.8							U
	MATERIALS HANDLING EQUIPMENT											
79	COMMAND SUPPORT EQUIPMENT	A			3.0		.3					U
80	AMPHIBIOUS RAID EQUIPMENT	A			1.8		.3		.3		.3	U
81	PHYSICAL SECURITY EQUIPMENT	A			.7		.8		1.8		1.4	U
82	GARRISON MOBILE ENGR EQUIP	A			2.1		3.6		5.2		5.4	U
83	TELEPHONE SYSTEM	A			.4		13.3		8.3		5.3	U
84	WAREHOUSE MODERNIZATION	A			2.2		3.7		2.9		4.0	U
85	MATERIAL HANDLING EQUIP	A			3.2		3.0		3.1		3.2	U
86	FIRST DESTINATION TRANSPORTATION	A			1.9		2.5		1.7		1.4	U
	GENERAL PROPERTY											
87	FIELD MEDICAL EQUIPMENT	A			2.0		3.5		3.2			U
88	TRAINING DEVICES	A			13.8		33.3		17.8		30.6	U
89	CONTAINER FAMILY	A			8.0		5.2				4.1	U
	OTHER SUPPORT											
90	MODIFICATION KITS	A			.1		.6		1.5		1.1	U
91	CHEMICAL AGENT MONITOR	A		222	1.3							U

* ITEMS UNDER $50,000

DEPARTMENT OF THE NAVY
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 1109N PROCUREMENT, MARINE CORPS

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
92	ITEMS LESS THAN $2 MIL	A					1.8		.1		.2	U
93	DRUG INTERDICTION	A			2.7							U
TOTAL ENGINEER AND OTHER EQUIPMENT					54.3		76.6		50.6		83.0	
BUDGET ACTIVITY 07: SPARES AND REPAIR PARTS												
SPARES AND REPAIR PARTS												
94	SPARES AND REPAIR PARTS	A			31.8		37.3		52.0		46.8	U
TOTAL SPARES AND REPAIR PARTS					31.8		37.3		52.0		46.8	
TOTAL PROCUREMENT, MARINE CORPS					442.9		418.2		474.1		687.9	

* ITEMS UNDER $50,000

TABLE OF CONTENTS

	PAGE
Air Force Appropriation Summary	F-i
Aircraft Procurement, Air Force	
Budget Activity Summary	F-1
Detail by Line Item	F-2 through F-9
Procurement of Ammunition, Air Force	
Budget Activity Summary	F-10
Detail by Line Item	F-11 through F-13
Missile Procurement, Air Force	
Budget Activity Summary	F-14
Detail by Line Item	F-15 through F-21
Other Procurement, Air Force	
Budget Activity Summary	F-22
Detail by Line Item	F-23 through F-35

DEPARTMENT OF THE AIR FORCE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION	FY 1994	FY 1995	FY 1996	FY 1997
AIRCRAFT PROCUREMENT, AIR FORCE	6,447.7	6,307.3	6,183.9	6,576.9
PROCUREMENT OF AMMUNITION, AIR FORCE		286.4		
MISSILE PROCUREMENT, AIR FORCE	3,718.1	3,622.1	3,647.7	4,422.6
OTHER PROCUREMENT, AIR FORCE	7,600.4	6,923.6	6,804.7	6,904.6
TOTAL	17,766.2	17,139.4	16,636.3	17,904.1

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: AIRCRAFT PROCUREMENT, AIR FORCE

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. COMBAT AIRCRAFT	1,208.4	570.6	336.3	347.2
02. AIRLIFT AIRCRAFT	2,226.5	2,373.3	2,674.9	2,732.9
03. TRAINER AIRCRAFT	150.7	246.7	59.3	113.6
04. OTHER AIRCRAFT	580.6	656.2	494.4	509.1
05. MODIFICATION OF INSERVICE AIRCRAFT	996.1	1,107.8	1,149.7	1,291.9
06. AIRCRAFT SPARES AND REPAIR PARTS	415.7	485.5	603.6	748.6
07. AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES	869.7	867.2	865.8	833.6
TOTAL	6,447.7	6,307.3	6,183.9	6,576.9

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
	BUDGET ACTIVITY 01: COMBAT AIRCRAFT											
	STRATEGIC OFFENSIVE											
1	B-1B (MYP)	B			165.8		138.3		56.3		77.4	U
2	B-2A (MYP)	B			564.7		337.0		279.9		216.9	U
	TACTICAL FORCES											
3	ADVANCED TACTICAL FIGHTER ADVANCE PROCUREMENT (CY) (FY 1997 FOR FY 1998) (MEMO)										52.9 (52.9)	U
4	F-15A	A			28.6		20.3					U
5	F-16 C/D (MYP)	A		12	(587.8)		(75.0)					U
	LESS: ADVANCE PROCUREMENT (PY)				(-138.5)							
					449.3		75.0					
	TOTAL COMBAT AIRCRAFT				1,208.4		570.6		336.3		347.2	
	BUDGET ACTIVITY 02: AIRLIFT AIRCRAFT											
	TACTICAL AIRLIFT											

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
6	C-17 (MYP)	B	324,048,875	6	(2115.0)	6	(2400.3)	8	(2592.4)		(72.0)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-250.9)		(-248.2)		(-189.9)			
					1864.1		2152.1		2402.5		72.0	
7	C-17 (MYP)											
	ADVANCE PROCUREMENT (CY)				222.2		189.9					U
	(FY 1994 FOR FY 1995) (MEMO)				(222.2)							
	(FY 1995 FOR FY 1996) (MEMO)						(189.9)					
	OTHER AIRLIFT											
8	C-130H	A			42.2		31.3					U
9	C-130J	A	44,304,000					2	88.6	2	92.8	U
	STRATEGIC AIRLIFT											
10	STRATEGIC AIRLIFT	A							183.8		2568.1	U
	NON DEVELOPMENT AIRLIFT											
11	NON DEVELOPMENT AIRLIFT AIRCRAFT	A			98.0		*					U
	TOTAL AIRLIFT AIRCRAFT				2,226.5		2,373.3		2,674.9		2,732.9	
	BUDGET ACTIVITY 03: TRAINER AIRCRAFT											
	OPERATIONAL TRAINERS											
12	ENHANCED FLIGHT SCREENER	A		33	9.9							U
13	JPATS	A	18,322,666			3	92.7	3	55.0	12	109.1	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
14	TANKER, TRANSPORT, TRAINER SYSTEM	B		35	140.8	32	154.1		4.4		4.5	U
	TOTAL TRAINER AIRCRAFT				150.7		246.7		59.3		113.6	
	BUDGET ACTIVITY 04: OTHER AIRCRAFT											
	MISSION SUPPORT AIRCRAFT											
15	CIVIL AIR PATROL A/C	A	96,185	27	3.6	14	1.4	27	2.6	27	2.7	U
16	DRUG INTERDICTION	A			3.0							U
	OTHER AIRCRAFT											
17	E-8B	B	268,167,000	2	(509.9)	2	(559.6)	2	(536.3)	2	(515.3)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-78.3)		(-123.7)		(-141.7)		(-120.0)	
					431.5		435.9		394.6		395.2	
18	E-8B											
	ADVANCE PROCUREMENT (CY)				123.7		218.8		97.1		111.1	U
	(FY 1994 FOR FY 1995) (MEMO)				(123.7)							
	(FY 1995 FOR FY 1996) (MEMO)						(141.7)					
	(FY 1995 FOR FY 1997) (MEMO)						(22.9)					
	(FY 1995 FOR FY 1998) (MEMO)						(24.6)					
	(FY 1995 FOR FY 1999) (MEMO)						(29.6)					
	(FY 1996 FOR FY 1997) (MEMO)								(97.1)			
	(FY 1997 FOR FY 1998) (MEMO)										(111.1)	
19	SOF A/C CSE	A			18.7							U
	TOTAL OTHER AIRCRAFT				580.6		656.2		494.4		509.1	

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 05:	MODIFICATION OF INSERVICE AIRCRAFT											
	STRATEGIC AIRCRAFT											
20	B-2A	A			21.9		64.0		17.3		5.6	U
21	B-1B	A			29.0		40.3		75.4		131.4	U
22	B-52	A			37.4		33.3		4.9		10.0	U
23	F-117	A			11.8		11.1		47.7		39.6	U
	TACTICAL AIRCRAFT											
24	A-10	A			29.6		46.8		79.4		44.1	U
25	F/RF-4	A			*		1.6		.1		.1	U
26	F-15	A			264.9		184.8		79.5		143.1	U
27	F-16	A			111.1		110.0		118.6		143.1	U
28	EF-111	A			3.8		2.0		1.9			U
29	F-111	A			13.6		5.0					U
30	T/AT-37	A			1.9		1.4		.5		.6	U
	AIRLIFT AIRCRAFT											
31	C-5	A			38.1		28.5		45.4		22.6	U
32	C-9	A			11.8		6.7		4.1		4.7	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
33	C-17A	A			3.5		6.1		12.7		24.4	U
34	C-21	A			.3		2.5		4.7		4.0	U
35	C-22	A					5.1		.7		.4	U
36	C-STOL	A			.1		.7		.3		.8	U
37	C-137	A			3.5		1.4		2.4		1.5	U
38	C-141	A			29.2		14.4		95.2		53.3	U
	TRAINER AIRCRAFT											
39	T-1	A							5.8		8.5	U
40	T-3 (EFS) AIRCRAFT	A							.1		.2	U
41	T-38	A			14.3		25.4		11.5		15.4	U
42	T-41 AIRCRAFT	A			.2		*		*		*	U
43	T-43	A			1.9		5.3		5.4		1.1	U
	OTHER AIRCRAFT											
44	KC-10A (ATCA)	A			36.7		17.9		20.7		15.6	U
45	C-12	A			.3		1.3		3.2		3.1	U
46	C-18	A			.2		2.1		2.7		1.1	U
47	C-20 MODS	A			.1		6.4		7.8		2.0	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
48	VC-25A MOD	A			9.8		.8		7.8		1.9	U
49	C-130	A			118.8		76.5		84.4		92.5	U
50	C-135	A			61.1		77.3		142.8		188.5	U
51	E-3	A			4.6		136.6		230.4		270.3	U
52	E-4	A			10.4		35.0		1.0		1.6	U
53	H-1	A			.1				6.2		5.5	U
54	H-60	A			26.1		.3				7.3	U
55	OTHER AIRCRAFT	A			72.0		40.5		29.4		40.7	U
	OTHER MODIFICATIONS											
56	CLASSIFIED PROJECTS	A			28.3		48.4				7.2	U
57	DARP	A					68.2					U
	TOTAL MODIFICATION OF INSERVICE AIRCRAFT				996.1		1,107.8		1,149.7		1,291.9	
	BUDGET ACTIVITY 06: AIRCRAFT SPARES AND REPAIR PARTS											
	AIRCRAFT SPARES + REPAIR PARTS											
58	SPARES AND REPAIR PARTS	A			415.7		485.5		603.6		748.6	U
	TOTAL AIRCRAFT SPARES AND REPAIR PARTS				415.7		485.5		603.6		748.6	

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 07: AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES												
	COMMON AGE											
59	COMMON AGE	A			190.5		225.6		216.0		191.9	U
	POST PRODUCTION SUPPORT											
60	F-15 POST PRODUCTION SUPPORT	A							14.0		11.6	U
61	F-16 POST PRODUCTION SUPPORT								194.7		84.3	U
	INDUSTRIAL PREPAREDNESS											
62	INDUSTRIAL PREPAREDNESS				25.1		51.1		48.7		35.0	U
63	BOMBER INDUSTRIAL BASE SUPPORT						125.0					U
	WAR CONSUMABLES											
64	WAR CONSUMABLES	A			17.9		18.4		25.5		31.5	U
	OTHER PRODUCTION CHARGES											
65	OTHER PRODUCTION CHARGES	A			607.2		234.9		167.7		342.6	U
66	CANCELLED ACCOUNT ADJUSTMENTS	A			3.1							U
	COMMON ECM EQUIPMENT											

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3010F AIRCRAFT PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
67	COMMON ECM EQUIPMENT				25.9		16.8		4.9		4.7	U
	DARP											
68	DARP						195.4		194.4		132.0	U
TOTAL AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES					869.7		867.2		865.8		833.6	
TOTAL AIRCRAFT PROCUREMENT, AIR FORCE					6,447.7		6,307.3		6,183.9		6,576.9	

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: PROCUREMENT OF AMMUNITION, AIR FORCE

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. PROCUREMENT OF AMMO, AIR FORCE		286.4		
TOTAL		286.4		

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3011F PROCUREMENT OF AMMUNITION, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01: PROCUREMENT OF AMMO, AIR FORCE												
PROC AMMO, AF												
1	2.75 INCH ROCKET MOTOR	A				41652	13.8					U
2	ITEMS LESS THAN $2,000,000	A					2.0					U
CARTRIDGE CHAFF RR-180												
3	5.56 MM	A				27935	11.5					U
4	20MM TRAINING	A					39.0					U
5	30 MM TRAINING	A				1634	15.4					U
6	CARTRIDGE CHAFF RR-180	A					5.3					U
7	CARTRIDGE CHAFF RR-188	A				1513	2.3					U
8	SIGNAL MK-4 MOD 3	A				702	1.5					U
9	ITEMS LESS THAN $2,000,000	A					4.5					U
TIMER ACTUATOR FIN FUZE												
10	TIMER ACTUATOR FIN FUZE	A				14432	8.7					U
11	GBU-15	A					5.6					U
12	BOMB PRACTICE 25 POUND	A				381280	5.4					U
13	SENSOR FUZED WEAPON	A				260	112.7					U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3011F PROCUREMENT OF AMMUNITION, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
14	ITEMS LESS THAN $2,000,000	A					2.5					U
	ITEMS LESS THAN $2,000,000											
15	ITEMS LESS THAN $2,000,000	A					.8					U
	FLARE, IR MJU-7B											
16	FLARE, IR MJU-7B	A					16.1					U
17	PARACHUTE FLARE LUU-2 B/B	A					4.0					U
18	M-206 CARTRIDGE FLARE	A					9.1					U
19	INITIAL SPARES	A					.2					U
20	REPLENISHMENT SPARES	A					2.8					U
21	MODIFICATIONS	A					.5					U
22	ITEMS LESS THAN $2,000,000	A					10.2					U
	FMU-139 FUZE											
23	FMU-139 FUZE	B					11.7					U
24	ITEMS LESS THAN $2,000,000	A					.1					U
	MUNITIONS UNDISTRIBUTED											
25	M-16 A2 RIFLE	A					.8					U
	TOTAL PROCUREMENT OF AMMO, AIR FORCE						286.4					

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3011F PROCUREMENT OF AMMUNITION, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
TOTAL PROCUREMENT OF AMMUNITION, AIR FORCE							286.4					

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: MISSILE PROCUREMENT, AIR FORCE

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. BALLISTIC MISSILES	27.1	16.1	18.7	22.4
02. OTHER MISSILES	680.9	450.9	309.2	236.9
03. MODIFICATION OF INSERVICE MISSILES	113.0	113.3	37.7	132.1
04. SPARES AND REPAIR PARTS	59.7	64.7	53.9	60.7
05. OTHER SUPPORT	2,837.4	2,977.3	2,906.8	3,661.2
06. MUNITIONS & RELATED EQUIPMENT			321.3	309.3
TOTAL	3,718.1	3,622.1	3,647.7	4,422.6

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3020F MISSILE PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
	BUDGET ACTIVITY 01: BALLISTIC MISSILES											
	MISSILE REPLACEMENT EQUIPMENT - BALLIST											
1	MISSILE REPLACEMENT EQ-BALLISTIC	A			27.1		16.1		18.7		22.4	U
	TOTAL BALLISTIC MISSILES				27.1		16.1		18.7		22.4	
	BUDGET ACTIVITY 02: OTHER MISSILES											
	STRATEGIC											
2	HAVE NAP	A			5.0	36	25.8					U
3	TRI-SERVICE ATTACK MISSILE	A			86.2							U
4	ADVANCED CRUISE MISSILE	A			3.5				1.9		1.9	U
	TACTICAL											
5	GPS AIDED MUNITION	A					24.8					U
6	JOINT STANDOFF WEAPON	A									12.1	U
7	AMRAAM	A	655,230	1007	465.9	413	287.4	291	190.7	240	177.5	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3020F MISSILE PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
8	AGM-130 POWERED GBU-15	A		102	70.4	102	68.8		69.3		2.6	U
	TARGET DRONES											
9	TARGET DRONES	A	444,886	61	30.8	48	22.9	88	39.2	88	35.1	U
	INDUSTRIAL FACILITIES											
10		A			6.3		6.4		8.1		7.6	U
	MISSILE REPLACEMENT EQUIPMENT - OTHER											
11	MISSILE REPLACEMENT EQ-OTHER	A			12.9		14.8		.1		.1	U
TOTAL OTHER MISSILES					680.9		450.9		309.2		236.9	
BUDGET ACTIVITY 03: MODIFICATION OF INSERVICE MISSILES												
	CLASS IV											
12	CONVENTIONAL ALCM	A					29.2					U
13	PEACEKEEPER (M-X)	B			.2							U
14	AIM-9 SIDEWINDER	A			4.7		8.2		15.4		9.5	U
15	MM III MODIFICATIONS	A			33.4		9.2		19.3		119.7	U
16	AGM-65D MAVERICK	A			.4							U
17	AGM-88A HARM	A			74.0		63.7		1.6		1.7	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3020F MISSILE PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
18	MODIFICATIONS UNDER $2.0M	A			.2		2.9		1.4		1.3	U
	TOTAL MODIFICATION OF INSERVICE MISSILES				113.0		113.3		37.7		132.1	
	BUDGET ACTIVITY 04: SPARES AND REPAIR PARTS											
	MISSILE SPARES + REPAIR PARTS											
19	SPARES AND REPAIR PARTS	A			59.7		64.7		53.9		60.7	U
	TOTAL SPARES AND REPAIR PARTS				59.7		64.7		53.9		60.7	
	BUDGET ACTIVITY 05: OTHER SUPPORT											
	SPACE PROGRAMS											
20	SPACEBORNE EQUIP (COMSEC)	A			.2		2.1		19.2		15.0	U
21	GLOBAL POSITIONING (MYP)	A	50,727,500	4	(165.9)	5	(201.1)	4	(202.9)	3	(219.6)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-64.7)		(-67.6)		(-66.9)		(-32.5)	
					101.2		133.5		136.1		187.1	
22	GLOBAL POSITIONING (MYP) ADVANCE PROCUREMENT (CY)				58.8		55.4		38.4		27.5	U
23	SPACE SHUTTLE OPERATIONS	A			(70.9)		(138.1)		(57.0)		(54.7)	U
	LESS: ADVANCE PROCUREMENT (PY)						(-35.3)					
					70.9		102.8		57.0		54.7	

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3020F MISSILE PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
24	SPACE BOOSTERS	A			463.2		379.1		465.0		510.3	U
25	SPACE BOOSTERS ADVANCE PROCUREMENT (CY)										90.4	U
26	MEDIUM LAUNCH VEHICLE	A	44,873,250	2	(124.2)	2	(117.5)	4	(179.5)	4	(204.5)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-34.3)		(-11.0)		(-28.6)		(-38.9)	
					89.9		106.5		150.9		165.6	
27	MEDIUM LAUNCH VEHICLE ADVANCE PROCUREMENT (CY)				19.6		28.6		38.9		50.0	U
28	DEF METEOROLOGICAL SAT PROG	A			31.0		29.0		29.3		28.3	U
29	DEFENSE SUPPORT PROGRAM (MYP)	A		1	(322.0)		(464.8)		(102.9)		(86.9)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-101.6)		(-103.4)					
					220.4		361.4		102.9		86.9	
30	DEFENSE SUPPORT PROGRAM (MYP) ADVANCE PROCUREMENT (CY)				129.9							U
31	DEFENSE SATELLITE COMM SYSTEM	A			23.9		20.0		25.7		39.6	U
	SPECIAL PROGRAMS											
32	IONDS (MYP)	A	7,261,250	4	(40.4)	5	(46.0)	4	(29.0)	3	(4.3)	U
	LESS: ADVANCE PROCUREMENT (PY)				(-11.7)		(-10.6)		(-10.0)			
					28.7		35.3		19.1		4.3	
33	IONDS (MYP) ADVANCE PROCUREMENT (CY)				10.6		10.0					U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3020F MISSILE PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
34	SPECIAL UPDATE PROGRAMS	A			140.5		182.9		218.8		312.9	U
35	SPECIAL PROGRAMS	A			1448.5		1530.7		1605.8		2088.6	U
TOTAL OTHER SUPPORT					2,837.4		2,977.3		2,906.8		3,661.2	
BUDGET ACTIVITY 06: MUNITIONS & RELATED EQUIPMENT												
	ROCKETS + LAUNCHERS											
36	2.75 INCH ROCKET MOTOR	A	346					30000	10.4	51828	16.5	U
37	2.75" ROCKET HEAD SIGNATURE	A	81					24320	2.0	25584	1.9	U
38	ITEMS LESS THAN $2,000,000	A							1.0		.9	U
	CARTRIDGES											
39	5.56 MM	A	400					13835	5.5	19504	7.2	U
40	20MM TRAINING	A								526	2.9	U
41	30 MM TRAINING	A	10,647					1360	14.5	1800	18.5	U
42	CARTRIDGE CHAFF RR-180	A	13,930					720	10.0	596	8.0	U
43	CARTRIDGE CHAFF RR-188	A	1,320					903	1.2	1276	1.8	U
44	SIGNAL MK-4 MOD 3	A								670	1.2	U
45	CART IMP 3000 FT/LBS	A								1200	3.4	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3020F MISSILE PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
46	ITEMS LESS THAN $2,000,000	A							5.2		5.2	U
	BOMBS											
47	MK-82 INERT/BDU-50	A	655					12586	8.3	13712	8.3	U
48	TIMER ACTUATOR FIN FUZE	A	624					10000	6.2	10000	6.4	U
49	BOMB PRACTICE 25 POUND	A	14					400000	5.9	560000	7.6	U
50	MK-84 BOMB-EMPTY	A	2,490					3718	9.3	3933	8.9	U
51	SENSOR FUZED WEAPON	A	330,894					500	165.4	500	155.7	U
52	CBU-89 GATOR INERT	A	27,673					236	6.5			U
53	ITEMS LESS THAN $2,000,000	A							1.5			U
	OTHER ITEMS											
54	FLARE, IR MJU-7B	A	23					945049	21.9	816420	17.3	U
55	MJU-23 FLARE	B	873					7426	6.5	13087	11.4	U
56	MJU-10B	A	65					110436	7.2	86088	5.2	U
57	M-206 CARTRIDGE FLARE	A	33					331564	11.3	174775	5.5	U
58	INITIAL SPARES	A							.6			U
59	REPLENISHMENT SPARES	A							2.3		2.2	U
60	MODIFICATIONS	A							2.3		.4	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3020F MISSILE PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
61	ITEMS LESS THAN $2,000,000	A							11.3		4.2	U
	FUZES											
62	JOINT PROGRAMMABLE FUSE(JPF)	B								324	4.1	U
	OTHER WEAPONS											
63	M-16 A2 RIFLE	A							5.0		4.5	U
TOTAL MUNITIONS & RELATED EQUIPMENT									321.3		309.3	
TOTAL MISSILE PROCUREMENT, AIR FORCE					3,718.1		3,622.1		3,647.7		4,422.6	

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: OTHER PROCUREMENT, AIR FORCE

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. MUNITIONS AND ASSOCIATED EQUIPMENT	290.1			
02. VEHICULAR EQUIPMENT	158.0	135.5	123.9	122.1
03. ELECTRONICS AND TELECOMMUNICATIONS EQUIPMENT	1,034.2	754.3	774.9	789.2
04. OTHER BASE MAINTENANCE AND SUPPORT EQUIPMENT	6,118.1	6,033.8	5,844.2	5,942.8
05. SPARE AND REPAIR PARTS			61.7	50.5
TOTAL	7,600.4	6,923.6	6,804.7	6,904.6

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01:	MUNITIONS AND ASSOCIATED EQUIPMENT											
	ROCKETS + LAUNCHERS											
1	ITEMS LESS THAN $2,000,000	A			2.4							U
	CARTRIDGES (THOUSANDS)											
2	5.56 MM	A		26061	7.8							U
3	20MM TRAINING	A		2089	7.0							U
4	30 MM TRAINING	A		3375	26.5							U
5	CARTRIDGE CHAFF RR-180	A		558	8.8							U
6	CARTRIDGE CHAFF RR-188	A		2561	2.9							U
7	SIGNAL MK-4 MOD 3	A		505	.8							U
8	CART IMP 3000 FT/LBS	A		776	1.7							U
9	ITEMS LESS THAN $2,000,000	A			2.1							U
	BOMBS											
10	BSU-49 INFLATABLE RETARDER	A		28565	8.0							U
11	GBU-15	B			6.0							U
12	BOMB PRACTICE 25 POUND	A		539440	5.6							U
13	SENSOR FUZED WEAPON	A		112	93.1							U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
14	CBU-87(COMBINED EFFECTS MUNITIONS)	A		5828	70.0							U
15	ITEMS LESS THAN $2,000,000	A			5.8							U
	TARGETS											
16	ITEMS LESS THAN $2,000,000	A			.1							U
	OTHER ITEMS											
17	FLARE, IR MJU-7B	A		306540	6.3							U
18	MJU-10B	A		75810	3.2							U
19	ALA-17 FLARE	A		8485	1.8							U
20	SPARES AND REPAIR PARTS	A			2.9							U
21	MODIFICATIONS	A			2.7							U
22	ITEMS LESS THAN $2,000,000	A			8.5							U
	FUZES											
23	FMU-139 FUZE	B			10.3							U
24	ITEMS LESS THAN $2,000,000	A			.3							U
	OTHER WEAPONS											
25	M-16 A2 RIFLE	A			4.1							U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
26	.50 CAL RIFLE	A		184	1.3							U
TOTAL MUNITIONS AND ASSOCIATED EQUIPMENT					290.1							
BUDGET ACTIVITY 02: VEHICULAR EQUIPMENT												
PASSENGER CARRYING VEHICLES												
27	SEDAN, 4 DR 4X2	A	9,666	190	1.9	299	2.8	186	1.8	125	1.2	U
28	STATION WAGON, 4X2	A	15,260	101	1.5	128	1.9	69	1.1	105	1.6	U
29	BUS, 28 PASSENGER	A		49	2.5	33	1.7					U
30	BUS - 32-44 PASSENGER	A		45	2.6	27	1.6					U
31	BUSES	A	54,395					43	2.3	74	4.3	U
32	AMBULANCE, BUS	A		1	.1	1	.1					U
33	AMBULANCES	A								3	.2	U
34	MODULAR AMBULANCE	A		157	8.0	146	7.5					U
35	14-23 PASSENGER BUS	A		6	.2	6	.2					U
36	LAW ENFORCEMENT VEHICLE	A	15,430	115	1.8	17	.3	86	1.3	61	1.0	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
37	ARMORED SEDAN	A	202,000	2	.4			1	.2	1	.2	U
	CARGO + UTILITY VEHICLES											
38	TRUCK, CARGO-UTILITY, 3/4T, 4X4	A	20,597					134	2.8	121	2.6	U
39	TRUCK, PICKUP, 1/2T, 4X2	A	10,506	761	8.0	192	1.9	235	2.5	200	2.2	U
40	TRUCK, PICKUP, COMPACT	A	10,981	1291	13.4	507	5.4	435	4.8	478	5.4	U
41	TRUCK MULTI-STOP 1 TON 4X2	A	22,384	67	1.4	427	9.4	164	3.7	218	5.0	U
42	TRUCK CARRYALL	A		175	2.9							U
43	TRUCK, CARGO, 2 1/2T, 6X6, M-35	A	54,100			199	10.8	50	2.7			U
44	MEDIUM TACTICAL VEHICLE	A	104,642					56	5.9	72	7.8	U
45	TRUCK TRACTOR, OVER 5T	A	49,105	1	.1			57	2.8	44	2.2	U
46	CAP VEHICLES	A			.8		.8		.8		.8	U
47	ITEMS LESS THAN $2,000,000	A			12.4		15.4		7.3		7.6	U
	SPECIAL PURPOSE VEHICLES											
48	TRUCK TANK FUEL R-11	A	145,058	157	22.8	154	22.3	154	22.3	154	22.3	U
49	HMMWV, ARMORED	A	128,035					56	7.2	53	7.1	U
50	TRACTOR, TOW, FLIGHTLINE	A	29,342					152	4.5	2	.5	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
51	ITEMS LESS THAN $2,000,000	A			13.7		7.8		6.6		5.0	U
	FIRE FIGHTING EQUIPMENT											
52	TRUCK CRASH P-23	A		3	1.3							U
53	TRUCK WATER P-26 (P-18)	A		18	3.0							U
54	HEAVY RESCUE VEHICLE	A	174,400	8	1.3	18	3.1	15	2.6	15	2.7	U
55	TRUCK PUMPER P-24	A		15	2.5	14	2.5					U
56	TRUCK PUMPER P-22	A		26	3.9	26	4.3					U
57	ITEMS LESS THAN $2,000,000	A			.8				1.3		.2	U
	MATERIALS HANDLING EQUIPMENT											
58	TRUCK, F/L 10,000 LB	A		156	7.1							U
59	60K A/C LOADER	A	1,262,000	10	27.7	15	29.5	28	35.3	33	36.9	U
60	50K CONTAINER HANDLER	A		9	3.1							U
61	ITEMS LESS THAN $2,000,000	A			2.4		4.4		1.7		1.3	U
	BASE MAINTENANCE SUPPORT											
62	WELL DRILLING SYSTEM	A		4	3.5							U
63	SPARES AND REPAIR PARTS	A			.2							U
64	MODIFICATIONS	A			.4		.6		.2		.2	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
65	ITEMS LESS THAN $2,000,000	A			6.5		1.3		2.4		4.0	U
TOTAL VEHICULAR EQUIPMENT					158.0		135.5		123.9		122.1	
BUDGET ACTIVITY 03: ELECTRONICS AND TELECOMMUNICATIONS EQUIPMENT												
	COMM SECURITY EQUIPMENT(COMSEC)											
66	COMSEC EQUIPMENT	A			24.6		21.1		39.4		41.1	U
67	SPARES AND REPAIR PARTS	A			1.2							U
68	MODIFICATIONS (COMSEC)	A			.4		.5		.5		.5	U
	INTELLIGENCE PROGRAMS											
69	INTELLIGENCE DATA HANDLING SYS	A			10.7		24.2		12.0		13.3	U
70	INTELLIGENCE TRAINING EQUIPMENT	A			*		.2		2.4		2.1	U
71	INTELLIGENCE COMM EQUIP	A			10.3		9.9		5.5		6.8	U
72	ITEMS LESS THAN $2,000,000	A					.2		1.0		1.0	U
	ELECTRONICS PROGRAMS											
73	AIR TRAFFIC CTRL/LAND SYS (ATCALS)	A			12.8							U
74	NATIONAL AEROSPACE SYSTEM	A									3.0	U
75	THEATER AIR CONTROL SYS IMPROVEMENT	A			45.4		70.7		32.3		22.8	U
76	WEATHER OBSERV/FORCAST	A			48.2		26.1		7.1		14.6	U

* ITEMS UNDER $50,000

DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
77	DEFENSE SUPPORT PROGRAM	A			28.4		23.9		36.9		4.4	U
78	STRATEGIC COMMAND AND CONTROL	A			57.4		8.2		67.6		25.0	U
79	CHEYENNE MOUNTAIN COMPLEX	A			28.9		15.1		8.7		5.4	U
80	SPACE BASED IR SENSOR PROG	A							19.9		23.9	U
81	NAVSTAR GPS	A			4.6		3.7		1.2		1.5	U
82	DEFENSE METEOROLOGICAL SAT PROG	A			11.8		14.9		14.4		11.1	U
83	TAC SIGINT SUPPORT	A			6.5				5.9		6.1	U
84	DRUG INTERDICTION PROGRAM	A			8.2							U
85	NUDET DETECTION SYSTEM (NDS)	B							5.8		2.2	U
86	DARP	A					22.2					U
	SPECIAL COMM-ELECTRONICS PROJECTS											
87	AUTOMATIC DATA PROCESSING EQUIP	A			60.8		40.0		24.0		28.8	U
88	ADP OPERATIONS CONSOLIDATION	A			67.9							U
89	WWMCCS/GLOBAL COMMAND & CONTROL SYS	A					8.4		5.2		4.8	U
90	MOBILITY COMMAND AND CONTROL	A			4.9		8.1				4.8	U
91	PENTAGON RENOVATION	A									14.7	U
92	AIR FORCE PHYSICAL SECURITY SYSTEM	A			29.1		25.3		15.2		15.0	U

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93	COMBAT TRAINING RANGES	A			23.9		11.6		2.1		31.8	U
94	C3 COUNTERMEASURES	A			10.0		5.4		7.5		9.6	U
95	BASE LEVEL DATA AUTO PROGRAM	A			32.9		30.9		26.9		24.1	U
96	AIR FORCE SATELLITE CONTROL NETWORK	A			30.0		25.6		25.5		30.2	U
97	THEATER BATTLE MGT C2 SYS	A			5.2		32.2		52.6		50.9	U
98	EASTERN/WESTERN RANGE I&M	A			117.3		115.8		114.5		125.7	U
	AIR FORCE COMMUNICATIONS											
99	INFORMATION TRANSMISSION SYSTEMS	A					.5					U
100	BASE INFORMATION INFRASTRUCTURE	A			93.8		44.6		73.1		77.8	U
101	USCENTCOM	A			2.0		2.8		2.2		2.4	U
102	AUTOMATED TELECOMMUNICATIONS PRG	A			7.5		29.4		18.1		20.1	U
103	MILSATCOM	A			70.8		3.7		43.4		65.4	U
104	SATELLITE TERMINALS	A			10.7		5.3					U
	DISA PROGRAMS											
105	WIDEBAND SYSTEMS UPGRADE	A			1.0		1.4					U

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106	MINIMUM ESSENTIAL EMER COMM NET	B			.3							U
	ORGANIZATION AND BASE											
107	TACTICAL C-E EQUIPMENT	A			53.6		39.0		24.6		25.3	U
108	RADIO EQUIPMENT	A					19.5		7.2		9.6	U
109	TV EQUIPMENT (AFRTV)	A			4.2		2.6		2.5		2.5	U
110	CCTV/AUDIOVISUAL EQUIPMENT	A			8.8		2.3		5.8		4.2	U
111	BASE COMM INFRASTRUCTURE	A			1.3		.9					U
112	SPARES AND REPAIR PARTS	A			26.2							U
113	CAP COM & ELECT	A			.3		.3					U
114	ITEMS LESS THAN $2,000,000	A			14.2		9.5		6.6		5.9	U
	MODIFICATIONS											
115	COMM ELECT MODS	A			21.9		19.0		20.4		18.4	U
116	ANTIJAM VOICE	A			9.9							U
117	SPACE MODS	A			26.5		29.4		37.1		32.1	U
TOTAL ELECTRONICS AND TELECOMMUNICATIONS EQUIPMENT					1,034.2		754.3		774.9		789.2	

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DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

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BUDGET ACTIVITY 04: OTHER BASE MAINTENANCE AND SUPPORT EQUIPMENT												
	TEST EQUIPMENT											
118	BASE/ALC CALIBRATION PACKAGE	A			9.8		9.9		10.0		10.1	U
119	PRIMARY STANDARDS LABORATORY PACKAGE	A			1.6		1.6		1.6		1.6	U
120	ITEMS LESS THAN $2,000,000	A			11.1		11.6		11.8		12.5	U
	PERSONAL SAFETY AND RESCUE EQUIP											
121	NIGHT VISION GOGGLES	A			.9				1.0		1.0	U
122	BREATHING APPARATUS TWO HOUR	A					4.2		3.1		.8	U
123	UNIVERSAL WATER ACTIVATED REL SYS	B							7.5		1.0	U
124	CHEMICAL/BIOLOGICAL DEF PROG	B					7.0					U
125	ITEMS LESS THAN $2,000,000	A			4.6		3.8		4.8		2.2	U
	DEPOT PLANT + MATERIALS HANDLING EQ											
126	MECHANIZED MATERIAL HANDLING EQUIP	A							3.5		10.6	U
127	BASE MECHANIZATION EQUIPMENT	A			15.8		11.2					U
128	AIR TERMINAL MECHANIZATION EQUIP	A			2.2		6.8					U

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DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

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DATE: FEB 1995

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129	ITEMS LESS THAN $2,000,000	A			4.7		4.3		4.1			U
	ELECTRICAL EQUIPMENT											
130	GENERATORS-MOBILE ELECTRIC	A			7.8		4.3		3.2		3.8	U
131	FLOODLIGHTS SET TYPE NF2D	A							.3		4.7	U
132	ITEMS LESS THAN $2,000,000	A					3.5		3.3		3.5	U
	BASE SUPPORT EQUIPMENT											
133	BASE PROCURED EQUIPMENT	A			15.7		15.7					U
134	NATURAL GAS UTILIZATION EQUIPMENT	A			10.0		2.5					U
135	MEDICAL/DENTAL EQUIPMENT	A			9.7		13.8		12.8		15.9	U
136	ENVIRONMENTAL PROJECTS	A			38.7		23.4					U
137	AIR BASE OPERABILITY	B			12.8		4.8		4.3		5.0	U
138	PALLET AIR CARGO	A	919	7632	6.7	4000	3.6	4000	3.7	4000	3.8	U
139	NET ASSEMBLY, 108"X88"	A			1.9				2.0		.9	U
140	BLADDERS FUEL	A							3.9		3.7	U
141	AERIAL BULK FUEL DELIVERY SYSTEM	A									2.1	U
142	PHOTOGRAPHIC EQUIPMENT	A			6.6		6.6		6.2		6.3	U
143	PRODUCTIVITY ENHANCEMENT	A			10.8		7.1					U

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DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

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144	PRODUCTIVITY INVESTMENTS	A			14.1		7.1					U
145	MOBILITY EQUIPMENT	A			21.7		15.4		17.7		21.8	U
146	WARTIME HOST NATION SUPPORT	A							1.7		2.1	U
147	SPARES AND REPAIR PARTS	A			.2		31.9					U
148	DEPLOYMENT/EMPLOYMENT CONTAINERS	A							3.3		1.0	U
149	SPATIAL DISORIENTATION DEMONSTRATOR	A									2.0	U
150	AIR CONDITIONERS	A									4.6	U
151	ITEMS LESS THAN $2,000,000	A			17.9		17.1		9.3		3.9	U
	SPECIAL SUPPORT PROJECTS											
152	INTELLIGENCE PRODUCTION ACTIVITY	A			45.3		54.2		67.9		88.6	U
153	TECH SURV COUNTERMEASURES EQ	A			1.7		2.3		1.0		1.1	U
154	SR VR GROUND STATIONS	A			38.6							U
155	DARP	A					64.8		74.1		79.2	U
156	SELECTED ACTIVITIES	A			5634.1		5515.9		5409.4		5475.9	U
157	SPECIAL UPDATE PROGRAM	A			157.1		164.9		158.4		171.7	U
158	INDUSTRIAL PREPAREDNESS	A			1.4		1.0		1.2		1.4	U
159	MODIFICATIONS	A			.5		.2		.2		.2	U

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DEPARTMENT OF THE AIR FORCE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 3080F OTHER PROCUREMENT, AIR FORCE

DATE: FEB 1995

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160	FIRST DESTINATION TRANSPORTATION	A			14.0		13.4		12.9			U
TOTAL OTHER BASE MAINTENANCE AND SUPPORT EQUIPMENT					6,118.1		6,033.8		5,844.2		5,942.8	
BUDGET ACTIVITY 05: SPARE AND REPAIR PARTS												
SPARES AND REPAIR PARTS												
161	SPARES AND REPAIR PARTS	A							61.7		50.5	U
TOTAL SPARE AND REPAIR PARTS									61.7		50.5	
TOTAL OTHER PROCUREMENT, AIR FORCE					7,600.4		6,923.6		6,804.7		6,904.6	

* ITEMS UNDER $50,000

TABLE OF CONTENTS

	PAGE
Defensewide Appropriation Summary	D-i
Procurement, Defensewide	
Budget Activity Summary	D-1
Detail by Line Item	D-2 through D-9
National Guard and Reserve Equipment	
Budget Activity Summary	D-10
Detail by Line Item	D-11 through D-13
Defense Production Act Purchases	
Budget Activity Summary	D-14
Detail by Line Item	D-15
Chemical Agents and Munitions Destruction, Defense	
Budget Activity Summary	D-16
Detail by Line Item	D-17

DEFENSEWIDE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION	FY 1994	FY 1995	FY 1996	FY 1997
PROCUREMENT, DEFENSE-WIDE	1,800.5	2,049.7	2,179.9	2,525.0
NATIONAL GUARD & RESERVE EQUIPMENT	1,168.3	794.4		
DEFENSE PRODUCTION ACT PURCHASES	200.0			
CHEM AGENTS & MUNITIONS DESTRUCTION, DEF	372.9	575.4	746.7	828.7
TOTAL	3,541.8	3,419.5	2,926.6	3,353.7

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DEFENSEWIDE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: PROCUREMENT, DEFENSE-WIDE

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. MAJOR EQUIPMENT	1,336.1	1,517.5	1,457.8	1,752.1
02. SPECIAL OPERATIONS COMMAND	464.4	532.2	581.6	575.3
03. CHEMICAL/BIOLOGICAL DEFENSE			140.5	197.6
TOTAL	1,800.5	2,049.7	2,179.9	2,525.0

* ITEMS UNDER $50,000

DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 0300D PROCUREMENT, DEFENSE-WIDE

DATE: FEB 1995

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BUDGET ACTIVITY 01: MAJOR EQUIPMENT												
	MAJOR EQUIPMENT, OSD/WHS											
1	MOTOR VEHICLES								.3			U
2	MAJOR EQUIPMENT, OSD	A			190.5		230.0		193.3		174.4	U
3	MAJOR EQUIPMENT, WHS						16.2		15.7		28.2	U
4	ARMED FORCE INFORMATION SERVICE						4.7		4.9		4.8	U
5	DEPARTMENT OF DEFENSE EDUCATION ACTIVIT						3.1		1.6		1.7	U
6	DEFENSE TECHNOLOGY SECRUITY ADMINISTRAT						1.2		.8		.7	U
7	DARP				87.9		332.7		179.3		403.5	U
8	CORPORATE INFORMATION MANAGEMENT				3.5		8.9		4.9		4.9	U
9	DEFENSE INFORMATION INFRASTRUCTURE	A							54.2		57.5	U
	MAJOR EQUIPMENT, NSA											
10	CLASSIFIED EQUIPMENT											U
11	DEFENSE AIRBORNE RECONNAISSANCE PROGRAM						16.3		17.0		13.8	U
	MAJOR EQUIPMENT, DNA											
12	VEHICLES			25	.4	33	1.5		.1		.2	U

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DEFENSEWIDE
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13	OTHER MAJOR EQUIPMENT	A		12	8.6	6	1.7		8.0		8.0	U
	MAJOR EQUIPMENT, DISA											
14	WWMCCS ADP SYSTEMS				7.0		6.7		4.4		4.2	U
15	INFORMATION SERVICES TRANSFER				*							U
16	PLANS & PROGRAM ANALYSIS SUPPORT CENTER						2.0		1.5			U
17	ITEMS LESS THAN $2 MILLION				47.7		59.0		.3		2.0	U
18	DRUG INTERDICTION SUPPORT				6.8							U
	MAJOR EQUIPMENT, DIA											
19	INTELLIGENCE AND COMMUNICATIONS											U
20	DIA INTELLIGENCE PROGRAM SUPPORT GROUP	A										U
	MAJOR EQUIPMENT, DLA											
21	DEFENSE SUPPORT ACTIVITIES				19.3		18.7		7.3		7.5	U
	MAJOR EQUIPMENT, DMA											
22	COMMUNICATION EQUIPMENT	A			2.5							U
23	AUTOMATED INFORMATION SYSTEM EQUIPMENT				2.4		23.1					U
24	VECTOR PRODUCT EQUIPMENT	A			.7							U
25	DEVELOPMENT TEST FACILITY				10.1							U

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DEFENSEWIDE
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26	MC & G MAINFRAME UPGRADE				4.2							U
27	VEHICLES				.3		.1		1.2		.1	U
28	OTHER CAPITAL EQUIPMENT				25.0		19.6					U
29	DEFENSE HYDROGRAPHIC EQUIPMENT	A			.3							U
	MAJOR EQUIPMENT, DIS											
30	VEHICLES		9,360		3.1		2.9	333	3.1	334	3.2	U
31	OTHER CAPITAL EQUIPMENT				1.9		6.0		6.8		8.8	U
	MAJOR EQUIPMENT, DCAA											
32	ITEMS LESS THAN $2 MILLION				4.3		4.0		4.0		4.0	U
	MAJOR EQUIPMENT, DSPO											
33	MAJOR EQUIPMENT , DSPO	A					11.6		25.1		23.4	U
34	MAJOR EQUIPMENT , DSPO	A			169.5							U
35	MAJOR EQUIPMENT				100.9							U
	MAJOR EQUIPMENT, TJS											

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DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

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36	MAJOR EQUIPMENT, TJS				44.1		46.5		38.7		45.0	U
	ON-SITE INSPECTION AGENCY											
37	VEHICLES									4	.1	U
38	OTHER CAPITAL EQUIPMENT								2.9		8.1	U
	BALLISTIC MISSILE DEFENSE ORGANIZATION											
39	PATRIOT	A										U
40	C4I	A							32.2		20.3	U
41	HAWK BN/C3 MODS	A					3.8		5.1		20.4	U
42	NAVY LOWER TIER	A										U
	CENTRAL IMAGERY OFFICE											
43	MAJOR EQUIPMENT, CIO	A										U
	TOTAL MAJOR EQUIPMENT				1,336.1		1,517.5		1,457.8		1,752.1	
	BUDGET ACTIVITY 02: SPECIAL OPERATIONS COMMAND											
	AVIATION PROGRAMS											
44	RADIO FREQUENCY MOBILE ELECTRONIC TEST	A					23.7		29.8		35.9	U
45	SOF ROTARY WING UPGRADES	A							9.0		4.9	U
46	SOF TRAINING SYSTEMS	A							26.8		13.4	U

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DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

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47	MC-130H COMBAT TALON II	B			20.6		29.5		12.1		5.0	U
48	AC-130U GUNSHIP ACQUISITION	B			24.8		70.6		57.2		40.4	U
49	C-130 MODIFICATIONS	B			(62.5)		(62.4)		(115.5)		(104.7)	U
	LESS: ADVANCE PROCUREMENT (PY)								(-5.1)			
					62.5		62.4		110.4		104.7	
50	C-130 MODIFICATIONS ADVANCE PROCUREMENT (CY)						5.1					U
	(FY 1995 FOR FY 1996) (MEMO)						(5.1)					
51	HH-53 MODIFICATIONS	A			12.4		6.8					U
52	MH-47/MH-60 MODIFICATIONS	A			7.6		10.6					U
53	OH-6 PROCUREMENT & MODIFICATIONS	A				7	7.3			8	8.4	U
54	AIRCRAFT SUPPORT	A			23.2		39.7		5.9		11.6	U
	SHIPBUILDING											
55	PC,CYCLONE CLASS	A			28.4		34.0					U
56	ADVANCED SEAL DELIVERY SYSTEM (ASDS) ADVANCE PROCUREMENT (CY)										4.4	U
	(FY 1997 FOR FY 1998) (MEMO)										(4.4)	
57	MK VIII MOD 1 - SEAL DELIVERY VEHICLE	B	2,778,750				11.8	4	11.1	4	9.6	U

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DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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58	SUBMARINE CONVERSION	A			(.5)		(4.0)		(6.8)		(6.4)	U
	LESS: ADVANCE PROCUREMENT (PY)								(-2.1)			
					.5		4.0		4.7		6.4	
59	SUBMARINE CONVERSION ADVANCE PROCUREMENT (CY)						2.1				2.9	U
	(FY 1995 FOR FY 1996) (MEMO)						(2.1)					
	(FY 1997 FOR FY 1998) (MEMO)										(2.9)	
60	MK V SPECIAL OPERATIONS CRAFT (MK V SOC	B	3,250,166		15.1	2	9.5	6	19.5	8	44.7	U
	AMMUNITION PROGRAMS											
61	SOF PYRO/DEMO	A			17.7		13.9		23.9		19.9	U
62	SOF PLATFORM GUN AMMUNITION	A			27.4		38.2					U
63	SOF INDIV WEAPONS AMMUNITION	A			12.6		10.1		45.4		39.0	U
	OTHER PROCUREMENT PROGRAMS											
64	MARITIME EQUIPMENT MODIFICATIONS	B							8.6		13.6	U
65	SPARES AND REPAIR PARTS	A							35.9		52.9	U
66	COMM EQUIPMENT & ELECTRONICS	A			44.8		15.1		32.8		34.7	U
67	SOF INTELLIGENCE SYSTEMS	A			27.8		13.5		19.5		15.1	U
68	SOF SMALL ARMS & WEAPONS	A			3.2		8.5		10.0		10.7	U
69	SPECIAL WARFARE EQUIPMENT	A			18.9		14.9		11.8		11.2	U

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DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

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DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
70	DRUG INTERDICTION	A			1.4							U
71	MISCELLANEOUS EQUIPMENT	A			2.7		3.9		.8		.8	U
72	SOF PLANNING AND REHEARSAL SYSTEM (SOFP	A			10.8		2.9		.6		.1	U
73	CLASSIFIED PROGRAMS	A			95.6		86.2		77.7		79.4	U
74	PSYOP EQUIPMENT	A			6.5		7.8		28.1		5.8	U
TOTAL SPECIAL OPERATIONS COMMAND					464.4		532.2		581.6		575.3	
BUDGET ACTIVITY 03: CHEMICAL/BIOLOGICAL DEFENSE												
CBDP												
75	PROTECTIVE MASK								24.8		8.3	U
76	AIRCREW MASK	B								13696	7.9	U
77	REMOTE CHEM AGT ALARM (RSCAAL)								4.2			U
78	IMPROVED CHEM AGENT MONITOR (ICAM)	A	30,514					237	7.2	1639	14.3	U
79	AUTO CHEM AGENT ALARM (ACADA)	B								460	6.6	U
80	NBC RECON SYS (NBCRS) MODS	A							46.0		57.2	U
81	MODULAR DECON SYSTEM	B								108	9.0	U
82	M17 DECON MODS	A							3.2			U
83	POCKET RADIAC AN/UDR- 13	B	804					4636	3.7	5510	3.7	U

* ITEMS UNDER $50,000

DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 0300D PROCUREMENT, DEFENSE-WIDE

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
84	CB PROTECTIVE SHELTER		185,387					62	11.5	71	13.1	U
85	JOINT BIO DEFENSE PRGM								22.9		42.7	U
86	CHME/BIO DEFENSE EQ (AF)								11.0		13.2	U
87	CHEM WARFARE DETECTORS								5.5		7.4	U
88	CB HELO NDI										7.8	U
89	CBR EQUIP-SHIPBOARD								.5		6.5	U
TOTAL CHEMICAL/BIOLOGICAL DEFENSE									140.5		197.6	
TOTAL PROCUREMENT, DEFENSE-WIDE					1,800.5		2,049.7		2,179.9		2,525.0	

* ITEMS UNDER $50,000

DEFENSEWIDE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: NATIONAL GUARD & RESERVE EQUIPMENT

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. RESERVE EQUIPMENT	623.7	183.7		
02. NATIONAL GUARD EQUIPMENT	544.7	610.7		
TOTAL	1,168.3	794.4		

* ITEMS UNDER $50,000

DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 0350D NATIONAL GUARD & RESERVE EQUIPMENT

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01:	RESERVE EQUIPMENT											
	ARMY RESERVE											
1	C-12F AIRCRAFT			4	15.0							U
2	MISCELLANEOUS EQUIPMENT	A			100.0		89.4					U
	NAVY RESERVE											
3	MISCELLANEOUS EQUIPMENT	A			22.7		44.7					U
4	C-130T AIRCRAFT			4	124.0							U
	MARINE CORPS RESERVE											
5	MISCELLANEOUS EQUIPMENT	A			50.0		24.8					U
6	KC-130T AIRCRAFT	A		2	70.0							U
7	DRUG INTERDICTION				.3							U
	AIR FORCE RESERVE											
8	MISCELLANEOUS EQUIPMENT	A			50.0		24.8					U
9	C-130 AIRCRAFT	A		6	189.0							U
10	DRUG INTERDICTION				2.7							U
TOTAL RESERVE EQUIPMENT					623.7		183.7					

* ITEMS UNDER $50,000

DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 0350D NATIONAL GUARD & RESERVE EQUIPMENT

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 02: NATIONAL GUARD EQUIPMENT												
	ARMY NATIONAL GUARD											
11	MISCELLANEOUS EQUIPMENT	A			100.0		69.5					U
12	C-12 AIRCRAFT	A		9	30.0							U
13	UV-18 REPL AIRCRAFT	A		6	32.0							U
14	C-23 AIRCRAFT	A		8	36.0							U
15	C-26 AIRCRAFT			1	4.2							U
16	ELECTRONIC TANDEM NETWORK				.5							U
17	DRUG INTERDICTION				2.1							U
	AIR NATIONAL GUARD											
18	MISCELLANEOUS EQUIPMENT	A			35.0		39.7					U
19	C-130 AIRCRAFT	A		8	252.0							U
20	C-21 AIRCRAFT	A		2	20.8							U
21	C-26 AIRCRAFT			6	27.0							U

* ITEMS UNDER $50,000

DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 0350D NATIONAL GUARD & RESERVE EQUIPMENT

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
22	DRUG INTERDICTION				5.1							U
	DOD											
23	MISC EQUIPMENT						501.5					U
	TOTAL NATIONAL GUARD EQUIPMENT				544.7		610.7					
	TOTAL NATIONAL GUARD & RESERVE EQUIPMENT				1,168.3		794.4					

* ITEMS UNDER $50,000

DEFENSEWIDE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: DEFENSE PRODUCTION ACT PURCHASES

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. DEFENSE PRODUCTION ACT PURCHASES	200.0			
TOTAL	200.0			

* ITEMS UNDER $50,000

DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 0360D DEFENSE PRODUCTION ACT PURCHASES

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01:	DEFENSE PRODUCTION ACT PURCHASES											
	DEFENSE PRODUCTION ACT PURCHASES											
1	DEFENSE PRODUCTION ACT PURCHASES				200.0							
	TOTAL DEFENSE PRODUCTION ACT PURCHASES				200.0							U
	TOTAL DEFENSE PRODUCTION ACT PURCHASES				200.0							

* ITEMS UNDER $50,000

DEFENSEWIDE

FY 1996/1997 PROCUREMENT PROGRAM

SUMMARY
($ IN MILLIONS)

FEB 1995

APPROPRIATION: CHEM AGENTS & MUNITIONS DESTRUCTION, DEF

ACTIVITY	FY 1994	FY 1995	FY 1996	FY 1997
01. CHEM AGENTS & MUNITIONS DESTRUCT-RDT&E	30.7	20.7	53.4	45.1
02. CHEM AGENTS & MUNITIONS DESTRUCT-PROC	51.0	199.0	299.4	351.6
03. CHEM AGENTS & MUNITIONS DESTRUCT-O&M	291.3	355.8	393.9	432.0
TOTAL	372.9	575.4	746.7	828.7

* ITEMS UNDER $50,000

DEFENSEWIDE
FY 1996/1997 PROCUREMENT PROGRAM

EXHIBIT P-1

APPROPRIATION: 0390D CHEM AGENTS & MUNITIONS DESTRUCTION, DEF

DATE: FEB 1995

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 1996 UNIT COST	MILLIONS OF DOLLARS FY 1994 QUANTITY	FY 1994 COST	FY 1995 QUANTITY	FY 1995 COST	FY 1996 QUANTITY	FY 1996 COST	FY 1997 QUANTITY	FY 1997 COST	SEC
BUDGET ACTIVITY 01: CHEM AGENTS & MUNITIONS DESTRUCT-RDT&E												
RESEARCH AND DEVELOPMENT												
1	CHEM DEMILITARIZATION - RDTE				30.7		20.7		53.4		45.1	U
TOTAL CHEM AGENTS & MUNITIONS DESTRUCT-RDT&E					30.7		20.7		53.4		45.1	
BUDGET ACTIVITY 02: CHEM AGENTS & MUNITIONS DESTRUCT-PROC												
2	CHEM DEMILITARIZATION - PROC				51.0		199.0		299.4		351.6	U
TOTAL CHEM AGENTS & MUNITIONS DESTRUCT-PROC					51.0		199.0		299.4		351.6	
BUDGET ACTIVITY 03: CHEM AGENTS & MUNITIONS DESTRUCT-O&M												
3	CHEM DEMILITARIZATION - O&M				291.3		355.8		393.9		432.0	U
TOTAL CHEM AGENTS & MUNITIONS DESTRUCT-O&M					291.3		355.8		393.9		432.0	
TOTAL CHEM AGENTS & MUNITIONS DESTRUCTION, DEF					372.9		575.4		746.7		828.7	

* ITEMS UNDER $50,000

Document Separator

DEFENSE BASE CLOSURE
AND
REALIGNMENT COMMISSION

DEPARTMENT OF DEFENSE
DEPOT MAINTENANCE

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SENIOR TECHNICAL STAFFMEMBER
FOR DEPOT MAINTENANCE

DEPOT MAINTENANCE

INTRODUCTION

The current U.S. political, economic, and military situation offers a unique, but limited, window of opportunity to make substantive changes in the Department of Defense's depot sizing, adjusting it to force structure changes which have resulted from the end of the Cold War. The current depot structure, which consists of approximately 30 facilities, is the product of a complex procurement and maintenance system that, for the most part, was founded in World War II and sustained by the Cold War for nearly 50 years. Because of a changing world and changing force structure requirements, DoD now finds itself with more depot maintenance capacity than is needed. Continued retention of this excess depot capacity--unneeded maintenance, overhaul, and modification facilities for requirements that have greatly diminished--is costly, and will begin to drain more defense dollars from the operating forces.

DoD has attempted for over 20 years to address cost-savings initiatives which, if implemented, would have resulted in a more cost-efficient, and less duplicative, depot structure. Since the early 1960s, the Services, DoD, and external agencies and commissions have undertaken numerous management initiatives, studies, and audits with recommendations for improving depot maintenance effectiveness and economies. These include standardizing cost accounting and reporting systems, increasing interservicing and competition, and varying degrees of depot maintenance modernization and centralization. Although these efforts resulted in some improvements--such as the Air Force's adopting its Integrated Weapon System Management and Technology Repair Center concepts--excess capacity, unnecessary duplication, and inefficiencies still exist.

How best to examine an enterprise that would rank in the top 30 companies of the Fortune 500 with the goal of identifying the best way to scale down that enterprise and reduce costs without degrading current or future capability to meet peacetime and wartime needs is the central problem. This problem of excess capacity within the DoD depot structure is a "national problem" because what we are talking about are genuine "national treasures" --facilities and a technical skillbase that has developed and matured for nearly a half century. The capabilities found within the DoD depot structure cannot simply be packed up and moved elsewhere without incurring some kind of degradation to our warfighting capabilities. The problem of excess capacity in the depot structure is further compounded by the growing evidence that the private sector's defense technological base is not being taken into consideration--the current DoD depot structure was established based on what the private sector either could or could not do; it is, therefore, essential that private sector capacity and capabilities be factored into any DoD strategic gameplan for reducing its depot structure.

CRITICALITY OF DEPOT MAINTENANCE

Authority: Department of Defense Directive 5100.1, Functions of the Department of Defense and Its Major Components, assigns the Army, Navy, Air Force, and Marine Corps, under their respective Secretaries, the responsibility for "providing logistic support for Service forces, including procurement, distribution, supply, equipment, and maintenance, unless otherwise directed by the Secretary of Defense." To meet the responsibility to maintain its equipment, each Service operates a depot maintenance system.

Scope: Depot maintenance is a vast undertaking that supports over 700,000 pieces of equipment, 36,000 combat vehicles, 660,000 wheeled vehicles, over 450 ships, and nearly 20,000 aircraft of over 100 different models. Maintenance of this equipment requires extensive shop facilities, specialized equipment, and highly skilled technical and engineering personnel to perform major overhaul of parts or completely rebuild parts. This includes reverse engineering, and manufacturing and remanufacturing of parts, modifications, testing, and reclamation. It also requires the flexibility to accommodate readiness changes and problems relating to safety of flight maintenance or inspection, scheduling maintenance to maintain alert capabilities, and particularly, the ability to surge to meet contingency requirements. The depot environment is a complex business enterprise, and is accomplished both within the military depots as well as within private industry. Maintenance at the military depots is considered "organic," while other maintenance is performed under contract to private industry.

The requirement to meet contingency requirements is embedded in law--Title 10 of the U.S. Code, Section 2484, requires DoD depots to".... maintain a logistics capability to insure a ready and controlled source of technical competence and resources necessary to insure effective and timely response to mobilization, national defense contingency situations, and other emergency requirements." This capability to meet contingency requirements is referred to as "core capability." In layman's terms, it is the amount and variety of skills required to be retained under government control in DoD depots to insure those operations can rapidly expand to effectively respond to emergencies. This ability to expand must encompass not only greater volumes of work, but also a sufficiently broad organic (military depot) industrial base capability to flexibly shift to other workloads, since wartime needs differ significantly from peacetime needs.

Proven Performance: Organic depots are essential to the U.S.'s warfighting capability. They are the cornerstones of defense readiness. The combined strengths of the depots, shipyards, ordnance stations, and specialized depot maintenance activities have for over 50 years provided a responsive industrial base that has proven essential to the sustained application of land, sea, and airpower in peacetime and in war. They have provided U.S. fighting forces with the right kind of equipment, in first class condition, when and where needed. The record of organic support to our forces in Operations Desert Shield and Desert Storm provides an example. The J-4, the Joint Staff Director for Logistics, referred to the operation in the Gulf as a "100 hour ground war, with a 43-day air campaign, and an 18-month long logistics action." No less a military authority than Field Marshall Rommel is reputed to have stated, "Before the first shot is fired, logisticians have already determined the outcome of the battle." There are numerous examples where organic depots have proven their worth during crises. For example, during the period of buildup and

engagement in the Gulf War, the flexibility and direct management control the Air Force exercises over its organic depot maintenance system enabled it to accelerate the production of 10 percent of the critically needed C-5 airlift fleet that happened to be in depot maintenance when hostilities began. Air Force depots also accelerated 41 C-141s back into service to deploy and support U.S. forces half way around the world. In 1984, engine production at Oklahoma City Air Logistics Center was halted when a major section of it primary industrial facility was destroyed by fire. When industry was contacted regarding repair and overhaul of specific types of engines, it advised that due to facility, manpower, and tooling constraints, a minimum of six months would be required to produce the first engine. In response, personnel at Oklahoma City dismantled and reconstructed required portions of the engine repair line and produced its first engine in about 30 days. To cite yet another example, in 1988 the Oklahoma City Center responded to a serious problem rising from a private industry company unable to meet its contractual obligations on the C-135 fleet. The flexibility of the Air Force's depot system allowed it to increase its C-135 workload by 63 percent and complete an additional 31 C-135s to keep the fleet a full strength and in the air. There are numerous other examples--from all the services--in support of their argument that retention of this organic core capability is essential for U.S. readiness and warfighting requirements and that private industry cannot be relied upon to fulfill these requirements.

WHAT'S WRONG WITH DOD'S DEPOT MAINTENANCE SYSTEM?

It's Costly: From FY 89, and projected through FY 97, DoD's annual maintenance budget is in the $13 Billion range. About 70 percent of this expenditure is accomplished in DoD's depots and the balance by private contractors. While depot maintenance expenditures are projected to remain relatively stable through the end of the decade, the overall defense budget has declined, and the force structure and that force structure's operating tempo has declined significantly. Total U.S. defense spending by 1997 will be 40 percent less than it was in 1987. Total U.S. military strength will be reduced by about 25 percent between the years 1991 and 1997. Operations and Maintenance funding will be about 20 percent less in 1997 then it was in 1991. Thus, it is clear that while DoD's maintenance budget remains stable, other categories are in a period of steep decline. Readiness will, and should, be DoD's top priority; consequently, the downward pressure to cut defense maintenance spending will intensify. It was not until 1990 that DoD gave serious attention to this problem. In that year, the Deputy Secretary of Defense concluded that substantial opportunities existed to increase the efficiency and reduce the cost of the Department's depot maintenance activities while continuing to effectively conduct their maintenance mission. He directed the Services to develop near- and long-term plans for increased efficiency, including single-siting of workloads in the Air Force and Navy depots, and a plan for improved maintenance information management. In addition, he established a Defense Depot Maintenance Council to develop and implement strategies for increasing efficiency and reducing costs through streamlining, restructuring, and consolidating functions, while at the same time preserving the capability to ensure equipment and weapon system readiness.

Excess Capacity: The services, DoD, and GAO have studied the relationship of repair capability (people, equipment, and facilities) to requirements in great detail. There is consensus that there is excess capability, or excess capacity, within the DoD depot structure. Depending on the agency conducting the review, as well as the baseline or benchmark used, the excess capacity

figure ranges from 25 to 50 percent. Retention of this excess capacity--again, people, equipment, and facilities--is expensive, as it eats into the operating forces' budgetary requirements. Some agencies believe this estimate of excess capacity is conservative, for reasons which will be addressed later in this report.

Unnecessary duplicate capabilities/technologies: The services have multiple and diverse product lines that they support. Duplicate capabilities exist in reverse engineering, manufacturing, remanufacturing, modification, and testing requirements. Despite efforts to single-site workloads, particularly in the Air Force and Navy, duplicate capabilities exist in airframe, engine, avionics, electronics, and most commodity groups. While some of these capabilities may be weapon system peculiar, the capital investment required to maintain these dual capabilities is substantial.

No effective structure/process for implementing joint solutions: A review of correspondence submitted to the Chairman of Joint Chiefs of Staff prior to submission of the 1993 Defense Base Closure and Realignment recommendations highlights this problem. In a 3 Dec 92 DepSecDef memorandum, the Services were directed to prepare integrated proposals, with cross-Service inputs, to streamline depot maintenance activities. Although the services' proposals for closure or realignment were consistent with one of the options in the JCS Consolidation Study for downsizing within service boundaries, it offered significantly less than expected with increased levels of interservicing. The correspondence stated, "In our judgment, the Services will not voluntarily agree to any significant increases in interservicing, either in ground systems, or fixed wing aviation. As a result, we will miss the opportunity to close some excess facilities via BRAC 93 and be forced to accept higher costs of doing business until decisions from BRAC 95, if it occurs, are implemented" The documents went on to add, "The Air Force and Navy are at an impasse on any increased level of interservicing in fixed wing aviation. This is the area of greatest excess capacity and additional savings potential."

Perception that Services Alone Will Not Fix Problem: Numerous management initiatives, studies, and audits going back to the 1960s have offered recommendations to DoD and the services on how to make depot maintenance more effective and cost-efficient. Few, if any, of these recommendations have been implemented. Again, drawing upon correspondence between the Office of the Chairman, JCS and the J-4 staff, "The Air Force and Navy remain at an impasse on fixed wing aviation. This is the area where major savings and closures could be realized if an increased level of interservicing was conducted. It appears that breaking the impasse will occur only by direct negotiations between SECAF and SECNAV."

No Clear Methodology for Identifying "Core" Workload: "Core" workload is the minimum essential organic depot maintenance skill and resource base which is retained in DoD depots to support contingency requirements. Clearly defining core requirements would appear essential to making key decisions on the future of the depot maintenance system. However, according to GAO, the services, despite DoD direction, have not yet made such a determination. GAO says that, while the services indicate they are working on this problem, none has yet sought approval of a methodology for defining its core requirement.

No Definitive Methodology for Measuring Performance: In 1990, the Joint Policy Coordinating Group on Depot Maintenance established the Joint Performance Measurement Group to implement and maintain the Defense Depot Maintenance Performance Measurement System. This system is intended to provide an improved set of performance indicators for depot level maintenance activities. Development and implementation of this system, however, has been slow with no approved system yet in place. Seven key areas of performance--effectiveness, efficiency, quality, capacity utilization, productivity, cost performance, and innovation--were identified. In January, 1993, the Joint Performance Measurement Group proposed eight new performance measures instead. These were due date performance, net operating results, throughput, inventory, operating expense, return on investment, flow day reduction, and unit cost. These eight criteria attempt to integrate two management concepts--the theory of constraints and competitive edges. Regardless of the nature of the performance measurement system ultimately implemented, the resulting output will only be as accurate and informative as the quality and consistency of the data that is input. Without the feedback afforded by the collection and analysis of improved performance indicators, it will be difficult for DoD to successfully achieve the required efficiencies and economies needed to cost-effectively manage its depot maintenance operations.

No Apparent Strategy for Simultaneous Drawdown of DoD Depots and Private Industry:
It is clear that the DoD depot structure must be downsized to make it more effective and cost-efficient. What is not clear is that DoD has a gameplan or strategy for actively participating with private industry in its downsizing to insure that the defense industrial and technological base retains the capability to design, develop, produce, and sustain future U.S. weapon systems.

OBSERVATIONS FROM DOD JOINT FIXED-WING AIRCRAFT STUDY

In 1991, a DoD Study Group addressed the issue of consolidating the repair of fixed-wing aircraft assets within DoD. While the only real significant recommendation from that group was the consolidation of C-130s at Ogden Air Logistics Center and F-4s at Cherry Point Naval Air Depot, that study offered some observations on the "rush" to make depot maintenance a business. That group's comments and observations are offered within the context of this study:

- Providing reliable support for military contingencies while balancing business objectives contains two contradictory objectives. In peacetime, the contradiction is minimum, whereas, in wartime or preparing to support a wide spectrum of military contingencies, the contradiction grows. The primary business of depot maintenance is not business--it is effective, unfailing, military support. However, the effective support of military contingencies also requires the efficient use of allotted resources. Therefore, obtaining the most capability or use from the defense dollar is and will remain a paramount objective of each service.

- The ability to respond to the continuum of support requirements varying from peacetime to full scale combat has presented logisticians with a conflict between maintaining peacetime

efficiency and wartime effectiveness. At one end of the continuum is a logistics system sized to be highly efficient during peacetime, but unresponsive to the extreme demands of war. At the other end of the continuum is a system capable of supporting any contingency, yet highly inefficient during peacetime. The fiscal constraints of today's environment are forcing logistics support toward the peacetime end of the continuum; at risk is the ability of the system to respond to the wartime demand.

- The uncertainty of wartime demand promotes the premise that the depot system can not be placed on a par with a large commercial enterprise whose sole measure of success is financial profit, or return on investment.

- Barriers within the "system" which prevent the depots from operating to maximize business-like efficiency. These include:

(1) The organic depot maintenance system is often the "court of last resort" for the maintenance, overhaul, modification, or manufacture of many weapon systems and their subsystems and components.

(2) The vagaries in the art of long-range forecasting and engineering, coupled with a Byzantine contracting and acquisition process, keep the military depots occupied responding to unanticipated manufacturing and repair requirements, usually of a critical nature.

(3) The inability to divest "unprofitable" product lines or to eliminate contingency (mobilization) capacity, imposes an extraordinary burden on the organic depots. For example, crash/battle damage holding fixtures are held in reserve; in actuality, they are seldom used. In addition, across the aviation depots some 80 percent of exchangeable and/or repairable items are repaired in quantities of less than 40 units per year and in many cases represent technologies that are decades old.

(4) Legislated competition requirements for procurement actions.

(5) Inflexibility of the personnel system in hiring, firing, classification, and use of employees.

(6) Lack of financial flexibility to shift resources when needed.

(7) Inability to control planned workload requirements.

(8) Defining the "bottom line"--Performance Measurement Standards concerning many issues are being developed (investments, workload balancing, etc.), yet none of the standards will attempt to tie the cost of a non-operational aircraft into the performance equation. This increases the potential for driving the organic system to suboptimize and make decisions affecting production output without considering the cost of a decline in readiness.

(9) The general perception is the higher capacity utilization rate a depot has, the better. This is not true; in reality, 100 percent utilization will never be achieved and is counter to providing effective mission support.

- The "master caution light" in the study was this--the primary purpose of the aviation depot system--to support military operations and contingencies--is being neglected in this age of fiscal reductions. The costs of supporting a military force for national security purposes are difficult to compare with those of a civilian enterprise. The purposes of the military and commercial systems are totally different.

CAPACITY

Terms Defined: The following definitions are provided to assist the reader in understanding a discussion of capacity within DoD's depots:

Capacity: As defined in DoD 4151.15-H, capacity is the amount of workload, expressed in actual direct labor hours (DLH) that a facility can effectively produce annually on a single shift, 40-hour week basis while producing the product mix that a facility is designed to accommodate.

Excess Capacity: Capacity for which no requirement exists.

Workload: The amount of workload in direct labor hours (DLH) that a depot anticipates in a given fiscal year; this workload is expressed as funded (vice unfunded) workload.

Capacity Index: The amount of workload in direct labor hours that a depot can effectively produce annually on a single shift, 40-hour week basis.

Utilization Index: A computation of dividing workload by capacity index.

Capacity computation: The DoD-approved formula for computing a depot's capacity is: Number of workstations times availability factor (.95) times annual productive hours (1615).

A **workstation** is the designated space of equipment/process usage than can be occupied consistently by one direct production worker to accomplish the assigned task on a full-time basis. It may include more than one location if the worker moves to other locations to accomplish the assigned task. The **availability factor** (.95) takes into account equipment downtime, power outages, etc. The **annual productive hours** (1615) represents annual paid hours (2080), minus indirect factors such as leave, training, and holidays.

History of Capacity Measurement Process: In 1990, a DoD study team was tasked to develop recommendations for a capacity measurement process which would portray comparable organic depot maintenance capacity and provide a basis for determining utilization. The emphasis was on developing methods that would result in comparable data to be used in future workload consolidation studies. The study concluded that the basic approach to capacity measurement

should be a refinement of the pre-1990 methodology. It also concluded that since capacity data is a broad indicator of relative size rather than a precise measure, it should be referred to as an "index." The basic formulas for computing capacity indices were developed to support peacetime and mobilization planning. Specific refinements to the pre-1990 capacity methodology were recommended to promote comparability, accommodate configuration changes, delete special consideration for bottlenecks, and include uncovered production areas. The study also recommended that DoD's policy of requiring 100 percent utilization in peacetime be reviewed. It acknowledged that while capacity in excess of requirements needs to be divested, some reserve capacity must be retained to support sound business practices and military necessities such as mobilization. One-hundred percent utilization, according to the study, is usually a costly approach. Rather than matching workload with capacity, facilities can operate at a more cost effective level by balancing flow with demand. The study recommended to DoD that the utilization policy be revised to recognize the need for reserve capacity and require a level of peacetime utilization that will insure that mobilization and contingency requirements can be met while operating in a cost effective manner.

JCS Consolidation Study Definition of Capacity: A JCS Depot Consolidation Study completed in January 1993 concludes that depot capacity is a function of the physical plant and personnel assigned, with the level of employment being the driving factor in the calculation. Therefore, the only variable in the capacity calculation formula is the number of work stations, which as defined, are not directly affected by personnel vacancies. The study adds, that from a purist's viewpoint, a reduction in personnel levels should only affect a depot's ability to perform up to its capacity, In reality, however (according to the Study), depots, when faced with a loss of manpower, elect not to use equipment and/or decrease shop configuration which results in reduced work positions and a lower computed capacity level.

HQ Air Force Material Command Comments on Capacity: The capacity computation simply aligns equipment required to accomplish a function to a given workload mix and available manpower and is not an accurate index to apply to facility utilization. Therefore, capacity utilization is not an accurate measure of a depot's ability to realign shops and equipment to accomplish requirements. A more accurate comparison is workload accomplished in prior years with an adjustment for new facilities. For example, Oklahoma City Air Logistics Center produced approximately 12 million Direct Labor Hours of annual workload during the 1986-1987 timeframe, and is capable of performing at or above that level when unconstrained by manpower and funding."

Recent Studies on Excess Capacity:

JCS Consolidation Study--The General Went Study: This study was completed in January 1993 and concluded that DoD currently has 25 to 50 percent more depot capacity than the department will need in the future and unnecessary duplication exists throughout the individual service depots, especially when viewed across service boundaries. This particular study was considered "flawed" by the services, primarily because of methodology used. Excess capacity was identified by subtracting the planned FY 95 workload from the FY 87 capacity. FY 87 capacity figures were used since it was a peak year with larger overall employment and more

accurately reflected what work a depot facility could absorb during workload consolidation. The services' primary complaint against this study was that many depots have been reconfigured since 1987 to reflect a lower capacity. Consequently, in order to accept added workload, these depots will require reconfiguring to a larger capacity. Looking at the Air Force, the JCS study concluded that based on a FY 95 workload of 34 million DLH and a FY 87 capacity of 53.1 million DLH, there will be 19.1 million excess DLH. In other words, the Air Force's facilities would be operating at only 64 percent capacity which equates to 36 percent excess capacity. (Note: if the Air Force's workload at Aerospace Guidance and Metrology Center, Newark AFB, OH, is factored out--since it will close--the utilization rate would still be at only 62 percent, owing to Newark's relatively low (1.1 million DLH) workload.). Going back to the 19.1 million DLH excess, if one applies a standard Air Logistics Center loading of 6.6 million DLH as a standard configuration factor, this would equate to nearly three excess facilities.

GAO Study: The General Accounting Office has, over the years, conducted numerous studies on DoD depots. In testimony before the House of Representatives' Subcommittee on Readiness, on 6 May 93, GAO stated that the estimates of excess capacity outlined in the JCS Study were conservative. According to GAO, the DoD depot system is now sized and organized to support a Cold War threat. Sizing the depot system to accommodate this scenario has created excess capacity and unnecessary duplication. For example, this requirement resulted in the development of an Air Force depot system sized to support a sustained wartime or emergency surge to 160 percent of the peacetime workload. The long-standing excess capacity in the DoD depot system has been exacerbated by the end of the Cold War, a reduction of defense systems and equipment, retirement of less reliable and more maintenance-intensive systems, and the private sector's push for a greater share of the depot maintenance workload. DoD workload projections for FY 95 are now lower than those used in the JCS study--this was confirmed in data provided by the Army and the Navy, which told GAO that they had lowered by 1.8 million DLH and 1.7 million DLH, respectively, the workload projected through FY 95. GAO says that all of the services, except the Marine Corps, indicated that they anticipate the future depot workload estimates will continue to decline. GAO believes the JCS estimates were conservative also because the depot capacity estimates used in the analysis greatly understated DoD's ability to more cost-effectively use existing facilities and equipment to generate maintenance output. For example, JCS's methodology considered only the capability to conduct a single, 40-hour-per-week operation; understated the ability of the gaining depots to absorb additional workload, given the movement of equipment from losing depots and potential productivity gains achievable by increasing available manpower; and did not consider existing depot maintenance capacity in the private sector or military units. Additionally, after querying the services about increases in depot facilities and plant equipment since 1987, GAO found that overall depot industrial capacity has increased. For example, based on information provided by the services, since 1987 DoD has added 5.6 million square feet in industrial maintenance square footage valued at $606 million and 31,563 pieces of equipment valued at $1.5 Billion.

Defense Depot Maintenance Council Corporate Business Plan: The Defense Depot Maintenance Council (DDMC) was established in 1990 to advise the Assistant Secretary of Defense for Production and Logistics on depot maintenance management within DoD. It serves as a mechanism for coordinated reviews of DoD depot maintenance policies, systems, programs,

and activities and provides advice on initiatives for reducing costs. Each year, the DDMC publishes a Corporate Business Plan for a five year period, outlining DoD's strategy for increasing efficiency and productivity, while preserving the capability to insure weapon system readiness of U.S. fighting forces, and while streamlining, restructuring, and consolidating functions. The Corporate Business Plan also provides data on projected capacity and workload. Data contained in the FY 92-FY 95 edition indicates that the Air Force's five Air Logistics Centers will have a combined capacity of 38.6 million DLH in FY 97, and a projected workload of 30.2 million DLH. This results in an "excess capacity" of roughly 8.4 million DLH, or approximately one and one half excess facilities. However, if the FY 91 capacity (44.6 million DLH) is used as a benchmark (like the FY 87 benchmark in the JCS Study), the "excess capacity" then becomes 14.4 million DLH, or two full excess facilities.

Joint Staff Multi-Service Depot Capacity Review: In December 1993, a DoD Joint Staff Multi-Service Depot Capacity Review was conducted prior to assist in the preparation of depot closure and realignment recommendations. This study used FY 91 capacity as the benchmark and compared it to projected workload requirements (i.e., budgeted end item/component and reimbursables FY 94-FY 99, reflecting a 60/40 organic/contract workload split.) This study concluded that FY 99 DoD aviation workload requirements will exceed FY 91 capacity by 14.6 million DLH. Specifically, for the Air Force, the FY 99 requirements exceeded the FY 91 capacity by 7.9 million DLH--this is slightly more than one Air Logistics Center equivalent.

HQ USAF/LG Certified Data Capacity Projections: HQ USAF/LG provided to the Defense Base Closure and Realignment Commission in 1993 copies of worksheets used in computing capacity and workload projections through FY 99. The Air Force's approach was to use FY 91 actual workload produced as the "new" capacity benchmark, since it allowed for facility divestiture, streamlining, personnel Reductions-in-Force, and other downsizing initiatives conducted during the years FY 87-FY 91. This data indicates that in FY 91 the five Air Logistics Centers produced 36.8 million DLH of work (this excludes the Aerospace Guidance and Metrology Center). The projected FY 99 workload is 26.4 million DLH--an excess of 10.4 million DLH. This would come very close to two full facilities excess. Based on continued downward projections of workload, it is very likely that "the numbers" would clearly indicate that two Air Logistics Centers could be closed. Closure of two of the facilities through the 1995 round of base closures could pose a problem for the entire system of ALCs; according to Acting Secretary of the Air Force Boatright, it would take the "system" a full eight to ten years to recover from the simultaneous closure of two facilities.

Summary of Excess Capacity Issue: The DoD depot maintenance system undeniably has excess capacity. DoD admits this and appears committed to restructuring the system to eliminate the excess and produce savings through FY 97 of over $6 billion through consolidation, downsizing, streamlining, interservicing, and competition. The real question is whether these measures will be adequate in themselves to redress the excess capacity problem. In this analyst's opinion, it will not. Only depot closures will produce the long-term savings that are required. The JCS Study and GAO both share this opinion.

DOD EFFORTS TO PROMOTE SAVINGS IN DEPOT SYSTEM

DoD's strategic blueprint or gameplan for achieving savings in its depot system and make the depots more efficient is contained in the Defense Depot Maintenance Council's Corporate Business Plan. Published annually and projecting depot activities through a five year period, the Plan outlines specific goals and objectives and provides annual updates on interservicing, competition, downsizing, capacity utilization, and streamlining initiatives. For the period covering FY 92-FY 97, the Plan identified savings of $6.3 billion.

Near-term initiatives ($3.2 billion) include downsizing of direct and indirect workforces, closure of facilities, cancellation of facility projects, and internal service consolidation of workloads.

Interservicing initiatives ($0.1 billion) will result in greater economies of scale and savings are supposed to accrue from overhead reductions caused by interservicing.

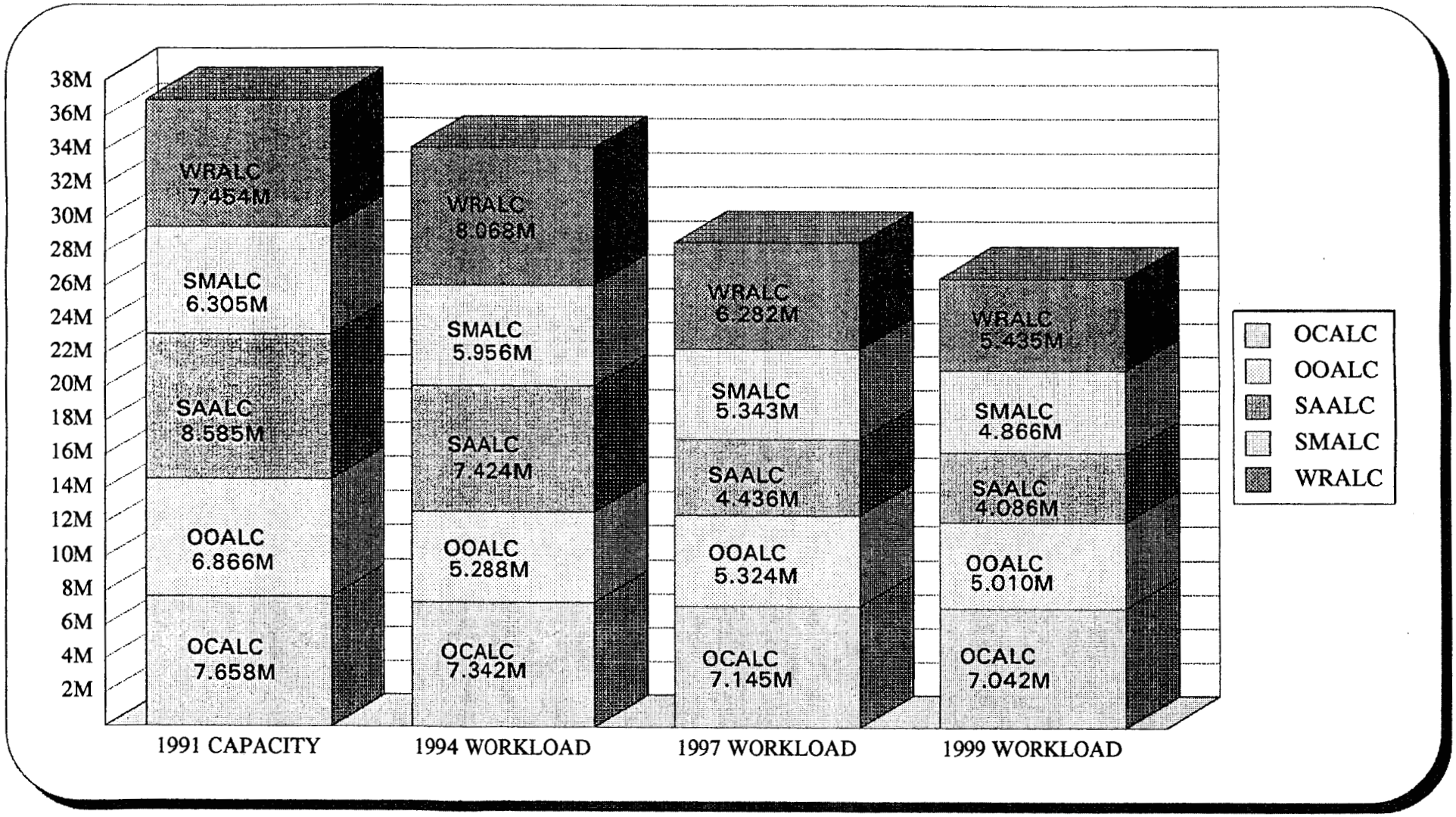
Competition initiatives ($1.7 billion) will result from an increased number of competitions, to include both public-public and public-private competition.

Improved capacity utilization ($1.3 billion) will result from a redistribution of workloads within and among the services.

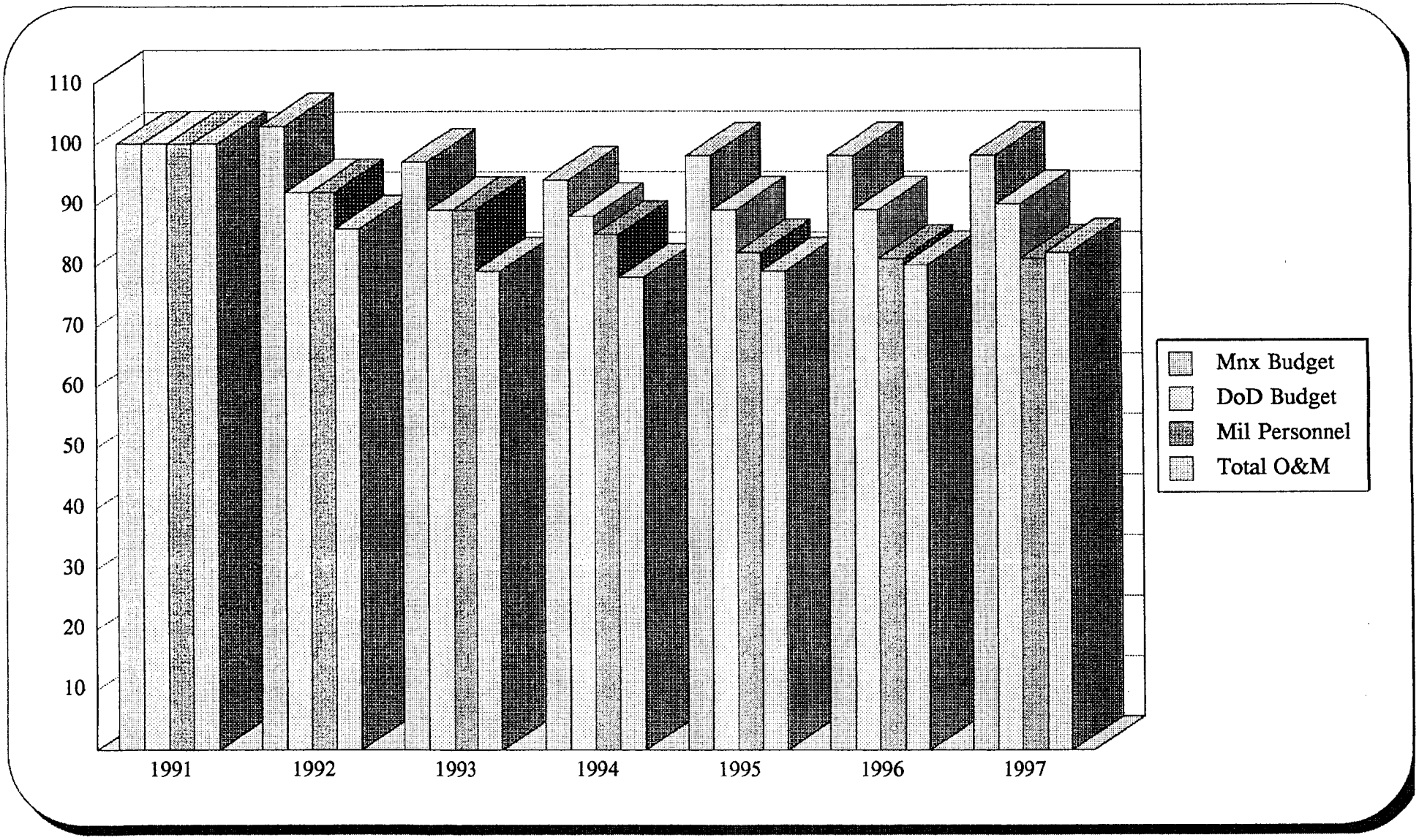
According to the JCS Depot Consolidation Study, it is highly unlikely that the Services will be able to meet these savings without taking actions which would severely affect readiness and the ability to go to war. The JCS Study acknowledges that some savings have been achieved through competition, interservicing, and capacity reduction; however, it cautions that the potential for continued success is limited without substantial new savings. Competition produces unit cost efficiencies and savings in depots, and the savings would increase if all services maximized the depot work they award competitively, vice the limited amounts seen thus far. Competition initiatives are projected to achieve savings of less than 2 percent of the total depot maintenance budget from FY 91 though FY 97. GAO reports that it and DoD audit agencies have not been able to substantiate much of the competition savings reported in the past. GAO also questions the services' ability to achieve cost reduction goals, in part because actual events have not supported DoD's assumption that competitions between the public and private sectors will reduce depot maintenance costs by an average of 20 percent for each work load that is competed. GAO further believes that the services' lower-than-expected savings can be attributed to declining workloads that have not only caused workloads to be eliminated from the program but also limited the amount of savings that were achieved on the workloads that remained in the program; unanticipated cost increases; and a certain amount of fixed costs that must be shifted to non-competed workloads when a competition results in the transfer of workload from the public to the private sector. Although the services plan to substantially expand the scope of their public-private competition programs during FY 93 and beyond, GAO questions whether these plans are realistic, especially in view of the difficulties the services have experienced with their competition programs during FY 92 and FY 93. Regarding interservicing, FY 91 interservicing efforts achieved only $100,000 in savings. In FY 93, interservicing savings are projected to be

$23.1 million, rising to $29.2 million in FY 97. This magnitude of savings, according to JCS Study, will be possible only if the services interservice vastly more work than has previously attempted. Each service can argue that there is a ceiling on interservicing imposed by their ownership of unique platforms; however, the JCS Study claims that a significant amount of similarly and commonality, particularly at the engine and component level, makes interservicing potential much greater than the current 3 percent. Reducing capacity and workload, without reducing the number of depots, decreases expenditures for direct labor and variable overhead costs; however, it does not significantly decrease the costs of fixed overhead expenses. Only depot closures, according to the JCS Study, will result in substantial savings by eliminating the fixed overhead of depots closed. This cost of total fixed overhead is estimated to have consumed 28 percent of the FY 90 depot maintenance expenditures. While capacity reductions will decrease the costs for direct labor hours and variable overhead expenses, they will not significantly decreased the substantial fixed overhead burden. Reducing capacity without closing depots will push the estimated fixed overhead percentage of depot costs over 32 percent by FY 96. Thus, fixed overhead costs should be the prime area to reduce depot maintenance expenditures. The only way to effectively reduce these costs is to close depots.

AIR LOGISTICS CENTERS
1991 - 1999 ESTIMATED FUNDED WORKLOAD VS. 1991 CAPACITY
(SOURCE: SAF/MII 21 JUN 93 LTR, USAF/LG DATA)



DEFENSE PROGRAMS
(PERCENT CHANGE FROM FY 91)
(SOURCE: JCS DEPOT MAINTENANCE CONSOLIDATION STUDY)



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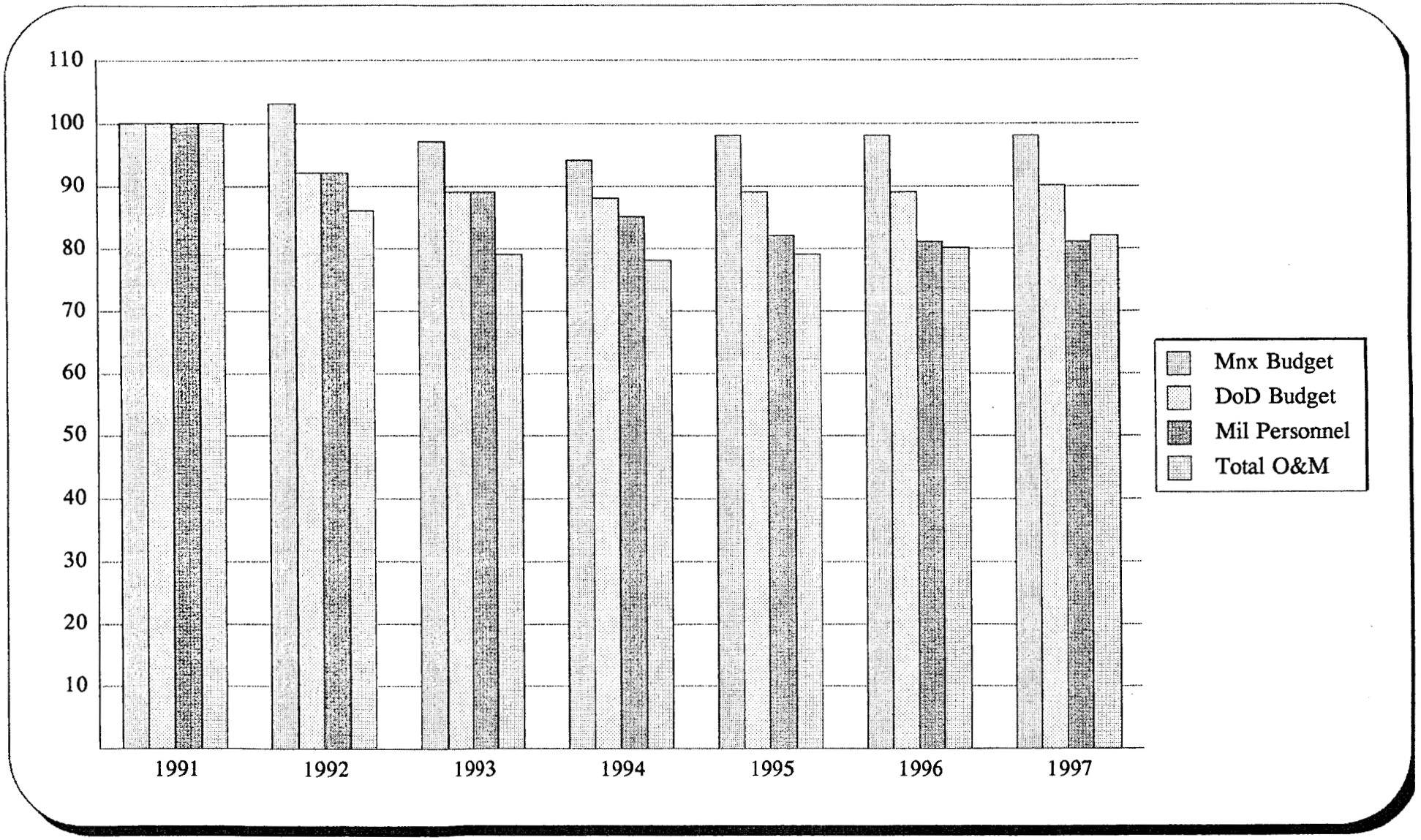
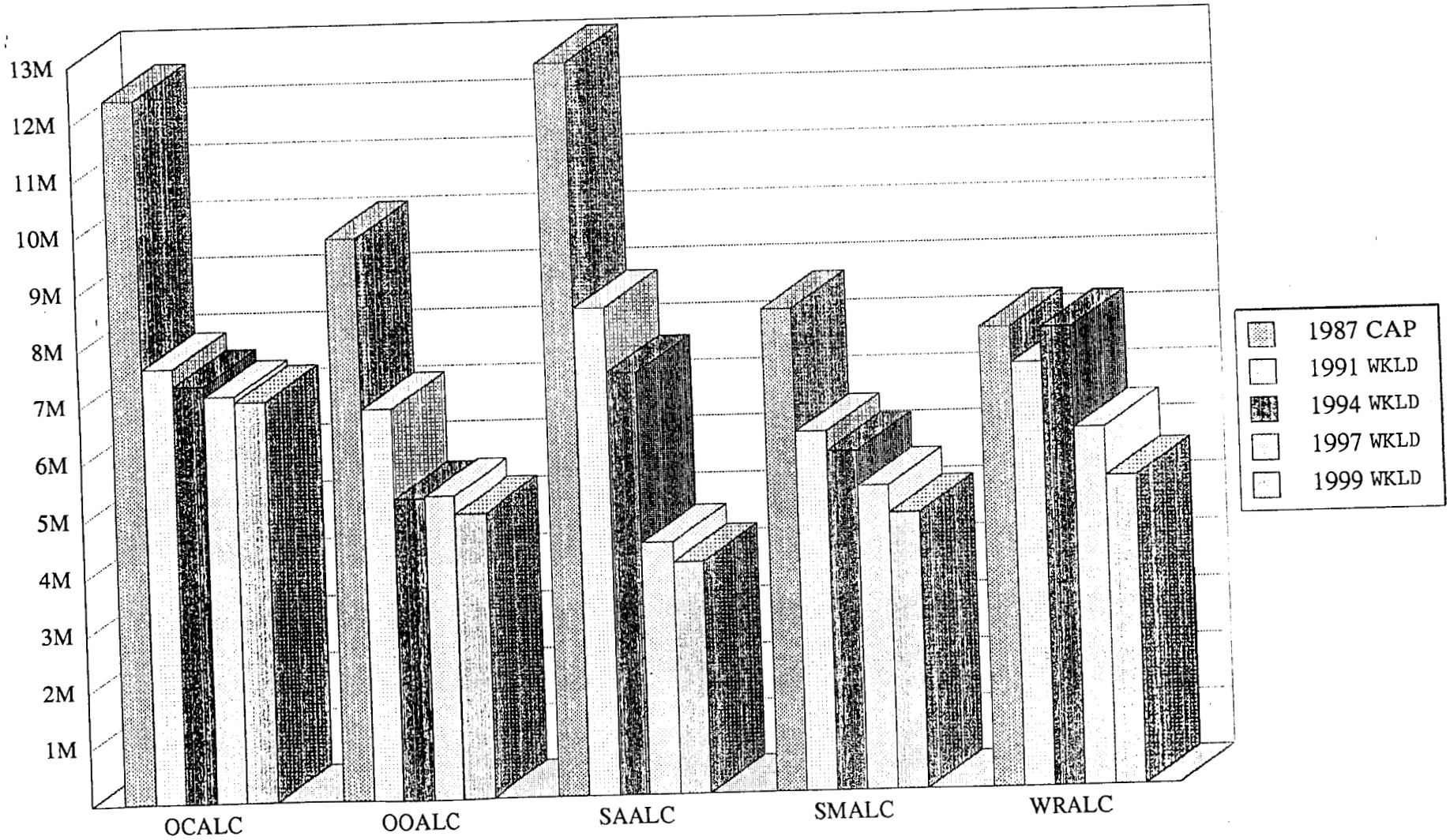
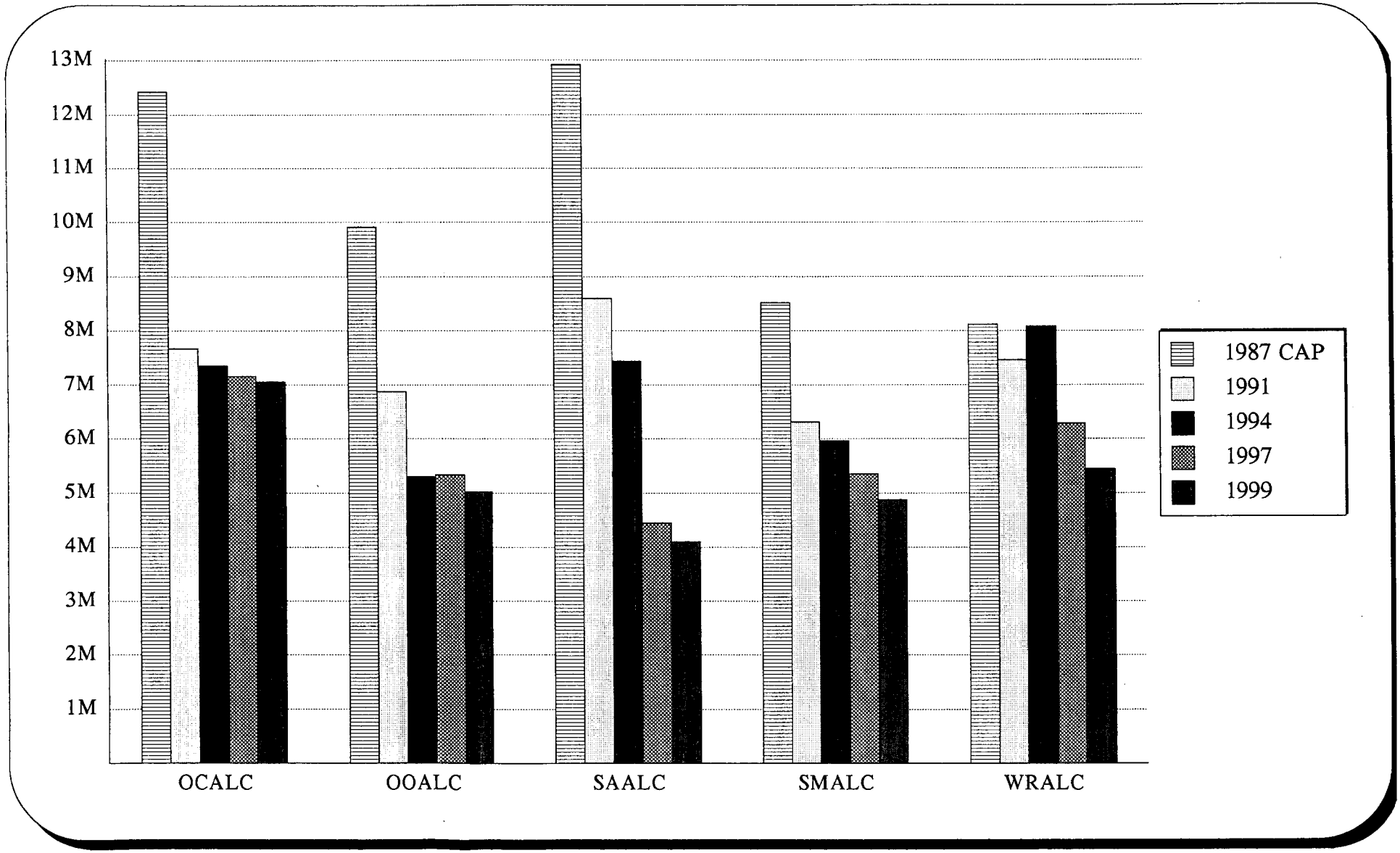


AIR LOGISTICS CENTERS
1991 - 1999 WORKLOAD VS. 1987 CAPACITY



AIR LOGISTICS CENTERS
1991 - 1999 WORKLOAD VS. 1987 CAPACITY



DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

SAF/MII
1660 Air Force Pentagon
Washington, DC 20330-1660

21 JUN 1993

Honorable Jim Courter
Chairman, Defense Base Closure and Realignment Commission
1700 North Moore Street, Suite 1425
Arlington, Virginia 22209

Dear Chairman Courter:

This responds to a June 21, 1993, verbal request from your staff for a copy of the raw data that was used to support the Depot Category mission specific standard deviations.

The information you requested (attached) is certified and was used in our process.

Hopefully this information will meet your analysis requirements. If your staff has any further questions, please have them contact us.

Sincerely,

JAMES F. BOATRIGHT
Deputy Assistant Secretary of the Air Force
(Installations)

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

4 MAR 1993

REPLY TO ATTN OF: AF/LGMM

SUBJECT: HQ AFMC Base Questionnaire Responses

TO: HQ USAF/XOOR

Attached are official responses to base closure questions on depot functions provided to AF/LGMM by HQ AFMC. The information appears correct to the best of our knowledge.

Lindsey T. Williams

Lindsey T. Williams Lt Col, USAF
AF/LG Representative
Base Closure Working Group

1 Atch
Responses to
Depot questions

Document Separator

2

DRAFT
NOTES FOR DEPOT CONCEPT PAPER

- **The Air Force's Perspective on Government Depots and Private Industry:**

-Organic Depot Strengths:
--short-notice wartime support
--support for very new and very old systems
--flexibility, depth, and breadth
--low volume repair

-Contractor Strengths:
--new technology
--expertise and technical competency
--cost advantage in high volume markets
--unique capabilities and specialized facilities

- How Private Industry Can Maintain Its Strengths:
--focus on design and prototyping opportunities
----get Congress support to conduct prototype programs
--restructure corporate ops to focus on specific business segments
----avoid substantial overhead penalties

-Air Force modernization initiatives through the 1980s have made Air Force ALCs the most effective and efficient depots in the world. $1-3$ billion invested in infrastructure; also, depot management structure was reorganized to focus on customer needs and flexible support for forces.

-Air Force already relies heavily on commercial sources for critical weapon system depot maintenance support. While the approximate 60/40 split in depot maintenance support levels between organic and contractor sources is generally accepted, these percentages are based only on classic bookkeeping methods. If you carefully track the actual amount of Air Force funds obligated for depot maintenance support, you can see the true split--only 42 percent of Air Force depot maintenance dollars are actually spent in organic depots, while a full 58 percent is spent in private industry. This is caused by a number of factors that consume organic depot funds in the commercial sector in addition to those used to obtain direct contract depot maintenance services. Some of these include: large sums spent for **interim contractor support** for systems that do not currently have an organic depot capability; even larger amounts spent in industry for systems under **lifetime contract logistics support**; money spent in industry to procure the parts, equipment, and other material used in organic depots; and a number of other smaller categories that all add together to produce this much higher ratio.

-Rationale for competing with private industry:

--Excess capacity in ALCs
--Takes into consideration investments in
--plants
--equipment
--personnel
--training
--Competitive process will reduce cost of depot maintenance.
---efficiency of operations will be increased

-General Yates' Competition Strategy

-Sustain ALC work by competing with other services for **core** work
-Compete with industry for **non-core** work, which will drive down costs
---each ALC will select significant workloads each year
----"significant" is workload that would result in loss of people and facilities if competition is lost.

- None of work up for competition has been done before by private industry

- Contractors in maintenance business are cost-competitive with ALCs
--non-OEM bids have been within 10% of most award prices
--all awards to industry have gone to non-OEMs
--three awards have gone to small/small disadvantaged firms
--OEMs are structured for a different market
--OEM proposals have been nearly double depot and mnx contractor bids

- Firms specializing in modification and repair have done well; Original Equipment Manufacturers (OEM) have not--their overhead is too high

- Appears to support notion that USAF has probably one ALC excess;(scuttlebutt has it that he has directed that McClellan and Hill be reviewed for possible closure in 1995.)

- **1991-1997 Corporate Business Plan (Defense Depot Maintenance Council's Business "Blueprint")**

- DoD's roadmap for achieving savings in the depot structure:

- Projects $6.3 billion in savings thru 1997

- called for in DMRD 908
- (COMMENT: GAO says these projections aren't realistic or achievable and that the numbers don't add up thus far--Audit Agencies cannot verify claimed savings thus far)

- **Near term ($3.2 billion)**

  - RIFs
    --How many, when, what skills represented, on what basis selected?

  - closure of facilities (through DBCRC)
    --How will DoD orchestrate an integrated, cross-service approach to closures?

  - cancel facility projects
    --What is a "facility project" (i.e., is it MILCON, etc)
    --What projects have been canceled and what were the dollar savings?
    --What was basis for original facility project and rationale for cancellation.

  - workload consolidation
    --What process does DoD have to work the consolidation problem?
    --What workloads will be consolidated and why?
    --Where will the workloads be consolidated and when?

- Interservicing ($134 million)

  - gaining depot: greater economies of scale are supposed to accrue.
    --What workloads will be interserviced, when, and at what savings?
    --What is the total workload that is susceptible to interservicing?

  - "overhead reductions" associated with reduced workloads and downsizing of facilities to eliminate overcapacity
    --What "overhead" reductions have occurred?
    --How does DoD define overhead?

- **Competition ($1.7 billion)**

  - Increased number of competitions are envisioned;
    --A review of the competitions that have been canceled for any number of reasons suggests that the services may be overly optimistic about the amount of savings to be expected (GAO agrees).

  - Improved capacity utilization ($1.3 billion)
    --much discussion in the CBP about better facility utilization, but how will it be executed, and when?)

    --Precisely how will improved capacity utilization result?

  - redistribution of workload
    --If a workload is redistributed because a depot loses a competition, what happens to the workers and the workstations at the losing depot? (This is not made clear in the

CBP)

- divestiture of unneeded facilities
  --(Two opinions here--the services, especially USAF--say they're divesting themselves of facilities housing work stations; other "camp" (industry) says all that's being divested are empty warehouses and storage buildings).
  --What percentage of infrastructure will ultimately be divested?

- closure of some facilities
  --How much is "some"
  --On what basis are the facilities selected?

- **Factors and trends in depot maintenance environment**

  - goals (Defense Depot Maintenance Council developed a "Depot Maintenance Vision Statement for 1995 and Beyond") ("World-Class Support" is the buzz-word; it portrays a depot structure that is lean and mean, can knock the socks off industry in level competitions, and achieves what the fixed-wing aviation study says can't be achieved--namely, a depot structure that is economically sound in peacetime and responsive in wartime)

  - objectives
    --operate in a business-like environment
    --operate in a cost-effective manner
    --smaller, but more specialized facilities
    --Achieve highly state-of-the-art technology capability

  - actions required to implement
    --consolidate
    --interservice
    --compete
    --downsize
    --close
    --implement process improvements
    --streamline
    --re-engineer
    --All of these have been coined to describe what is needed--comes back to question of whether these internal "fixes" alone will solve problem of excess capacity.

Depot structure

- management
  --how "top-heavy" is the system? The support tail at the ALCs (McClellan for example) suggests that its extensive);

- operational (complex operational environment--not just a repair line)

- personnel and resources
  --why is it that an Output Per Paid ManDay of roughly 4 hours is considered acceptable?)

- environmental/safety
  --Communities will argue, have argued, that depots are too dirty to close and that reuse is virtually nil.
  --To what extent should this be a factor in closure recommendation process?

- business
  --is the business of depots supporting warfighters or is it "business"; the problem--- sustaining a woefully inefficient, non-cost-effective system that performs magnificently in war, yet is inefficient and costly in peacetime...how best to balance the two?

- information technology

- Technological responsiveness

- **Depot maintenance funds**

  - O&M

  - Procurement

  - RDT&E

  - DBOF

    --DBOF is means by which DoD hopes to influence DoD managers and employees to provide better support at lowest cost.
    --Supposed to insure better financial information that will support efforts to improve management and productivity, increase focus on cost and performance in support of customer, insure full financial responsibility by customer originator of the requirement
    --DBOF is a way for DoD to align costs related to output
    --Expanded use of cost accounting principles
    --Expanded use of performance and activity-based budgeting

-DoD has made significant progress in reducing the depot maintenance workforce in a balanced manner with force structure reductions. At end of FY 87, the maintenance depots employed 155,000 civilians. The number of civilians employed in the depots at end of FY 93 is expected to be about 114,000, a reduction of 41,000 personnel representing a 26 percent decrease. 1993 proposed base closures were to reduce civilian employment at the depots by an additional 20,000 personnel.

-ALC Personnel Levels (CBP) (Even after lopping off the people at Newark, these numbers do not appear to support a significant reduction in the workforces at the depots). (The numbers were developed prior to the recommendations to close Newark and the NADEPs. While DoD goes down in personnel by roughly 28,000 from 1991 to 1997, USAF only loses about 3,000 or so--where are the cuts coming from?)

	91	92	93	94	95	96	97
AF	31670	31059	30457	29865	29287	28721	28721
DoD	133267	124424	117288	109844	101014	102137	105815

ALC Personnel Levels (CBP) (Direct and Indirect Civiians Only)

	91	92	93	94	95	96	97
AGMC	1143	1120	1098	1076	1054	1033	1033
00	5566	5457	5351	5247	5145	5045	5045
0C	6056	5935	5816	5700	5586	5474	5474
SA	6737	6602	6470	6341	6214	6090	6090
SM	5446	5337	5230	5125	5023	4923	4923
WR	5898	5780	5664	5552	5441	5332	5332
Tot	**30846**	**30231**	**29629**	**29041**	**28463**	**27897**	**27897**

Issues/Ideas/Things to Consider/Could be Considered:

-What's wrong in depot structure?:

--excess capacity
--unnecessary duplicate capability
--duplicate investments in new technology
--no effective structure/process for implementing joint solutions
--no effective structure/process to optimize cost savings
--perceived by many that services will not solve the problem by themselves

- Current U.S. political, economic, and military situation offers a unique (but limited) window of opportunity to make substantive changes in depot sizing and management structure, adjusting it to force structure changes which have resulted from the end of the Cold War..

--To what extent can the Commission influence this process?

-Should not DoD be held accountable to actively participate in managing the downsizing of the defense industrial base in order to protect capabilities needed to design, develop, product, and sustain future US military equipment.

-- Emphasis wold be on protecting capabilities, not specific companies; on preserving skills, not jobs; and on improving war-fighting capability, not buying un-needed equipment.

-Air Force procurement/depot maintenance is the product of a system that, for the most part, was founded in World War II and sustained by the Cold War. The looming threat of war with the Soviet Union created this system's main features--high-volume production, fast activation and retirement of weapons, and a constant search for the next modern aircraft. The end of the Cold War has forced the Air Force and commercial contractors to come to grips with the implications of reduced production volume, delayed weapon starts, and stretched-out weapon lives. Future procurement/depot maintenance will be a delicate balancing act, with military strength, industrial viability, and the edge of technology all weighed against the need for lower budgets. DepSecDef Perry has predicted that by 1997 total US defense spending will be roughly 40% less than it was in 1987; about 2/3 of this reduction has already occurred. Readiness is the top priority, so downward pressure on all other budget categories will be intense. Force structure is shrinking; modernization (procurement plus research and development funding) will be hit hard. For example, by 1997, the modernization budget, in real terms, will be only half of what it was at its peak in 1986. Current Administration strategy is to protect the technology base budget as much as possible, though that will mean reduced procurement of new weapons embodying such technology. Therefore, it is imperative that defense overhead by reduced so that optimal capability can be squeezed out of smaller budgets. Overcapacity and overhead at DoD makes a tempting target.

- Pentagon and private industry both agree there is significant overcapacity in repair and maintenance facilities within DoD, as well as within industry. Maintaining this overcapacity in DoD has driven up the cost of the military. Future DoD budgetary constraints will only further magnify the already-growing "tooth to tail" ration of defense spending.

--To what extent are we confronted with a "either cut depots and cut force structure scenario"?

- Trying to solve the depot problem simply by eliminating a facility could mean up to 20,000 votes lost with the stroke of a pen; consequently (and for good reason), elected representatives will fight like hell to save a depot in their district...

-Private sector involvement in depot maintenance isn't new. Equipment manufacturers have traditionally performed depot maintenance for a number of years after a new weapon system was fielded--until the design was stabilized, depot plant equipment and technical drawings procured, spare and repair parts inventories established, maintenance manuals developed, and maintenance personnel trained. While the underlying premise of **"interim contractor support"** is that such contractor maintenance is to be temporary, for some systems it has continued for many years. For example, on the B-1B, interim contractor support will continue for 17 or more years. For some systems such as the C-9 and KC-10, contractor maintenance was planned throughout the life of the system. Commercial contractors also perform other depot maintenance activities such as modifying and upgrading systems and equipment and repairing components of very complex systems and systems for which the equipment manufacturer owns proprietary rights to the technical data.

-Industry has expressed concern that cost overruns in government facilities are paid for by DoD. The government may be responsible for paying certain types of overruns by either public or private facilities which are due to scope of work increases not contained in the original work statements. Current policy stated in the Cost Comparability Handbook does not allow public agencies to finance competitive workload with non-competitive work, nor can a bidder knowingly include either a gain or a loss, bid on the margin or offer management discounts. In instances when losses do occur, the individual depots face the same risk as private concerns of becoming less competitive or being closed, since they must also spread losses via rate increases to all other customers. A Comptroller General Decision of Jan 87 concluded that while it is true that public funds are used to pay for any cost overruns at public facilities, this does not preclude meaningful competitions.

-Structuring competition and developing a level playing field agreed to by both private and public sectors have been very contentious. In general, commercial contractors contend that because of inherent differences in the structure, processes, accounting systems, and regulatory requirements of both sectors, it is not possible to achieve cost comparability and make public-private competition fair. The private sector asserts that DoD should identify minimum essential core requirements and contract out the remainder of the depot maintenance workload to private industry through private-private competition. The Defense Appropriations Act of 1993 attempted to address the comparability issue by requiring that when DoD competes depot maintenance and the production of components between DoD activities and private firms, the Defense Contract Audit Agency must certify that successful bids include comparable estimates of all direct and indirect costs. Certification is defined as an audit opinion that a proposal complies with the Cost Comparability Handbook issued by the Defense Depot Maintenance Council. The Handbook, which must be used by all depots when preparing proposals, requires the inclusion of all costs associated with proposed work. The objective of these audits is to detect

material understatements as a result of non-compliance with the Handbook.

-Cost-effective management of the defense depot maintenance system is first dependent on determining what workload capability must be retained in DoD--commonly referred to as core--and what can or should be contracted out to the private sector. While there has been a requirement that the services define their minimum essential core requirement for a number of years, the services have not yet done so. In effect, core requirements are currently defined by statute.

- An idea kicked around by General Carns is to remove depots from consideration of the Commission and let the "forces of the marketplace" determine their survival; however, would the problem not then become one of how to create a level playing field between military depots and private industry...?

--What are the prospects of depots being removed from consideration by the Commission?

--How would this be effected? By whom?

-General Carns has mentioned a possible solution--having military and private industry negotiate identical accounting systems under the auspices of an organization such as the American Institute of CPAs, so that all costs are being accounted for by both sides. Once rules have been agreed to, the policy would be that "any business you own, you keep"; however, all new work would go up for competition. If a military depot were to lose a bid to private industry, it would be required to terminate the work, release workers, and close workstations.

- Some in private industry argue that only closure of depots will produce the desired effect of competing for work. Government depots are not affected by market forces as quickly as private industry; the time taken to adjudicate a depot protest of an aware to industry would likely force an independent contractor to drop a bid. Government depots have time, but if private industry loses a contract, it must adjust quickly--there is no similar pressure on a government depot...

--There's probably a very strong counter-argument to this from the DoD depot community!!!

- From industry's perspective, if a depot underbids a contract, the taxpayer swallows the deficit without knowing it, but if industry makes the same mistake, the stockholder takes the loss and will either stop investing in aerospace or demand new management.

- Private industry (and others) say that the current 60% tooth-to-tail ratio maintained by the Air Force in the 1980s will have reversed by the time the service reaches its new force structure of 20 fighter wings; thus, unneeded support facilities will eat up even more of a shrunken defense depot; there is no way to preserve private industry without cuts to the depot system...

- Putting the Overhead Problem in Perspective (Air Force ALCs)
  - --FY 91 AFMC direct labor and total overhead rate.....$49.66
    - ---direct labor rate $19.01
    - ---total overhead rate $30.65
      - ----variable overhead (22% of overhead)
        - -----shop indirect labor
        - -----material/fuel
        - -----engineers/planners/schedulers (10%)
        - -----equipment repair-in-house
      - ----fixed overhead (78% of overhead)
        - -----depreciation
        - -----engineers/planners/schedulers (90%)
        - -----G&A staff labor
        - -----utilities
        - -----communications
        - -----facility maintenance and repair
        - -----office supplies and equipment

- Study depot operations

  -- how do the depots compute Capacity, determine cost-effectiveness, determine what workloads will be competed, integrate new process technologies, prepare bids on competed workloads;

  -- What guidance has been passed to ALCs on how to implement the "future vision" depot?

- Definition of major issues:
  - --Capacity (DoD and private industry)
  - --Core workload (60/40 split)
  - --Competition (Public-private and public-public)
  - --DoD and private industrial base (determine capacity in both sectors)
  - --Interservicing

- identification of options
  - --Limit study to study of capacity issue
  - --Expand scope of study to include other issues as well

- Force structure must determine depot structure

- Depot Performance: Realistic measures for evaluation?

  - --Effectiveness (what are determinants of effectiveness)
  - --Quality (reject rate, customer complaints, warranties, etc)
  - --Productivity (how best to assess)
  - --Innovation

--Capacity Utilization
--Cost Performance

- Reserve capacity (essentially, anything above 85%); concept was developed and implemented to support Cold War scenario; with Cold War over, how should reserve capacity now be redefined, if at all?

- What should competition opportunities focus on? Ships and weapons system modernization and maintenance, as well as manufacture of related parts? Commodity groups?

- Do service acquisition strategies actively promote and facilitate competition
  --The entire acquisition process is currently under review by DoD
  --What will be the impact depot maintenance?

- Depot capital plans and investments
  --What has been spent and for what?
  --What do they plan on adding in the future?
  --Should there be a freeze on depot capital investments until 1995 closures determined?

- Source of repair determinations
  --What methodology used (particularly USAF).

- Posture planning and command balancing
  --How effectively have workloads been balanced and postured and what was the rationale behind it?
  --To what extent were workloads shifted to other depots simply because they needed the work?
  --McClellan a big "receiver" over the years, but not a "giver." Why?

- Process Improvements:
  --To what extent are depot production and repair lines designed for fast setup, quick turnaround, and optimum throughput?
  --To what extent have process improvements been uniformly introduced at depots?

- Fixed wing aviation consolidation (to USAF)
  --Is it feasible or not?
  --DoD Study recommended against it.

- What is private industry capacity and how much is there?
  --Is private industry capacity data readily available?
  --Would contractors charge government a fee for providing this data?
  --What is comprehensive commercial depot maintenance capacity and capability ?
  --How would surge capacity/capability be retained in the private sector?

- Are there instances where workloads are being transferred from contract to organic?
  --If so, does it make sense, and under what circumstances did it occur?

- There will always be a logistics tail; whether in private or public sector. The decision on where to shorten the tail should be based on an analysis of all relevant factors, including military necessity and best value.

- Should industry be given priority for modification and upgrade work since it more closely resembles product design and manufacturing, rather than maintenance.

  --Over the years, military depots have demonstrated an ability to perform modification work, something historically done in private industry.
  --Conversely, since maintenance does not resemble manufacturing, should maintenance should maintenance be performed only in depots?

- Repair process technology crossflow
  --How is DoD driving this process?

- Standardization of operations, processes, systems

- DMIF budget submissions
  --Go through entire DMIF process

- Investment requirements development
  --How are capital investments determined?

- Source selection authority for all competitions

- Plans, policies, decision-development activities relative to DMIF activities.

- Consolidated requisition of depot spares, bench stock

- Extent to which consolidated buys of new equipment occurs (such as machine tools) and extent to which data systems consolidation is effected.

- Each ALC currently has evening shift work force, ranging from high of 40% at Ogden for aircraft, to 04% at Oklahoma City for engines.
  --Should evening shift therefore be included in capacity computations?

- To determine full extent of infrastructure requirements, would it not be prudent to address and formulate a comprehensive national defense technology and industrial base policy that takes into consideration the essential role of government and the industrial sector.

- **Private Industry:** Designers, developers, integrators, and producers of commercial and defense aerospace products and weapons systems. Also has capability to support, overhaul, repair DoD's field products and to continually modify and upgrade through technology advancement.

- **Depots:** From private industry's perspective, depots exist for after-market support of fielded systems, and

even then they still rely upon technical design and integration skills of the private sector.
--Robins and others would argue this one??

- Commission has tough job. In regards to depots, it must weigh critical defense needs in a vastly changed global environment against the emotions of closing facilities in areas already hard hit by a slow economy.

- Private Industry: From their perspective, they have been devastated by downsizings, restructuring, mergers, acquisitions, closing of facilities

- Depots, from private industry's perspective, have retrenched, with government labs and depot maintenance facilities protecting their workforces, expanding their facilities, seeking new missions, and in some cases pulling back workloads previously accomplished in private sector.

--This is a claim made by at least two major contractors--Lockheed and Rockwell.

--Is the claim valid? If so, what workloads? (I can only find one instance where work has moved)

- During Cold War, focus for support (maintenance) shifted from industry to depots:

--technology race with Soviets: needed to develop and field systems faster; depot-level maintenance had a lower level priority than building and fielding.

-- this made sense--industry could design and produce; military could maintain; each had sufficient work to make efforts efficient and affordable; government strategy based on planning and mobilization, a long-term global war scenario. Support was frequent and costly; systems not designed using integrated design, manufacturing, test, and maintenance teams of today; workloads were high.

- Workloads have diminished; To what extent should we rethink the whole concept of depot maintenance and retention of technical superiority.

--U.S. still must maintain technological superiority of the weapons retained in inventory and capability to do so resides primarily, if not wholly, in private sector.

- From private industry's perspective, government has spent/is spending billions to modernize facilities, duplicating capabilities that already exist within industry. Major quantities of workload are migrating from industry into government facilities in an effort to keep bases out of the closure process. Workloads include:

- depot-level maintenance
- modifications and upgrades to current systems
- manufacture of components already available in industry
- new designs

- Again, from private industry's perspective, tax dollars are being spent, with very little rationale, to modernize government facilities to keep them open; does this make sense when these capabilities duplicate those in an industry itself already riddled with excess capacity?

- Decisions should be based on best value and essential capabilities--not least cost and existing capacity.

- Concept of core workload should be critically examined with a view toward examining that work which must be performed in-house. Differing perceptions on what core is. General Carns, Air Force Vice Chief of Staff, says, "My guess is practically nothing is core." "I don't know of anything that you can't contract out for a price." "Core is work that the industry can't or won't do for a competitive price.

- To what extent does private industry offer a wider range of total life cycle capabilities than government depots?
    - Should they be protected or do we face risk that they will cease to exist?

- Should DoD freeze all capital investments in depots and labs until defense requirements are evaluated against private sector capabilities already in existence?

- Should weapons systems programs now supported by industry remain so supported until a "needs vs capabilities" is completed?

- Should the Commission take a close look at DoD research and development activities?
    --To what extent have their missions declined? Coupled with available industry capabilities, are there significant savings to be realized from their closure/consolidation?

- How are government depot sales prices computed?
    --This goes to the heart of the competition issue.
        --Are their prices artificial, not at all related to the cost of production at each individual depot.
        --Adjustments come down from OSD and below, altering sales rates from the calculated break-even levels; how then, are profit and loss figures calculated?

- **CAPACITY**

- Formula recommended by Joint Logistics Center and incorporated in DoD 4151.15-H is:

    # of work positions X availability factor (.95) X annual productive hours (1615).

- function of physical plant and personnel assigned, with level of employment being driving factor.

- Only variable in capacity formula is number of work positions, which as defined, is not directly affected by personnel vacancies.

- Went Study claims that, "from purists point of view, reduction in personnel should only affect depot's ability

to perform up to its capacity; **in reality, when faced with loss of manpower, most depots elect not to use equipment and/or decrease shop configuration which results in reduced work positions and lower computed capacity levels.**

- Reductions in workload attributed to projected decreases in force structure.
  --Can internal downsizing keep pace with force structure downsizing?

    ---Went Study says it cannot.

- Reductions in capacity attributed to services efforts to optimize their depots, with the largest single factor being across-the-board service reductions in depot maintenance personnel.

- To what extent is capacity utilization affected by:
  - technology
  - procedures
  - facilities and equipment
  - personnel reductions
  - workload (command) balancing

- To what extent do workload projections change with each program and budget update?

- AFMC says 10% of its depot facilities will be abandoned by 1997
  --Is "10%" enough, considering force structure and infrastructure added during '80's?
  --There is some evidence that all that is being abandoned are empty warehouses, not facilities with workstations.

- Industry defines capacity as the amount of work that can be accomplished on a two-shift per day basis; why does DoD compute one-shift when, at least at the ALCS, there is also an evening shift--in fact, 40% of the aircraft work done at Hill is accomplished on the evening shift. This is capacity that is not being caught in the formula.....

-Does capacity utilization measure space utilization?
  ---a shop could have 120% capacity utilization but have excess space
  ---a shop could have 70% capacity utilization and have excess work positions but the space is used appropriately for the equipment on-hand
  ---a shop may have 70% capacity utilization and have NSN unique equipment that is not worked continuously due to workload mix, but space is used appropriately for equipment.
-Does low capacity utilization mean mechanics/workers are idle?
  ---work positions are manned only when funded by workload
-Does low capacity utilization mean there is excess capacity?
  ---peculiar support equipment that is needed to repair specific NSNs may not be used.
  ---some machines may have special fixtures for specific NSNs which require excessive time to change.

Workload (CBP)

	91	92	93	94	95	96	97
AF	39881	37645	36790	Need	34464	32852	31661
DoD	147993	147698	138970	data	124304	121935	126010

- **Workload/Capacity by ALC (CBP)**

	87 (Capac)	91	92	93	94	95	96	97
OC	12400	7662	7072	7366	7007	6770	6644	6642
		11291	7644	8064	8042	7862	7729	7729
Utilizat		68	93	91	87	86	86	86
OO	9900	6866	6875	6890	6171	6296	6045	6072
		8165	7150	7947	7713	7196	7168	7168
Utilizat		84	96	87	80	87	84	85
SA	12900	8585	8193	7289	7417	7202	5998	5279
		8935	8935	8935	8935	8935	8935	8935
Utilizat		96	92	82	83	81	67	59
SM	8500	6867	6495	6387	6268	6032	6028	6016
		8596	7705	6819	7250	7250	7248	7248
lizat		80	84	94	86	83	83	83
	8100	7474	7046	7151	7058	6605	6587	6142
		7595	8075	7693	7486	7486	7486	7486
Utilizat		98	87	93	94	88	88	82

- **DoD Peacetime Workload by major commodity (DLH 000)**

	91	92	93	94	95	96	97
Acft	58798	53104	52890	49875	49545	47931	46992
Msls	5111	5217	4648	3962	3958	4172	4267
Ships	61064	65023	58776	56426	50752	50045	54979
Cbt Veh	5489	6841	7028	6374	5188	5228	5215
Automtv	2223	2498	2097	1959	1559	1486	1487
Constrn	80	127	104	238	262	274	298
C-E	8150	8215	7320	6958	6589	6508	6514
Ordnan	4356	4139	3839	3977	4197	4099	4051
CP	2662	2454	2199	2289	2190	2129	2144
r	60	79	69	69	63	63	63

	147993	147698	138970	132128	124304	121935	126010

- **Organic software support (CBP)**

	91	92	93	94	95	96	97
Army	267	351	554	343	343	343	343
NAVAIR	180	192	221	210	212	232	196
NAVSEA	12	7	5	9	28	28	28
SPAWAR	18	16	15	15	15	15	15
AF	2447	2948	3379	3719	3397	3386	4017
USMC	67	67	73	84	87	99	111
TOTAL	2991	3581	4247	4380	4082	4103	4710

- **DoD Contract Peacetime Workload by major commodity ($ in millions)**

	91	92	93	94	95	96	97
Acft	1,972.0	1,545.7	1,663.3	1,521.9	1,391.3	1,458.2	1,440.4
Msls	292.2	232.9	222.1	206.0	220.1	169.2	192.2
Ships	1,408.5	1,838.1	1,308.8	1,053.8	1,201.5	1,206.9	1,192.6
Veh	142.9	151.7	47.4	45.7	41.4	89.1	38.8
	130.6	145.3	147.1	130.1	162.6	123.3	152.5
[redacted]han	42.0	17.7	21.1	7.2	11.6	5.1	5.6
GP	71.8	65.9	62.8	61.8	53.6	51.2	51.2
Other	169.4	239.4	202.0	138.1	190.7	147.4	144.0
NAVSUP	538.9	509.4	504.8	522.9	540.2	558.0	577.4
TOTAL	4,768.4	4,746.2	4,182.5	3,687.6	3,813.0	3,808.5	3,794.8

- **UNFUNDED (UNCONSTRAINED) ORGANIC WORKLOAD (AF WORKSHEETS)**

	91	94	95	96	97	98	99
AGMC		1091	1112	1121	1009	1010	1010
OC		9064	9371	9459	9527	9639	9780
OO		6528	7046	7127	7099	7013	6959
SA		9166	8962	7123	5914	5673	5675
SM		7353	7121	6954	7124	6757	6759
WR		9960	9881	9395	8376	8051	7548
TOT		**43162**	**43493**	**41179**	**39049**	**38143**	**37731**

- **ESTIMATED ORGANIC FUNDING WORKLOAD (AF WORKSHEETS)**

	91	94	95	96	97	98	99
AGMC	1666	884	867	863	757	737	727
OC	7658	7342	7309	7283	7145	7036	7042
OO	6866	5288	5496	5488	5324	5119	5010
SA	8585	7424	6990	5485	4436	4141	4086
SM	6305	5956	5554	5355	5343	4933	4866
WR	7454	8068	7707	7234	6282	5877	5435
TOT	**38534**	**34962**	**33923**	**31708**	**29287**	**27843**	**27166**

- **ORGANIC/CONTRACT/ADJUSTED ORGANIC DATA (AF WORKSHEETS)**

	94	95	96	97	98	99
TOTAL ORGANIC	43338	43850	41374	39259	38359	37558
TOTAL CONTRACT	13829	12847	12532	11186	10656	10804
TOTAL	57167	56697	53906	50445	49015	48362
% TO BE ORGANIC	0.65	0.64	0.63	0.62	0.61	0.60
ADJUSTED ORGANIC	37159	36286	33961	31276	29899	29017
ORG ADJUST FACTOR	0.86	0.83	0.82	0.80	0.78	0.77

ORGANIC/INDEX/UTILIZATION DATA (AF WORKSHEETS)

	94	95	96	97	98	99
ORGANIC WKLD						
CAP INDEX						
CAPACITY UTIL						
AGMC	1091	1112	1121	1009	1010	1010
	1500	1197	1273	1022	1022	1022
	0.73	0.93	0.88	0.99	0.99	0.99
OC	9064	9371	9459	9527	9639	9780
	8940	8760	8628	8628	8628	8628
	1.01	1.07	1.10	1.10	1.12	1.13
OO	6528	7046	7127	7099	7013	6959
	7946	7714	7197	7205	7447	7447
SA	9166	8962	7123	5914	5673	5675
	9405	9405	9405	9405	9405	9405
	0.97	0.95	0.76	0.63	0.60	0.60
[illegible]	7353	7121	6954	7124	6757	6759
	7520	7520	7518	7518	7518	7518
	0.98	0.95	0.92	0.95	0.90	0.90
WR	9960	9881	9395	8376	8051	7548
	7570	7569	7570	7570	7570	7570
	1.32	1.31	1.24	1.11	1.06	1.00
AFMC TOTAL	43162	43493	41179	39049	38143	37731
	42881	42165	41591	41348	41590	41590
	1.01	1.03	0.99	0.94	0.92	0.91

AFMC COMMENTS ON CAPACITY:
"Capacity Index is Work Positions X Annual Productive Hours (1615) X Availability Factor (0.95). A work position is the equipment one worker utilizes on a single shift to accomplish the workload mix required. The computation simply aligns the equipment required to accomplish a function to a given workload mix and available manpower and is not an accurate index to apply to facility utilization. Therefore, capacity utilization is not an accurate measure of a depot's ability to realign shops and equipment to accomplish requirements. A more accurate comparison is workload accomplished in prior years with an adjustment for new facilities. For example, **Oklahoma City produced approximately 12 million DLH of annual workload during the 1986-1987 timeframe, and is capable of performing at or above that when unconstrained by manpower and funding."**

The preceding statement regarding Oklahoma City (made by HQ AFMC in certified data provided to the Commission) essentially says what the Commission has said all alone--the ALCs (in this case, Tinker--has the capability to ramp back up to its 1987 capacity provided funding and people are available; the infrastructure is still there.....

- **DEPOT SAVINGS BY CATEGORY**

	91	92	93	94	95	96	97
[illegible]-Tm	148.5	340.1	426.3	554.3	660.8	581.0	496.7
[illegible]c	0.1	2.0	23.4	24.4	26.9	27.8	29.2
[illegible]pete	77.0	134.2	242.1	341.2	421.7	241.5	276.0
Cap-Utilizat	113.3	87.3	119.9	205.8	248.7	255.5	253.3

- **AIR FORCE SAVINGS BY CATEGORY**

	91	92	93	94	95	96	97
Near-Tm	44.2	68.0	105.0	109.0	109.0	112.7	116.5
Intsvc	0.0	1.7	11.6	13.0	13.5	14.6	15.6
Competition	14.1	68.8	110.5	176.6	241.7	162.0	169.6
Cap Utilizat	0.1	10.8	8.4	1.2	3.2	3.4	3.5

- **Air Force Near-Term actions**
  - personnel reductions
  - installation closures
  - streamlining
  - process improvements
- **Air Force Long-Term Strategy**
  - Interservicing (overhead costs to be spread over larger workload base)
  - Competition

- **Air Force Capacity Utilization Strategy**
  - divestiture of unnecessary facilities and equipment
  - detailed plans for reductions in equipment buys and divestitures

- equipment and facilities analyzed in relation to current and projected workloads and reserve capacity requirements

- **Industrial Process Improvement Program**
  - Centers will be able to accomplish missions by using equipment for other facilities or by requiring less equipment based on new workload projections and/or process improvements

- **CORE**

  - **DoD Core Definition:** An integral part of a depot maintenance skill and resource basis which shall be maintained within the depot activities to meet contingency requirements.

  - **Air Force Core Definition:** The minimum essential organic depot maintenance capability necessary to support planned military contingencies

  - Core Algorithm
    - JCS-approved contingency scenario
      - weapon system usage
    - Compute depot rqmnts considering contractor capabilities
    - determine minimum capabilities required
      - facilities
      - skills
      - equipment
    - compute minimum peacetime workload required to maintain depot infrastructure capable of supporting contingency scenario

  - Current legislation restricts amount contracted out--40% of depot workload
    - currently, 58% of dollars resides with industry (includes organic depot funds spent on contract supplies and services)

- **USAF COMPETITION SUMMARY**

		1991	
Program	**SOR**	**AWARDEE**	**VALUE**
F-16 Op Software	Ogden	Logicon	$1.4M
TF33 Vanes	Ok City	Chromalloy	$6.6M
T-56 gearbox	San Antonio	Standard Aero	$7.8M
AN/TRC97A radio	Sacramento	Sacramento	$2.9M
AN/TRC186 radio	Warner-Rob	Warner-Rob	$3.8M

1992

[redacted]ram	SOR	AWARDEE	VALUE
CSDs	Ok City	Ok City	$3.0M
C-5 Speedline	San Antonio	San Antonio	$35.0M
C-141 wingbox	Robins	Robins	$62.0M
Landing Gear	Contract	Ogden	$14.0M
Generators	San Antonio	Army	$1.0M
C-18PDM	Contract	????	$5.0M
MMIII Nu Hardness	Contract	????	$7.0M
F-16 APG-68 radar	Contract	????	$8.0M
MMIII Software	Ogden	????	$7.0M

1993

Program	SOR	AWARDEE	VALUE
-135 refuel boom	Contract	Ok City	$9.4M
F-16 Block 40	Ogden	Ogden	$25.0M
F-16 APG66 radar	Ogden	Ogden/Hurley	$3.0M
E-3 PDM/Mod	Ok City	Ok City	$36.0M
[redacted]urbines	Contract/Ok City	Airborne/Ok City	$7.7M
[redacted]B-52/E-3 CSD	Ok City	Ok City	$11.2M
[redacted]Gyros	AGMC	Flight Electron	$1.1M
Firetrucks	Contract	ATAP, Inc.	$33.8M
AN/ALQ-155 PMS	Robins	Robins	$5.3M
Transponder Bundle	Robins	Robins	$20.6M
TF-30 turb blades	Contract	??????	$0.04M
TF-30 airseal	Contract	??????	$0.2M
TF-33 turbine spt	Contract	??????	$1.0M
TF-33 exhaust case	Contract	??????	$1.0M
TF-33 fan blade	Contract	??????	$1.0M
Engine Containers	Contract	??????	$0.2M
F-4C starter	San Antonio	??????	$0.4M
Misc Acft Wheels	Ogden	Ogden	$7.0M
T-56 eng/gearbox	San Antonio	??????	$36.0M
F-100 fuel control	San Antonio	??????	$22.0M
25K/40K loaders	Contract	??????	$7.0M
ALQ-131 II	Robins	??????	$1.0M
APG-63 radar	Robins	??????	$12.0M
C-130 Props	Robins	??????	$5.0M

1994

Program	SOR	AWARDEE	VALUE
B-52H PDM	Ok City	NA	?????
F-101/110	Ok City	NA	?????
T-56 Engine	San Antonio	NA	?????
C-5 PDM	San Antonio	NA	?????
F-111 E/F	Sacramento	NA	?????

- **AIR FORCE PUBLIC-PUBLIC COMPETITION**

  - One existing public-public competition

    - T-56 engine program at San Antonio
      - Core T-56 work: Air Force-Navy compete
      - Non-core T-56 work: public-private competition

- **SUMMARY OF SACRAMENTO ARMY DEPOT/SACRAMENTO ALC/TOBYHANNAH COMP**

GROUP	Depots	Date Sub	Award Date	Winner
Elect	TOAD-SM	1 Aug 92	15 Jan 93	TOAD (4.6M)
Brad Ftg Veh	RRAD-SM	15 Feb 93	2 Aug 93	SM (3.7M)
Electro Optics	ANAD-SM	15 Apr 93	15 Oct 93	TBD
Radar	LEAD-SM	1 May 93	2 Aug 93	SM (3.5M)
Radio	TOAD-SM	1 Jun 93	30 Sep 93	TOAD (5.0M)
Gyro/Indicators	CCAD/SM	1 Jul 93	1 Oct 93	SM (1.2M)
Intel/Elect Warfare	TOAD-SM	2 Aug 93	1 Nov 93	TBD
TMDE/Radio	TOAD-SM	1 Sep 93	1 Dec 93	TBD
Wire/Data Com	TOAD-SM	1 Oct 93	1 Jan 94	TBD

- **EXAMPLES OF BIDS--GOVERNMENT VS PRIVATE INDUSTRY**

Program	Government	Industry
C141 wingbox	128.6M (WR)	380M (Lockheed)
B-1 Offen Avion Test Kit	76,000 (OC)	745,000 (Boeing)
F-117 Components	38,400 (SM)	896,000 (Lockheed)
F-117 Components	38,400 (SM)	480,000 (Lockheed)
F-117 Components	54,600 (SM)	546,000 (Lockheed)
F-117 flir shroud	138,700 (SM)	1,825,000 (Lockheed)

McClellan's Advanced Composites Program Office supports all current and future Air Force weapon systems containing composite materials. ACPO is unique in DoD because of its advanced composites expertise and ability to perform in-house design, repair, analysis, manufacture, and testing of advanced composite structures. Due to ineffective contractor designs, the F-117 composite structures are incurring high cost of ownership and short service-life problems. Each Forward-Looking Infrared Radar (FLIR) shroud cost over $25,000 (for production run of 52) and had such poor durability the aircraft was constantly in a MICAP situation. ACPO redesigned the part, designed and built new tooling and is manufacturing a more durable design at a cost of just $1,900 each (for a production run of 52.). Total savings over the Lockheed cost if $1.2 million. The 20D82 is one of the F-117 trailing edge parts that is failing and extremely costly to manufacture. Each contractor part costs over $42,000 and takes 25 days to manufacture. Many F-117 aircraft have been grounded awaiting these parts. The ACPO redesigned the part, designed and built new tooling, reduced the manufacturing time from 25 to 5 days, and manufactured the parts at a cost of just $7,700 each. Total savings for each production run of 13 is over $456,000.

- **The Costs of Competing**

  - What are true costs of developing a competition package?
    - -- administrative costs
    - -- TDY costs
    - -- development of work package cost
    - -- preparation of RFP cost
    - -- review of work processes cost
    - -- preparation of bid cost
    - -- evaluation of bid cost

- **GROUPS AND ORGANIZATIONS: (Visits/Consults Probably Required)**

  - Implementation Working Group

    - Coordinates implementation of interservicing and consolidation decisions specified in both the Joint Service Business Plan and Corporate Business Plan

  - Joint Service Competition Working Group

    - Advises on depot maintenance workload competition issues--develops procedures and guidance for conducting public-public and public-private competition of maintenance workloads.

  - Joint Performance Measurement Group--tasked to develop depot maintenance performance measurement system

  - Joint Logistics Systems Center--(WP): achieves corporate information management goals for DoD logistics business areas by managing design, development, implementation, and maintenance of an integrated DoD corporate logistics process system and facilitating development and implementation of improved business practices.

- Directorate for Depot Maintenance:--planning, financial management, production workload planning, material management, quality control, performance measurement, production facilities

- Joint Policy Coordinating Group on Depot Maintenance--reviews commodity groups for interservicing
- Joint Depot Maintenance Analysis Group
- Defense Depot Maintenance Council
- DoD Maintenance Policy Office (Bob Mason's group)
- GAO (Donna Hevelin & Bob Myer)

- **PUBLICATIONS AND DOCUMENTS**

  - DoD 4151.15-H, DoD Maintenance Production Shop Capacity Measurement Handbook
  - DoD 4151.18, Maintenance of Military Material
  - Cost Comparability Handbook
  - FY 92, FY 93 Air Force Business Plan and Business Plan Update documents
  - Production Shop Capacity Measurement Handbook
  - DoD Instruction 4151.15, Depot Maintenance Program Policies
  - DoD Depot Study (Aug 93 timeframe) which can't yet be released.....???...???

- **Impact of two-level maintenance**

Pre-two-level		**2-level**
avion	82,500	236,800
engines	795	3500

- **COMPARISON OF ALCS AND NADEPS**

- Cost per labor hour

USAF	**USN**
69.99	97.00

- Capital investments (FY 83-92)

USAF	USN
1.015B	546M

- Navy did not have capital improvements program prior to 1991

- Annual throughput of aircraft

USAF	USN
903	450

- Organic component repairs

USAF	USN
800,000	209,000

- Aircraft fleets supported (FY91)

USAF	USN
8293	5813

- **PHYSICAL COMPARISON OF ALCS AND NADEPS**

	Sq ft	**Fac replace**	**Equip replace**
Alameda	2.3M	246.0M	183.0M
Cherry Pt	1.5M	274.0M	350.0M
Jacksnvle	1.6M	393.5M	250.0M
[illegible]olk	2.3M	356.0M	297.0M
[illegible]sland	2.5M	287.0M	288.0M
[illegible]acola	1.7M	213.7M	218.0M
Total	11.9M	1.770.2B	1.586.0B
Okla City	4.9M	1.077B	485M
Ogden	3.6M	350.0M	628.0M
San Antonio	3.9M	363.0M	587.0M
Sacramento	3.8M	640M	401M
Warner-Rob	2.7M	221.0M	687.0M
AGMC	.5M	231.0M	475.0M
Total	19.4M	2.882B	3.263.0B

- **CURRENT DEPOT AND PROCUREMENT ENVIRONMENT**
  - ✓ Founded in World War II and sustained by Cold War.
    - ✓ Main features were high volume production, fast activation and retirement of weapons, and constant search for next modern aircraft.
  - ✓ End of Cold War forced Air Force and private industry to come to grips with implications of reduced production, delayed weapon starts, stretched-out weapon lives.
  - ✓ Situation now requires delicate balancing act, with military strength, industrial viability, and edge of technology all weighed against need for lower budgets.
  - ✓ Total US defense spending by 1997 will be 40% less than in 1987; 2/3 of way there.
  - ✓ Readiness will be top priority--downward pressure on other budget categories intense.
    - ✓ Modernization will be hit hard--by 1997, it will be half of 1986 figure.
  - ✓ Current Administration strategy is to protect technology base.
  - ✓ Defense overhead must be reduced so that optimal capability can be squeezed out of smaller budgets--OVERHEAD/CAPACITY IN DEPOTS PRIME TARGET.
  - ✓ DoD and private industry agree there is significant overcapacity in public depots, as well as private industry
    - ✓ Maintaining this overcapacity has driven up cost of military and further magnified the "tooth-to-tail" ratio

- **THE PROBLEM IN DOD DEPOT ENVIRONMENT**
  - ✓ Excess capacity ranging from 25 to 50 percent.
  - ✓ Unncessary duplicate capabilities.
  - ✓ Duplicate investments in new technologies.
  - ✓ No effective structure or process for implementing joint solutions to joint problems.
  - ✓ No effective structure or process for optimizing cost savings.
  - ✓ Perception that services alone will not fix problem--20 years' of efforts failed.
  - ✓ No clear methodology for identifying "core" workload.
  - ✓ High overhead costs for depot maintenance--60 percent of costs are for overhead.
  - ✓ No definitive methodology for measuring performance, quality, productivity.
  - ✓ No apparent strategy for actively participating in managing downsizing of the defense industrial base (including private industry) to protect capabilities needed to design, develop, produce, and sustain future US military equipment.
  - ✓ No apparent strategy for protecting capabilities, not specific companies; on preserving skills, not jobs; and on improving warfighting capability, not buying un-needed equipment.
  - ✓ Intense pressure from private industry to shift work from public to private sector.

- **CAPACITY**
  - ✓ Defined DoD 4151.15-H as *The amount of workload, expressed in actual direct labor hours (DLH), that a facility can effectively produce annually on a single shift, 40-hour week basis while producing the product mix that a facility is desig*ned to accommodate.
  - ✓ Formula for computing capacity is: number of work stations X availability factor (.95%) X annual productive hours (1615).

- ✓ A function of physical plant (infrastructure and equipment) and personnel assigned, with level of employment being driving factor in the calculation.
- ✓ Only variable is number of work stations which, as defined, is not directly affected by personnel vacancies.
- ✓ *Went Study* claims that when faced with manpower losses, most depots elect not to use equipment and/or decrease shop configurations which results in reduced work positions and lower computed capacity capacity levels.

- ✓ Questions for consideration:

  - ✓ Does capacity utilization measure space utilization?
    - ✓ A shop can have 120% utilization but have excess space.
    - ✓ A shop can have 70% utilization and have excess work stations but the space is being used appropriately for the equipment on hand.
    - ✓ A shop may have 70% utilization and have NSN unique equipment that is not worked continuously due to workload mix, but space is used appropriately for equipment.
  - ✓ Does low capacity utilization mean workers are idle?
    - ✓ Work positions are manned only when funded by workload.
  - ✓ Does low capacity utilization mean there is excess capacity?
    - ✓ Peculiar equipment needed to repair specific NSNs may not be used.
    - ✓ Some equipment may have special fixtures for specific NSNs which require excessive time to change.
  - ✓ *Reserve capacity*
    - ✓ What is it and how is it defined?
  - ✓ What is *private industry capacity* and how much is there?
    - ✓ Is data readily available?
    - ✓ Would contractors charge a fee for providing this data?
    - ✓ How would surge capability be retained in private industry?
  - ✓ Private industry defines capacity as the amount of work that can be accomplished on a two-shift-a-day basis.
    - ✓ Each ALC has an evening shift--why not included in computations?
  - ✓ Reductions in depot workloads are attributed to force structure decreases.
    - ✓ Capacity reductions not likely to keep pace with force drawdown.
  - ✓ To what extent is capacity utilization affected by technology and process improvements, procedural changes, facility and equipment investments, and workload, or command, balancing?

Table 1. AF ALC Workload vs 1987 Capacity
(Source: DoD Corporate Business Plan)

	_87	_91	_92	_93	_94	_95	_96	_97
OO Wk		6,866	6,875	6,890	6,171	6,296	6,045	6,072
Cap	9,900	8,165	7,150	7,947	7,713	7,196	7,168	7,168
Util		84	96	87	80	87	84	85
OC Wk		7,662	7,072	7,366	7,007	6,770	6,644	6,642
Cap	12,400	11,291	7,644	8,064	8,042	7,862	7,729	7,729
Util	68	93	91	87	86	86	86	
SA Wk		8,585	8,193	7,289	7,417	7,202	5,998	5,279
Cap	12,900	8,935	8,935	8,935	8,935	8,935	8,935	8,935
Util		96	92	82	83	81	67	59
SM Wk		6,867	6,495	6,387	6,268	6,032	6,028	6,016
Cap	8,500	8,596	7,705	6,819	7,250	7,250	7,248	7,248
Util		80	84	94	86	83	83	83
WR Wk		7,474	7,046	7,151	7,058	6,605	6,587	6,142
Cap	8,100	7,595	8,075	7,693	7,486	7,486	7,486	7,486
Util		98	87	93	94	88	88	82

	_94	_95	_96	_97	_98	_99
AGMC	1,091	1,112	1,121	1,009	1,010	1,010
OO	6,528	7,046	7,127	7,099	7,013	6,959
OC	9,064	9,371	9,459	9,527	9,639	9,780
SA	9,166	8,962	7,123	5,914	5,673	5,675
SM	7,353	7,121	6,954	7,124	6,757	6,759
WR	9,960	9,881	9,395	8,376	8,051	7,548
Total AF	43,162	43,493	41,179	39,049	38,143	37,731

Table 2. AFLC Unfunded (Unconstrained) Workload
(Source: AF Worksheets)

	_91	_94	_95	_96	_97	_98	_99
AGMC	1,666	884	867	863	757	737	727
OO	6,866	5,288	5,496	5,488	5,324	5,119	5,010
OC	7,658	7,342	7,309	7,283	7,145	7,036	7,042
SA	8,585	7,424	6,990	5,485	4,436	4,141	4,086
SM	6,305	5,956	5,554	5,355	5,343	4,933	4,866
WR	7,454	8,068	7,707	7,234	6,282	5,877	5,435
Total	38,534	34,962	33,923	31,708	29,287	27,843	27,166

Table 3. AFLC Funded Workload
(Source: Air Force Worksheets)

- **DOD EFFORTS TO PROMOTE SAVINGS IN DEPOT STRUCTURE**
  - ✓ Laid out in Defense Depot Maintenance Council's *Corporate Business Plan*
    - ✓ Projects $6.3 billion in savings through FY97
      - ✓Near-term initiatives.....$3.2 billion
      - ✓Interservicing.....$0.1 billion
      - ✓Competition.....$1.7 billion
      - ✓Improved capacity utilization.....$1.3 billion

  - ✓ **Near-term savings** include:
    - ✓ Downsizing of direct and indirect workforce (*numbers not provided)*
    - ✓ Closure of facilities (*what actions will DoD take to insure that an integrated cross-service approach is taken?)*
    - ✓ Cancellation of "facility projects" (*what is a "facility project"?; what projects have been cancelled and at what dollar savings?)*
    - ✓ Internal service consolidation of workloads (*what process does DoD have to insure services work the internal workload consolidation problem?)*

  - ✓ **Interservicing** of workloads
    - ✓ Savings from greater economies of scale (*what workloads will be interserviced and what is the total workload susceptible to interservicing?)*
    - ✓ Savings will also accrue from overhead reductions caused by interservicing (*resulting from reduced workload and facility downsizings presumably)*
  - ✓ **Competition**
    - ✓ An increased number of competitions are envisioned by DoD (*GAO says DoD is overly optimistic based on number of competitions canceled)*

  - ✓ **Improved capacity utilization**

- ✓ Redistribution of workloads within and among the services (*how will this redistribution of workload be accomplished and when?)*

✓ DoD's Vision Statement for World-Class Depots
- ✓ Lean and mean
- ✓ Competitive with private industry
- ✓ Economically efficient in peacetime and responsive in wartime.
- ✓ Operate in a cost-effective manner.
- ✓ Smaller and more specialized facilities.
- ✓ Achieve and maintain highly state of the art technological capabilities.

✓ DoD's perception of public depot strengths:
- ✓ Short-notice wartime support.
- ✓ Support for very new and very old weapon systems.
- ✓ Flexibility, depthy, and breadth of support.
- ✓ Low-volume repair.

- **COMPETITION**

✓ Legislatively mandated 60/40 split between public and private work.

✓ Cost-effective management of public depots is dependent on determining what must be retained in public depots--"core"--and what can be done in private sector.
- ✓ Services have not defined their minimum essential "core."

✓ DoD "Core" Definition: *"An integral part of a depot maintenance skill and resource base which shall be maintained within the depot activities to meet contingency requirements."*

✓ *Air Force "Core" Definition: "The minimum essential organic depot maintenance capability necessary to support planned contingencies."*
- ✓ *Air Force Core Algorithm:*
  - ✓ *JCS-approved contingency scenario.*
  - ✓ *Weapon system usage.*
  - ✓ *Compute depot requirements considering contractor capabilities.*
  - ✓ *Determine minimum capabilities required--facilities,* skills, equipment.
  - ✓ *Compute mimimum peacetime workload required to maintain depot infrastructure capable of supporting contingency scenario.*
- ✓ *General Carns: "My guess is practically nothing is core. I don't know of anything that you can't contract out for a price."*
  - ✓ *Does "core" then become work that industry can't or won't do for a competitive price?*

✓ Private sector involvement in depot maintenance not a recent phenomenom...
- ✓ Traditionally performed maintenance on newly-fielded systems until design stabilized, plant equipment and drawings procured, spare and repair parts i nventories established, manuals developed, and personnel trained.
- ✓ Premise of *"interim contractor support"* is that it will be temporary; however,

- ✓ support for B-1B will continue for 17 or more years.
- ✓ support for C-9 and KC-10 will continue for life of the systems.
- ✓ Modify and upgrade systems and equipment and repair components on complex systems and systems for which they own proprietary rights to tech data.

✓ Private industry
- ✓ Designers, developers, integrators, producers of commercial and defense aerospace products and weapon systems.
  - ✓ Also capable of supporting, overhauling, repairing DoD's fielded products and to continually modify and upgrade these products through technology advancement.
- ✓ Devastated by downsizings, restructuring, mergers, acquisitions, closings..

✓ Private industry's perception of role of public depots:
- ✓ Exist solely for after-market support of fielded systems, and even then they still rely on technical design and integration skills of private sector.
- ✓ Public depots have retrenched, with government labs and depots protecting their workforces, expanding their facilities, seeking new missions, and in some cases pulling back workloads previously accomplished in private sector.
- ✓ Goverment is spending/has spent billions of dollars to modernize public depots, duplicating capabilities that already exist in private sector.
- ✓ Major quantities of workload migrating from private industry to public depots in an effort to keep public depots out of the closure process, including:
  - ✓ depot-level maintenance
  - ✓ modifications and upgrades to current systems
  - ✓ manufacture of components already available in private sector
  - ✓ development of new designs
- ✓ Tax dollars being spent, with very little rationale, to modernize government facilities to keep them open; *this does not make sense when these capabilities duplicate those in an industry already riddled with excess.*

✓ Structuring competition and developing level playing field highly contentious issue
- ✓ Private sector says inherent differences in structure, processes, accounting systems, and regulatory requirements of both sectors preclude achieving cost-comparability and making public-private competition fair.
- ✓ Private sector says DoD should identify miminum essential core requirements and contract out remainder of work through private-private competition.
- ✓ Defense Appropriations Act of 1993 attempted to address comparability issue by requiring Defense Contract Audit Agency certify that successful bids include comparable estimates of all direct and indirect costs.
  - ✓ "Certification" is compliance with Cost Comparability Handbook.

✓ Private industry says current 60% "tooth to tail" ratio maintained by Air Force ....
- ✓ will have reversed by time service reaches new force structure of 20 wings.
- ✓ unneeded public depots will eat up even more of shrunken defense budget.

- ✓ *No way to preserve private sector capabilities without closing public depots.*

- ✓ Air Force perspective on competion with private sector.
  - ✓ Air Force already relies heavily on private sector.
  - ✓ Traditional 60/40 split misleading; actual split is more like 42/58.
  - ✓ Competiton strategy for Air Force will focus on
    - ✓ sustain ALC work by competing with other services for *core* work.
    - ✓ compete with private industry for *non-core* work, to drive down costs
  - ✓ None of work up for competition has been done before by private industry.
  - ✓ Non-Original Equipment Manufacturers (OEM) cost-competivie with ALCs
    - ✓ All awards to industry have gone to non OEMs.
    - ✓ 3 awards have tone to small/small-disadvantaged firms
  - ✓ OEMs are structured for a different market--their overhead is too high.
    - ✓ OEM bids have been nearly double ALC and small contractor bids.
  - ✓ Competition with private industry is smart thing to do because:
    - ✓ excess capacity in ALCs.
    - ✓ takes into consideration Air Force investments in plants, equipment, personnel, and training, particularly those made during 1980s.

- ✓ Vice Chief of Staff General Carns' thoughts on competition:
  - ✓ Remove depots from consideration of DBCRC and let "forces of the marketplace" determine their survival.
  - ✓ Have public depots and private industry negotiate identical accounting systems under auspices of American Institute of CPAs so that all costs included.
  - ✓ Once rules agreed upon, policy would be "any business you own, you keep; however, all new work would go up for competition."
  - ✓ If public depot loses competition, it will terminate workers/work stations.

- OTHER IDEAS AND ISSUES/ADDITIONAL COMMENTS

- ✓ Review DoD's actions/plan for achieving Corporate Business Plan objectives:
  - ✓ Consolidation
  - ✓ Interservicing
  - ✓ Competition
  - ✓ Downsizing
  - ✓ Closing of facilities
  - ✓ Implementation of process improvements
  - ✓ Streamlining and re-engineering
  - ✓ *These are all phrases used to describe what DoD is going to do fix the problem of excess capacity and growing financial burden of maintaining unneeded depots. I believe it would be beneficial to find out whether these are just "plans" that are offered up in hope that they will be forgotten or whether there is an office in DoD that is aggressively pursuing this.*

- ✓ The Air Logistics Center Structure
  - ✓ Management (*what is their overhead and how much of it has been eliminated?)*
  - ✓ Operations (*for example, how are source of repair determinations made?)*
  - ✓ Personnel and resources
  - ✓ Environmental issues
  - ✓ Business operations *(financial scrub, including DBOF)*
  - ✓ Information technology
  - ✓ Technological responsiveness
  - ✓ Overhead
    - ✓ For every $50.00 in depot costs, $31.00 goes for overhead--why?
  - ✓ What are realistic depot performance measurement standards?
    - ✓ Effectiveness
    - ✓ Quality
    - ✓ Productivity
    - ✓ Innovation
    - ✓ Flexibility
  - ✓ Capital plans and investments *(what has been spent and for what?)*
  - ✓ Should there be a freeze on capital investments until after 1995 round?
  - ✓ Posture, or command, balancing
  - ✓ What divestiture of facilities has occurred and total square footage involved?
  - ✓ Are there detailed plans for reductions in equipment buys and divestitures?
  - ✓ How are sales prices computed? *(Are the prices artificial, not at all related to the cost of production at the ALC?)*

- ✓ Projected impact of two-level maintenance

- ✓ Comparison of ALCs with Naval Aviation Depots (NADEPs)
  - ✓ Workload consolidation potential
  - ✓ "Cost of doing business" comparison
  - ✓ Physical plant comparison
  - ✓ Is there a basis for throughput and quality comparison?
- ✓ Private Industry Capacity
  - ✓ Without having the results of an analysis based on comprehensive private depot maintenance capacity and capability data, is private industry's recommendation to close public depots on a wholesale basis valid?
- ✓ Private Industry surge capability:
  - ✓ How expensive a proposition would this be?
- ✓ Private industry contends that it must be closely linked with the ultimate user (the military) to insure that needed or suggested improvements can be fed into the design process. What evidence is there to indicate that suggestions from the user are not being fed into the design process very effectively today in the current private industry/military relationship?
- ✓ Private industry contgends that DoD should avail itself of "all that industry has to offer and concentrate on warfighting capabilities."
  - ✓ In contingencies, there is a need for rapid response from logistics infrastructure.

- ✓ Public depots provide that quick response.
- ✓ With depots under DoD control, on a moment's notice, they can increase output, change priorities, and dispatch field teams.
- ✓ DoD would argue that this is all an integral part of the services' warfighting capability.

✓ Private industry says it should have priority for modification and upgrade work because it more closely resembles product design and manufacturing rather than maintenance. On the other hand, would advocates of this argument be willing to accept the converse--that maintenance does not resemble manufacturing and therefore should not be performed by manufacturers?

✓ Capacity:

- ✓ Air Force says interpretation of work stations is not uniform or standardized; what does this mean? Was this a reason for not using the FY 87 baseline?
- ✓ Air Force says the 1987 methodology used to compute capacity was different from the method used today--that it allowed depot-specific sets of factors which could vary among the depots. Again, reason for not using FY 87?

- ✓ Definitions of capacity, capacity utilization, capacity index, excess capacity, availability factor, annual productive hours, reserve capacity, funded workload, unfunded/constrained workload, will be included in study.

- ✓ Study will include various types of bar and stacked charts to illustrate capacity, workload, and other comparative data.

- **POTENTIAL SOURCES OF INFORMATION/DATA**

✓ Joint Implementation Working Group.

- ✓Coordinates implementation of interservicing and consolidation decisions specififed in both Joint Service Business Plan and Corporate Business Plan

✓ Joint Service Competition Working Group

- ✓ Advises on depot maintenancfe workload competition issues--develops procedures and guidance for conducting public-public and public-private competition of depot maintenance workloads.

✓ Joint Performance Measurement Group

- ✓ Develops depot maintenance performance measurement system among others.

✓ Joint Logistics Systems Center

- ✓ Achieves corporate information management goals for DoD logistics business areas by managing design, development, implementation, and maintenance of an integrated DoD corporate logistics process system and facilitating development and implementation of improved business practices.

✓ Joint Policy Coordinating Group on Depot Maintenance
✓ Joint Depot Maintenance Analysis Group
✓ Defense Depot Maintenance Council
✓ DoD Maintenance Policy Office (Bob Mason's office)
✓ General Accounting Office (Donna Heivelin and Bob Myer)

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Gordon R. England
President

23 November 1993

Lt. Gen. Jim Fain
Commander
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Jim,

Jim

Thanks for the opportunity to dialogue with you, your staff and industry counterparts on several topics important to the U.S. Air Force and to industry. I trust that my comments were helpful to your objectives and would like to make several follow-up comments.

As you know, acquisition reform is an extremely complex matter with many players and a host of conflicting objectives. Frankly, it's not obvious to me that significant macro changes will be made during either of our tenures, even with the personal involvement of Bill Perry. Independent of much energy to change the overall system, however, your organization, working with the aerospace industry, can affect many current practices that are inhibitors to lean manufacturing (big M, from the executive suite to the factory floor and from the SECDEF to the field). You will find many individuals in the SPOs reluctant to range far afield from past practices so you will personally have to be involved as I have to be in my own organization. I heartily endorse your recommendation for a direct communicative link on acquisition issues.

In my judgment, the depot issue is being addressed and debated at a micro level that does a disservice to the Services, industry, and our Nation. Rather, this is a national policy issue that needs to go far beyond the arguments for or against a particular facility. In succeeding months I plan to frame this topic more appropriately and will dialogue with you along the way.

Commercial practices are of strategic importance to the Air Force. Industry that supports the USAF must have the flexibility to compete in the commercial marketplace and the USAF must be able to obtain goods and services at less cost.

The lean aircraft initiative is right on. You will probably find that by the time most of the data is compiled, many companies will already be well down the path. We have been actively working this process at Fort Worth for almost two years and are about to enter Phase III. In Phase III we are redesigning all of our business processes to make them far more efficient. My comment here is that industry does not see the same dedication on behalf of the Government. While we know that the military is reducing, it appears to us that the infrastructure is staying largely intact. That increases our task and at the same time detracts from the tip of the spear. My challenge to you at President's Day was intended to be an honest and forthright suggestion. That is, as the leader of ASC, it is your obligation to lead in this lean aircraft initiative. We in industry expect to see a lean customer.

The above subjects are complex and little progress has been made at reform. On the other hand, people in responsible positions with vision and determination can make a difference. I include both of us in that category and therefore will be pleased to work with you in bringing about meaningful changes. Keep in touch. Thanks for sponsoring President's Day.

Best regards,

Jerry

"PRESIDENT'S DAY" AT ASC (NOV 93)

General Fain's "Acquisition Reform" presentation:

• OVERSIGHT IS INCREASED - Once oversight gets in the picture, you are headed for failure - because the oversight always finds something and that creates the need for more oversight, and on and on.

• ACQUISITION SYSTEM ROLES & MISSIONS - Fain wants industry to help sell this set of definitions of roles and missions - and understand the interfaces. "We have to stop people from reaching down 23 levels into something they shouldn't be involved in."

• PRODUCT FOCUSED INTEGRATED PROGRAM - The model for management - every supervisor generates products for his subordinates - the subordinates are his customers. Fain characterizes this as a new way for management to view their role in an IPT environment.

• HIERARCHICAL RELATIONSHIPS - Product/customer concept described above applies to every level in the hierarchy. This is key to Fain's philosophy.

• NEW ACQUISITION ENVIRONMENT - Wants to talk about a change in the way we do our business.

• CURRENT ACQUISITION STRUCTURE

> Both government and industry lack upfront overall planning - don't give the IPTs enough structure or metrics before they start working.
>
> Technology Base is not being directed, does not feed our programs as well as it should. Still a lot of technology for technology's sake. In dem/val you have to prove you can integrate the technology.
>
> Manufacturing Processes still not worked early enough - this is why we have EMD - to prove that we can build what we have designed for the price we said - only way to do this is to go back into the design process and get the risk out of your manufacturing processes.

• NEW ACQUISITION STRUCTURE - Presented as representing a position agreed to between he and Gen Yates.

> Plan for a gap - (Post EMD) - i.e. no cost share in EMD - industry must make profits. Must be good business because we can't and shouldn't count on going straight to production. The only way we're going to get Congress to release up front money is to convince them that not every CE and Dem/Val will lead EMP and production.

GORDON R. ENGLAND - Gen Fain, do you really believe we're going to have another Dem/Val and EMD program this decade?

GEN FAIN - JAST will lead to an EMD Program. "I believe that if we in the Air Force/Navy/industry need to present to this administration a program that keeps the design teams together - that doesn't have to lead to production, i.e. we have to recognize the validity of the post-EMD Gap. If we do, the administration will accept the notion of having to fund our design teams.

ENGLAND - We have to get off the idea of using commercial parts. We have to adopt COMMERCIAL PRACTICES.

FAIN - I agree. Biggest issue is PRICE vs COST! How the government does it vs how commercial industry does it.

ENGLAND - We've studied this - the study was presented to Deutch and Perry.

FAIN - Studies don't cut it.

ENGLAND - Don't agree that we can set the depots aside - it is integral to our total problem. Fain's doesn't agree, thinks depots are NOT the heart of the problem of keeping our design teams together - "a minor factor at best." It is a problem but Fain doesn't feel it is significant

ADM BOWES - The world doesn't revolve around airplanes and design teams - it revolves around systems - really big systems of systems.

DICK HARDY (Boeing) - I agree that we have to plan for a gap before production, but I don't like JAST because we aren't starting with a requirement, we're just going to do technology.

FAIN - I agree JAST was ludicrous, but I think we have fixed it at the last minute - Adm Bowes and I agree that you have to know where you're going to go. I gave them a set of 15 "requirements" questions they had to answer before I could tell them what technologies I would have to work:

These drive the technologies we have to pursue:

Under weather	vs	thru weather
One man	vs	two man
Internal weapons	vs	external weapons
One engine	vs	two engine
VSTOL	vs	CTOL

HARDY - Have to focus on specific missions and objectives.

FAIN - "Gordon, if you look at what we're doing in JAST, you'll see that we'll be doing dem/val or EMDs but not at the level of F-22. They'll be different. We'll have to pursue 4 or 5 concepts. Can see us doing dem/val of common avionics or support equipment."

Navy is going to give Muellner an experienced acquisition one-star executive as his deputy.

In the ground attack environment for JAST, I don't see why we need to build an airplane - we're not inventing new aerodynamics - but we might need sub-scale demos.

JONES (Northrop) - We've done some time line analysis and its very short, no longer then 24 months, before we'll have to start significantly drawing down our design teams. Need careful economic modeling of the JAST concept to see if they will generate enough money to keep the design teams together. If it isn't you're going to have to develop a different strategy if your goal is to keep design teams together.

FAIN - We expect to come down to only 2 design teams for fighters - 2 for bombers, 2 for transports, etc.

We don't have a model that is sufficiently precise to determine how much money it takes to keep a design team together. We don't know if JAST is enough.

We can't keep going in to OSD and the Congress individually - we get thrown out. We'd be delighted to work with an industry IPT to try and address the issue raised by Mr. Jones although we have some legal issues about how we can work this.

JONES (Northrop) Volunteered to lead the IPT to develop an economic analysis of what is required to support a design team.

FAIN - Fine, we'll take that as an action item.

FAIN - Congress won't let us start CE (Concept Explorations) because they believe that once we start a CE we never quit until we get to production.

ASC has decided that our most important core values are

1. To acquire and manage fixed wing aero systems.
2. Propulsion
3. Weapons
4. Avionics integration

I'll give the core value list to industry when it is finished.

I have 50% of my work force managing weapons and 50% managing common systems - avionics like GPS, training, etc. These common systems activities will be the first things to go if my workforce gets cut.

DEPOT ISSUES

BLACKWELL (LASC) (plus many other presidents voiced concurrence) - depots are a much bigger issue. Vote among us and you'd see.

BOWES - The Navy isn't competing for depot work? (?Did he mean they've decided not to or that they can't compete?)

FAIN - The dollars available for industry to compete for depot work have actually increased.

BLACKWELL - But your RFPs prohibit us from doing the design and then competing for the mod line. The dollars aren't/cant go to the companies with the design teams.

CLUBB (TI) - How can we help sell this new acquisition structure to DoD and Congress.

FAIN - You've all been in to see Colleen Preston and we've all reinforced the impression that we're incompetent - industry complains about depots. AF about Navy. Navy about AF. We have to start talking as a coalition.

MATTICE - Industry has not been talking to the Chief and the AF leaders about this type of issue. You talk to them about specific programs, not about improving the collective process. Jim is on to something here. We need to work together to get the right type of Acquisition Reform.

FAIN - You've got to stop talking program specifics in the Pentagon. Talk to them about the acquisition process to get the Pentagon to focus on the issues they should be working on.

We ought to decide what we think OSD ought to deal with. What Congress ought to deal with - and then talk to them about that, not about things we don't want them to work on like program technical details.

SPONYOE (IBM) - I think Perry and Deutch are a first rate team so I disagree with your characterization of them. We ought to be working the kinds of issues raised in John Griffin's DBO work. We've backed away from it when we should be accelerating it.

FAIN - You misunderstood me. I want them to work on the right issues for their positions.

I want this group to agree on three-four issues that we want to put PATS on to go work.

LACKMAN (Rockwell) - What are we going to be able to do about funding stability.

FAIN - I've tried for years, but don't see how we're ever going to do that.

We all need to go to Washington with the same story for the next 6-8 months. We need to sell this new development process concept. Where we keep necking down from CE to D/V to EMD - so that we break the paradigm that if Congress gives us CE money it will continue forever.

BAIR - Why don't we think at the break about what specific actions the group would like to bring forth at the end of the day.

FAIN - You'll have to understand that you'll have to commit resources to this IPT/PAT. We won't work anything without a IPT. No more than 4 IPTs should come out of this meeting.

BOTTOM LINE

- Depots (i.e. depot type work) are not going to maintain our design teams but, I'll concede to Gordon that we need to keep it on our agenda.

- Can't foresee another major production for some considerable time - remember when we were planning for 72 F-22's per year - "we'll be lucky if we get to 12 per year."

GORDON ENGLAND'S POINT: We need to work on all their fronts - Congress, OSD, and Service Acquisition Commands.

OSD Regulation (Herman Report + others) - Fain doesn't like it, because it says all we need is for the government to change and everything will be ok. Gordon's point is that it was a thoughtful, useful study and while it doesn't have the whole answer, it should be used, not rejected.

FAIN - Believes that we in the bottom trapezoid have to start feeding actions to the upper trapezoid and triangle. We can't sit in the bottom and let them control our destiny.

ENGLAND - Then let's control some of our own actions - challenged Fain to make his SPOs stop requiring cost and pricing data beyond what is required by law. Said that 50% of what is requested is above what is required by law.

FAIN - Agreed to take this action if we in industry will manage our programs to show that we haven't lost our insight and ability to produce quality programs.

FAIN/ENGLAND will work this together. Fain assigned Col. Todd to look into this for a potential ASC Policy letter. Fain said that he is really surprised by what he finds some SPOs doing. When he finds a problem he sends out a policy letter. He will make these available to industry.

COL MIKE HARRISON - None of the seven commercial pilot practices programs received complete OSD concurrent.

ENGLAND - LAI doesn't work all of the full spectrum of industry/OSD/Congress.

FAIN - There have been 1000 reports in my lifetime - BUT I haven't seen a whole lot of change.

ENGLAND - There are efforts throughout industry and government by well-meaning people; we need all of them.

ADM BOWES - What Jim is trying to say is we've <u>never</u> gone up there <u>together</u> as AF/Navy/Industry representing the experience base - the people who have to execute the programs.

CLUBB - We need to clean up our programs first.

FAIN - No, we can't count on that - we can't wait for that.

FAIN - Irritates the hell out of me that we're just sitting here in our bottom trapezoid waiting for something to happen.

We've got to pull our trapezoid together in a congruent way! I want to see something - <u>anything</u> happen in the bottom trapezoid before we go forward.

ANTINUCCI (Martin-Marietta) - Suggest you get key advocates from middle and upper triangles involved in the process.

FAIN - Not my way but I'll bow to the group if this is a consensus. (Industry seemed to feel it was premature to do this.)

MATTICE - MDI 2 years old - nothing really new happened. Only real successes are F-22 and JDAM. Why?
Must focus on middle block - use the established decision process

FAIN - Must work on 6 of our top 10 Initiatives today; get some results; take results to middle block - main problem is we do not speak with unified voice.

ENGLAND - One key difference today - budget crashing down - some DoD persons highly interested in making change. The environment is ripe to try this approach.

FAIN - We've never had to be efficient before. Efficiency is now the single measure - we'll give up performance, we'll give up schedule.

HARDY - Peace is hell.

FAIN - Need data to do something in the bottom box - pick a bunch of horses and then ride them up to the middle box.

BOWES - We are moving out with the JACG to try to accomplish some of these things.

Acquisition Reform - This is the task we've been talking about all day long. This is the objective of recommendation No. 1 alone.

HARDY - Don't use this term as the focus for this groups activities.

YORK - If we use Acquisition Reform, this effort will be put on the shelf like all the other studies.

BLACKWELL - We need to answer Griffin's DBO questions. Put a logic together that fits within the money we think we're going to receive. What pisses us off about JAST is that we're just wandering around. We're spending B&P like mad and its just killing us.

FAIN - John Griffin presented an approach that was aligned with my Acquisition Reform thoughts. We need data to go upward - not impressions and stories.

BLACKWELL - We need the focus that Griffin's approach would give us - so that we're at least working the right issues.

FAIN - We can work them under JACG once we get some data.

MATTICE - You've got a list of 13 items from last year (MDI?) plus John Griffin's ideas plus John Halpin.

FAIN - I'm not sure we've done enough (or have enough to show) to have a story that can go forward. We can work a lot of things here to get credibility before we go up. Where can I show what ISO 9000 and MIL 499 have done to increase efficiency. Where is the data?

How can we tie this Group together to speak as one voice? I need to find out how we can do this legally.

ENGLAND - If we're already doing more than the law requires in cost/pricing data is our lower trapezoid, how can we go forward to OSD with a straight face and say we should be given relief to use commercial practices?

FAIN - We need a PAT to go forward to develop a plan to flush out the strawman we gave you for acquisition reform.

McCORD - Develop a list of things we as a team (services/industry) can do within the bottom box.

FAIN - We need an articulated plan.

JONES (Northrop) - The time line is too great - we can't wait for long to develop more data - we've got enough data - let's put it together.

FAIN - We're not ready quite yet, but when we get the data - fine time. John's approach - and then we have to go forward together, industry and services together.

And we need to continue to support LAI even though it is on a longer time line. It will give us date and credibility that we need.

ENGLAND - Challenge you to get as Lean as we are.

FAIN - We're going to have cuts, but maybe not as fast or in the areas you'd prefer.

ENGLAND - You've got to do it because it adds to your cost <u>and</u> our cost . . . and cost is cost.

BOWES - Agree, we want to reduce <u>total</u> cost within the government, industry, and the fleet.

SPONYOE - We haven't talked all day about software. Three services can't even agree on a methodology.

FAIN - ACTION ITEMS

1. FORM A PAT
2. WORK THIS OVERALL PLAN
3. IDENTIFY WHAT WE'VE ALREADY DONE
4. IDENTIFY ISSUES WE'VE DISCUSSED TODAY - LIST OF THINGS WE NEED TO WORK
   - Commercial practices
   - Software
5. How do we talk to each other more frequently - real legal issue (some 1970 law).

- Put the team on some type of schedule.
- Fain's lawyer says he can do this if he gives the PAT a specific task.

- Wants first report from PAT in one month by 15 December.

< CONFIRMATION REPORT >

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The Role of DOD Depots Within The Defense-Industrial Base

PREMISE:

A basis of Depot Consolidation and competition decisions (as part of the Defense Industrial Base restructuring) should be the cost-efficiency of delivering the end product to the using Defense customer.

These critical depot work decisions require comparable and accurate total costs accumulated in accounting for the delivery of the final product

ISSUES:

I. What is a Depot? What does it cost to deliver Depot Products?

II. How is it possible to identify all cost elements (regardless of source or organization) needed to deliver each Depot's final product?

III. What is the basis for quantifying (costing) the total of all of these elements for each product delivered by either Depots or Industry. Are all "Depot" costs assigned to these Products?

IV. Will BRACC consider work allocations to optimize depot and industry participation in satisfying user requirements?

The Role of DOD Depots Within The Defense-Industrial Base

1. Depots have significant design/engineering/manufacturing/repair capabilities which range from activities defined as **Core Capabilities** to a wide range of related support, management, and administrative infrastructure.

1.1 **What is a Depot?** What is included in Depot costs? What is the actual cost of final products or services?

1.1.1 Functional (Supply, Maintenance, Manufacturing, etc.)
1.1.2 Geographical (Base boundaries, real estate, facilities)
1.1.3 Budget Sources (Appropriation Accounts)
1.1.4 Organizational (Service, Command, Directorates, Agencies)
1.1.5 Capabilities (Equipment, Critical Skills, etc.)
1.1.6 Cost Categories and Costs Included
1.1.7 Others (Cost Accounting Standards & Auditing Practices)

1.2 What are the <u>Core</u> **Functions** -- or Core Capabilities -- of each Depot?

1.2.1 Does the definition of "Core" differ between Services?
1.2.2 Do certain Core Capabilities reside only within Depots and not in the Private Sector? What are the differentiating criteria?
1.2.3 What excess or undesired Core Capability duplication exists between Depots and Industry in specific categories of tasks to be performed?

-- Engineering Design?
-- Major Mods?
-- Weapon System Maintenance/Repair?
-- Component Repair?
-- Item Management?
-- Supply and Distribution?

1.3 To what extent should the Public Defense Depot system and the Private Defense Industry maintain identical and **duplicative** <u>core</u> **capabilities** -- business, technical, and function?

1.4 From a national economic perspective, what overall level of nationalized Depot Industrial Capability is required or desired in the future from both a Defense as well as a national economic perspective?

2. Structuring Depot Maintenance competition and developing a level playing field for both the private and the public sectors remains a major challenge. Cost concerns impacting Industry-Depot competitions include:

2.1 Can all true and complete costs associated with a Depot activity be defined in terms of all that is required to support each program or product ? Will all costs of all of the Depots programs sum to equal the total "Depot Cost" (or "Depot Operating Expense)?

2.2 How can the uncertainty in cost comparability -- and the ambiguity -- that currently exists in comparisons between Depots or in comparing Depot versus Industry costs be equalized? How can it be factored into decisions to optimize the Defense Industrial Base?

2.3 Does the current system of certification by the DCAA that each Depot's bid on each competitive project complies with the "Cost Comparability Handbook" of the Defense Depot Maintenance Council result in a level "playing field" between the public and private sectors? How should Depot rates be revised to reflect differences in the structure, processes, accounting systems, and regulatory requirements of both sectors?

2.4 An all-component definition of "What Is A Depot" is of critical importance in competitions, downsizing, or consolidation rationalization of the Defense Industrial Base

3. The continuing discrepancies in the Defense Business Operating Fund (DBOF) are an indication of **problems of cost accountability** and **auditability** in the Depot System (and DOD Product Support/Supply System) associated with multiple DOD organizations involved in the Defense Maintenance system.

3.1 How are costs allocated/assessed when multiple organizations are involved in receiving, producing, supporting, and delivering the Depot's product?

3.1.1 Depot host (Includes base support, etc.)
3.1.2 Major depot supporting tenants directly involved in the supply/maintenance workload (such as DLA, GSA, etc.)
3.1.3 Secondary tenants or geographically separated DOD entities (such as DCAA, DPRO, Civil Engineering, Real Estate Management, Computer Services, Financial and Cost Systems , etc.)
3.1.4 How are DBOF transfers documented and reconciled?

3.2 Is there an auditable process followed in determining cost impacts or cost-sharing contributions made by other tenants geographically located at the depot (e.g. Operational flying units, other defense agencies, etc.)?

3.3 Depot Costs must be segmented into major functions to properly identify costs associated with Depot Core competed and non-competed functions on a basis which permits comparisons with Industry in undertaking major tasks:

3.3.1 Depot maintenance (end items and components)
3.3.2 Major Mods
3.3.3 Engineering and Design Activities
3.3.4 Depot Manufacturing Activities
3.3.5 Product Support
3.3.6 Others

3.4 What changes in cost accounting visibility or cost information collection should be identified now by the Defense Services in order to provide objectivity in support of Defense Industrial Base decisions in FY 94-97?

4. The JCS Depot Maintenance Consolidation Study (page ES-2) stated:

"Closure of a significant number of depots will be necessary if we are to reduce excess capacity. We believe the only effective way to close depots is through the BRACC process".

Because substantial overcapacity exists throughout the Depot system (estimated by the January 1993 JCS Depot Maintenance Study to be as much as 50%), what methodology will the BRACC use to determine the priority in which Depot functions can be combined and Depots eliminated or downsized?

4.1 What additional information [on Costs, Industrial Capabilities, alternative public/private work splits, etc.] will be needed by BRACC in the future in their considerations of these Defense Industrial Base issues affecting optimization of the Depot system?

4.2 How can Industry assist in providing essential comparable data?

4.3 How many of the 37 major Army, Navy, and Air Force Depot activities located in the United States have specialized (core) critical capabilities which support unique military weapon system requirements -- and which capabilities cannot be provided by other Depots)?

5. In BRACC comparisons between Government Depots and Industry contractors, to what extent do you plan to reconcile the cost comparability of data (cost information) supplied from fundamentally different accounting systems? Some of the particularly difficult issues include:

5.1 Types of "overhead" which are readily identified in Industry (Government Contractor) costs but which are not acknowledged or identified on an equivalent basis by Depot organizations in "cost of work" calculations:

5.1.1 Employee fringe benefits and retirement
5.1.2 Personnel management
5.1.3 Depot "Self insurance" (e.g. fire loss, product liability)
5.1.4 Environmental Costs (current and future)
5.1.5 Depreciation of equipment
5.1.6 Others

5.2 Means of reconciliation of budgetary and expense information from separate (but co-located) agencies?

6. With the variety of tasks accomplished by both Industry and the different Depots (including current inter-service support), what measures of merit (e.g. Quality, Productivity, Cost-Effectiveness, etc.) should be used in comparing the "value" of private and public output:

6.1 Rank candidates and alternative Defense Industrial Base scenarios for evaluation of the future desired public-private mix of capabilities needed to perform depot maintenance and defense supply activities?

6.2 Provide a common cost accounting baseline to insure competitiveness can be calculated for work performed by the total (Public and Private) Defense Industrial Base?

7. How will the potential benefits of competition to undertake various depot workloads be considered?

7.1 Can the overall cost to DOD be minimized if duplicative Depot activities maintained by each Service in multiple depot locations be consolidated through inter-service support? Can other alternatives be regularly considered ?

7.2 Can inter-service questions be addressed on a Service-by-Service basis and what level of decision-making should be involved?

7.3 Will "competition" between Depots and Private Contractors be "ground ruled"as a factor in BRACC assessments. To what extent will work activities requiring Depot "Core" capabilities also be competed ?

7.4 Will private core capabilities (as well as public) be considered in the downsizing rationalization of the Defense Industrial Base?

7.5 To what extent can BRACC consider the various alternative cost saving approaches that have been proposed for centralizing indirect support activities (alternatives such as combining support "functions" in a single agency depot system)?

8. There are legislative restrictions that require specific considerations of the amount of work that can be competed/contracted out to industry (e.g. The FY 93 Authorization prohibits the military services from contracting out more than 40 percent of the depot-level "maintenance work" by non-federal employees.)How will considerations of these mandated legislative restrictions be weighted in the BRACC analyses?

Context for Public & Private Roles in Industrial Base Downsizing

1	World Confrontation	Regional Conflicts	Local Disputes
2	Dominate Threat	Define Responsibilities	Respond Quickly
3	Unlimited Funding	Unstable Funding	Minimum Funding
SERVICES	SELF-SUFFICIENCY	ROLE TRANSITION	INTERDEPENDENCY
	Development of Independent Assets	*Downsizing of Fixed Assets*	*Utilization of Shared Assets*

1950 - 1990

- ✓ Massive System
- ✓ Many Regulations
- ✓ Much Oversight
- ✓ Directly Adversarial

- "Firm" Requirements
- "Competitive" Solutions
- Huge Production $
- Many Changes

Vertical Integration

National Security

1990 - 1995

- ✓ Chaotic System
- ✓ Fewer Regulations
- ✓ Less Oversight
- ✓ More Dialogue

- Changing Needs
- Uncertain Requirements
- Competitive Uncertainty
- Diminished Production
- Arbitrary Changes

Rationalization of Depot Maintenance

Survival Test (profitability)

Technology Custodian

FUTURE

- ✓ System "Commercialization"
- ✓ Minimum Regulations
- ✓ Emphasis On:
  - Jointness (services)
  - Teamwork (industry)
- Technologically Defined
  - Need
  - Requirements
  - Changes
- Innovative Contract Ts & Cs
- Production Flexibility
- Core Competencies

Sustained Effectiveness

Affordable $

INDUSTRY		
Design / Build Major Systems	Design / Fabricate / Test Multiple Prototypes	Modernize / Maintain Force Structure Elements

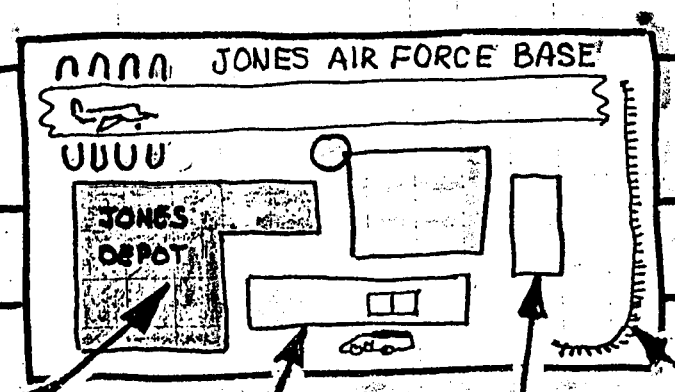
RM14836

WHAT IS A DEPOT?

? ORGANIZATIONAL (SERVICE/COMMAND)

? GEOGRAPHICAL

? BUDGET SOURCES



FUNCTIONAL (MOD/REPAIR/M) ?

EQUIPMENT TYPE ?

TRADITIONAL ?

AIRFIELD (TACAIR)	AFMC	DLA	GSA	CORPS OF ENG'RS (ARMY)
COMMAND	DEPOT OPERATION	SUB-CONTRACTOR	AGENT ROLE	RESPONSIBILITIES (GOV'T PROPERTY)
DBOF: REAL ESTATE	MANAGEMENT	WAREHOUSES - PACKAGING - STORING	COMPUTERS	FLOOD/DRAINAGE
DBOF: BUILDINGS $	WORKFORCE		LEASES	CONSTRUCTION
DBOF: UP-KEEP	LABORATORIES	DISTRIBUTION - HANDLING - SHIPPING	FURNITURE	WATER
USER	EQUIPMENT		PURCHASES	POWER
	CONTRACTS	TRANSPORTATION	COMMUNICATIONS	

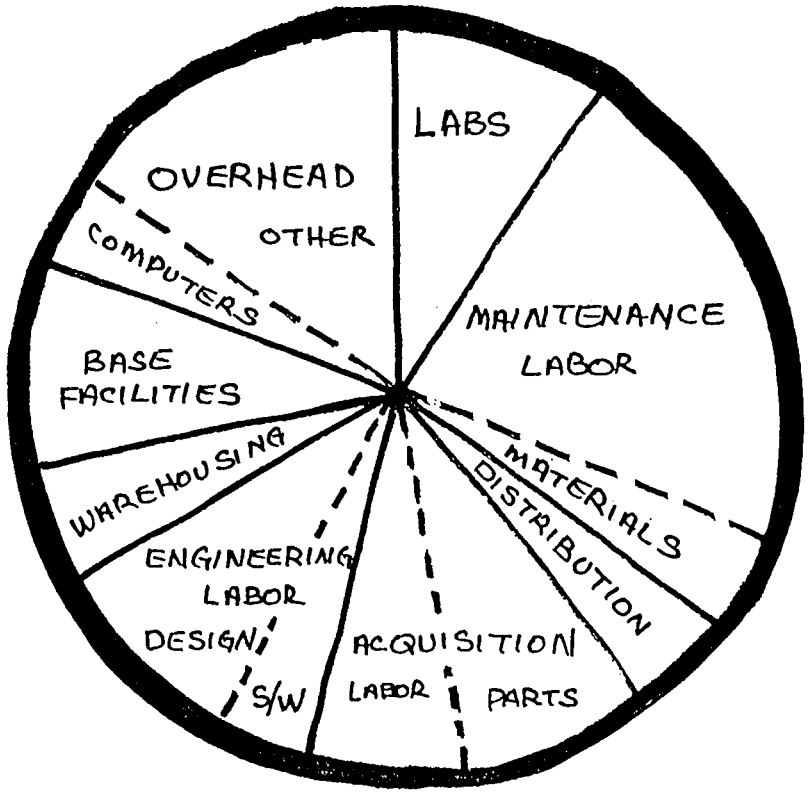
HOW ARE EXPENSES ALLOCATED, ACCOUNTED FOR, AND AUDITED?

FIVE AGENCIES WITH SEPARATE ACCOUNTABILITIES & FUNDING

WHAT IS A DEPOT?

WHAT ARE THE
PROJECTS

- ✓ CUSTOMER
- ✓ SCOPE
- ✓ URGENCY
- ✓ PRIORITY
- ✓ SECURITY



WHAT ARE THE
ESSENTIALS

- SKILLS/SPECIALISTS
- PROCESSES/EQUIPMENT
- ORGANIZ'N/INTERFACES
- FACILITIES/LABS
- COST/BUDGETS

WHAT SEGMENT OF DEPOT BUSINESS CAN INDUSTRY DO

- AIRCRAFT MODIFICATIONS
- DEPOT LEVEL MAINTENANCE

} BETTER, FASTER, CHEAPER?

Aircraft Modifications:

- Aircraft modifications encompasses research and engineering, kit fabrication and assembly, and installation (and testing?) of modifications to post-delivery aircraft which may be in or out of production.

- Modifications may be to structures, electronics, weapons, propulsion, and/or other systems.

- Modifications are intended to correct deficiencies and/or improve the operational capabilities and/or reliability and maintainability of existing aircraft. The modification changes, as a minimum, the fit or function of the item.

- Modifications occasionally overlap with new aircraft production when a modification is incorporated in both pre- and post-delivery aircraft.

Depot Level Maintenance:

- Depot level maintenance encompasses the more complex maintenance and repair of aircraft at a depot-level maintenance facility or at an operating base by a field team.

- Complex maintenance and repair is the major overhaul or a complete rebuild of aircraft parts, assemblies or subassemblies and end items. It can include the emergency manufacture of nonavailable parts, modifications installations, testing, and reclamation.

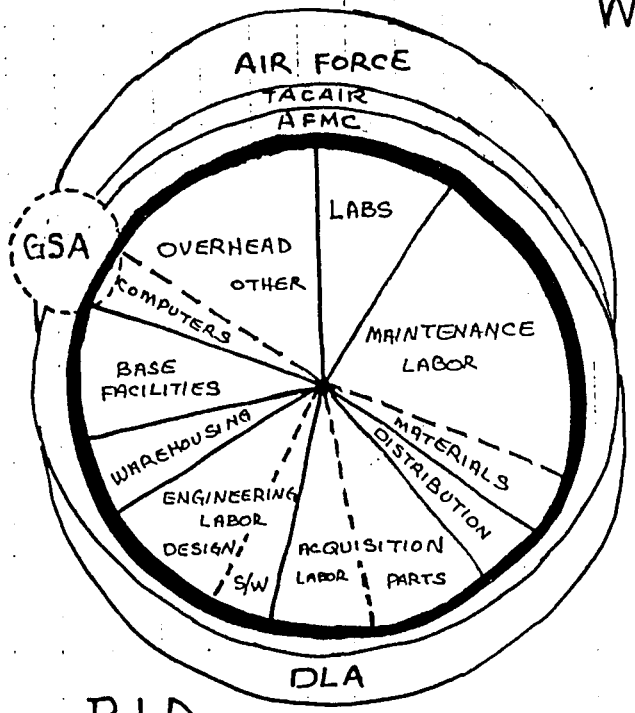
- Depot level maintenance differs from modifications in that depot level maintenance maintains or restores an aircraft to its original configuration whereas modification results in a new aircraft configuration.

- Depot level maintenance may overlap with modifications in that when an aircraft is down for modification, depot level maintenance may be performed concurrently.

DEPOT BIDS

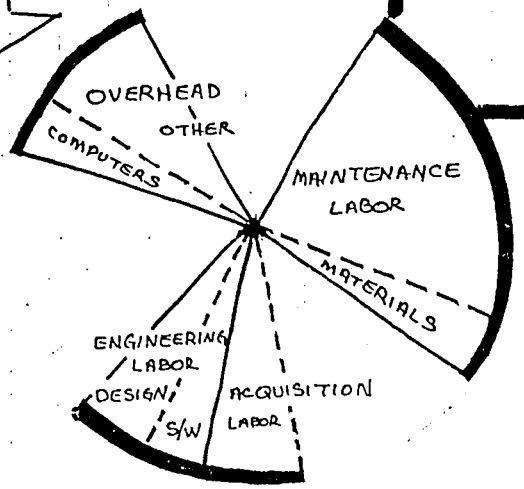
WHAT COST ELEMENTS

PUBLIC



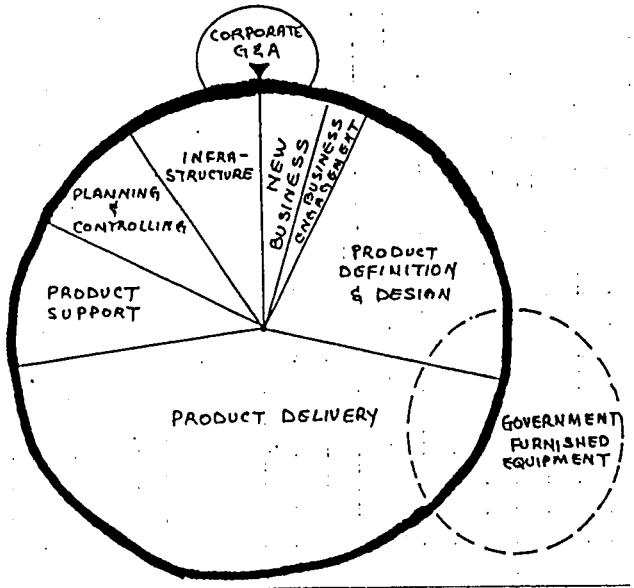
BID

COST ELEMENTS



FALCON UP

PRIVATE



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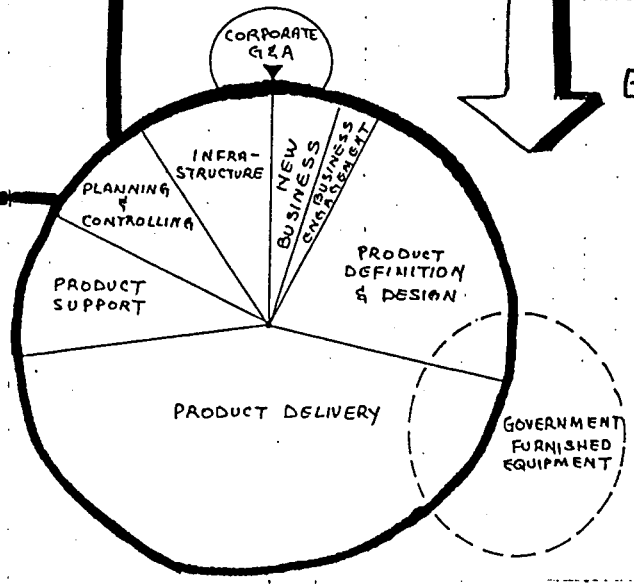
COST ELEMENTS



Depot Facilities

Huge/Diverse Commitment of National Resources

Owner	"Depot" Facilities
Army	6
Navy Shipyards/Other	9
Navy Aviation	6
Air Force ALCs	5
Air Force Specialized	2
Marine Corps Logistics	2
SUBTOTAL	30
+ Naval Ordnance Depots	9
+ Army Weapons/Munitions Maintenance Depots	16
	55⊛

PLUS

Depot Equivalents

+ Commercial Industrial Base
  - Primes
  - Major Subs
  - Vendors
+ Space Industrial Complexes (Cape Canaveral AFS, Vandenberg)
+ NASA Industrial Complexes Providing Depot Type Services to Military Space/ Missiles/Satellites
+ Distribution/Warehousing (DLA/GSA)
+ Foreign Government Depots/Firms Servicing DoD Equipment
+ Services Intermediate Level Shops Performing Depot Level Repairs
+ Non-Depot Governmental Labs

⊛ In addition, Depots have geographically separated detachments and operating locations.

Distribution of Depots' Budgets by Service

% of Depot Budget	Service
47%	Navy
34%	USAF
17%	Army
2%	Marines
100%	

Weapon Systems Budgets Serviced in Depots (By Types)

Weapon System	% of Depot Budgets
450 Ships	33%
20,200 Aircraft	45%
36,000 Combat Vehicles	5%
660,000 Vehicles	13%
Missiles	4%
	100%

HOW HAS THE TERM "DEPOT OVERCAPACITY" BEEN DEFINED?

50% Potential Overcapacity Cited in January 93 JCS Report

- Since Depot "Requirements" are based on ability of each Depot as well as the Depot system to support a sustained wartime or emergency surge of up to **160% of the Peacetime Work Load**, then exactly what is the BASE on which the 50% overcapacity is based?

  --50% over the Peacetime Workload (If this is true, then USAF Depots would not meet the 160% Wartime Surge Objective)

  --50% over the "160% of Peacetime Work Load" (If this is true, then the true minimum overcapacity is 240% -- based on 160% plus 50% over the 160%)

- The assumptions on which the wartime requirements are based still reflect DOD OPLANS -- many of which still have cold war assumptions. (If this is true, then the overcapacity is even higher)

- Overcapacity calculations only recognize the capacity of each Depot to maintain the specific product mix currently assigned to each individual Depot -- regardless of whether that Depot has the capacity to repair other systems.

2

HOW HAS THE TERM "DEPOT OVERCAPACITY" BEEN DEFINED?

50% Potential Overcapacity Cited in January 93 JCS Report

- No actual definition of Core Logistics Capability has yet been developed in response to DOD Directive 4151.18 (or any of the predecessor laws dating back to 1974).

"OPERATIONAL DEFINITION"—

- Does not reflect the additional overcapacity that would result from economies of scale resulting from consolidation of Depots capabilities within each Service Depot System.

- Does not reflect the additional overcapacity that would result from economies of scale resulting from inter-service consolidation of Depots capabilities.

- Excludes additional overcapacity that essentially results from the performance of Depot maintenance defined activities by non-Depot military units (eg. Intermediate Level Maintenance Shops)

3

HOW HAS THE TERM "DEPOT OVERCAPACITY" BEEN DEFINED?

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- In determining the Core Logistics skill & resource base that is solely justified as being essential to meet contingency requirements, the Army and Air Force computations exclude contributions provided by Commercial Defense Contractors.

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- The impact of recent structural changes (e.g. transferring Distributions functions from the "Depot" to DLA, etc.) may not be reflected in depot overcapacity estimates.

- Depot overcapacity estimates do not include reliability and maintainability (R&M) improved performance of currently acquired Weapon Systems versus the historical R&M performance of 1970-1980 era Weapon Systems (on which Depot Manpower Requirements are based in Manpower Standards).

Context for Public & Private Roles in Industrial Base Downsizing

1	World Confrontation	Regional Conflicts	Local Disputes
2	Dominate Threat	Define Responsibilities	Respond Quickly
3	Unlimited Funding	Unstable Funding	Minimum Funding
SERVICES	SELF-SUFFICIENCY	ROLE TRANSITION	INTERDEPENDENCY
	Development of Independent Assets	*Downsizing of Fixed Assets*	*Utilization of Shared Assets*

1950 - 1990

- ✓ Massive System
- ✓ Many Regulations
- ✓ Much Oversight
- ✓ Directly Adversarial

- "Firm" Requirements
- "Competitive" Solutions
- Huge Production $
- Many Changes

1990 - 1995

- ✓ Chaotic System
- ✓ Fewer Regulations
- ✓ Less Oversight
- ✓ More Dialogue

- Changing Needs
- Uncertain Requirements
- Competitive Uncertainty
- Diminished Production
- Arbitrary Changes

Rationalization of Depot Maintenance

FUTURE

- ✓ System "Commercialization"
- ✓ Minimum Regulations
- ✓ Emphasis On:
  - Jointness (services)
  - Teamwork (industry)
- Technologically Defined
  - Need
  - Requirements
  - Changes
- Innovative Contract Ts & Cs
- Production Flexibility
- Core Competencies

	Vertical Integration	*Survival Test (profitability)*	*Sustained Effectiveness*
	National Security	Technology Custodian →	Affordable $
INDUSTRY	Design / Build Major Systems	Design / Fabricate / Test Multiple Prototypes	Modernize / Maintain Force Structure Elements

RM14836

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DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - SM-ALC DEPOT MAINTENANCE

Table of Contents

COMMODITY GROUPS LIST 3

TABLE OF ACRONYMS 4

CAPACITY 5

1 - Capacity Utilization 5
2 - Plant Replacement Value 9
3 - Programmed Workload 10
4 - Service Centers of Excellence 16

MEASURES OF MERIT 24

GEOGRAPHIC: 24
1 - Geographic Location 24
2 - Environmental Compliance 26
3 - Environmental Restrictions 27
4 - Other Collocated Activities 28
5 - Encroachment 33
FACILITIES AND EQUIPAGE: 34
6 - Unique or Peculiar Facilities 34
7 - Buildings and Their Condition 39
8 - Unique and/or Peculiar Capabilities and Capacities 44
9 - Acreage Available for Building 53
10 - Administrative Space 55
11 - Industrial Waste 55
WORKLOAD AND CAPABILITIES: 57
12 - Core Capabilities (DoD) 57
13 - Core Workloads 61
14 - Other Workloads (Above Core) 63
15 - Unique and/or Peculiar Workloads 69
16 - Scope of Work Performed 72
17 - Interface with Customers 79
COSTS: 86
18 - Real Property Maintenance (RPM) 86
19 - Annual Operating Costs 86
20 - Environmental Compliance 87
21 - Local Wage Rate 88
22 - Programmed Capital Investments 88

specific break out is requested by the question. Individual Military Departments in their Service specific data calls, may measure data in different commodity groups or categories, but for the Joint Cross Service analysis, these commodity groups must be utilized.

9. Data will be amounts as of the end of the applicable fiscal year.

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

CAPACITY

1. Capacity Utilization

1.1 Calculate the capacity index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed in direct labor hours (DLHs) in Table 1.1.a by commodity groups for the Fiscal Years requested.

Table 1.1.a: **Capacity Index**

	COMMODITY GROUP	INDEX (DLHs)				
		FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
1C1	TRANS/TNKR/BOMB	818059	809279	795168	820939	818908
1C3	LIGHT COMBAT	1458121	1442471	1417319	1463251	1459632
	1 SUB-TOTAL	2276180	2251749	2212487	2284190	2278540
2B	ACFT STRUCTURES	228872	226469	222549	229750	229181
2C	HYD/PNEU	486515	483267	477162	493066	491846
2D	INSTRUMENTS	280965	278014	273202	282041	281343
2G	AVIONICS/ELECTRIC	451738	448854	443344	458154	457020
2J	MANUFACT/FABRICATION	530012	590095	702839	496591	512847
	2 SUB-TOTAL	1959738	2026699	2119096	1959602	1972237
7A	RADAR	740277	715127	681745	704151	702409
7B	RADIO	338449	336145	330300	341150	340306
7C	WIRE	212354	201920	207253	214063	213534
7E	NAV AIDS	277433	275643	270847	279745	279054
7F	E-O NIGHT VISION	136541	156610	174836	180581	180134
7G	SATELLITE CONT/SENSORS	171861	170701	167733	173245	172816
	7 SUB-TOTAL	1876915	1865146	1832714	1892935	1888253
10D	GROUND GEN	96777	99724	97957	101131	100881
10E	OTHER	74209	66176	60509	61537	61385
	10 SUB-TOTAL	170986	165900.3	158466	162668	162266

12A	TACTICAL SYS	401036	397202	390254	402459	401464
12B	SUPPORT EQUIP	328121	324984	319299	329284	328470
	12 SUB-TOTAL	729157	722186	709553	731743	729934
14	OTHER	36974	36635	35999	37164	37072
	GRAND TOTAL	7068314	7068315	7068315	7068302	7068302

1. Capacity Utilization, continued

1.2 Calculate the utilization index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed as a percentage (%) in Table 1.2.a by commodity groups for the Fiscal Years requested.

Table 1.2.a: **Utilization Index**

COMMODITY GROUP		INDEX (%)				
		FY95	**FY96**	**FY97**	**FY98**	**FY99**
1C1	TRANS/TNKR/BOMB	78.76	78.60	73.04	71.94	69.57
1C3	LIGHT COMBAT	81.94	81.77	75.98	74.84	72.37
	1 SUB-TOTAL	80.80	80.63	74.92	73.80	71.36
2B	ACFT STRUCTURES	77.57	77.39	71.90	70.82	68.49
2C	HYD/PNEU	83.18	82.67	76.44	75.23	72.75
2D	INST	77.56	77.38	71.89	70.83	68.48
2G	AVIONICS/ELEC	83.61	83.07	76.78	75.56	73.07
2J	MFG & FABRICATION	78.35	78.03	73.37	71.44	69.08
	2 SUB-TOTAL	80.54	80.09	74.13	73.20	70.76
7A	RADAR	65.77	67.21	64.37	63.37	61.28
7B	RADIO	69.25	68.83	63.96	62.97	60.90
7C	WIRE	68.89	68.47	63.62	62.64	60.57
7E	NAV AIDS	69.36	68.92	64.04	63.05	60.97
7F	E-O NIGHT VISION	90.38	81.14	63.62	62.64	60.57
7G	SATELLITE	68.91	68.49	63.64	62.66	60.59
	7 SUB-TOTAL	63.05	62.92	58.20	57.30	55.41

10D	GROUND GEN	98.49	94.36	87.70	86.39	83.54
10e	OTHER	90.20	99.85	99..70	99.70	96.41
	10 SUB-TOTAL	94.89	96.55	92.29	91.42	88.41
12A	TACTICAL SYS	81.62	81.35	75.60	74.55	72.09
12B	SUPPORT EQUIP	81.62	81.35	75.60	74.55	72.09
	12 SUB-TOTAL	81.62	81.35	75.60	74.55	72.09
14	OTHER	88.08	87.76	81.54	80.32	77.67
	GRAND TOTAL	78.15	77.94	72.35	71.27	68.92

Note: All percentages in the above table rounded to the nearest hundredth's.

1. Capacity Utilization, continued

1.3 Assuming (a) the current projected total workload remains as assigned; (b) that sufficient production demand is available to justify maximum hiring, with no significant investment in capital equipment; and (c) no major Military Construction additional to that already approved and funded: what is the maximum extent to which operations, by commodity group, could be expanded for depot maintenance work at your activity, based on the current and future planned workload mixes? Please provide your response in the absolute maximum number of direct labor hours (DLHs).

Table 1.3.a: **Maximum Potential Capacity**

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
1c1. Trans/Tank	957392	945451	947860	985342	982904
1c3. Light Combat	1475270	1456105	1464386	1523901	1520131
1d. Other	163240	161743	158928	164078	163672
Total	2595902	2563299	2571174	2673320	2666707
2b. Aircraft Structures	676284	668321	584927	526321	524929
2c. Hydraulic/Pneumatic	715917	737375	805020	817254	815232
2d. Instruments	514802	523896	526126	542858	541515
2g. Avionics/Electronics	727702	781391	844139	871761	869605
2j Manufact/Fabrication	764072	852765	1011419	695905	719639
Total	3398057	3563749	3794918	3475111	3491972
7a. Radar	1040612	1225877	1220363	1238306	1235243
7b. Radio Communications	844005	678893	711464	736206	734385
7c. Wire Communications	231903	229778	225779	233094	232517
7d. Electronic Warfare	9777	9687	9519	6552	6536
7e. Navigational Aids	567725	482186	480596	502720	501476
7f. Electro-Optics/Night Vis	136541	166510	209060	215834	215300
7g. Sat Control/Sensors	185523	183823	180623	186475	186014
Total	3016086	2976753	3037404	3119187	3111471
10d. Ground Generators	96777	111402	109463	113010	112730
10e. Other	74209	66176	60509	61537	61385
Total	170986	177578	169972	174546	174115
12a. Tactical Systems	470834	455459	420488	452956	451835
12b. Support Equipment	446854	453379	409226	358390	357504
Total	917688	908838	829715	811346	809339
14. Other	37105	36764	36125	37295	37203
Total	10,135,824	10,226,981	10,439,307	10,290,807	10,290,807

CAPACITY

2. Plant Replacement Value

2.1 What is the estimated Plant Replacement Value (PRV) as of the end of each Fiscal Year of your depot maintenance activity expressed in thousands of dollars ($K) as a function of the facilities and equipment? Provide your answer in Table 2.1.

Table 2.1: **Expenditures and Equipment Values**

PRV	$ K				
	FY 1995	**FY 1996**	**FY 1997**	**FY 1998**	**FY 1999**
Facilities	2,499,770	2,549,765	2,626,258	2,757,571	2,950,601
Equipments	532,137	550,025	601,572	626,673	668,116
TOTAL	3,031,907	3,099,790	3,227,830	3,384,244	3,618,717

CAPACITY

3. Programmed Workload

3.1 Given the current configuration and operation of your activity, provide the programmed depot level workload by commodity group in Tables 3.1.a and 3.1.b. Express your answer in both dollars ($K) and direct labor hours (DLH) for the Fiscal Years requested.

Table 3.1.a: **Programmed Workload**

COMMODITY GROUP	$ K				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
1 Aircraft Air Frame					
1a Rotary	0	0	0	0	0
1b Vistol	0	0	0	0	0
1c Fixed Wing	0	0	0	0	0
1c1 Trans/Tnkr/Bomb	55870	55297	51343	53678	53087
1c2 Comm And Cont	0	0	0	0	0
1c3 Light Combat	103600	102537	95206	99534	98439
1c4 Admin/Training	0	0	0	0	0
1d Other	0	0	0	0	0
2 Aircraft Components	0	0	0	0	0
2a Dynamic Components	0	0	0	0	0
2b Aircraft Structures	15393	15236	14146	14789	14626
2c Hydraulic/Pneumatic	35091	34730	32248	33714	33343
2d Instruments	18895	18701	17364	18153	17953
2e Landing Gear	0	0	0	0	0
2f Ordanance	0	0	0	0	0
2g Avionics/Electric	32750	32414	30097	31464	31118
2h Apu	0	0	0	0	0
2i Other	0	0	0	0	0
2j Manufacturing/Fab	37325	42676	48298	34668	34654
3 Engines	0	0	0	0	0
3a Aircraft	0	0	0	0	0
3b Ship	0	0	0	0	0

3c Tank	0	0	0	0	0
3d Blades/Vanes	0	0	0	0	0
4 Missiles	0	0	0	0	0
4a Strategic	0	0	0	0	0
4b Tactical/Mlrs	0	0	0	0	0
5 Amphibians	0	0	0	0	0
5a Vehicles	0	0	0	0	0
5b Components	0	0	0	0	0
6 Ground Combat Vehicles	0	0	0	0	0
6a Self-Propelled	0	0	0	0	0
6b Tanks	0	0	0	0	0
6c Towed	0	0	0	0	0
6d Componets	0	0	0	0	0
7 Grnd & Ship Com & Elec	0	0	0	0	0
7a Rdr	42215	41783	38795	40559	40112
7b Rdo	20323	20116	18676	19526	19311
7c Wire	12685	12554	11657	12187	12053
7d Electronic Warfare	0	0	0	0	0
7e Navigation Aids	16687	16516	15335	16033	15858
7f Elec-Optic/Night Vision	10701	11812	9834	10281	10168
7g Satellite Cont/Sensors	10269	10163	9437	9865	9757
8 Auto/Constr Equipment	0	0	0	0	0
9 Tactical Vehicle	0	0	0	0	0
9a Tactical Auto Vehicle	0	0	0	0	0
9b Components	0	0	0	0	0
10 Ground Group	0	0	0	0	0
10a Ground Support	0	0	0	0	0

10b Small Arms/Pers Wpns	0	0	0	0	0
10c Munitions/ Ordnance	0	0	0	0	0
10d Ground Generators	8266	8181	7595	7941	7853
10e Other	5804	5745	5333	5576	5515
11 Sea System	0	0	0	0	0
11a Ships	0	0	0	0	0
11b Weapon Systems	0	0	0	0	0
12 Software	0	0	0	0	0
12a Tacticalsystems	28382	28091	26082	27269	26969
12b Support Equipment	23222	22953	21340	22310	22065
13 Special Interest Items	0	0	0	0	0
13a Bearings Refurbish	0	0	0	0	0
13b Calibration	0	0	0	0	0
13c Test Measurement	0	0	0	0	0
14 Other	2824	2794	2595	2713	2683
Total	480302	482129	455381	460260	455562

Table 3.1.b: **Programmed Workload**

Commodity Group	**DLHs**				
	FY1995	**FY1996**	**FY1997**	**FY1998**	**FY1999**
1 Aircraft Air Frame	0	0	0	0	0
1a Rotary	0	0	0	0	0
1b Vistol	0	0	0	0	0
1c Fixed Wing	0	0	0	0	0
1c1 Trans/Tnkr/Bomb	644331	636094	580751	590578	569688
1c2 Comm And Cont	0	0	0	0	0
1c3 Light Combat	1194779	0	1076883	1095106	1056368
1c4 Admin/Training	0	0	0	0	0
1d Other	0	0	0	0	0
2 Aircraft Components	0	0	0	0	0

2a Dynamic Components	0	0	0	0	0
2b Aircraft Structures	177529	175259	160011	162719	156963
2c Hydraulic/Pneumatic	404687	399513	364754	370927	357806
2d Instruments	217908	215122	196406	199729	192664
2e Landing Gear	0	0	0	0	0
2f Ordnance	0	0	0	0	0
2g Avionics/Electric	377690	372862	340422	346182	333936
2h Apu	0	0	0	0	0
2i Other	0	0	0	0	0
2j Manufact & Fabrication	415285	460446	509372	354779	354279
3 Engines	0	0	0	0	0
3a Aircraft	0	0	0	0	0
3b Ship	0	0	0	0	0
3c Tank	0	0	0	0	0
3d Blades/Vanes	0	0	0	0	0
4 Missiles	0	0	0	0	0
4a Strategic	0	0	0	0	0
4b Tactical/Mlrs	0	0	0	0	0
5 Amphibians	0	0	0	0	0
5a Vehicles	0	0	0	0	0
5b Components	0	0	0	0	0
6 Ground Combat Vehicles	0	0	0	0	0
6a Self-Propelled	0	0	0	0	0
6b Tanks	0	0	0	0	0
6c Towed	0	0	0	0	0
6d Components	0	0	0	0	0
7 Grnd & Ship Com & Elec	0	0	0	0	0
7a Rdr	486853	480831	438816	446239	430454
7b Rdo	234382	231388	211254	214829	207230
7c Wire	146287	144417	131852	134083	129340
7d Electronic Warfare	0	0	0	0	0
7e Navigation Aids	192442	189962	173453	176388	170149
7f Elec-Optic/Night Vision	123412	127071	111234	113117	109115

7g Satellite Cont/Sensors	118427	116913	106741	108547	104707
8 Auto/Constr Eq	0	0	0	0	0
9 Tactical Vehicles	0	0	0	0	0
9a Tactical Auto Vehicles	0	0	0	0	0
9b Components	0	0	0	0	0
10 Ground Group	0	0	0	0	0
10a Ground Support	0	0	0	0	0
10b Small Arms/Pers Wpns	0	0	0	0	0
10c Munitions/Ordnance	0	0	0	0	0
10d Ground Generators	95319	94099	85913	87366	84276
10e Other	66934	66078	60329	61350	59179
11 Sea Systems	0	0	0	0	0
11a Ships	0	0	0	0	0
11b Weapon System	0	0	0	0	0
12 Software	0	0	0	0	0
12a Tactical System	327324	323140	295026	300018	289405
12b Support Equipment	267809	264385	241383	245468	236785
13 Spec Interest Items	0	0	0	0	0
13a Bearings Refurb	0	0	0	0	0
13b Calibration	0	0	0	0	0
13c Test Measurement	0	0	0	0	0
14 Other	32567	32151	29353	29850	28794
Total	5523964	5509051	5133950	5037275	4871138

CAPACITY

4. Service Centers of Excellence

4.1 If your activity has been designated as a Service Center of Excellence for any of the commodity groups, please identify them below.

Aircraft Systems:

F-111
A-10
T-39
F-22
Aircraft Battle Damage Repair.

Electrical Components:

Per AFMCI 21-XX, the following family groups of Electrical Components are assigned to SM-ALC:

Electrical
Aircraft, Motors, Gearboxes/Actuators
Resistors
Filters And Networks
Switches
Connectors
Relays,Connectors, Solenoids
Coils And Transformers
Contact Brushes And Electrodes
Synchros And Resolvers
Miscellaneous Components
Motors
Panels And Regulators
Switches And Contacts
Regulators, Generators And Alternators
Converters, Rotating
Converters, Non-Rotating
Batteries, Primary
Batteries, Secondary
Miscellaneous Power And Distribution Systems

Indoor And Outdoor Lighting Fixtures
Vehicular Light And Fixtures
Aircraft Alarm And Signal System
Miscellaneous Alarm And Signal System
Capacitors
Fuses And Lightning Arrestors
Circuit Breakers
Lugs, Terminal, And Terminal Strips
Electron Tubes
Semiconductors
Microelectronic Circuit Devices
Handsets, Headsets, Microphones, Speakers
Insulators
Hardware And Supplies
Cables, Cords & Wire Assemblies
Wire And Cable, Electrical
Portable And Hand Lighting Equipment
Generators And Generators Sets

The following lists some of SM-ALC's specialties in Electrical Accessories and the weapon systems supported:

Commodity Group	Weapon Systems
Airborne Generators	B52, EC135, A7, KC135, C5A, C131, C141, A10, F111, F15, F16, F106, F4, F5, T38, E3A, C130
Generator Control Units	C130, KC135, F111, F15, B1, F4, RF4, F106, C5A, EC135, RC130, A10, E3A, F16, F5, E3A, C141,T38
Control Panels	F111, C141, B52, C130, KC135, RF4, C5A, A10, T38, C5B, F111
Voltage Regulators	B52, C130, C141, HH53, KC135, MULTI ACFT, F111
Inverters	C130, MULTI ACFT, B52, F5, A7, T38, B52, KC135
Frequency Converters	MULTI ACFT

Power Supplies	C5, C141, F106, B52, KC135, C130, EC135, F4, F111, F16, A10, F5, E3A
Battery Chargers	MULTI ACFT, B52, F16
Motors	F111, B52, MULTI ACFT, T39, B52, C5, C130 C141,F5, C5, F4, F15, A10, T38, E3A, OV10, T33
Aircraft Linear/Rotary Actuators	F111, C5A, KC135, RC135, B52, T37, C130, C141, F4, F106, F5, F15, A10, E3A, F16
Aircraft Screw Jacks	C5, C130, C141, KC135
Winches	C5, C141, C130
Gear Boxes	C5, F16, B52
Miscellaneous Electro-mechanical	B52, C130, F111, MULTI ACFT, F4, F106
Assessories	KC135, C5, C141, OV10, F16, F15, TPS43A, E3A, A10
Ground Power Generators 5KW-200K (Gasoline, Diesel and Turbine powered) (Stationary and Mobile Units)	ALL ACFT, GND COMMUNICATIONS, BARE BASE ,FORWARD AIR CONTROL,DISASTER RELIEF AND ANY OTHER REQMT FOR AC POWER

Hydraulics/Pneudraulics - Fluid Driven Accessories:

Actuators
Cylinders/Valves
Flight Control Sytems
Pumps, Motors

The following lists some of SM-ALC's specialties in Hydraulics/Pneudraulics and the weapon systems supported:

Commodity Group	Weapon Systems
Hydraulic Fluid Driven	Test and repair the following hydraulic/

Components and Pneudraulics Air Driven Components	pneudraulic components: actuators, servo actuators, accumulators, valves, servo valves, cylinders, motors, manifolds, pumps, control boxes, servo dampers, dash pots, reservoirs, gearboxes, brake assemblies, snubber assemblies, filter assemblies, compensators, fan assemblies, mode selector assemblies and pitch ratio control assemblies. Associated with the following aircraft systems: F-111, F-4, F-15, F-16, F-106, F-117, F-5, F-18, B-1B, B-2, C-130, C-141, KC-135, C-17, C-5, CH3, C-123, C-122, A-10, A-7, A-6, S-3, 02A, H-53, E3A, T-37, T-39, and T-38

Flight Control Instruments:

Aims
Altimeters
Transducers
Airspeed Computers
Central Air Data Computers (Cadc)
Vertical Velocity & Airspeed Indicators
Flight Data Recorders
Attitude Indicators
Attitude Reference Indicators
Horizontal Situation Indicators (Hsi)
Stall Warning
Position Transmitter Indicators
Mach Meters
Attitude, Heading Indicators
Accelerometers
Amplifiers/Power Supply

The following lists some of SM-ALC's specialties in Flight Control Instruments and the weapon systems supported:

Commodity Group	Weapon Systems

Accelerometers	F-15, E3A
Altimeters	F-15, F-111, C-141, C-135, Multi-Acft
Transducers	F-16, A-10
Central Air Data Indicators	C-5, C-141, A-7, F-5, F-111, A-10, E-3A, C-130, C-141, C-5, Multi-Acft
Flight Data Recorders	C-141, C-130, C-135
Attitude Indicators	F-6, F-15, C-141, C-5, B-52, HH-53, E-3A, F106, F-111,B-52, C-130, C-141, C-5, Multi-Acft
Horizontal Situation Indicators (HSI)	B-1B, C-130, F-4, F-16, Multi-Acft
Stall Warning	C-141
Position Transmitter Indicators	A-7, C-141, C-5
Cockpit Voice Recorder	C-141
Standard Flight Data Recorder (SFDR)	C-130, C-141, B-52, F-111, C-135, T-37, F-15 C-17, T-38, E-3A, C-135, T-43A, OA-37B, SH-60, C-27A, T-1A, Multi-Acft
Crash Survivable Flt Data Recorder (CSFDR)	F-16A, F-16B

Ground Communications And Electronics:

Peculiar C3I Test Equipment
Radio/TV/Comm/NAV/Metro
Indicator Group
Computer Group
Search Radar Equipment
Electronic Countermeasures Equipment

Meteorological Instruments And Apparatus
Radar Training Device
Automated Data Processing
Central Processing Unit
I/O And Storage
Accessorial Equipment
ADP Components

Rigid-Wall Shelters

Night Observation/Night Vision:

The following lists some of SM-ALC's specialties in Night Vision and the weapon systems supported:

Commodity Group	Weapon Systems
M-1 Electronics Unit M-1 Power Control Unit Common Power Cont. Unit M-1 Laser Rangefinder AN-VVS-2 Drivers Viewer M-1 Thermal Imaging System on all Combat Vehicles	M1 Main Battle Tank
Tank Thermal Sight Power Control Unit Electronics Unit Commanders Relay Laser Rangefinder	M-60-A3 Main Battle Tank
Bradley Fighting Vehicle	Intergrated Sight Unit Commanders Relay
AN/TAS-4, 4A, 4B, 4C, 4D	Manportable Common Thermal Night Sights Part of the Tube Launched Optically Tracked Wire
AN/TAS-5 (Basic Sight) AN/TAS-6	Guided Missile Systems, (TOW and Dragon)

AN/TVQ-2 Ground Vehicular Laster Locator Designator AN/PAQ-1 Laser Target Designator AN/PAQ-3 Modular Universal Laser Equipment	Ground Laser Target Designators
AN/PVS-2 and 4 Individual Weapons Sights AN/TVS-2 and 5 Crew Served Weapons Sights AN/PVS-5, 7A and 7B Night Vision Goggles AN/AVS-6 Aviators Night Vision Imaging System	Night Vision Systems

Other TRCs:

Laser Designator
Sights
Optical Sighting/Ranging

Technology Application Program Management (TAPM) Assignments:

Fiber Optics and Fiber Optic Connectors
Micro-Electronics
    Very High Speed Integrated Circuits (VHSIC)
Advanced Composites

McClellan Nuclear Radiation Center (MNRC).

McClellan Air Force Base is the DoD Center of Excellence for Nuclear Radiography. The MNRC houses a 1 megawatt research type reactor. The facility was originally designed to perform neutron radiography of aircraft structures. That capacity has been expanded to include nuclear and space survivability and Air Force treaty verification support. The MNRC is the only reactor facility in the Air Force and provides multiple neutron output selections. The MNRC is the only DoD licensed source for providing Neutron Transmutation Doping for silicon used in the semiconductor industry. We are an authorized source under the Defense Production Act Title III Program for the purpose of expanding domestic production capacity and accelerating development in the semiconductor field.

The capability to perform for in-core irradiations and neutron radiography at the same time provides the versatility to accomplish research and development projects simultaneously with the military mission. The research applications include the ability to study and evaluate the effects of nuclear radiation on electro-optic components and Neutron Capture Therapy research and development. Neutron radiography is extremely effective in detecting very low levels of hydrogen and corrosion. This facility, in concert with the adjacent NDI facility at SM-ALC, provides for the most complete and comprehensive NDI facility in the United States.

Non-Destructive Inspection (NDI) Facility.

SM-ALC has the most comprehensive NDI facility in the defense industry. We have all the conventional processes at the state-of-the-art, including X-Ray, Ultrasound, Mag Particle, Dye Penetrant and Eddy Current. We offer Robotic and conventional applications to inspect entire aircraft as well as components. We have the ability to provide film, video, and real-time output products. The inclusion of the Neutron Radiography facility as a capacity or capability makes this facility entirely unique. The combination of so many NDI disciplines makes the SM-ALC operation the premier NDI facility in DoD.

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

MEASURES OF MERIT

Geographic

1. Location

1.1 Specify any special strategic importance or military value consideration of your activity accruing from its geographical location.

Activity Location Description of Strategic Importance/Military Value

Activity: Sacramento Air Logistics Center

Location: McClellan Air Force Base, California

Description of Strategic Importance/Military Value:

McClellan Air Force Base is located at a major transportation hub:

- Located on the main east-west railroad line, between East Coast and the San Francisco Bay area, with connections via rail tracks throughout strategic McClellan points of shipping/receiving. Close to SP Railroad Marshaling Yard in Roseville.
- At the intersection of Interstate Highways I80 (E-W) and I5 (N-S).
- On an Air Force base and near four other commercial airports or major Air Force bases (Travis AFB, Beale AFB, Metro Airport, and Mather Field).
- Near Sacramento Port Facility for Sealift capability. McCellan AFB owns deep water access property approximately 15 miles away providing this center with opportunities to receive shipment of numerous government commodities via ocean transportation.
- Ideal staging location for any required military build up in the Pacific Rim (Alaska, Hawaii, Korea, Russia, Japan, China, Southeast Asia, Australia, New Zealand, Pacific Islands, West Coast of South America).

Extensive local educational facilities. Within 25 miles of McClellan AFB there are 12 colleges offering graduate degrees, 17 colleges offering undergraduate degrees, and 110 vocational schools.

SM-ALC is one of only two remaining west coast aviation depots.

Air Force Academy Summer Training Center.

Near DLA Regional Center in Tracy, CA.

Near Lawrence Livermoore Laboratories.

Less than 150 miles from Silicon Valley.

45 miles from Sharpe Army Terminal.

Sacramento Municiple Utility District (SMUD) electrical power Sub Station located on McClellan AFB.

Excellent climate with mild winters (lower utility usage than most other locations in winter, never a lost day due to inclement weather), and dry summers (allowing outdoor work and storage).

Geographic, continued

2. Environmental Compliance

Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

2.1 Is your activity in full compliance with all Federal, state, and local environmental regulations? If not in full compliance, provide a comprehensive list of individual regulations that require actions to be taken. What compliance waivers have been granted? When must the activity come into compliance?

Type Regulation Waiver (Date Expires)Date Must be in Compliance

Required Action	Type[1] & Regulation ID	Waiver[2] (Dates Must be in Compliance)
Plating Shop Tunnel (Re-line)	(S) CCR[3]Title 22	FY93 MCP to be completed May 97

[1] Type Regulation Key: (F)= federal, (S)= state, (L)= local
[2] No compliance waiver has been issued by this agency. Operations can continue until corrected.
[3] Sacramento Metropolitan Air Quality Management District
[4] CCR= California Code of Regulations

2.2 Has any actual or programmed work at this installation been restricted or delayed because of environmental considerations, such as air or water quality? If so, provide the details of the impact of the restrictions or delays.

NO. Actual and programmed work at McClellan AFB has always been planned within an environmentally conscious base planning structure. There are currently no restrictions to construction or work that can not be surmounted within the effective working and negotiating relationship McClellan AFB has with State and Federal Agencies.

Programmed Work	Restriction/Delay	Describe Impact
N/A	N/A	N/A

Geographic, continued

3. Environmental Restrictions

Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

3.1 Are there any special programs relating to environmental or industrial waste considerations for your activity? If so, provide the details.

No Restrictions

3.2 Within what provisions must the activity operate with regard to disposal of hazardous wastes and radioactive materials?

Type	Provisions	Describe
No Restrictions		

Geographic, continued

4. Other Collocated Activities

4.1 Are there any collocated activities that directly benefit or relate to the depot maintenance activity? If yes, list and describe the impact of each. Include benefits derived from being collocated.

4.2 Do collocated activities support, or are they supported by, the depot maintenance activity?

4.3 How would these activities and the depot maintenance activity function if they were not collocated?

1. Inventory Control Point activities and Integrated Product Teams

4.1: A major aspect of the operation of the Air Logistics Centers is the collocation of the Inventory Control Point (ICP) activities, program management and sustaining engineering activities with the Depot. This collocation leads to the development of Integrated Product Teams (IPT) that follow product lines and are designed to quickly respond to customer concerns and requirements. Using the team approach optimizes the expertise of each represented discipline. The focus is on a quality product function provided on time, insuring the highest level of weapons system readiness.

The IPT is cohesive team with common priorities, philosophy and customer focus. The team operates in a proactive mode and appropriate measures are taken to ensure customer support. Process Improvements can be immediately implemented. Material shortages, lack of assets and unforeseen in-house production issues are kept to a minimum by monitoring factors that could impact the production schedule. A key responsibility is to identify and resolve any potential issue before production schedules are impacted. Potential issues are resolved before they can escalate, thus ensuring solid customer support. The IPT collocation within the same division is the most efficient business practice that directly benefits our customer. A typical IPT at SM-ALC is described below:

IPT Members	Function
Equipment Specialist	Technical Responsibility for System Performance
Inventory Management Specialist	Management of items to determine buy and repair requirements for worldwide logistics support

Program Manager	Management responsibility for all aspects of workload including new acquisition
Industrial Engineer/Planner	Establishes and Maintains labor and material standards and accomplishes work simplification studies
Elect/Mech Engineer	Provides engineering support for all aspects of workload
Production Supervisor	Responsible for execution performance of workload requirements
Scheduler	Schedules work into the shop and controls in-process workloads
Production Support	Ensures timely requisitioning of material
Production Technician	Accomplishes Repair

The benefit to depot maintenance is the quick turnaround of engineering and technical support. Without a collocated ICP function, a repair technician could wait weeks for an engineering fix. First, he/she would have to write up the problem (and proposed solution, if at hand), mail it to the engineer, and wait for reply. If the engineer cannot solve the problem "on paper", travel to the repair site would be necessary. In the meantime the system could not be repaired and other systems are back-logged awaiting work. With a collocated ICP the engineer can be on site in 15 minutes approve a fix (if available), approve a technical order change and start the paperwork in a half day. Benefits to depot maintenance are a much improved schedule reliability, significantly lower prices by reducing down time, and a quantum leap in customer satisfaction. (See attached discussion paper, which describes the relationship for a *typical* commodity group, C4I)

4.2: The collocation of ICP, IPT and Depot Maintenance functions forms a synergistic symbiotic relationship, with each activity supporting the others.

4.3: If the functions were not collocated, all functions would be handicapped in their ability to carry out their responsibilities. Depot response would be slower and carry a higher price tag. Product performance would be reduced since each function would be operating separately without benefit of efficiencies and ideas provided by the others. The ultimate loser would be the customer of the product line being supported, i.e., the operator in the field that requires the system in order to fulfill his/her defense mission.

2. Collocated Depot Operations.

4.1: Many depot operations provide common services to all other depot operations. These include:

Plating	Plastic/Bonded Repair	Motor Rewind
Non-Destructive Inspection	Heat Treat	Precision Measurement Equipment Unit

Tool, Paint, Cleaning	Tubing Shop	Software Support
Woodmill	Parachute Shop	Sheetmetal Supply Parts
Manufacturing	Cordage Shop	Autoclave
Weld Shop		

4.2: These operations are part of the depot and support the remainder of the depot.

4.3: If any of the collocated activities are not available, the jobs would have to be contracted out or not done. These activities help alleviate work stoppage conditions.

3. Defense Logistics Agency (DLA) Defense Distribution Depot, McClellan.

4.1: The DLA Defense Distribution Depot located on McClellan AFB has the mission to stock, store, and issue defense goods. They work together with the SM-ALC depot maintenance operation. DLA provides repairable carcasses to the depot, which in turn provides serviceable goods to DLA for distribution.

4.2: The depot and DLA support each other.

4.3: The primary impact of separating the DLA distribution depot from the SM-ALC maintenance depot would be lengthening of the supply pipeline. There would be an increase in the time it takes for the maintenance depot to obtain reparable assets and an increase in the time to return serviceable assets to the distribution depot.

4. Environmental Process Improvement Center (EPIC)

4. 1: EPIC is a "first-of-a-kind" political/technical partnership, among McClellan AFB, the EPA, and CAL-EPA. EPIC improves processes and saves DMIF operating and cleanup monies by establishing a culture of continuos improvement. It facilitates the sharing of knowledge and encourages technology transfer by the three governmental participants. EPIC aggressively applies innovative environmental restoration and pollution prevention technologies from research and development activities to permanently restore contaminated sites, reduce the use of hazardous chemicals and wastes, and improve depot processes. Initial specific program improvement areas include: application of innovative technology for remediation and hazardous waste minimization; streamlined technology transfer and insertion; shared compliance strategies; establishment of a regional environmental resource center; expedited site cleanup; and establishment of test sites for new technology tests and employment.

4.2: EPIC collocation allows arranging for R&D technology tests on actual depot processes to reduce environmental waste, disposal, and cleanup costs. The interface of the three bureaucracies

involved in getting the funding, technology, target processes, and expertise into a single focus on an environmental enhancement is superb. The successful depot tests are usually fully implemented into depot processes immediately, avoiding the unwieldy bureaucratic delays and costs.

4.3: Without collocation, the advantages of having the direct interface between the depot and other governmental agencies will be lost and the streamlined procedures for R&D technology transfer, funding, and testing will be lost. The opportunities for advancing environmental preservation enhancements will be much more difficult and costly.

5. 652 Combat Logistic Support Squadron (CLSS)

4.1: The 652 CLSS provides aircraft repair support for SM-ALC. The depot provides field training for the squadron, which in turn provides direct labor support for the depot. Support includes aircraft and avionics component repair.

4.2: The activities support each other.

4.3: If not collocated with the depot, the CLSS would receive less training resulting in reduced readiness. In turn, the depot would lose the support of the squadron.

6. Secure Storage

4.1, 4.2, 4.3: Bldg. 1069 on McClellan AFB contains 220,748 square feet of secure storage. Additional data on this facility are classified.

7. Laboratories

4.1: The 'Lab' facilities and capabilities offer an appropriate corollary function to the activities described in the JCSG data call for Depot. The laboratories are collocated at McClellan AFB (primarily bldgs. 618, 620 and 243) and provide many benefits to depot maintenance. The activities and benefits are related in the Branch Mission Statements:

-SYSTEMS TECHNOLOGY: Mission is to develop and field advanced systems technology products which meet the requirements of the Air Force and other federal agencies. Specific mission elements include but are not limited to:

-integration of advanced technology systems into existing weapons systems
-technical consultation and support for real-time embedded systems
-manage Continuous Acquisition and Life-cycle Support (CALS)
-manage the development and implementation of Flexible Computer Integrated Manufacturing (FCIM)

-manage Software Configuration Control Center -develop and manage Ada and Software Reuse Repository

-ELECTRO-OPTICS TECHNOLOGY CENTER: Mission is to design, develop, demonstrate and transition electro-optic technology in an effort to provide cost effective solutions for new and existing weapons systems (Avionics, Space and Ground Communications). Our customers are the Department of Defense, Federal Aviation Administration, Department of Energy, Environmental Protection Agency and others.

-USAF ADVANCED COMPOSITES PROGRAM OFFICE: Mission is the development and introduction of advanced composites technologies into the Air Force. Our mission elements include but are not limited to:

-development of the expertise necessary to support advanced structures in present and future weapons systems.

-resolution of structural and service-life problems via application of advanced composites.

-provide the infrastructure for technology of advanced composites technology transfer to other commands.

-ADVANCED MICROELECTRONICS TECHNOLOGY PROGRAM OFFICE: Mission is to manage insertion of Advanced Microelectronics Technologies into fielded weapons systems across all DoD services and other Federal agencies. Our responsibilities include Logistics Retrofit Engineering which provides solutions to obsolescence problems at all levels of indenture (Chip, board, sub-system, and system); and VHSIC Hardware Description Language (VHDL) Program Office. The VHDL office provides management of VHDL technologies throughout the Air Force.

-EXTENDIBLE INTEGRATED SUPPORT ENVIRONMENT (EISE): Mission is to provide an integration and test environment for Special Operations Forces (SOF), F-111 and A-10 Integration Support Facilities. They provide an embedded computer testing platform for the real-time testing of avionics, Communications/Electronics and missile systems.

All these mission elements have instances of direct correlation to the depot maintenance effort. The correlation is primarily indirect in nature (CALS, FCIM, ELECTRO-OPTICS, ADVANCED COMPOSITES, EISE, AND MICROELECTRONICS support the weapons systems assigned here as well as many others.) The depot maintenance activity benefits from their collocation by making use of the proximity to solve problems more quickly and easily. A hands-on approach to problem solving facilitates early resolution.

4.2: The activities reported as 'Lab' are supported indirectly by the depot maintenance activity. Their financial sources are primarily COD and O & M. The perspective that permits this

statement is simply that every activity of the 'Lab' is in support of some System Program Director (SPD).

4.3: Without collocation of these labs with the depot, there would be a regression in the ability to insert new technologies into weapon systems that are in sustainment.

8. Other Activities

4.1: A number of satellite activities receive support directly from the depot maintenance operation at McClellan AFB. These include:

LA-(4.1) 60 EMS/MAEB, Travis AFB, CA.
Det 1, 4950th Test Wing/MAS, Edwards AFB, CA
US Coast Guard, McClellan AFB, CA
Air National Guard Unit, McClellan AFB, CA
Beale AFB, CA.

SM-ALC provides the above listed organizations with a wide variety of depot supported functions. These activities include tubing manufacturing, ordnance/oxygen service, crane and crane operators, fueling/defueling aircraft, and engine repair/overhaul work. These functions are necessary to the every day operations of squadron(s) and their mission needs.

4.2: The listed organization benefit from collocation with the depot. All the activities listed above are either directly or indirectly supported by the SM-ALC depot maintenance activities. These activities rely on SM-ALC to provide them with products/services in a timely and cost efficient manner that provides enhancement to their mission/operational capabilities.

4.3: Due to the proximate location of McClellan AFB to these activities, the SM-ALC depot maintenance operation provides the customers with products/services that are timely and at a reasonable cost that if provided from another source would cause work/mission disruptions and increased costs.

9. Collocated Activity: Communications Systems

4.1 Benefit/Relationship: McClellan Air Force Base was selected as one of 16 DOD data processing "megacenters" by the Base Realingment And Closure (BRAC) 93 Commision and placed under the Defense Information Systems Agency (DISA) umbrella. McClellan AFB was selected because of the state-of-the-art facilities it posses. This facility has backup power, its own generator system, chilled water for the mainframes, and secure access. Our data processing capacity will increase from 85 million instructions per second to 191 million instructions per

second. As a Megacenter, McClellan AFB is responsible for data processing workloads for the Navy, National Gaurd, and Air Force facilities in a region encompassing Northern California, Oregon, and Washington. The Defense Megacenter, Sacrmento (DMCS) is part of the DISA based in Arlington VA that provides unparalleled support for communication lines and information system products.

4.2 This center provides technical support relating to communications and computer systems hardware, software and networking. The Megacenter has a dedicated staff of highly qualified software engineering/system specialists and programmers to provide engineering services required to design, implement or trouble-shoot any network topology problem. They provide advice on needed protection measures for all our computer systems and facilities and will perform risk analysis on all data systems. The Information Center (in the DMCS) promotes end-user efficiency through training consulting services, technical advice and systems analyses of new requirements. The recently constructed 76,000 square foot automated data processing and telecommunications Megacenter supports regional telecommunications and computer support requiremets of the DOD. The 24-hour operation is also a self-supporting facility with 152 employees and an annual payroll of $6.5 million. This facility contains state-of-the-art equipment using the latest technology to provide every communication need.

4.3 Describe Impact: It is essential that all communication systems be on line. Sacramento customers include the Air Force, the Defense Logistics Agency, U.S Navy, and the Air National Guard. During the next three years, DMC, Sacramento, will pick up transferred workloads from Guam, the Navy in Oakland, Puget Sound in Washington, Bangor Trident Missile Base in Washington, Whidbey Island Naval Air Station in Washington, and Port Hueneme, Naval Civil Engineering Station in California. This excellent organization provides regional telecommunications and computer support requirements for DOD. The information center provides a system compatibility unequaled throughout DOD. This system allows the merging of data from virtually any system to prepare reports and find data inconsistencies. Information security provides total support to DOD activities, SM-ALC and the Air Force's Mission.

Geographic, continued

5. Encroachment

5.1 Have operations at this activity been at all constrained to accommodate requests of the local communities?

Type of Encroachment	Operation Impacted	Describe

There have been no requests by the local community to constrain or restrict operations at McClellan AFB. As a good neighbor to the community, **Self-imposed** noise abatement procedures have been implemented.

5.2 Indicate any encroachment constraints on current or future operations that would restrict future expansion.

Type of Encroachment Constraint on Expansion Describe

There have been no encroachment constraints on current operations. This can be contributed to a Joint Land Use Study which was completed at McClellan AFB in 1986. During that same year the Sacramento Area Council of Governments (SACOG) developed a McClellan AFB Comprehensive Land Use Plan (CLUP). The plan was approved by the Airport Land Use Commission (ALUC) and adopted by both the Sacramento City Council and Sacramento County Board of Supervisors in January 1987. The most recent Air Force AICUZ Handbook land use compatibility tables have been incorporated into a December 1992 CLUP Amendment. When the AICUZ data is changed and authorization is received to release the data, it is provided to SACOG personnel to incorporate into the CLUP. Both the city and county planning departments have taken the necessary steps to incorporate the CLUP restrictions into their respective community and general plans. Enforcement of the CLUP restrictions is being accomplished by either the Zoning Commission, Planning Commission, Sacramento City Council or Sacramento County Board of Supervisors public hearings.

Because of the implementation and enforcement of the CLUP, we do not foresee encroachment as being a constraint for future operations.

MEASURES OF MERIT

Facilities and Equipage

6. Unique or Peculiar Facilities

6.1 List unique or peculiar testing facilities, excluding equipment (e.g. runways, railheads, ports, tracks, ponds, etc.).

6.2 Indicate the reasons that these facilities are required by the depot maintenance function.

6.3 How could the depot maintenance functions be performed without these specialized facilities?

Testing Facility (6.1)	Description of Uniqueness (6.1)	Reason Required (6.2)	Alternative (6.3)
F-111 cold proof	An 8,500 square foot facility used for F-111 airframe certification. The aircraft airframes are stressed on a wing fixture inside an environmental chamber. A computerized program simulates a flight profile of -2.46G and +7.36G, and -3.00G and +7.33G at the 56 degree and 26 degree wing sweeps. Echo characteristics and the structural give allow flaws as little as .007 in to be accurately located. Cooling to -42 deg F increases metal sensitivity and decreases fracture toughness.	The F-111 manufacturers states that this facility offers the only acceptable means of airframe certification. Other Nondestructive Inspection (NDI) methods do not detect all flaws responsible for loss of aircraft. Testing is designated mission essential, and is mandated by Air Force wide flight safety requirements.	No alternatives acceptable for certification and no such capabilities exist elsewhere. SM-ALC is the only asigned Air Force source of repair for this workload.

McClellan Nuclear Radiation Center (MNRC).	The MNRC houses a 1 megawatt research type reactor. The facility was originally designed to perform neutron radiography of aircraft structures. That capacity has been expanded to include nuclear and space survivability and Air Force treaty verification support. The MNRC is the only reactor facility in the Air Force and provides multiple neutron output selections. The 4464 square foot facility is unique in that it has been designed and constructed to contain high levels of radioactivity. The walls, doors and windows are heavily shielded to protect the environment as well as the employees that work there. The facility meets the critical requirements of the Atomic Energy Commission (AEC). In staff are a cadre of health physics employees that ensure our adherence to AEC requirements.	The capability to perform both in-core irradiation's and neutron radiography at the same time provides the versatility to accomplish research and development projects simultaneously with the military mission. The research applications include the ability to study and evaluate the effects of nuclear radiation on electro-optic components and Neutron Capture Therapy research and development. Neutron radiography is extremely effective in detecting very low levels of hydrogen and corrosion. This facility, in concert with the adjacent NDI facility at SM-ALC, provides for the most complete and comprehensive NDI facility in the United States	There is no alternative capability available anywhere.

Non-Destructive Inspection (NDI) Facility	SM-ALC has the most comprehensive NDI facility in the defense industry. We have all the conventional processes at the state-of-the-art, including X-Ray, Ultrasound, Mag Particle, Dye Penetrant and Eddy Current. We offer Robotic and conventional applications to inspect entire aircraft as well as components. The facility contains 8000 square feet of production space. Its construction includes heavy shielding to insure safety and health to the environment as well as the employees. We have ability to provide film, video, and real-time output products. The inclusion of the Neutron Radiography facility as a capacity or capability makes this facility entirely unique. The combination of so many NDI disciplines makes the SM-ALC operation the premier NDI facility.	We offer Robotic and conventional applications to inspect entire aircraft as well as components. We have the ability to provide film, video, and real-time output products. The inclusion of the Neutron Radiography facility as a capacity or capability makes this facility entirely unique. The combination of so many NDI disciplines makes the SM-ALC operation the premier NDI facility in DoD.	Since there is no other comprehensive NDI facility available, much of the testing could not be done at all. That which is available is not in a single location, so would necessitate sending units to multiple locations for testing.

Near Field Test Range	The only DOD facility for testing of Fire Finder, TPQ-36/37, Phased Array Radar.	Fire Finder is an Army competition workload gained by SM-ALC. The test facility is DOD unique to this radar system and was transferred from the Sacramento Army Depot to this center. It has been installed and calibrated in support of this workload. It is unique in that it has precision alignment rails for positioning the Fire-Finder in the chamber.	Since this is the only DOD test range, we would have to contract with the prime contractor, Hughes Division, to support maintenance/repair of this radar system.
1000 Meter Tower	The tower, in conjunction with the test probe, simulate a target for near field calibration of the Fire Finder.	This complements the near field test range. This test facility is vital for checkout of the Fire Finder system after depot maintenance.	Since this is the only DOD Fire Finder test range, we would have to contract with the prime contractor, Hughes Division, to support maintenance/repair of this radar system.
Near Field Probe	The largest one in DOD for calibration of Fire Finder antenna near range beam pattern housed in a close tolerance anechoic chamber.	A unique computer calibrated and operated close tolerated probe for near field antenna beam pattern testing housed in an anechoic room used for Fire Finder radar system antenna calibration and system operational checkout.	Since this is the only DOD test range this size, we would have to contract with the prime contractor, Hughes Division, to support maintenance/repair of this radar system.

Munson Road Test Track	A Mil-Spec designed bumpy road simulating rough terrain	After 20 hours of burn-in time, Fire Finder system is subjected to the Munson Test Track at moderate speeds, then retested for an additional 20 hours of operation prior to release to customer	Capability exists in another service (Army) and contractors. We would obtain this service from them.

Hydraulics/ Pneudraulics Component Repair	Three modern buildings occupying more than 180,000 sq. ft. with a 6000 psi hard plumbed manifold system. The system is expandable to 8000 psi for future use. It is unique to all other types of hydraulic repair facilities; there is no other facility like it! The manifold consists of thousands of feet of stainless steel pipe; the number of settings, valves and meters measures in the hundreds. The facility contains environments of 100,000 class controlled area. State-of-the-art test equipment, both manual and automatic are hard plumbed to the manifold. This type of system provides better temperature control and constant flow. The configuration eliminates hazardous noise in the work place and allows the test stands to be placed in the assembly work area making the work process more efficient.	The repair of hydraulic/pneudraulic components require highly specialized and constructed facilities as called out by Technical Orders. There are special requirements, i.e. unique power, fluid and air requirements to meet current and future needs.	We would be unable to repair the components that we do without the facility, the repair would have to be contracted out to multiple sources, no single source is able to do all we can. The component could also be purchased new instead of being repaired. SM-ALC is the only assigned Air Force source of repair for this workload.

Flow grind	It is unique to all other hydraulic repair organizations. It is a combination of skills, equipment, facility and workload. The flowgrind unit as a fully equipped machine shop and tool making capabilities and its workload is tied closely with the hydraulic component repair. Flow grinding strives to: (1) retrofit used spools and sleeves. (2) Replace work spools and sleeves/selector sets with new manufactured non-flow ground spools and sleeves employing our new state-of-the-art automated flow grind system. This system is capable of plus or minus 0.000010 inches linear grinding to an edge finish of 8 micro-inches. (3) Precision fitting of old and work valve bodies and restoring the bore to a straight and round condition of plus or minus 0.000020 inches. We routinely achieve a finish of 4 micro-inches on all fitted parts. (4) Perpendicularly is also kept to plus or minus 0.000050 inches. (5) Produce a hydraulic synchronization between metering ports/orifices and corresponding edges on the spool to be consistent tolerance of plus or minus 0.000050 inches. The flow grind shop is the best in the Air Force and in this particular field the most advanced in DOD and possibly the world!	The high tolerance and specialized grinding equipment is necessary to overhaul close tolerance hydraulic/pneudraulic components.	No current alternatives available.

Ground Power Generator & Engine Test Facility	Dynamometer Test capability up to 500 kw for all Air Force aircraft generators and interservice workloads. Facility requires cooling towers and plant air.	Maintain operational Ground Power Generators to provide power for all Air Force aircraft and ground support systems.	No current alternatives available. SM-ALC is the only assigned Air Force source of repair for this workload.
Radome Test	This facility was designed to test F-111 aircraft radomes. It is unique because it can test the F-111's TFR (Terrain Following Radar) and ARS (Attack Radar System) systems for beam deflection, antenna pattern distortion, and RF transmission efficiency.	The F-111 is managed at SM-ALC and the PDM overhaul is also performed here. The F-111 radome test facility was established to support the PDM line.	Can be contracted or relocated. SM-ALC is the only assigned Air Force source of repair for this workload.
Laser Range	Outdoor laser range with controlled access and minimum of 515 meters long to test laser systems.	To test sensitivity parameters of tank laser systems.	Products could not be repaired without specialized facilities. If attempts were made without the facilities the product produced would not comply with directives and specifications.
Laser Test Bed	Only test and calibration equipment of its kind. Used daily to align laser designating equipment for battlefield use.	Required by repair an overhaul technical manuals.	Equipment would be relocated.

AN/FPS-117 Log Support Facility (LOGSET)	The facility is a complete and operational radar system that can be re-configured to operate and emulate various versions of the radar. The LOGSET provides hardware and software support for systems installed in Alaska (Version 1 or V1), Berlin (V2) Saudi Arabia (V3), Canada (V4), Iceland (v5), United Kingdom (Version GE-592-UK), Israel (GE-592-QM), Korea (GE-592-K), and Taiwan (GE-592-PJ). In addition, the LOGSET supports parts that are common with the AN/TPS-59 and AN/TPS-34 radars (owned by the Marine Corps and Egypt).	This facility is required to test hardware and software items before sending out to the field. Because of the many different versions deployed around the world, a re-configurable LOGSET is absolutely necessary to test all outgoing parts to ensure the part will function in the particular radar in which it will be installed.	The only testing alternatives on the older versions of the radar would be to send parts out on a trial and error basis. This method would be unacceptable from both a cost and operational standpoint. SM-ALC is the only assigned Air Force source of repair for this workload.

Communications Nodal Control Element (CNCE) (TSQ-111) ISF	Integrated Logistics Support Facility (ISF). Overhaul/parts repair and emergency assistance worldwide including software support. This is the only shop that supports worldwide CNCE requirements and depot level overhaul. DoD unique test equipment, test software, depot training, and depot tech data were designed for this system. They also serve as management tools for the Inventory Control Point function.	This facility is required to test hardware and software items before sending out to the field.	The only testing alternatives would be to send parts out on a trial and error basis. This method would be unacceptable from both a cost and operational standpoint. SM-ALC is the only assigned Air Force source of repair for this workload.
Modular Control Equipment (MCE) (TYQ-23) ISF	Integrated Logistics Support Facility (ISF). Overhaul/parts repair and emergency assistance worldwide including software support. Designated Technical Repair Center for Air Force and Marine Corps TYQ-23 System. DoD unique test equipment, test software, depot training, and depot tech data were designed for this system. They also serve as management tools for the Inventory Control Point function.	This facility is required to test hardware and software items before sending out to the field.	The only testing alternatives would be to send parts out on a trial and error basis. This method would be unacceptable from both a cost and operational standpoint. SM-ALC is the only assigned Air Force source of repair for this workload.

Electronic Warfare (EW) ISF	Integrated Logistics Support Facility (ISF). Overhaul, repair and testing of 35 separate electronic combat subsystems that comprose the 806L system. This suite of test equipment was designed to support a number of EW systems and is continually modified to accommodate new or modified equipment in the field. They also serve as management tools for the Inventory Control Point function.	This facility is required to test hardware and software items before sending out to the field.	The only testing alternatives would be to send parts out on a trial and error basis. This method would be unacceptable from both a cost and operational standpoint. SM-ALC is the only assigned Air Force source of repair for this workload.
Ground Wave Emergency Network (GWEN) ISF	Integrated Logistics Support Facility (ISF). Overhaul/parts repair and emergency assistance worldwide including software support. Test equipment designed for GWEN and communication secret (COMSEC) requirements.	This facility is required to test hardware and software items before sending out to the field.	The only testing alternatives would be to send parts out on a trial and error basis. This method would be unacceptable from both a cost and operational standpoint. SM-ALC is the only assigned Air Force source of repair for this workload.
A-10/F-111 AISF	This is a special reinforced steel structure with filtered power, special security, and TEMPEST shielding. It is used for testing of the F-111 and A-10 avionics systems and insertion of technological upgrades to these systems.	This facility is required to test hardware and software items before sending out to the field.	There is no known alternative. SM-ALC is the only assigned Air Force source of repair for this workload.

Ground Comm-Electronics Facility	This consists of 14 separate, fully equipped buildings (473K sq ft) used for test and repair of all AF Ground Communications-Electronics systems ranging from hand held radios to computer integrated radar systems. Some of the most complex ground-comm systems in the world are tested in these facilities. A list of unique "hot-mockups" used for the testing and repair is attached.	This set of facilities is required to perform test and repair of all AFF Ground Commuications-Electronics equipment. McClellan AFB is the only source of this capability in the Air Force.	There is no suitable alternative for this capability. SM-ALC is the only assigned Air Force source of repair for this workload.
Instrument and Electrical Components Test Facility	McClellan is home to the largest, most modern, most comprohensive Intrument and Electronic Component Repair Facility in the DoD This facility (90K sq ft) provides test and repair of a fill range of pressure, temperature, humidity and time measurement instruments; flight control and navigational instruments, and flight data cockpit recorders.	McClellan is the sole source for this capability in the Air Force. It is required to provide serviceable instruments and electrical components.	There is no alternative in existence today. SM-ALC is the only assigned Air Force source of repair for this workload.

Facilities and Equipage, continued

7. Buildings and Their Condition

7.1 List the buildings used to perform the depot maintenance functions by category code numbers (five or six digit CCNs), identifying their current condition (adequate, substandard, and inadequate) in Table 7.1 in thousands of square feet (KSF).

Table 7.1: **Facility Conditions**

CCN	Facility Type	Condition / Area (# KSF)			Comments
		Adequate	Substandard	Inadequate	
125977	PMP STN, LF	.17			
141763	TECH LAB	1.975		6.42	
141764	INTEGR SPT FCLTY	24.562			
141765	LAB, Q/C DEP	27.861			
211111	HG MAINT	50.7			
211116	HG, MAINT DEP	824.256			
211152	SHP ACFT GEN PURP	665.373	10.674		
211153	SHP NON-DESTR INSP	50.973			
211154	SHP A/M ORGL	351.866			
211159	ACFT COR CON	100.562			
211161	COR CON UTIL STOR	8.785			
211175	MAINT DOCK, M/A	154.128			
211179	MAINT DOCK, FL SYS	49.827	4.56		
211183	TST CELL		52.301		
211254	SHP ACFT & ENG DEP	235.398			
211271	SHP INSTM OVHL DEP	97.920			
214467	SHP, REFL VEH		1.672		
217735	SHP, ELCT O&T/D	540.333	5.333		
217736	SHP RADOM O&T/D	3.95			
218712	SHP A/SE STOR FCLTY	15.6	.8		

218852	SHP SURV EQUIP	4.143			
218868	LAB, PME	30.165			
310932	SC LAB AVIONICS	17.7			
442258	STOR LIQ OXYGEN	1.309			
610281	HQ CENTER	19.813			
610675	LOG FCLTY DEP OPS	62.022	6.196		
723392	SAN LATRINE	1.808			
811149	ELEC PWR STN BLDG	.336			
890123	AIR COND PLT BLDG	.437			
890136	CMPRS AIR PLT BLDG	1.698			
	Total	3343.67	81.536	6.42	**3431.626**

Facilities and Equipage, continued

7.2 In Table 7.2.a, identify space available for expansion by building type for those facility category code numbers (five or six digit CCNs) that are most important to your mission. An activity's expansion capability is a function of its ability to reconfigure/rehabilitate existing underutilized facilities to accept new or increased requirements.

Table 7.2.a: **Space Available for Expansion**

Building ID / Type	CCN	Installation Space (KSF)			Total
		Adequate	Substandard	Inadequate	
1048	211-152	32.0			32.0
1046	211-152	6.8			6.8
878	211-175	17.7			17.7
1022	211-173	12.0			12.0
1033	218-712	12.0			12.0
877	211-175	8.4			8.4
259	211-153	1.4			1.4
876	211-154	.8			.8
721	211-175	21.6			21.6
722	211-175	21.6			21.6
250L	610-675		21.6		21.6
1071	211-111		7.2		7.2
4	610-128	4.4			4.4
9	610-128	.5			.5
250K	442-758		34.2		34.2
250J	510-176		16.4		16.4
269H	610-675		21.6		21.6
922	721-315		25.7		25.7
355	610-675		15.0		15.0
1026	211-154		2.5		2.5
1042	171-212		.6		.6
1025	171-618		1.8		1.8
829	211-154		1.3		1.3
1016	141-753		3.2		3.2
1030	141-753		2.5		2.5
1017	141-753		4.4		4.4
335	610-675			9.2	9.2
339	610-675			8.7	8.7

639	217-735			1.4	1.4
628	141-763		109.0		109.0
338	171-618			1.8	1.8
607	141-764	1.4			1.4
608	141-764	1.4			1.4
609	141-764	1.4			1.4
606	141-764	1.4			1.4
458	141-764			14.6	14.6
381	141-764			1.4	1.4
6661	610-121	1.4			1.4
6662	610-121	1.4			1.4
6663	610-121	1.4			1.4
6664	610-121	1.4			1.4
1043	141-753	2.7			2.7
350	141-763			6.4	6.4
18	219-944		6.1		6.1
347	442-628			107.0	107.0
621	141-787			168.0	168.0
650	441-758			167.7	167.7
627	441-758			168.0	168.0
54	219-944			18.5	18.5
53	219-946			11.6	11.6
412	218-842			5.3	5.3
431	211-183			52.3	52.3
	Total	153.1	273.1	741.9	1168.1

273.1
741.9
1015.0

Facilities and Equipage, continued

8. Unique and/or Peculiar Capabilities and Capacities

8.1 What unique and/or peculiar capabilities and capacities does the depot maintenance activity possess?

Depot Maintenance Capability/Capacity Describe Why Unique/Peculiar

1. F-111 cold proof Facility. An 8,500 square foot facility . An enclosed environmental chamber used for testing aircraft in a flight simulation environment. The F-111 aircraft is being tested in an environment of -42 degrees plus or minus 3 degrees with an aircraft wing gravitational equivalent force of approximately -3G to +7G. The purpose of the chamber is to detect catastrophic structural failures. The advanced/enhanced acoustic system in the chamber also detects secondary failures, such as popped rivets, broken bolts and cracked panels, within twelve inches of failure.

The acoustic system (Spartan 3000) is used to locate defects in the F-111 airframe structure during applied test loads. The system provides monitoring and a continuous record of audible sounds emitted by the airframe structure during test. These signals (which could be an indication of structural failure or significant deformation) are analyzed to determine the character and significance of the sound. Experience obtained from the testing of a number of aircraft has provided a basis for comparison of acoustic signal produced by each aircraft tested. Unusually large acoustic signals are analyzed to determine their signal origin.

The noises are picked up by sensors attached to the aircraft during structural loading. Noises common to every aircraft or from the wing fixture are zeroed out by program algorithms. Additional algorithms establish pre-determined time elapses between sensors to reduce echoes. Significant spikes are then triangulated to determine their source. Other NDI methods are used for post inspection.

The low temperature proof test facility is composed of an insulated weather protective building which houses an environmental test chamber, a pit area containing the test fixture located under the test chamber, a control room adjacent to the chamber and ancillary equipment, work space and storage area.

The environmental test chamber is 58 feet wide , 84 feet long and 24 feet high. Side bays extend out from each side of the test chamber to permit a forward sweep of the aircraft wings to 26 degrees. Two large roll-away doors admit the aircraft into the chamber. The chamber is insulated and sealed on the walls, floor, and ceiling. The floor insulation will support normal

pedestrian traffic and is removable in areas where a heavy load would cause crushing of the insulated panels. Pressure buildup within the environmental chamber during nitrogen vaporization and during chamber purging is regulated by an adjustable, automatic ceiling vent to the outside atmosphere. Six windows are located around the chamber walls to permit observation of the aircraft during testing. Also the chamber can be viewed by a closed circuit television system. Explosion proof lighting is provided for the test chamber.

The pit area is located under the environmental chamber and provides for installation, operation and maintenance of the test fixture. Also the pit provides for ground level roll in and installation of the aircraft on the test fixture. The pit is approximately in the shape of a cross with a maximum north- south internal dimension of 55.5 feet and east-west dimension of 74 feet. Average depth is nine feet. The pit can be entered by stairway.

The aircraft is attached to the fixture during wing loading. The test fixture is designed to test the F-111 aircraft at two wing sweep angles of 26 degrees and 54 degrees. A nose landing gear elevator is used to position the aircraft when pinning up the nose landing gear load assembly. The fixture design incorporates the use of energy absorbers and shear pins at critical points to prevent damage to the aircraft during loading.

The control room is attached to the outside of the environmental chamber. The control room contains the environmental control console, master test control console, computer, recording equipment and ancillary service equipment.

An ancillary weather enclosure houses the support equipment that includes the air compressor, hydraulic pumps, air dryer, and utilities.

The low temperature environment of -65 F and -40 F in the environmental chamber is provided by vaporizing liquid nitrogen in the test chamber. Liquid nitrogen (LN2) is stored in a 25,000 gallon storage tank and injected into the environmental chamber through atomizing nozzles into a duct system. The duct system includes two blowers which discharge the vaporized nitrogen gas to opposite ends of the environmental chamber. For fast warming of the environmental chamber heat is provided by two natural gas fired industrial heater units, each with a capacity of 2 million BTU/Hr. The airplane is structurally loaded by nine electro-hydraulic loading modules, one hydro-mechanical loading module.

Once loaded, the load control and data system and its associated equipment comprise a test system with computer control of the hydraulic actuators for stress testing of the F-111 air frame under both positive and negative G loading. The system performs data gathering automatically by scanning, digitizing and processing test data from load cells, potentiometer and strain gauges.

SM-ALC is the only DoD source of repair for thes F/EF-111 aircraft.

2. **Comprehensive Integrated Process to Resolve Parts Obsolescence.** The PWB (printed wire board) manufacturing area in LH directly supports the LRE (Logistics Retrofit Engineering) process by providing the PWBs for the iterative prototype operation. Typically LRE workload is in support of blackbox redesign or diminishing source hardware requirements. Redesign of the hardware to new configurations may require redefinition of written and graphical documentation, manufacture of PWBs and verification of performance characteristics in the Automatic Test Equipment (ATE) shop. The surface mount capability within the PWB shop is utilized in support of LRE workload.

The PWB shop is composed of circuit board manufacturing and assembly operations, including single, double and multi-layer, both through-hole and surface mount types. The shop, in addition to supporting LRE redesign, has its own workload supporting LH and multi-service activities. PWB workload is typically 50% Air Force, 32% Army, 7% Navy, 2% Air National Guard and 9% other customers. About 15% of the Air Force workload is in support of LRE. TI and LH have developed a cloning process whereby an image of an existing PWB can be reproduced onto a stable base film or mylar which can be used with fabrication data taken from the existing board to manufacture any number of PWBs with the same characteristics and dimensions as the original. The process has value when a contractor is no longer in business and original technical data are inadequate, cost prohibitive or no longer available. The shop also manufactures PWBs for the LRU/SRUs produced by the custom repair/manufacturing process, another solution to the parts obsolescence problem.

When a customer needs to replicate an existing LRU/SRU but has no technical data, the Custom Repair/Manufacturing area will reverse engineer the item, and either develop a reprocurement package or manufacture the unit. The documentation will be produced by the Technical Services area to include required engineering drawings (up to Level 3) and technical orders. These support packages are geared to field and/or depot level as necessary. PWB design, layout, circuit routing, drill path instructions, assembly drawings, parts lists and photo tools can all be provided to the PWB shop for manufacture. The newly manufactured PWB can be tested in the ATE area prior to being assembled into the LRU/SRU. Depending on requirements, the LRU/SRU may be tested in the Custom Repair/Manufacturing area or the ATE area.

The integrated approach to supporting parts obsolescence and sustaining weapon systems with electronics repair and manufacturing provides a synergistic benefit to the center. This is a unique capability within DOD; no other facility has incorporated these functions within its organization.

3. **Repair of Microwave Printed Wire Assemblies (PWAs).** Microwave PWAs associated with the PASS radar (a small, receive only space array) are being repaired utilizing the near field probe (ref. 6.1, 8.2). The microwave PWA repair capability is unique to DOD. No other installation has this capability.

4. **Hydraulic/Pneudraulic Component Repair (fluid driven).** This hydraulic repair capability is the most advanced facility of its kind in the world. It is the largest aircraft-related hydraulic and pneudraulic overhaul and repair capability in the DoD. The 186,000 sq ft new and modern facility has five separate hydraulic manifold systems with 4000 psi working pressure and 6000 proof psi and expansion capability to 8000 proof psi. There are 70 hydraulic test stands built by manufacturers such as Dayton T. Brown , Vickers, ACL Technologies, R.R. Textron, MOOG, Parker Hanifin, Greer, Weston, and Sprauge. Pump and motor test stands are 3000 psi with flow of 70 gallons per minute and regulated temperatures up to 240 degrees F. The facility has a controlled temperature and humidity, 300,000 class air particle environment as well as a 100,000 class metrology lab and 100,000 class laminar flow stations. There is also a computer operated mechanized material handling system, precision lapping equipment, and precision measuring equipment. It has highly skilled artisans with 21 different skills capable of providing complete "ground-up" rebuild and re-manufacture of components, and complete plating and machining support. Support can be provided for any pneudraulic component, whether ground equipment or aircraft. McClellan AFB is the sole source for this capability in the Air Force.

5. **Flow Grind Capability.** Precision match fitting/grinding and precision spool and sleeve grinding. Computer controlled/laser guided flow grinding machining to 0.000001 inch.

6. **Airborne Generator Rewind Capability for Flat & Rectangular Wire.** Rewind process for rotors, stators, coils, armatures, and exictors developed by Service Center of Excellence to reduce acquisition costs. Process has resulted in a 70% savings to the customer. McClellan is the sole DoD source of repair for flat wire rewind.

7. **A-10 and F-14 CADC Transducer.** The only capability within DOD to test and repair. McClellan is the sole DoD source of repair for this item.

8. **F-111 Radome Repair.** The only capability within the Air Force to test and repair F111 radomes. It is unique because it can test the Terrain Following Radar (TFR) and Attack Radar System. McClellan is the sole DoD source of repair for this item.

9. **Electro Optics Night Vision.** Image intensification, thermal imagery, and laser systems in a single facility. This is the only facility with three mission items in one area in DOD. Specific capabilities which are performed in no other service are as follows: Main Battle Tank Thermal Systems, Main Battle Tank Laser Systems, Ground Laser and Laser Designator Systems.

10. **Non-Destructive Inspection (NDI).** SM-ALC has the most comprehensive NDI capability in the defense industry. We have all the conventional processes at the state-of-the-art, including X-Ray, Ultrasound, Mag Particle, Dye Penetrant and Eddy Current. We offer Robotic and conventional applications to inspect entire aircraft as well as components. We have the ability to provide film, video, and real-time output products. The inclusion of the Neutron Radiography facility as a capacity or capability makes this facility entirely unique. The combination of so many NDI disciplines makes the SM-ALC operation the premier NDI facility in DoD.

11. **McClellan Nuclear Radiation Center (MNRC).** The MNRC is theonly DoD industrial reactor and houses a 1 megawatt research type reactor. The facility was originally designed to perform neutron radiography of aircraft structures. That capacity has been expanded to include nuclear and space survivability and Air Force treaty verification support. The MNRC is the only reactor facility in the Air Force and provides multiple neutron output selections. The capability to perform both in-core irradiation's and neutron radiography at the same time provides the versatility to accomplish research and development projects simultaneously with the military mission. The research applications include the ability to study and evaluate the effects of nuclear radiation on electro-optic components and Neutron Capture Therapy research and development. The MNRC is the only DoD licensed source for providing Neutron Transmutation Doping for silicon use in the semiconductor industry. We are an authorized source under the Defense Production Act Title III Program for the purpose of expanding domestic production capacity and accelerating development in the semiconductor field.

Neutron radiography is extremely effective in detecting very low levels of hydrogen and corrosion. This facility, in concert with the adjacent NDI facility at SM-ALC, provides for the most complete and comprehensive NDI facility in the United States.

12. **Composite Demonstration Center (Blue Room).** Residing within TI is the USAF Advanced Composites Program Office. Their mission is the development and introduction of advanced composites technologies into the Air Force. This facility is unique to the Air Force because the technologies inserted into fielded weapons systems are not available elsewhere. They also provide production applications that are quickly transitioned to our manufacture/repair activity. This facility is capable of handling classified, low-observable technology applications. This facility handles classified. low-observable technology applications (e.g., F-117A).

13. **Injection Molding.** This capability is unique in that it is the largest facility of its kind in the DOD. The facility provides a test and development arena for the resolution of DOD problems relating to composites and plastics. The Sacramento Injection Molding Facility manufactures parts using up to twenty pounds of material on dies up to four feet square. The facility at OO-ALC is limited to the manufacture of parts containing no more than sixteen ounces of material on dies no more than sixteen inches square. Furthermore, the collocation of the Air Force

Composite Program Office with the Injection Molding Facility provides for a beneficial cooperative between Engineering and Production that does not exist elsewhere in DoD.

14. Optical Measurement System (OMS). The OMS is unique and peculiar to both DOD and the private sector. The capability provides for precise laser measurement (mapping) of a part. The data is digitized and processed so that it can be used to provide Numerical Control (NC) input. That NC input may include quality verification (Gold Part), analysis and prototyping function.

15. Communications Nodal Control Element (CNCE) (TSQ-111). Integrated Logistics Support Facility (ISF). Overhaul/parts repair and emergency assistance worldwide including software support. This is the only shop that supports worldwide CNCE requirements and depot level overhaul. DOD unique test equipment, test software, depot training, and depot tech data were designed for this system. They also serve as management tools for the Inventory Control Point function. SM-ALC is the sole DoD source of repair for this system.

16. Modular Control Equipment (MCE) (TYQ-23) Integrated Logistics Support Facility (ISF). Overhaul/parts repair and emergency assistance worldwide including software support. Designated Technical Repair Center for Air Force and Marine Corps TYQ-23 System. DOD unique test equipment, depot training, and depot tech data were designed for this system. They also serve as management tools for the Inventory Control point function. SM-ALC is the sole DoD source of repair for this system.

17. AN/FPS-117 and AN/FPS-118 Integrated Logistics Support Facility (ISF). Overhaul, repair modification testing of all six world-wide versions of this radar including software support. A wide variety of hardware and software test equipment and an operational radar designed specifically for the support of this system. DOD unique test equipment, test software, depot training, and depot tech data also serve as management tools for the Inventory Control Point function. SM-ALC is the sole DoD source of repair for this system.

18. Electronic Warfare (EW) Integrated Support Facility (ISF). Overhaul, repair and testing of 35 separate electronic combat subsystems that comprise the 806L System. This suite of test equipment was designed to support a number of EW systems and is continually modified to accommodate new or modified equipment in the field. They also serve as management tools for the Inventory Control Point function. SM-ALC is the sole DoD source of repair for this system.

19. Ground Wave Emergency Network (GWEN) Integrated Support Facility. Overhaul, parts repair and modification testing including software support. Test equipment was designed for GWEN and communication secret (COMSEC) requirements. SM-ALC is the sole DoD source of repair for this system.

20. **F-111 Aircraft Programmed Depot Maintenance, Modification, and Repair Capability.** McClellan posses the only capability in the DoD to provide the complete range of depot management required by all models of the F/EF-111 aircraft. In addition to the Cold Proof capability described above, this includes but is not limited to hush house support, sull wiring services, extensive modifications, compete overhaul and repair of radomes, contorl surfaces, and sub-systems, corrosion control, wing overhaul and reseal, analytical condition inspections (ACI) to track patterns of weapon systems failures, pyrotechnics refurbishment, and structural integrity programs to analyze high stress areas for cracks, corosion and wear. SM-ALC is the sole DoD source of repair for this aircraft.

21. **A-10 Aircraft Modification and Repair Capability.** McClellan possesses the only capability in the DoD to provide the complete range of depot maintenance required by the A-10 aircraft. This includes but is not limited to hush house support, full wing services, extensive modifications, complete overhaul and repair of radomes, control surfaces, and subsystems, corrosion control, wing overhaul and reseal, analytical condition inspections (ACI) to track patterns of weapon systems failures, pyrotechnics refurbishment, and structural integrity programs to analyze high stress areas for cracks, corrosion and wear. SM-ALC is the sole DoD source of repair for this aircraft.

22. **Air Force Ground Communications Electronics Overhaul and Repair Capability.** This consists of 14 fully equipped buildings (473K sq ft) used for overhaul and repair of all AF Ground Communications Electronics systems ranging from ahnd held radios to computer integrated radar systems. Some of the most complex ground-comm systems in the world are overhauled and repaired in these facilities. McClellan AFB is the only source of this capability in the Air Force. Skills, capabilities, and capacities exist at McClellan for: ground communications (LF/HF/VHF/UHF radios, single sife and multiple side band radios, troposhperic scatter systems, microwave systems, and ground-based jammers), air traffic control and navigation (instrument landing systems, tactical navigation systems, precision approach radars, terminal VHF OMNI range systems), radars (phased array or feed horn type, fixed site, tactical or mobile, height finder radar systems, search radar systems, three dimensional radar systems and over-the-horizon backscatter systems), identification friend-or-foe, telephone and teletype (teletypes, telephones, DSN, mechanical and electronic switching systems), meteorology (storm tracking radars, runway visibility equipment, satellite tracking systems, weather forecasting equipment), microwave, electronic imagery, sensors, copy exploitation, and electronic warfare training devices (including either re-designated radar, communications, navigation equipment, ot because of design, function and support require the same skills and support equipment in the repair process as other equipment in this technology, such as: multiple threat emitter simulators, surface to air missile simulators, tactical radar threat generator systems, and ground based jammers). Within these broad categories are systems and subsystems which include microwave and launch control systems, tracking and range safety, in regards to manned and unmanned orbiter launching,

communications equipment operating through the complete range of communications frequiencies, intercom and audio equipment, display groups (color and B/W TV monitors, recorders, mappers, selective identification features), computers, antennas and ancillary equipment. Some peculiar features of many of the radio, radar, and navigational family groups are: large physical size (either permanent ground stations, mounted in transportable shelters, or in mobile vans), high power outputs with long range capabilities, complex system composition (transmitters, receivers, computers, control devices, and interconnecting hardware) and mockups required for depot support. Ground Communications electronics equipment is all electronic in nature and include applications of the full spectrum if electronics technology from vacuum tube throughhybrid and Very High Speed Integrated Circuits (VHSIC). Scope of repair includes completeground-up overhaul, repair, amnufacture, system modification and integration, and mock-up designand facbrication. McClellan is the sole source for this capability in the Air Force.

23. **Ground Communications-Electronics Operational Software Development and Maintenance Capability.** McClellan possesses the only comprehensive capability inthe Air Force for development and maintenance of Ground C-E operationial software. Capabilities include operational program development, operation program maintenance, simulation modeling, mission software developmetn, integration testing, test data analysis, case tols engineering, and technolgy insetion. SM-ALC is the sole Air Force source for this capability.

24. **Instrument and Electronic Component Repair Capability.** McClellan is hoome to the largest, most modern, most comporehensivenstrument and Electronic Component Test and Repair capability inthe DoD. This facility provides test and repair of a full range of pressure, temperature, humidity and time measurement, instruments, flight control and navigationsl instruments, and flight data cockpit recorders. Skills and capabilities include reverseengineering, unsupportable electronicequipment repair, large wire harness test automation, specialized test equipment manufacture, test system overhaul process development, supportability review, normal repair procedures development, and mil-standard technical manual development. McClellan is the sole source for this capabiilty in the Air Force.

25. **Aircraft Operation Flight Software Development and Maintenance.** McClellanhas the most comprehensive OFP development and maintenance capability for F/EF-111 and A-10 aircraft in DoD. Using the Extendible Integration Support Environment (EISE), equipment is shared by several weapon systems. McClellan is the sole Air Force source for this capability.

8.2 Separately list the depot maintenance facilities and equipment which are one of a kind within the Service and/or DoD.

Facility/Equipment Describe Why It is One of a Kind

1. **F-111 Cold Proof Facility.** The only Certified F-111 structural test facility in existence.

2. **Infrared Reflow Soldering System.** Processor controlled 10 zone conveyorized IR convection oven used for mass soldering of surface mount components onto multilayer printed wire boards. Peculiar to the Air Force.

3. **Automated Conformal Coating Application System.** Processor controlled conveyorized spray application and curing of polyurethane, silicone, epoxy, or acrylic conformal coatings onto printed wire assemblies. Peculiar to the Air Force.

4. **Automatic Power Supply Test System.** Processor controlled generic power supply test system. Accomplishes fully automated functional testing of "never before seen" low voltage power supplies within one day after receipt at depot. Peculiar to the Air Force.

5. **Kryterion 5000 Bare Board Test System.** Processor controlled bare board test system capable of accessing 25,000 test points simultaneously. It tests for open or shorted traces on unpopulated printed wire boards. Peculiar to the Air Force.

6. **Near Field Probe.** Processor controlled antenna calibration system. This system is used to calibrate an antenna's beam position in an anechoic chamber. The information gained from this calibration is used to project the long range beam position, thus eliminating the need for a Far Field Probe. Peculiar to Air Force

7. **Near Field Test Range.** The only DOD facility for testing of Fire Finder, TPQ-36/37, phased array radar. Unique within DOD.

8. **Munson Road.** A Mil-Spec designed bumpy road which simulates rough terrain. This road is currently used to test the Fire Finder Radar System for survivability under rough terrain conditions. Peculiar to Air Force.

9. **Mockups.** Attached is a list of mockups that are necessary for the performance of our workload requirements. These mockups are unique within DOD as depot maintenance support equipment. Unique within DOD.

10. **Hydraulic/Pneudraulic Component Repair (fluid driven).** This hydraulic repair facility is the most advanced facility of its kind in the world. It has highly specialized equipment and skilled personnel.

11. **Flow Grind Capability.** Precision match fitting/grinding and precision spool and sleeve grinding.

12. **Airborne Generator Rewind Capability for Flat & Rectangular Wire.** Rewind process for rotors, stators, coils, armatures, and exictors developed by Service Center of Excellence to reduce acquisition costs. Process has resulted in a 70% savings to the customer.

13. **A-10 and F-14 CADC Transducer.** The only capability within DOD to test and repair.

14. **F-111 Radome Repair.** The only capability within the Air Force to test and repair.

15. **Electro Optics Night Vision.** Image intensification, thermal imagery, and laser systems in a single facility. This is the only facility with three mission items in one area in DOD. Specific capabilities which are performed in no other service are as follows: Main Battle Tank Thermal Systems, Main Battle Tank Laser Systems, Ground Laser and Laser Designator Systems.

16. **Non-Destructive Inspection.** SM-ALC has the most comprehensive NDI capability in the defense industry. We have all the conventional processes at the state-of-the-art, including X-Ray, Ultrasound, Mag Particle, Dye Penetrant and Eddy Current. We offer Robotic and conventional applications to inspect entire aircraft as well as components. We have the ability to provide film, video, and real-time output products. The inclusion of the Neutron Radiography facility as a capacity or capability makes this facility entirely unique. The combination of so many NDI disciplines makes the SM-ALC operation the premier NDI facility in DoD.

17. **McClellan Nuclear Radiation Center (MNRC).** The MNRC houses a 1 megawatt research type reactor. The facility was originally designed to perform neutron radiography of aircraft structures. That capacity has been expanded to include nuclear and space survivability and Air Force treaty verification support. The MNRC is the only reactor facility in the Air Force and provides multiple neutron output selections. The capability to perform forth in-core irradiation's and neutron radiography at the same time provides the versatility to accomplish research and development projects simultaneously with the military mission. The research applications include the ability to study and evaluate the effects of nuclear radiation on electro-optic components and Neutron Capture Therapy research and development. The MNRC is the only DoD licensed source for providing Neutron Transmutation Doping for silicon use in the semiconductor industry. We are an authorized source under the Defense Production Act Title III

Program for the purpose of expanding domestic production capacity and accelerating development in the semiconductor field.

Neutron radiography is extremely effective in detecting very low levels of hydrogen and corrosion. This facility, in concert with the adjacent NDI facility at SM-ALC, provides for the most complete and comprehensive NDI facility in the United States.

18. **Composite Demonstration Center (Blue Room).** Residing within TI is the USAF Advanced Composites Program Office. Their mission is the development and introduction of advanced composites technologies into the Air Force. This facility is unique to the Air Force because the technologies inserted into fielded weapons systems are not available elsewhere. They also provide production applications that are quickly transitioned to our manufacture/repair activity. This facility is capable of handling classified, low-observable technology applications.

19. **Injection Molding.** This capability is unique in that it is the largest facility of its kind in the DOD. The facility provides a test and development arena for the resolution of DOD problems relating to composites and plastics. As a matter of fact, the injection molding capability was instrumental in the competition, award and subsequent production of the A- 10 Link Tube second source contract. This milestone was important because it represents the first time a DOD agency was able to compete for and win a workload that previously had been awarded to the private sector. It proved we could provide both capability and value.

20. **Optical Measurement System (OMS).** The OMS is unique and peculiar to both DOD and the private sector. The capability provides for precise laser measurement (mapping) of a part. The data is digitized and processed so that it can be used to provide Numerical Control (NC) input. That NC input may be include quality verification (Gold Part), analysis and prototyping functions.

21. **Communications Nodal Control Element (CNCE) (TSO-111) Integral Support Facility (ISF).** This is the only facility that provides support to worldwide CNCE requirements and depot level overhaul in the world.

22. **Modular Control Equipment (MCE) (TYO-23) Integrated Support Facility (ISF).** This is the only facility that provides support to worldwide MCE requirements and depot level overhaul in the world.

23. **AN/FPS-117 and AN/FPS-118 Integrated Support Facility (ISF).** This is the only facility that provides support to worldwide AN/FPS-117 and AN/FPS-118 requirements and depot level overhaul in the world.

24. **Electronic Warfare (EW) Integrated Support Facility (ISF).** This is the only facility that provides support to requirements and depot lecel overhaul worldwide of the 35 separate electronic combat subsystems that compromise the 806L system in the world.

25. **Ground Wave Emergency Netwrok (GWEN) Integrated Support Facility (ISF).** This is the only facility that provides support to worldwide GWEN requirements and depot level overhaul in the world.

26. **F/EF-111 Aircraft Programmed Depot Maintenance, Modification and Repair Facilities.** McClellan has the only comprehensive set of facilities and equipment in the world capable of performing all the required tasks for F/EF-111 depot level maintenance.

27. **A-10 Aircraft Modification and Repair Facilities.** McClellan has the only comprehensive set of facilities and equipment in the world capable of performing all the required tasks for A-10 depot level maintenance.

28. **Air Force Ground Communications Electronics Overhaul and Repair Facilities.** McClellan has the only comprehensive set of facilities and equipment suites in the world that are capable of all depot level tasks required for ground communications and electronics.

29. **Instrument and Electronic Component Repair Capabilities.** McClellan is home to the largest, most modern, most comprehensive instrument and electronic component test and repair facilities and equipment suites in DoD.

30. **F/EF-111 and A-10 Avionics Integrated Support Facility (AISF).** McClellan has the only AISF for the F/EF-111 aircraft and the A-10 aircraft.

Facilities and Equipage, continued

9. Acreage Available for Building

9.1 What acreage on the installation does the government own in the proximity of the depot maintenance area that could be used for future expansion? Identify in the table below the real estate resources which have the potential to facilitate future development and for which you are the plant account holder or into which, though a tenant, your activity could reasonably expect to expand. Developed area is defined as land currently with buildings, roads, and utilities where further development is not possible without demolition of existing improvements. Report in "Restricted" areas that are restricted for future development due to environmental constraints (e.g. wetlands, landfills, archaeological sites), operational restrictions (e.g. ESQD arcs, HERO, HERP, HERF, AICUZ, ranges) or cultural resources restrictions. Identify the reason for the restriction when providing the acreage.

Table 9.1: **Real Estate Resources**

Land Use	Total Acres	Developed Acreage	Available for Development	
			Restricted	Unrestricted
Maintenance (1)	331	239(5)	0	92
Operational (2)	1,293	1,157	0	136
Training	8	8	-	-
R & D	1	1	-	-
Supply & Storage (3)	412	412	-	-
Admin	67(6)	67	-	-
Housing	277(7)	260(8)	0	17(9)
Recreational	40	40	-	-
Forestry Program	0	0	-	-
Agricultural Outlease Program	0	0	-	-
Hunting/Fishing Programs	0	0	-	-
Other (4)	1,357(10)	1,116(11)	-	191(12)
Total:	3,786	3,350	0	436

(1) Identified as aircraft Operation & Maintenance in BCP.
(2) Identified as airfield pavements/clearance in BCP.
(3) Identified as Industrial in BCP.
(4) Identified as community services/commercial, open space and medical in BCP.

(5) Existing nose docks could be converted to accommodate large aircraft (+/- 9 acres).
(6) Number includes Camp Kohler (5 acres), Davis Comm Site (4 acres) and Lincoln Comm Site (4 acres).
(7) Number includes 218 acres of Capehart housing.
(8) Number includes 201 acres of Capehart housing.
(9) Area is located within Capehart housing complex (approx. 5 miles off-base).
(10) Number includes Camp Kohler (23 acres), Sacramento River Dock (2 acres), McClellan Hospital Annex (26 acres), Davis Comm Site (312 acres), GWEN Comm Site (11 acres) and Lincoln Comm Site (227 acres).
(11) Number includes Camp Kohler (8 acres), Sacramento River Dock (2 acres), McClellan Hospital Annex (21 acres), Davis Comm Site (282 acres), GWEN Comm Site (11 acres) and Lincoln Comm Site (222 acres).
(12) There are 35 acres within an area which was previously used as a landfill. Major portions of the 35 acres have been identified as IRP sites and will require extensive clean-up prior to development.

Facilities and Equipage, continued

10. Administrative Space

10.1 What amount in square feet of administrative space could be made available to the depot maintenance function?

Current Use	Square Feet	Potential Use (Be Specific)
LOG FCLTY DEPOT OPS	59,903	Software
	18,000	Aircraft Components
BASE PERSONNEL OFC	4,964	Software
DPI	1,520	Software
SQ OPS	13,000	Software
GEN ADMIN	71,919	Aircraft/Airframe Admin/Training
	14,400	Software
	400	Avionics/Electronics
	1,700	Hydraulic/Pneudraulic
	100	Ground Genereator
	600	Electro-Optics/Night Vision
FLD TRN FCLTY	1,832	Aircraft/Airframe Admin/Training
TOTAL	216,536	

11. Industrial Waste

11.1 Are there any inhibiting factors that would limit future expansion on the base? Provide the details if applicable.

Inhibiting Factor Provide Detailed Description

There are no inhibiting factors that would limit future expansions on the base. The plant currently operates at less than half of its available capacity.

MEASURES OF MERIT

Workload and Capabilities

Answers to the following questions are to reflect programmed amounts by commodity group, by activity in direct labor hours by Fiscal Year for FY 1996 through FY 1999.

12. Core Capabilities (DoD)

12.1 What is the amount of core capability required to support your own Service? Provide your answers in Table 12.1.a by commodity group for the Fiscal Years requested.

Table 12.1.a: **Service Required Core**

COMMODITY GROUP	CAPABILITY (DLH)			
	FY96	FY97	FY98	FY99
1 Aircraft Air Frame				
1c1 Trans/Tnkr/Bomb	515342	470348	520564	520564
1c3 Light Combat	841362	878285	840658	840628
2 Aircraft Components				
2b Aircraft Structures	234133	234133	241157	241157
2c Hydraulic/Pneumatic	416645	411268	395939	395939
2d Instruments	307307	307285	286215	286215
2g Avionics/Electric	401604	400165	388700	388700
2h APU	0	0	0	0
2i Other	644	859	644	644
2j Manufacturing/Fabrication	639836	639836	639836	639836
7 Grnd & Ship Com & Elec				
7a Rdr	374321	415386	100464	400464
7b Rdo	206925	214215	213732	213732
7c Wire	5218	5218	5283	5283
7d Electronic Warfare	3874	4304	3713	3713
7e Navigation Aids	182976	170532	170499	170499
7g Satellite Cont/Sensors	37693	38170	38991	38991
10 Ground Group				
10d Ground Generators	59154	59227	59196	59196

12 Software				
12a Tactical System	246141	247450	277274	277274
12b Support Equipment	214519	211599	216251	216251
14 Other	466	466	466	466
Total	4688160	4708744	4699582	4699552

Workload and Capabilities, continued

12. Core Capabilities (DoD), continued

12.2 What is the amount of capability retained for the performance of other Services core? Provide your answers in Table 12.2.a by commodity group for the Fiscal Years requested.

Table 12.2.a: **Core Capability Retained for Other Services**

COMMODITY TYPE		Capability (DLHs)			
		FY96	FY97	FY98	FY99
1C1	TRANS/TNKR/BOMB				
1C3	LIGHT COMBAT				
	TOTAL	0	0	0	0
2B	ACFT STRUCTURES				
2C	HYD/PNEU				
2D	INST				
2G	AVIONICS/ELEC				
	TOTAL	0	0	0	0
5B	COMPONENTS	0	0	0	0
6D	COMPONENTS	0	0	0	0
7A	RADAR	105	105	105	105
7B	RADIO				
7C	WIRE				
7E	NAV AIDS	4,675	4,675	4,675	4,675
7F	E-O NIGHT VISION	127,071	111,234	113,117	109,115
7G	SATELLITE				
	TOTAL	1011634	1011634	1011634	1011634
10D	GROUND GEN	10980	10980	10980	10980
12A	TACTICAL SYS				

12B	SUPPORT EQUIP				
	TOTAL	0	0	0	0
14	OTHER	0	0	0	0
	GRAND TOTAL	142,831	126,994	128,877	124,875

Workload and Capabilities, continued

12. Core Capabilities (DoD), continued

12.3 What portion of the Service Core capability identified in the 12.1a above is identified as Service-Controlled Core (Title 10 responsibility)? Provide your answer in Table 12.3.a by commodity group for the Fiscal Years requested.

McClellan AFB has no service core to report

Workload and Capacities, continued

13. Core Workloads

13.1 What are your total Core Workloads to be applied against capabilities identified in Tables 12.1a and 12.2a)? Provide your answer (DLH) in Table 13.1.a by commodity group for the Fiscal Year requested.

Table 13.1a **Total Core Workloads**

		FY96	FY97	FY98	FY99
1C1	TRANS/TNKR/BOMB	441201	441201	441201	441201
1C3	LIGHT COMBAT	835204	825988	900577	906583
	TOTAL	1276405	1267189	1341778	1347784
2B	ACFT STRUCTURES	175259	160011	162719	156963
2C	HYD/PNEU	356703	356703	356703	356703
2D	INST	215122	196406	199729	192664
2G	AVIONICS/ELEC	343827	340422	343827	333936
2I	OTHER	0	0	0	0
2J	MANUFACTURE/FAB	460455	509372	354779	354279
	TOTAL	1551356	1562914	1417757	1394545
7A	RADAR	383361	369341	420344	430410
7B	RADIO	177156	177156	177156	177156
7C	WIRE	79900	91277	111143	118283
7E	NAV AIDS	164644	164644	164644	164644
7F	E-O NIGHT VISION	127071	111234	113117	109115
7G	SATELLITE	32271	32271	32271	32271
	TOTAL	964403	946223	1018675	1031879
10D	GROUND GENERATORS	61624	61624	61624	61624
12A	TACTICAL SYS	210729	210729	210729	210729
12B	SUPPORT EQUIP	183656	183656	183656	183656
	TOTAL	394385	394385	394385	394385
14	OTHER	399	399	399	399
	GRAND TOTAL	4248571	4232734	4234617	4230615

Workload and Capabilities, continued

14. Other Workloads (Above Core)

14.1 What above core workloads do you perform by these source categories? Use the most appropriate category, but do not duplicate workload on more than one table. Provide answers in Tables 14.1.a through 14.1.g by commodity group for the Fiscal Years requested.

Table 14.1.a: **FMS Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1c3. Light Combat	0	502	353	80
7a. Radar	1172	827	749	0
7b. Radio Communications	39	30	22	10
7c. Wire Communications	116	108	104	100
7e. Navigational Aids	19	0	0	0
Total	1346	1467	1228	190

Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.b: **Interservice Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	7627	5377	0	0
7b. Radio Communications	257	182	145	67
7c. Wire Communications	699	647	623	602
7e. Navigational Aids	121	0	0	0
12b. Support Equipment	3602	2558	1660	1352
Total	12306	8764	2428	2021

Table 14.1.c: **Other Agency Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
	0	0	0	0
TOTAL	0	0	0	0

Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.d: **Last Source of Repair Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
7a. Radar	28631	20011	0	0
7b. Radio Communications	967	682	546	254
7c. Wire Communications	3610	3342	3221	3111
7e. Navigational Aids	155	0	0	0
TOTAL	33363	24035	3767	3365

Table 14.1.e: **Within Service Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1c1. Transport/ Tanker/Bomber	194893	139550	149377	128487
1c3. Light Combat	344300	250393	194177	149706
2. Aircraft Components				
2c. Hydraulic/Pnuematic	42810	8051	14224	1103
2g Avionics/Electric	29035	0	2355	0
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	48317	33877	25146	44
7b. Radio Communications	52580	32930	36741	29641
7c. Wire Communications	60092	36478	18992	7244
7e. Navigational Aids	24554	8809	11744	5505
7g. Satellite Control/Space Sensors	84642	74470	76276	72436

12. Software				
12a. Tactical Systems	112411	84297	89289	78676
12b. Support Equipment	77127	55169	60152	51777
TOTAL	1070761	724014	678473	524619

Table 14.1.f: **Low Quantity Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
7a. Radar	11523	8015	0	0
7b. Radio Communications	387	274	219	102
7e. Navigational Aids	489	0	0	0
TOTAL	12399	8289	219	102

Workload and Capabilities, continued

14. All Other Workloads (Above Core), continued

Table 14.1.g: **All Other Workload (Above Core)**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
7a. Radar	0	1065	0	0
10d Ground Gen Purpose	32475	24289	25742	22652
10e Other	66078	60329	62350	59179
14 Other	31752	28954	29451	28395
TOTAL	130305	114637	116543	110226

Table 14.1.h: **Total Above Core Workload**

(Sum of Tables 14.1.a through 14.1.g)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1c1. Transport/ Tanker/Bomber	194893	139550	149377	128487
1c3. Light Combat	344300	250895	194530	149786
2. Aircraft Components				
2c. Hydraulic/ Pneumatic	42810	8051	14224	1103
2g Avionics/Electric	29035	0	2355	0
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	97270	69172	25895	44
7b. Radio Communications	54230	34098	37673	30074
7c. Wire Communications	64517	40575	22940	11057
7e. Navigational Aids	25338	8809	11744	5505
7g. Satellite Control/Space Sensors	84642	74470	76276	72436
10d. Ground General Purpose	32475	24289	25742	22652
10e Other	66078	60329	61350	59179
12. Software				
12a. Tactical Systems	112411	84297	89289	78676
12b. Support Equipment	80729	57727	61812	53129
14. Other	31752	28954	29451	28395
TOTAL	1230480	881216	802658	640523

Workload and Capabilities, continued

15. Unique and/or Peculiar Workloads (Refer to Question 8.1)

15.1 What amount of the workload reported in question 8.1 is Core? Provide your answer in Table 15.1 by commodity groups for the Fiscal Years requested.

Table 15.1: **Unique and/or Peculiar Total Core Workload**

COMMODITY GROUP	WORKLOAD (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1 Aircraft Air Frame				
1c1 Transport/Tanker/Bomber	0	0	0	0
1c3 Light Combat	745204	735988	810577	816583
2 Aircraft Components				
2b Aircraft Structures	125399	125,400	127,497	127,497
2c Hydraulic/Pneumatic	373483	356703	356703	356703
2d Instruments	215122	196406	199729	192664
2g Avionics/Electronics	60,426	60,477	59,835	59,690
7 Grnd & Ship Com & Elec				
7a Rdr	383361	369641	420344	430410
7b Rdo	177156	177156	177156	177156
7c Wire	79900	91277	111143	118283
7e Navigation Aids	164644	164644	164644	164644
7f Elec-Optic/Night Vision	127071	111234	113117	109115
7g Satellite Cont/Sensors	32271	32271	32271	32271
10d Ground Generators	61624	61624	61624	61624
12 Software				
12a Tactical System	196329	196329	196329	196329
12b Support Equipment	183656	183656	183656	183656
14 Other	399	399	399	399
Total	2909266	2863205	3015024	3027024

Workload and Capabilities, continued

15. Unique and/or Peculiar Workloads (Refer to Question 8.1), continued

15.2 What amount of the workload reported in question 8.1 is non-Core? Provide your answer in table 15.2 by commodity group for the Fiscal Years requested.

Table 15.2: **Non-Core Unique and/or Peculiar Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY96	FY97	FY98	FY99
1 Aircraft Air Frame				
1c3 Light Combat	2,787	2,787	2,871	2,871
2 Aircraft Components				
2b Aircraft Structures	52129	49859	32514	35222
7 Grnd & Ship Com & Elec				
7a Rdr	103492	110990	18469	15829
7b Rdo	57226	54230	34098	37673
7c Wire	66387	53140	20709	15800
7d Electronic Warfare	0	0	0	0
7e Navigation Aids	27798	25338	8809	11744
7f Elec-Optic/Night Vision	0	0	0	0
7g Satellite Cont/Sensors	86156	84642	74470	76276
10 Ground Group				
10d Ground Generators	33695	32475	24289	25742
14 Other	1,527	1,527	1,527	1,527
Total	431198	414988	217757	222685

Workload and Capabilities, continued

16. Scope of Work Performed

16.1 Indicate the services/functions performed at this activity that are associated with depot maintenance, but not generally classified or considered as integral to the depot maintenance functions.

Service/Function Description

1. Inventory Control Point (ICP). Management of items. Includes determining spares buys and repair requirements; includes technical and engineering support of items and/or systems; includes major modification and replacement programs; includes procurement activities; and includes customer services such as telephone hot lines, Mission Capable (MICAP), emergency services, and coordination services among customers, contractors and depot maintenance.

Direct Support to Depot Maintenance

Hardware. Engineering design, development, and fabrication of depot maintenance equipment. Equipment includes test mock-ups, test sets, and Automated Test Equipment (ATE).

Software. Operational software facilities support the management of systems, but also design, develop, and produce test procedures, and test program sets for the depot maintenance activity. This function allows the depot maintenance activity to repair/upgrade these test equipments for cost savings, environmental requirements, or new mission requirements.

Training. Hardware and software is also produced to train the depot workforce in the use of mock-ups, test equipment, and ATE. In addition, the 510 Field Training Detachment (FTD) on base uses these tools to train the depot work force.

2. System Program Director (SPD) and System Support Manager (SSM) functions. Functions that are not normally directly associated with maintenance are development of depot maintenance work specifications, analysis of materiel deficiencies identified during depot maintenance and weapon system acquisition, interpretation of engineering and technical data and resolution of ambiguities identified by depot maintenance technicians, and review and disposition of special inspection results.

Direct Support to Depot Maintenance

The SSM and SPD's engineering and technical staff is located within easy walking distance of the depot maintenance production shops. Those engineers having the most frequent contact with the depot taskings (e.g., structures, mechanical systems) are collocated in the same building as the maintenance shops.

3. The Power Conditioning and Continuation Interfacing Equipment (PCCIE) Office.

Direct Support to Depot Maintenance

Since forming as a materiel group, the PCCIE office has developed full capabilities necessary to support all government customer needs (cradle-to-grave support):

a. Technical and engineering support necessary to assist customers in defining or refining their PCCIE requirements.

b. Program Management, item management, equipment specialist, and contract management support necessary to acquire and field the full range of PCCIE.

c. USAF organic and DOD contractor capability to provide worldwide preventative maintenance and emergency maintenance for the full range of PCCIE. (Note: the PCCIE Materiel Group Manager is currently working a proposal with USAF MAJCOMs to develop and manage a full centralized depot maintenance capability for uninterruptible power supplies, a capability that currently does not exist in the USAF.)

4. Secure Storage: Bldg. 1069 on McClellan AFB contains 220,748 square feet of secure storage.

Direct Support to Depot Maintenance

Additional data on this facility are classified.

5. Laboratories

Direct Support to Depot Maintenance

The activities reported as 'Lab' are supported indirectly by the depot maintenance activity. Their financial sources are primarily COD and O & M. The perspective that permits this statement is simply that every activity of the 'Lab' is in support of some System Program Director (SPD). Without collocation of these labs with the depot, there would be a regression in the ability to insert new technologies into weapon systems that are in sustainment.

6. **Composite Demonstration Center (Blue Room).**

Direct Support to Depot Maintenance

This activity provide production applications that are quickly transitioned to our manufacture/repair activity. This facility is capable of handling classified, low-observable technology applications.

16.2 Describe how these services/functions are related to accomplishment of the depot maintenance mission, and the benefits of these relationships.

Service/Function Describe Relationship and Benefit to Maintenance Mission

1. **Inventory Control Point (ICP).** Management of items. Includes determining spares buys and repair requirements; includes technical and engineering support of items and/or systems; includes major modification and replacement programs; includes procurement activities; and includes customer services such as telephone hot lines, Mission Capable (MICAP), emergency services, and coordination services among customers, contractors and depot maintenance

A major aspect of the operation of the Air Logistics Centers is the collocation of the Inventory Control Point (ICP) activities, program management and sustaining engineering activities with the Depot. This collocation leads to the development of Integrated Product Teams (IPT) that follow product lines and are designed to quickly respond to customer concerns and requirements. Using the team approach optimizes the expertise of each represented discipline. The focus is on a quality product function provided on time, insuring the highest level of weapons system readiness.

The IPT is cohesive team with common priorities, philosophy and customer focus. The team operates in a proactive mode and appropriate measures are taken to ensure customer support. Process Improvements can be immediately implemented. Material shortages, lack of assets and unforeseen in-house production issues are kept to a minimum by monitoring factors that could impact the production schedule. A key responsibility is to identify and resolve any potential issue before production schedules are impacted. Potential issues are resolved before they can escalate, thus ensuring solid customer support. The IPT collocation within the same division is the most efficient business practice that directly benefits our customer. A typical IPT at SM-ALC is described below:

IPT Members	Function
Equipment Specialist	Technical Responsibility for System Performance
Inventory Management Specialist	Management of items to determine buy and repair requirements for worldwide logistics support
Program Manager	Management responsibility for all aspects of workload including new acquisition
Industrial Engineer/Planner	Establishes and Maintains labor and material standards and accomplishes work simplification studies
Elect/Mech Engineer	Provides engineering support for all aspects of workload
Production Supervisor	Responsible for execution performance of workload requirements
Scheduler	Schedules work into the shop and controls in-process workloads
Production Support	Ensures timely requisitioning of material
Production Technician	Accomplishes Repair

The benefit to depot maintenance is the quick turnaround of engineering and technical support. Without a collocated ICP function, a repair technician could wait weeks for an engineering fix. First, he/she would have to write up the problem (and proposed solution, if at hand), mail it to the engineer, and wait for reply. If the engineer cannot solve the problem "on paper", travel to the repair site would be necessary. In the meantime the system could not be repaired and other systems are back-logged awaiting work. With a collocated ICP the engineer can be on site in 15 minutes approve a fix (if available), approve a technical order change and start the paperwork in a half day. Benefits to depot maintenance are a much improved schedule reliability, significantly lower prices by reducing down time, and a quantum leap in customer satisfaction. **(See attached discussion paper, which describes the relationship for a *typical* commodity group, C4I)**

The collocation of ICP, IPT and Depot Maintenance functions forms a synergistic symbiotic relationship, with each activity supporting the others.

If the functions were not collocated, all functions would be handicapped in their ability to carry out their responsibilities. Depot response would be slower and carry a higher price tag. Product performance would be reduced since each function would be operating separately without benefit of efficiencies and ideas provided by the others. The ultimate loser would be the customer of the product line being supported, i.e., the operator in the field that requires the system in order to fulfill his/her defense mission.

2. System Program Director (SPD) and System Support Manager (SSM) functions. Functions that are not normally directly associated with maintenance are development of depot

maintenance work specifications, analysis of materiel deficiencies identified during depot maintenance and weapon system acquisition, interpretation of engineering and technical data and resolution of ambiguities identified by depot maintenance technicians, and review and disposition of special inspection results.

The purpose of the depot maintenance mission is to enhance and restore service life to the aircraft by performing timely periodic inspection and rework of either critical structures or subsystems. These critical structures and subsystems typically reside in areas not normally accessible to field organizations and rework/inspection of these components by field organizations is not cost effective because of the specialized skills, tooling and technologies required. The complexity of the inspections and repairs often require close oversight of the depot procedures by the cognizant on-sight civil servant engineering design authority personnel which reside within the SPD organization personnel mix.

Rapid response by the SPD engineers is often required to resolve discovered problems and prevent production delays of the aircraft through the depot flow process. A similar process exists with reparable aircraft components for which the SPD maintains design and configuration authority. Collocation of the SPD engineering and technical staff within the depot maintenance infrastructure promotes effective depot production completion; the close proximity of the engineer to the maintenance shops provide for easy access of the depot specialist to the engineering office and thus enhances quick resolution to reported problems. This results in less idle time of the aircraft flow as a result of awaiting problem resolution. Thus, this collocation provides for quicker aircraft production process flow with a significant dollar savings to field customers.

3. **The Power Conditioning and Continuation Interfacing Equipment (PCCIE) Office.**

Because PCCIE is Commercial-Off-The-Shelf (COTS), the PCCIE Office provides organic and contract depot repair for the equipment depending on the customer's needs. Under IWSM, the PCCIE Office is working towards centralizing all depot maintenance of this equipment under this office.

4. **Secure Storage: Bldg. 1069 on McClellan AFB contains 220,748 square feet of secure storage.**

Additional data on this facility are classified.

5. **Laboratories**

The 'Lab' facilities and capabilities offer an appropriate corollary function to the activities described in the JCSG data call for Depot. The laboratories are collocated at McClellan AFB (primarily bldgs. 618, 620 and 243) and provide many benefits to depot maintenance. The activities and benefits are related in the Branch Mission Statements:

-SYSTEMS TECHNOLOGY: Mission is to develop and field advanced systems technology products which meet the requirements of the Air Force and other federal agencies. Specific mission elements include but are not limited to:

-integration of advanced technology systems into existing weapons systems
-technical consultation and support for real-time embedded systems
-manage Continuous Acquisition and Life-cycle Support (CALS)
-manage the development and implementation of Flexible Computer Integrated Manufacturing (FCIM)
-manage Software Configuration Control Center -develop and manage Ada and Software Reuse Repository

-ELECTRO-OPTICS TECHNOLOGY CENTER: Mission is to design, develop, demonstrate and transition electro-optic technology in an effort to provide cost effective solutions for new and existing weapons systems (Avionics, Space and Ground Communications). Our customers are the Department of Defense, Federal Aviation Administration, Department of Energy, Environmental Protection Agency and others.

-USAF ADVANCED COMPOSITES PROGRAM OFFICE: Mission is the development and introduction of advanced composites technologies into the Air Force. Our mission elements include but are not limited to:

-development of the expertise necessary to support advanced structures in present and future weapons systems.
-resolution of structural and service-life problems via application of advanced composites.
-provide the infrastructure for technology of advanced composites technology transfer to other commands.

-ADVANCED MICROELECTRONICS TECHNOLOGY PROGRAM OFFICE: Mission is to manage insertion of Advanced Microelectronics Technologies into fielded weapons systems across all DoD services and other Federal agencies. Our responsibilities include Logistics Retrofit Engineering which provides solutions to obsolescence problems at all levels of indenture (Chip, board, sub-system, and system); and VHSIC Hardware Description Language (VHDL) Program Office. The VHDL office provides management of VHDL technologies throughout the Air Force.

-EXTENDIBLE INTEGRATED SYSTEM ENVIRONMENT (EISE): Mission is to provide an integration and test environment for Special Operations Forces (SOF), F-111 and A-10 Integration Support Facilities. They provide an embedded computer testing platform for the real-time testing of avionics, Communications/Electronics and missile systems.

All these mission elements have instances of direct correlation to the depot maintenance effort. The correlation is primarily indirect in nature (CALS, FCIM, ELECTR-OOPTICS, ADVANCED COMPOSITES, EISE, AND MICROELECTRONICS support the weapons systems assigned here as well as many others.) The depot maintenance activity benefits from their collocation by making use of the proximity to solve problems more quickly and easily. A hands-on approach to problem solving facilitates early resolution.

6. <u>Composite Demonstration Center (Blue Room).</u>

Residing within TI is the USAF Advanced Composites Program Office. Their mission is the development and introduction of advanced composites technologies into the Air Force. This facility is unique to the Air Force because the technologies inserted into fielded weapons systems are not available elsewhere. They also provide production applications that are quickly transitioned to our manufacture/repair activity. This facility is capable of handling classified, low-observable technology applications.

Workload and Capabilities, continued

17. Interface with Customers

17.1 Indicate any special functions that the depot maintenance function performs that require close interface with customers, such as on-site workloads (e.g. technical assistance, crash/battle damage repairs, modification/upgrade installations).

Service/Function Describe Required Interface/Relationship/Benefit

1. Modify F-111 Flight Simulator: Deployment of Depot Teams as required to modify/upgrade flight simulators to the required model/configuration

2. Sacramento Army Night Vision Workload:

Performance of hand-off of new or modified systems to regular Army, Reserve, National Guard, and Foreign Military Sales customers

Technical assistance at the customer site as well as supplemental maintenance training.

Modification of systems in-house and at the customer field site if it can be performed without special and unique equipment.

Maintenance evaluations, LSA/LSAR input, and other new weapon system support.

Benefits of tasks being performed by the Depot Maintenance activity are low cost, highly skilled personnel, high flexibility to a changing environment.

3. PCCIE Materiel Group Unique Capabilities and Potential:

a. The Power Conditioning and Continuation Interfacing Equipment (PCCIE) Materiel Group was formed in Dec 92 in response to a sustained record of strong interfacing with USAF DOD and other Federal agencies to provide these customers a unique form of depot level support. The PCCIE Materiel Group, formed under the USAF implementation of integrated weapon system management (IWSM), represents a definite shift in the Sacramento Air Logistics Center practices from providing government customers the item management of PCCIE to the field of total quality power systems. The PCCIE Materiel Group has historically received between $4-8M in programmed USAF BP 83 funds to support USAF customer needs. However, customer direct funding by AF Form 616 has averaged 2-4 times the programmed amount. Furthermore, the PCCIE office has

supported other DOD services, as well as over 20 other federal agencies and averaged over $100M per year in customer funded efforts. This represents a proven capability of customer focus at not only the USAF level, but the DOD and federal agency level. The largest non-USAF customer is the FAA and the PCCIE office has received $5.7M in fee-for-service funding to support a $310M acquisition and fielding of PCCIE for 26 FAA sites. This funding includes 9 full time manpower authorizations, funded through FY97. The PCCIE office has several new initiatives that have the potential of providing increased funded workload to the Sacramento Air Logistics Center.

b. Since forming as a materiel group, the PCCIE office has developed full capabilities necessary to support all government customer needs (cradle-to-grave support):

(1) Technical and engineering support necessary to assist customers in defining or refining their PCCIE requirements.

(2) Program Management, item management, equipment specialist, and contract management support necessary to acquire and field the full range of PCCIE.

(3) USAF organic and DOD contractor capability to provide worldwide preventative maintenance and emergency maintenance for the full range of PCCIE. (Note: the PCCIE Materiel Group Manager is currently working a proposal with USAF MAJCOMs to develop and manage a full centralized depot maintenance capability for uninterruptible power supplies, a capability that currently does not exist in the USAF.)

c. The PCCIE Materiel Group represents a capability that is unique in the federal government. The PCCIE customer requirements for USAF, DOD and federal agencies is expected to grow dramatically over the next few years. The PCCIE office is an ideal example of how the new government should work--customer funded/supporting USAF, DOD and federal agencies all from one central office. The PCCIE office has been successful in the past clearly because of its ability to provide a better service, at a cheaper cost to the government customer, and with a faster response time than any other government alternative.

4. Electrical Systems Engineering Flight:

The Electrical Systems Engineering Flight is staffed by engineers and engineering technicians. Since the engineering function within the Air Force Material Command is a support function, this group provides engineering support in the following ***areas (NOTE: The interfaces listed below are typical of the Product Directorate flight interfaces):***

(1) Coordinate and recommend procurement codes such as sole source, competitive, etc.
(2) Sit in source selection teams.
(3) Provide technical decisions to buyers regarding aspects of a bid package.
(4) Provide technical support to contractors on existing contracts.
(5) Evaluate deviation/waiver requests from contractors.
(6) Prepare specifications and statements of work in support of procurement activity.

b. Defense Logistics Agency (DLA)

(1) Provide general engineering support required to maintain configuration control.
(2) Provide clarification on specifications required for use in a procurement action.
(3) Make decisions and provide guidance regarding parts substitution, alternate materials, etc.
(4) Review data packages to determine acceptability for procurement use.

c. Using Activity (Field)

(1) Review and provide technical guidance in response to technical order change requests and recommendations.
(2) Analyze deficiency reports to determine if a failure/malfunction trend has developed.
(3) Examine deficient/failed hardware to determine cause of malfunction and provide design change to preclude reoccurrence.
(4) Discuss and analyze operational and testing requirements for weapons systems with personnel from the using activity.

d. Legal Office

(1) Provide technical support in claims cases.
(2) Provide technical guidance for attorneys during fraud investigation.
(3) Review data and correspondence in support of attorney regarding proprietary claims.
(4) Provide technical support/opinions regarding technical questions arising from accident investigations.

e. Local Shops (Overhead and Repair)

a. Procurement

(1) Evaluate and provide technical assistance in material substitution requests.
(2) Evaluate questions/inquiries regarding technical orders such as disassembly, assembly, and testing.
(3) Design and develop shop tooling to be used during overhaul/maintenance of products division workload.
(4) Evaluate and provide decisions on material and parts substitutions as requested by various shops.
(5) Provide data and expertise to bolster technical order shortcomings.
(6) Provide procedures/methods of repair or overhaul such as cleaning, passivating, and plating.
(7) Analyze chemicals used in shops and manufacture, locate, and recommend non-hazardous non-ozone depleting chemicals.

f. Other Commands and ALCs

(1) Provide engineering support to other ALCs whose equipment is overhauled, repaired at McClellan AFB.
(2) Answer inquiries from other commands and ALCs regarding technical treatment of similar hardware or like hardware in same instances.
(3) Provide insight into local capability regarding overhaul, repair, and testing of various electrical components.

g. Mishap and Accident Investigation

(1) In cases of accidents resulting in a crash, the engineer may be required to go to the crash site to assist the accident investigation board and evaluate cause.
(2) Examine and evaluate electrical components from crashed aircraft to determine if components may have been a contributory factor or if compound was functionally at impact, etc.
(3) Review reports and statements from accident investigation and provide a knowledgeable technical decision regarding component involvement.

5. Aircraft Depot Field Teams

During the two years reviewed (May 1992 through April 1994), there were 90 DFTs for on-site workloads we could verify with AFLC Forms 505. The DFT's were in support of A-10, F-111 and F-117 aircraft. Of the 90 DFTs, modification installations account for 27 DFTs, 7 for crash/battle damage and repair, 19 to provide technical assistance, and 37 for depot level repairs.

The benefits the customer receives from the on-site support include advanced depot level training, shorter out of service time for the weapon system, and reduced costs. Many of their mechanics assist our DFTs which allows them to learn a higher degree of aircraft maintenance. The preparation and time to ferry the aircraft shortens the time out of service if the aircraft must fly to and from a depot. The assistance (labor) received from the on-site host would be an additional expense in a depot.

Our customers rated our teams excellent on 86 percent of the trips, and satisfactory on the remaining 14 percent. In the last two years, we have not had an unsatisfactory rating from our customers.

6. C4I - Air Force, Inter service and FMS customers.

We install all of the Electronic Warfare systems that we overhaul. Therefore we must be in touch with our customers both before and after delivery of the systems. An example of the type of assistance we perform is as recent as this year. The MSR-T4 in Germany had problems and we sent a team over with the parts needed to put it back on the air. Due to an illegal contractor installed modification (unregulated power supply) the equipment we installed was also damaged. It was determined that due to the age of the system it should come to depot and be overhauled. We had a system in house that was destined to go to Keesler AFB. We had our Red Force representative call Keesler and get permission to take the system to Germany where they were performing real time missions on live threats.

7. C4I - USMCSYSCOM, USAF, Army CECOM/LARS, ANG.

We perform initial installation and check out of new AN/TRC-170 systems deliver to the field. We perform complete mechanical and electrical check out of new systems delivered to the field. Perform complete mechanical and electrical checks of system and verify operational status. Provide training for operators and maintenance personnel; over-the shoulder operational training and informal classroom training. Brief organizational commander and staff on system installation, training and operational status. Assures user of operational system and operator and maintenance training at lowest cost.

8. C4I - Technical Order Development.

To be successful, technical order development demands a teaming effort with not only the customer, it must also include the appropriate engineer disciplines, manufacturing personnel, and the ultimate user. Without this relationship, time and money are wasted, both through lengthy communication and coordination chains as well as when assumptions

on data content are in error and require rework. Hands on access to the equipment is mandatory and complete facility reviews are often required.

9. C4I - Design Drafting & Engineering Documentation.

Accurate design documentation demands the same interface and relationships described above. Conversion of engineering proof of concept drawings into fully detailed manufacturing and formal data packages requires the design draftsman to work closely with the engineer, material, and manufacturing personnel. This ensures design packages are accurate and properly sequenced for efficient manufacturing techniques. When complete, the data packages are also used as source data for the development of the necessary technical data being developed for the system or end item.

10. C4I - Automated Test Equipment/Automated Test Systems Electronic Fabrication.

Prototype manufacturing must be closely teamed with the customer and their engineering staff. Initial guidance is often vague with only an end objective in sight. The manufacturing shop must then fully understand this objective and develop the hardware, techniques and list of material to be used. Often times, complete item supportability is required, including testing and repair procedure development. In this case, the manufacturing personnel must be teamed with design drafting and technical order development personnel to ensure successful job completion.

11. C4I - High-altitude Electromagnetic Pulse (HEMP) Workload.

The HEMP workload requires on-site testing and maintenance. On-site HEMP testing is performed by engineers and technicians, who then perform any maintenance required as identified by the testing. This requires close interface and with the customer to plan and schedule the work

12. C4I - Defense Mapping Agency Workload

When the ATE test software is unable to identify a failed component, this workload will require on-site maintenance.

13. C4I - Sacramento Cooperative Administrative Support Unit (CASU)

We provide computer repair and maintenance and system development and field installation for CASU customers (list of CASU customers attached). CASU is part of a national program established by the President's Council on Management Improvement to reduce duplication efforts, increase productivity, and provide savings.

21. Local Wage Rate

21.1 What were your Department of Labor local wage rates for a WG-11, step 3 for Fiscal Years 1991 through 1994?

Table 21.1: **Wage Rate**

Wage Rate	FY 1991	FY 1992	FY 1993	FY 1994
WG-11 / Step3	$15.92	$16.58	$17.19	$17.34

Costs, continued

22. Programmed Capital Investments

22.1 How much is programmed for new mission equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.

22.2 How much is programmed for replacement equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.

Table 22.1: **Programmed Capital Investments**

TYPE	FY 1996	FY 1997	FY 1998	FY 1999
NEW MISSION ($K)	9,410	9,693	9,984	10,284
REPLACEMENT ($K)	7,216	7,433	7,656	7,887

Document Separator

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

TABLE OF CONTENTS

Notes 2
Commodity Groups List 3
Table of Acronyms 4
CAPACITY 5
1. Capacity Utilization 5
2. Plant Replacement Value 8
3. Programmed Workload 8
4. Service Centers of Excellence 11
MEASURES OF MERIT 13
Geographic 13
1. Location 13
2. Environmental Compliance 14
3. Environmental Restrictions 15
4. Other Collocated Activities 15
Facilities and Equipage 20
6. Unique for Peculiar Facilities 20
7. Buildings and Their Condition 26
8. Unique and/or Peculiar Capabilities and Capacities 29
9. Acreage Available for Building 46
10. Administrative Space 47
11. Industrial Waste 47
Workload and Capabilities 47
12. Core Capabilities 47
13. Core Workloads 49
14. Other Workloads (Above Core) 50
15. Unique and/or Peculiar Workloads 53
16. Scope of Work Performed 54
17. Interface with Customers 61
Costs 64
18. Real Property Maintenance 64
19. Annual Operating Costs 64
20. Environmental Compliance 65
21. Local Wage Rate 65
22. Programmed Capital Investments 66

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

This supplement is designed to facilitate the cross service analysis required of the 1995 Base Realignment and Closure (BRAC-95) process. It requests data in a standardized format that will be used by the Joint Cross Service Group-Depot Maintenance (JCSG-DM) to develop closure and realignment alternatives to be given to the Military Departments for their analysis and final recommendations. The JCSG-DM Data Call consists of two sections, one for capacity measurements and a second measuring "measures of merit". This Data Call has been formatted to assist the preparer in providing the required information with the minimum amount of effort. If questions arise, contact your Military Department BRAC-95 office for clarification.

Notes

Notes in the context of this data call:

1. Base your responses on workload as programmed for your activity. Unless otherwise specified, use workload mixes as programmed in the FYDP.
2. Direct Labor Hours (DLH) is the common unit of measure unless specifically noted otherwise in the question.
3. Information requested in this supplement may duplicate data requested by BRAC 95 data calls from the individual Military Departments. If this occurs, read both questions carefully to ensure that they are in fact asking for identical information, and if that is the case, transfer information from one data call to the other.
4. These questions should be passed up and down the chain of command without editing or rewriting. This standardized data call is designed to support an auditable process by having each activity (regardless of Military Department assigned) respond to the same question.
5. "Core" capability calculations are to be performed in accordance with Office of the Under Secretary of Defense (Logistics) Memorandum dated November 15, 1993 (Subject: Policy for Maintaining Core Depot Maintenance Capability).
6. Capacity and utilization index calculations will be performed in accordance with the Defense Depot Maintenance Council approved update to DoD 4151.15H (Depot Maintenance Capacity/Utilization Index Measurement) dated December 5, 1990.
7. All calculations will assume a one shift, 40 hour work week.
8. Workload, capabilities, and capacities will be measured by commodity groups. A detailed breakout of the JCSG-DM commodity groups is contained in the following box. Insert the commodity groups applicable to your depot maintenance activity into the tables whenever a specific break out is requested by the question. Individual Military Departments in their Service specific data calls, may measure data in different commodity groups or categories, but for the Joint Cross Service analysis, these commodity groups must be utilized.
9. Data will be amounts as of the end of the applicable fiscal year.

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

Commodity Groups List

1. Aircraft Airframes:
   a. Rotary
   b. VSTOL
   c. Fixed Wing
      (1) Transport / Tanker / Bomber /
      (2) Command and Control
      (3) Light Combat
      (4) Admin / Training
   d. Other

2. Aircraft Components
   a. Dynamic Components
   b. Aircraft Structures
   c. Hydraulic/Pneumatic
   d. Instruments
   e. Landing Gear
   f. Aviation Ordnance
   g. Avionics/Electronics
   h. APUs
   i. Other

3. Engines (Gas Turbine)
   a. Aircraft
   b. Tank
   c. Blades / Vanes (Type 2)

4. Missiles and Missile Components
   a. Strategic
   b. Tactical / MLRS

5. Amphibians
   a. Vehicles
   b. Components (less GTE)

6. Ground Combat Vehicles
   a. Self-propelled
   b. Tanks
   c. Towed Combat Vehicles
   d. Components (less GTE)

7. Ground and Shipboard Communications and Electronic Equipment
   a. Radar
   b. Radio Communications
   c. Wire Communications
   d. Electronic Warfare
   e. Navigational Aids
   f. Electro-Optics / Night Vision
   g. Satellite Control / Space Sensors

8. Automotive / Construction Equipment

9. Tactical Vehicles
   a. Tactical Automotive Vehicles
   b. Components

10. Ground General Purpose Items
    a. Ground Support Equipment (except aircraft)
    b. Small Arms / Personal Weapons
    c. Munitions / Ordnance
    d. Ground Generators
    e. Other

11. Sea Systems
    a. Ships
    b. Weapons Systems

12. Software
    a. Tactical Systems
    b. Support Equipment

13. Special Interest Items
    a. Bearings Refurbishment
    b. Calibration (Type I)
    c. TMDE

14. Other

Table of Acronyms

$/DLH	Cost per Direct Labor Hour
$K	Thousands of Dollars
ADMIN	Administrative; administration
AICUZ	Air Installations Compatible Use Zone
AOC$	Annual Operating Cost (dollars)
CCN	Category Code Number
DBOF	Defense Business Operating Fund
DLH	Direct Labor Hour
DoD	Department of Defense
ESQD	Explosive Safety Quantity Distance
FMS	Foreign Military Sales
FY	Fiscal Year
FYDP	Future Year Defense Plan
GTE	Gas Turbine Engines
HERF	Hazardous Electronic Radiation - Fuels
HERO	Hazardous Electronic Radiation - Ordnance
HERP	Hazardous Electronic Radiation - Personnel
JCSG-DM	Joint Cross Service Group - Depot Maintenance
KSF	Thousands of Square Feet
PRV	Plant Replacement Value
R&D	Research and Development
RPM	Real Property Maintenance
SF	Square Feet
WG	Wage Grade

CAPACITY

1. Capacity Utilization

1.1 Calculate the capacity index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed in direct labor hours (DLHs) in Table 1.1.a by commodity groups for the Fiscal Years requested.

Table 1.1.a: Capacity Index

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME					
Transport	2,103,974	2,103,974	2,103,974	2,103,974	2,103,974
Light Combat	1,083,865	1,083,865	1,083,865	1,083,065	1,083,865
ACFT COMPONENTS					
Aircraft Structures	656,477	656,477	656,477	656,477	656,477
Hydraulic/Pneumatic	173	173	173	173	173
Instruments	412,266	412,266	412,266	412,266	412,266
Landing Gear	1,247	1,247	1,247	1,247	1,247
Aviation Ordnance	837	837	837	837	837
Avionics/Electronics	1,763,055	1,763,055	1,763,055	1,763,055	1,763,055
Manufacturing & Fabrication	431,525	431,525	431,525	431,525	431,525
Other	387,839	387,839	387,839	387,839	387,839
MISSILE COMPONENTS					
Tactical/MLRS	18,105	18,105	18,105	18,105	18,105
GRND COMM & ELECTR EQUIP					
Radar	1,550	1,550	1,550	1,550	1,550
Radio Communications	43	43	43	43	43
Wire Communications	63	63	63	63	63
Navigation Aids	145	145	145	145	145
Electro-Optics/Night Vision	87	87	87	87	87
SOFTWARE					
Tactical Systems	795,304	795,304	795,304	795,304	795,304
Support Equipment	530,203	530,203	530,203	530,203	530,203
TOTAL	8,186,758	8,186,758	8,186,758	8,186,758	8,186,758

1.2 Calculate the utilization index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed as a percentage (%) in Table 1.2.a by commodity groups for the Fiscal Years requested.

Table 1.2.a: Utilization Index

COMMODITY GROUP	INDEX (%)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME					
Transport	131	121	92	81	64
Light Combat	101	85	88	121	117
ACFT COMPONENTS					
Aircraft Structures	72	72	78	74	73
Hydraulic/Pneumatic	76	76	83	78	77
Instruments	72	72	78	74	73
Landing Gear	72	72	78	74	72
Aviation Ordnance	72	72	78	74	73
Avionics/Electronics	72	72	78	74	73
Manufacturing & Fabrication	73	72	79	74	73
Other	72	71	78	74	72
MISSILE COMPONENTS					
Tactical/MLRS	72	72	78	74	73
GRND COMM & ELECTR EQUIP					
Radar	72	72	78	74	73
Radio Communications	72	72	79	74	72
Wire Communications	71	71	78	75	73
Navigation Aids	72	72	79	74	72
Electro-Optics/Night Vision	72	72	78	74	72
SOFTWARE					
Tactical Systems	87	96	113	111	112
Support Equipment	87	96	113	111	112
TOTAL	93	90	89	88	83

1.3 Assuming (a) the current projected total workload remains as assigned; (b) that sufficient production demand is available to justify maximum hiring, with no significant investment in capital equipment; and (c) no major Military Construction additional to that already approved and funded: what is the maximum extent to which operations, by commodity group, could be expanded for depot maintenance work at your activity, based on the current and future planned workload mixes? Please provide your response in the absolute maximum number of direct labor hours (DLHs).

Table 1.3.a: Maximum Potential Capacity

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME					
Transport	2,103,974	2,103,974	2,103,974	2,103,974	2,103,974
Light Combat	1,083,865	1,083,865	1,083,865	1,083,865	1,083,865
ACFT COMPONENTS					
Aircraft Structures	801,152	801,152	801,152	801,152	801,152
Hydraulic/Pneumatic	223	223	223	223	223
Instruments	503,352	503,352	503,352	503,352	503,352
Landing Gear	1,517	1,517	1,517	1,517	1,517
Aviation Ordnance	1,026	1,026	1,026	1,026	1,026
Avionics/Electronics	2,152,671	2,152,671	2,152,671	2,152,671	2,152,671
Maufacturing & Fabrication	514,172	514,172	514,172	514,172	514,172
Other	462,934	462,934	462,934	462,934	462,934
MISSILE COMPONENTS					
Tactical/MLRS	21,907	21,907	21,907	21,907	21,907
GRND COMM & ELECT EQUIP					
Radar	1,550	1,550	1,550	1,550	1,550
Radio Comm	43	43	43	43	43
Wire Comm	63	63	63	63	63
Navigation Aids	145	145	145	145	145
Electro-Optics/Night Vision	87	87	87	87	87
SOFTWARE					
Tactical Systems	1,358,465	1,358,465	1,358,465	1,358,465	1,358,465
Support Equipment	905,643	905,643	905,643	905,643	905,643
TOTAL	9,912,789	9,912,789	9,912,789	9,912,789	9,912,789

2. Plant Replacement Value

2.1 What is the estimated Plant Replacement Value (PRV) as of the end of each Fiscal Year of your depot maintenance activity expressed in thousands of dollars ($K) as a function of the facilities and equipment? Provide your answer in Table 2.1.

Table 2.1: Expenditures and Equipment Values

PRV	$ K				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Facilities	**878,264**	**929,204**	**1,012,832**	**1,136,398**	**1,313,676**
Equipment	**994,000**	**1,046,190**	**1,067,608**	**1,101,696**	**1,128,442**
TOTAL	**1,872,264**	**1,975,394**	**2,080,440**	**2,238,094**	**2,442,118**

3. Programmed Workload

3.1 Given the current configuration and operation of your activity, provide the programmed depot level workload by commodity group in Tables 3.1.a and 3.1.b. Express your answer in both dollars ($K) and direct labor hours (DLH) for the Fiscal Years requested.

(See Tables on following pages)

Table 3.1.a: Programmed Workload

COMMODITY GROUP	$ K				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME					
Transport	232,691	220,384	149,010	132,943	108,221
Light Combat	91,908	78,958	84,460	116,644	116,336
ACFT COMPONENTS					
Aircraft Structures	43,591	44,954	49,787	46,952	47,191
Hydraulic/Pneumatic	12	13	14	13	13
Instruments	27,375	28,231	31,266	29,486	29,636
Landing Gear	83	85	94	89	90
Aviation Ordnance	56	57	63	59	60
Avionics/Electronics	117,069	120,730	133,710	126,094	126,738
Maufacturing & Fabrication	28,800	29,701	32,894	31,020	31,178
Other	25,607	26,408	29,247	27,581	27,723
MISSILE COMPONENTS					
Tactical/MLRS	1,202	1,240	1,373	1,295	1,302
GRND COMM & ELECT EQUIP					
Radar	103	106	118	111	111
Radio Communications	3	3	3	3	3
Wire Communications	4	4	5	5	5
Navigation Aids	10	10	11	10	10
Electro-Optics/Night Vision	6	6	7	6	6
SOFTWARE					
Tactical Systems	41,082	46,482	55,649	54,942	56,704
Support Equipment	27,388	30,988	37,100	36,628	37,803
TOTAL	636,989	628,362	604,813	603,883	583,131

Table 3.1.b: Programmed Workload

COMMODITY GROUP	DLHs				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME					
Transport	2,757,366	2,544,281	1,925,239	1,699,038	1,348,994
Light Combat	1,094,889	918,498	954,162	1,310,273	1,267,169
ACFT COMPONENTS					
Aircraft Structures	473,770	471,864	514,555	485,388	476,571
Hydraulic/Pneumatic	132	131	143	135	133
Instruments	297,528	296,330	323,140	304,824	299,286
Landing Gear	899	895	976	921	904
Aviation Ordnance	604	601	656	619	607
Avionics/Electronics	1,272,368	1,267,247	1,381,900	1,303,569	1,279,889
Maufacturing & Fabrication	313,010	311,751	339,956	320,686	314,861
Other	278,317	277,197	302,276	285,142	279,962
MISSILE COMPONENTS					
Tactical/MLRS	13,067	13,014	14,192	13,387	13,144
GRND COMM & ELECT EQUIP					
Radar	1,119	1,114	1,215	1,146	1,125
Radio Communications	31	31	34	32	31
Wire Communications	45	45	49	47	46
Navigation Aids	105	104	114	107	105
Electro-Optics/Night Vision	63	63	68	64	63
SOFTWARE					
Tactical Systems	689,334	763,634	894,983	881,795	888,197
Support Equipment	459,556	509,089	596,655	587,863	592,131
TOTAL	7,652,203	7,375,889	7,250,313	7,195,036	6,763,218

4. Service Centers of Excellence

4.1 If your activity has been designated as a Service Center of Excellence for any of the commodity groups, please identify them below.

Service Center of Excellence

F-15 Fighter Aircraft

C-130 SOF/Special Mission Aircraft

Flight Data Recorders

Gyroscopes (Excl. Displacement)

Fasteners (Manufacture & Test)

Miniature Precision Instrument Bearing

Radio Frequency Analysis & Measurement Center

Air Force Executive Agent - Shelf-Life Extension Data

Joint Logistics Systems Center (JLSC) Initial Operating Site for Maintenance

C-141 Transport Aircraft

C-130 Transport Aircraft

Propellers (C-130s)

Life Support

Flexible Computer Integrated Manufacturing (FCIM)/Validation

Physical Sciences Laboratories (AALA Certified)

Special Fuels Testing (NASA Shuttle, Air Force One, U-2)

Depot Maintenance Mgt Information Sys (DMMIS) Initial Operating Site

Airborne Electronics Technology Repair Center

Electronic Warfare AISF

Joint Logistics Systems Center (JLSC) Initial Operation Site for DoD Joint Laboratory Management System

Aging Aircraft Structures

4.2 Identify Technology Area Program Management (TAPM) functions assigned to your center.

TAPM Assignments

Power Systems

Environment Stress Screening

Advanced Electronics Systems Architecture (AESA)

Force Management

Corrosion

Environmental Technology Needs

Product Data

Software Engineering

Electronic Manufacturing and Repair

Obsolete Micro-Electronics

Aircraft Manufacturing and Repair

Aircraft Structures Technology Needs

MEASURES OF MERIT

Geographic

1. Location

1.1 Specify any special strategic importance or military value consideration of your activity accruing from its geographical location.

Description of Strategic Importance/Military Value

Only East Coast Air Force depot maintenance activity to support military requirements in peace and war.

Over 50% of the aircraft repaired at WR-ALC are based on the East Coast.

Within minutes of interstates I-16 and I-75 going to eastern seaboards and major transportation hubs such as Atlanta.

Close proximity to Savannah, Charleston, and Jacksonville provides quick access to major waterports.

Hartsfield International Airport in Atlanta is located within 2 hours travel time. Macon Municipal Airport which provides commuter and commercial service is located within 20 minutes.

On-base access to national railway system.

Boeing, McDonnell-Douglas, Northrop, Grumman, General Dynamics, Pratt Whitney, and United Technologies are within short driving distances which provides convenient access to defense industries and their technologies.

Excellent weather for base/depot operations.

Army, Navy, Air Force, and Marine installations are located within the state which allows rapid interservice support.

Lockheed Corporation is located within 2 ½ hours which provides immediate access to engineering and production support for C-130 and C-141 aircraft.

In close proximity to Eglin and Atlantic Ranges for testing mod installs, engineering upgrades, etc.

The low elevation, extremely flat local terrain, and southern location of Robins AFB enhances the Global Positioning System (GPS) Integrated Support Facility's (ISF) ability to analyze signals from satellites low on the horizon.

Close proximity to the 16SOW (Hurlburt Field. FL) allows WR-ALC to quickly respond to AFSOC (Eglin AFB FL) requirements. High priority missions sometime call for same day turn-around. Our proximity minimizes cost and flowdays which are vitally important to supporting AFSOC's mission.

2. Environmental Compliance

Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

2.1 Is your activity in full compliance with all Federal, state, and local environmental regulations? If not in full compliance, provide a comprehensive list of individual regulations that require actions to be taken. What compliance waivers have been granted? When must the activity come into compliance?

Robins AFB is currently in full compliance with all environmental regulations. No compliance waivers have been granted nor are any required. No deadlines for compliance have been issued.

2.2 Has any actual or programmed work at this installation been restricted or delayed because of environmental considerations, such as air or water quality? If so, provide the details of the impact of the restrictions or delays.

NO.

3. Environmental Restrictions

Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

3.1 Are there any special programs relating to environmental or industrial waste considerations for your activity? If so, provide the details.

NO.

3.2 Within what provisions must the activity operate with regard to disposal of hazardous wastes and radioactive materials?

No special provisions relating to disposal of hazardous wastes and radioative materials are imposed on Robins AFB.

4. Other Collocated Activities

4.1 Are there any collocated activities that directly benefit or relate to the depot maintenance activity? If yes, list and describe the impact of each. Include benefits derived from being collocated.

Collocated Activity: Systems Program Directors (F-15, C-130, C-141, Special Ops Forces, Avionics, Electronic Warfare, Space and Special Systems)

Benefit/Relationship: Collocation provides integrated weapons systems management sustained interaction with depot maintenance to enhance customer support and reduce life cycle costs. Depot maintenance provides direct support for system program directors in fulfilling weapons system requirements of the operating commands and immediate response for problems. Close coordination between the weapons system management structure, Test Program Set (TPS) support, depot repair functions, and Avionics Integrated Support Facility (AISF) operation results in better integrated product team decisions. Configuration management of hardware, TPS and Operation Flight Program (OFP) software is enhanced. Electronic Failure Analysis facilitates identification and resolution of problems in depot maintained avionics and electronic warfare equipment. Collocation benefits include on-site analytical equipment to provide responsive electronics engineering support for critical electronics problems. This collocation also

enhances elimination of other failure modes thereby improving reliability and reducing life cycle repair costs. Failure analysis, development of NDI procedures, system peculiar corrosion control, and structural analysis require the prime aircraft or weapons system to be on the same depot site

Impact: Collocation provides integrated weapons systems management and sustained interaction with depot maintenance to enhance customer support and reduce life cycle costs. Without the aircraft or weapon system on the depot site, engineering work would not be possible without allocation and expenditure of TDY funds. Decentralization would result in delays in production, mishap investigation, and solving numerous other specialized problem situations.

Collocated Activity: Current Tenant Organizations (19ARW, 5CCG, AFOSI, etc); Future Tenant Organizations (Joint STARS, B-1B)

Benefit/Relationship: Depot maintenance provides direct support to operating units covering life support equipment, lab analysis, machining, avionics repair and other services to enhance their war readiness posture. Assignment of the intermediate level avionics maintenance support for the 19ARW to the Avionics Production Division improves maintenance cycle time, reduces excessive pipeline time, and conserves Air Force resources. Joint STARS and B-1B will also benefit from having intermediate level avionics repair collocated.

Impact: Depot maintenance provides an immediate complement of services and capabilities that would have to be pursued through alternative sources. With a speedline established between the 19ARW and our avionics shops, a 15 day pipeline to the former Intermediate Level Maintenance Center (ILMC) at Griffiss AFB was reduced to less than two (2) days.

Collocated Activity: Defense Logistics Agency (DLA)

Benefit/Relationship: Our industrial shops provide an immediate source of supply for DLA managed materials via local manufacturing capability. Depot maintenance also provides lab analysis of fuels and shelf life materials for DLA. Due to the nature of assets stored (i.e., electronics, Automated Data Processing Equipment (ADPE), aircraft structural components, etc), DLA warehouse personnel do not always have the test equipment and/or knowledge to determine serviceability and/or identity of assets

processed/stored. Receipts where identity/condition is in question can be resolved quickly and correctly with the assistance of the technical experts.. Having this expertise available locally results in the avoidance of shipping costs associated with sending assets off base, or in some cases, travel funds to have the expertise brought on base.

Impact: Without collocation of maintenance, DLA would be required to seek alternate sources of repair/manufacture of needed assets. Additionally, engineering testing and other lab functions would have to be contracted for in the private sector.

Collocated Activity : EM, 653ABG

Benefit/Relationship: Depot maintenance provides analysis in support of identification of lead paint and asbestos. Final analysis of environmental wastes and by-products is also provided.

Impact: Approximately 14 percent of environmental analyses performed are in support of EM and 653 ABG. This analysis would have to be obtained from alternative sources.

Collocated Activity: 653CLSS

Benefit/Relationship: The mission of the 653 CLSS is to provide highly trained worldwide deployable, military teams to accomplish aircraft battle damage maintenance, crash recovery operations, and crash damage repair. Being collocated to the Warner Robins Air Logistics Center, which manages the aircraft that the 653 CLSS supports during wartime, benefits both parties. The CLSS is able to train and keep its personnel proficient in heavy maintenance typical of the kind they may encounter when repairing battle damaged aircraft. Additionally, they work with aircraft engineers essential to preparing ABDR technicians and engineers for real world contingencies. Collocation results in a pool of rapidly deployable, highly trained military personnel ready to assist with accomplishing depot maintenance on and off station.

Impact: Negative impact on readiness capabilities during wartime efforts.

4.2 Do collocated activities support, or are they supported by, the depot maintenance activity?

Collocated Activity	Support	Supported By
System Program Directors	X	X
F-15	X	X
C-130	X	X
C-141	X	X
Special Ops Forces	X	X
Avionics	X	X
Electronic Warfare	X	X
Space and Special Systems	X	X
Tenants	X	X
19ARW		X
5CCG		X
AFRES	X	X
AFOSI		X
Future B-1B Wing	X	X
EM	X	X
653ABG	X	X
653CLSS	X	X
Defense Logistics Agency	X	X

4. Other Collocated Activities, continued

4.3 How would these activities and the depot maintenance activity function if they were not collocated?

Collocated Activity: System Program Directors

When system engineers, equipment specialists, and logistic managers are not located with the support and repair activity, end user and customer support is degraded in terms of quality and schedule. Problems would remain unsolved for longer periods of time and solutions would suffer from not having the benefit of integrated team decisions. Under the integrated weapons system management concept, collocation of the system program directors with the depot maintenance processes provides a high degree of interaction, and sustained communications in meeting mission requirements of the operating commands. AFMC's logistics support posture and depot

maintenance's ability to meet critical mission requirements could be significantly degraded if not collocated.

Collocated Activity: Current Tenant Organizations (19ARW, 5CCG, AFOSI, etc) / Future Tenant Organizations (Joint STARS, B-1B)

These AF activities are supported in a variety of ways to satisfy their mission requirements. Without the depot maintenance on-site services/capabilities, these organizations would require alternative sources for obtaining services now provided by depot maintenance. For example, AFOSI would be required to obtain another source for the analytical support provided by the laboratory.

Collocated Activity: DLA

Material support could be significantly degraded. Equally, nonavailability of depot lab services would require DLA to locate alternative private sector sources. This alternative could result in increased costs and longer lead times for lab results.

Collocated Activity: EM, 653 ABG

The environmental analysis performed by the depot lab must be provided in a timely manner in order to meet regulatory restrictions. Without the availability of the depot laboratory, EM and 653ABG would need to identify a private laboratory for environmental analysis. Such a relationship could result in increased costs and longer lead times for lab results.

Collocated Activity: 653 CLSS

If the 653 CLSS was not collocated at the Warner Robins Air Logistics Center, its aircraft battle damage repair capabilities would suffer. The Air Logistics Center (ALC) provides a wide variety of training opportunities which are vital to meeting the CLSS's wartime mission. Newly assigned personnel would have to be sent to the ALC for long periods of time to gain depot experience and all maintenance personnel would have to be sent to the ALC periodically for proficiency training and updates on new depot repair procedures. This would cause a hardship for personnel and extra cost to the government.

5. Encroachment

5.1 Have operations at this activity been at all constrained to accommodate requests of the local communities?

NO.

5.2 Indicate any encroachment constraints on current or future operations that would restrict future expansion.

NONE.

Facilities and Equipage

6. Unique or Peculiar Facilities

6.1 List unique or peculiar testing facilities, excluding equipment (e.g. runways, railheads, ports, tracks, ponds, etc.). Describe Uniqueness/Peculiarity of each.

<u>Test Facility:</u> Buildings 640/645 Avionics Complex (15.1, 2.g. and 12b)

The uniqueness of the avionics complex deals with the complexity, diversity, and flexibility of the facilities. These features are listed individually below, however the synergy derived from the integration of the features of these facilities is what make them truly one of a kind within the Department of Defense. Our facilities offer the flexibility to realign for new workloads while providing for specific technologies including hybrid microelectronics manufacture, computer integrated repair, environmental screening, RF/microwave antenna measurement, and a comprehensive software engineering capability. The total facility size is 533,573 square feet (12.25 acres under roof). Described below are some of our more unique facility capabilities:

Antenna Ranges: The avionics complex houses eight (8) indoor antenna ranges totaling 9,185 square feet providing for a full range of services necessary for antenna evaluation, repair, and recertification. Our facilities have the capability for antenna testing between 2 - 94 GHz. The anechoic chambers are shielded to prevent radio frequency (RF) noise from infiltrating into the surrounding production facility and have microwave absorbent material on the floor, walls, and ceiling to absorb RF noise created within the chamber. Removable exterior walls facilitate arrival and/or removal of antenna test equipment. The F-111 range has a seismic isolation pad.

Printed Wiring Board Manufacturing: The avionics complex has an area of 17,000 square feet for the design and manufacture of double sided and multi-layered Printed Wiring Boards. This area has an extensive industrial waste system, recessed flooring for wet processing areas, exhaust systems, deionized water, explosion proof facility for chemical mixing/distribution, raised floor for computer aided design and sealed walls (floor to roof) to prevent chemical processes infiltrating into the surrounding facilities/operations.

Hybrid Microelectronics: The Hybrid Microelectronics manufacturing facility consists of 2600 square feet of class 10,000 clean room. Temperature/humidity factors, and airborne contamination are controlled within this electrostatic static discharge (ESD) sensitive environment utilizing high efficiency particulate air filters with accelerated air velocities. The ESD concerns are met by utilizing a static dissipative raised floor system. Other special utilities incorporated in the facility are liquid/gaseous nitrogen, fume hoods for chemical exhaust, and 400 Hertz power.

LANTIRN: The LANTIRN (Low Altitude Navigation and Targeting Infra-Red for Night) technology repair center (TRC) features automated storage/retrieval systems (high bay required), a 2000 square foot class 10,000 clean room, and a 400 square foot LASER light tight room. The entire LANTIRN area has a static dissipative raised floor over a monolithic signal reference grid which provides a equipotential earth ground at any point. General utilities are distributed under the raised floor as well as telecommunications, industrial waste, and gaseous nitrogen.

Clean Rooms: The avionics complex houses 12,085 square feet of clean rooms having cleanliness levels ranging from class 10,000 up to class 300,000. These clean rooms have rigid temperature/humidity/air filtration requirements as well as ESD, positive pressure, vacuum, air locks, and material handling requirements.

LASER Rooms: There are 16 LASER safe firing rooms within building 640. These rooms are totally sealed, including doors, to prohibit a LASER beam from exiting the room. These rooms are also electrically interlocked so that if the door seal is broken the power supplied to the LASER firing mechanism is de-energized.

Optics Repair: The avionics complex has two (2) optic repair stations with isolated seismic foundations - in the PAVE Tack and in the LANTIRN Automated Depot. These seismic pads, located below the raised floor, isolate the optics repair equipment from vibrations normally transmitted within repair facilities.

Security: The facility consists of an Air Force controlled area of 522,313 sq ft certified for open storage of classified equipment (up to secret). The facility is completely fenced to maintain security including two (2) security guard posts to regulate personnel and vehicular entry. The Avionics Complex also houses a unique cryptographic facility.

Heating Ventilation and Air Conditioning: The facility is environmentally controlled by 11 chillers (capacity totaling 3600 Ton of A/C), providing temperature control of 72 degrees F +/- 5 degrees F and a humidity control of 40% +/- 10%. All chillers are in compliance with the Ozone Depleting Substance regulations. Also, two (2) industrial painting facilities totaling 2,577 square feet are located in the complex; these rooms have specialized air handling/ventilation systems, fire detection and suppression systems.

Power/Utility Distribution: Electrical capabilities include a high reliability exterior electrical distribution system, underground cable, loop fed, dedicated circuit which uses tie switches to isolate loads, and 16,250 KVA of uninterruppted power. The electrical system also contains an equipotential, internal earth ground reference grid with low impedance. The electrical system feeds 11,659 linear feet of freestanding uniformly distributed utility systems (also known as "Raceways") throughout the complex. All raceways contain outlets and electrical receptacles which are repeated every five (5) feet on center. These electrical outlets include the following capacities:

120 Volts AC, 60 Hz, single (1) phase (standard capacity 20 Amps)
208 Volts AC, 60 Hz, single (1) phase (standard capacity 20 Amps)
208Y/120 Volts AC, 60 Hz, three (3) phase 4 wire (standard capacity 30 Amps)
200 Volts AC, 400 Hz, single (1) phase (standard capacity 20 Amps)
200Y/115 Volts AC, 400 Hz, three (3) phase 4 wire (standard capacity 30 Amps)
115 Volts AC, 400 Hz, single (1) phase (standard capacity 20 Amps)
28 Volts DC +/- .5 volts DC (standard capacity 20 Amps).

Also provided in each raceway is compressed air ranging from 30 psi to 100 psi and a vacuum system ranging from 14 in Hg to 22 in Hg. The Avionics Complex also accommodates several non standard utilities such as automatic computer supervised fire detection systems linked to the base fire department, deionized water/nitrogen (liquid and gaseous), natural gas, and industrial waste. The complex also has three (3) civil engineering support buildings, two (2) chemical storage buildings totaling 700 square feet and a machine shop support facility of 4,700 square feet.

Software Production Facilities: The Avionics Software Production facility has the unique capability to design, produce, and maintain Test Program

Sets (TPS) for LRU and SRU end items. Organic repair activities include requirements analysis, project planning/management/ control, software design, interface test assembly design, quality assurance, computer and dedicated test resources, and product delivery. This facility supports major systems including Joint STARS, E-3, F-111, F-15, AC-130, MC-130, MH-53, MH-60, B-52, C-130, GPS, MRT, and LANTIRN.

Test Facility: Building 226/227 Complex (15.1, 12a and 12b)

Avionics Integrated Support Facilities (AISFs) are unique, modular, multi-system engineering facilities developed to support specific avionics sub-systems. AISFs provide a comprehensive support environment for supported subsystems. AISF capabilities include: real time system integration testing, Operational Flight Program (OFP) software development, testing/reconfiguration, compilation, configuration control, off line sub system analysis, data reduction. comprehensive self diagnostics, and maintenance of software documents. AISF facilities provide data communication and software data transmission to the operational user units. AISFs resident to and supported by WR-ALC include LANTIRN, Joint Tactical Information Distribution System Centralized Software Support Activity (JTIDS CSSA), Special Operations Forces Extendible Integrated Support Environment (SOF EISE), C-130 Self Contained Navigational System (SCNS), Miniature Receiver Transmit Software Maintenance Facility (MRT SMF), PAVE TACK, and Extendible Communication Integration Support Environment (ECOMISE). The Electronic Warfare Avionics Integrated Support Facility (EWAISF) has a 10,000 square foot intelligence and communications facility accredited for Sensitive Compartment Information. The EWAISF has four electromagnetic screen rooms and two microwave anechoic chambers. The electromagnetic isolation of these rooms ensures external signals do not falsely stimulate equipment under test and security sensitive transmitter techniques are not radiated outside the controlled area. The Electronic Warfare Avionics Integrated Support Facility (EWAISF) has emergency power generation to allow full operation in the absence of commercial power. This complex supports most major weapon systems including Joint STARS, E-3, F-111, F-15, AC-130, MC-130, MH-53, MH-60, B-52, C-130, C-141, F-16, GPS, MRT, A-7, EF-111, A-10A, F-4, HH-3, UH-1, UH-60, B-1B, OA-10A, C-5B, and C-17. Electronic Combat (EC) systems by nomenclature and aircraft weapon system are listed in the Avionics Planning Baseline, September 1993.

Test Facility: Building 231 Security Assistance Electronic Warfare Support Facility (15.1, 12a)

The facility was bought with FMS funds to be used only for FMS purposes. The facility includes labs, within security vaults approved for processing up to SECRET NO FOREIGN level of information, with special climate conditioning and additional backup sources for air and power, raised floor, and a radio-frequency screen room. Software development and test are accomplished on Integrated Support Stations (ISS) which provide system interfaces and wiring closely representing the system as installed on the aircraft; test facility instrumentation and control systems to monitor, manage, and record system operations; plus simulators capable of generating accurate representations of the threats. Highly reliable and repeatable lab tests save valuable range and aircraft flight time. Certified classified computer network supports multiple Foreign Military Sales cases and their peculiar software support requirements.

Test Facility: Building 323 Engineering Assessment Facility Teardown Inspection High Bay Area (15.1, 2.b)

The engineering assessment facility in support of C-141 Empennage and oversize access doors for which WR-ALC is the single source of repair for the DoD.

Test Facility: Building 675/676 Radome Ranges (15.1, 2.b and 2.g)

WR-ALC is the single source of repair for the DoD for the F-15 nose radome.

Test Facility: Building 91 Special Operations Forces Aircraft Maintenance Hangars (15.1, 1.c.(1))

WR-ALC is the single source of repair in the Air Force for Special Operations Forces assigned aircraft such as Combat Talon, C-130 Gunships, and Helicopters.

Test Facility: C-141 Aircraft Maintenance Complex (15.1, 1.c.(1) and 15.2, 1.c.(1))

WR-ALC is the single source of repair in the DoD for the C-141 aircraft.

Test Facility: C-141 Aircraft Component Complex (15.1, 2.b and 2.j)

WR-ALC is the single source of repair in the DoD for the C-141 aircraft components.

Test Facility: Bulding 140 F-111 Crew Escape Module Parachute (15.1, 2.I)

WR-ALC is th single source of repair in the DoD for the F-111 Crew Escape Module Parachute.

Test Facility: F-15 Aircraft Component Complex (15.1, 2.b, 2.j)

WR-ALC is the single source of repair in the DoD for the total refurbishment of the F-15 wings and other associated field generated components.

Test Facility: C-130 Aircraft Component Complex (15.1, 2.b, 2.i, 2.j)

WR-ALC is the single source of repair for the Air Force for the C-130 aircraft field generated structural components and propellers.

Test Facility: Building 158 Gyro Repair Facility (15.1, 2.d)

Bldg 158, totaling 69,075 sq ft, was specifically designed to support organic overhaul and testing of gyroscopes, accelerometers and indicators. It contains 47,285 sq ft of Class 300,000 certified controlled space, and 12,258 sq ft of Class 100,000 certified controlled space. The entire facility is climate controlled to 72 degrees plus or minus 5 degrees with 30 to 50 percent humidity. Seismological stable piers are in pace for automated and manual test stations required to support this workload. All work stations are electro-static discharge sensitive. Miniature precision bearing inspection, repair and testing area exist, in addition to machining and welding support functions. Contained in this facility are 12 general purpose automatic test stations, 31 manual test stations, 9 mass spectrometer leak detector systems, 14 dynamic ballancers, 2 random drift automated test stations and a host of other specialized equipment.

6.2 Indicate the reasons that these facilities are required by the depot maintenance function.

The engineering assessment facility in support of C-141 Empennage and oversize access doors for which WR-ALC is the single source of repair for the DoD.

Test Facility: Building 675/676 Radome Ranges (15.1, 2.b and 2.g)

WR-ALC is the single source of repair for the DoD for the F-15 nose radome.

Test Facility: Building 91 Special Operations Forces Aircraft Maintenance Hangars (15.1, 1.c.(1))

WR-ALC is the single source of repair in the Air Force for Special Operations Forces assigned aircraft such as Combat Talon, C-130 Gunships, and Helicopters.

Test Facility: C-141 Aircraft Maintenance Complex (15.1, 1.c.(1) and 15.2, 1.c.(1))

WR-ALC is the single source of repair in the DoD for the C-141 aircraft.

Test Facility: C-141 Aircraft Component Complex (15.1, 2.b and 2.j)

WR-ALC is the single source of repair in the DoD for the C-141 aircraft components.

Test Facility: Bulding 140 F-111 Crew Escape Module Parachute (15.1, 2.I)

WR-ALC is th single source of repair in the DoD for the F-111 Crew Escape Module Parachute.

Test Facility: F-15 Aircraft Component Complex (15.1, 2.b, 2.j)

WR-ALC is the single source of repair in the DoD for the total refurbishment of the F-15 wings and other associated field generated components.

Test Facility: C-130 Aircraft Component Complex (15.1, 2.b, 2.i, 2.j)

WR-ALC is the single source of repair for the Air Force for the C-139 aircraft field generated structural components.

Test Facility: Buildings 640/645 Complex (15.1, 2.g, 12.b)

Avionics Repair: The unique facilities described in question 6.1 are required to support the security, safety, environmental controls, diverse electrical, and electromechanical test equipment requirements for 300 + mission critical common/peculiar avionics and electronic warfare test/repair systems. The volume and diversity of equipment cannot be supported utilizing general industrial or administrative space.

Test Facility: Building 226/227 Complex (15.1, 12.a)

The Avionics Integrated Support Facilities (AISFs)are required to provide a capability for testing and reconfiguration of Operational Flight Program (OFP) software. An organic OFP capability is necessary to provide responsive support to changing mission requirements. The EWAISF is required by HQ USAF direction to give 24 hour, seven day per week support for EW operational requirements, engineering, and software reprogramming. Electronic Warfare systems engineering requires communications with the customers, rapid worldwide software distribution, and immediate access to all levels of intelligence information. Testing of highly classified electronic countermeasures techniques require the security of the EWAISF. After testing, maintenance installs the changes or modifications outside of the EWAISF. To accomplish the security level of the Warner Robins ALC EWAISF would require many facilities world wide.

Test Facility: Building 231 Security Assistance Electronic Warfare Support Facility

The facilities are required to give 24 hour, seven day a week support for FMS requirements. Electronic Warfare systems engineering require communications with customers, rapid worldwide distribution and immediate access to all levels of intelligence information. The facilities and equipment can simulate aircraft and threat. The security level of these buildings elsewhere would require multiple buildings.

Test Facility: Building 323 Engineering Assessment Facility Teardown Inspection High Bay Area (15.1, 2.b)

6.3 How could the depot maintenance functions be performed without these specialized facilities? Describe testing alternatives.

Test Facility: Buildings 640/645 (Avionics, Antenna Ranges, Printed Wiring Board Manufacturing, Microelectronics, LANTIRN, Clean Rooms, LASER Rooms, Optics Repair, Security, HVAC, Power/Utility Distribution, Avionics Software Production Facilities) (15.1, 2.g, 12.b)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: Buildings 226/227 (Avionics Integrated Support Facilities (AISFs) (15.1, 12.a)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: Building 231 Security Assistance Electronic Warfare Support Facility (15.1, 12.a)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: Building 323 Engineering Assessment Facility Teardown Inspection High Bay Area (15.1, 2.b)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: Building 675/676 Radome Ranges (15.1, 2.b and 2.g)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: Building 91 Special Operations Forces Aircraft Maintenance Hangars (15.1, 1.c.(1))

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: C-141 Aircraft Maintenance Complex (15.1, 1.c.(1) and 15.2, 1.c.(1))

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: C-141 Aircraft Component Complex (15.1, 2.b and 2.j)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: Bulding 140 F-111 Crew Escape Module Parachute (15.1, 2.I)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: F-15 Aircraft Component Complex (15.1, 2.b, 2.j)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: C-130 Aircraft Component Complex (15.1, 2.b, 2.i, 2.j)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned.

Test Facility: Building 158 Gyro Repair Facility (15.1, 2.d)

The workload in this facility would have to be accomplished in a comparable facility. The availability of comparable facilities is dependent on where the work is assigned. Closure of the Aerospace Guidance and Metrology Center was decided in the BRAC 93.

7. Buildings and Their Condition

7.1 List the buildings used to perform the depot maintenance functions by category code numbers (five or six digit CCNs), identifying their current condition (adequate, substandard, and inadequate) in Table 7.1 in thousands of square feet (KSF).

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

(See Table on following page)

Table 7.1: Facility Conditions

CCN	Facility Type	Condition/Area (#KSF)			Comments
		Adequate	Substandard	Inadequate	
121-124	Hydr Fl	0.3	0	0	
123-335	Veh Fl Stn	1	0	0	
141-763	Tech Lab	140	0	0	
141-764	Integr Spt Fclty	58	109	0	
141-765	Lab, Q/C Depot	39	0	0	
171-471	RG Con Hse	2	0	0	
171-625	High Bay Tech Tng	5	0	0	
211-116	Hg Maint Dep	1,150	31	0	
211-152	Shp Acft Gen Purp	469	139	0	
211-153	Shp Non Destr Insp	5	5	0	
211-154	Shp A/M Orgl	7	84	0	
211-157	Shp Jet Eng I/Mnt	26	0	0	
211-159	Acft Cor Con	115	53	0	
211-173	Maint Doc, L/A	104	30	0	
211-177	Maint Dock, S/A	0	9	0	
211-179	Maint Dock, Fl Sys	15	0	0	
211-183	Tst Cell	0	8	0	
211-254	Shp Acft & Eng Dep	5	0	0	
211-271	Shp Instm Ovhl Dep	67	0	0	
217-712	Shp, Avionics	303	201	0	
217-736	Shp, Radom O & T/D	5	0	0	
218-712	Shp, A/SE Stor Felt	0	5	0	
218-852	Shp, Surv Equip	20	42	0	
218-868	Lab, PME	44	0	0	
221-228	Prod Acft Fin Asmb	27	0	0	
422-258	Stor, Mag	0	0.5	0	
442-257	Hazard Stor	1	0.5	0	
442-258	Stor Liq Oxy	0.5	0	0	
442-628	Shed Sup & Equip Bse	15	0	0	
442-758	Whse Sup & Equip Bse	8	12	0	
610-675	Log Fclty Dep Ops	292	243	0	
723-392	San Latrine	2	0	0	
730-839	Traffic Chk Hse	2	0	0	
811-149	Elec Pwr Stn Bldg	0.2	7	0	
890-123	Air Cond Plt Bldg	15	13	0	
890-136	Compr Air Plt Bldg	3	0	0	
TOTAL		2,946	992	0	

2946
992
3.938

8. Unique and/or Peculiar Capabilities and Capacities

8.1 What unique and/or peculiar capabilities and capacities does the depot maintenance activity possess? Describe why unique and/or peculiar.

Capability: Avionics Complex (15.1, 2.g, 12.b)

The avionics complex is the single largest electronics repair activity in DoD housing over a half million square feet of environmentally controlled avionics design, test, repair, and manufacturing capacity. The specialized electronics capabilities provide for the full spectrum of workloads from the latest surface mount technologies found in the LANTIRN and Joint STARS programs to the 1930s vacuum tube technologies found in the ARN-6 radio compass.

The uniqueness of the avionics complex deals with the complexity, diversity, and flexibility of the WR-ALC infrastructure. Providing a capability for fully integrated centralized mission based avionics support, WR-ALC possesses the comprehensive infrastructure to support all aspects of electronics repair including laser technologies, microwave measurement, hardware fabrication, electronics failure analysis, software engineering, computer integrated repair, and microelectronics manufacturing. These features are listed individually below; however the synergy derived from the integration of the features is what makes them truly one of kind within the Department of Defense.

Antenna Microwave Radiation Pattern and Boresight: The Avionics Production Division has one of the largest and most comprehensive antenna repair and certification operations within the Armed Services. Weapon System antennas and radomes require comprehensive testing to ensure technical parameters are within the critical tolerances needed to meet mission requirements. The avionics complex houses eight (8) indoor antenna ranges totaling 9,185 square feet providing for a full range of services necessary for antenna evaluation, repair, and recertification. Our facilities have the capability for antenna testing between 2 - 94 GHz, and the Doppler antenna range is the only boresight capability for the APN-218, APN-230, and APN-236 antennas within DoD.

Hardware Fabrication: Due to the rapid changes in electronics technology and limited avionics quantity requirements, an organic fabrication capability is essential to depot capability. WR-ALC has an extensive fabrication and manufacturing capability to support the avionics repair activities. Through

reverse engineering, form, fit and function requirements are identified at the component, circuit card, or major sub-assembly level. The requirements are then satisfied via WR-ALC organic fabrication facilities.

Hybrid Microelectronics Manufacture and Requalification: The Avionics Production Division maintains a comprehensive manufacturing support capability for hybrid microelectronics. It is the only Air Force activity that has the combined capabilities of hybrid circuit design, manufacture, repair and requalification.

Electronics Failure Analysis: WR-ALC has a unique capability in the Air Force by collocation of an electronic failure analysis capability with the depot maintenance production activities. The amount and variety of electrical test equipment and the photon emission microscope are unique within the Air Force.

Computer Integrated Repair: The LANTIRN (Low Altitude Navigation and Targeting Infra-Red for Night) technology repair center (TRC) is the only Air Force activity that has incorporated a paperless computer integrated repair concept. WR-ALC has planned for future avionics workloads with digital electronic display of technical orders and computer assist of the production activities. Computer integrated repair concepts are presently being incorporated into the new Joint STARS facility collocated with LANTIRN.

Laser/Optics Repair: The avionics complex has extensive laser repair capabilities including advanced optics. These capabilities support workloads associated with precision targeting and weapons delivery systems, imaging systems and combat recording systems.

Software Engineering: The Avionics Software Production facility has the a significant capability to maintain Test Program Sets and design and produce TPS for LRU and SRU end items. Organic repair activities include requirements analysis, project planning/management/ control, software design, interface test assembly design, quality assurance, computer and dedicated test resources, and product delivery.

<u>Capability/Capacity</u>: Avionics Integrated Support Facilities (AISFs) (15.1, 12.a)

WR-ALC's AISFs provide a comprehensive support environment for multiple subsystems. AISF capabilities include: real time system integration

testing, Operational Flight Program (OFP) software development, testing/reconfiguration, compilation, configuration control, off line sub system analysis, data reduction, comprehensive self diagnostics, and maintenance of software documents. AISF facilities provide data communication and software data transmission to the operational user units. AISFs resident to and supported by WR-ALC include LANTIRN, Joint Tactical Information Distribution System Centralized Software Support Activity (JTIDS CSSA), Special Operations Forces Extendible Integration Support Environment (SOF EISE), C-130 Self Contained Navigational System (SCNS), Miniature Receiver Transmit Software Maintenance Facility (MRT SMF), PAVE TACK, Extendible Communication Integration Support Environment (ECOMISE) and various Electronic Warfare systems

Capability/Capacity: Aerospace Fastener Testing (15.1, 2.j)

The WR-ALC fastener testing laboratory is the only accredited DoD facility for aerospace fastener test. The Fastener laboratory is accredited to ISO Guide 25 Standard under the ISO 9000 series of standards.

Capability/Capacity: Miniature Precision Bearing Testing (15.1, 2.d)

Bearings are tested in class 100 certified laminar flow booths, which are located in a class 300,000 certified controlled area.

Capability/Capacity: Security Assistance Electronic Warfare Support Capability (15.1, 12.a)

Capacity includes labs, within security vaults, approved for processing up to SECRET NO FOREIGN level of information, with special climate conditioning and additional backup sources for air, power, raised floor, and a radio-frequency screen room. Software development and test are accomplished on Integrated Support Stations (ISS) which provide system interfaces and wiring closely representing the system as installed on the aircraft; instrumentation and control systems to monitor, manage, and record system operations; plus simulators capable of generating accurate representations of the threats.

Capability/Capacity: Electronic Failure Analysis (15.1, 2.g)

This capability is unique in the Air Force. The amount and variety of electrical test equipment for an Electronic Failure Analysis capability, and a Photon Emission Microscope are also unique in the Air Force.

Capability/Capacity: Automated Depots (15.1, 2.g)

The Paperless LANTIRN Automated Depot (PLAD) (10,000 square feet) and the Joint STARS Paperless Automated Depot (14,000 square feet) support total integration of depot test and repair systems including automated material handling, technical information collection analysis and application, and computer based technical orders. The unique properties provided by these facilities are directly related to the manner in which they were designated to satisfy the requirements of a modern avionics depot.

Capability/Capacity: Corrosion Prevention and Control (15.1, 1.c.(1))

Dedicated expertise on all Air Force weapon systems, munitions, munitions handling equipment, common support equipment, communication-electronics equipment and vehicles. Provides for a single programmatic face to the DoD customer.

Capability/Capacity: Bicarbonate of Soda Paint Stripping (BOSS) (15.1, 1.c.(1))

Bicarbonate of Soda Paint Stripping is applicable to paint removal from any aircraft structure. Currently it is available only on C-130 aircraft at WR-ALC. This procedure reduces the use of methylene chloride paint stripper for aircraft paint removal by 96%. The Environmental Protection Agency is considering banning the use of methylene chloride completely. Bicarbonate of Soda is environmentally safe for the earth and for the individuals who work with it.

Capability/Capacity: Computer Integrated Manufacturing (CIM) (15.1, 2.j)

The WR-ALC CIM shop has the ability to accept digital data transfer from any source worldwide across the Internet network integrating the total

manufacturing enterprise, including data transfer, programming, shop floor scheduling and tracking of individual job orders. Computer Integrated Manufacturing provides electronic links from system engineering, technical data systems and CAD-CAM programming station to the CIM machines. The CIM capabilities consists of three, four and five axis vertical and horizontal machining capabilities; and three and six axis turning capabilities. These capabilities allow almost unlimited fabrication, modification and repair of a variety of extremely detailed and complex aerospace components made from steel, aluminum, beryllium, copper or titanium and ranging in size up to 120"X30"X24" while maintaining tolerances of .001".

Capability/Capacity: Metal Finishing Facility (15.1, 2.j)

Newly renovated state of the art metal finishing facility which meets all local, state and federal environmental regulations. Only DoD facility capable of Titanium chemical milling and IVD of steel aircraft fasteners.

Capability/Capacity: F-111 Parachutes (15.1, 2.i)

Only Depot level repair and packing facility in the DoD capable of handling F-111 Crew Escape Module parachutes. These parachutes deploy when a F-111 Crew Capsule is jettisoned during a life threatening emergency. The aircraft crew remains within the cockpit which is catapulted from the airframe. The packing of these chutes requires a tower for shake-out, special equipment, an autoclave and special skills and certification. WR-ALC is the only facility with DoD possessing all the requirements for repairing and packing these parachutes.

Capability/Capacity: F-15 Robotic Paint (15.1, 1.c(3))

The F-15 paint facility is unique because it is the only robotic aircraft paint facility in the Department of Defense. Together, the robotic paint and depaint facilities provide a unique automated capability for the entire corrosion control process. These facilities significantly reduce environmental impact and human exposure to toxic chemicals. Employee exposure to hazardous paint is reduced through the use of the robot for painting F-15 aircraft. The robotic depaint area reduces the amount of hazardous waste removed during the depaint operation since depaint is accomplished through the use of carbon dioxide instead of stripping compounds or plastic media.

Capability/Capacity: Gyro Overhaul (15.1, 2.d)

Designated as the Technology Repair Center (TRC) for the Air Force. Possesses 12,258 sq ft of class 100,000 and 47,285 sq ft of class 300,000 cleanroom space. Unique and specialized equipment is certified and traceable to the National Institute of Standards and Technology (NIST)

Capability/Capacity: Aerospace Fastener Manufacturing (15.1, 2.j)

The fastener manufacturing facility at WR-ALC is the only one of its kind in DoD. The capability exists to manufacture a wide variety of aerospace quality fasteners from carbon steel alloys, stainless steel and titanium. Fasteners sizes range from #6 thread size to 3/8" thread size. This capability in conjunction with the only accredited DoD fastener testing laboratory located at WR-ALC provides the unique capability to provide emergency support for critical aerospace fasteners.

Capability/Capacity: Fluid Cell Press (15.1, 2.j)

The WR-ALC sheet metal shop possesses unique flex-forming capabilities with a new 20,000 psi fluid cell press. The press was purchased at &8.6 million ABB Metallurgy of Sweden, and is the only press of its kind in the DoD. Due to the large tray capability and high forming pressures, it is the largest fluid cell press in the United States. The press provides for high pressure flexible die forming to achieve quality parts not available from other forming techniques. The high pressure allows forming of alloys that are very difficult to form with other presses, including forming of severe shrink flanges without wrinkling. The flex-forming process eliminates a high percentage of secondary forming operations that are required with other types of presses. Hand forming processes are practically eliminated by high side pressures produced by a flexible diaphragm hydrostatically backed by pressurized fluid.

Test Facility: Building 323 Engineering Assessment Facility Teardown Inspection High Bay Area (15.1, 2.b)

The engineering assessment facility in support of C-141 Empennage and oversize access doors for which WR-ALC is the single source of repair for the DoD.

Test Facility: Building 675/676 Radome Ranges (15.1, 2.b and 2.g)

WR-ALC is the single source of repair for the DoD for the F-15 nose radome.

Test Facility: Building 91 Special Operations Forces Aircraft Maintenance Hangars (15.1, 1.c.(1))

WR-ALC is the single source of repair in the Air Force for Special Operations Forces assigned aircraft such as Combat Talon, C-130 Gunships, and Helicopters.

Test Facility: C-141 Aircraft Maintenance Complex (15.1, 1.c.(1) and 15.2, 1.c.(1))

WR-ALC is the single source of repair in the DoD for the C-141 aircraft.

Test Facility: C-141 Aircraft Component Complex (15.1, 2.b and 2.j)

WR-ALC is the single source of repair in the DoD for the C-141 aircraft components.

Test Facility: F-15 Aircraft Component Complex (15.1, 2.b, 2.j)

WR-ALC is the single source of repair in the DoD for the total refurbishment of the F-15 wings and other associated field generated components.

Test Facility: C-130 Aircraft Component Complex (15.1, 2.b, 2.i, 2.j)

WR-ALC is the single source of repair for the Air Force for the C-130 aircraft field generated structural components. As the single source of repair for C-130 propellers, WR-ALC has complete capability to balance and functional test propellers. Only C-130 Propeller overhaul/repair facility within DoD.

8.2 Separately list the depot maintenance facilities and equipment which are one of a kind within the Service and/or DoD.

<u>One of a Kind Facility/Equipment:</u> Hybrid Microcircuit Requalification (15.1, 2.g):

WR-ALC is the only Air Force facility that has the combined capability of hybrid microcircuit design, manufacture, repair and requalification. Collocation with failure analysis engineering functions provides access to high technology analytical tools useful in identifying material compatibility during the development of new microcircuit manufacturing and repair processes. Unique equipment includes:

Auto Assembly: The only hybrid auto assembly machine in the Air Force that utilizes a pattern recognition system to automatically dispense epoxy and position semiconductor devices.

Auto Wire Bonder: The only fully programmable high speed auto wire bonder in the Air Force that uses a pattern recognition system to locate die pads and thermosonically bond 0.001" diameter wire. Equipment provides increased reliability over manual machines and is capable of bond speeds of 250 milliseconds per wire with 0.0005" placement accuracy.

Automatic Optical Inspection System: The only production facility in the Air Force that uses automatic optical inspection.

<u>One of a Kind Facility/Equipment:</u> Low Altitude Navigation and Targeting Infra-Red for Night (LANTIRN) (15.1, 12.a, 12.b)

Integration of the Navigation Pod Station and Targeting Pod Station with a General Purpose Computing System provides a capability to modify Operational Flight Program (OFP) software code and simulate system operation for the LANTIRN Navigation and Target Pods. These Pods support mission requirements for the F-15E and F-16 weapon systems. Unique LANTIRN AISF equipment includes:

LANTIRN Navigation Pod Station

LANTIRN Targeting Pod Station

LANTIRN General Purpose Computing System

The LANTIRN support equipment, valued in excess of $150 million, is one of a kind in DOD. Unique LANTIRN equipment includes:

Environmental Control Unit Test Station (ECUTS): The ECUTS is a unique test station used to test the ECU assembly and sub-assemblies on both LANTIRN Pods. The LANTIRN depot has 2 ECUTSs.

Mass Reprogramming Station (MRPS): The MRPS is a unique station to load Operational Flight Program (OFP) software at the board level. The LANTIRN depot has 3 MRPSs.

Laser Receiver Test Station (LRTS): The LRTS is a unique test station used to functionally test the Laser transmitter and Receiver. The LANTIRN depot has 1 LRTS.

Laser Functional Test Station (LFTS): The LFTS is a unique test station used to test and align the Laser transmitter and the Laser Electronics. The LANTIRN depot has 2 LFTSs.

Snap Look Test Set (SLTS): The SLTS functionally tests the snap look assembly on the NAV Pod. The LANTIRN depot has 1 SLTS.

AEG Cooler Repair Station: The AEG Cooler Repair Station is a unique test/repair station designed and built by AEG, in Germany, to repair the AEG cooler on both LANTIRN pods. The LANTIRN depot has 1 AEG Cooler Repair Station.

Detector Cooler Test Station (DCTS): The DCTS is a unique test station used to functionally test the detector coolers on both of the LANTIRN Pods. The LANTIRN depot has 2 DCTSs.

Static Balance Bench: The Static Balance Bench is a unique test station used to statically balances and aligns the pitch gimbal assembly. The LANTIRN depot has 1 Static Balance Bench.

RF Test Station (RFTS): The RFTS is a unique test station used to test LANTIRN RF assets. The LANTIRN depot has 2 RFTS.

Scanner Assembly Test Station (SATS): The SATS is a unique test station designed and built by WR-ALC personnel to functionally align and fault isolate the LANTIRN scanner

assembly on the NAV and Target Pods. The LANTIRN depot has 1 Scanner Assembly Test Station.

Electro-Optical Work Center (EOWC): The EOWC is a unique station used to test all optical and Laser assemblies on LANTIRN (6 Test Programs). The LANTIRN depot has 1 EOWC.

<u>One of a Kind Facility/Equipment:</u> Joint Tactical Information Distribution System Centralized Software Support Activity (JTIDS CSSA) AISF (15.1, 12.a)

Integration of the JTIDS Terminal Acceptance Test Set, the JTIDS Formal Qualifications Test Equipment, JTIDS Communications and Navigation Dynamic Simulator, and the JTIDS Integrated Test Set provide a unique capability to modify OFP software code and simulate system operation for the JTIDS system. Unique JTIDS CSSA AISF equipment includes:

JTIDS Terminal Acceptance Test Set

JTIDS Formal Qualifications Test Equipment

JTIDS Communications, Navigation Dynamic Simulator

JTIDS Integrated Test Set

<u>One of a Kind Facility/Equipment:</u> Special Operations Forces Extendible Integration Support Environment (SOF EISE) AISF (15.1, 12.a)

The SOF EISE is a unique, modular, multi-system engineering facility developed for the support of USAF Special Operations aircraft avionics. The EISE provides for a comprehensive support environment for the SOF fleet.

Unique SOF EISE AISF equipment includes:

MC130H Combat Talon II/MH-53J PAVE LOW III/MH-60G PAVE HAWK Simulation Platform

AC-130H Gunship

MC-130E Combat Talon I Simulation Platform

SOF EISE Avionics Software Primary Support System (SUN)

SOF EISE Avionics Software Primary Support System (VAX)

PAVE LOW III Enhanced Navigation System Test Station

PAVE LOW III Gunship (CDU) Software Verification Test Station

PAVE LOW III (BIU/SGU) Software Verification Test Station

Combat Talon II (CDC) Software Verification Test Station

<u>One of Kind Facility/Equipment:</u> C-130 Self Contained Navigational System (SCNS) AISF (15.1, 12.a)

The C-130 SCNS is the only facility in DoD, which contains all of the hardware and software tools needed to modify OFP software code and simulate system operation. Unique C-130 SCNS AISF equipment include:

C-130 SCNS Integrated Software Support Station

<u>One of a Kind Facility/Equipment:</u> Miniature Receiver Transmit Software Maintenance Facility (MRT SMF) AISF (15.1, 12.a)

The MRT SMF, unique within DoD contains all of the hardware and software tools needed to make the embedded software in the MRT system and to test those changes. Unique MRT SMF AISF equipment includes:

Manual Performance Station consisting of TE Antenna Simulator

TM L/R Antenna

TM F/A Antenna Simulator

TMLU to Base Station Interface Cable Miniature Receive Terminal Software Maintenance Facility

<u>One of a Kind Facility/Equipment:</u> PAVE TACK AISF (15.1, 12.a)

The PAVE TACK AISF is the only facility in existence that can support the PAVE TACK system. Unique PAVE TACK AISF equipment include:

Simulated Aircrew Station

<u>One of a Kind Facility/Equipment:</u> Extendible Communication Integration Support Environment (ECOMISE) AISF (15.1, 12.a)

The ECOMISE AISF is a unique software/system integration facility that is capable of supporting the upgrade and testing of multiple military communications systems (ARC-164, ARC-190, TRC-181). The AISF contains the only ECOMISE test station in the AF inventory. ECOMISE test software was developed using the ATLAS/ADA Based Environment for TEST (ABET) and consists of reusable software modules. ECOMISE is designed to be expandable to support testing of other military communications systems and is currently being used to support inter-operability testing of the TRC-181.

<u>One of a Kind Facility/Equipment:</u> AN/GSM-285 (15.1, 12.b)

This RCA-built ATE is used to develop AWACS TPSs (E-3) and to test AWACS avionics items using them. WR-ALC/LY has the only three in the Air Force. NATO uses two of these ATEs to perform depot repair using USAF developed TPSs. The NAVY at North Island uses the only other AN/GSM-285 to perform depot repair for selected items on the F-18.

<u>One of a Kind Facility/Equipment:</u> Advanced Radar Test Bench Set (ARTBS) (15.1, 12.b)

The ARTBS is a unique engineering test center designed to significantly reduce the high number of "bad actors" on the F-15. Although there is one other ARTBS at Langley AFB, Robins AFB has the only ARTBS outfitted with environmental testing chamber and an 039 Unit Burn-In Test Stand.

<u>One of a Kind Facility/Equipment:</u> F-15 Radar(15.1, 12.a)

A unique overhaul capability exists for the F-15 APG-63 and APG 70 radars. WR-ALC has the only complete set of test program sets for the Automated Depot Test Stations (ADTS) and possesses the only intermediate Frequency Video Microwave (IFVM) stations in existence.

<u>One of a Kind Facility/Equipment:</u> F-15 Robotic Paint/Depaint Equipment (15.1, 1.c.(3))

The robotic paint and depaint equipment is the only one of its kind in DoD. The paint booth consists of two robotic systems; one for wash/rinse and the other to paint the aircraft. The depaint system consists of three robots which

use carbon dioxide to depaint the aircraft in lieu of stripping chemicals or plastic media.

<u>One of a Kind Facility/Equipment:</u> Electron Beam Welder(15.1, 2.b, 2.j)

Possess the largest (112" X 96" X 96") vacuum chamber capacity in the Air Force. Required for welding F-15 titanium wing spars on lower skin panels.

<u>One of a Kind Facility/Equipment:</u> Fluid Cell Press (15.1, 2.j)

The Fluid Cell Press (FCP) is the only one of its kind in DoD and the largest in the USA. The FCP is a bladder type hydraulic forming press used for forming various types of sheet metal aircraft structural components. This equipment is capable of forming parts made of aluminum, titanium, stainless steel, roll steel, tool steel and magnesium ranging from .008" to .375" in thickness. It generates 20,000 pounds per square inch of forming pressure and has dual trays to allow loading from both sides of the machine. This feature enables simultaneous loading and unloading of components while parts are being formed inside the chamber. The total weight of the FCP is 353 tons and is approximately 78 feet long by 22 feet wide by 15 feet high. Utilization of the FCP increases forming capacity, increases part definition and repeatability, reduces overall process time for formed parts by 40% with up to a 75% reduction on forming time. The FCP virtually eliminates hand forming and in combination with the robotic abrasive water jet cutter moves us closer to lean logistics.

<u>One of a Kind Facility/Equipment:</u> Automated Aircraft Rework System (AARS) (15.1, 2.b, 2.j)

The robotic work cell was designed to perform fastener removal, hole location, inspection, and transfer (within +/- 0.005") to new skin panels and/or structures of the F-15 wing workload. The system uses an extended reach industrial overhead gantry robot provided a large work envelope (30' X 18' X 5' high) and high precision accuracy for large scale process operations. The robot is capable of a global accuracy rating of +/- 0.015" and a global repeatability rating of +/- 0.005". The robot is runway mounted an provides five degrees of freedom (axes) consisting of: three translational movements (X,Y,Z) and two rotational movements, main rotation (yaw) and pivot (pitch). The robot is all electric servo motor driven and microprocessor controlled. A holding fixture is incorporated in the work cell to hold the

wings and maintain structural alignment of the part during rework. The work cell has the capability to drill and countersink 250 holes per hour. Mapping existing hole patterns takes approximately four seconds per hole so mapping drilling, and countersinking the holes can be performed at about 198 holes per hour. The rate for manually performing these operations ranges from three to ten holes per hour.

<u>One of a Kind Facility/Equipment:</u> Metallograph Image Analysis System (15.1, 12.b)

The computer enhanced image analysis system allows up to nine composite micro images to be computer enhanced in order to compare metallurgical conditions of samples before and after corrosion testing.

<u>One of a Kind Facility/Equipment:</u> Rheometrics Spectrometric Materials (15.1, 12.b)

Unique to the Air Force Material Command. The state-of-the-art equipment to investigate the effect of environmental conditions on the rheological properties (flow and deformation) of composite materials.

<u>One of a Kind Facility/Equipment:</u> Electronic Warfare AISF (15.1, 12.a)

The Electronic Warfare Management Directorate owns the EWAISF which occupies approximately 200,000 square feet of secure electronic and computer work area for complete support of 25 electronic warfare systems. Each work area includes flight hardware, controls and displays, engineering instrumentation, support computers, analysis equipment, and complex threat simulators. One of a kind electronic warfare equipment includes:

> **Complement of equipment, reprogramming tools and support facilities for Electronic Warfare that do not exist elsewhere in DOD.**
>
> **ALR-46/69 Software Support Facility. This facility is a unique stand-alone, computer facility enclosed in a Class B security vault and paid for by International customers. It contains 6 unique ALR-46/69 Integrated Support Stations (ISS) which each are unique due to the different time frames, requirements and technology when purchased. These ISSs are a unique integration of Radio-Frequency (RF) simulator, Electronic**

Warfare (EW) Equipment (ALR-46 or ALR-69), commercial test equipment, unique interface wiring, specialized analysis equipment and computer work stations with unique integration software which is used for software development, integration and test of the ALR-46 and ALR-69 Radar Warning Receivers (RWRs). This facility is the only dedicated facility designed to provide complete software support of International customers of the ALR-46/69 RWRs.

Royal Saudi Air Force (RSAF) F-15 Tactical Electronic Warfare System (TEWS) Software Support Facility. This facility is a unique stand-alone, dedicated computer facility, enclosed in a Class B security vault and paid for by Saudi Arabia. This facility consists of a RF simulator integrated with unique EW equipment, commercial test equipment, specialized analysis equipment and computer workstations, integrated together with a central computer and unique interface wiring and software to develop, integrate and test the unique RSAF TEWS software. This is the only facility capable of supporting the Saudi unique hardware and software configuration of the F-15 TEWS.

Advanced Radar Warning Receiver (ARWR) / Countermeasures Dispenser (CMD) Integrated Software Support Facility. This facility is a unique stand-alone computer facility, enclosed in a Class B security vault that has been paid for by International customers. This facility consists of a RF simulator integrated with unique EW equipment, commercial test equipment, specialized analysis equipment and computer workstations, integrated together with a central computer and unique interface wiring and software to develop, integrate and test the unique ARWR/CMD software. This facility is the only dedicated facility designed to provide complete software support for the unique ARWR/CMD hardware and software configurations of a number of International customers.

Security Assistance Electronic Warfare Support Facility. This facility provides conditioned power and air for the operation of a classified computer network. This classified computer network is utilized in the software support of our International

customer's EW systems. This network is a unique integration of various types of computers, host software, applications and interface hardware.

One of a Kind Facility/Equipment: Radar Test Bench Set (RTBS) (15.1, 12.a)

The Radar Test Bench Set is the only APG-63 integrated test bench in DoD which is configured and equipped for development and support of APG-63 OFPs.

One of a Kind Facility/Equipment: Radar Workstation (RWS) (15.1, 12.a)

The Radar Workstation is the only DoD facility designed for supporting software development of APG-63 Electronic Counter Countermeasures (ECCM).

One of a Kind Facility/Equipment: Software Development and Integration Facility (SDIF) (15.1, 12.a)

The Software Development and Integration Facility is a $5.5 million dollar facility for the integrated development and support of the F-15 CentralComputer (CC) and the F-15 Programmable Signal Data Processor (PSDP) OFPs. This F-15 OFP equipment is DoD unique.

One of a Kind Facility/Equipment: 70Radar Test Bench Set (RTBS) (15.1, 12.a)

The 70RTBS is the only APG-70 integrated test bench in DoD which is configured and equipped for development and support of APG-70 OFPs.

One of a Kind Facility/Equipment: Advanced Simulation Bench (ASB) (15.1, 12.a)

The ASB is the only APG-70 integrated test bench in DoD which is configured and equipped with digital simulation capability for development and support of APG-70 OFPs.

<u>One of a Kind Facility/Equipment:</u> Cockpit Integration Bench (CIB) (15.1, 12.a)

The CIB is the facility for the integrated development and support of the VHSIC Central Computer (CC) and Programmable Signal Data Processor (PSDP) OFPs for MSIP configuration F-15 aircraft.

<u>One of a Kind Facility/Equipment:</u> Avionics Integration Bench (AIB) (15.1, 12.a)

The AIB is the only DoD facility for the integrated development and support of the VHSIC Central Computer (CC) and Multi-Purpose Data Processor (MPDP) OFPs for F-15E model aircraft.

<u>One of a Kind Facility/Equipment:</u> Central Computer Workstation (15.1, 12.a)

The VHSIC VCC WS is the facility for the stand alone development and support of the VHSIC CC for F-15E model aircraft. This F-15 OFP equipment is DoD unique.

<u>One of a Kind Facility/Equipment:</u> Programmable Armament Control Set Workstation (PACS WS) (15.1, 12.a)

The PACS WS is the facility for stand alone support of the PACS OFPs for F-15E model aircraft. This F-15 OFP equipment is DoD unique.

<u>One of a Kind Facility/Equipment:</u> Multi-Purpose Display Processor Workstation (MPDP WS) (15.1, 12.a)

The MPDP WS is the facility for the stand alone development and support of the MPDP OFPs for the F-15E model aircraft. This F-15E OFP equipment is DoD unique.

<u>One of a Kind Facility/Equipment:</u> Automatic Flight Control System Workstation (AFCS WS) (15.1, 12.a)

The AFCS WS is the facility for the stand alone development and support of the AFCS OFPs for F-15E model aircraft. This F-15E OFP equipment is DoD unique.

<u>One of a Kind Facility/Equipment:</u> Avionics Integration Unit Workstation (AIU WS) (15.1, 12.a)

The AIU WS is the facility for the stand alone development and support of the AIU OFPs for F-15E model aircraft. This F-15E OFP equipment is DoD unique.

<u>One of a Kind Facility/Equipment:</u> Thermal Wave Enhanced Thermography System (15.1, 1.c.(1))

This system is a DoD one of a kind. WR-ALC currently uses thermography in support of the depot inspection of the composite C-141 weep hole repairs under the Coral Weep project. All patches must be inspected prior to releasing the aircraft from the depot to ensure aircraft structural integrity. NASA has provided WR-ALC with computer improvements which greatly enhance the capability of our thermography system to Non-Destructively Inspect (NDI) composite aircraft repairs.

<u>One of a Kind Facility/Equipment:</u> Scanning Acoustic Microscope (15.1, 1.c.(1))

In support of depot maintenance activities, the Scanning Acoustic Microscope is a state-of-the-art analytical system for non-destructive and non-invasive imaging of internal cracks and corrosion in advanced composite materials and multi-layered aluminum alloy structures and contributes directly to resolving aging aircraft and other material issues.

<u>Test Facility:</u> Building 323 Engineering Assessment Facility Teardown Inspection High Bay Area (15.1, 2.b)

The engineering assessment facility in support of C-141 Empennage and oversize access doors for which WR-ALC is the single source of repair for the DoD.

<u>Test Facility:</u> Building 675/676 Radome Ranges (15.1, 2.b and 2.g)

WR-ALC is the single source of repair for the DoD for the F-15 nose radome.

Test Facility: Building 91 Special Operations Forces Aircraft Maintenance Hangars (15.1, 1.c.(1))

WR-ALC is the single source of repair in the Air Force for Special Operations Forces assigned aircraft such as Combat Talon, C-130 Gunships, and Helicopters.

Test Facility: C-141 Aircraft Maintenance Complex (15.1, 1.c.(1) and 15.2, 1.c.(1))

WR-ALC is the single source of repair in the DoD for the C-141 aircraft.

Test Facility: C-141 Aircraft Component Complex (15.1, 2.b and 2.j)

WR-ALC is the single source of repair in the DoD for the C-141 aircraft components.

Test Facility: Bulding 140 F-111 Crew Escape Module Parachute (15.1, 2.I)

WR-ALC is th single source of repair in the DoD for the F-111 Crew Escape Module Parachute.

Test Facility: F-15 Aircraft Component Complex (15.1, 2.b, 2.j)

WR-ALC is the single source of repair in the DoD for the total refurbishment of the F-15 wings and other associated field generated components.

Test Facility: C-130 Aircraft Component Complex (15.1, 2.b, 2.i, 2.j)

WR-ALC is the single source of repair for the Air Force for the C-130 aircraft field generated structural components and propellers.

9. Acreage Available for Building

9.1 What acreage on the installation does the government own in the proximity of the depot maintenance area that could be used for future expansion? Identify in the table below the real estate resources which have the potential to facilitate future development and for which you are the plant account holder or into which, though a tenant, your activity could reasonably expect to expand. Developed area is defined as land currently with buildings, roads, and utilities where further development is not possible without demolition of existing improvements. Report in "Restricted" areas that are restricted for future development due to environmental constraints (e.g. wetlands, landfills, archaeological sites), operational restrictions (e.g. ESQD arcs, HERO, HERP, HERF, AICUZ, ranges) or cultural resources restrictions. Identify the reason for the restriction when providing the acreage.

Table 9.1: Real Estate Resources

Land Use	Total Acres	Developed Acreage	Available for Development	
			Restricted	Unrestricted
Maintenance	395	395		
Operational	302	302		
Training	109	109		
R & D	0	0		
Supply & Storage	332	332		
Admin	103	103		
Housing	525	525		
Recreational	428	428		
Forestry Program	0	0		
Agricultural Outlease Program	0	0		
Hunting/Fishing Pgms	0	0		
Other	6,526	1,891	**4,133	*502
Total	8,720	4,085	**4,133	*502

*** This acreage can be developed in any area. ** Due to environmental constraints.**

10. Administrative Space

10.1 What amount in square feet of administrative space could be made available to the depot maintenance function?

Current Use	Square Feet	Potential Use (Be Specific)
Admin	**131,406**	**Admin**
Data Processing Input (DPI)	**4,358**	**DPI**

11. Industrial Waste

11.1 Are there any inhibiting factors that would limit future expansion on the base? Provide the details if applicable.

NO. There are no limiting factors which would limit future expansion on the base.

Workload and Capabilities

Answers to the following questions are to reflect programmed amounts by commodity group, by activity in direct labor hours by Fiscal Year for FY 1996 through FY 1999.

12. Core Capabilities (DoD)

12.1 What is the amount of core capability required to support your own Service? Provide your answers in Table 12.1.a by commodity group for the Fiscal Years requested.

(See Tables on following pages)

Table 12.1.a: Service Required Core

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME				
Transport	1,227,827	1,227,827	1,227,827	1,227,827
Light Combat	486,827	486,827	486,827	486,827
ACFT COMPONENTS				
Aircraft Structures	470,000	470,000	470,000	470,000
Hydraulic/Pneumatic	50	50	50	50
Instruments	242,100	242,100	242,100	242,100
Landing Gear	1,041	1,041	1,041	1,041
Aviation Ordnance	309	309	309	309
Avionics/Electronics	2,647,317	2,647,317	2,647,317	2,647,317
Manufacturing & Fabrication	482,891	482,891	482,891	482,891
Other	179,281	179,281	179,281	179,281
MISSILE COMPONENTS				
Tactical/MLRS	17,935	17,935	17,935	17,935
GRND COMM & ELECT EQUIP				
Radar	2,000	2,000	2,000	2,000
Radio Communications	1,000	1,000	1,000	1,000
Wire Communications	1,000	1,000	1,000	1,000
Navigation Aids	1,000	1,000	1,000	1,000
Electro-Optics/Night Vision	684	684	684	684
SOFTWARE				
Tactical Systems	674,310	674,310	674,310	674,310
Support Equipment	505,000	505,000	505,000	505,000
TOTAL	6,940,572	6,940,572	6,940,572	6,940,572

12.2 What is the amount of capability retained for the performance of other Services core? Provide your answers in Table 12.2.a by commodity group for the Fiscal Years requested.

Table 12.2.a: Core Capability Retained for Other Services

COMMODITY TYPE	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
	0	0	0	0
TOTAL	0	0	0	0

12.3 What portion of the Service Core capability identified in the 12.1a above is identified as Service-Controlled Core (Title 10 responsibility)? Provide your answer in Table 12.3.a by commodity group for the Fiscal Years requested.

Table 12.3.a: Service-Controlled Core (Title 10)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	**0**	**0**	**0**	**0**

13. Core Workloads

13.1 What are your total Core Workloads to be applied against capabilities identified in Tables 12.1a and 12.2a)? Provide your answer (DLH) in Table 13.1.a by commodity group for the Fiscal Year requested.

(See Table on following page)

Table 13.1a Total Core Workloads

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME				
Transport	2,375,591	1,843,899	1,617,698	1,348,994
Light Combat	651,871	725,761	1,137,149	1,267,169
ACFT COMPONENTS				
Aircraft Structures	471,864	514,555	485,388	476,571
Hydraulic/Pneumatic	131	143	135	133
Instruments	296,330	323,140	304,824	299,286
Landing Gear	895	976	921	904
Aviation Ordnance	601	656	619	607
Avionics/Electronics	1,267,247	1,381,900	1,303,569	1,279,889
Manufacturing & Fabrication	311,751	339,956	320,686	314,861
Other	277,197	302,276	285,142	279,962
MISSILE COMPONENTS				
Tactical/MLRS	13,014	14,192	13,387	13,144
GRND COMM & ELECT EQUIP				
Radar	1,114	1,215	1,146	1,125
Radio Communications	31	34	32	31
Wire Communications	45	49	47	46
Navigation Aids	104	114	107	105
Electro-Optics/Night Vision	63	63	64	63
SOFTWARE				
Tactical Systems	763,634	894,983	881,795	888,197
Support Equipment	509,089	596,655	587,863	592,131
TOTAL	6,940,572	6,940,572	6,940,572	*6,763,218

***Projected FY99 funded workload as shown in Table 3.1.b is less than the FY99 computed total core capability (6,940,572) shown in Table 12.1.a. This creates a situation where core capability exceeds available dollars.**

14. Other Workloads (Above Core)

14.1 What above core workloads do you perform by these source categories? Use the most appropriate category, but do not duplicate workload on more than one table. Provide answers in Tables 14.1.a through 14.1.g by commodity group for the Fiscal Years requested.

Table 14.1.a: FMS Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	**0**	**0**	**0**	**0**

Table 14.1.b: Interservice Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
***TOTAL**	**0**	**0**	**0**	**0**

Table 14.1.c: Other Agency Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	**0**	**0**	**0**	**0**

Table 14.1.d: Last Source of Repair Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	**0**	**0**	**0**	**0**

WR-ALC has workload that would fit this category; however, we have no documentation to support that premise. Some examples include approximately 17 navigation, communications systems (avionics i.e., ARN 6/7) and F-111 Crew Escape Module parachutes. The avionics systems are older technology and/or low volume workloads. The parachute workload is also low volume workload.

Table 14.1.e: Within Service Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME				
Transport/	**168,690**	**81,340**	**81,340**	**0**
Light Combat	**266,627**	**228,401**	**173,124**	**0**
TOTAL	**435,317**	**309,741**	**254,464**	**0**

Table 14.1.f: Low Quantity Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	**0**	**0**	**0**	**0**

Table 14.1.g: All Other Workload (Above Core)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	**0**	**0**	**0**	**0**

Table 14.1.h: Total Above Core Workload
(Sum of Tables 14.1.a through 14.1.g)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME				
Transport/	**168,690**	**81,340**	**81,340**	**0**
Light Combat	**266,627**	**228,401**	**173,124**	**0**
TOTAL	**435,317**	**309,741**	**254,464**	**0**

15. Unique and/or Peculiar Workloads (Refer to Question 8.1)

15.1 What amount of the workload reported in question 8.1 is Core? Provide your answer in Table 15.1 by commodity groups for the Fiscal Years requested.

Table 15.1: Unique and/or Peculiar Total Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME				
Transport	**2,375,591**	**1,843,899**	**1,617,698**	**1,348,994**
Light Combat	**93,240**	**146,160**	**161,280**	**170,100**
ACFT COMPONENTS				
Aircraft Structures	**448,271**	**488,827**	**461,119**	**452,742**
Instruments (Gyros)	**137,693**	**153,824**	**143,976**	**140,725**
Avionics/Electronics	**1,267,247**	**1,381,900**	**1,303,569**	**1,279,889**
Manufacturing & Fabrication	**198,819**	**192,405**	**192,405**	**192,405**
Other	**119,180**	**130,031**	**122,640**	**120,400**
SOFTWARE				
Tactical	**763,634**	**894,983**	**881,795**	**888,197**
Support Equipment	**509,089**	**596,655**	**587,863**	**592,131**
TOTAL	**5,912,764**	**5,828,684**	**5,472,345**	**5,185,583**

15.2 What amount of the workload reported in question 8.1 is non-Core? Provide your answer in table 15.2 by commodity group for the Fiscal Years requested.

Table 15.2: Non-Core Unique and/or Peculiar Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
Transport	**168,690**	**81,340**	**81,340**	**0**
TOTAL	**168,690**	**81,340**	**81,340**	**0**

16. Scope of Work Performed

16.1 Indicate the services/functions performed at this activity that are associated with depot maintenance, but not generally classified or considered as integral to the depot maintenance functions.

Service/Function	Description
DLA	**Defense Logistics Agency**
653 ABG	**Supply**
	Security Police
	Civil Engineering
	Operations Support Squadron
	Vehicle Control
	Morale, Welfare, and Recreation
WR-ALC/EM	**Environmental Management**
WR-ALC/FM	**Financial Management**
WR-ALC/DP	**Civilian Personnel**
WR-ALC/PK	**Contracting**
653 MEDGP/SG	**Hospital**
DRMO	**Salvage**

653 CCSG	**Communications-Computer Systems Group**
AFRES	**ARC Training**
WR-ALC/SE	**Safety Office**
DMC Warner Robins	**Defense Mega Center**
WR-ALC/MO	**Manpower Office**
DFAS	**Defense Finance Accounting Service**
WR-ALC/PA	**Public Affairs Office**
653 CLSS	**Combat Logistics Support Squadron**
DISA	**Defense Information Systems Agency**
PMEL Contractor	**Precision Measurement Equipment Laboratory**
GSE Contractor	**Ground Support Equipment**

16.2 Describe how these services/functions are related to accomplishment of the depot maintenance mission, and the benefits of these relationships.

Service/Function: Defense Logistics Agency

Performs initial stock, storage and issuing of material required for daily maintenance operations. Reduces manpower and flow days associated with the depot maintenance production operation.

Service/Function: 653 ABG/ Supply

Supply manages, receives, stores, inventories, transfers, and issues aviation fuels, ground fuels, bulk petroleum products, cryogenic fluids, and propellants for depot maintenance functions. Supply provides a recycling service for reclaimable fuels. Hence, depot maintenance functions not only have a readily available source of clean fuel and petroleum products for flight tests and return flights, but they also have help to handle environmental initiatives such as recycling. Depot maintenance functions, in turn, provide fuels laboratory support to Supply.

Supply operates and manages mini-supply systems known as Depot Maintenance Support Centers (DMSCs) located in the depot maintenance functional areas as close to users as possible. The DMSCs functions include manage, order, receive, store, and issue high-use items such as "direct" component parts, for example, circuit cards, and "indirect bits and pieces," for example, nuts, bolts, screws, washers, et cetera. The concept is to provide immediate "hands-on" service for such programs as Two-Level Maintenance, the C-141 Center Wing Box Replacement, and the Lean Logistics initiative. The result is increased supply pipeline timeliness and, in turn, increased depot repair pipeline timeliness.

Supply manages and accounts for inventories of materiel belonging to other service/agency Inventory Control Points (ICPs). This includes, but is not limited to, requisitioning materiel from ICPs; managing retail inventories of materiel stored in support of maintenance activities; managing wholesale inventories of materiel stored for other service/agency ICPs; managing prepositioned materiel within the depot maintenance complex in DMSCs; and managing bench stocks for depot maintenance activities; maintaining liaison with prime item managers, staff offices, and customers as to problems affecting timely support; tracking and monitoring "G" coded items; managing parts shortage program; and providing special commodities support.

Supply supports depot maintenance activities by inventorying, inspecting, accounting for, receiving, storing, and issuing munitions; requisitioning and controlling all MICAP requirements for depot support of managed weapon systems; functioning as MICAP control officer to monitor MICAP requirements to ensure timely supply response to depot maintenance activities; performing demand processing, research, and records maintenance of SBSS item records; serving as the point of contact for materiel support relative to repair and/or modification in the absence of applicable item managers; acting as Chief of Supply (COS) with authority to make commitments on supply support position/policy; initiating expeditious action and applying intensified management action to obtain positive supply support to satisfy MICAP demands; serving as MICAP monitor to ensure that required support of materiel or parts required for repair or for MICAPs are available; ensuring all post-post actions are input to the D035K system and maintaining close coordination with appropriate depot maintenance activities to monitor the daily and monthly document control register; and researching all part numbers, stock numbers, technical order figures, and index requests received prior to computer input.

Service/Function: 653 ABG/Security Police

Provides resource protection and security guidance to the maintenance activities.

Service/Function: 653 ABG/Civil Engineering

Provides real property management, repair, maintenance, engineering and construction services to the production operations. Also provides fire protection, disaster preparedness and emergency spill response.

Service/Function: 653 ABG/Operations Support Squadron

Provides air traffic control and ground airfield control to the maintenance activities.

Service/Function: 653 ABG/Vehicle Control

Vehicles supplied are used to transport equipment and personnel to and from other organization areas and internal to maintenance areas.

Service/Function: 653 ABG/Morale, Welfare and Recreation

These activities are necessary to build comradeship among employees and maintain esprit de corps which is integral to team building. This cohesive relationship among employees is necessary for maintaining morale.

Service/Function: WR-ALC/Environmental Management

Provides environmental guidance and compliance requirements on federal, state and local regulations to the production operation.

Service/Function: **WR-ALC/Financial Management**

Provides corporate financial and strategic planning to the maintenance activities.

Service/Function: **WR-ALC/Civilian Personnel**

Provides human resource management and employee relations assistance. Services of Civilian Personnel (WR-ALC/DPC) include classifying and staffing positions, administering disciplinary programs, awards, labor union matters, retirement, drug testing, and leave policies. Technical and functional skills required within WR-ALC/LY demand constant interaction with DPC.

Service/Function: **WR-ALC/Contracting**

Provides contracting services to obtain equipment, supplies and services from private industry.

Service/Function: **653 MEDGP/Hospital**

Provides emergency medical response, occupational first aid to maintanance activities. Provides occupational hazard analysis, bioenvironmental management and training to the maintenance activities.

Service/Function: **DRMO/Salvage**

Provides disposal and recycling of scrap material.

Service/Function: **653/Communications-Computer Systems Group**

Provides communicatons and computer support to all maintenance activities. Support includes on-line access to the Data Support Center facilitating one day services for any emergency.

Service/Function: **AFRES/ARC Training**

AFRES receives valuable training while depot receives valuable man-hours.

Service/Function: 653/Safety Office

Provides occupational safety analysis, management and guidance to the maintenance activities.

Service/Function: DMC Warner Robins /Defense Mega Center

The DMC (Defense Megacenter) Warner Robins processes over thirty data systems in direct support of depot maintenance. This organization monitors these data systems, as well as produces products resulting in data relating to requirements, materials, production, and cost for the effective repair of both aircraft and aircraft components.

It is critical to depot maintenance processes that the maximum turnaround of repairable items to a serviceable condition within established timeframes is achieved. The depot maintenance related systems are critical in supporting those processes.

Service/Function: WR-ALC/Manpower Office

Productivity studies are necessary to gauge the time allocated to repair maintenance end items for comparison to standards or set repair standards. The measurements contribute to the overall production output capability metrics.

Service/Function: DFAS Defense Accounting Office (DAO)

The DFAS DAO organization at WR-ALC provides direct support to the Depot Maintenance organization by maintainng and updating the Cost Accounting System, performing analyses or financial data, payment of maintenance contracts and posting of disbursements, payment of civilian and military employees, payment of travelers and preparation and submission of monthly, quarterly or as required financial reports to higher headquarters.

Service/Function: Public Affairs

The public affairs office supports organizations throughout the base. Through relationships with the various organizations, coordination can be

made in areas of teamwork achievement and recognition, visiting dignitaries, and providing tips and advice on fitness and health issues for the personnel.

Service/Function: 653 Combat Logistics Support Squadron

The 653 CLSS maintenance personnel are available for on base and off base workload, as an integral part of the WR-ALC maintenance workforce, as long as the work is in support of primary training for wartime skills; i.e., weapon system hands-on experience. CLSS works directly with all WR-ALC maintenance divisions to ensure the best use of CLSS personnel in support of the ALC workload. The work performed within the ALC and worldwide is authorized under TO 00-25-107 or AFM 67-1 Volume III, Part I. Benefits are the unscheduled maintenance workload accomplished by CLSS relieves ALC maintenance division of this additional workload allowing them to concentrate their efforts on scheduled maintenance actions.

Service/Function: Precision Measurement Equipment Laboratory (PMEL) Contractor

The quality of support would decline and equipment would not be as readily available because of transit time alone thus requiring and increase in inventory which will greatly increase the cost of doing business.

Service/Function: Ground Support Equipment (GSE) Contractor

Provides powered and non-powered equipment for aircraft maintenance. on site support for GSE is essential to aircraft production because each phase of repair to the airframe requires different and serviceable GSE. Response time to a new or unprogrammed repair effort is reduced to minutes by having GSE serviced by a collocated activity. Collocation provides the user of GSE and service organizations a direct communication link that many times brings the two parties together at the job site within minutes to correct or resolve problems. If the support for GSE was not collocated with the using activity, transportation time would cause many lost production hours and increase flow days to produce each aircraft.

17. Interface with Customers

17.1 Indicate any special functions that the depot maintenance function performs that require close interface with customers, such as on-site workloads (e.g. technical assistance, crash/battle damage repairs, modification/upgrade installations). Describe required interface/relationship/ benefit.

Service/Function: Aircraft Maintenance and Repair (F-15, C-130, C-141, Special Ops Forces)

Aircraft maintenance and repair of assigned weapon systems require extensive interaction with the respective system program directors. Under the integrated weapon system management philosophy, these system program directors actually manage, control and coordinate depot maintenance processes specifically oriented towards their assigned weapon system. Collocation of these activities have proven to enhance customer support and reduce life cycle costs.

Service/Function: Technical Assistance

Depot maintenance offers a variety of capabilities and services which are essential to the system program management offices and their respective engineering staffs in investigating, analyzing, and developing solutions for aircraft system and sub-system deficiencies in supporting customer requirements.

Service/Function: Crash/Battle Damage

Provides immediate and long term technical support, spares, emergency repairs, and management oversight support for C-141, C-130, and F-15 fleets.

Service/Function: Depot Field Teams

Close communication is required with the using organizations for Depot Field Team Workloads. This is required to coordinate the efforts of both parties, the User and the Depot. This coordination consists of schedule integration, material/equipment acquisition, and the resolution of any problems that may arise during the time frame of the work being performed.

Having this association between the user and the depot precludes additional expenditures and increased flow days.

Service/Function: Modifications

Both TCTO Trial Installations and Kit Proofs require close communication between the depots and the user. There are times when this work is performed at the Using Organization's location, and other times when the User travels to the Depot to participate. It is during this stage of modification/TCTO development that feed-back from the User and Depot is critical to the success of the program.

Service/Function: Airborne Electronics Repair

Special functions performed by airborne electronics maintenance activities requiring close interface with the customer include maintenance test, repair, overhaul and modification of avionics components for USAF and Foreign Military Sales customers. Close interface with customers require on-site customer support visits for evaluation of problems, analysis of equipment operation, engineering assistance, technical services for resolution of cannot duplicate conditions and technical interchange meetings. Other customer interfacing occurs to define, discuss and determine customer requirements, funds availability, delivery schedules and product improvement needs. Activities require on-site customer support visits for evaluation of problems, analysis of equipment operation, engineering assistance, resolution of cannot duplicate conditions and technical interchange meetings.

Service/Function: Test Program Set (TPS) Development

The Avionics Software Production Facility develops and maintains the software test programs for systems managed at WR-ALC including: F-111 Amp SRU/LRU, E-3 Avionics (Multiple Systems-Comm & Radar), B-52 Radar systems, MRT (Multi-applications), LANTIRN (F-15E/F-16), F-15, C-130 SCNS, GPS (Multi-application), JSTARS (E-8), SOF CDU (AC-130H, MH-60G, MH-53J). Integrated Product Teams facilitate on-site support in the repair depot when modifications/upgrades or technical assistance is needed. This assistance spectrum spans the purchase of spare parts to an enhanced technical capability resolved by the systems engineer, software engineering designer, and hardware repairer. This enhances customer responsiveness. The close proximity of the repair site, logistics managers,

and the software developers/maintainers at Robins AFB reinforces the timely logistics support for the end user of these systems. The JSTARS user will also be located at Robins AFB subsequently shortening the logistics "pipeline" and enhancing responsiveness to user needs.

Service/Function: OFP Maintenance & Modification

The Avionics Software Production Facility supports the software for the following systems OFP managed, modified/enhanced, tested, and placed under configuration control at WR-ALC: SOF OFP (AC-130H, AC-130U, MH-53J, MH-60G, MC-130H, MC-130E), JTIDS CSSA OFP, PAVE TACK OFP, MRT OFP, LANTIRN OFP. The Integrated Product Team for each of these systems allows problem resolution and proper logistics support to be accomplished through daily contact among the logistics managers, systems engineers, technicians, and software developers/managers. Tiger teams are implemented immediately when problem areas merit them. This increases our customer responsiveness and satisfaction.

Joint STARS is going to have a combined ACC and AFMC software support facility. This facility will provide the ACC organic as well as the AFMC depot software support functions. Both organizations will be collocated in the same facility at Robins AFB. This will allow the WR-ALC software engineers to augment the ACC mission software personnel in the mission planning area, while ACC software personnel can be involved in the software trouble report system and analysis of the operational flight program.

Service/Function: On-Site Joint STARS

Selection of Robins AFB as the Main Operating Base for the Joint STARS organization was based on the knowledge that WR-ALC was designated as the single location for post-production management of the weapon system as well as the center for organic repair of mission avionics and software support. This collocation of activities not only provides the best support possible to ACC, but it produces cost efficiencies and savings, such as those from co-utilization of facilities and equipment, reduction of manpower requirements, reduction of repairable asset transportation costs, reduced spares requirements and pipeline time, and reduced technical and management personnel travel costs. The opportunities provided by on site support are beneficial to both MAJCOMs.

Costs

18. Real Property Maintenance (RPM)

18.1 What is your activity's backlog of real property maintenance for facilities performing depot maintenance as of 30 September 1993 (express in $K)?

$19,917

18.2 What were your activity's annual RPM expenses (in $K) for Fiscal Years 1990-1993? Provide your answers in Table 18.2.

Table 18.2: Real Property Maintenance Expenses

	FY 1990	FY 1991	FY 1992	FY 1993
RPM Expenses ($K)	**7,979**	**10,414**	**9,394**	**7,112**

19. Annual Operating Costs
(Excludes Materials used in Depot Maintenance Workloads)

19.1 What were the total depot maintenance actual annual operating costs for your activity (AOC/$K), excluding materials, used in depot maintenance workloads for Fiscal Years 1990-1993? What was the cost per direct labor hour ($DLH) for actual executed hours reported in the DBOF? Provide your answers in Table 19.1.

Table 19.1a: Annual Operating Costs (DPAH)

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	**320,933**	**294,383**	**324,850**	**331,507**
$ / DLH (DPAH)	**38.48**	**39.87**	**43.67**	**43.64**

20. Environmental Compliance

20.1 What were your total depot maintenance actual and programmed environmental compliance costs (expressed in $K) for Fiscal Years 1990-1997? Provide your answers in Table 20.1.

Table 20.1: Environmental Compliance Costs

COST($K)	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997
Actual	**1,869**	**6,729**	**7,348**	**12,471**	*	*	*	*
Programmed	**1,869**	**6,729**	**6,848**	**11,829**	**13,346**	**17,598**	**13,384**	**7,658**

***Actual costs have not been completed for these years.**

20.2 If spending is accomplished as programmed above, what will be the remaining costs (backlog at the end of Fiscal Year 1997 expressed in $K) to bring existing facilities/equipment into environmental compliance?

There is no expected backlog of costs remaining at the end of FY97 to correct non-compliant facilities/equipment. Costs required to maintain total general compliance per year are estimated to be the same as the FY 97 total in question 20.1 above.

21. Local Wage Rate

21.1 What were your Department of Labor local wage rates for a WG-11, step 3 for Fiscal Years 1991 through 1994?

Table 21.1: Wage Rate

Wage Rate	FY 1991	FY 1992	FY 1993	FY 1994
WG-11 / Step3	**$12.51**	**$12.96**	**$13.24**	**$13.71**

22. Programmed Capital Investments

22.1 How much is programmed for new mission equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.

22.2 How much is programmed for replacement equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.

Table 22.1: Programmed Capital Investments

TYPE		FY 1996	FY 1997	FY 1998	FY 1999
NEW MISSION	**($K)**	**16,645**	**13,306**	**44,825**	**11,179**
REPLACEMENT	**($K)**	**11,528**	**10,455**	**8,942**	**11,705**

Document Separator

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP -- OO-ALC DEPOT MAINTENANCE

Table of Contents

Notes 2
Table of Acronyms 5
CAPACITY 6
1. Capacity Utilization 6
2. Plant Replacement Value 9
3. Programmed Workload 9
4. Service Centers of Excellence 12

MEASURES OF MERIT 16
Geographic 16
1. Location 16
2. Environmental Compliance 19
3. Environmental Restrictions 20
4. Other Collocated Activities 21
5. Encroachment 37
Facilities and Equipage 38
6. Unique or Peculiar Facilities 38
7. Buildings and Their Condition 51
8. Unique and/or Peculiar Capabilities and Capacities 56
9. Acreage Available for Building 79
10. Administrative Space 80
11. Industrial Waste 80
Workload and Capabilities 81
12. Core Capabilities (DoD) 81
13. Core Workloads 83
14. Other Workloads (Above Core) 84
15. Unique and/or Peculiar Workloads 88
16. Scope of Work Performed 89
17. Interface with Customers 99
Costs 105
18. Real Property Maintenance (RPM) 105
19. Annual Operating Costs 106
20. Environmental Compliance 106
21. Local Wage Rate 107
22. Programmed Capital Investments 107

Commodity Groups List

1. Aircraft Airframes:
   a. Rotary
   b. VSTOL
   c. Fixed Wing
      (1) Transport / Tanker / Bomber /
      (2) Command and Control
      (3) Light Combat
      (4) Admin / Training
   d. Other

2. Aircraft Components
   Dynamic Components
   Aircraft Structures
   Hydraulic/Pneumatic
   Instruments
   Landing Gear
   Aviation Ordnance
   Avionics/Electronics
   APUs
   Other

3. Engines (Gas Turbine)
   Aircraft
   Ship
   Tank
   Blades / Vanes (Type 2)

4. Missiles and Missile Components
   Strategic
   Tactical / MLRS

Commodity Groups List (cont)

5. Amphibians
   Vehicles
   Components (less GTE)

6. Ground Combat Vehicles
   Self-propelled
   Tanks
   Towed Combat Vehicles
   Components (less GTE)

7. Ground and Shipboard Communications
   and Electronic Equipment
   Radar
   Radio Communications
   Wire Communications
   Electronic Warfare
   Navigational Aids
   Electro-Optics / Night Vision
   Satellite Control / Space Sensors

8. Automotive / Construction Equipment

9. Tactical Vehicles
   Tactical Automotive Vehicles
   Components

10. Ground General Purpose Items
    Ground Support Equipment (except aircraft)
    Small Arms / Personal Weapons
    Munitions / Ordnance
    Ground Generators
    Other

11. Sea Systems
    Ships
    Weapons Systems

Commodity Groups List (cont)

12. Software
    Tactical Systems
    Support Equipment

13. Special Interest Items
    Bearings Refurbishment
    Calibration (Type I)
    TMDE

14. Other

Table of Acronyms

$/DLH	Cost per Direct Labor Hour
$K	Thousands of Dollars
ADMIN	Administrative; administration
AICUZ	Air Installations Compatible Use Zone
AOC$	Annual Operating Cost (dollars)
CCN	Category Code Number
DBOF	Defense Business Operating Fund
DLH	Direct Labor Hour
DoD	Department of Defense
ESQD	Explosive Safety Quantity Distance
FMS	Foreign Military Sales
FY	Fiscal Year
FYDP	Future Year Defense Plan
GTE	Gas Turbine Engines
HERF	Hazardous Electronic Radiation - Fuels
HERO	Hazardous Electronic Radiation - Ordnance
HERP	Hazardous Electronic Radiation - Personnel
JCSG-DM	Joint Cross Service Group - Depot Maintenance
KSF	Thousands of Square Feet
PRV	Plant Replacement Value
R&D	Research and Development
RPM	Real Property Maintenance
SF	Square Feet
WG	Wage Grade

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

CAPACITY

1. Capacity Utilization

1.1 Calculate the capacity index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed in direct labor hours (DLHs) in Table 1.1.a by commodity groups for the Fiscal Years requested.

Table 1.1a: Capacity Index

COMMODITY GROUP	CAPACITY INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY1998	FY 1999
1C1 Transport	469,481	469,481	469,481	469,481	469,481
1C3 Lt Combat	1,380,825	1,380,825	1,380,825	1,380,825	1,380,825
2B A/C Structures	311,453	311,453	311,453	311,453	311,453
2C Hydr/Pneudr	41,425	41,425	41,425	41,425	41,425
2D Instruments	191,781	191,781	191,781	191,781	191,781
2E Ldg Gear	1,027,946	1,027,946	1,027,946	1,027,946	1,027,946
2F Av Ordnance	418,850	418,850	418,850	418,850	418,850
2G Av Electric	510,905	510,905	510,905	510,905	510,905
2H APUs	88,987	88,987	88,987	88,987	88,987
2I Other	492,494	492,494	492,494	492,494	492,494
2J Manufacturing	73,664	73,664	73,664	73,664	73,664
3A Engine	101,261	101,261	101,261	101,261	101,261
4A Missile, Strat	745,646	745,646	745,646	745,646	745,646
4B Missile, Tac	569,207	569,207	569,207	569,207	569,207
10E Other	102,795	102,795	102,795	102,795	102,795
12A Software	754,851	754,851	754,851	754,851	754,851
12B Spt Equip	312,987	312,987	312,987	312,987	312,987
13A Bearings	19,945	19,945	19,945	19,945	19,945
TOTAL	7,614,483	7,614,483	7,614,483	7,614,483	7,614,483

1. Capacity Utilization, continued

1.2 Calculate the utilization index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed as a percentage (%) in Table 1.2.a by commodity groups for the Fiscal Years requested.

Table 1.2a: Utilization Index

COMMODITY GROUP	INDEX (%)				
	FY 1995	FY 1996	FY 1997	FY1998	FY 1999
1C1 Transport	128	134	125	156	116
1C3 Lt Combat	72	62	65	63	50
2B A/C Structures	77	75	78	81	77
2C Hydr/Pneudr	32	32	32	32	32
2D Instruments	50	55	63	66	65
2E Ldg Gear	52	50	49	50	47
2F Av Ordnance	34	33	28	25	25
2G Av Electric	74	76	81	84	84
2H APUs	32	30	33	35	32
2I Other	32	33	33	36	37
2J Manufacturing	103	103	103	103	103
3A Engine	73	121	142	148	144
4A Missile, Strat	93	96	80	89	90
4B Missile, Tac	33	30	30	32	32
10E Other	104	107	111	116	116
12A Software	92	88	86	82	86
12B Spt Equip	75	71	65	73	77
13A Bearings	24	24	24	24	24
TOTAL	69%	68%	66%	69%	65%

1. Capacity Utilization, continued

1.3 Assuming (a) the current projected total workload remains as assigned; (b) that sufficient production demand is available to justify maximum hiring, with no significant investment in capital equipment; and (c) no major Military Construction additional to that already approved and funded: what is the maximum extent to which operations, by commodity group, could be expanded for depot maintenance work at your activity, based on the current and future planned workload mixes? Please provide your response in the absolute maximum number of direct labor hours (DLHs).

Table 1.3a: Maximum Potential Capacity

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY1998	FY 1999
1C1 Transport	469,481	469,481	469,481	469,481	469,481
1C3 Lt Combat	1,870,251	1,870,251	1,870,251	1,870,251	1,870,251
2B A/C Structures	311,453	311,453	311,453	311,453	311,453
2C Hydr/Pneudr	41,425	41,425	41,425	41,425	41,425
2D Instruments	191,781	191,781	191,781	191,781	191,781
2E Ldg Gear	1,027,946	1,027,946	1,027,946	1,027,946	1,027,946
2F Av Ordnance	418,850	418,850	418,850	418,850	418,850
2G Av Electric	811,619	811,619	811,619	811,619	811,619
2H APUs	88,987	88,987	88,987	88,987	88,987
2I Other	1,103,126	1,103,126	1,103,126	1,103,126	1,103,126
2J Manufacturing	62,904	62,904	62,904	62,904	62,904
3A Engine	101,261	101,261	101,261	101,261	101,261
4A Missile, Strat	745,646	745,646	745,646	745,646	745,646
4B Missile, Tac	569,207	569,207	569,207	569,207	569,207
10E Other	102,795	102,795	102,795	102,795	102,795
12A Software	754,851	754,851	754,851	754,851	754,851
12B Spt Equip	312,987	312,987	312,987	312,987	312,987
13A Bearings	19,945	19,945	19,945	19,945	19,945
TOTAL	9,004,515	9,004,515	9,004,515	9,004,515	9,004,515

CAPACITY

2. Plant Replacement Value

2.1 What is the estimated Plant Replacement Value (PRV) as of the end of each Fiscal Year of your depot maintenance activity expressed in thousands of dollars ($K) as a function of the facilities and equipment? Provide your answer in Table 2.1.

Table 2.1: Expenditures and Equipment Values (In thousands of Dollars)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Facilities	$1,256,330	$1,292,993	$1,332,101	$1,371,209	$1,412,760
Equipment	$1,364,257	$1,407,642	$1,446,231	$1,489,460	$1,530,840
TOTAL	$2,620,587	$2,700,635	$2,778,332	$2,860,669	$2,943,600

CAPACITY

3. Programmed Workload

3.1 Given the current configuration and operation of your activity, provide the programmed depot level workload by commodity group in Tables 3.1.a and 3.1.b. Express your answer in both dollars ($K) and direct labor hours (DLH) for the Fiscal Years requested.

Table 3.1a: Programed Workload in Thousands of Dollars

COMMODITY GROUP	Programmed Workload in Thousands of Dollars				
	FY 1995	FY 1996	FY 1997	FY1998	FY 1999
1C Trans/Tnkr/Bmbr	43,190	45,859	44,130	57,126	43,936
1C Light Combat	71,808	61,703	67,265	67,355	55,858
2B A/C Structures	17,192	17,020	18,252	19,542	19,509
2C Hyd/Pneu	949	949	949	949	949
2D Instruments	6,887	7,623	9,071	9,851	10,048
2E Landing Gear	38,084	37,133	38,065	39,551	39,279
2F Aviation Ord	10,370	9,992	8,818	8,063	8,426
2G Avionic/Electron	27,018	28,291	31,256	33,640	34,730
2I Other	11,271	11,777	12,186	13,889	14,573
2J Manufacturing	5,447	5,502	5,727	5,923	6,140
2H APUs	2,234	2,160	2,418	2,629	2,546
3A Aircraft	5,334	8,877	10,850	11,682	11,773
4 Strat & Comp	49,921	51,959	44,791	51,703	54,480
4B Tac & Comp	13,428	12,411	12,905	14,306	14,680
10E Other	7,695	7,979	8,622	9,287	9,678
12A Tactical Sys	49,676	48,255	49,124	48,355	52,753
12B Support Equip	16,861	16,086	15,257	17,838	19,512
13A Bearings	346	350	363	376	390
TOTAL	377,711	373,926	380,049	411,795	399,260

Table 3.1b: Programed Workload (DLH)

COMMODITY GROUP	Programmed Workload in Thousands of Dollars				
	FY 1995	FY 1996	FY 1997	FY1998	FY 1999
1C Trans/Tnkr/Bmbr	601,057	631,264	585,990	732,945	543,465
1C Light Combat	999,130	849,366	893,185	864,193	690,933
2B A/C Structures	239,258	234,290	242.363	250,732	241,310
2C Hyd/Pneu	13,296	13,296	13,296	13,296	13,296
2D Instruments	95,833	104,931	120,450	126,398	124,288
2E Landing Gear	533,503	514,496	508,346	509,929	487,904
2F Aviation Ord	144,315	137,540	117,090	103,453	104,219
2G Avionic/Electron	375,985	389,428	415,033	431,601	429,591
2I Other	232,650	237,842	237,855	254,199	256,209
2J Maufacturing	75,805	75,733	76,042	75,995	75,949
2H APUs	28,431	27,077	29,446	31,066	28,836
3A Aircraft	74,231	122,194	144,067	149,880	145,621
4A Strat & Comp	694,460	714,964	594,491	663,103	673,626
4B Tac & Comp	186,194	170,181	170,706	179,423	180,915
10E Other	107,088	109,634	114,487	119,160	119,717
12A Tactical Sys	691,315	664,247	652,306	620,418	652,524
12B Support Equip	234,648	221,431	202,596	228,868	214,351
13A Bearings	4,818	4,818	4,818	4,818	4,818
TOTAL	5,256,392	5,146,999	5,046,525	5,283,482	4,938,623

CAPACITY

4. Service Centers of Excellence

4.1 If your activity has been designated as a Service Center of Excellence for any of the commodity groups, please identify them below.

Conclusion: Ogden ALC Landing Gear Division has been designated as the Technical Repair Center or a Service Center of Excellence for repair and overhaul of aircraft wheels, brakes, and struts and related components. This Center provides overhaul, repair, modification and testing services to 70% of the Department of Defense aircraft landing gear inventory in the following aircraft categories:

Aircraft Components
Landing Gear
- Light Combat,
- Cargo/Transport/Bomber/Tanker
- Rotary
- Admin/Training
- Command and Control

The Photonics and Technical Repair Division has been designated as the Technical Repair Center or the Service Center of Excellence for Aircraft Components, Other Commodity Group Categories. This Center provides overhaul, modification, testing and a variety of depot level support functions to many assorted components which include:

Aircraft Components
Aviation Ordnance
- Ejection Seats, Egress Systems, 20MM guns, and 30MM guns

Hydraulics/Pneudraulics
- Ram Air Turbines, Missile Control Hydraulic Actuation System, LGM-30 Shock Isolator

Instruments
- Electrical/Mechanical Instruments, Pressure, Temperature, Humidity, Navigational Instruments, Multi-function Displays

Missile Launch Control
- Launchers
- Other
- Gun Racks, External Fuel Tanks, Bomb Racks, Adapters, and Pylons

Other Components
- Photographic/Reconnaissance/Imaging Equipment
- Physiological Trainers

The Armament Production Branch has been designated as the Technical Repair Center or the Service Center of Excellence for Missiles and Missile Component Commodity Group within the Air Force. This Center provides overhaul, modification, testing and a variety of depot level support functions to many assorted missiles and missile components which included:

Missiles and Munitions/Ordnance

Maverick Missiles
Sidewinder Missiles
SRAM Missiles
Air Launch Cruise Missiles
Advanced Cruise Missiles
Paveway I and II
GBU-15 Laser Guided Bombs
Missile Guidance Control Units
Electro Optics, Infrared, Laser, and TV Seeker Control Sensors
Signal Processing Units
Digital Test Sets, Guided Missile Test Sets, Air Force and Navy Infrared Test Sets.

The Missile Commodity Group

Missile Electronic Repair--inspects, repairs and tests LGM-30 (Minuteman) and LGM-118 (Peacekeeper) launch and launch control facilities electronic equipment and flight control units.

Ground Mechanical Repair--performs depot maintenance on all LGM-30 and LGM-118 transportation and handling equipment and all repair and overhaul of ground support equipment.

Propulsion Repair--performs inspection, disassembly, component replacement, assembly and testing of LGM-30 and LGM-118 rocket motors, missile and ground support cables, all pyrotechnic switches, and prepares rocket motors for X-ray, dissection and static firing.

The Technology Repair Center

Per AFMCI 21-XX, which is to replace AFLCR 66-48, we (OO-ALC) are designated as the Technology Repair Center for the following:

Technology	Family Group	Family Code
Weapons (A)	All	All
Airmunitions (B)	All	All
Missile and Space Launch Vehicle Components Launch Control (H)	All	All

Hydraulics/Pneudraulics Pneumatics, Air Driven Accessories, Refrigeration and Heating Systems and Ram Air Turbines (J)	JB	JBB
Hydraulics/Pneudraulics Pneumatics, Fluid Driven Accessories, Missile Control (J)	JD	All
Landing Gear (Q)	All	All
Photographic/Reconnaissance Imaging Equipment (R)	All	All
Training and Simulation Equipment (S)	All	All
Instruments/Displays Electrical Mechanical Instruments (T)	TA	All
Instruments/Displays Pressure, Temperature, Humidity (T)	TB	All
Instruments/Displays Navigational Instruments (T)	TG	All except TGG
Instruments/Displays Multifunction Displays (T)	TH	All

Airframes and engines: According to AFMCR 523-1, airframe, engines, and related structural components will require HQ AFMC evaluation, issuance of mission assignment letter, and subsequent publication in AFMCR 523-3.

Technology Area Program Management (TAPM)
The Ogden Air Logistic Center assignments are Photonics and Software. Our software efforts include Technology Area Program Management (TAPM) developing photonics and software and implementing Neural Network (NN) and Self Organizing Systems (SOS) for Automatic Test Systems (ATS) where applicable as an advanced diagnostic tool and pursue other application of NN and SOS to include Test Program Sets (TPS) diagnostics, automatic TPS generation and real time ATS application. Primarily supports commodity group 12B - support equipment (software).

The Software Technology Support Center (STSC) is one of the four tasks under the ESIP PMD. The STSC is a centralized source of technical expertise, management, and evaluation support to guide the future evolution of software support technologies for Air Force and Department of Defense customers. Primarily supports commodity group 12 - software.

Reliability and Maintainability Engineering
Ogden Air Logistic Center was assigned program management responsibility for leading a Command effort to develop and enhance R&M tools and techniques for routine engineering use in continuing efforts to improve R&M of fielded products/systems. Provides support to all commodity groups; however, primarily will support commodity group 1-aircraft and aircraft related items.

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

MEASURES OF MERIT

Geographic

1. Location

1.1 Specify any special strategic importance or military value consideration of your activity accruing from its geographical location.

Activity: OO-ALC Depot Maintenance Function
Location: Hill AFB Utah
Description of Strategic Importance/Military Value: Depot maintenance is located on an operational Air Force Base and enjoys collocation with the premier 388th Fighter Wing and the 419th Fighter Wing Reserve. OO-ALC has equidistant access and distribution throughout Western U.S. (air, rail, and surface). OO-ALC is within 750 air miles of any point along the U.S.Western coastline. The center has a minimal encroachment problem with the surrounding communities, and was purposely located for strategic inland/central advantage prior to World War II. The State of Utah has legally prohibited incompatible development in all APZs and all noise contours above 75 LDN. In addition, the State building board is expected to require compatible building in noise contours 65 - 75 LDN.

Activity: Utah Test and Training Range (UTTR)
Location: Great Salt Lake Desert, within 30 air miles of OO-ALC
Description of Strategic Importance/Military Value: UTTR is the largest DOD overland controlled airspace (17,000 square miles). The large land and airspace, combined with modern data collection/processing capabilities and test expertise, provide unmatched support for developmental tests of advanced weapons systems. Tracking and documentation equipment include an extensive high accuracy, multiple-object tracking system in addition to radars, cinetheodolites, video-metric systems, and high speed cameras. State of the art systems are used to collect, process, display, and analyze data. Both ground and airborne telemetry acquisition systems are available. Training operations use near-real-time air-to-ground target scoring and a large air combat maneuvering instrumentation arena. UTTR blends modern developmental test capabilities with a realistic environment for training to produce the finest operational test range in the U.S. Sponsors joint service exercises and supports over 30,000 training sorties annually with capabilities for air-to-ground, air-to-air, and ground exercises in any combination. Simultaneous test and training activities are routinely conducted using modern communications, airspace control, and mission control facilities. An extensive variety of realistic targets within the 6 complexes, with over 300 targets, are available to meet any training need from scorable target pads to remotely controlled realistic threats. UTTR's proximity to OO-ALC increases the time on target and test time because of minimal fuel burn to arrive at the range. The Great Salt

Lake acts as a permanent buffer from future encroachment from the east and the range is not in danger of incompatible land use.

UTTR has a unique mixture of unmatched physical characteristics, and variety of terrain features. Varied terrain from 4300 foot desert floor to 12,000 foot mountains, and four season climate, provides conditions required for a full scope of training scenarios. The favorable weather at UTTR makes it a uniquely valuable resource because it experiences minimal inclement weather is available for use virtually every day of the year. B-1 and B-52 aircraft routinely launch Cruise missiles or drop munitions on UTTR targets. UTTR serves as DoD's only high altitude strategic bombing training range. The immensity of the range permits misses when dropping munitions, there is no chance for accidental destruction of roads, facilities, etc. **It is the only range in the U.S. where all test objectives for the Air Launched Cruise Missile (ALCM) can be conducted.** The strategic location of the Utah Test and Training Range to the depot maintenance activity provides easily accessible range capability to perform the required acceptance test firing of the 30MM gun. The extremely sparse population surrounding UTTR makes it ideal for remote, isolated storage of ICBM motors, and destruction of munitions and missile motors. Tests of up to 500,000 pounds of conventional explosive have been accomplished at UTTR. It is also used for training, developmental test and evaluation, operational test, and munitions/rocket motor disposal.

Activity: Munitions Test, Evaluation and Sustainment
Location: Utah Test and Training Range, Tooele Army Depot
Description of Strategic Importance/Military Value: The strategic importance of the collocation of the Munitions Test Team and the Armament Sustainment Support Group with the Utah Test and Training Range and the Tooele Army Depot Provides greater synergism for munitions support through expeditious resolution of field problems storage, transportation aging and surveillance testing anomaly resolution and failure analysis than any other Air Force Installation.

Through the location of UTTR next to Hill AFB, the Munitions Sustainment Support Group is able to perform the required testing for the entire list of weapon systems in the Air Force's inventory. Warranty testing of munitions reliability is performed timely and economically without the TDY and added test costs, which would be required, if performed at another test center. Because the F-16 contingent at Hill AFB conducts Operational Flight Testing at UTTR the Munitions Sustainment Group is able to piggy-back over 75 percent of the munitions testing which is performed, saving 5 to 6 million dollars annually in test costs for aircraft support.

Due to the close proximity of the Tooele Army Depot a large portion of assets can be stored locally and shipped or tested on very short notice rather than waiting for transportation and shipping time. This is especially helpful for rapid resolution of failure and anomaly testing and resolution. Having the Munitions Test Team collocated at Hill AFB provides quick turn around for testing safety of flight anomalies. For example, when it was found that the Navy had possibly produced some JAU-8 initiators, which are used for emergency pilot egress, without the required propellant, a resolution was quickly developed, tested and implemented on the inventory stored at Hill AFB and Tooele Army Depot. The Munitions Test Team in concert with the Armament Sustainment Group was able to quickly process, check and send replacements to the field. As the

returned field units started to arrive at Hill AFB, they were quickly checked labeled and reshipped shipped to the Field until all initiators had been verified to contain propellant. The resultant impact to the field was very little down-time for any of the aircraft. If the test team had not been at Hill and could not have worked in a cohesive team in association with the storage capability for asset inventory, the task would have required an enormous amount of paperwork, time and communication to coordinate this effort. Instead it was done expeditiously and smoothly because all the necessary functions were collocated at Hill AFB.

If it wasn't for the capacity and capability of the UTTR to perform the required munitions testing the cost to perform the current level of testing would increase 2 to 3 million dollars and take 3 to 4 times as long to execute the tests and obtain the test results. Testing has been accomplished at the other test centers and has been shown to be non-responsive to the timelines and schedules required to support the field in an acceptable manner.

In conjunction with the Tooele Army Depot, Hill AFB's runway capacity offers a tremendous benefit to the logistics process of getting the required munitions to the location of the war in an expeditious manner. The runway is located in close proximity to the large storage capability here at Hill AFB. Multiple cargo aircraft can be loaded simultaneously. The Air Force's Ammunition Control Point (ACP) is also located at Hill AFB. During Desert Storm, Hill AFB loaded up to 1 million pounds of munitions per day for a sustained period of over two weeks. No other Air Force base could have accomplished this. This capability only exists because of the close proximity of the storage capability which co-exists between Hill AFB and Tooele Army Depot.

Activity: Propellant Disposal
Location: Hill AFB, Utah
Description of Strategic Importance/Military Value: Disposal of unstable propellant and obsolete motors from other services is accomplished at OASIS Complex on UTTR, the only EPA environmentally licensed Thermal Treatment Unit in the United States. Due to the unstable nature of solid rocket motor propellant after the dissection process, it must be disposed of within 5 days (class 1.1) or 30 days (class 1.3) (OO-ALC HAFBR 136-1).

Activity: Missile Motor Movement
Location: Hill AFB, Utah
Description of Strategic Importance/Military Value: The virtual collocation of the Thiokol motor production facility reduces transportation distance and costs and reduces the opportunity for incident.

Activity: Runway
Location: Hill AFB, Utah
Description of Strategic Importance/Military Value: The proximity of the runway and hot pads to the storage and depot maintenance areas prevents unnecessary transportation and opportunity for incident. The runway provides adequate length for landing overweight C-141 aircraft (loaded with a missile booster) any time of the year without a problem.

Activity: Explosives Storage

Location: Hill AFB, Utah
Description of Strategic Importance/Military Value: Storage facilities for a mission requirement of 37,216,000 pounds Net Explosive Weight (NEW) of 1.3 class and 8,878,355 pounds NEW of 1.1 class explosives for Minuteman and Peacekeeper are available and comply with Explosive Safety Quantity Distance (ESQD) requirements (in accordance with Air Force Regulation 127-100, Explosive Safety Standards).

Activity: Long term missile motor storage
Location: Hill AFB, Utah
Description of Strategic Importance/Military Value: Life cycle analysis and deactivation movement requires adequate storage facilities to prevent unnecessary transportation costs and opportunities for incident.

Activity: Silo-Based Intercontinental Ballistic Missile (SBICBM) Depot Maintenance
Location: Hill AFB, Utah
Description of Strategic Importance/Military Value: The current location of the SBICBM infrastructure is central to both the deployed force (six operational missile wings) and major rocket motor manufacturers. This fact mitigates the risk of transporting hazardous and toxic elements of the weapon systems and enhances customer support and responsiveness.

Activity: SBICBM System Program Office (SPO)
Location: Hill AFB, Utah
Description of Strategic Importance/Military Value: The SPO performs all systems engineering, integration, subsystem management, subcontracting, performance evaluation, interface control, modification management, post production support, acquisition and data management tasks associated with Minuteman and Peacekeeper missiles. Collocation of the SPO function with the ICBM physical infrastructure allows all functions to utilize facilities and equipment to meet recurring and special needs.

Geographic, continued

2. Environmental Compliance

Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

2.1 Is your activity in full compliance with all Federal, state, and local environmental regulations? If not in full compliance, provide a comprehensive list of individual regulations that require actions to be taken. What compliance waivers have been granted? When must the activity come into compliance?

Conclusion: Full compliance, no existing Federal or State compliance orders.

Type: N/A
Regulation: N/A
Waiver (Date Expires): N/A
Date Must be in compliance: N/A

2.2 Has any actual or programmed work at this installation been restricted or delayed because of environmental considerations, such as air or water quality? If so, provide the details of the impact of the restrictions or delays.

Conclusion: No.

Programmed Work: N/A
Restriction/Delay: N/A
Describe Impact: N/A
Geographic, continued

3. Environmental Restrictions
Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

3.1 Are there any special programs relating to environmental or industrial waste considerations for your activity? If so, provide the details.

Conclusion: No special programs required.

3.2 Within what provisions must the activity operate with regard to disposal of hazardous wastes and radioactive materials?

Conclusion: Ogden ALC operates within the rules promulgated by the Utah Division of Environmental Quality. Current hazardous waste storage limited to 308 drums. This is not a limiting factor due to in-place contracts for hazardous waste pick up. A new facility has been approved and scheduled for construction for Fall 1994 with 2,400 drum capacity. No radioactive waste is generated by current operations.

Type: N/A
Provisions: N/A
Describe: N/A

Geographic, continued

4. Other Collocated Activities

4.1 Are there any collocated activities that directly benefit or relate to the depot maintenance activity? If yes, list and describe the impact of each. Include benefits derived from being collocated.

Conclusion:

Collocated Activity: Silo-Based Intercontinental Ballistic Missile (SBICBM) System Program Office (SPO)
Benefit/Relationship: Since the SPO function is collocated with the ICBM physical infrastructure allows all functions to utilize facilities and equipment to meet recurring and special needs. Practical self-sufficiency of the SBICBM SPO allows for strict cost control and ensures cost decreases go to ICBM users.
Describe Impact: It allows a synergistic flow of operations, effective utilization of resources and strict cost controls.

Collocated Activity: Communications Systems
Benefit/Relationship: The Regional Processing Center (RPC) and the Defense Information Systems Agency (DISA) provide unparalleled support for communication lines and information system products. Provides technical support relating to communications and computer systems hardware, software and networking. They have a dedicated staff of highly qualified software engineering/system specialists and programmers to provide engineering services required to design, implement or trouble-shoot any network topology problem. They provide advice on needed protection measures for all our computer systems and facilities and will perform risk analysis on all data systems. The Information Center (in the RPC) promotes end-user efficiency through training consulting services, technical advice and systems analyses of new requirements. The recently constructed 143,000 square foot communications and computer systems facility contains state-of-the-art equipment using the latest technology to provide every communication need.
Describe Impact : It is essential that all communication systems be on line. This includes communications between different areas on base, Little Mountain, Oasis (Utah Test & Training Range) and the operational missile wings. This excellent organization provides computer and communication support which solves network problems, delays and repair. The Information Center provides a system compatibility unequaled throughout DoD. This system allows the merging of data from virtually any system to prepare reports and find data inconsistencies. Information security provides total support to Ogden ALCs and the Air Force's Mission.

Collocated Activity: Program Management for the following systems and commodities: Landing Gear, F-16 Emergency Power Unit Tank, Airmunitions Cartridge Actuated Devices/Propellant Actuated Devices, Tanks, Pylons, Physiological Trainer, Trainer Simulator System Support, Silo-Based ICBM, Air to Surface Munitions, F-4 Aircraft, F-16 Aircraft, Missile Component, Ram Air Turbine, Photonics & Reconnaissance Imagery, Maverick Missile, GBU-15 Laser Guided Bomb, and Paveway I and II.

Benefit/Relationship: Provides on-site engineering, technical, item management and program management support. These groups perform the sustainment functions of procurement, asset tracking, Technical Order to update and verification, asset dispositioning, failure and anomaly investigations, aging and surveillance test and evaluation, design change analysis, modification, and foreign military sales support. The collocation of these activities with the depot repair/maintenance and testing functions allow tremendous synergism in expediting the repair and supply process to support the field in all aspects of sustainment in the most timely manner. Collocation of program management with depot level maintenance and repair affords immediate access by the repair activity to the engineering authority for problem resolution. This eliminates the need for temporary duty trips and message traffic to resolve problems.

Describe Impact: The ability to have all the entities of sustainment program management, repair, test, and storage, which contribute to the overall support of the weapon system under one authority and in one location provides great empowerment to the workers who have to identify the corrections and initiate action to resolve the problems which arise. This synergism expedites the requisition processing, shipping and transportation, depot maintenance/repair anomaly resolution, test execution, failure/anomaly analysis and implementation of correction. Further, cost of operations are reduced because down time is minimized with technical and engineering support locally available to address issues. The Armament Sustainment Support Group, collocated with the Depot Maintenance, Munitions Test Team function, and storage capability, provide immediate feedback and resolution of shortfalls and supply anomalies which create a delay in the field support of 1 to 2 months minimum over current support time frames.

Collocated Activity: Silo-Based Intercontinental Ballistic Missile (SBICBM) Product Management

Benefit/Relationship: The SBICBM Product Management Teams (PMT) contain the program managers, equipment specialists, item managers, production managers, and hardware engineers who support the subsystems on a day-to-day basis. They are responsible for executing the subsystem management plans for logistics management, assessment and repair operations support which they develop in concert with the system engineers. During the acquisition of the Minuteman and Peacekeeper weapon systems, it was decided that there would be no prime contractor to perform the functions of system engineering, system integration, subsystem management, subcontracting, performance evaluation, interface control, modification management, post production support, or data management. Instead, the SPO assumed the role of "prime" and performs these functions organically with the assistance of a Sustainment Engineering/Technical Assistance contractor (SE/TA), TRW. The education level of personnel provided by TRW in support of the depot maintenance function include 13 with no college degree, 1 associates degree, 124 bachelor degrees, 83 masters degrees and 9 PhDs. Their

experience includes only 6 with less than three years, 44 with 3-10 years, 46 with 11-15 years, 44 with 16-20 years and 90 individuals with more than 20 years experience. All 230 contractors have technical responsibilities.
Describe Impact: Provides seamless support of the weapon system.

Collocated Activity: OO-ALC Depot Maintenance and Management activities:
The F-16 System Support Manager, Avionics, Structural Repair, Engineering and Configuration Management, Software, Flight Test, and Weapon Systems Management
Benefit/Relationship: Depot maintenance is located on an operational Air Force Base and enjoys collocation with the premier 388th Fighter Wing and the 419th Fighter Wing (Reserve). The F-16 System Support Manager (SSM) organization is collocated with both F-16 aircraft modification lines and F-16 avionics and Structural Repair maintenance functions. The F-4 System Program Director (SPD) is also collocated with the depot activities. Flight test is collocated at OO-ALC. The F-16 System Support Manager (SSM) has both engineering and configuration management authority for the F-16 weapon system. As such, any weapon system engineering and configuration questions that arise during the course of maintenance can be resolved on site by resident structural, mechanical and electronic engineers assigned to the SSM. The F-4 collocated activities include avionics repair, engineering and configuration management, structural repair, software development/validation/verification, and first article testing. Flight test's collocation with us secures a symbiotic relationship that allows testing, engineering, and depot maintenance functions to rapidly change or repair aircraft.
Describe Impact: These engineers have the final authority to approve any changes to work specifications, to design or modify structural repair fixes for damage found during the course of aircraft modifications, and to approve, fund and implement both hardware and software changes needed to resolve problems which arise during maintenance of all F-16 Core Avionics, Radar, Heads Up Display, and both Depot and Intermediate avionics test stations. The F-16 SSM also develops and funds all test plans for flight test of first articles either manufactured or repaired at Ogden. The high degree of integration between the F-16 program management activity and supporting depot repair functions is an immense advantage to the worldwide support of the largest fighter fleet in the Air Force. Two-way feedback between F-16 depot maintenance and F-16 product engineering constantly brings aircraft problems to the prompt attention of responsible engineers for resolution. Conversely, the on-site presence of SSM engineers reduces the time required for engineering solutions to reach depot maintenance by 1-2 weeks when compared to a non-collocated engineering activity. This translates directly to greatly reduced aircraft downtime, and improved cost and schedule effectiveness for depot support of the F-16 fleet. The F-4 SPD collocation with the depot allows for timely solutions to problems occurring in repair or modification, via direct contact between engineers, management, and maintenance activities. Software can be verified and validated, and first articles can be tested, with the aircraft right there, circumventing the need for temporary duty (TDY) trips.

Collocated Activity: Defense Logistics Agency
Benefit/Relationship: Collocated with all depot maintenance facilities and related support functions to provide receiving, storage and transportation support. They store assets valued at approximately $7 billion in 2,461,169 gross square feet of covered storage and 1,037,762 gross

square feet of open storage for the entire center. DLA provides indoor and outdoor storage for all Minuteman and Peacekeeper assets of a non-explosive nature. All packaging and transportation functions, excluding missile motor movement, are also performed by DLA. The SPI (Special Packaging Instruction) and Inventory Control Assistant (SICA) is a one of a kind system that allows DLA packaging personnel immediate access, on screen, to the most current technical drawings for packaging Air Force assets. This information system is owned by the Air Force.
Describe Impact: DLA provides timely delivery of common assets and protection from inclement weather. Receiving, transportation and storage costs would be significantly decreased. Excellent customer support is provided due to their location on base. The transportation and storage services provided by DLA minimize delays in day-to-day operations.

Collocated Activity: Defense Reutilization and Marketing Organization (DRMO)
Benefit/Relationship: The Defense Reutilization and Marketing Organization provides a disposal service for unnecessary and obsolete items.
Describe Impact: Transportation costs are minimal due to the collocation. The DRMO function also expedites the disposal hazardous waste minimizing possible spill potential. DRMO is the only permitted long term hazardous storage facility on base. Other base storage areas for items going to disposal are not needed, as it is a regular route stop for base expediters.

Collocated Activity: Depot Maintenance Supply Center (DMSC)
Benefit/Relationship: These forward supply points, operated by the 649th ABG, provide seamless support of commonly used parts within the specific depot maintenance function to which they are assigned.
Describe Impact: These centers eliminate unnecessary delays to the mechanics' workstation, therefore, increasing maintenance effectiveness.

Collocated Activity: 388 Fighter Wing, 419 Fighter Wing, 649 Combat Logistics Support Squadron.
Benefit/Relationship: Benefits provided to collocated activities include shorter delivery times, less transportation costs, and manufacturing and/or repair costs are less compared to creating purchase requests for private industry procurement actions. Collocated organizations also experience a very unique benefit. They are able to route components through the depot without having to use the standard avenue of supply. This adds to their readiness capability and deters aircraft down time. Peculiar test equipment and technical experience are convenient and utilized. F-16 Emergency Power Unit fuel tanks are delivered by the 388 Fighter Wing and 419 Fighter Wing to the depot repair facility and routed into work as unprogrammed workload. This alleviates the need for duplication of servicing shops. The same applies to wiring harness/cables, pneudraulics, weapon pylons, etc. The collocated activities are able to draw upon the depot maintenance technical experience to resolve their problems. Aircraft down time for repair is minimized. Readiness capability and mobility/deployment costs are minimized. Colllocation with the Avionics Integration Support Facility (AISF) allows direct interface with an F-16 pilot user of software changes. Their pilots assist in testing OPF changes at the UTTR.
Describe impact: Immediate support is provided to maintain mission readiness and minimum aircraft downtime. Transportation costs associated with depot maintenance are decreased

through collocation. Rapid feedback of software test results as well as pilot inputs on OPF development, therefore, ensuring better customer support and user identification of OPF software needs.

Collocated Activity: 501 Range Control Squadron, 514 Test Squadron
Benefit/Relationship: The 501 Range Control Squadron and the 514 Test Squadron provide support to the depot maintenance activities by operating, maintaining, and controlling all target footprint capability required for the cadre of munitions flight testing of Air Force munitions at the Utah Test and Training Range. The test planes are stationed at Hill Air Force Base and fly their missions from here to the range which is a short five minute flight. The collocation of Hill Air Force Base and these organizations provide the capability to test munitions for aging and surveillance, warranty testing, lot acceptance testing, First Article testing and failure analysis testing.
Describe impact: Collocation with these activities provides lower costs for flight testing of munitions. This eliminates the need to use more distant facilities at Eglin Air Force Base, Edwards Air Force Base (limited), or China Lake (Navy) which would require a much larger annual budget, approximately four to five times the current budget. The other major impact is the quick rate of accomplishment of surveillance testing.

Collocated Activity: 649 Munitions Test and Evaluation Flight
Benefit/Relationship: This Team is matrixed into the Armament Division. The product team engineers, equipment specialists and item managers rely on the capabilities of the Munitions Test Team to provide the ground test support for the reliability and maintainability problems that arise in the day to day operations of field support. Their collocation allows them to respond immediately to problems which arise and to resolve them expeditiously. This collocation allows the system engineers and equipment specialists to guide the testing procedures for maximum benefit to the Air Force in the data collection process. There is no other Air Force location in the United States where the collocation of asset storage, test capability, weapon system engineering and logistic support exists in the magnitude and synergism that exists at Hill Air Force Base.
Describe Impact: Many of the field problems are safety related and must be worked very quickly to minimize aircraft and/or weapon system downtime. Tests performed by the Munitions Test Team at Hill Air Force Base require 1 to 3 weeks minimum to an average of 4 months. This is primarily due to the collocation of the Armament Sustainment Support Group, large storage capability on base and at Tooele Army Depot, and the Munitions Test Team capability all being readily accessible in one location. Currently, tests performed at the Navy's test center requires 3 to 6 in months minimum and averages 14 months from problem identification. Tests performed at Eglin Air Force Base require 1 to 3 months minimum and are averaging 9 months. Collocation eliminates the need for communication completely by phone and mail, as it is done currently with the other test centers. This provides expeditiousness in supporting the field through cutting delays by one to four months.

Collocated Activity: Utah Test and Training Range (UTTR)
Benefit/Relationship: UTTR contains all target footprint capability required for the cadre of munitions flight testing of Air Force munitions. UTTR's 17,000 square miles of airspace, provides the capability to drop test any conventional munitions in the DoD inventory. The UTTR provides easy access to flight testing of all the coventional munitions used by the Air Force. The test planes are stationed at Hill Air Force Base and fly their missions from here to the range, a short five minute flight. The collocation of Hill Air Force Base and the UTTR provides the capability to test munitions for aging and surveillance, warranty testing, lot acceptance testing, First Article testing and failure analysis testing. Since the UTTR is so close, the Product Team engineers are able to witness the loading and then go to the range and witness the release and function of the weapon all in the same day. There is a large cost benefit from the collocation of the test aircraft, the Munitions Test Team and the Product Team. Munitions testing and operational flight testing are piggybacked about 75 percent of the time, with the operational flight testing performed by the F-16 System Program Office. This teaming saves the Air Force approximately 6 to 7 milliion dollars a year costs if this capability had to be recreated. The costs for flight time alone would be nearly 2 million dollars a year in flight test costs id not for this teaming arrangement. Even using other existing test centers would increase munition test costs by 70%. Our sustainment engineers are able to witness the tests and still work up to four hours the same day with minimal or no temporary duty costs. When failures or anomalies occur, immediate analysis can be done with follow on tests the same day or next day with little to no additionial costs and time.
Describe Impact: If this collocation did not exist, the testing would have to be performed at either Eglin AFB, Edwards AFB, or China Lake (Navy). all of these installations are limited in their capabilities, either because of explosive requirements or environmental licensing. This would significantly increase our budget track, schedule, plan, coordinate, and execute test requirements. Accomplishments of surveillance testing would also be reduced without this collocation.

Collocated Activity: Tooele Army Depot
Benefit/Relationship: It is only one hour driving time away from Hill Air Force Base and provides the needed additional storage capability to house the reparables and stockpiles which are awaiting repair and shipment to the needed locations and make them easily accessible to the Ammunition Control Point (ACP) which is located at Hill Air Force Base. Because of this proximity, the time and cost to ship-to or ship-from Hill Air Force Base is minimal. This provides a storage location for excess assets, reparables and test assets awaiting disposition. With the reduction of disposal/demilitarization locations and facilities, the Tooele storage capability has become increasingly important to the overall munitions operation at Hill Air Force Base. This tremendous capability proved its worth during Desert Storm where 500,000 tons of munitions were shipped in one day on several different occasions to ensure no delay in the fire power that was delivered in the Middle East.
Describe Impact: Collocation of the Armament Munitions Group, the Munitions Test Team and the Munitions Depot Maintenance Team greatly reduces the cost for shipping. The time to initiate and receive the items is shortened, minimizing the repairs and testing. Collocation offers failure and anomaly resolution in days rather than weeks and even months in some cases.

Grounding of aircraft and armament systems is minimized due to reduced waiting times for assets to arrive to perform the failure duplication testing and resolution verification testing.

Collocated Activity: 649 Civil Engineering Squadron Explosive Ordnance Disposal (EOD)
Benefit/Relationship: The EOD unit is responsible for setting the explosive charges and detonating the propellant at the Thermal Treatment Unit.
Describe Impact: The EOD unit plans and schedules proper disposal of ordinance and ensures all environmental and safety directives are followed.

Collocated Activity: 649 ABG/LGTPD Special Packaging Instructions (SPI).
Benefit/Relationship: This organization develops the Special Packaging Instructions (SPI) and technical drawings for all HAFB prime assets. They also conduct Performance Oriented Packaging (POP) tests for almost all explosives containers. All explosive shipment containers must meet the United Nations requirements for both Continental U.S. and overseas shipments.
Describe Impact: Proper packaging must be used in order to meet requirements for air, surface, CONUS and overseas shipments to assure serviceable assets are received by the customer. The SPI conducts Performance Oriented Packaging (POP) tests for almost all explosives containers. All explosive shipment containers must meet the United Nations requirements for both CONUS and overseas shipments.

Collocated Activity: Technical Training Facility
Benefit/Relationship: This training facility provides depot maintenance personnel with required skills to effectively accomplish job performance requirements. Personnel are classroom trained in all elements of job performance to support the Production Acceptance Certification (PAC) program. Instruction ranges from entry to advanced level courses and includes electronics, aircraft and missile systems, sheet metal, special equipment, and numerous other courses necessary to ensure personnel are technically proficient. Effective job performance results in reduced rework, better product quality, and reduced costs.
Describe Impact: These training courses are necessary to assure properly trained and certified technicians are skilled to perform critical operations.

Collocated Activity: Avionics Integrated Support Facility
Benefit/Relationship: This facility is geographically collocated with the weapon system management functions (F16, F4, ICBM, etc.) which is the ideal setting for optimum support. Joint venture with Aircraft Directorate to physically test Operational Flight Program (OFP) modifications and development through use of Ogden Air Logistic Center (ALC) F-16s and assigned pilots at various ranges located in Utah. Collocated with the Commodities Directorate to support the Air Force Mission Support System (AFMSS). Collocated with the F-16 System Program Managers for software support to the F-16 OFP. Improves timeliness, increases accuracy levels and allows better overall Weapon System Management.
Describe Impact: Optimum increase in workload planning, communication, timeliness and customer support due to the close partnership which fosters the sharing of expertise and ideas. Direct on line support and product updates are provided to the customer immediately. Decrease in temporary duty (TDY) expenses.

Collocated Activity: Science and Engineering Laboratory
Benefits/Relationship: Our Utah State certified laboratory is collocated with our depot maintenance facilities and is prime for failure analysis of landing gear production and overhaul capabilities. The quality of the plating tank chemistry is tested and adjusted daily based on monitoring done by our laboratory. Testing in the laboratory helps manage the hazardous chemicals and wastes produced. This is critical to EPA compliance, the laboratory is EPA and Utah Department of Environmental Quality certified for environmental analysis. Mechanical/ dimensional measurements performed ensure form fit and function. Testing for problems such as hydrogen, embrittlement, and corrosion; tensile, fatigue and Non-Destructive Inspection (NDI) functions are critical to quality safe products. Collocation promotes efficient processes and timely work completion.
Describe Impact: Provides reliable chemical mixes in the process tanks. Significant decrease in hazardous waste, environmental and worker safety problems. Decreased work stoppages due to improper industrial processes which could result in mission failures. Improved streamlined landing gear process and increased customer support.

Collocated Activity: Computed Tomography (CT)
Benefit/Relationship: Mission essential function dependent on the geographic location of the Silo-based Intercontinental Ballistic Missiles (ICBM) Systems. CT detects propellant voids and density changes in addition to assessing bond line integrity. One CT facility is currently operational and a larger facility will be operational in Fiscal Year (FY) 94, which will provide the largest CT inspection envelope in existence and the only system capable of lifting the Peacekeeper and Minuteman stages into the vertical inspection position.
Describe Impact: The CT facility provides excellent support to the missile assessment program and our mission capability status is vastly improved by this facility.

Collocated Activity: Large Magnetic Particle Inspection System
Benefit/Relationship: This unique system was designed and built especially for Ogden's worldclass Landing Gear Facility. This system has an inspection envelope of 11' high x 11' 6" wide x 18' long and is collocated in the landing gear facility to accommodate inspection of landing gear and large components from the C-141, B-1B and C-5A weapon systems.
Describe Impact: Increased customer support due to the unique, streamlined process used in this facility. This facility provides detailed inspection of critical components to accommodate major weapon systems.

Collocated Activity: Detachment 8, 1365th Audiovisual Squadron
Benefit/Relationship: Collocation of the 1365th Audiovisual Squadron with depot maintenance provides rapid access to the development of audio visual training aids.
Describe Impact: Due to implementation of modern technologies, continuous environmental changes, and concern for employee safety, it is imperative to providie current up-to-date training to large groups as well as to individual employees.

Collocated Activity: 649th ABG Hazardous Materiel Dispensing Facility
Benefit/Relationship: Collocation of the Hazardous Materiel Dispensing Facility with depot maintenance provides expedient deliveries and reduces quanities of hazardous materiel.
Describe Impact: This facility provides just in time delivery of hazardous materiel to depot maintenance activities resulting in fewer work stoppage situations. It has also reduced hazardous materiel waste, resulting in lower disposal costs.

4.2 Do collocated activities support, or are they supported by, the depot maintenance activity?

Conclusion:

Collocated Activity: Silo-Based Intercontinental Ballistic Missile (SBICBM) System Program Office (SPO)
Describe Relationship: The SBICBM SPO supports the depot maintenance function. Having the SPO function collocated with the ICBM physical infrastructure allows all functions to utilize facilities and equipment to meet recurring and special needs. Practical self-sufficiency of the SBICBM SPO allows for strict cost control and ensures cost decreases go to ICBM users.

Collocated Activity: Communications Systems
Describe Relationship: The Regional Processing Center and the Defense Information Systems Agency (DISA) supports depot maintenance activities and provides unparalleled support for communication lines and information system products. This includes communications between different areas on base, Little Mountain, Oasis (Utah Test & Training Range) and the operational wings.

Collocated Activity: Program Management for the following systems and commodities:
Landing Gear, F-16 Emergency Power Unit Tank, Airmunitions Cartridge Actuated Devices/Propellant Actuated Devices, Tanks, Pylons, Physiological Trainer, Trainer Simulator System Support, Silo-Based ICBM, Air to Surface Munitions, F-4 Aircraft, F-16 Aircraft, Missile Component, Ram Air Turbine, Photonics & Reconnaissance Imagery, Maverick Missile, GBU-15 Laser Guided Bomb, and Paveway I and II.
Describe Relationship: Supports depot maintenance activities. The collocation of these activities with the depot repair/maintenance and testing functions allow tremendous synergism in expediting the repair and supply process to support the field in all aspects of sustainment in the most timely manner. Collocation of program management with depot level maintenance and repair affords immediate access by the repair activity to the engineering authority for problem resolution.

Collocated Activity: Silo-Based Intercontinental Ballistic Missile (SBICBM) Product Management
Describe Relationship: Supports depot maintenance activties. The SBICBM Product Management Teams (PMT) contain the program managers, equipment specialists, item managers, production managers and hardware engineers who support the subsystems on a day-to-day basis. They are responsible for executing the subsystem management plans for logistics

management, assessment and repair operations support which they develop in concert with the system engineers. This arrangement allows seamless support of the fielded system as well as acquisitions. During the acquisition of the Minuteman and Peacekeeper weapon systems, it was decided that there would be no prime contractor to perform the functions of system engineering, system integration, subsystem management, subcontracting, performance evaluation, interface control, modification management, post production support, or data management. Instead, the SPO assumed the role of "prime" and performs these functions organically with the assistance of a sustainment engineering/technical assistance (SE/TA) contractor, TRW. The education level of personnel provided by TRW in support of the depot maintenance function include 13 with no college degree, 1 associates degree, 124 batchelor degrees, 83 masters degrees and 9 PhDs. Their experience includes only 6 with less than three years, 44 with 3-10 years, 46 with 11-15 years, 44 with 16-20 years and 90 individuals with more than 20 years experience. All 230 contractors have technical responsibilities.

Collocated Activity: OO-ALC Depot Maintenance and Management activities:
The F-16 System Support Manager, Avionics, Structural Repair, Engineering and Configuration Management, Software, Flight Test, and Weapon Systems Management
Describe Relationship: Supported by depot maintenance activities. The collocation of weapon system product engineering with F-16 depot maintenance at OO-ALC produces a mutually beneficial effect. Flight test and weapon system repair and modification efforts are less expensive and more timely. F-16 program engineers are consistently alerted to aircraft problems before they become crises at operating bases, and have the opportunity to do on site engineering in the depot facility. Depot maintenance gains the benefits of on the spot engineering decisions which would cause significant loss of cost and schedule effectiveness. Having flight test and depot engineers and repairmen collocated allows us to prepare for testing, review testing results, and correct deficiencies on the spot.

Collocated Activity: Defense Logistics Agency (DLA)
Describe Relationship: DLA supports depot maintenance activities by providing indoor and outdoor storage for all Minuteman and Peacekeeper assets of a non-explosive nature. They store assets valued at approximately $7 billion in 2,461,169 gross square feet of covered storage and 1,037,762 gross square feet of open storage for the entire center. All packaging and transportation functions, excluding missile motor movement, are also performed by DLA. The SPI (Special Packaging Instruction) and Inventory Control Assistant (SICA) is a one of a kind system that allows DLA packaging personnel immediate access, on screen, to the most current technical drawings developed by Air Force Packaging Specialists, for packaging Air Force assets. This information system is owned by the Air Force.

Collocated Activity: Defense Reutilization and Marketing Organization (DRMO)
Describe Relationship: The Defense Reutilization and Marketing Organization is supported by the depot maintenance function. Unnecessary and obsolete items are sent to DRMO for resale and recycling. The DRMO function also expedites the disposal hazardous waste minimizing possible spill potential. DRMO is the only permitted long term hazardous storage facility on base. Other base storage areas for items going to disposal are not needed, as it is a regular route stop for base expediters.

Collocated Activity: Depot Maintenance Supply Center (DMSC)
Describe Relationship: Supports depot maintenance activities. These forward supply points, operated by the 649th ABG, provide seamless support of commonly used parts within the specific depot maintenance function to which they are assigned.

Collocated Activity: 388 Fighter Wing, 419 Fighter Wing, 649 Combat Logistics Support Squadron,
Describe Relationship: Supported by depot maintenance activities with repair and maintenance operations, training, and technical problem resolution.

Collocated Activity: 514 Test Squadron, 501 Range Control Squadron
Describe Relationship: Supports depot maintenance activities by operating, maintaining, and controlling all target footprint capabilities required for the cadre of munitions flight testing at the Utah Test and Training Range.

Collocated Activity: 649 Munitions Test and Evaluation Flight
Describe Relationship: Supports depot maintenance activities. This team is matrixed into the Armament Division. The product team engineers, equipment specialists and inventory managers rely on the capabilities of the Munitions Test Team to provide the ground test support for reliability and maintainability.

Collocated Activity: Utah Test and Training Range (UTTR)
Describe Relationship: Supports depot maintenance activities. The UTTR contains all target footprint capability required for the cadre of munitions flight testing of Air Force munitions. The 17,000 square miles of airspace provides the capability to drop test any conventional munitions/non-nuclear in the Air Force's inventory.

Collocated Activity: Tooele Army Depot
Describe Relationship: Supports depot maintenance activities. One hour away from Hill Air Force Base, Tooele Army Base provides needed additional storage capacity to house the reparables and stockpiles awaiting repair and shipment by the Ammunition Control Point (ACP) located at Hill Air Force Base. This tremendous capacity proved its worth during Desert Storm when 500,000 pounds of munitions were shipped in one day on several different occasions, totaling 18.5 million pounds, to ensure no delay in the fire power that was delivered in the Middle East. The Tooele Army Locomotive Repair Facility is located at OO-ALC and is the only repair facility of its kind in the U.S.

Collocated Activity: 649th Civil Engineering Squadron (CES) Explosive Ordnance Disposal (EOD)
Describe Relationship: The 649th CES The EOD unit supports depot maintenance and is responsible for setting the explosive charges and detonating the propellant at the Thermal Treatment Unit.

Collocated Activity: 649 ABG/LGTPD Special Packaging Instructions (SPI).
Describe Relationship: This organization develops the Special Packaging Instructions (SPI) and technical drawings for all HAFB prime assets and supports depot maintenance.

Collocated Activity: Technical Training Facility
Describe Relationship: This facility supports personnel with required classroom training to fulfill Production Acceptance Certification program (PAC) requirements for basic and critical mission elements for all depot maintenance functions.

Collocated Activity: Avionics Integrated Support Facility
Describe Relationship: Supports depot maintenance activity. Provides software engineering and development support for F-16 and F-4 weapon system sustainment and management.

Collocated Activity: Science and Engineering Laboratory
Describe Relationship: Our laboratory supports depot maintenance activities. Satellite portions of the laboratory are collocated to directly support the landing gear production and overall capability in support of all weapon system landing components.

Collocated Activity: Computed Tomography (CT)
Describe Relationship: Supports depot maintenance activities. Provides mission essential non-destructive inspection support to assure no degradation in the Minuteman and Peacekeeper Missile mission capabilities.

Collocated Activity: Large Magnetic Particle Inspection System
Describe Relationship: Supports depot maintenance activities. Collocated in our fully automated landing gear facility to provide non-destructive inspection support as part of the streamlined process to ensure customer support for all weapon system landing gear components.

Collocated Activity: Detachment 8, 1365th Audiovisual Squadron
Describe Relationship: Collocation of the 1365th Audiovisual Squadron supports depot maintenance by producing training and information videos for employees. It is also supported by depot maintenance by providing a resource for the production of videos used for training, information, and documentation throughout the Air Force.

Collocated Activity: 649th ABG Hazardous Materiel Dispensing Facility
Describe Relationship: The Hazardous Materiel Dispensing Facility supports depot maintenance by providing delivery of hazardous materiel just in time for each workload process. Hazardous materiel is dispensed in reduced quantities, resulting in less waste and reduced disposal costs.

4.3 How would these activities and the depot maintenance activity function if they were not collocated?

Conclusion:

Collocated Activity: Silo-Based Intercontinental Ballistic Missile (SBICBM) System Program Office (SPO)
Describe Impact if not Collocated: Costs would rise significantly, customer support would be degraded and mission readiness would be compromised.

Collocated Activity: Communications Systems
Describe Impact if not Collocated: Loss of valuable computer and communication support resulting in network problem solving delays and repair, possible security or virus problems. This would greatly hamper our customer support, impact information security and cause a degradation in Ogden ALC's support to the Air Force Mission.

Collocated Activity: Program Management for the following systems and commodities:
Landing Gear, F-16 Emergency Power Unit Tank, Airmunitions Cartridge Actuated Devices/Propellant Actuated Devices, Tanks, Pylons, Physiological Trainer, Trainer Simulator System Support, Silo-Based ICBM, Air to Surface Munitions, F-4 Aircraft, F-16 Aircraft, Missile Component, Ram Air Turbine, Photonics & Reconnaissance Imagery, Maverick Missile, GBU-15 Laser Guided Bomb, and Paveway I and II.
Describe Impact If Not Collocated: If not collocated, the exchange of information would require other more costly avenues such as telephone, fax, video teleconferencing. Other expenses such as temporary duty for face-to-face visits and conferences would increase. Problem solving/process improvement could not occur as readily as by daily interface. These factors would cause unavoidable time delays in problem resolution.

Collocated Activity: Silo-Based Intercontinental Ballistic Missile (SBICBM) Product Management
Describe Impact if not Collocated: If the SBICBM product management function were located elsewhere, it would require more employees; some would need to be collocated with the depot maintenance function for day-to-day support and more would be required at the main office due to TDY requirements or the customer support interface would be degraded. Much of the technical expertise of both the SE/TA contractors (TRW) and the organic workers could be lost during a transition.

Collocated Activity: OO-ALC Depot Maintenance and Management activities:
The F-16 System Support Manager, Avionics, Structural Repair, Engineering and Configuration Management, Software, Flight Test, and Weapon Systems Management
Describe Impact if not Collocated: If aircraft management, flight test, and depot activities were not collocated we would see a surge in time to test, time to modify, and time to repair aircraft.

This would also be true with cost to test, modify, and repair. Collocation with the engineers allows instant testing preparation and results reviews and immediate problem fixes.

Collocated Activity: Defense Logistics Agency (DLA)
Describe Impact if not Collocated: On-site receiving, storage and transportation services would not be available. Either Air Force (AF) resources would have to be identified to accomplish these functions or a contractor would have to be found. This could cause an interruption of service, additional expenditure of AF resources and possible delays in supporting customers.

Collocated Activity: Defense Reutilization and Marketing Office (DRMO)
Describe Impact if not Collocated: Increased transportation and long term storage for hazardous waste would have to be contracted, increasing storage costs. Due to EPA and State licensing requirements, the use of vital depot maintenance space for a holding area for these assets could decrease workload capacity.

Collocated Activity: Depot Maintenance Supply Center (DMSC)
Describe Impact If Not Collocated: Forward supply points would have to be contracted. Delays to the mechanics, scheduling problems, and a decrease in maintenance effectiveness.

Collocated Activity: 388 Fighter Wing, 419 Fighter Wing, 649 Combat Logistics Support Squadron.
Describe Impact If Not Collocated: Shipping assets from field locations to the depot would cause delays in supportability and war readiness capability. Costs for these collocated activities would increase if contracted to private industry for local purchase and manufacture efforts now being provided by the depot. Additional manpower, facilities, and equipment will be required at the activity level to satisfy field maintenance requirements. The unique situation of collocating operational wings with an air logistics center that both manage and repair operational aircraft extend the readiness capability and enhance overall response time.

Collocated Activity: 514 Test Squadron, 501 Range Control Squadron
Describe Impact If Not Collocated: If this collocation did not exist, the testing would have to be performed at either Eglin Air Force Base, Edwards Air Force Base (limited), or China Lake (Navy). This would require a much larger annual budget, approximately four to five times the current budget. The other major impact would be the rate of accomplishment of surveillance testing.

Collocated Activity: 649 Munitions Test and Evaluation Flight
Describe Impact If Not Collocated: If the Munitions Test Team was not collocated, there would be an increase in yearly budgets to perform aging and surveillance testing and a decrease in the number of tests that could be performed with the current manning levels. All the tests which are currently performed here would have to be contracted out either commercially or to an Air Force Test Center or a Navy Test Center. The cost of commercial testing is comparable to the Munitions Test Group. The Air Force Test Center at Eglin has been two to three times higher

for tests performed. The Navy Test Centers have been more responsive than the Air Force Test Center and one and a half to two times higher than the Munitions Test Team costs. This will increase our budget by 2 to 3 times or from approximately $2 million to $6 million per year.

Collocated Activity: Utah Test and Training Range (UTTR).
Describe Impact If Not Collocated: If the Utah Test and Training Range was not collocated, the impact would be a tremendous delay in flight testing, as well as a very large increase in test costs. The time to ship assets, schedule and approve test setups, witness testing and receive the test reports would take three to four times longer. Testing which is currently very economical to the Air Force due to the piggy backing of software flight testing in conjunction with munitions testing, ignificantly saves Air Force costs each year. The cost increases alone could be as high as $7 million per year if the Armament Munitions Group had to pay for the airplane maintenance in its entirety. Currently the F-16 contingent here at Hill Air Force Base pays for the test aircraft. Those flights which are for munitions testing alone are paid for by the Armament Sustainment Group.

Collocated Activity: Tooele Army Depot
Describe Impact If Not Collocated: If the Tooele Army Depot storage was not available, the impact would primarily be the cost and responsiveness to the needs of the field activities. The time and cost to ship assets stored at other bases to Hill's Depot Maintenance facility would increase. The distances to ship would greatly increase as the next closest storage location for overflow is 8 - 10 times the distance of the Tooele Army Depot. The responsiveness to emergency shipments would diminish as the supply point would not be directly within the item managers control or influence.

Collocated Activity: Explosive Ordnance Disposal (649CES)
Describe Impact If Not Collocated: Difficulties would be experienced in workload planning and scheduling. Delays in proper disposal of ordinance would create safety problems, and an increase in temporary duty (TDY) expenses would occur to bring in EOD personnel from other locations.
Collocated Activity: 649 ABG/LGTPD Special Packaging Instructions (SPI).
Describe Impact If Not Collocated: Without proper packaging, requirements for air, surface, CONUS and overseas shipments would be costly. Damage and delays to serviceable assets would create customer dissatisfaction.

Collocated Activity: Technical Training Facility
Describe Impact If Not Collocated: Production Acceptance Certification (PAC) is a keystone to our quality program. Loss of classroom training to provide personnel certification will greatly impact our quality program. Without this program, certification training would have to be obtained from an outside contracting agency at a potentially higher cost to the government and create a loss of flexibility in meeting our day-to-day training needs.

Collocated Activity: Avionics Integrated Support Facility
Describe Impact if not Collocated: The constant crossfeed of information and partnership available with the weapon system management would be less effective. Streamlined processes used today in the research and solving of problems would be hampered. Degradation of customer support could occur.

Collocated Activity: Science and Engineering Laboratory
Describe Impact if not Collocated: Many industrial plant processes used in depot maintenance production would quickly suffer and ultimately fail without direct daily support from the collocated Science and Engineering Laboratory; i.e., chemistry in the process tanks would not be reliable, environmental problems would arise, air quality would be affected and worker safety could suffer, and many industrial processes would not work properly without laboratory monitoring, thus resulting in mission failure.

Collocated Activity: Computed Tomography (CT)
Describe Impact if not Collocated: The CT facility is an important part of assuring weapon system assessment. Without this capability missile motors would have to be transported to other locations, incurring transportation costs not required today. This could create the potential for an increase of hazardous materials transported over the roadways and more occasions for accidents involving the civilian population on the highways. Since our facility is unique, millions of dollars would be required to upgrade or build a like facility in order to obtain the same type of support available today.

Collocated Activity: Large Magnetic Particle Inspection System
Describe Impact if not Collocated: Since this is a one of a kind piece of equipment, inspection of large landing gear components would not be possible; a new system would have to be built to provide similar type support. The streamlined landing gear process would be destroyed and customer service would be affected.

Collocated Activity: Detachment 8, 1365th Audiovisual Squadron
Describe Impact if not Collocated: Production of training and information aids for the depot would require contract with local production companies, delay the availability of training due to the need to teach in smaller groups. Training costs will increase and the potential use of outdated and often unrelevant visual aids will increase without Detachment 8.

Collocated Activity: 649th ABG Hazardous Materiel Dispensing Facility
Describe Impact if not Collocated: Delivery time for hazardous materiel would be increased.

Geographic, continued

5. Encroachment

5.1 Have operations at this activity been at all constrained to accommodate requests of the local communities?

Conclusion: There are NO encroachment constraints (present or future) to the depot maintenance functions at Hill AFB.

Type of Encroachment: None
Operation Impacted: None
Describe: None

5.2 Indicate any encroachment constraints on current or future operations that would restrict future expansion.

Conclusion: There are NO encroachment constraints (present or future) to the depot maintenance functions at Hill AFB. The State of Utah is purchasing easements to prevent future incompatibility in all APZs and all noise contours above 75 LDN. In addition, the State building board is expected to require compatible building in noise contours 65 - 75 LDN.

Type of Encroachment: None
Constraint on Expansion: None
Describe: None

MEASURES OF MERIT

Facilities and Equipage

6. Unique or Peculiar Facilities

6.1 List unique or peculiar testing facilities, excluding equipment (e.g. runways, railheads, ports, tracks, ponds, etc.).

Ogden ALC Silo-Based Intercontinental Ballistic Missiles (SBICBM) maintenance and test facilities are the only DoD facilities for Minuteman and Peacekeeper Missiles; *therefore, OO-ALC is the single source of repair for SBICBM workloads. This applies to all SBICBM workloads and capabilities described in the following paragraphs. (15.1 4A Strategic Applies to all paragraphs down to and including OASIS at Utah Test and Training Range).*

Test Facility: Strategic Missile Integration Center (SMIC)
Describe Uniqueness/Peculiarity: This facility is the **only one of its kind** within DoD capable of testing Intercontinental Ballistic Missiles, providing simulated system launch from a variety of launch scenarios. The facility has three 90 foot vertical below ground silos, 30 feet in diameter, constructed to meet nuclear hardness requirements of operational ICBM missile silos. Surrounding ground is compacted, and access roads are built, to meet 32,000 lb axle transportation load requirements. Buried antennae systems and underground communication meet operational requirements and connect to other test sites. Power and air supplies are capable of supporting ICBM equipment. Construction meets TEMPEST classified data processing and physical security requirements. Sensitive ICBM guidance system instruments and equipment are isolated by a large concrete seismic mass. Facilities include the following:

- Minuteman 'AM' Launch Facility (LF) and Launch Control Facility (LCF)
- Minuteman 'B' LF and LCF
- Peacekeeper LF and LCF
- Minuteman and Peacekeeper Guidance and Control Integration facilities
- Instrumentation facility
- Squadron Data Simulator facility.

Test Facility: Survivability & Vulnerability Integration Complex (SVIC)
Describe Uniqueness/Peculiarity: This complex is the **only one of its kind** within DoD. The SVIC is a group of state-of-the-art facilities dedicated to the simulation testing of nuclear hardness, survivability, reliability, and electromagnetic compatibility of defense systems. The simulated environments accommodate testing to weapon system specifications such as those required for Minuteman and Peacekeeper ICBMs. The SVIC consists of a variety of facilities, centrally located, that provide the following:

- Nuclear radiation and gamma ray bombardment are provided by two flash X-Ray machines & a linear accelerator with radiation containment provided by concrete walls, 7 feet thick on the sides and 12 feet thick in front. The PI-958 Flash X-Ray is the **only one of its size and energy level in DoD**. The PI-216AH Flash X-Ray is **unique in the world** in its high pulse rate; as many as 400 'shots' within an 8 hour day sustained without downtime, unlike other flash x-ray machines which have a typical pulse rate of 50 to 70 shots per day. The Linear Accelerator is unique in that the energy of the pulse may be varied from 5 to 20 Mev and the pulse width is variable from 20 nano-seconds to 10 micro-seconds. The pulse may also be pulsed up to 60 times per second.

- Nuclear airblast over-pressure simulation is provided by a Blast Load Generator (BLG), capable of generating pressures in excess of 1000 psi on buried structures. The BLG is unique because special fixtures used during testing expose test articles to simultaneous shock and over-pressure pulses.

- Shock and vibration simulation is provided by large hydraulic and electrodynamic shakers. The SVIC shock and vibration facility contains an eight shaker, three axis system capable of 80,000 force pounds in vertical, 40,000 force pounds horizontal for a 5000 pound test article. This triaxial shaker is the **only one of its kind in the world**. The shock and vibration facility is used to simulate the vibration on a missile guidance system during flight and is capable of replicating the in-flight shock for a wide variety of test articles. It is also used to provide classical shock, shock response spectra, random vibration, sinusoidal vibration and nuclear weapons ground simulation vibration. This isolated facility is built on a one million pound reaction mass (concrete with air bags).

- Direct Drive electromagnetic pulse simulation is provided by a laser triggered pulser, capable of a wide variety of pulse shapes and amplitudes. The facility provides the longest pulse decay and fastest pulse rise time in the Air Force direct drive inventory.

- Free field electromagnetic pulse simulation is provided by a Nuclear Electromagnetic Pulse (NEMP) simulator capable of variable pulse shapes and amplitudes with 3 nano-second rise time and 200 nano-second fall time. Pulse energy may be adjusted from 15,000 volts/meter to 300,000 volts/meter and may be applied to test article sizes of up to 2 meters square.

- The electromagnetic interference (EMI) & compatibility testing, provided by EMI generators and fiber optic instrumentation equipment, is designed around MIL-STDs 461 and 462 requirements across a frequency band ranging from 10KHz to 40GHz at a strength of up to 200 volts/meter. The EMI facility has a large anechoic chamber to simulate free space environment.

Test Facility: Propellant Analyses
Describe Uniqueness/Peculiarity: The propellant analysis facility is the only depot maintenance site within the AF for complete physical and chemical tests to support aging surveillance and failure analysis of both the large Minuteman and Peacekeeper missiles and small

tactical missile motors and their component parts. The dissection facilities, located at the Survivability & Vulnerability Integration Complex and OASIS on Utah Test & Training Range are the only solid propellant dissection facilities where safe dissection of small tactical motors and large ICBM rocket motors can be performed. These facilities are of frangible (easily broken) construction for explosive contents, and specially designed to meet explosive safety clear zone quantity distance for inhabited buildings requirements. Built into these facilities are remote propellant machining equipment, sophisticated scientific test stations, and backup computers for statistical performance analysis. Complete solid propellant analysis testing includes hardness, tensile strength, maximum/rupture stress, maximum/rupture strain, Modulus (tangent, secant, Young's), shear testing, Rheometric testing for viscosity and elasticity, and tests for moisture, density, chemical composition and degradation, ignitability, burn rate, thermal properties, ignition temperature, glass transition temperature, and Sol Gel testing for crosslink density, swell ratio and extractable percentage. Results of these tests establish shelf life criteria and guide depot maintenance and refurbishment schedules.

Test Facility: Computed Tomography
Describe Uniqueness/Peculiarity: The Ogden Air Logistics Center has the **only explosive sited DoD computed tomography facilities** to provide nondestructive inspection of large and small items, varying from small missile components to Peacekeeper rocket motors. In addition to the assigned mission, our CT facility is capable of performing computed tomography testing for all components smaller than Peacekeeper rocket motors, including engines and related components. The power source of our largest system, the largest in DoD, is capable of variable energy levels from 11 to 15 million electron volts (MEVs). This energy output is from 14 to 36 times greater than other known DoD CT capabilities. The facility is isolated to provide radiation containment, using 3000 cubic yards of concrete, with shooting direction concrete walls 10 feet thick. Output on both systems includes on-screen display, 8x10 photo, overhead viewgraphs, 35mm and VCR. Both systems are multi-axis to allow analysis from three different planes. The smaller facility contains a 58 inch diameter turntable, 100 inches in height, with 10,000 lb load capacity and a detector package which contains 130 crystal detectors. The energy source is a Varian 3000 Linatron with variable 6/9/11 MEV (million electron volts). This facility is sited for 4,000 pounds of class 1.1 explosives and 10,000 pounds of class 1.3 explosives. The larger facility is designed to handle inspection of components too large for the smaller facility. It contains the largest inspection envelope in existence, capable of inspecting Peacekeeper 1st stage solid rocket motors. The inspection envelope is 96 inches in diameter, 350 inches high, with a 120,000 lb load capacity. It is the only system capable of lifting the Minuteman and Peacekeeper stages into the vertical position for inspection.

Test Facility: High Energy X-Ray
Describe Uniqueness/Peculiarity: This high energy radiographic facility is the **only one in DoD large enough and with high enough energy levels** to provide nondestructive surveillance inspection for very large as well as small components. Specifically designed to accommodate the Minuteman and Peacekeeper solid rocket motor requirements, the facility has been sited, IAW AFR 127-100, for 1,000,000 pounds of 1.3 class explosives and 100,000 pounds of 1.1 class explosives (the **only** x-ray facility sited for explosives). The facility is sectioned into two

production wings. The north wing is configured to inspect all Minuteman solid rocket stages. The south wing accommodates Peacekeeper solid rocket boosters. Both wings have receiving and handling bays to prepare the boosters for inspection.

Test Facility: OASIS at Utah Test & Training Range (UTTR)
Describe Uniqueness/Peculiarity: OASIS at UTTR is a remote area that contains many of the facilities required to determine shelf life and depot maintenance and refurbishment schedules for the Minuteman and Peacekeeper solid rocket motors. These facilities are environmentally licensed, explosive sited and include:

- Environmentally controlled vertical and horizontal static firing facility, with fully instrumented bays and a recording capability at approximately 200 channels of information.
- **The only facility in DoD capable of dissecting large ICBM rocket motors** and small tactical motors. This system is remotely operated for safety.

Test Facility: Missile Support Equipment Repair Facility (15.1 10E Other)
Describe Uniqueness/Peculiarity: This is a single source of repair and one-of-a-kind facility for the Air Force. It is the service and repair center for Minuteman and Peacekeeper large truck and tractor equipment. The facility is equipped with utilities, including electrical, water, hydraulics, and specialized automotive testing equipment to fully complete final funtional tests of tractors and trailers.

Test Facility: Compass Transmitter and Magnetic Azimuth Detector Test Facility (15.1 2D Instruments)
Describe Uniqueness/Peculiarity: This facility is unique in the Department of Defense. We are the single source of repair. The building, tools, end items, and component parts are non-magnetic/non-ferrous and the facility is aligned directly along the earth's true magnetic north-south meridian. Before construction of this facility, an in-depth geographic study was accomplished to determine the most suitable and magnetically stable location at Ogden Air Logistics Center. The facility is built entirely from non-ferrous metals and materials such as aluminum joists in place of wood, studs rather than steel nails, nylon fabric instead of steel reinforcing bar in the concrete foundation and floor, and special lighting and electrical fixtures to minimize magnetic interference.

Test Facility : 20MM Automatic Gun Test Firing Facility (15.1 2F Aviation Ordinance)
Describe Uniqueness/Peculiarity: This is a single source of repair and one-of-a-kind facility for the Air Force. It is an underground test firing range used for the acceptance test firing after overhaul or modification of 20MM automatic guns. The test firing facility consists of a control room housing test evaluation equipment, a firing bay where guns are mounted for testing, a projectile impact area located at one end of the 100 foot long tunnel, a utility room containing all facility electric and hydraulic equipment, an explosive approved ammunition handling and storage area, and a preparation room to perform maintenance on the guns and handling systems prior to the actual test firing. Specific design features of this building include security requirements for ammunition, an overhead lifting system, a video monitoring system in an

adjacent room to the firing bay for personnel safety, a door interlock system that shuts down the test firing if any door is opened during the firing sequence, and a ventilation system capable of clearing out the gun gasses from the firing bay and tunnel within 40 seconds.

Test Facility: 30MM automatic gun test firing facility (15.2 2F Aviation Ordnance)
Describe Uniqueness/Peculiarity: This is the single source of repair and one-of-a-kind facility for the Air Force. Utah Test and Training Range has one of a kind testing equipment to perform the acceptance test firing after the overhaul of the A-10 aircraft GAU-8 gun on the 30MM test firing pad, modular building shelters the test equipment.

Test Facility: F-16 Emergency Power Unit Test Facility (15.1 2H APUs)
Describe Uniqueness/Peculiarity: This facility is the only Department of Defense single source of repair and overhaul and test capability for the F-16 Emergency Power Unit (EPU). This facility is designed to duplicate aircraft in-flight emergencies for major systems failures of the Emergency Power Unit. Integrated into the construction of this facility is deionized water equipment, hazardous waste disposal facility, and a compressor and incinerator to insure total burning of hydrazine. Deionized water is used to clean and flush hydrazine contaminated components. All hazardous waste is contained and neutralized on-site. A chemical clean line with 2 different alcohol baths that will filter to two microns, hot steam bath, and nitric acid bath make up this unique cleaning line. Also, this facility has an in-line propane compressor and combustor; a compressor and incinerator to insure total burning of hydrazine, and a 4500 psi nitrogen system.

Test Facility: F-16/F-18 Final Functional Test Facility (15.1 1C3 Light Combat)
Describe Uniqueness/Peculiarity: This facilityis the single source of repair and test capability for the F-16 and F-18 aircraft. This class 1 division I facility is equipped with the AFFF underwing cannons and an inferred flash detection system which allows work to be done indoors onfueled aircraft. Each dock is fully equipped for aircraft utilities, which include electrical, central hydraulic (3000 psi) and shop air. Additionally each dock has central avionic air cooling hook-ups, allowing for final funtional tests to be run on all systems. The facility is located inclose proximity to the runway minimizing towing distances, and has an aircraft engine run-up area.

Test Facility: Ram Air Turbine (RAT) Wind Tunnel Test Facility
Describe Uniqueness/Peculiarity: This is the only Ram Air Turbine test facility in the Air Force. This facility has a 25 foot squirrel cage type fan with variable pitch blades turned by a 900 horse power electric motor. The air flow control vanes are variable pitch blades that must be perfectly balanced to prevent vibration at the high RPMs reached during testing. These vanes are opened and closed as required for the various testing speeds. The squirrel cage fan achieves wind speeds from 75 to 375 knots variable. This specialized wind tunnel is located within a jet engine test cell because of the high noise it produces when the RAT is operating. This hush house has a 12' x 8' inlet tube that is hooked to a 25-foot blower. From the blower, the outlet tube is reduced to a 12 inch diameter tube. This 20-foot long tube is specially designed to reduce

wind turbulence at the outlet where the RAT is tested. The wind flow is picked up by a 6-foot diameter pickup tube and vented outside the building.

Test Facility: The Photographic Image Quality Test Facility (PIQTF) (15.1 2I Other)
Describe Uniqueness/Peculiarity: This is a single source of repair and a one-of-a-kind facility both for Department of Defense and private industry. This four-story facility is specifically designed for critical testing of aerial/space sensors, determining the operational imagery quality to Department of Defense standards. Three stories of this facility are underground. The features and benefits offered by an underground facility include vibration isolation to a low frequency and stability of temperature.

Test Facility: Cartographic Camera Test Facility (15.1 2I Other)
Describe Uniqueness/Peculiarity: This is a single source of repair and a one-of-a-kind test facility in the Department of Defense}specifically designed for mapping camera calibration. Like the PIQTF, this facility is constructed with two stories underground and offers the features and benefits to ensure vibration isolation to a low frequency, and stability of temperature.

Test Facility: Tactical Missile All-Up-Round Maintenance Facility (15.1 12 B Support Equipment)
Describe Uniqueness/Peculiarity: The facility is the single source of repair, and an Air Force one-of-a-kind, explosive certified structure. It provides testing capabilities on fully loaded and fueled tactical missiles. The facility is rated for 15,000 lbs. of 1.1 explosives. The facility was designed to allow maintenance and system testing of numerous fully operational Maverick missiles simultaneously. The facility is designed with a six feet thick wall separating the test equipment and operator from the armed missile. There are currently 4 stations setup in this configuration with the facility. The walls are made of 3 feet of sand sandwiched between 1 1/2 feet of concrete so that if a mishap occurred in one bay, the missiles in other bays will not propagate. Any explosion would be directed to specially designed walls. The facility is located in a secured area on the base with 24 hour guard. The location of the facility was designed to provide appropriate quantity and distance requirements in case of an explosion.

Test Facility: Tactical Missile Maverick Guidance and Control Section (GCS) Facility (15.1 4B Tactical)
Describe Uniqueness/Peculiarity: This is the single source of repair and the only facility in the Department of Defense that tests the guidance control sections (GCS), interface electrical assemblies (IEA), or the laser seeker assembly (LSA) of the Maverick missile. The facility supports special programs such as the Maverick 'E' model for the Navy, which contains door interlocks that shut the laser equipment down if opened during operation/testing periods. The facility is a cettified Class IV laser testing operation and includes all equipment necessary for final functional testing of the Maverick GCS assets.

Test Facility: Tactical Missile Sidewinder Guidance and Control Section (GCS) Facility (15.1 4B Tactical)
Describe Uniqueness/Peculiarity: This facility is the single source of repair, and specifically designed to meet the stringent maintenance and testing support requirements of the GCS of the

Sidewinder Missile. A special requirement in the missile in the repair of the Seeker and gyro repair requires absolute cleanliness as part of the overhaul/testing process. Specially designed electrostatic floor help to maintain the elctor dtatic discharge (ESD) concerns associated with operations/testing. The facility is a certified testing operation and includes all equipment necessary for final functional testing of Sidewinder GCS assets.

Test Facility: Advanced Cruise Missile Imaging Radar System (AIRS) Facility (15.1 4B Tactical)
Describe Uniqueness/Peculiarity: This is the single source of repair, and one-of-a-kind Department of Defense depot level AIRS facility. The design and constructio of this facility is classified; however, the purpose of this new facility is to provide the ability to diagnose degradation of the radar cross section (RCS) of stealth type weapon systems. The AIRS is an indoor (RCS) test facility that is an integral part of the maintenance concept of the Advanced Cruise Missile (ACM). When a missile comes into the depot, AIRS will be used to diagnose degradations in the missiles RCS. Once AIRS isolates the defect, the depot can repair the defect. Upon exiting the depot, ARIS is used to ensure the missile signature meets established survivability criteria before it re-enters the fleet. The equipment used by AIRS is not a test community asset; it is a part of the ACM depot maintenance facility. The radar signature of a missile body varies as a function of transmitted radar frequency, transmitted and received radar polarization, and the aspect angle at which the test body is illuminated and viewed. The radar signature must be determined from the collected backscatter, which includes both test object contributions and that associated with the surrounding environment. Top secret level 4 access is required. Currently the Advance Cruise Missile (ACM) is being serviced in this facility.

Test Facility: Cartridge Activated Device Testing Facility (15.1 2F Aviation Ordinance)
Describe Uniqueness/Peculiarity: This Testing Facility is unique in that neither another DoD installation nor contractor have all these specialists assembled at one location. The facility is designed to meet all Quantity/Distance requirements for explosive items in the CAD/PAD category. It has the ability to rapidly assemble a collocated (on base) IWSM test team composed of item managers, system engineers, test engineers, test crews, and repair specialists. Quick testing turnaround in support of aircraft accident investigation is possible because many CAD/PAD explosive items are stored at 00-ALC and a ready test team composed of the above personnel is available 24 hours a day, 365 days a year. The impact of going to another DoD facility or contractor would require longer testing lead time, thus impact on longer aircraft/fleet grounding pending resolution of test results and analysis.

Test Facility: Munitions Surveillance Testing Facilities
Describe Uniqueness/Peculiarity: These facilities are specifically designed to allow the operation/detonation of a variety of munitions components including rocket motors. Assets can be conditioned through vibration, drop testing, accelerators, temperature, and altitude chamber. Stand-alone testing of fuses, rocket motors, batteries, starter cartridges, and impulse cartridges is conducted. Propagation testing and generic buffer testing, with a net explosive weight capability of more than 500,000 pounds, has been accomplished.

Test Facility: Avionics Integration Support Facility (AISF) (15.1 12A Tactical)
Describe Uniqueness/Peculiarity: Building 1515 is a unique/peculiar testing facility both in design and location. It comprises 144,000 square feet and this facility is essentially a secure vault, radio frequency bonded and totally fenced, requiring security code access. Areas within the facility also have restricted access requiring security code for entry. This facility houses a Sensitive Compartmented Information Facility (SCIF), radar anechoic chambers, software testing laboratories, storage libraries, and work space which has been especially developed to allow a full range of testing without electronic emanations to or from the outside world. The structure, physical facilities and current security posture of building 1515 are such that it would require relatively simple modifications to upgrade the facility, all 144,000 sq ft, to SCIF status in accordance with current DCID 1/21 requirements. The size and magnitude of the Ogden ALC ASIF is unique within AFMC and DoD.

This facility was specifically designed to provide large scale classified testing, from confidential to top secret, and operational flight program (OFP) support, including computer, simulator, and test fixture support. Within the facility are engineering laboratories and office space for the development, test, and integration of software and hardware for the F-4, F-16, Minuteman, and Peacekeeper weapon systems and the Air Force Mission Support System.

This facility is positioned to allow unobstructed radar view of all incoming and outgoing aircraft from OO-ALC. This capability of tracking actual airborne targets provides a myriad of opportunities to test the development efforts in the OFP radar environment. Latest OFP innovations in the radar software are simply loaded on existing hot mock-ups and tested within the confines of building 1515 rather than actual flight testing. Advantages to this approach include decreased actual weapon system downtime, economical testing, and rapid turn-around time for test results.

Test Facility: Hot Site Computer Recovery Facility
Describe Uniqueness/Peculiarity: The Hot Site Computer Recovery Facility at OO-ALC is the only one of it's kind in the DoD. It is an IBM compatible computer facility specifically designed redundant communication nodes to ensure the facility is readily available when needed. It is constructed with a raised floor, chilled water and airconditioning systems for the main frame computers, and is humidity and temperature controlled. It is used for recovery of damaged or destroyed computer facilities and computer contingency operations/testing. Configuration includes:

AMDAHL 5870	AMDAHL 5860	SHARED RESOURCES
21 MIPS	12.4 MIPS	20 GIGS 3380 DASD
32 MB Main Memory	32 MB Main Memory	110 GIGS Sing 3380 DASD
32 Channels	16 Channels	16 Reel Tape Drive
		16 Cartridge Tape Units
		6 3880 Controllers

Test Facility: Compact Range Facility (CRF) (15.1 2G Avionics/Electronics)
Describe Uniqueness/Peculiarity: The CRF is one of a kind in DoD and is the single source of repair. It is the only CRF available for testing the F_16 AN/APG-66 and AN/APG-68 Fire

Control Radar Antennas and the F-16 Nose Radome. Used for F-16 models A, B, C, and D and two Nose Radome Electrical Test systems, it tests electrical mapping (including image sidelobe levels), power transmission deficiencies, and beam deflections. The system is divided into two separate rooms, one being an anechoic chamber (compact range group and portions of the antenna analyzed), the other containing most of the antenna analyzer group. The facility is designed and constructed to create an electromagnetic environment to allow pattern testing gain documentation and boresighting. It radiates, collimates, and detects the RF signals. It is also used to position or polarize the RF source, position the radar under test, facilitate fault isolation, and measure antenna position. The small indoor chambers eliminate the need for large outdoor facilities and real estate. Its design provides significant cost and time savings, improved security, and eliminates surveillance requirements and adverse environmental factors. The system is environmentally controlled and mounted on a spring supported concrete floating foundation to preclude movement. Because of the construction, and the equipment sensitivity, it would not be economically feasible to relocate the system.

6.2 Indicate the reasons that these facilities are required by the depot maintenance function.

Ogden ALC Silo-Based Intercontinental Ballistic Missiles (SBICBM) maintenance and test facilities are the only DoD facilities for Minuteman and Peacekeeper Missiles; therefore, OO-ALC is the single source of repair for SBICBM workloads. This applies to all SBICBM workloads and capabilities described in the following paragraphs. (15.1 4A Strategic Applies to all paragraphs down to and including OASIS at Utah Test and Training Range)

Test Facility: Strategic Missile Integration Center (SMIC)
Reasons Required for Maintenance: The SMIC replicates an operational launch facility, launch control facility and operational missile minus the warhead. A variety of simulated launch scenarios can be enacted, and maintenance modifications tested prior to installation at an operational site to ensure compatibility.

Test Facility: Survivability/Vulnerability Integration Complex (SVIC)
Reasons Required for Maintenance: Nuclear hardness, gamma ray bombardment, shock and vibration, electromagnetic pulse (EMP) and electromagnetic interference (EMI) testing of ICBM components is critical in design of Minuteman and Peacekeeper systems and sub-systems.

Test Facility: Propellant Test
Reasons Required for Maintenance: Physical and chemical propellant tests to support aging surveillance assessment and failure analysis of motors. Results guide in establishing shelf life criteria which is used to determine depot maintenance and refurbishment schedules.

Test Facility: Computed Tomography (2 facilities)
Reasons Required for Maintenance: These facilities provide a three dimensional image of internal Minuteman and Peacekeeper components to allow technicians to perform nondestructive point by point statistical analysis to ultimately determine serviceability of a part or system. The

largest of the two facilities is specifically configured to accomodate Minuteman and Peacekeeper weapon system components. The shelf life criteria established guides depot maintenance and refurbishment schedules.

Test Facility: High-Energy X-Ray
Reasons Required for Maintenance: This facility is used to detect voids, changes in density, delamination of insulators and lining, and propellant separation from the case liners and insulation. This information is used to develop shelf life criteria and establish guidelines for depot maintenance and refurbishment scheduling.

Test Facility: OASIS at Utah Test & Training Range
Reasons Required for Maintenance: The aging surveillance program steers the development of shelf life criteria used to guide depot maintenance and refurbishment scheduling. Static motor firing is essential to the assessment of expected motor performance, and is an integral element of the aging surveillance program. The **solid propellant dissection facility** is the **only facility within DoD** capable of cutting solid propellant into test size samples for testing by the propellant analysis unit. The transporter board course qualifies missile motor transporters for over-the-road use after maintenance to ensure safe operation during transport. Explosive storage procedures are determined by propagation studies. Fragmentation test results guide establishing safe storage and quantity distances of explosive components.

Test Facility: Missile Support Equipment Repair Facility (15.1 10E Other)
Reasons Required for Maintenance: We are the single source of repair. There are no other DoD depot maintenance facilities with this capability. The repair and testing of missile support equipment requires a facility with state-of-the-art technology to ensure the highest reliability and maintainability are achieved in providing DoD support.

Test Facility: Compass Transmitter and Magnetic Azimuth Detector Test Facility (15.1 2D Instruments)
Reasons Required for Maintenance: We are the single source of repair. The repair and testing of the Compass Transmitter and Magnetic Azimuth Detector (MAD) requires a facility with state-of-the-art technology to ensure the highest reliability and maintainability are achieved in providing Department of Defense support. These extremely sensitive items require an environment as free from magnetic interference as possible to achieve the level of accuracy needed to obtain calibration requirements.

Test Facility: 20MM automatic gun test firing facility (15.1 2F Aviation Ordinance)
Reasons Required for Maintenance: We are the single source of repair. As part of the overhaul process, this facility is required for the acceptance test firing after overhaul or modification of 20MM automatic guns.

Test Facility: 30MM automatic gun test firing facility (15.2 2F Aviation Ordnance)

Reasons Required for Maintenance: This is the single source of repair. As part of the overhaul process, the Utah Test and Training Range (UTTR) is reqired for the acceptance test firing after overhaul or modification of 30MM automatic guns.

Test Facility: F-16 Emergency Power Unit Test Facility (15.1 2 H APUs)
Reasons Required for Maintenance: We are the single source of repair. Safety of flight items have a time change overhaul requirement. The Emergency Power Unit is an integral part of the Emergency Electrical/Hydraulic Flight Control System. Hydrazine fuel is toxic, corrosive, highly flammable, explosive, and a suspected carcinogenic requiring strict handling procedures to comply with Environmental Protection Agency, Occupational Safety and Health Administration, and Air Force Occupational Safety and Health standards. Hydrazine handling and disposal require chemical laboratory support and unique equipment.

Test Facility: F-16/F-18 Final Functional Test Facility (15.1 1C3 Klight Combat)
Reasons Required for Maintenance: We are the single source of repair. This test facility is needed for the final functional test of F-16/F-18 aircraft.

Test Facility: Ram Air Turbine (RAT) Wind Tunnel Test Facility
Reasons Required for Maintenance: This test facility is needed for functional testing of the A-7D and F-4 Ram Air Turbine.

Test Facility: The Photographic Image Quality Test Facility (PIQTF) (15.1 2I Other)
Reasons Required for Maintenance: We are the single source of repair. Part of depot maintenance, this four-story facility is specifically designed for critical testing of aerial/space sensors, necessary for determining the operational imagery quality to Department of Defense standards. It is composed of 14 off-axis parabolic mirror collimators pointing from different angles to the sensor test position. This facility is adaptable to a variety of different sensor requirements.

Test Facility: Cartographic Camera Test Facility (15.1 2I Other)
Reasons Required for Maintenance: We are the single source of repair. This one-of-a-kind facility uses 121 precisely positioned collimators covering +/- 60 degrees along 12 radial arms which is required to calibrate cartographic cameras.

Test Facility: Tactical Missile All-Up-Round Maintenance Facility (15.1 12B Support Equipment)
Reasons Required for Maintenance: We are the single source of repair. To assure the tactical missile is fully operational when it is delivered to the Air Force and Navy customers, this type of explosive certified test facility is required. This facility provides testing capabilities on fully loaded and fueled tactical missiles. The facility is rated for 15,000 lbs of 1.1 explosives. The facility was designed to allow maintenance and system testing of numerous fully operational missiles simultaneously. This facility design is in accordance with technical order requirements.

Test Facility: Tactical Missile Maverick Guidance and Contro Section (GCS) Facility (15.1 4B Tactical)
Reasons Required for Maintenance: We are the single source of repair. Current Tecnical Orders require this type of test environment be used to support the servicing of the missiles. The dangers of laser operations also require isolation fro populations. This facility tests the guidance control sections (GCS), interface electrical assemblies (IEA), and the laser seeker assembly (LSA) of the Maverick 'E' missile. This level of clean room is required to ensure non-contamination of theoptical system within the optical system within the missile.

Test Facility: Tactical Missile Sidewinder Guidance and Control Section (GCS) Facility (15.1 4B Tactical)
Reasons Required for Maintenance: We are the single source of repair. Some components cannot be contaminatec as part of the depot repair process. This test facility is required in order to service missile components. It is designed to provide maintenance and testinf support for the seeker assembly of the Sidewinder Missile. This level of clean room is required to ensure non-contamination of the optical system of the missile.

Test Facility: Advance Cruise Missile Imaging Radar System (AIRS) Facility (15.1 4B Tactical)
Reasons Required for Maintenance: We are the single source of repair. The AIRS is an indoor (RCS) test facility that is an integral part of the maintenance concept of the Advanced Cruise Missile (ACM). When a missile comes into the depot, AIRS will be used to diagnose degradations in the missiles RCS. Once AIRS isolates the defect, the depot can repair the defect. Upon exiting the depot, AIRS is used to ensure the missile signature meets established survivability criteria before it re-enters the fleet. This controlled facility design is driven by the security classification of the weapon system.

Test Facility: Cartridge Activated Device Testing Facility (15.1 2F Aviation Ordinance)
Reasons Required for Maintenance: We are the single source of repair. The facility is utilized to test and check the serviceability of Cartridge Activated Devices (CAD) components in a variety of environments.

Test Facility: Munitions Surveillance Testing Facilities
Reasons Required for Maintenance: This facility is utilized to test and check the serviceability on a variety of munitions components.

Test Facility: Hot Site Computer Recovery Facility
Reasons Required for Maintenance: The Hot Site is an IBM compatible computer facility used for recovery of damaged or destroyed computer facilities and computer contingency operations/testing.

Test Facility: Compact Range Facility (CRF) (15.1 2G Avionics/electronics)
Reasons Required for maintenance: The CRF duplicates capabilites of an outdoor range which has large facilities and real estate. Testing could be performed at outdoor ranges.

Test Facility: Avionics Integration Support Facility (AISF) (15.1 12A Tactical)
Reasons Required for maintenance: We are the single source of repair. Ogden ALC's software development maintenance function provides engineering design and development of Operation Flight Programs (OFPs) for F-4 Wild Weasel, RF-4s, F-16 production blocks 10 through 40, and the Mission Planning systems software for the F-4 and F-16 weapon systems. Software is developed for all key avionics subsystems on each of these weapon systems. These include the Fire Control Computers, Radar Systems, Stores Management Systems, the Heads Up Displays, the Up Front Control Systems, and the Multifunction Display Processors. Organic OFP capability is essential to provide responsive support to changing mission requirements. Emergency changes to weapon system software can be developed and fielded within a short period of time. After reconfiguration, integration, and testing, maintenance installs the software and/or hardware modifications.

The sensitive nature of our Ogden ALC OFP software charter makes it absolutely necessary to have such a facility as that located within Bldg 1515. This is further evidenced by the F-16 software object code being upgraded from unclassified to confidential on all F-16 block 50 aircraft development efforts. This upgrade to confidential is expected to migrate to the classification of secret.

6.3 How could the depot maintenance functions be performed without these specialized facilities?

Ogden ALC Silo-Based Intercontinental Ballistic Missiles (SBICBM) maintenance and test facilities are the only DoD facilities for Minuteman and Peacekeeper Missiles; therefore, OO-ALC is the single source of repair for SBICBM workloads. This applies to all SBICBM workloads and capabilities described in the following paragraphs. (15.1 4A Strategic Applies to all paragraphs down to and including OASIS at Utah Test and Training Range)

Test Facility: Strategic Missile Integration Center (SMIC)
Describe Testing Alternatives: The SMIC is the only facility within DoD with the specialized equipment required to perform simulated launch scenarios.

Test Facility: Survivability/Vulnerability Integration Complex (SVIC)

Describe Testing Alternatives: Operating the SVIC for combined qualification and reliability testing is the most cost effective and efficient method for the government to satisfy the required ICBM specifications. There is no other comparable facility within DoD.

Test Facility: Propellant Analysis
Describe Testing Alternatives: There are no other DoD depot maintenance facilities with this capability. With no way to verify aging, motors would be 'washed out' at the designated life, rather than extended based on our own aging and surveillance testing. This would increase replacement costs significantly.

Test Facility: Computed Tomography
Describe Testing Alternatives: There are no DoD facilities available explosives sited or large enough to provide comparable nondestructive tests on Minuteman and Peacekeeper components.

Test Facility: High Energy X-Ray
Describe Testing Alternatives: There are no DoD facilities available explosives sited or large enough and with high enough energy levels to provide comparable nondestructive tests on Minuteman and Peacekeeper components.

Test Facility: OASIS Utah Test & Training Range
Describe Testing Alternatives: There is no other facility within DoD environmentally licensed and explosive sited to dissect and static fire solid rocket propellant. Limited information can be obtained from computer math modeling. There is no other facility within DoD with the capability to dissect solid rocket propellant for small tactical and large ICBM motors. Flight testing is the only other alternative to obtaining motor performance data.

Test Facility: Missile Support Equipment Repair Facility (15.1 10E Other)
Describe Testing Alternatives: We are the single source of repair. There are no other DoD depot maintenance facilities with this capability.

Test Facility: Compass Transmitter and Magnetic Azimuth Detector Test Facility (15.1 2D Instruments)
Describe Testing Alternatives: We are the single source of repair. Ogden Air Logistics Center is one of only two continental United States (CONUS) facilities for the repair and testing of compass transmitters and magnetic azimuth detectors. The other facility is at Honeywell Corporation, Durham, North Carolina. Mike Trainer, Item Manager for the compass transmitter and magnetic azimuth detector from Oklahoma City Air Logistics Center, stated that Honeywell is only providing new manufactured units and that repair for the past ten years has been provided by Ogden Air Logistics Center only. Therefore, there are no repair and testing alternatives available.

Test Facility: 20MM Automatic Gun Test Firing Facility (15.1 2F Aviation Ordinance)
Describe Testing Alternatives: We are the single source of repair. Current testing methods are driven by technical order requirements. Any alternative test firing methods without the use of the unique test facility would require sufficient range capability to accommodate the 20MM gun and provide a climate controlled mobile facility for the hot fire control center with link capability to send and receive data to the gun. Also, an environmental constraint of noise could be a limiting factor in alternative test methods.

Test Facility: 30MM automatic gun test firing range (15.1 2F Aviation Ordinance)
Describe Testing Alternatives: We are the single source of repair. Current testing methods are driven by technical order requirements. Ogden is not aware of any DoD facility that could fire the 30MM gun indoors, the acceptance test firing is accomplished at Utah Test and Training Range. This workload could be accomplished at any DoD range that is large enough to accommodate the 30MM gun. However, some environmental constraints for noise and impact area could be limiting factors.

Test Facility: F-16 Emergency Power Unit Test Facility (15.1 2H APUs)
Describe Testing Alternatives: We are the single source of repair. This is the only Department of Defense overhaul and test facility for the F-16 Emergency Power Unit (EPU). The EPU test firing stand is a one-of-a-kind piece of equipment which was built by the manufacturer for the Air Force. Hydrazine fuel is toxic, corrosive, highly flammable, explosive and a suspected carcinogenic. It requires strict handling procedures to comply with Environmental Protection Agency, Occupational Safety and Health Administration, and Air Force Occupational Safety and Health standards. Hydrazine handling and disposal require chemical laboratory support and unique equipment which the Air Force is the sole owner of. The original manufacturer does not have this test stand and must replace components rather than repair them at a greater cost to the Government. Also, the contractor's test capability is manual and the reliability is not equal to the Air Force's computerized capability.

Test Facility: F-16/F-18 Final Functional Test Facility (15.1 1C3 Light Combat)
Describe Testing Alternatives: The F-16 and F-18 aircraft would have to be tested at another facility no located within the immediate area. This creates down-time, job routes, and an increase in the cost of operation.

Test Facility: Ram Air Turbine (RAT) Wind Tunnel Test Facility
Describe Testing Alternatives: The Ram Air Turbine would have to be tested at another facility not located within the immediate area. This creates down time, job routes, and an increase to the cost of operation. Any testing alternative facilities would require modification to accommodate the speed, horse power, and environmental concerns associated with the Ram Air Turbine testing.

Test Facility: The Photographic Image Quality Test Facility (PIQTF) (15.1 2I Other)
Describe Testing Alternatives: We are the single source of repair. The facility at Ogden ALC is the only facility of its kind providing the full range of maintenance capabilities. We provide complete overhaul and test operations including the physical, photonics, electronics, circuit boards, wiring harnesses, and testing operations not found at any other facility. Currently, there are no other facilities like the PIQTF at a contractor plant. It is possible to build a four story structure above ground; however, there would be a nonrecurring engineering cost to redesign the facility for increased requirements to maintain temperature and stability controls. There are greater temperature fluctuations and above ground facilities have a harder time maintaining stability. The facility construction costs, as well as maintenance and operating costs, would be greater due to the increased requirements in temperature control. The features and benefits offered by an underground facility are temperature control and facility stability. The benefit is less money spent on construction and maintaining this type of facility; therefore, lower repair and test costs to the customer.

Test Facility: Cartographic Camera Test Facility (15.1 2I Other)
Describe Testing Alternatives: We are the single source of repair. There is only one other cartographic camera calibration facility in government control in the United States. It is in Reston, Virginia, at the U.S. Geological Service. They only test and perform limited repair of mapping cameras. The customer has to perform their own repairs then send the camera to the U.S. Geological Service for testing. They do not offer the full range of depot overhaul and testing provided by Ogden ALC.

Test Facility: Tactical Missile All-Up-Round Maintenance Facility (15.1 12 B Support Equipment)
Describe Testing Alternatives: We are the single source of repair. The process cannot be performed outside in the open because of the sensitivity of the test equipment, and it can't be relocated to different locations without duplicating similar facilities and transferring the equipment.

Test Facility: Tactical Missile Maverick Guidance and Control Section (GCS) Facility (15.1 4B Tactical)
Describe Testing Alternatives: We are the single source of repair. The only alternative would be to have contractor support which would cost significantly higher than the Government or buy new guidance systems.

Test Facility: Tactical Missile Sidewinder Guidance and Control Section (GCS) Facility (15.1 4B Tactical)
Describe Testing Alternatives: We are the single source of repair. The only alternative would be to have contractor support which would cost significantly higher than the Government or buy new guidance systems.

Test Facility: Advance Cruise Missile Imaging Radar System (AIRS) Facility (15.1 4B Tactical)
Describe Testing Alternatives: We are the single source of repair. This is a one-of-a-kind depot level AIRS facility. Because of the secrecy of this test operation, this facility would have to be completely replicated. If the ACM depot had to rely on an outside RCS facility, a costly transportation cycle would be incurred. For example, the RCS facility would test, find a failure, send back to the depot for repair, depot would send back to the range for repair verification, the range could potentially send back to the depot for further repair.

Test Facility: Cartridge Activated Device Testing Facility (15.1 2F Aviation Ordinance)
Describe Testing Alternatives: We are the single source of repair. Send components to a contractor facility to have testing accomplished.

Test Facility: Munitions Surveillance Testing Facilities
Describe Testing Alternatives: Send components to a contractor facility to have testing accomplished.

Test Facility: Hot Site Computer Recovery Facility
Describe Testing Alternatives: Without this backup computer recovery facility, depot maintenance functions would be at risk of losing critical weapon system inventory data.

Test Facility: Avionics Integration Support Facility (AISF) (15.1 12A Tactical)
Describe Testing Alternatives: We are the single source of repair. Ogden ALC's depot maintenance software charter simply could not be performed without a facility like building 1515. In the absence of this type facility, the only alternatives available to Air Force would be as follows: First, to collocate this workload within smaller facilities such as those located at the other Air Logistics Centers; however, at this time, the other center's facilities appear to be fully utilized and unable to absorb additional workload. The second alternative would be to build an equivalent to building 1515; however, the cost to duplicate Ogden ALC's building 1515 is estimated to be $33 million. Third, would be to contract out this workload which would require providing contractors with our unique test and development equipment, as well as time delays in writing and awarding contracts.

Facilities and Equipage, continued

7. Buildings and Their Condition

7.1 List the buildings used to perform the depot maintenance functions by category code numbers (five or six digit CCNs), identifying their current condition (adequate, substandard, and inadequate) in Table 7.1 in thousands of square feet (KSF).

Conclusion: See table. The data incorporates all of the funding, personnel, and workload of depot related facilities. This data does not include 366.84 thousand square feet for facilities required to support weapon system teams, an integral part of our depot maintenance process, but are not normally included at other DoD depots.

Table 7.1a: Facility Conditions

CCN	Facility Type	Condition	Area	(KSF)	Comments
		Adequate	Substandard	Inadequate	Totals
116661	PAD, ARM & DISARM	.10			.10
116665	PAD, POWER CHK W/SPR	2.32			2.32
116672	PAD, ACFT WASH RACK	13.28			13.28
132133	PAD, EQUIPMENT	1.48			1.48
141764	INTEGR SUPT FCL	190.342	89.875		280.217
141765	LAB, Q/C DEP	56.467	78.075		134.542
141821	MAT PROCES DEP	76.337	57.18	2.230	135.747
141912	REENTRY VEH BLD	2.70			2.70
149968	TOWER, SPECIAL	.16			.16
171214	PHYSL TNG		14.217		14.217
171621	TECH TNG, CLASSROOM	23.815			23.815
171623	TECH TNG, LAB/SHOP		18.907		18.907
211116	HANGER, MAINT DEP		667.238		667.238
211152	SHOP ACFT GEN PURP	523.349	152.864	50.567	726.78
211153	SHOP NON-DESTR INSP	12.55	9.899	.576	23.025
211154	SHOP A/M ORGL	26.034	1.417	23.533	51.004
211157	SHOP, JET ENG I/MNT			37.05	37.05
211159	ACFT COR CON	103.241	22.730		125.971
211161	COR CON UTIL STOR	1.40			1.40
211179	MAINT DOCK, FL SYS	15.948	30.018		45.966
211183	TST CELL			36.314	36.314
211252	SHOP RAM AIR DEP			4.783	4.783
211254	SHOP ACFT & ENG DEP	133.813	163.378	.512	297.703

4980,526
1317 860
6,298 386

Table 7.1a: Facility Conditions

CCN	Facility Type	Condition	Area	(KSF)	Comments
		Adequate	Substandard	Inadequate	Totals
211271	SHOP INSTM OVHL DEP	63.493			63.493
212212	SHOP MSL ASMB	103.478			103.478
212216	SHOP MSL SVC	144.616	4.549		149.165
212213	SHOP MISSILE G/W		.70		.70
214425	SHOP VEJHICLE MAINT	46.727			46.727
214426	VEH OPS HEAT PKG	4.62			4.62
215553	SHOP, A/WPN/O/DEP	4.788		10.376	15.164
215555	SHOP, CTRGE/0/DEP	14.166			14.166
217712	SHOP AVIONICS	23.084	63.875		86.959
217735	SHOP ELECT O&T/D	29.516	30.011		59.527
217736	SHOP RADOM O&T/D		2.538		2.538
217762	SHOP NAVAID	10.208	35.018		45.226
218712	SHOP A/SE STOR FAC	61.749	58.392		120.141
218852	SHOP SURV EQUIP	28.713			28.713
218868	LAB PME	7.30			7.30
219944	MAINT SHOP	.40			.40
222222	PROD GM	455.491	62.692		518.183
422256	STOR RKT CHK ASMB	225.872			225.872
422257	STOR SEG MAGAZINE	7.636			7.636
422258	STOR MAG AG AB&C	.80			.80
422264	STOR IGLOO	104.836	1.148		105.984
441257	HAZARD STOR DEP	11.00	.974		11.974
441758	WHSE SUP EQUIP DEP	.379	30.555		30.934
442257	HAZARD STOR BSE	1.500			1.500
442628	SHED SUP EQUIP DEP	.900			.900
610675	LOG FCLTY DEP OPS	579.471	96.395	2.353	678.219
721315	DORM, VAQ (UTTR)		5.488		5.488
	Activity Total	3114.079	1698.133	168.314	4980.526

Facilities and Equipage, continued

7.2 In Table 7.2.a, identify space available for expansion by building type for those facility category code numbers (five or six digit CCNs) that are most important to your mission. An activity's expansion capability is a function of its ability to reconfigure/rehabilitate existing underutilized facilities to accept new or increased requirements.

Conclusion:

Table 7.2a Space Available for Expansion

Installation Space (KSF)					
Building ID/Type	CCN	Adequate CC1	Substandard CC2 & 3	Inadequate CC4 & 5	Total
5C	211152		3.0		3.0
5D	211152		16.3		16.3
5K	211152		21.0		21.0
5L	211152		10.57		10.57
5P	217712		20.0		20.0
5G	217735		20.0		20.0
5M	141764		1.0		1.0
11	141764		18.8		18.8
100C	141764		10.0		10.0
100D	141765	4.9			4.9
100E	141765	5.0			5.0
100F	141765		12.0		12.0
100J	141764		5.6		5.6
100K	141764		21.97		21.97
100L	217712	1.4	4.0		5.4
100M	217712		12.1		12.1
100N	141764		10.0		10.0
100O	141764		10.0		10.0
100P	141764		5.0		5.0
100F	610675		12.0		12.0
214	278868 141765		6.0 20.6		26.6
216	211153	2.0			2.0
220	211159	6.0			6.0
225	211116	50.0			50.0
236	211179	9.0			9.0

Table 7.2a Space Available for Expansion (Cont)

Installation Space (KSF)					
Building ID/Type	CCN	Adequate CC1	Substandard CC2 & 3	Inadequate CC4 & 5	Total
238	211152	56.0			56.0
250	610675	1.1			1.1
265	211152	23.6	65.0		88.6
267	211152	10.25			10.25
268	211152			7.7	7.7
270	211152		4.0		4.0
272	211157			40.0	40.0
273	441758			4.35	4.35
274	211154			36.0	36.0
276	211152			2.4	2.4
505	211152	21.11			21.11
507	211254 141765	66.51 1.40			67.91
509	211152	20.0			20.0
510	211254	21.92			21.92
511	211254	7.38			7.38
524	219944		1.6		1.6
745	211254			2.88	2.88
751	211271		2.0		2.0
752	215553	2.4			2.4
800	441758		39.86		39.86
805	441758		16.9		16.9
810	441758		20.53		20.53
830	442758			4.0	4.0
840	441758			21.74	21.74
843	441758	31.65			31.65
845	441758	55.18			55.18
847	222222	60.0			60.0
849	141821	7.0			7.0
849	610625	13.1			13.1
850	441758	48.7			48.70
915	441257	3.77			3.77
936	212212	3.1			3.1
940	212212	6.9			6.9
945	212212	6.9			6.9
965	212212	6.9			6.9
970	212212	6.9			6.9

Table 7.2a Space Available for Expansion (Cont)

Installation Space (KSF)					
Building ID/Type	CCN	Adequate CC1	Substandard CC2 & 3	Inadequate CC4 & 5	Total
985	22222	5.2			5.2
1146	141764	7.2			7.2
1200 Zone	610675	73.8			73.8
1208	127712	13.7			13.7
1289	610675	10.2			10.2
1294	740735	10.0			10.0
1367	212212	2.3			2.3
1379	441628		1.6		1.6
1424	212212	21.16			21.16
1554	610711		5.0		5.0
1564	422265		4.5		4.5
1568	422265		4.5		4.5
1825	212216	1.8			1.8
1835	212216	1.8			1.8
1913	212216	3.3			3.3
1915	212216	3.1			3.1
1917	212216	1.9			1.9
1943	222222	.8			.8
1946	222222	.8			.8
2005	212216	.4			.4
2014	215555	7.4			7.4
2015	215555	.7			.7
2024	441257	2.8			2.8
2026	212216	13.0			13.0
2113	22222	9.2			9.2
2143	441257	.2			.2
2145	422265	.2			.2
2147	422265	.2			.2
2202	212216	4.3			4.3
2204	217712	2.4			2.4
2211	222222	7.3			7.3
2212	222222	5.5			5.5
2213	222222	12.2			12.2
2214	222222	5.6			5.6
2233	422258			.1	.1
2247	441257		.2		.2
2407	222222	1.8			1.8
	TOTAL	793.06	405.63	119.17	1317.86

world. Its high pulse rate allowing many 'shots' per day (up to 400 per 8 hour shift sustained with no downtime. Typical machines are capable of only 50 - 70 shots per day). This facility is capable of simulating basically six environments:

- Nuclear radiation provided by flash X-Ray machines & a linear accelerator with a 5 to 20 MeV energy source. This electron beam is used directly to simulate radiation from a nuclear event and converted to produce gamma rays.

- Airblast, provided by a Blast Load Generator, to produce overpressures in a soil medium. It is used to test buried cable and splice cases, models of buried structures, buried cable entrances, soil attenuation studies and structure tranmissability and simultaneous acceleration and overpressure.

- Shock and vibration provided by various shakers, accelerators, and impulse testers to simulate underground shock waves from a nuclear event.

- In-flight shock and vibration profiles provided by the vibration facility, which consists of two complete control units, a computer-controlled optical monitoring system and a digital acquisition system.

- Direct drive electromagnetic pulse simulation provided by a wide variety of pulse generators, a computerized controller and a large on-site data acquisition and analysis capability.

- Electromagnetic interference (EMI) & compatibility testing provided by EMI generators and instrumentation equipment. This facility is designed to perform MIL-STDs 461 and 462 requirements across a frequency band ranging from 10KHz to 40GHz at a strength of up to 200 volts/meter. They perform radio frequency emissions interference and susceptability testing of weapon system equipment to include environments produced within a 48x24 foot anechoic chamber.

Depot Maintenace Capability/Capacity: Missile Maintenance & Repair
Describe Why Unique/Peculiar: These facilities are one of a kind in DoD and are specially constructed, configured, and explosives sited for Minuteman (MM) and Peacekeeper (PK) ICBMs. A PK Type II rail movement system interfaces with a MM "V" rail system that converts the rocket motor from a system transportation rail to a storage facility rail system. Provides tilt or break over stand operations and accomplishes maintenance and end ring changes.

Depot Maintenance Capability/Capacity: Minuteman (MM) Stage I, II, III missile assembly & repair facilities
Describe Why Unique/Peculiar: The only facilities in DoD and are specially constructed to accommodate Minuteman Missiles with a horizontal rail system, explosive safety clear zone quantity distance (ESQD for inhabited buildings), frangible (easily broken) quantity distance (QD for fragment throw), frangible construction for explosive contents.

Depot Maintenance Capability/Capacity: Peacekeeper (PK) Stage I, II, III missile motor assembly & repair (2 facilities)
Describe Why Unique/Peculiar: The only DoD horizontal rail system, sited for clear explosion safety zone quantity distance (QD), frangible construction for explosive contents. (Bldgs: 2401-2403)

Depot Maintenace Capability/Capacity: Motor Dissection
Describe Why Unique/Peculiar: The only solid propellant dissection facility capable of dissecting large ICBM rocket motors and small tactical motors. This system is explosive sited and remotely operated for safety.

Depot Maintenace Capability/Capacity: Propellant Analysis
Describe Why Unique/Peculiar: This is the only depot maintenance facility for solid propellant analysis. Complete solid propellant analysis tests are performed for nuclear hardness, tensile strength, maximum/rupture stress, maximum/rupture strain, Modulus (tangent, secant, Young's), shear testing, Rheometric testing for viscosity and elasticity, and tests for moisture, density, chemical composition and degradation, ignitability, burn rate, thermal properties, ignition temperature, glass transition temperature, and Sol Gel testing for crosslink density, swell ratio and extractable percentage. These 11 physical and chemical test facilities provide remote propellant machining processes, and sophisticated scientific test stations and computer backup for statistical performance analysis.

Depot Maintenace Capability/Capacity: Minuteman/Peacekeeper Transfer
Describe Why Unique/Peculiar: A throughput facility equipped with lifting devices for MM and PK rocket motor systems. The rail system is compatible with all MM and PK transportation and handling equipment.

Depot Maintenace Capability/Capacity: Missile Support Equipment Repair Facility (15.1 10E Other)
Describe Why Unique/Peculiar: This is a single source of repair and one-of-a-kind facility for the Air Force. It is the service and repair center for Minuteman and Peacekeeper large truck and tractor equipment. The facility is equipped with 80' by 20' paint and sandblast facilities.

Depot Maintenace Capability/Capacity: Static Firing
Describe Why Unique/Peculiar: The only enviromentally licensed vertical and horizontal static firing capability within DoD for Minuteman and Peacekeeper rocket motors. The facilities are environmentally controlled and equipped with 500,000 pound thrust blocks and a motor propelled building that moves to allow motor installation. The bays are fully instrumented and have recording capability at approximately 200 channels of information.

Depot Maintenace Capability/Capacity: Shrink backshells
Describe Why Unique/Peculiar: Forms connector backshells on Peacekeeper missile cables. No other capability exists.

Depot Maintenace Capability/Capacity: Computed Tomography (2 facilities)
Describe Why Unique/Peculiar: Facilities are the **only** ones within DoD sited for explosives inspection. The larger facility is the only system capable of scaning the ICBM missile motors and lifting them into the vertical inspection position. Our facilities are capable of inspecting all articles smaller than Peacekeeper rocket motors, including engines and related components. Unique capabilities include:

- Building 2113 - Variable 6, 9, 11 million electron volts (Mev) energy level
  Table load is 48 inch diameter, 100 inch height and 10,000 pounds load
- Building 984 - Variable 9, 15 Mev
  Table load is 96 inch diameter, 348 inch height and 120,000 pound load
- On screen display
- Overhead viewgraphs, 8 x 10 photos, 35 mm and VCR of test results
- Multi-axis capability

Depot Maintenace Capability/Capacity: High Energy X-Ray
Describe Why Unique/Peculiar: Physically large enough to handle Peacekeeper motors as well as smaller items. The energy source is the **only** one capable of producing the amount of volts required to penetrate large missile components.

Depot Maintenace Capability/Capacity: Test cubicle
Describe Why Unique/Peculiar: Test capability for Minuteman explosive ordnance devices. Contains explosive detonation test cells and is capable of monitoring devices for integrity and performance.

Depot Maintenace Capability/Capacity: Lithium Battery Storage/disposal
Describe Why Unique/Peculiar: The only AF capability to store, electrically discharge and destroy lithium batteries. This is an enviromentally restricted function.

Depot Maintenace Capability/Capacity: Liquid propellant decontamination
Describe Why Unique/Peculiar: The only AF capability to decontaminate liquid propellant.

Depot Maintenace Capability/Capacity: PSRE Storage and Repair
Describe Why Unique/Peculiar: To meet operational requirements of Minuteman and Peacekeeper, the Propulsion System Rocket Engine (PSRE) repair is designed to handle hydrazine and nitrogen tetroxide on board the flight vehicles. It is environmentally controlled and includes extensive underground communication systems. Construction meets TEMPEST classified data processing and physical security requirements.

Depot Maintenace Capability/Capacity: Cold/Heat Soak for Minuteman motors
Describe Why Unique/Peculiar: The **only** existing capability to control temperature conditioning capability , -45 degrees F to +175 degrees F, of Minuteman motors.

Depot Maintenace Capability/Capacity: Nozzle cutting

Describe Why Unique/Peculiar: The **only** capability to cut 1st and 2nd stage Minuteman motors while on on transporation rails and 3rd stage, due to the size of the stage, in pits. This is a very hazardous operation, as nozzles are an integral part of the solid propellant booster.

MISSILE STORAGE FACILITIES

Depot Maintenace Capability/Capacity: Storage facilities
Describe Why Unique/Peculiar: The rail system, used to safely and efficiently move missile motors into and out of the storage facilities, is compatible with Minuteman and Peacekeeper transportation equipment. Recent site surveys determined no other operation is equipped with this type of system. Explosive Safety Quantity Distance (ESQD) sited for a storage capacity of: greater than:

- 15 million lbs NEW, class 1.1
- 30 million lbs NEW, class 1.2
- 45 million lbs NEW, class 1.3
- or physical capacity of class 1.4

The 109 facilities provide 394,305 Square feet of explosives storage space, all environmentally controlled, plus utility connections outside of eight storage igloos that allow the storage of an extra full-up Minuteman booster in its transportation container.

MISSILE AND MUNITIONS DISPOSAL FACILITIES

Depot Maintenace Capability/Capacity: Thermal Treatment Unit
Describe Why Unique/Peculiar: The **only** environmentally licensed propellant disposal site, capable of disposing of Minuteman and Peacekeeper solid rocket motor propellant and as well as obsolete motors from other services. Environmental approval has been requested for the distruction of the Navy Poseidon 3 rocket motors, demonstrating the benefits of our Thermal Treatment Unit.

PHYSIOLOGICAL TRAINERS

Depot Maintenance Capability/Capacity: Physiological Trainer Maintenance Repair Capability.
Describe Why Unique/Peculiar: Physiological Trainer Maintenance Repair Capability is a unique Air Force capability. This team is the only government repair team of its kind in existence and is considered to be the single source of repair for this capability. They not only support all Air Force requirements but also maintain Navy and Army trainer systems through Inter service Support Agreements as well as trainer systems for the Federal Aviation Administration and Foreign Military Sales countries. The physiological trainer maintenance team at Ogden Air Logistics Center has accomplished specialized repairs, prototypes, installations, removals, modifications, and overhaul services on all types of physiological and environmental trainer systems for the entire United States Air Force, with world wide support provided for over 30 years. Unlike other repair operations, all of the team members are extremely skilled in all phases of environmental and physiological chamber and trainer

component repair and maintenance. They utilize skills in electronics, electrical, mechanical, sheet metal, welding, plumbing, air conditioning, and painting to perform all necessary maintenance and modification work. This team also manufactures mechanical parts when the parts are not otherwise available.

MAVERICK REPAIR FACILITIES

Depot Maintenance Capability/Capacity: Repair and overhaul of Air Force and Navy Maverick Missile (AGM-65) electro optic, laser, and infrared guidance control sections (GCS), Field Level Analog / Digital Missile Test Sets, and the All-Up-Round Maverick Missiles. (15.1 12B Support Equipment)
Describe Why Unique/Peculiar: Ogden ALC has the only Department of Defense facility and is the single source that repairs, overhauls, aligns, and tests all components of the guidance control sections (GCS) and Missile Test Sets of the Maverick Missile. The facility includes millions of dollars of specialize Analog and Digital Automatic Test Equipment and a peculiar designed 10,000 class laser clean room with appropriate test stations to functional service the Navy's Laser Maverick. The component repair and testing is located separately from the All-Up-Round facility. The Tactical Missile All-Up-Round Maintenance Facility provides testing capabilities for fully armed and fueled tactical missiles. The facility is rated for 15,000 lbs of 1.1 explosives and contains automated test equipment required to service all versions of the Maverick Missile. The facility is located in a secured area on base with appropriate quantity/distance requirements and designed to minimize munitions propagation in case of a mishap. All the maintenance facilities have lighting storm warning systems to protect electronic automatic test stations.

Depot Maintenance Capability/Capacity: Reapir and overhaul capability for Sidewinder Missile (Aim-9) guidance control sectioins (GCS). (15.1 12B Support Equipment)
Describe Why Unique/Peculiar: Ogden ALC is the single source of repair and has the only capability inthe Air Force to service the Sidewinder Missile guidance control sections. The process utilizes unique automatic test stations to functioinal check the weapons systems serviceability. A 1,000 class clean room with appropriate test stations is used to service te complex missile seeker and gyro assemblies.

ADVANCED CRUISE MISSILE RADAR CROSS SECTION FACILITY

Depot Maintenance Capability/Capacity: Advanced Cruise Missile (ACM) Imaging Radar System Facility (15.1 4B Tactical)
Describe Why Unique/Peculiar: The OO-ALC Advanced Cruise Missile Imaging Radar System (AIRS) Facility is one-of-a-kind in DoD and is the single source of repair in DoD. It is used to diagnose degradations in the missile radar cross section and is required to test the Advanced Cruise Missile. The AIRS is an essential maintenance tool that allows the depot to maintain the air vehicle signature. AIRS equipment is not a test community asset, it is a part of the ACM depot maintenance facility. Environmental licensing requirements for propellant disposal and ground test firing would take from four to six years for approval.

LANDING GEAR REPAIR FACILITY

Depot Maintenance Capability/Capacity: Landing Gear Repair Facility (15.1 2E Landing Gear)
Describe Why Unique/Peculiar: This is the only fully automated single source of repair Department of Defense facility capable of accommodating all aircraft in the Department of Defense inventory. We provide overhaul, repair, modification and testing services to 70% of the Department of Defense aircraft landing gear inventory. We have the capability to perform the repair/overhaul of all landing gear in the Department of Defense from the small T-38 Talon nose gear to the massive C-5 main landing gear. Force structure reductions have decreased landing gear output requirements to 585,000 DPAH which is a 35.2 percent decrease from our highest output year. This leaves room for approximately 318,000 DPAH of additional workload. We still have additional capacity for surge.

Our unique process includes tasks designed for the purpose of overhauling landing gear components with minimal human intervention.. The main landing gear overhaul and repair facility is the only facility in the Department of Defense that was specifically designed for the overhaul and repair of aircraft wheels, brakes, landing gear, and related components. A 1981 data study of the new automated landing gear facility revealed a savings of $2,500,287 (26.6% in that year) over a conventional operation.

OTHER CAPABILITIES/CAPACITIES

(Although Computed Tomography is mentioned under Missile Maintenance And Testing it is unique and should be presented as a separate unique capability and is considered to be the single source of repair, because of the capability to accommodate large weapons and components).

Depot Maintenance Capability/Capacity: Computed Tomography (15.1 4A Strategic)
Describe Why Unique/Peculiar: The CT facility is the only system capable of lifting Peacekeeper and Minuteman solid rocked motors into the vertical inspection position. It has the capability to inspect weapon systems and parts for voids and cracks to ensure that they perform when needed. Our technicians are certified to provide finite inspections of all weapons, missile motors and parts, landing gear, wheels, propellant, castings, reverse-engineering projects and space age materials, including the space shuttle boosters.

Depot Maintenance Capability/Capacity: F-16/F-18 Overhaul/Test (15.1 1C3 Light Combat)
Describe Why Unique/Peculiar: Our facility provides the single source of repair and overhaul for the Air Force F-16 and the MCAPP for the Navy F-18. The facility is equipped with aircraft docks which allow complete overhaul capabilities. Each dock is fully equipped for aircraft utilities, that include electrical, central hydraulic, and shop air.

Depot Maintenance Capability/Capacity: Laser Automated Decoating System (LADS) (15.1 IC3 Light Combat)
Describe Why Unique/Peculiar: Capability to strip or remove paint and other coating from aircraft in the DoD inventory. Our facilities and equipment are the only ones in DoD, deployed or

under development, which possess such precise coating removal capabilities and is considered as single source of repair for fighter aircraft weapon systems. LADS prepares aircraft and their components for repainting and resurfacing. LADS accurate depth decoating capability is critical to aircraft radomes since depth of coatings affect radar accuracy. No process, other than tedious hand sanding, comes close to our capability to control the level of resolution in removing layers of previous finishes and coatings. This allows us to efficiently and effectively remove coating from all DoD aircraft with no damage to underlying materials for all component parts. Our process can be successfully applied to all composites - thermoplastic, metallic substrates, etc.

Depot Maintenance Capability/Capacity: Aircraft Robotics Bead Blast (15.1 IC3 Light Combat)
Describe Why Unique/Peculiar: This facility is the DoD's only single source robotics bead blast aircraft paint stripping cell in operation. The cell consist of two custom designed nine axis robots. The robots strip fighter aircraft using plastic media blast (PMB) process for paint removal. The system is programmed for stripping F-16 aircraft. Blast parameters such as pressure, media flow rate, stand-off distance, and angle of attack are all preprogrammed and will be the same for all F-16 aircraft. The Robots themselves monitor the strip rate and adjust the end effector velocity based on paint removal rate for that individual aircraft. The system will benefit, save and improve workers environment, reduce the man-hours and flow time for stripping fighter aircraft and optimize the PMB process.

Depot Maintenance Capability/Capacity: Robotic Canopy Polisher (15.1 IC3 Light Combat)
Describe Why Unique/Peculiar: The Robotic Canopy Polisher is the single source and only one of it's kind in the world. It's precision contour work is highly efficient and much more consistent when compared to traditional hand polishing methods. The system detects flaws using vision inspection and performs the repair procedure.
System attributes:

- Unique vision inspection
- Performs repair
- Completes final inspection
- Saves up to 50% of transparencies normally replaced
- Programmable for any canopy in DoD inventory
- Supports F-16 and F-4 worldwide

Depot Maintenance Capability/Capacity: Hot Site Computer Recovery Facility
Describe Why Unique/Peculiar: The Hot Site Computer Recovery Facility at OO-ALC is the only one of it's kind in the DoD. It is an IBM compatible computer facility used for recovery of damaged or destroyed computer facilities and computer contingency operations/testing.
Configuration includes:

AMDAHL 5870	AMDAHL 5860	SHARED RESOURCES
21 MIPS	12.4 MIPS	20 GIGS 3380 DASD
32 MB Main Memory	32 MB Main Memory	110 GIGS Sing 3380 DASD

32 Channels	16 Channels	16 Reel Tape Drive 16 Cartridge Tape Units 6 3880 Controllers

Depot Maintenance Capability/Capacity: Building 511, Investment Casting Capability
Describe Why Unique/Peculiar: This is the only fully operational investment casting production capability in the Department of Defense. Aerospace quality castings are produced on a quick turnaround basis when contractor parts are not available. The facility is designed for large or small production runs. The investment casting process has been utilized to manufacture parts for Air Force F-16 Mission Capable (MICAP) requirements, C-130, F-15, and F-111 aircraft as well as Navy submarine and torpedo parts. This capability involves casting parts from alloys of aluminum, iron, copper, cobalt and nickel into numerous configurations of parts, while maintaining tight tolerances and exceptional strength.

Depot Maintenance Capability/Capacity: Airborne Reconnaissance Overhaul Capability (15.1 2I Other)
Describe Why Unique/Peculiar: The capability at Hill Air Force Base is the only one of its kind in the Department of Defense providing the full range of maintenance capabilities. As the Air Force Technical Repair Center for depot repair of airborne reconnaissance equipment, both photographic and electro-optical sensors, our maintenance and engineering personnel are uniquely qualified. We overhaul and support airborne reconnaissance systems for Air Force, Navy, Marine Corps and the Coast Guard. We also support many agencies outside the Department of Defense spectrum including Drug and Alcohol, and On-Site Inspection Agency. We provide complete overhaul and test operations including the physical, photonics, electronics, circuit boards, wiring harnesses, and testing operations not found at any other facility. We have many years of experience repairing the highest quality and most critical sensors in the Department of Defense inventory. We utilize special alignment and focusing test equipment to optimize the infrared image characteristics within a selected spectral range. During the instrument repair phase, our opticians and technicians resurface, polish and recoat those optics that can be reclaimed.

Depot Maintenance Capability/Capacity: Imaging System Overhaul Capability (15.1 2I Other)
Describe Why Unique/Peculiar: The capability at Hill Air Force Base is the only one of its kind in the Department of Defense providing the full range of maintenance capabilities, and single source of repair. As the Air Force Technical Repair Center for depot repair of imaging systems, we support a variety of film-based cameras, printers, processors, light tables, stereoscopes, electro-optic sensors, infrared sensors, mapping and hand-held cameras, optical lenses and elements. On-site support teams travel around the world servicing all Navy aircraft carriers, as well as Army, Navy, and Air Force operations locations. We provide complete overhaul and test operations including the physical, photonics, electronics, circuit boards, wiring harnesses, and testing operations not found at any other facility. Our overhaul process includes complete capabilities for tear down, bead blast, paint, reassemble and testing of imaging systems. Our overhaul technicians employ optical measuring equipment to validate system specifications.

Depot Maintenance Capability/Capacity: Optical Refurbishment Overhaul Capability. (15.1 2I Other)
Describe Why Unique/Peculiar: The capability at Hill Air Force Base is the only one of its kind in the Department of Defense having the ability to work lenses up to 30 inches and providing a full range of maintenance capabilities. We provide complete overhaul and test operations including the physical, photonics, electronics, circuit boards, wiring harnesses, and testing operations not found at any other facility. Ogden Air Logistics Center photonics opticians and technicians skillfully refurbish concave, convex, and flat optical elements consisting of metal, glass and plastic materials. The Optical Film coating area has the capability of designing and manufacturing mutilayer optical coatings on optical substrates for the purpose of altering either their physical or optical properties. Our engineers direct the work of these opticians and technicians developing skills in repair and manufacture of optical elements. Infrared spin mirrors, Head Up Display optical elements, cinesextant telescopes, Solar Observing Optical Network (SOON) optical elements, satellite tracking cameras and Tactical Airborne Reconnaissance Pod Systems (TARPS) pod windows are examples of elements we refurbish.

Depot Maintenance Capability/Capacity: Compass Transmitter and Magnetic Azimuth Detector Repair Capability (15.1 2D Instruments)
Describe Why Unique/Peculiar: The Compass Transmitter and Magnetic Azimuth Detector Repair Capability at Ogden Air Logistics Center is one of a kind in the Department of Defense. We are the single source of repair. Mike Trainer, Item Manager for the compass transmitter and magnetic azimuth detector from Oklahoma City Air Logistics Center, stated that Honeywell Corporation, Durham, North Carolina has the capability but is only providing new manufactured units and that repair for the past ten years has been provided by Ogden Air Logistics Center only.

Depot Maintenance Capability/Capacity: 20MM automatic gun test firing facility
Describe Why Unique/Peculiar: Self contained environmentally controlled facility which allows for complete recovery of all expended projectile and depleted ammunition residue.

Depot Maintenance Capability/Capacity: 30MM automatic gun test firing range
Describe Why Unique/Peculiar: Utah Test and Training Range is remote and firing of 30MM automatic gun allows for safety concerns to be minimized. Less than serviceable ammunition can be used in testing due to locally assigned management and engineering responsibilities. The situation equates to a significant cost savings by using ammunition that would be normally disposed of.

Depot Maintenance Capability/Capacity: F-16 Emergency Power Unit Repair Capability (15.1 2H APUs)
Describe Why Unique/Peculiar: This is the only Department of Defense single source of repair and overhaul and test capability for the F-16 Emergency Power Unit (EPU). This EPU is the only system using hydrazine as a fuel and the overhaul must accommodate the hazards of the hydrazine propellant in a safe and monitored environment.

Depot Maintenance Capability/Capacity: Repair and overhaul of Laser Guided Munitions (15.1 12 B Support Equipment)
Describe Why Unique/Peculiar: Ogden ALC has the only Department of Defense depot level repair capability and is the single source of repair for the following assorted air munitions. The Paveway I, II and GBU-15 laser guided munitions are serviced utilizing state-of -the -art analog and digital automatic test stations. Unique optic alignment equipment provides the necessary hardware and software needed to assure proper accuracy. Technical skills in electronics, electro-mechanical, and integrated optics provides the manpower resources needed. Access to the Utah Test and Training Range (UTTR) with its 207 by 92 nautical miles airspace and its overland supersonic corridors, allows the program office to provide age and surveillance testing of the air munitions.

Depot Maintenance Capability/Capacity: Repair and overhaul capability for Short Range Attack Missiles (SRAM).
Describe Why Unique/Peculiar: OO-ALC has the only depot level capability to service Short Range Attack Missiles (SRAM). Specialized equipment, some mounted in the overhaul facility, is used to determine serviceability of the missile. The computed tomography facility , which uses a 3 dimension x-ray process, is used to check propellant characteristics for serviceability. The Utah Test and Training Range, a short distance from the base, has capability to cut the propellant from the frame and provide live fire testing of the missile motors.

Depot Maintenance Capability/Capacity: Repair and overhaul capability for the Air Force's Air Launch Cruise Missile (ALCM) program (15.1 4B Tactical)
Describe Why Unique/Peculiar: OO-ALC is the single source of repair and has the only capability in DOD to fully service the Air Launch Cruise Missiles (ALCM). The cruise missile facilities have embedded all the necessary automatic test stations to electronically check serviceability. The complex has a fuel farm with appropriate capabilities to defuel and fuel cruise missiles and storage facilities, explosive rated with intrusion alarms, available to store numerous fuel missiles. These explosive rated facilities are isolated from general base operations and designed specifically to handle fueled missile functions. The Utah Test and Training Range (UTTR) located a short distance from the base, with its overland supersonic corridors and highly variable terrain, has been identified as a prime cruise missile range within DOD. The range has 207 by 92 nautical miles of airspace situated over 2675 square miles of DoD land.

Depot Maintenance Capability/Capacity: Repair and overhaul capability for the Advance Cruise Missile (ACM) (15.1 4B Tactical)
Describe Why Unique/Peculiar: OO-ALC is the single sorce of repair and has the only capability in DoD to overhaul and repair the Advance Cruise Missile (ACM). Within the Cruise Missile Facilities is all the latest state-of-the-art automatic test stations necessary to functional check the Advance Cruise Missile electronics and target navigating characteristics. Included within the complex is an Imaging Radar System (AIRS) that is fully operational to diagnose degradation of the radar cross section (RCS) of this stealth type weapon. The radar signature must be determined from the collected back scatter, which includes both test object contributions and that associated with the surrounding environment. Operator of the AIRS facility must have

top secret clearances to be in the facility. The Utah Test and Training Range (UTTR) located a short distance from the base, with its overland supersonic corridors and highly variable terrain, has been identified as a prime cruise missile range within DOD. The range has 207 by 92 nautical miles of airspace situated over 2675 square miles of DoD land.

Depot Maintenance Capability/Capacity: Neural Engineering and self-organizing systems.
Describe Why Unique/Peculiar: Per direction of Program Action Directive (PAD) number 90-MME-200(1), Ogden ALC has been tasked to develop and implement neural networks (NN) and/or self-organizing systems (SOS) as an advanced diagnostic tool. We are the designated Air Force organic capability to apply these techniques successfully.

The first system we applied this to was the Air Combat Maneuvering System (ACMI). Documented repair savings of over $250K the first year and improved reliability of the system from 40 hours to over 1,000 hours was experienced. Current work on the Infra-red camera to detect faults in electronic circuits has the potential to save many millions of dollars in maintenance costs.

Depot Maintenance Capability/Capacity: Software Technology Support Center (STSC).
Describe Why Unique/Peculiar: Ogden ALC is the home of the Software Technology Support Center (STSC). Per direction of SAF/AQKS under Program Management Directive (PMD) number 3118(8), 1 April 94, our STSC has been designated as the focal point for the Air Force and Department of Defense for the technical expertise, management, and evaluation of software tools, methods and environments to identify, evaluate and adopt technologies to improve the quality of their software products, their efficiency in producing them and their ability to help organizations improve their effectiveness. The prime benefits received include software/hardware standardization throughout the Air Force as well as other government agencies.

Depot Maintenance Capability/Capacity: Software Engineering Institute (SEI) Level certification for our Software Engineering Division.
Describe Why Unique/Peculiar: In May 1992 Ogden ALC Software Engineering Division was assessed as a Level 2 on the SEI Capability Maturity Model. This division was informed they were among the top 15 percent of the software organizations that had been assessed.

Depot Maintenance Capability/Capacity: Compact Range Facility(CRF)
Describe why Unique/Peculiar: The CRF is one of a kind in DoD and is the single source of repair. It is the only CRF available for testing the F-16 AN/APG-66 and AN/APG-68 Fire Control Radar Antennas and the F-16 Nose Radome. Used for F-16 models A, B, C, and D and two Nose Radome Electrical Test systems, it tests electrical mapping (including image sidelobe levels), power transmission deficiencies, and beam deflections. The system is divided into two separate rooms, one being an anechoic chamber (compact range group and portions of the antenna analyzed), the other containing most of the antenna analyzer group. The system creates an electromagnetic environment to allow pattern testing gain documentation and boresighting. It radiates, collimates, and detects the RF signals. It is also used to position or to polarize the RF source, position the radar under test, facilitate fault isolation, and measure antenna position. The small indoor chambers eliminate the need for large outdoor facilities and real estate. It provides significant cost and time savings, improved security, and eliminates surveillance requirements and adverse environmental factors. The system is environmentally controlled and mounted on a spring supported concrete floating foundation to preclude movement. Because of the construction, and the equipment sensitivity, it would not be economically feasible to relocate the system.

8.2 Separately list the depot maintenance facilities and equipment which are one of a kind within the Service and/or DoD.

Facilities

MISSILE MAINTENANCE AND TESTING FACILITIES

Ogden ALC Silo-Based Intercontinental Ballistic Missiles (SBICBM) maintenance and test facilities are the only DoD capability for Minuteman and Peacekeeper Missiles; therefore, OO-ALC is the single source of repair for SBICBM workloads. This applies to all SBICBM workloads and capabilities described in the following paragraphs. Recent analysis has identified it will cost in excess of $1 Billion to transfer the workload and replicate the facilities. The data provided in the subsequent paragraphs provide details on the unique capabilities, therefore, each description is noted to be unique. (15.1 4A Atrategic Applies to all paragraphs down to and including Missile and Munitioons Disposal Facilities)

Facility /Equipment: 3 Silos, 5 Bldgs-Strategic Missile Integration Complex (SMIC)
Describe Why it is One of A Kind: The only DoD facility capable of simulating launch scenarios with three 90' vertical below-ground silos constructed to meet Minuteman and Peacekeeper ICBM silo hardness and operational requirements. The test site is a replica of an operational silo and includes capsule and control equipment and interfaces. Facilities accommodate, replicate, and support ICBM launch control centers and launch control equipment facilities. Bldgs: 1203, 1204, 1530, 1538, 1540.

Facility /Equipment: 4 Survivability andVulnerability Integration Center (SVIC)
Describe Why it is One of A Kind: The Survivability and Vulnerability Integration Center is a state-of-the-art AFMC test facility dedicated to simulation testing of nuclear hardness, survivability, reliability, and electromagnetic compatibility of defense systems. The SVIC consists of facilities (bldgs 402, 501, 1701, and 4301) for simulating basically six environments:

- Nuclear radiation, provided by flash X-Ray machines and a linear accelerator.
- Airblast, provided by a Blast Load generator
- Shock and vibration, provided by various dynamic shakers, accelerators and impulse testers.
- In-flight shock and vibration profiles, provided by the vibration facility.
- Electromagnetic pulse (EMP) provided by electrical pulsars of various waveforms and energy capabilities.
- Electromagnetic interference and compatibility (EMI/EMC) testing, provided by EMI generators and instrumentation equipment.

Facility /Equipment: 12 Minuteman (MM) Stage I, II, III missile assembly & repair facilities
Describe Why it is One of A Kind: Horizontal rail movement system, explosive safety clear zone quantity distance (ESQD for inhabited buildings), frangible (easily broken) quantity distance (QD for fragment throw), frangible construction for explosive contents. Bldgs: 940-980 & 2406-2409

Facility /Equipment: 4 Motor dissection and Propellant analysis for Minuteman and Peacekeeper

Describe Why it is One of A Kind: Remote cutting and handling operation. Franglible roof section. 50 ton overhead bridge crane. Bldgs: 40060, 40086, 60060, 60075 .

Facility /Equipment: 2 Peacekeeper (PK) Stage I, II, III missile storage facilities
Describe Why it is One of A Kind: Horizontal rail system. Clear zone quantity distance (QD), frangible construction for explosive contents. Bldgs: 2401-2403

Facility /Equipment: 11 Physical and chemical test facilities
Describe Why it is One of A Kind: Explosive sited remote propellant machining processes. Sophisticated scientific test stations and computer backup for statistical performance analysis.

Facility /Equipment: 1 Missile transfer and support (Minuteman and Peacekeeper) Bldg:
Describe Why it is One of A Kind: Horizontal rail system used for carriage and end ring change. Lifting capability for rocket motors and booster assembly. Fifty ton overhead bridge crane.

Facility /Equipment: Missile Support Equipoment Repair Facility (15.1 10E Other)
Describe Why it is One of A Kind: This is a single source of repair and on-of-a-kind facility in the Air Force. There are no other DoD depot maintenance facilities with this capability. The repair and testing of missile support equipment requires a facility with complete facilties to ensure the highest reliability and maintainability of Minuteman and Peacekeeper truck and tractor equipment.

Facility /Equipment: Computed Tomography
Describe Why it is One of A Kind: The Computed Tomography (CT) facility is the most up-to-date facility in the world and the **only** DoD facility that is capable of assessment on large rocket motors for MM and PK. The CT facilities at Ogden Air Logistics Center are the only ones sited for exlosives inspection. It enables detection of small voids, changes in density, and more accurate assessment of the bond line between propellant insulators and the case.

Facility /Equipment: High Energy X-Ray
Describe Why it is One of A Kind: Physically large enough to handle Peacekeeper motors as well as smaller items. The energy source is the **only** one capable of producing the amount of volts required to penetrate large missile components.

Facility /Equipment: 3 Rocket motor static firing facilities
Describe Why it is One of A Kind: Environmentally licensed and explosive sited MM rocket motor test pads with 500,000 pound thrust blocks. Test recording capability at approximately 200 channels of information. Test pads are covered with a motor propelled building that is moved to allow for motor installation and static firing. The test pads are environmentally controlled and are equipped with a 50 ton bridge crane mounted in the building. Bldgs 60000, 60015, 30025, Hazard pad #3.

Facility /Equipment: 1 Test cubicle

Describe Why it is One of A Kind: This facility contains explosive detonation test cells capable of testing Minuteman and Peacekeeper ordinance devises and monitoring equipment to test cartridge activated devices for integrity and performance. Bldg: 2014.

Facility /Equipment: 1 Lithium battery storage & discharge
Describe Why it is One of A Kind: The only AF facility is environmentally controlled and equipped with battery discharge equipment. Bldg: 30220

Facility /Equipment: 1 Transportation and Handling hoist proof-load test.
Describe Why it is One of A Kind: This hole is equipped with weight slugs simulating the weight of the Minuteman missile. It is approximately 90 feet deep to allow inspection and testing of hoist and wire ropes for Minuteman Transporter Erectors (TEs). Bldg: 10296

Facility /Equipment: 1 Cold soak/heat soak
Describe Why it is One of A Kind: The only DoD facility with temperature conditioning capability to control temperature of Minuteman motors at -45 degrees F to +175 degrees F. Designed for Minuteman motors.

Facility /Equipment: 1 Propulsion System Rocket Engine (PSRE) Facility
Describe Why it is One of A Kind: 10,000 class clean room, bridge crane with 25 foot hook height, infra-red fire protection system, **hydrazine intercept and recovery systems**, and electron beam welder all in support of 4th Stage MM & PK. Bldg: 2016

Facility /Equipment: 1 Liquid propellant decontamination
Describe Why it is One of A Kind: The only AF facility designed to decontaminate missile recovery equipment used to mitigate or provide abatement to hazardous spills of rocket engine liquid fuels. Bldg: 30260.

Facility /Equipment: 1 Missile support equipment repair facility
Describe Why it is One of A Kind: Service and repair center for large truck, tractor equipment associated with Minuteman and Peacekeeper missiles. Facility is equipped with 80' by 20' paint and sandblast facility. Bldg: 847

Facility /Equipment: Missile Assembly, Maintenance and Storage (MAMS) I and II, Utah Test and Training Range motor storage area access roads
Describe Why it is One of A Kind: Previous site surveys to determine alternate sites for ICBMs indicate service roads at other centers/bases would require significant upgrades just to meet the 22,000 pound Minuteman axle load and 32,000 pound Peacekeeper axle load basic requirements. Since Ogden Air Logistics Center is the prime site for MM and PK storage and repair, there is no reason to believe any site considering a workload of this magnitude would not require such upgrades. Service roads at the Utah Test and Training Range motor storage area and the MAMS I and II have been compacted to meet MM and PK weight during transportation, therefore, they are deemed to be peculiar.

Facility/Equipment: LGM-30 Shock Isolator Facility.

Describe Why it is One of A Kind: This is a one-of-a-kind facility in the Department of Defense. Ogden Air Logistics Center is the designated Technology Repair Center for the LGM-30. Shock Isolator depot maintenance and modification is accomplished within the three-story maintenance building. The facility capability consists of a shock isolator test stand, linear actuator test stand, and a hydraulic pressure system. Built within the facility are special reinforced and shock isolated concrete pads strong enough to withstand enormous loads placed on them while testing the shock isolator.

MISSILE STORAGE FACILITIES

Facility /Equipment: 109 Rocket motor storage for MM and PK
Describe Why it is One of A Kind: Horizontal rail system, Clear zone quantity distance, frangible construction, environmentally controlled and monitored. Bldgs: 981-983, 1320-1321, 1331-1373, 1403, 1440-1463, 1811-1815, 1822-1832, 11802-11804,11825-11830, 30020-30219,30221-30250, 30270-30290.

MISSILE AND MUNITIONS DISPOSAL FACILITIES

Facility /Equipment: Thermal Treatment Unit
Describe Why it is one of a kind: The only environmentally licensed propellant disposal site, capable of disposing of Minuteman and Peacekeeper solid rocket motor propellant and as well as obsolete motors from other services. It sits on a 21,000 acre site at the Utah Test & Training Range (UTTR).

TACTICAL MISSILE REPAIR FACILITIES

Facility/Equipment: Repair and overhaul capability for Maverick Missiles (Air Force and Navy) Guidance Control Systems (GCS); Electro optic, Laser, and Infrared. (15.1 12 B Support Equipment)
Describe Why it is One of A Kind: This is the only Department of Defense depot overhaul capability.

Facility/Equipment: Repair and overhaul capability for Sidewinder Missile uidance and control sections (15.1 12B Support Equipment)
Describe Why it is One of A Kind: The Sidewinder equipment embedded in this facility make it an Air Force one-of-a-kind. This facility is specifically designed to meet the stringent maintenance and testing support requirements of the seeker assembly portion of the Sidewinder Missile. Seeker and gyro repair requires absolute cleanliness as part of the overhaul process. Specially designed electro static floors help to maintain the elctro static discharge concerns associated with operation. Contamination particle count must be maintained bo 0.5 microns not to exceed 100 particles per cubic foot of air. Temperature stability is maintained at 72 degrees +or- 2 degrees. Humidity is maintained at 30-45%.

ADVANCED CRUISE MISSILE RADAR CROSS SECTION FACILITY/EQUIPMENT

Facility/Equipment: Advance Cruise Missile Imaging Radar System Facility (AIRS) Facility (15.1 4B Tactical)

Describe Why it is One of A Kind: This is a one-of-a-kind Department of Defense depot level AIRS facility and is the single source of repair in DoD. The purpose of this new facility is to provide the ability to diagnose degradation of the radar cross section (RCS) of stealth type weapon systems. The AIRS is an indoor (RCS) test facility that is an integral part of the maintenance concept of the Advanced Cruise Missile (ACM). When a missile comes into the depot, AIRS will be used to diagnose degradations in the missiles RCS. Once AIRS isolates the defect, the depot can repair the defect. Upon exiting the depot, ARIS is used to ensure the missile signature meets established survivability criteria before it re-enters the fleet. The radar signature of a missile body varies as a function of transmitted radar frequency, transmitted and received radar polarization, and the aspect angle at which the test body is illuminated and viewed. The radar signature must be determined from the collected backscatter, which includes both test object contributions and that associated with the surrounding environment. Top secret level 4 access is required. Currently the Advance Cruise Missile (ACM) is being serviced in this facility. The equipment used by AIRS is not a test community asset; it is a part of the ACM depot maintenance facility.

LANDING GEAR REPAIR FACILITY

Facility/Equipment: Automated Landing Gear Repair Facility (15.1 2E Landing Gear)
Describe Why it is One of A Kind: This is the only fully automated, single source of repair DoD facility capable of accommodating all aircraft in the DoD inventory from the small T-38 Talon nose gear to the massive C-5 main landing gear. Force structure reductions have decreased landing gear output requirements to 585,000 DPAH which is a 35.2 percent decrease from our highest output year. This leaves room for approximately 318,000 DPAH of additional workload. We still have additional capacity for surge. Our unique process includes tasks designed for the purpose of overhauling landing gear components with minimal human intervention.. The main landing gear overhaul and repair facility is the only facility in the Department of Defense that was specifically designed for the overhaul and repair of aircraft wheels, brakes, landing gear, and related components. A 1981 data study of the new automated landing gear facility revealed a savings of $2,500,287 (26.6% in that year) over a conventional operation.

The facility is specifically designed for streamlined overhaul/repair of all landing gear wheels, brakes, struts, and related components. It will accommodate all of the essential processes and equipment required to perform metal processing operations. The jib cranes, utilized in the disassembly and assembly areas, are designed with a 12' high minimum clearance and a minimum 12' hook height clearance over all dip tanks and plating tanks. These tanks have the width and depth sufficient to accommodate the largest Department of Defense aircraft components. The overhead hoists are designed with a capacity to load landing gear components of the largest military aircraft and/or fixtures onto machines such as grinders, lathes, hones, etc. The two walk-in continuous flow throughput ovens allow parts to flow from one process to another ensuring a continuous flow of the repair process without problems of bottlenecking. The newly designed Environmental Protection Agency compliant air filtration system consisting of scrubbers, blowers, and a hazardous waste removal and processing system that require special procedures. This system is designed to meet current and future foreseeable emissions regulations. All equipment was specifically identified and purchased according to the workload requirements accounting for such factors as size, capacity, and efficiency to support all landing gear processes.

OTHER ONE OF A KIND FACILITIES

Facility/Equipment: Ram Air Turbine (RAT) Wind Tunnel Test Facility.
Describe Why it is One of A Kind: This is the only Ram Air Turbine test facility in the Air Force. This facility has a 25 foot squirrel cage type fan with variable pitch blades turned by a 900 horse power electric motor. The air flow control vanes are variable pitch blades that must be perfectly balanced to prevent vibration at the high revolutions per minute (RPMs) reached during testing. These vanes are opened and closed as required for the various testing speeds. The squirrel cage fan achieves wind speeds from 75 to 375 knots variable. This specialized wind tunnel is located within a jet engine test cell because of the high noise it produces when the RAT is operating. This hush house has a 12' x 8' inlet tube that is hooked to a 25-foot blower. From the blower, the outlet tube is reduced to a 12 inch diameter tube. This 20-foot long tube is specially designed to reduce wind turbulence at the outlet where the RAT is tested. The wind flow is picked up by a 6-foot diameter pickup tube and vented outside the building.

Facility/Equipment: Building 511, Investment Casting Facility
Describe Why it is One of A Kind: This is the only fully operational investment casting production facility in the Department of Defense. Aerospace quality castings are produced on a quick turnaround basis when contractor parts are not available. The facility is designed for large or small production runs. The investment casting process has been utilized to manufacture parts for Air Force F-16 Mission Capable (MICAP) requirements, C-130, F-15, and F-111 aircraft as well as Navy submarine and torpedo parts.

Facility/Equipment: Photographic Image Quality Test Facility (PIQTF) and the Cartographic Camera Calibration Facility (CCCF) (15.1 2I Other)
Describe Why it is One of A Kind: This facility is the only one in the Department of Defense and is the single source of repair. The Photographic Image Quality Test Facility is a four-story facility an is specifically designed for critical testing of aerial/space sensors, determining the operational imagery quality to Department of Defense standards. Three stories of this facility are underground. The features and benefits offered by an underground facility include vibration isolation to a low frequency and stability of temperature. The Cartographic Camera Calibration Facility is a one-of-a-kind test facility specifically designed for mapping camera calibration. This facility has two stories underground. The features and benefits offered by an underground facility include vibration isolation to a low frequency and stability of temperature. Mission sensitivity and security required that the Air Force develop and maintain this capability. Also, high replication cost and the level of requirements dictate the need for only one facility in Department of Defense.

Facility/Equipment: F-16/F-18 Overhaul/Test (15.1 1C3 Light Combat)
Describe Why it is One of A Kind: Our facility is the only one in the DoD and is the singel source of repair and overhaul for the Air Force F-16 and the MCAPP for the Navy F-18.

Facility/Equipment: Aircraft Robotics Bead Blast (15.1 IC3 Light Combat)
Describe Why it is One of a Kind: Ogden ALC provides the world's first and only robotics plastic media bead blast for DoD fighter aircraft. This integrated facility and equipment provide a virtual closed system for the application and recycling of the plastic media material. It is recycled and sorted by size and when it becomes too small to reuse it is packaged and recycled through a contractor virtually eliminating any hazardous waste from our automated stripping operation. The robotic operation is monitored by personnel in a control room, removing them from the process application area. This reduces manpower requirements, improves stripping accuracy, and increasing employee safety

Facility/Equipment: 20MM automatic gun test firing facility (15.1 2F Aviation Ordinance)
Describe Why it is One of A Kind: This is a one-of-a-kind facility in the Air Force. It is an underground test firing range used for the acceptance test firing after overhaul or modification of 20MM automatic guns. The test firing facility consists of a control room housing test evaluation equipment, a firing bay where guns are mounted for testing, a projectile impact area located at one end of the 100 foot long tunnel, a utility room containing all facility electric and hydraulic

equipment, an explosive approved ammunition handling and storage area, and a preparation room to perform maintenance on the guns and handling systems prior to the actual test firing. Specific design features of this building include security requirements for ammunition, an overhead lifting system, a video monitoring system in an adjacent room to the firing bay for personnel safety, a door interlock system that shuts down the test firing if any door is opened during the firing sequence, and a ventilation system capable of clearing out the gun gasses from the firing bay and tunnel within 40 seconds.

Facility/Equipment: 30MM automatic gun test firing facility (15.1 2F Aviation Ordinance)
Describe Why it is One of A Kind: Utah Test and Training Range is a single source of repair and has one of a kind testing equipment to perform the acceptance test firing after overhaul of the A-10 aircraft GAU-8 gun on the 30MM test firing pad.

Facility/Equipment: Compass Transmitter and Magnetic Azimuth Detector Repair Facility (15.1 2D Instruments)
Describe Why it is One of A Kind: Ogden Air Logistics Center is one of only two continental United States (CONUS) facilities for the repair and testing of compass transmitters and magnetic azimuth detectors. The other facility is at Honeywell Corporation, Durham, North Carolina. Mike Trainer, Item Manager for the compass transmitter and magnetic azimuth detector from Oklahoma City Air Logistics Center stated that Honeywell is only providing new manufactured units and that repair for the past ten years has been provided by Ogden Air Logistics Center only. Therefore, there are no repair and testing alternatives available. This facility is unique because the building, tools, end items, and component parts are non-magnetic/non-ferrous and the facility is aligned directly along the earth's true magnetic north-south meridian. Before construction of this facility, an in-depth geographic study was accomplished to determine the most suitable and magnetically stable location at Ogden Air Logistics Center. The facility is built entirely from non-ferrous metals and materials such as aluminum joists in place of wood, studs rather than steel nails, nylon fabric instead of steel reinforcing bar in the concrete foundation and floor, and special lighting and electrical fixtures to minimize magnetic interference.

Facility/Equipment: Building 509 Gun Overhaul Shop.
Describe Why it is One of A Kind: The Guns and ammunition handling systems overhaul at this center are one-of-a-kind in the Air Force. Systems worked include 20MM and 30 MM gun systems, ejection racks, pylons, bomb racks, guns and gun control systems (both aircraft mounted and ground), missile launchers and bomb dispensers. This area of Building 509 was specifically designed for the overhaul and storage of guns and gun handling systems. Security consists of video surveillance equipment, motion detectors, door sensors and a double door entry area. Security requirements are met for aircraft guns as well as hand-held weapons to be worked and stored.

Facility/Equipment: Maverick Tactical All-Up-Round Facility (15.1 4B Tactical)
Describe Why it is One of A Kind: The facility is an Air Force one-of-kind, explosive certified structure that allows for maintenance and testing of fully loaded and fueled Maverick tactical missiles. The facility is rated for 15,000 lbs. of 1.1 explosives. The facility was designed to

allow maintenance and system testing of numerous fully operational Maverick missiles simultaneously. The facility is designed with a six feet thick wall seperating the test equipment and operator from the armed missile. There are currently 4 stations setup in this configuration with the facility. The walls are made of 3 feet of sand sandwiched between 1 1/2 feet of concrete so that if a mishap occurred in one bay, the missiles in other bays will not propagate. Any explosion would be directed to specially designed walls. The facility is located in a secured area on the base with 24 hours guard. The location of the facility was designed to provide appropriate quantity and distance requirements in case of an explosion.

Facility/Equipment: Hot Site Computer Recovery Facility
Describe Why it is One of A Kind: The Hot Site Computer Recovery Facility at OO-ALC is the only one of it's kind in the DoD. It is an IBM compatible computer facility used for recovery of damaged or destroyed computer facilities and computer contingency operations/testing.

Equipment:

Facility /**Equipment:** 507 pieces of Minuteman equipment
Describe Why it is One of A Kind: This unique equipment is configured and designed specifically to support the Depot Maintenance functions for Minuteman LGM-30 Missiles. The equipment is critical for repair, modification, testing/diagnostics and life cycle extension of the weapon system. Ogden Air Logistics Center, according to the Master Equipment Management Index Table of Allowances (TA001), is the only authorized user of this equipment.

Facility /**Equipment:** 78 pieces of Peacekeeper equipment
Describe Why it is One of A Kind: This unique equipment is configured and designed specifically to support the Depot Maintenance functions for Peacekeeper LG-118 Missiles. The equipment is critical for repair, modification, testing and life cycle extension of the weapon system. Ogden Air Logistics Center, according to the Master Equipment Management Index Table of Allowances (TA001), is the only authorized user of this equipment.

Facility /**Equipment:** Survivability/Vulnerability Integration Center (SVIC)
Describe Why it is One of A Kind: The following list of unique equipment is configured and designed specifically to support the Depot Maintenance functions for Minuteman LGM-30 and Peacekeeper LG-118 Missiles. The equipment is critical for repair, modification, testing and life cycle extension of the weapon system.

Triaxial Shaker	**One of a kind in the world** of this size and capacity
PI-958 Flash X-Ray	**Only one** of its size in the DOD
PI-216AH Flash X-RAY	**Unique in the world** in high pulse rate allowing as many as 400 "shots" per day (typical is 50-70).
Electromagnetic Pulse Assembly	**Only one** in the AF. It forms backshells to meet configuration requirements for Peacekeeper cabling.

Facility /**Equipment:** Strategic Missile Integration Complex (SMIC)

Describe Why it is One of A Kind: The following list of unique equipment is configured and designed specifically to support the Depot Maintenance functions for Minuteman LGM-30 and Peacekeeper LG-118 Missiles. The equipment is critical for repair, modification, testing and life cycle extension of the weapon system.

Minuteman 'AM' Launch System	This equipment is the **only one of its kind** for testing Intercontinental Ballistic Missiles, providing simulated system launch from a varity of launch scenarios.
Minuteman 'AM' Launch Control System	
Peacekeeper Launch System	
Peacekeeper Launch Control System	
Peacekeeper/Minuteman Guidance and Control System	
Squadron Data Simulator	

Facility /**Equipment:** OASIS at Utah Test and Training Range
Describe Why it is One of A Kind: The following list of unique equipment is configured and designed specifically to support the Depot Maintenance functions for Minuteman LGM-30 and Peacekeeper LG-118 Missiles. The equipment is critical for repair, modification, testing and life cycle extension of the weapon system.

Static Motor Firing and Data Reduction System	**Unique to DOD** for collecting and reducing raw data into digital format during vertical and Horizontal Static firing of ICBM or Small Missile motors.
Propellant Dissection Unit	**Only capability** in DOD to dissect ICBM Motors

Facility/**Equipment:** Mechanized Material Handling System (MMHS)
Describe Why it is One of A Kind: This is the only fully automated overhead material handling system in Department of Defense designed for repairing landing gear components. The MMHS is assisted by an on line computer. The MMHS carriers are programmed by the computer to stop at specified stations. The carriers smoothly and safely process the parts through the cleaning tanks keeping employees out of the chemical environment. The process and dwell times for cleaning, etching, stripping, florescent particle inspection and rinsing are tightly controlled and repeatable. The carriers efficiently move the parts from station to station in the main landing gear facility and also to the electroplating shop located in an adjacent building, avoiding exposure to adverse weather conditions.

Facility/**Equipment:** Automated Remanufacture of Cylindrical Objects (ARCO)
Describe Why it is One of A Kind: ARCO is the only voice operated computer evaluation and inspection system in the Department of Defense designed for repair of landing gear components. The ARCO system is an efficient evaluation and inspection system for landing gear components. When the part arrives at the inspection station, the inspector enters an internal part number that is peculiar to the component and its serial number. A picture of the component appears on the monitor for part conformation. The areas that require inspection are highlighted on the monitor and the inspector orally enters his/her findings for each area. The system compares the input

information with acceptable limits and then generates the appropriate work control document with the required repair operations.

Facility/**Equipment:** Laser Automated Decoating System (LADS)
Describe Why it is One of a Kind: The only process in DoD capable of automatically removing layers of previous finishes on aircraft and their component parts. This is successfully applied to any aircraft, or part, and does not damage underlying materials. Depth of removal is accurately controlled for removing finishes and coatings on all thermoplastics, metallic substrates, etc. LADS accurate depthdecoating capability is critical to aircraft radomes since depth of coatings affect radar accuracy.

Facility/**Equipment:** Robotic Canopy Polisher
Describe Why it is One of a Kind: One of a kind in DoD. Presently used to polish F-4 and F-16 transparencies, but can be programmed for all DOD aircraft. Reduced labor standards from 52 to 16 hours on F-4 canopy. Can also polish any plastics or glass lens items.

Facility Equipment: F-16 Emergency Power Unit Test Stand. F-16 Nitrogen Control Valve Test Stand. F-16 Gases Generator Test Stand.
Describe Why it is One of A Kind: High cost and the level of requirements dictate the need for only one facility in Department of Defense. Unique/peculiar workloads required the Air Force to develop a facility for repair. Also, this facility is required to support a core workload. Table of Allowances and System Program Office authorization determined F-16 Emergency Power Unit and related components is to be overhauled at Ogden Air Logistics Center.

Facility/**Equipment:** Maverick All-Up-Round Electro-Optics and Infrared Test Set
Describe Why it is One of A Kind: The only Department of Defense test set available which is unique and critical to the maintenance facility.

Facility/**Equipment:** Maverick Component Repair Electro Optic and Infrared Test Set
Describe Why it is One of A Kind: The only Department of Defense test set available. The tester is the only tester capable of performing the necessary test functions.

Facility/**Equipment:** Maverick Guidance Components Test Set
Describe Why it is One of A Kind: The only Department of Defense Test Set available.

Facility/**Equipment:** Advance Cruise Missile All-Up-Round Test Set
Describe Why it is One of A Kind: The only Department of Defense Test Set available.

Facility/**Equipment:** Paveway Test Set
Describe Why it is One of A Kind: The only Department of Defense Test Set available.

Facility/**Equipment:** Magnetic Particle Inspection System
Describe Why It Is One of a Kind: This one of a kind system was designed and built especially for Ogden ALC to support inspection of large landing gear components as part of our world class Landing Gear Facility.

These are one of a kind test sets designed and built here at Ogden ALC specifically for testing various F-16 and F-4 weapon system entities and components. Due to the expense of these test stations, neither contractor, other AF or DoD installations possess similar equipment which can perform this specific function.

APG-66 Radar Test
APG-68 Radar Test
F-16 A/B Heads Up Display (HUD) Test Station
F-16 C/D Heads Up Display (HUD) Test Station
F-16 A/B Human Engineering Development Test Station (HEDS)
F-16 A/B Stores Management Operational Program Dynamic Test Station (2 each)
F-16 A/B Advanced Multi-Purpose Support Environment (AMPSE)
F-16 C/D Operational Program Dynamic Test Station
Honeywell 3500 F-16 Software Depot Level Maintenance Test Stands (2 ea)
F-16 A/B Dynamic System Simulation (DSS)
F-4G ARN-101 Dynamic Test Station
F-4/RF-4 Navigation Weapon Delivery System (NEWDS)
Common Modular Environmental (COMET) (8 each)
(Not all of these eight stands are completed, but are anticipated to be completed prior to the FY96 timeframe)
F-16 A/B AvionicsFacility/Equipment Bay (AEB)
F-16 C/D AvionicsFacility/Equipment Bay (AEB)
These are F-16 weapon system unique test stands. There are no others within the Air Force or DoD

Facilities and Equipage, continued

9. Acreage Available for Building

9.1 What acreage on the installation does the government own in the proximity of the depot maintenance area that could be used for future expansion? Identify in the table below the real estate resources which have the potential to facilitate future development and for which you are the plant account holder or into which, though a tenant, your activity could reasonably expect to expand. Developed area is defined as land currently with buildings, roads, and utilities where further development is not possible without demolition of existing improvements. Report in "Restricted" areas that are restricted for future development due to environmental constraints (e.g. wetlands, landfills, archaeological sites), operational restrictions (e.g. ESQD arcs, HERO, HERP, HERF, AICUZ, ranges) or cultural resources restrictions. Identify the reason for the restriction when providing the acreage.

Conclusion: Identify in the table below the real estate resources which have the potential to facilitate future development and for which you are the plant account holder or into which, through a tenant, your activity could reasonably expect to expand. Developed area is defined as land currently with buildings, roads, and utilities where further development is not possible without demolition of existing improvements.

Table 9.1: Real Estate Resources

Land Use	Total Acres	Developed Acreage	Available for Development	
			Restricted [1]	Unrestricted
Maintenance	12,388	1,319	*1,946	9,123
Operational	947,640	1,611	**930,871 ***15,000	158
Training	130	5		125
R & D				
Supply & Storage	895	895		
Admin	189	189		
Housing	413	413		
Recreational	278	278		
Forestry Program				
Agricultural Outlease Program	88		*88	
Hunting/Fishing Programs				
TOTAL	962,021	4,710	947,905	9,406

1. This includes areas that are restricted for future development due to environmental constraints such as wetlands, landfills, archaeological sites, etc. and other restrictions such as Explosive Safety Quantity Distance (ESQD) areas, HERO, HERP, HERF, AICUZ, Ranges or cultural resources. Identify the reason for the restriction when providing the acreages in the above table.

***ESQD/AICUZ** ****RANGE** *****WETLANDS**

962,021
930,871
31,150

Facilities and Equipage, continued

10. Administrative Space

10.1 What amount in square feet of administrative space could be made available to the depot maintenance function?

Conclusion: 353,589 square feet could be made available to the depot maintenance function.

11. Industrial Waste

11.1 Are there any inhibiting factors that would limit future expansion on the base? Provide the details if applicable.

Conclusion:

Inhibiting Factor: Hazardous Waste Storage

Detailed Description: Storage is limited to 308 drums. This is not a limiting factor due to in-place contracts for hazardous waste pick up. A new facility is scheduled for construction beginning in Fall 1994 with 2,400 drum capacity.

MEASURES OF MERIT

Workload and Capabilities

Answers to the following questions are to reflect programmed amounts by commodity group, by activity in direct labor hours by Fiscal Year for FY 1996 through FY 1999.

12. Core Capabilities (DoD)

12.1 What is the amount of core capability required to support your own Service? Provide your answers in Table 12.1a by commodity group for the Fiscal Years requested.

Conclusion:

Table 12.1a: Service Required Core

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1C1,Transport	179,717	179,717	179,717	179,717
1C3, Light Com	809,376	809,376	809,376	809,376
2B,Aircraft Stru	88,441	88,441	88,441	88,441
2C,Hydr/Pneu	13,296	13,296	13,296	13,296
2D,Instruments	314,837	314,837	314,837	314,837
2E,Landing Gear	590,135	590,135	590,135	590,135
2F,Exch, Weapo	137,540	137,540	137,540	137,540
2G,Exch,Av/Elct	389,428	389,428	389,428	389,428
2H, APUs	27,077	27,077	27,077	27,077
2I,Other	326,398	326,398	326,398	326,398
2J, Manufacture	130,996	130,996	130,996	130,996
3A,A/C Engines	8,744	8,744	8,744	8,744
4A,Strategic	615,594	615,594	615,594	615,594
4B,Tactical	129,412	129,412	129,412	129,412
10E,Other	109,834	109,834	109,834	109,834
12A,Tactical Sys	758,568	758,568	758,568	758,568
12B, S/E	261,201	261,201	261,201	261,201
13A, Bearings	4,818	4,818	4,818	4,818
TOTAL	4,895,412	4,895,412	4,895,412	4,895,412

Workload and Capabilities, continued

12. Core Capabilities (DoD), continued

12.2 What is the amount of capability retained for the performance of other Service's core? Provide your answers in Table 12.2a by commodity group for the Fiscal Years requested.

Conclusion: No other service core.

Table 12.2a: Core Capability Retained for Other Services

COMMODITY TYPE	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
	0	0	0	0
TOTAL	0	0	0	0

12.3 What portion of the Service Core capability identified in the 12.1a above is identified as Service-Controlled Core (Title 10 responsibility)? Provide your answer in Table 12.3.a by commodity group for the Fiscal Years requested.

Conclusion:

Table 12.3a: Service-Controlled Core (Title 10)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
	0	0	0	0
TOTAL	0	0	0	0

Workload and Capacities, continued

13. Core Workloads

13.1 What are your total Core Workloads to be applied against capabilities identified in Tables 12.1a and 12.2a)? Provide your answer (DLH) in Table 13.1.a by commodity group for the Fiscal Year requested.

Conclusion: No other service core.

Table 13.1a Total Core Workloads

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1C1,Transport	631,264	585,990	732,945	543,465
1C3, Light Com	809,376	893,185	824,203	690,933
2B,Aircraft Stru	170,143	242,363	161,732	241,310
2C,Hydr/Pneu	13,296	13,296	13,296	13,296
2D,Instruments	104,931	120,450	126,398	124,288
2E,Landing Gear	514,496	508,346	506,429	487,904
2F,Exch, Weapo	137,540	117,090	86,453	104,219
2G,Exch,Av/Elct	389,428	415,033	411,601	429,591
2I,Other	162,109	161,813	166,204	180,260
2J, Manufacture	75,733	76,042	75,995	75,949
2H,APUs	27,077	29,466	31,066	28,836
3A,A/C Engines	8,744	8,744	8,744	102,409
4A,Strategic	714,964	594,491	663,103	673,626
4B,Tactical	136,181	154,916	145,423	180,915
10E,Other	109,634	114,487	87,716	119,718
12A,Tactical Sys	664,247	652,306	620,418	652,524
12B, S/E	221,431	202,596	228,868	241,351
13A, Bearings	4,818	4,818	4,818	4,818
TOTAL	4,895,412	4,895,412	4,895,412	4,895,412

Workload and Capabilities, continued

14. Other Workloads (Above Core)

14.1 What above core workloads do you perform by these source categories? Use the most appropriate category, but do not duplicate workload on more than one table. Provide answers in Tables 14.1.a through 14.1.g by commodity group for the Fiscal Years requested.

Conclusion:

Table 14.1a: FMS Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1C3, Lt Combat	39990	0	39990	0
2B,Aircraft Stru	30000	0	30000	0
2E,Landing Gear	0	0	3500	0
2I4 Other	0	0	12000	0
TOTAL	69990	0	85490	0

14. Other Workloads (Above Core), continued

Conclusion:

Table 14.1b: Interservice Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
2F, Av Ordnance	0	0	17000	0
TOTAL	0	0	17000	0

14. Other Workloads (Above Core), continued

Table 14.1c: Other Agency Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
10E, Other	0	0	31443	0
TOTAL	0	0	31443	0

14. Other Workloads (Above Core), continued

Conclusion:

Table 14.1d: Last Source of Repair Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
2B,Aircraft Stru	34148	0	59000	0
2G,Avon/Electrical	0	0	20000	0
4B, Tactical	34000	15793	34000	0
TOTAL	68148	15793	113000	0

14. Other Workloads (Above Core), continued

Conclusion:

Table 14.1e: Within Service Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
* 3A, A/C Engines	113450	135323	141136	43212
TOTAL	113450	135323	141136	43212

* Two Level Engine Work

Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Conclusion:

Table 14.1f: Low Quantity Above Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	0	0	0	0

14. All Other Workloads (Above Core), continued

Conclusion:

Table 14.1g: All Other Workload (Above Core)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	0	0	0	0

14. Other Workloads (Above Core), continued

Conclusion:

Table 14.1h: Total Above Core Workload (Sum of Tables 14.1a through 14.1g)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1C3, Light Combat	39990	0	39990	0
2B,Aircraft Stru	64148	0	89000	0
2E,Landing Gear	0	0	3500	0
2F, Av Ordnance	0	0	17000	0
2G6, Avon/Electrical	0	0	20000	0
2I4, Other	0	0	12000	0
3A, A/C Engines	113450	135323	141136	43211
4B1, Tactical	34000	15790	34000	0
10E, Other	0	0	31444	0
TOTAL	251588	151113	388070	43211

Workload and Capabilities, continued

15. Unique and/or Peculiar Workloads (Refer to Question 8.1)

15.1 What amount of the workload reported in question 8.1 is Core? Provide your answer in Table 15.1 by commodity groups for the Fiscal Years requested.

Conclusion:

Table 15.1: Unique and/or Peculiar Total Core Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1C1 Transport	631264	585990	732945	543465
1C3 Light Combat	809376	893185	824203	690933
2B A/C Structures	55000	55000	55000	55000
2D Instruments	4764	4764	476XSDXEFR VG 4	4764
2E Landing Gear	407707	402126	402126	402126
2F Ordinance	22450	22450	22450	22450
2G Av Electronics	163938	163938	163938	163938
2H APUs	17930	17930	17930	17930
2I Other	22617	22617	22617	22617
2J Manufacture	75773	76042	75995	75949
4A Strategic	444532	444249	416749	416749
4B Tactical	19237	19237	19237	19237
10E, Other	85940	85940	85940	85940
12A Tactical	664247	652306	620418	652524
12B Support Equip	221431	202596	228868	241351
TOTAL	3646166	3648370	3693180	3414973

Workload and Capabilities, continued

15. Unique and/or Peculiar Workloads (Refer to Question 8.1), continued

15.2 What amount of the workload reported in question 8.1 is non-Core? Provide your answer in table 15.2 by commodity group for the Fiscal Years requested.

Conclusion:

Table 15.2: Non-Core Unique and/or Peculiar Workload

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
4B1, Tactical	34000	15793	34000	0
TOTAL	34000	15793	34000	0

Workload and Capabilities, continued

16. Scope of Work Performed

16.1 Indicate the services/functions performed at this activity that are associated with depot maintenance, but not generally classified or considered as integral to the depot maintenance functions.

Conclusion:

Service/Function: Storage (non explosive)
Description: Provide indoor, outdoor, secure and refrigerated storage for all assets of a non-explosive or hazardous nature.

Service/Function: Storage (explosive)
Description: Provide sited (explosive safety quantity distance, ESQD, in accordance with Air Force Regulation 127-100, Sited Munitions Storage Facilities) indoor, outdoor, secure and environmentally controlled storage for all Minuteman and Peacekeeper missile motors and munitions.

Service/Function: Packaging & Transportation
Description: Provide packaging and transportation services, including missile motor movement.

Service/Function: Disposal of irreparable/obsolete items
Description: Disposal services for irreparable, unnecessary and obsolete items.

Service/Function: Program Management
Description: Provides program direction, logistics, acquisition, systems engineering and depot repair support, as well as managing equipment spares, modifications and replacement to maintain weapons systems throughout the life cycle.

Service/Function: Financial Management
Description: Establishes and manages the budgetary and financial functions for depot maintenance.

Service/Function: Safety
Description: Provide guidance, direction and support for all activities, work processes and weapons system mishaps.

Service/Function: Engineering
Description: Provide day-to-day and long term engineering services to the depot through the life cycle of products and weapon systems.

Service/Function: Procurement

Description: Provide capability to procure material and components in direct support of the depot maintenance functions.

Service/Function: Environmental Management
Description: Establishes and implements environmental programs, systems, and procedures to ensure compliance with Federal, State, and local laws and regulations and to minimize environmental risk and liabilities for the depot maintenance processes.

Service/Function: Plant Management
Description: Provide mechanical, electrical, air conditioning, electronics and material handling equipment support to organizations at Hill AFB, Little Mountain and the Utah Test and Training Range (UTTR).

Service/Function: Packaging Design
Description: Develop Special Packaging Instructions (SPIs) and technical drawings/information to maintain asset serviceability during the shipment and storage cycles.

Service/Function: Explosives Container Configuration Testing
Description: Perform functional tests to certify containers for explosive shipments.

Service/Function: Calibration/Maintenance of Test Standards
Description: Provide support for the Department of Defense and private contractors using government furnished equipment in the repair and calibration of unique support equipment.

Service/Function: Tooling
Description: Provide painters and carpenters for depot support and tenant activities.

Service/Function: Software Evaluation and Improvement Services
Description: Provide products and services to assist Air Force software executives, managers and practitioners.

Service/Function: Software Configuration Control and Management
Description: Download new modified software to a magnetic tape, verify software configuration, and provide complete packages to depot maintenance and other worldwide customers.

Service/Function: Technical Training
Description: Provide technical training in approximately 165 occupations to depot maintenance and other personnel, including scientific and engineering occupations.

Service/Function: Engineering & Technology Support
Description: Is center focal point for engineering support, technology transfer, transition and insertion; provides center reliability engineering support, quality control, engineering and industrial process improvement support.

Service/Function: Science & Engineering Laboratory Services
Description: Provide cost effective analytical, scientific, and engineering services.

Service/Function: Software Engineering Services
Description: Provide the skills and services required by today's Automatic Test Equipment (ATE) and Operational Flight Program (OFP) computer systems.

Service/Function: Embedded Computer Services
Description: Build and support an infrastructure to transition technology from developers to Air Force software customer to enhance their ability to implement operational mission-critical software requirements.

Service/Function: Design and Manufacture of components
Description: Provide reverse engineering of components and systems not available from the private sector.

Service/Function: Security
Description: Maintain security integrity of the depot maintenance facilities to ensure protection of national defense assets.

Service/Function: Explosive ordnance disposal
Description: Dispose of excess and non-serviceable propellant, rocket motors, and munitions.

Service/Function: Communications - Computer, Voice, Electronic
Description: Provide voice, computer, and electronic communications for depot maintenance operations and processes within the base infrastructure and with functions and processes completed at the Utah Test and Training Range.

16.2 Describe how these services/functions are related to accomplishment of the depot maintenance mission, and the benefits of these relationships.

Conclusion:

Service/Function: Storage (Non-explosive)
Describe relationship and Benefit to Maintenance Mission: Managed by the Defense Logistics Agency (DLA) supply specialists, depot maintenance enjoys the benefits of 5,345,700 square feet of covered and 1,900,000 square feet of open storage space virtually adjacent to their facilities. Many of these facilities are fully automated with automated guided vehicles (AGVs) that travel underground, safe from inclement weather and connected to the depot maintenance

areas by pneumatic tube systems. Proper storage of assets prevents theft, deterioration and ensures valuable depot maintenance space is not decreased and assets are visible to inventory managers. The asset value varies from day-to-day. On 13 May 1994, that value was in excess of $6.5 billion dollars, not including missile motor and munitions storage.

Service/Function: Storage (Explosive)
Describe relationship and Benefit to Maintenance Mission: Storage of Minuteman and Peacekeeper missiles requires a specifically designed rail system in order to provide safe and efficient loading and unloading. This system is compatible with Minuteman and Peacekeeper transportation equipment Recent site surveys determined no other operation is equipped with this type of system. The facilities are Explosive Safety Quantity Distance (ESQD) sited (in accordance with Air Force Regulation 127-100, Sited Munitions Facility) for a storage capacity of: greater than:

- 21 million lbs NEW, class 1.1
- 75 million lbs NEW, class 1.2
- 87 million lbs NEW, class 1.3
- or physical capacity of class 1.4

603,234 Square feet of environmentally controlled explosives storage space, plus utility connections outside of eight storage igloos that allow the storage of a full-up Minuteman booster in its transportation container. These storage facilities are within the Missile Assembly, Maintenance and Storage (MAMS) area for efficient and controlled transfer of missile motors into the depot maintenance facilities. Over eight million pounds (Net Explosive Weight, NEW) of class 1.1 missile stages are stored at any given time.

Service/Function: Packaging & Transportation (Non-explosive)
Describe relationship and Benefit to Maintenance Mission: Defense Logistics Agency (DLA) provides packaging, preservation, labeling, receipt, issue, shipment, inspection and tracing services for a wide range of non-explosive weapons system commodities. The SPI (Special Packaging Instruction) and Inventory Control Assistant (SICA), developed, installed and maintained by Ogden ALC, provides paperless, on-line information/drawings concerning the technical, special handling and preservation procedures for all assets. This system provides container visibility to the packer and empowers them to select the most economical substitute when specific containers are unavailable. Adequate, yet cost effective, packaging of unserviceable assets is essential to prevent further damage prior to repair. After repair, proper packaging prevents damage during transit and deterioration during storage.

Service/Function: Packaging & Transportation (Explosive)
Describe relationship and Benefit to Maintenance Mission: On-site movement of Minuteman and Peacekeeper missile motors at Ogden ALC and missile operating locations is accomplished by depot maintenance personnel. Packaging services for munitions is accomplished by the 649th Munitions Squadron. Performance Oriented Packaging (POP) certification inspection and labeling of munitions (United Nations requirement) and satellite tracking of missile motors (as required under Strategic Arms Reduction Treaties) in transit is accomplished by Defense Logistics Agency.

Service/Function: Disposal of Hazardous/Irreparable/Obsolete items
Describe relationship and Benefit to Maintenance Mission: The Defense Reutilization and Marketing Office (DRMO) provides responsible disposal of hazardous, irreparable, unnecessary and obsolete items to assure recycling efforts are not superseded and items with residual value are not sent to local land fills. DRMO is licensed to handle large amounts of hazardous waste and its collocation with depot maintenance provides rapid authorized disposal of hazardous waste generated by the depot processes. This local service prevents the need to maintain licensed storage areas within the depot maintenance functions and reduces costs.

Service/Function: Program Management
Describe relationship and Benefit to Maintenance Mission: Due to the mission assignments at Ogden ALC, our depot utilizes two types of program management described below.
Program Management is designed to capture the benefits of cradle to grave management through Integrated Weapons Systems Management (IWSM). This provides our customers with single point of contact for any weapons system support or performance issue. While not collocated with the depot until completion of the acquisition, the IWSM program management team provides complete support at the depot location which greatly enhances customer and depot relations through reduced communication delays and life cycle costs. Descriptions of four major team responsibilities are:

• Item Managers serve as the central point of contact for major groups of end items, equipment and sub components. They determine buy and repair requirements, distribution of assets to ensure optimum worldwide mission support and coordinate user requirements with the program manager to ensure depot maintenance adjusts and completes delivery schedules based on customer needs..

• Equipment Specialists prepare, process, and provide follow-up on all technical order change requests as required by approved suggestions. They develop engineering Bills of Material and establish new workloads by identifying tooling, support equipment and material requirements. Assists in the development of logistic support plans and assists the product engineer with necessary configuration management activities.

•Logistics Management Specialists are responsible for ensuring overall support for specified weapon systems. Conducts weapon system team reviews. Analyzes logistics management data and provides recommendations concerning support of specified weapon systems. Manages, analyzes, forecasts requirements and prepares budget submissions for all programmed and unprogrammed repair requirements and modifications.

• Acquisition/modification specialists manage assigned programs to effectively establish and implement acquisition policies and procedures to ensure compliance with Air Force Materiel Command (AFMC), Air Force (AF), and Department of Defense (DoD) directives.
Silo-Based Intercontinental Ballistic Missile Program Management:

•SBICBM System Program Office (SPO) is responsible for executing the subsystem management plans for logistics management, assessment and repair operations support which they develop in concert with the system engineers. This arrangement allows seamless support of the fielded system as well as acquisitions. During the acquisition of the Minuteman and Peacekeeper weapon systems, it was decided that there would be no prime contractor to perform

the functions of system engineering, system integration, subsystem management, subcontracting, performance evaluation, interface control, modification management, post production support, or data management. Instead, the SPO assumed the role of "prime" and performs these functions organically with the assistance of a sustainment engineering/technical assistance (SE/TA) contractor, TRW. The education level of personnel provided by TRW in support of the depot maintenance function include 9 PhDs, 83 masters degrees, 124 bachelor degrees, 1 associates degree, and 13 with no college degrees. Their experience includes only 6 with less than three years, 44 with 3-10 years, 46 with 11-15 years, 44 with 16-20 years and 90 individuals with more than 20 years experience. All 230 contractors have technical responsibilities. Having the SPO function collocated with the ICBM physical infrastructure allows all functions to utilize facilities and equipment to meet recurring and special needs. Practical self-sufficiency of the ICBM SPO allows for strict cost control and ensures cost decreases go to ICBM users.

Service/Function: Financial Management
Describe relationship and Benefit to Maintenance Mission: Establishes and manages the budgetary and financial functions of depot maintenance operations to ensure effective planning for programs and controls to support the weapon systems.

Service/Function: Safety
Describe relationship and Benefit to Maintenance Mission: The Ogden ALC Safety Office provides guidance, direction and support for all facilities, activities, work processes, work areas and weapons system mishaps. Specialists review and analyze modifications and address safety issues to minimize risks to depot maintenance personnel. They monitor and maintain the Hazardous Material Information System and provide access to material safety data (Material Safety Data Sheets, MSDS).

Service/Function: Engineering
Describe relationship and Benefit to Maintenance Mission:

•Sustainment Engineering/Technical Assistance (SE/TA) contract and organic engineers provide day-to-day sustainment management for the 500 Minuteman and 50 Peacekeeper deployed Intercontinental Ballistic Missiles (ICBM); provide ground, propulsion, and guidance subsystem engineering and logistics management throughout the depot level repair, missile storage and transportation process. Approves one-time repairs to correct anomalies for which the Technical Order or repair manual do not provide authorization.

•System Engineers develop and maintain long range plans and ensure technical integration of all weapons system changes.

•Contract Engineers establish policy and procedures for contract technical support. Manages Technical Data, Configuration Control and Hardness Surveillance programs.

•Product Engineers provide general engineering and reliability functions, and specific landing gear functions for the Landing Gear Division. Prepares work in support of contractual engineering projects. Develops source qualification data.

•Engineering design services for industrial equipment installation and service contract management for the depot maintenance function.

Service/Function: Procurement
Describe relationship and Benefit to Maintenance Mission: Provides base and central procurement in direct support of the depot maintenance functions. Collocation provides rapid communication, visual verification and reduced processing for procurement of material and components in critical functional areas.

Service/Function: Environmental Management
Describe relationship and Benefit to Maintenance Mission: Establishes and implements environmental programs, systems, and procedures to ensure compliance with Federal, State, and local laws and regulations and to minimize environmental risk and liabilities for the depot maintenance processes. Provides training and monitors the use of hazardous chemicals throughout depot maintenance.

Service/Function: Plant Management
Describe relationship and Benefit to Maintenance Mission: Performs various types of maintenance on unique Air Force equipment and operations; familiar with the unique characteristics of industrial plant equipment. Skills consist of maintenance mechanics, air conditioning, electronics, production machinery mechanics, etc. We have the ability to respond immediately to the customers' ever changing requirements; to manufacture any repair parts required that are no longer available thus enabling repair of equipment and bringing it back into operation without delay.

Service/Function: Packaging Design
Describe relationship and Benefit to Maintenance Mission: The 649th ABG develops Special Packaging Instructions (SPIs) and technical drawings/information for all reparable assets to maintain asset serviceability during the shipment and storage cycles. These specialists are immediately available to resolve packaging problems for all types of assets, including explosives and hazardous, to ensure shipments meet all transportation requirements to avoid unnecessary shipment delays. They are the point of contact for any agency requesting current drawings, Stock Control and Distribution (SC & D) packaging and hazardous data and Department of Transportation (DOT) information and waivers.

Service/Function: Explosives Container Configuration Testing
Describe relationship and Benefit to Maintenance Mission: The 649th ABG performs all functional tests to certify containers for explosive shipments. They resolve problems with explosive shipments to avoid unnecessary costs and delays. Certified Performance Oriented Packaging (POP) tested containers are a United Nations requirement for all explosives shipments.

Service/Function: Calibration/Maintenance of Test Standards
Describe relationship and Benefit to Maintenance Mission: Test equipment and test standards are maintained and calibrated in our 59,420 square foot type IIA certified laboratory. This ensures tracability to the NIST Standards for test measurement equipment and performance accuracy during mission operations.

Service/Function: Tooling
Describe relationship and Benefit to Maintenance Mission: Patternmakers design and manufacture form blocks and patterns used to fabricate parts for aircraft and associated equipment. They fabricate master patterns for tooling used in bond forming, drop hammer dies, molds and fixtures. Patternmakers design and manufacture parts that are unavailable. Tooling is accomplished on base working directly with the customer.

Service/Function: Software Evaluation and Improvement Services
Describe relationship and Benefit to Maintenance Mission: The Software Technology Support Center (STSC) assists Air Force software organizations to identify, evaluate, and adopt technologies that will improve the quality of their software products, their efficiency in producing them, and their ability to accurately predict the cost and schedule of their delivery. Currently the STSC has a synergistic relationship with the Software Support Division (TIS), a software development organization. The STSC uses organizations within TIS to test new and emerging software technologies. If the STSC were to be relocated, this relationship would cease and communication timeliness would be affected; possible degrading of customer support could occur, valuable technical knowledge and expertise would be gone which has continually resulted in saving time through process and product improvements. The Software Technology Support Center (STSC) has a common venture with Utah State University to manage the DoD Annual Software Technology Conference (STC). The STSC also has a contract with a non profit organization, Utah Research Institute (URI), established by the State of Utah to allow industry access to the four major universities along the Wasatch Front. The result is a direct benefit to the Air Force software support community.

Service/Function: Software Configuration Control and Management
Describe relationship and Benefit to Maintenance Mission: Provides services to download new modified software to a magnetic tape to ensure configuration control, and assures complete packages of the software are shipped to appropriate customers worldwide.

Service/Function: Technical Training
Description: Provides depot maintenance personnel with the skills necessary to effectively accomplish job performance requirements. Instruction ranges from entry to advanced level courses and includes electronics, aircraft systems, missile systems, sheet metal, special equipment and numerous other courses necessary to ensure personnel are technically proficient. Effective job performance results in reduced rework, better product quality, and reduced costs.

Service/Function: Engineering & Technology
Describe relationship and Benefit to Maintenance Mission: Each OO-ALC Directorate has a center focal point for engineering support, technology transfer, transition and insertion; provides center reliability engineering support, quality control, engineering and industrial process improvement support. Efforts contribute either directly or indirectly to the improvements of costs, throughput, and schedule to support customer requirements as well as modifications and upgrades for reliability, maintainability, and performance enhancements.

Service/Function: Science & Engineering Laboratory Services
Describe relationship and Benefit to Maintenance Mission: Science and Engineering Laboratory services support the depot industrial maintenance functions with qualified engineers, computer scientists, physical scientists, metallurgist, and a research analyst with an average of 9.5 years of government experience each. These laboratory services verify that the maintenance processes are operating within specified parameters and it is an Environmental Protection Agency (EPA) certified facility. Laboratory services provide analysis of depot maintenance end products to ensure that these products meet design specifications. Laboratory services provide analysis of environmental samples and depot maintenance waste products to permit appropriate disposition of these wastes as mandated by state and federal laws and regulations. The laboratory also provides the following quality verification and first article inspection of components at Hill AFB and other agencies. This includes the following testing and analysis support, i.e. electronic failure analysis, electrical functional testing, environment screening, electro-static discharge, first article inspection, conformance verification, all axis dimensional verification, and software independent verification and validation. The materials laboratory tests landing gear, wheels and other aircraft parts for problems such as hydrogen embrittlement, and corrosion, tests for tensile, fatigue, and NDI to ensure quality safe and end products.

Service/Function: Software Engineering Services
Describe relationship and Benefit to Maintenance Mission: We have approximately 375 engineering and other professional series collocated in our Software Engineering Division (TIS) providing services in support of embedded mission critical computer resources software. Of these, 5 have doctorate degrees, 54 have masters degrees, over 298 have bachelors degrees and together have an average of 10 years experience in military software development. We are collocated with both our customers and users who provide immediate and direct feedback to our software programs. Software support is provided in the following major areas:

- Software maintenance, development and technology insertion for Automatic Test Equipment (ATE) in support of Intercontinental Ballistic Missile (ICBM) Launch control facility and aircraft and related weapon systems within.
- Central focal point for technical expertise and management support of computer system support software tools, methods, and environments.
- Software support, development and maintenance for Operational Flight Program (OFP) software residing in computers on-board fighter aircraft.
- Engineering Release Testing (ERT) of newly developed and modified OFPs and Mission Support Software (MSS) in a simulated environment prior to release to flight testing/deployment.

• Design, construction, and maintenance of test stand hardware and software used for OFP software simulation testing.

Service/Function: Embedded Computer services
Describe relationship and Benefit to Maintenance Mission: The mission of embedded computer services is to provide for engineering services, hardware procurement, research and development for study, analysis, requirements definition, design, development, installation, testing, and selective prototyping, and limited off the shelf procurement leading to application of technologies and engineering techniques to support systems.

Service/Function: Design and Manufacture of Components
Describe relationship and Benefit to Maintenance Mission: Hardware technology efforts significantly increase reliability, extend service life, and reduce maintenance and support costs by using state-of-the-art equipment and technical expertise, to design solutions for problems facing our depot maintenance community. They provide reverse engineering of components and systems not available from the private sector, i.e., printed circuit board services, auto-pilot computers. Projects typically include new design, reverse engineering, printed circuit board services, mechanical enclosures, assembly, test, repair, evaluation, environmental stress screening, qualification testing, data package development, documentation, configuration control, statistical process control, warranty work, repair procedure development, etc.

Service/Function: Security
Describe relationship and Benefit to Maintenance Mission: Explosives and weapons storage areas require strict surveillance to prevent incident. All vaults, and many buildings, are equipped with monitoring devices to guard against intrusion to protect national defense assets.

Service/Function: Explosive Ordnance Disposal
Describe relationship and Benefit to Maintenance Mission: The 649th CES Explosive Ordnance Disposal Unit is responsible for disposal of excess and non-serviceable propellant, rocket motors, and munitions at the Thermal Treatment Unit at the Utah Test and Training Range. This includes the disposal of such quantities of solid rocket propellant as are contained in the Minuteman and Peacekeeper missiles.

Service/Function: Communications - Computer, Voice, Electronic
Describe relationship and Benefit to Maintenance Mission: The 1881st Communications Squadron and the Defense Information Systems Agency (DISA) are responsible for all voice, computer, and electronic communications throughout the depot maintenance facilities. All communication systems must remain on-line, to include communication links to the various missile maintenance sites (Little Mountain, OASIS at Utah Test and Training Range, operational Wings). The Information Center provides unparalleled support to merge the data in different systems to provide more meaningful and accurate products for program managers, item managers, facilities engineers and other specialists in support of the depot maintenance mission.

Workload and Capabilities, continued

17. Interface with Customers

17.1 Indicate any special functions that the depot maintenance function performs that require close interface with customers, such as on-site workloads (e.g. technical assistance, crash/battle damage repairs, modification/upgrade installations).

Conclusion: Our depot maintenance personnel consider open lines of communications with our customers as essential in meeting their day-to-day needs. As a result, "special functions" as defined by many, are considered normal business. Some examples of customer interface are provided in the following paragraphs.

Service/Function: Rivet Minuteman Integrated Life Extension (MILE) Program
Describe Required Interface/Relationship/Benefit: The Rivet MILE program provides maintenance assistance to four Minuteman missile wings and Vandenburg, AFB. This assistance includes depot maintenance, system engineering and technical assistance for programmed depot maintenance and modifications performed by Ogden ALC organic resources. The Vandenberg AFB operating location is provided with engineering support, depot maintenance and refurbishment of facilities and equipment for Minuteman and Peacekeeper launches (current program is three launches each per year). Close interface with the operating locations ensures problems are rapidly resolved and required maintenance tasks are completed as scheduled.

Service/Function: SELECT
Describe Required Interface/Relationship/Benefit: The System Engineering Level Evaluation and Correction Team (SELECT) is a depot function consisting of a team of engineers with extensive experience and system knowledge on the Minuteman and Peacekeeper weapon systems. Weapon system field problem response requires almost daily interface with Wing maintenance personnel. SELECT support for weapon system modification and upgrades requires close interface with the developing agency and contractors to ensure the modification/upgrade will interface properly with existing systems. Close interface with end users at the Wings must be maintained to ensure problems with the installed modification are quickly resolved.

Service/Function: Emergency Response
Describe Required Interface/Relationship/Benefit: Emergency response teams provide trained personnel and equipment to the Wings for emergency recovery of rocket motors and missiles, emergency detanking of liquid propellant, transportation and handling equipment problems, hydrazine and nitrogen tetroxide recovery and on-site support for special projects such as the Strategic Target System and the Re-entry System Launch Program.

Service/Function: ICBM Alert Center
Describe Required Interface/Relationship/Benefit: The Silo-Based Intercontinental Ballistic Missile (SBICBM) Alert Center provides 24 hour/seven day coverage for the Silo-Based ICBM SPO. One of the primary functions is the ability to quickly respond to any ICBM related emergency situation. The Missile Potential Hazardous Network (MPHN) is linked to each missile wing and HQ SPACECOM so any anomaly or emergency can be quickly addressed/resolved. The Alert Center tracks each missile location and movement both on and off Hill Air Force Base with subsequent reporting to HQ AFMC. In the event of an emergency while in-transit, the Alert Center is the point of contact. All Strategic Arms Reduction Treaty (START) reporting is accomplished at the Alert Center

Service/Function: Propellant Disposal
Describe Required Interface/Relationship/Benefit: The Explosive Ordnance Disposal Unit is responsible for setting the explosive charges and detonating the propellant at the Thermal Treatment Unit. The depot maintenance function provides assistance during transportation of the propellant to the TTU and provides equipment necessary for proper handling.

Service/Function: Modifications
Describe Required Interface/Relationship/Benefit: During the past year the Landing Gear Division has supported the following modifications through team deployment.
Provide field team support to B-1 units on Time Compliance Technical Order Number 1B-1B1048 nose landing gear modification. Bulkhead repair of F-16 aircraft. Bulkhead replacements and modifications of F-16 aircraft. Provided line support for aircraft programmed depot maintenance of C-130, upgrades and modifications to F-16 aircraft to include tooling design and manufacture, parts manufacture, modification of aircraft items through Time Compliance Technical Order compliance. Built overhaul platforms for the F-16 and F/A-18 aircraft.

Service/Function: Technical Assistance
Describe Required Interface/Relationship/Benefit: Tooling and fixtures have been designed and manufactured by the Landing Gear Division in support of 479 bulkhead milling for F-16 aircraft. Support provided to General Dynamics, US Navy, and several Foreign Military Sales countries. Work stands have been manufactured to support F-16, F/A-18, and C-130 programmed depot maintenance repair requirements. Technical assistance has been provided by the investment casting operation to the Naval Undersea Warfare Center and Applied Research Laboratory in the redesign of a torpedo rotor and stador.

Service/Function: Crash Damage
Describe Required Interface/Relationship/Benefit: The 649th Combat Logistics Support Squadron (CLSS) works directly with the aircraft depot maintenance team in the rebuilding of crash damaged aircraft. Collocation with the depot provides access to extensive capability not normally available at a smaller installation, i.e. composite surface manufacture, manufacturing machine shop, investment casting. This access enhances the ability of the CLSS to manufacture components which normally require extended delivery times or that are not available through supply channels. In addition to the CLSS, the depot deploys field teams to repair customers crashed damaged aircraft.

During the past year, a depot field team deployed for 60 days in Turkey assisting the Foreign Military Sales customers in bulkhead repair on F-16 crash damaged aircraft.

Service/Function: Physiological Trainer Maintenance
Describe Required Interface/Relationship/Benefit: The Physiological Trainer Maintenance organization repairs, prototypes, installs, kit proofs and modify hypobaric (altitude), hyperbaric (pressure), decompression chambers, and ejection seat trainers on-site at the customer facilities. This workload was contracted out in September 1987. The contractor defaulted and the repair function returned to Ogden ALC in October 1988. Benefits are technical experience and assistance are assured at highest levels for the Army, Air Force, Federal Aviation Administration, National Aeronautical Space Administration, Foreign Military Sales countries and some universities. This provides a Department of Defense consolidated source of repair.

Service/Function: Ogden Air Logistics Center, Technical Repair Center and Photonics Division Depot Maintenance Interservice Support Agreement with Naval Air System Command
Describe Required Interface/Relationship/Benefit: Photonics requirements with Naval Air Systems Command for overhaul and repair of reconnaissance cameras, photo processing machines and image interpretation equipment at sea are supported by this organization. On-site support is provided for Navy intelligence and interpretation equipment. Direct support for aircraft carriers, amphibious assault ships, amphibious command ships and shore stations. This provides a Department of Defense consolidated source of repair.

Service/Function: Hydrazine training
Describe Required Interface/Relationship/Benefit: We conduct specialized training required for hydrazine related components and handling. Our highly skilled team receives requests for training from other organizations on base, Air National Guard units, Fighter Wings, and other governments regularly. We have provided training to Pakistan, Greece, Israel, Egypt, Taiwan. We have also provided training to the Aerospace Maintenance And Regeneration Center.

Service/Function: Hydrazine fuel services
Describe Required Interface/Relationship/Benefit: We have provided fuel services and overhaul support of components to tenant organizations (388 Fighter Wing and the 419 Fighter Wing). We have supported Eielson Air Force Base in Alaska and have also received requests for assistance in setting up H70 hydrazine servicing areas at other bases.

Service/Function: Emergency Repairs
Describe Required Interface/Relationship/Benefit: We can correct depot level repairs for safety on Depot Repairs of flight items on aircraft or other systems at depot for modifications or other repairs.

Service/Function: Engineering Support for all repairs, modifications,
Describe Required Interface/Relationship/Benefit: Support manufacturing between depot maintenance and back shops.

Service/Function: Depot Interface
Describe Required Interface/Relationship/Benefit: Face to face negotiations with Inventory with Management Management Specialists, Production Management Specialists, and maintenance planning and scheduling.

Service/Function: Paint Requirements
Describe Required Interface/Relationship/Benefit: OO-ALC Depot works closely with customers to meet their unique paint requirements. We provide special stencil and paint markings as required by individual customers. Our depot also works closely with customers to provide special paint reflectivity schemes. Providing these services requires close communication with the using activity operations organizations. Each participant in this arrangement gains an understanding of each others' needs, which in turn facilitates resolution of more complex problems.

Service/Function: Software Support
Describe Required Interface/Relationship/Benefit: The Technology and Industrial Support Directorate (TI) provides software engineering services for various operational flight programs (OFPs) including F-16 A/B Expanded Fire Control Computer, AN/APG-66 Radar, Stores Management System, Heads Up Display, Data Entry/Cockpit Instrumentation System and Multi-Function Display in support of system program managers within the U.S. Air Force and Foreign Air Forces.

We work closely with Oklahoma ALC to provide software support to the Advanced Cruise Missile Systems, B1-B and KC-135 aircraft systems; F-16 A/B/C/D support to each of the Air Logistics Centers (ALCs) as well as to ASD-AFMC at Wright Patterson AFB; Tactical missile support to Eglin AFB as well as the Commodities Directorate here at Ogden ALC; and Minuteman and Peacekeeper software support to the Intercontinental Ballistic Missile (ICBM) Directorate located at Ogden ALC.

TI also provides software engineering and development support to the F4, F/RF-4, and C-130 weapon systems to all on-base directorates as well as to other ALCs. Support is provided to the Navy on Navy Airborne Reconnaissance Systems and Photonic Circuit Cards.
Because of our collocated software function, engineers and technicians are able to share the information obtained working for our varied customers; processes are more streamlined and our overall customer satisfaction is high.

Service/Function: Software Technology Support Center (STSC).
Describe Required Interface/Relationship/Benefit: The STSC is the central point for technical expertise and management of computer system support software tools, methods and environments. This involves extensive customer contact to determine customer requirements and determine appropriate software/hardware solutions to meet this requirement. Benefits

include software/hardware standardization throughout the Air Force as well as other government agencies.

Our customers include:

Air Combat Command (ACC)	Strategic Command (STRATCOM)
Air Mobility Command (AMC)	Space Command (SPACECOM)
Air Force Global Weather Central	Air Force Material Command (AFMC)

Service/Function: Plant Management
Describe Required Interface/Relationship/Benefit: TI provides maintenance and installation electrical, mechanical, and facility support to such customers as the Ogden ALC Aircraft Directorate (LA), Commodities Directorate (LI), ICBM Directorate (LM) and to Little Mountain, the Utah Test and Training Range (UTTR), and Defense Logistics Agency-Hill Facility (DLA). In addition, we provide maintenance and repair of material handling equipment, industrial and carpentry support, and contract management functions for our entire industrial complex.

Service/Function: Tooling and Patternmaking
Describe Required Interface/Relationship/Benefit: Provide patternmaking; drop hammers, form blocks, bond forms and fiberglass manufacture and repair. Provide tooling, fiber trim and drill fixtures for crash damage aircraft and depot maintenance. On base accessibility and low cost in a timely manner. Tooling can be accomplished working directly with the customer through close working relationship and first hand communication to assure customer requirements are met.

Service/Function: Science and Engineering Laboratory
Describe Required Interface/Relationship/Benefit: Laboratory services are an essential part of the depot maintenance function. Many of the depot's processes require direct and parallel laboratory services to support production of depot maintenance end products which meet the required quality and design thereby reducing waste and rework. The laboratory provides thousands of tests on a monthly basis to support these industrial processes. They also provide analysis of environmental samples and hazardous wastes generated by these industrial processes. These environmental services require a very close relationship and interface with customers to ensure that this center is in compliance with state and federal regulations and laws, thereby avoiding fines and penalties and promoting a healthy and safe working environment. Customers include the Ogden ALC directorates, all the Hill Air Force Base organizations including the Environmental Management Directorate, tenants, Thiokol Chemical Corporation, University of Utah and the Defense Depot Ogden.

Service/Function: Technical Training
Describe Required Interface/Relationship/Benefits: Technical training in support of depot maintenance activities requires close interface with depot maintenance organizations. Training needs are constantly changing; requirements are gathered quarterly and updated monthly through the quarter; classes are established based on customer identified requirements.

Service/Function: Non-Destructive Inspection (NDI)

Describe Required Interface/Relationship/Benefits: Ogden ALC is a leader in non-destructive inspections for explosive and hazardous items. We can do your testing using high and low energy x-ray and computed tomography. We also provide a full range of NDI techniques including eddy current, magnetic particle, fluorescent penetrant, and ultra-sonic inspection to ensure weapon systems and equipment function reliably, thus saving valuable manhours and capital assets.

Service/Function: Precision Measurement Equipment Laboratory (PMEL)
Describe Required Interface/Relationship/Benefit: PMEL performs on-site maintenance, calibration and certification on automatic test equipment (ATE), complex test stands and console checkouts for all assigned depot maintenance processes.

Service/Function: Welding Certification
Describe Required Interface/Relationship/Benefit: Responsible to provide a certification program in accordance with 00-25-252 to all DOD requesting agencies for Level I and II aircraft and missile welds. Test welds are shipped from remote sites for evaluation and analysis and results forwarded to the requester.

Service/Function: Battery Services
Describe Required Interface/Relationship/Benefit: TI provides missile, aircraft and automotive service in the way of charging, testing and condemnation of all types of batteries. Support is provided to all Hill AFB organizations and tenants, including Lakeside, Little Mountain and the Utah Test and Training Range (UTTR).

MEASURES OF MERIT

Costs [1]

18. Real Property Maintenance (RPM)

18.1 What is your activity's backlog of real property maintenance for facilities performing depot maintenance as of 30 September 1993 (express in $K)?

Conclusion ($K):

RPM Backlog = $10,316

18.2 What were your activity's annual RPM expenses (in $K) for Fiscal Years 1990-1993? Provide your answers in Table 18.2.

Conclusion:

Table 18.2: Real Property Maintenance Expenses

	FY 1990	FY 1991	FY 1992	FY 1993
RPM Expenses ($K)	4,158	3,715	5,167	4,560

[1]There are inherent differences in organizational structure and accounting systems across the Services. Consequently, cost accumulations vary considerably. This severely limits the comparability of the cost per direct labor hour ($/DLH) rates across Service lines.

19. Annual Operating Costs (Excludes Materials used in Depot Maintenance Workloads)

19.1 What were the total depot maintenance actual annual operating costs for your activity (AOC/$K), excluding materials, used in depot maintenance workloads for Fiscal Years 1990-1993? What was the cost per direct labor hour ($DLH) for actual executed hours reported in the DBOF? Provide your answers in Table 19.1.a.

Conclusion:

Table 19.1a: Annual Operating Costs (DPAH)

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($K)	318,787	300,333	319,440	305,893
$ / DLH (DPAH)	41.42	41.48	47.56	48.58

Table 19.1b: Annual Operating Costs (DPSH)

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($K)	318,787	300,333	319,440	305,893
$ / DLH (DPSH)	45.39	45.89	52.70	53.99

20. Environmental Compliance

20.1 What were your total depot maintenance actual and programmed environmental compliance costs (expressed in $K) for Fiscal Years 1990-1997? Provide your answers in Table

Conclusion: **Table 20.1: Environmental Compliance Costs**

COST($K)	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997
Actual	928	898	879	1104	1837	1375	------	------
Programmed	928	898	879	1104	1837	1375	2048	2591

20.2 If spending is accomplished as programmed above, what will be the remaining costs (backlog at the end of Fiscal Year 1997 expressed in $K) to bring existing facilities/equipment into environmental compliance?

Conclusion ($K):

Remaining Costs = $0

Cost, Continued

21. Local Wage Rate

21.1 What were your Department of Labor local wage rates for a WG-11, step 3 for Fiscal Years 1991 through 1994?

Conclusion:

Table 21.1 Department of Labor Local Wage Rates

WAGE RATE	FY 1991	FY 1992	FY 1993	FY 1994
WG-11 STEP 3	$13.76	$14.32	$14.92	$15.47

22. Programmed Capital Investments

22.1 How much is programmed for new mission equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.
22.2 How much is programmed for replacement equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.

Conclusion:

Table 22.1: Programmed Capital Investments

TYPE	FY 1996	FY 1997	FY 1998	FY 1999
NEW MISSION ($K)	235	45	235	235
REPLACEMENT($K)	7,231	7,799	7,720	7,053

Document Separator

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP -- OC-ALC DEPOT MAINTENANCE

CAPACITY

1. Capacity Utilization

1.1 Calculate the capacity index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed in direct labor hours (DLHs) in Table 1.1.a by commodity groups for the Fiscal Years requested.

Table 1.1.a: **Capacity Index**

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES					
CARGO, TANKER, BOMBER	2,208,054	2,201,755	2,243,945	2,279,080	2,279,080
COMMAND AND CONTROL	258,501	265,911	299,112	288,779	288,779
TOTAL	2,466,555	2,467,666	2,543,057	2,567,859	2,567,859
AIRCRAFT COMPONENTS					
AIRCRAFT STRUCTURES	381,129	430,487	434,208	403,608	403,608
HYDRAULIC/PNEUMATIC	269,464	278,721	278,739	277,731	277,731
INSTRUMENTS	234,758	237,516	230,217	227,444	227,444
AVIATION ORDNANCE	1,124	1,184	1,221	1,171	1,171
AVIONICS/ELECTRONICS	156,857	172,322	189,470	218,295	218,295
OTHER	568,572	583,800	578,151	594,423	594,423
MANUFACTURING AND FABRICATION	253,626	157,839	162,945	162,313	162,313
TOTAL	1,865,530	1,861,869	1,874,951	1,884,985	1,884,985

Table 1.1.a: **Capacity Index** (Cont'd)

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)					
AIRCRAFT TOTAL	2,650,688	2,558,714	2,511,462	2,496,512	2,496,512
BLADES AND VANES	154,958	154,959	154,962	154,957	154,957
TOTAL	2,805,646	2,713,673	2,666,424	2,651,469	2,651,469
SOFTWARE					
TACTICAL SYSTEMS	266,684	247,633	263,172	238,070	238,070
SUPPORT EQUIPMENT	426,914	445,937	430,386	455,476	455,476
TOTAL	693,598	693,570	693,558	693,546	693,546
SPECIAL INTEREST					
BEARINGS REFURBISH	14,323	12,260	9,513	9,530	9,530
TEST MEASUREMENT & DIAGNOSTIC	3,519	3,502	3,438	3,474	3,474
TOTAL	17,842	15,762	12,951	13,004	13,004
TOTAL	7,849,171	7,752,540	7,790,941	7,810,863	7,810,863

1.2 Calculate the utilization index for the commodity groups applicable to depot maintenance work at your activity. Provide your answers expressed as a percentage (%) in Table 1.2.a by commodity groups for the Fiscal Years requested.

Table 1.2.a: **Utilization Index**

COMMODITY GROUP	INDEX (%)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES					
CARGO, TANKER, BOMBER	110	100	93	95	95
COMMAND AND CONTROL	132	134	195	198	198
TOTAL	112	104	105	107	107
AIRCRAFT COMPONENTS					
AIRCRAFT STRUCTURES	104	97	84	83	83
HYDRAULIC/PNEUMATIC	70	67	65	65	65
INSTRUMENTS	122	122	117	116	116
AVIATION ORDNANCE	31	30	29	30	30
AVIONICS ELECTRONICS	30	36	46	64	64
OTHER	38	36	35	37	37
MANUFACTURING AND FABRICATION	89	60	59	60	60
TOTAL	73	68	64	65	65

Table 1.2.a: **Utilization Index** (Cont'd)

COMMODITY GROUP	INDEX (%)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)					
AIRCRAFT TOTAL	88	94	93	94	94
BLADES AND VANES	42	35	39	49	49
TOTAL	86	91	90	91	91
SOFTWARE					
TACTICAL SYSTEMS	128	136	135	153	153
SUPPORT EQUIPMENT	91	92	90	74	74
TOTAL	105	108	107	101	101
SPECIAL INTEREST					
BEARINGS REFURBISH	84	92	127	160	160
TEST MEASUREMENT & DIAGNOSTIC	60	60	61	61	61
TOTAL	79	85	109	133	133
TOTAL	93	91	90	91	91

1.3 Assuming (a) the current projected total workload remains as assigned; (b) that sufficient production demand is available to justify maximum hiring, with no significant investment in capital equipment; and (c) no major Military Construction additional to that already approved and funded: what is the maximum extent to which operations, by commodity group, could be expanded for depot maintenance work at your activity, based on the current and future planned workload mixes? Please provide your response in the absolute maximum number of direct labor hours (DLHs).

Table 1.3.a: **Maximum Potential Capacity**

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES					
CARGO, TANKER, BOMBER	2,890,416	2,838,867	2,571,928	2,609,186	2,609,186
COMMAND AND CONTROL	407,138	458,687	725,626	688,368	688,368
TOTAL	3,297,554	3,297,554	3,297,554	3,297,554	3,297,554
AIRCRAFT COMPONENTS					
AIRCRAFT STRUCTURES	434,208	434,208	434,208	434,208	434,208
HYDRAULIC/PNEUMATIC	884,751	884,751	884,751	884,751	884,751
INSTRUMENTS	712,396	712,396	712,396	712,396	712,396
AVIATION ORDNANCE	1,467	1,467	1,467	1,467	1,467
AVIONICS/ELECTRONICS	218,295	218,295	218,295	218,295	218,295
OTHER	816,914	816,914	816,914	816,914	816,914
MAUFACTURING AND FABRICATION	294,499	294,499	294.499	294,499	294,499
TOTAL	3,362,530	3,362,530	3,362,530	3,362.530	3,362,530

Table 1.3.a: **Capacity Index** (Cont'd)

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	**FY 1996**	**FY 1997**	**FY 1998**	**FY 1999**
ENGINES (GAS TURB)					
AIRCRAFT TOTAL	4,912,111	4,912,111	4,912,111	4,912,111	4,912,111
BLADES AND VANES	529,321	529,321	529,321	529,321	529,321
TOTAL	5,441,432	5,441,432	5,441,432	5,441,432	5,441,432
SOFTWARE					
TACTICAL SYSTEMS	268,792	249,769	265,320	240,230	240,230
SUPPORT EQUIPMENT	426,914	445,937	430,386	455,476	455,476
TOTAL	695,706	695,706	695,706	695,706	695,706
SPECIAL INTEREST					
BEARINGS REFURBISH	62,412	62,412	62,412	62,412	62,412
TEST MEASUREMENT & DIAGNOSTIC	3,519	3,519	3,519	3,519	3,519
TOTAL	65,931	65,931	65,931	65,931	65,931
TOTAL	12,863,153	12,863,153	12,863,153	12,863,153	12,863,153

CAPACITY

2. Plant Replacement Value

2.1 What is the estimated Plant Replacement Value (PRV) as of the end of each Fiscal Year of your depot maintenance activity expressed in thousands of dollars ($K) as a function of the facilities and equipment? Provide your answer in Table 2.1.

Table 2.1: **Expenditures and Equipment Values**

PRV	$ K				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Facilities	1,343,223	1,421,130	1,560,173	1,750,514	2,023,595
Equipments	929,916	983,851	1,072,398	1,203,230	1,390,934
TOTAL	2,273,139	2,404,981	2,632,571	2,953,744	3,414,529

CAPACITY

3. Programmed Workload

3.1 Given the current configuration and operation of your activity, provide the programmed depot level workload by commodity group in Tables 3.1.a and 3.1.b. Express your answer in both dollars ($K) and direct labor hours (DLH) for the Fiscal Years requested.

Table 3.1.a: **Programmed Workload**

COMMODITY GROUP	$K				
	FY 1995	**FY 1996**	**FY 1997**	**FY 1998**	**FY 1999**
AIRCRAFT					
CARGO, TANKER, BOMBER	216,628	202,515	195,994	208,889	213,586
COMMAND AND CONTROL	32,041	33,091	56,411	56,724	58,000
TOTAL	248,669	235,606	252,405	265,613	271,586
AIRCRAFT COMPONENTS					
AIRCRAFT STRUCTURES	45,173	40,925	36,302	36,875	39,527
HYDRAULIC/PNEUMATIC	20,702	17,998	17,704	19,388	20,644
INSTRUMENTS	33,595	28,699	27,025	29,823	32,114
AVIATION ORDNANCE	41	35	35	40	43
AVIONICS/ELECTRONICS	5,159	5,815	8,079	13,284	13,789
OTHER	21,933	19,419	18,915	22,081	23,377
MAUFACTURING AND FABRICATION	18,491	8,013	8,185	8,548	8,739
TOTAL	145,094	120,904	116,245	130,039	138,233

Table 3.1.a Programmed Workload (Cont'd)

COMMODITY GROUP	$K				
	FY 1995	**FY 1996**	**FY 1997**	**FY 1998**	**FY 1999**
ENGINES (GAS TURB)					
AIRCRAFT TOTAL	462,062	470,280	523,649	516,975	531,436
BLADES AND VANES	8,427	5,521	6,267	8,847	9,482
TOTAL	470,489	475,801	529,916	525,822	540,918
SOFTWARE					
TACTICAL SYSTEMS	21,151	21,198	22,907	23,979	24,627
SUPPORT EQUIPMENT	24,167	25,969	25,072	22,320	22,923
TOTAL	45,318	47,167	47,979	46,299	47,550
SPECIAL INTEREST					
BEARINGS REFURBISH	1,274	1,069	1,163	1,627	1,732
TEST MEASUREMENTS & DIAGNOSTIC	178	182	186	190	195
TOTAL	1,452	1,251	1,349	1,817	1,927
TOTAL	911,022	880,729	947,894	969,590	1,000,214

Table 3.1.b: **Programmed Workload**

COMMODITY GROUP	DLHs				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT					
CARGO, TANKER, BOMBER	2,431,238	2,210,869	2,081,670	2,175,546	2,175,546
COMMAND AND CONTROL	340,529	355,168	583,590	570,381	570,381
TOTAL	2,771,767	2,566,037	2,665,260	2,745,927	2,745,927
AIRCRAFT COMPONENTS					
AIRCRAFT STRUCTURES	395,694	417,975	365,671	333,754	333,754
HYDRAULIC/PNEUMATIC	189,854	187,870	181,954	181,160	181,160
INSTRUMENTS	286,538	289,790	268,871	263,920	263,920
AVIATION ORDNANCE	352	350	350	350	350
AVIONICS/ELECTRONICS	47,832	62,349	86,874	138,695	138,695
OTHER	214,513	212,517	204,298	217,372	217,372
MANUFACTURING AND FABRICATION	224,777	95,342	95,353	96,850	96,850
TOTAL	1,359,560	1,266,193	1,203,371	1,232,101	1,232,101

Table 3.1.b **Programmed Workload** (Cont'd)

COMMODITY GROUP	DLHs				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)					
AIRCRAFT TOTAL	2,335,802	2,410,080	2,347,113	2,347,183	2,347,183
BLADES AND VANES	65,061	54,482	60,296	76,386	76,386
TOTAL	2,400,863	2,464,562	2,407,409	2,423,569	2,423,569
SOFTWARE					
TACTICAL SYSTEMS	341,211	336,116	355,684	364,366	364,366
SUPPORT EQUIPMENT	389,862	411,754	389,307	339,151	339,151
TOTAL	731,073	747,870	744,991	703,517	703,517
SPECIAL INTEREST					
BEARINGS REFURBISH	11,981	11,316	12,066	15,202	15,202
TEST MEASUREMENTS & DIAGNOSTIC	2,103	2,105	2,105	2,105	2,105
TOTAL	14,084	13,421	14,171	17,307	17,307
TOTAL	7,277,347	7,058,083	7,035,202	7,122,421	7,122,421

4. Service Centers of Excellence

4.1 If your activity has been designated as a Service Center of Excellence for any of the commodity groups, please identify them below.

a. OC-ALC is the AFMC Center of Excellence for depot level repair of bomber, tanker, and surveillance aircraft. Aircraft repair responsibility includes: B-1B, B-2, B-52, -135, and E-3.

b. OC-ALC is also the AFMC Center of Excellence for aircraft/missile engines. These include the J57, TF30, TF33, F101, F108, F110 and F118 aircraft engines, and the F107 and F112 missile engines.

c. OC-ALC is AFMC Center of Excellence for the following items:

1. B-1B, B-2, B-52, -135, and E-3 Aircraft Related Exchangeables
   a. Radomes
   b. Cowls/Fairing
   c. Structural Components
2. J57, TF30, TF33, F101, F107, F108, F110, F112, and F118 Engine Related Exchangeables
   a. Fuel Accessories
   b. Control Valves
   c. Filters
   d. Starters
   e. Turbines
   f. Compressors
   g. Blades and Vanes
3. Engine Instruments, and Automatic Flight Controls
   a. Including Altimeter and Altitude Indicators, etc
4. Oxygen and other Gas Generating Equipment
   a. Include Oxygen Regulators and Lox converters
5. Constant Speed Drives (CSD)/Integrated Drive Generators, Air Driven Accessories, and Air Valve Systems
6. Software Process Maturity Level Two
   a. Software Engineering Institute Certified
      Certification process is standard measurement for United States software organizations
      OC-ALC is first organization to be Level Two
   b. Avionic Automatic Test Equipment (ATE)
   c. Industrial Plant Equipment Software (IPE)
7. Technology Area Program Management (TAPM) functions
   a. Mechanical systems
   b. Nuclear hardness and survivability

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

MEASURES OF MERIT

Geographic

1. Location

1.1 Specify any special strategic importance or military value consideration of your activity accruing from its geographical location.

Activity Location

OC-ALC Tinker AFB OK

Description of Strategic Importance/Military Value

OC-ALC is a vital national asset due in part to its strategic location.

- OC-ALC is located in central Oklahoma; 200 miles south of the geographic center of the United States.

-- The ALC is readily accessible via three intersecting interstate highways, a major rail system, and commercial air, as well as our own airdrome facilities.

-- There are many opportunities for off-base education within 25 miles of the base.

--- Vocational/Technical training facilities include:
Moore-Norman Vo-Tech Schools: Main Campus and Rock Creek Campus
Eastern Oklahoma County Vo-Tech
Metro-Tech Springlake Campus
Metro-Tech South Bryant Campus
Metro-Tech Skill Center
Metro-Tech Aviation Career Center
Metro-Tech Downtown Center
Metro-Tech Lincoln Plaza
Mid-Del Lewis Eubanks Area Vo-Tech
Francis Tuttle Vo-Tech Center

--- Undergraduate Colleges include:
University of Oklahoma
University of Central Oklahoma
Oklahoma City University
Southern Nazarene University
Oklahoma Christian University of Science and Arts
Langston University Urban Center
Southwestern College of Christian Ministries
Oklahoma City Community College
Oklahoma State University - Technical Branch Okla City
Rose State College

--- Graduate Colleges include:
University of Oklahoma
University of Oklahoma - Health Sciences Center
University of Central Oklahoma
Oklahoma City University
Southern Nazarene University
Oklahoma Christian University of Science and Arts
Langston University Urban Center
Southwestern College of Christian Ministries

- 134 DOD installations and 56 Air Force installations are within a 1200 mile radius of OC-ALC, a day and a half by truck to almost any city in the U.S.

- Oklahoma City Air Logistics Center's central location was proven invaluable in support to cross country in-transit aircraft during Desert Storm.

- Our central location is an asset to bomber support in the event of a conflict anywhere in the world, including two major regional conflicts, as presented in the Bottom Up Review.

-- Bombers supported by OC-ALC are based within the 1200 mile radius.

--- Tinker AFB's geographical proximity to the B-2 bomber's total customer base, Whiteman AFB, MO (appr 400 miles from Tinker) allows rapid response for parts and technical assistance upon which some maintenance plans are based.

- The central location was a major factor in the Navy TACAMO wing selecting Tinker as home port.

-- The Navy E-6 TACAMO (Take Charge and Move Out) fleet is a Category A National Command resource under the operation control of USSTRATCOM.

--- Its mission is to provide a reliable and redundant communications of National Command Authorities and Joint Chiefs of Staff directions to the US Navy's Ballistic Missile Submarine fleet.

-- The Navy's location here at Tinker has proven to be essential to the mission.

--- Central location removes most of the infrastructure from the more vulnerable coasts.
--- Also optimizes access to the alert sites on each coast.
--- Air space availability enhances readiness.
--- Allows good access to future operations at Offutt AFB (Nebraska) and, if required, in the Pacific, European and other theaters.

-- Infrastructure consolidation allowed a one-third reduction to numbers of air crews as part of the post-Cold War drawdown.

-- The 552 Air Control Wing (ACW) also benefits from OC-ALCs central location.
--- Advantages of collocation with OC-ALC at Tinker were a major factor in initial basing decision.
--- Transportation costs have been reduced on reparables for weapon system components collocated with SOR (i.e., engines, oxygen, etc.).
--- Travel and per diem expenditures have been eliminated for depot skills when required by the 552 ACW.
--- Central location removes most of the infrastructure from the more vulnerable coasts, while maintaining optimal readiness posture for a 2 region conflict scenario.
--- Located within 3 hours by vehicle to prime contractor (Boeing, Wichita).
---- Additional engineering support available

2. Environmental Compliance

Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

2.1 Is your activity in full compliance with all Federal, state, and local environmental regulations? If not in full compliance, provide a comprehensive list of individual regulations that require actions to be taken. What compliance waivers have been granted? When must the activity come into compliance? **YES**

2.2 Has any actual or programmed work at this installation been restricted or delayed because of environmental considerations, such as air or water quality? If so, provide the details of the impact of the restrictions or delays. **NO**

3. Environmental Restrictions

Answers to the following questions need to reflect the particular workloads or processes affected by the environmental restrictions/compliance.

3.1 Are there any special programs relating to environmental or industrial waste considerations for your activity? If so, provide the details. **NO**

3.2 Within what provisions must the activity operate with regard to disposal of hazardous wastes and radioactive materials? **NONE**

4.1 Are there any collocated activities that directly benefit or relate to the depot maintenance activity? If yes, list and describe the impact of each. Include benefits derived from being collocated.

Collocated Activity

552 Air Control Wing
STRATCOMMWING ONE

Benefit/Relationship

- Collocation of the 552 Air Control Wing (ACW) with OC-ALC was done to the advantage of the ACW. The Navy Strategic Command Wing ONE has experienced similar advantages from location at OC-ALC. Additionally, the Navy and ACW have realized benefits derived from their integrated missions. It is only logical then, to ensure that if either is moved to a location other than OC-ALC that they be jointly located at a depot.

-- The decision to assign STRATCOMMWING ONE and 552 ACW to Tinker AFB was accomplished in concert with a review of benefits derived from collocation with the depot maintenance activity at OC-ALC. This decision has resulted in reduced costs by elimination of duplication of resources, and is in effect a force multiplier.

-- The 552 Air Control Wing joined Tinker at a cost of $194.9M in Military Construction.

--- The collocation of the E-3 weapon system manager and source of repair (SOR) for engines and many of the E-3 commodity items has proven beneficial to the flying mission.

--- Early repair support by the ALC saw the 552 ACW through initial provisioning shortfalls and continues through present program austerity.

---- Economies in support equipment (SE) dictate joint utilization in many instances by both 552 ACW and OC-ALC. In many instances, if the Air Force only bought one piece of SE, without collocation, additional equipment would have been required. An example is the Texas Tower for radome removal and repair.

---- During depot maintenance all aircraft must go through mission equipment check out with another E-3. If the depot is moved, a second 552 ACW aircraft will have to be flown to where the depot work is in process to perform the check out procedures.

---- The E-3 has segmented computer software configuration items support, with some items maintained by the Wing and some by the ALC. The OC-ALC Avionics Integrated Support Facility (AISF) is shared by Wing and ALC personnel in the support functions.

---- Transportation costs were reduced on reparables for weapon system components collocated with SOR (i.e., engines, oxygen, etc.).

---- Travel and per diem expenditures were nearly eliminated for depot skills when required by the 552 ACW.

---- Force structure reduction impacts on organizational skills are minimized by the availability of depot personnel.

-- Navy Strategic Communications Wing ONE joined Tinker associates in May 92 with an initial MILCON investment of $56.3M. A cost avoidance of $17.3M was also gained by joint utilization of the 552 ACW Alert Facility.

--- Tinker was chosen for consolidation of the Navy's Atlantic and Pacific Air Squadrons because OC-ALC is SOR for the AF E-3 and F108-GE-100 engine which have a high percentage of commonality to the E-6 airframe, its CFM-56 engine, and numerous subsystems. The move from high cost-of-living areas (e.g., Hawaii) resulted in DoD savings.

--- Advantages of collocation with OC-ALC are many.

---- This collocation with similar airframe allows exploitation of OC-ALC support already in place at Tinker for the E-3 and allows the development of a joint training program for Navy and Air Force flight crews. This joint training program is being implemented with joint program administration joint courseware development, and joint maintenance on training aircraft. An annual savings of $7M has resulted.

---- Navy uses depot shop support for many items (i.e., slides, wheels and tires, batteries, etc.), and labs (chemical, metallurgical, and precision measurement).

---- OC-ALC technical and engineering expertise have been accessed by the Navy, resulting in savings in travel and per diem.

---- OC-ALC and Navy are preparing to begin organic maintenance on Navy CFM-56 engines.

---- The E-6 depot program is being worked concurrent with field phase inspection which will minimize aircraft downtime. This work is being done in the Navy's facilities.

---- Discrepancies between Air Force and Navy manuals, Non-destructive Inspection processes, suitable consumable hardware and funding transfers are a few issues that have been encountered and resolved.

-- Just as important as locating either tenant with a depot maintenance function is locating the ACW and Navy together. This integration benefits both the 552 ACW and the Navy in ways that were not envisioned when either located at Tinker.

--- For instance, the 552 ACW and Navy both benefit from the shared alert facility, which has a state-of-the-art security system, and also from a joint training contract.

--- Infrastructure expenditures for 552 ACW and Navy total over $274M.

--- Navy and AF joint efforts at Tinker should serve as a prototype for future interservice and joint service ventures.

Collocated Activity

507 ARG AFRES

Benefit/Relationship

- Collocation enhances depot support of -135 fleet

-- OC-ALC technical and engineering expertise are readily available, resulting in savings in travel and per diem by support engineering personnel.

- The 507 Air Refueling Group, collocated with OC-ALC shares some of the same benefits that the 552 ACW and Navy experience.

-- OC-ALC and the 507 utilize aircraft maintenance building (Bldg 3102) to work fuel leaks, and also share fuel and defuel facilities.

-- There is also interaction of training and expertise between 507 and OC-ALC production personnel.

Collocated Activity

DEFENSE LOGISTICS AGENCY (DLA)

Benefit/Relationship

- The Defense Distribution Depot Oklahoma City, Oklahoma (DDO), is responsible for the receipt, storage, issue, inspection and shipment of material, including material quality control, preservation and packaging, inventory, transportation functions and pickup and delivery services.

-- Incoming shipments, with the exception of munitions, are received and inspected by the Product Receiving and Evaluation Division in Building 506. If there is no immediate requirement, material is then placed in a warehouse location for storage until requriements are generated.

-- All outbound shipments are made by commercial carriers. Utilized modes of transportation range from parcel post, small parcel air and surface carriers, truckload and less-than-truckload carriers, to specialized heavy haulers. Modes of transportation are selected based on supply/transportation priority assigned and UMMIPS standards.

-- Pickup and delivery services are provided from distribution warehouses, collocated disposal activity and on base Air Force customers, including pickup/delivery services for depot base supply items, local purchases, and off base deliveries.

Collocated Activity

DEFENSE INFORMATION SYSTEMS AGENCY (DISA)

Benefit/Relationship

DISA personnel operate the computers on which the Command data systems reside. The activity residing at Tinker Air Force Base has been designated a Regional Processing Center (RPC). There is no other similar capability on-site to perform the depot support function.

4.2 Do collocated activities support, or are they supported by, the depot maintenance activity?

Collocated Activity	Support	Supported By
System Program Directors		
B-1	X	X
B-2	X	X
-135	X	X
B-52	X	X
Cruise Missile	X	X
Tenants		
552 ACW	X	X
Navy Strategic Command Wing One	X	X
507 ARG AFRES	X	X
EM	X	X
654 CES	X	X
654 SP	X	X
654 CLSS	X	X
Defense Logistics Agency	X	X
Defense Information Systems Agency	X	X

Collocated Activity	Describe Relationship

- Collocated activities that are supported by the depot maintenance activity include 552 ACW, STRATCOMMWING ONE, and 507 AFRES. Details are on point paper at question 4.1 above.

- Collocated activities that support the depot maintenance activity include Defense Logistics Agency (DLA) and the Defense Information Systems Agency (DISA). These agencies also derive benefit from collocation with OC-ALC because of the infrastructure, facilities, and support functions already in place. Details are discussed at question 4.3, following.

4.3 How would these activities and the depot maintenance activity function if they were not collocated?

Collocated Activity
552 ACW

Describe Impact if not Collocated

A small-population fleet of aircraft like the E-3, just 33 aircraft in the entire USAF inventory, suffer disproportionate impact when up against even the normal range of spare parts shortages and maintenance problems. Half of the already small fleet is always subdivided into smaller deployed contingents, 5000 to 12000-plus miles from Tinker. The lack of a single critical part makes one E-3 non-mission capable--but that one nonflyable aircraft counts for 3 percent of the fleet. An average of 12 parts are taken from the depots four E-3s each month so the other 29 jets can meet their tasking in support of six commanders in chief on four continents. If AWACS was denied access to depot E-3s for purposes of cannibalization, the wing's ability to meet mission tasking would be significantly degraded.

Great flexibility exists in allowing 552 ACW modifications and maintenance work to be done on aircraft by wing people while the aircraft is in the depot. If the wing was denied this ability, work would be deferred until return from the depot-a deterioration of mission capability.

If the wing and OC-ALC were not collocated, the wing would be required to maintain many shops necessary to support flying missions. These shops include: Large-diameter Tubing Shop, Non-destructive Inspection, Oil Analysis, Transient Maintenance, Tire Buildup, Parachute/Fabric, Battery Shop, Propulsion, Fiberglass/Plastic, Precision Measurement Equipment, Laboratory/Test Measurement Diagnostics Equipment, and Liquid Oxygen. The depot also provides a ready source of additional aerospace ground equipment and testers.

Collocated Activity

STRATCOMMWING ONE

Describe Impact if not Collocated

- There would be a significant financial cost burden and mission degradation associated with the loss of collocation of the STRATCOMMWING ONE community to the OC-ALC. The savings that were derived from moving the activities to the Oklahoma City area would be negated. The support delineated in response to mission stated in question 4.1 is mission essential. Alternative means of effecting this support are more costly and less responsive.

-- Interservice Support Agreement (ISA) depot maintenance support would have to revert to the original vendor. The Navy has some organic engineering and analysis support via NADEP Jacksonville, but no artisans. This was the initial means of support and was extremely costly and not timely.

--- OC-ALC provides significant intermediate level maintenance support to STRATCOMMWING ONE. This support includes but is not limited to the following:

---- Tire/wheel build-up
---- Local manufacture of fuel, oil, hydraulic and pneumatic lines
---- Proof-load testing of aircraft hoists and slings
---- Inspection and repair of oxygen regulators and bottles
---- Calibration of precision measuring equipment
---- Non-destructive inspection (NDI) for both aircraft and engines
---- Full NICAD and lead acid battery servicing
---- Fuel, oil and hydraulic fluid analysis
---- Inspection and repair of Aircraft Life Support Systems (ALSS) equipment, including 2 types of escape slides, life rafts, life preservers, survival kits, emergency radios, emergency beacon transmitters.

-- Two options exist to provide most of ISA intermediate maintenance support.

--- Create organic capability: This I-level service capability could be either contractor supported or military manpower. Each of these sources would involve a huge cost to set up the required shops, put in place the right test equipment and find the manpower to man the shops.

--- Local vendor: A second option would involve contracting for each of the required support items. This would involve many different contracts and require an increase in stock levels to ensure survival of non-availability of parts/test equipment.

-- Expanded Phase Maintenance (EPM) support

--- Without EPM support from OC-ALC the Navy would probably have to abandon the EPM program and work toward a standard approach to depot level maintenance, such as Standard Depot Level Maintenance (SDLM). Although replacement of the fourteen artisans is possible, replacement of the multitude of other "on call" personnel and back shop support is not.

--- This would have severe mission impact as it would leave the Navy wing two aircraft short of that required to accomplish the mission; procurement of other aircraft not being an option. The Navy would then be required to transfer inventory, test fly and accept every aircraft that is moved to another facility (off Tinker). Presently this is not done because the squadrons retain custody of their aircraft while the depot tasks are being accomplished alongside normal maintenance.

Collocated Activity

507 ARG (Air Refueling Group) AFRES

Describe Impact if not Collocated

- This activity would function separately, if not collocated, but at a higher cost to the government due to loss of economies of scale gained by collocation. Travel costs for depot kit proofing of TCTOs would increase significantly. Depot and the Aircraft Maintenance Unit (AMU) would each lose use of the other's facilities necessitating periodic TDYs to accomplish mission. Scheduling of periodic maintenance would be adversely impacted due to less facilities available.

-- 507 requires a facility to work fuel leaks. If they were not collocated with the depot, a fuel facility would have to be built for their use.

Collocated Activity
Defense Logistics Agency (DLA)

Describe Impact if not Collocated

The absorption of all supply and storage functions under DLA included those OC-ALC supply functions that supported the base as well as the depot requirements. Over $8.9B in total inventory is stored in warehouses located at Tinker, a large portion of which is for the depot. DLA's relocation away from the depot would require a reconstitution of some of the old ALC supply functions. The depot maintenance activity could not function without on-site support. Acquisition programs, establishing depot capability, would suffer management nightmares due to systemic problems within the automated supply management system, which requires off-line manual tracking of contractor furnished depot support equipment and the special handling interface required to assure delivery.

Collocated Activity
Defense Information Systems Agency (DISA)

Describe Impact if not Collocated

DISA personnel operate the computers on which the Command data systems reside. Relocation away from depot would impact the depot by driving a duplication of capability on-site to perform the depot support function.

Impact to DISA would be limited. The activity located at Tinker has been designated as a Regional Processing Center, and would continue to perform regional processing if the ALC were not adjacent.

5. Encroachment

5.1 Have operations at this activity been at all constrained to accommodate requests of the local communities? **NO**

5.2 Indicate any encroachment constraints on current or future operations that would restrict future expansion. **NONE**

6. Unique or Peculiar Facilities

6.1 List unique or peculiar testing facilities, excluding equipment (e.g. runways, railheads, ports, tracks, ponds, etc.).

Test Facility Describe Uniqueness/Peculiarity

6.2 Indicate the reasons that these facilities are required by the depot maintenance function.

Test Facility Describe Reasons Required for Maintenance

6.3 How could the depot maintenance functions be performed without these specialized facilities?

Test Facility Describe Testing Alternatives

a. Peculiar Test Facility: **BLDG 210 - AIR ACCESSORIES OVERHAUL/TEST (15.1 Aircraft Components-Hydraulic/Pneumatic)**

(6.1) Describe Peculiarity:
This is the only facility of its kind in the Air Force. Capabilities include single source repair, overhaul, calibration, and testing of any air driven item in the Air Force inventory. It contains 22 test cells designed to contain high speed rotating components, such as air turbine motors, in the event of part failure. It also safely isolates the operator and remainder of the facility from the item under test. Contrary to the OO-ALC Ram Air Test wind tunnel test facility, which utilizes very high volumes of low pressure ambient air through a large diameter duct, this facility tests air driven components, such as valves and cooling turbines, up to nine inches in diameter under compressed air conditions. The building houses equipment required to generate, control, and condition compressed air from ambient temperature to 300 PSIG and 800 degrees F at flow rates up to 8 lb/sec thus simulating in-flight operational conditions. In addition, the facility accommodates a single "Super Cell" that boosts test capability to 800 PSIG, 1400 degrees F and 3 lb/sec or 9 lb/sec at ambient temperature is available for the higher technology aircraft and is critical for support of F-16 items. The facility produces over 16,000 items per year in support of U.S., NATO (C-130), and other FMS aircraft. During Desert Storm this facility surged 7,977 items in support of the war effort. A feasibility study accomplished by Sverdup Technology Inc of Tennessee indicates that this facility will be able to support future weapon systems such as the F-22, B-2, and C-17.

(6.2) Reasons Required for Maintenance:

Air Accessories Overhaul/Test Facility provides specialized testing. This testing, including serviceability testing, is necessary for technical data compliance and for verification of field discrepancies. Weapon system readiness is dependant upon overhaul and production testing. This unique testing facility provides correct environment necessary for testing of even the most sensitive components and parts which provide for crew comfort and safety. Military readiness and crew safety is dependent upon proper testing of components, engines, and weapon systems.

(6.3) Describe Testing Alternatives:
Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

b. Unique Test Facility: **BLDG 214 - CRUISE MISSILE ENGINE FACILITY (15.2 Engines-Aircraft Total)**

(6.1) Describe Uniqueness
Only DOD self-contained single source maintenance repair/test center specializing in cradle-to-grave overhaul and production testing of air launched cruise missile engines (F107 and F112). Currently, the Tinker AFB Cruise Missile Engine Facility receives missile engines in containers from both field units and OO-ALC for engine refurbishment and test. During test, automated software monitors engine conditions such as thrust, fuel flow, revolutions per minute, and exhaust temperature to detect and establish possible sources of error for out-of-limit engine parameters. This greatly increases the reliability of the engine when the missile is fired. The clean room in this building controls dust particles, humidity, and temperature to increase engine reliability. An electrostatic discharge certified floor prevents static electrical discharge to the engines during uncrating. Without this flooring the explosive device used as a starter for the engine might accidentally be discharged. This facility could be expanded to support other small missile engines and is adaptable to any small jet or reciprocating engine.

(6.2) Reasons Required for Maintenance
The Cruise Missile Engine Facility provides specialized testing, including serviceability testing, that is necessary for technical data compliance and for verification of field discrepancies. Pre-test screening is necessary to identify required engine rework. Trending of engine data to monitor changes in repair processes and engine configuration, and fault isolation and troubleshooting is included. Software debug and integration testing is often required. Weapon system readiness is dependent upon overhaul and production testing. Most systems are needed for support of CORE capability in response to war requirements. This facility provides correct environment necessary for testing of even the most sensitive components and parts. Military

readiness and crew safety is dependent upon proper testing of components, engines, and weapon systems.

(6.3) Describe Testing Alternatives:
Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

c. Peculiar Test Facility: **BLDG 1055 - OXYGEN AND ASSOCIATED EQUIPMENT OVERHAUL FACILITY (15.1 Aircraft Components-Other (Oxygen))**

(6.1) Describe Peculiarity
This facility, which is the only single source oxygen overhaul facility in the Air Force, is used for the overhaul, test, and calibration of critical life support systems (Oxygen Breathing Systems) for all types of aircraft in the Air Force inventory. Facility is kept isolated from other facilities due to the requirement for clean, dry, and oil free systems. The facility consists of specialized chemical cleaning systems, overhaul equipment, calibration equipment, and oxygen purging/filling systems. Over 22 different types of life support equipment are overhauled in this facility; Over 8,000 items are repaired each year.

(6.2) Reasons Required for Maintenance
Oxygen and Associated Equipment Overhaul Facility provides specialized testing, including serviceability testing, which is necessary for technical data compliance and for verification of field discrepancies. Weapon system readiness is dependent upon overhaul and production testing. Most systems are needed for support of CORE capability in response to war requirements. Military readiness and crew safety is dependent upon proper testing of components.

(6.3) Describe Testing Alternatives:
Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

d. Unique Test Facility: **BLDG 3220 - AVIONICS INTEGRATED SUPPORT FACILITY (AISF) (15.1 & 15.2 Software-Tactical Systems)**

(6.1) Describe Uniqueness

OC-ALC is the only B-1B/E-3/B-52/ALCM and Rotary Launcher complete avionics test facility in DOD. It provides single source software maintenance and integration of computer programs for the systems listed in question 8.2. AISF performs ground integration and test of avionics systems software through the combined use of weapon system specific avionics components and one-of-a-kind hardware/software thereby reducing full integration design development costs. Only existing world-wide facility in DoD capable of testing and integrating E-3, B-1B, B-52, AGM-86, and AGM-129 software changes. Workload cannot be readily moved without impact to software support because of lack of duplicate capability. The AISF was designed and constructed to accommodate resources required to perform Operational Flight Program (OFP) support for OC-ALC assigned weapon systems. Constructed of specially designed brick and mortar, and reinforced concrete floors, wall, and ceilings, it contains prime mission equipment driven by simulation computers in a laboratory environment which provides the means to accomplish OFP modifications which correct design deficiencies, enhance weapon systems operation, and incorporate new capabilities in the B-1B, E-3, and B-52/Air Launched Cruise Missiles (ALCM) integration. A specially designed high bay area was constructed to accommodate the rotary and pylon cruise missile launchers within required collocation distance of the B-52 software integration lab. This construction included facility integration to accommodate the cable tray runs, 400 Hz power, and hydraulics for testing the missile load frames/rotary launcher for the AGM-86 and AGM-129 Air Launched Cruise Missiles.

(6.2) Reasons Required for Maintenance
The Avionics Integrated Support Facility (AISF) provides specialized testing, including serviceability testing, which is necessary for technical data compliance and for verification of field discrepancies. Also supports the AISF Software debug and integration testing requirements.

Weapon system readiness is dependant upon overhaul and production testing. Most systems are needed for support of CORE capability in response to war requirements. Military readiness and crew safety is dependent upon proper testing of components, engines, and weapon systems.

(6.3) Describe Testing Alternatives:
Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

e. Unique Test Facility: **BLDGS 3234/3703 - JET ENGINE TEST FACILITIES (12 CELLS) (15.1 Engines-Aircraft Total)**

(6.1) Describe Uniqueness

These are the only engine test facilities configured and certified in DOD which house single source test cells (4) rated at 100,000 lbs thrust class cells capable of handling up to 4,000 lbs of air per second, up to 150,0000 lbs per hour of fuel, and 5500 gallons per minute of afterburner cooling water. An eleven foot center line for the engine allows testing of engines up to a 11 foot diameter inlet. This provides current capability for testing the J57, TF30, TF33, F101, F108, F110, and F118 engines used as power plants in the B-1B, B-2, B-52, F-14 (Navy), F-16, F-111, C/KC-135, C-141, and E-3 aircraft. All engine to adapter buildup is accomplished on the prep floor in front of the test cells thus minimizing test cell time. A monorail system is used to transport the engine from the buildup floor into the test cells providing a 5-minute engine installation time once in the test cell.

The medium cells are 50,000 lbs thrust class cells capable of testing turbo jet engines with afterburners and small turbofan engines (TF33).

All cells are multi-engine capable allowing easy switching between engine types without major test cell re-tooling and allow for future growth with minimal modifications.

OC-ALC has the only depot test cell in DOD equipped to test the F118 engine used to power the B-2 aircraft. The instrumentation and computer systems are unique to this engine and are in addition to the normal test cell system.

Each test cell utilizes the Pacer Comet III Automated/Computerized Engine Test and Data Acquisition engine test system that was developed at SA-ALC and customized and installed at OC-ALC by in-house engineering support staff.

Capability exists to test engines in the Quick Engine Connect (QEC) configuration. This capability was developed for the TF30, TF33, and F108 engines in-house by modifying existing depot adapters and/or modifying existing field level T-9 adapters.

An Automated Vibration Diagnostic (AVID) System is used to provide engine vibration signature analysis and trim balance data. The system uses both transient and steady state vibration data to assemble a vibration signature. These signatures contain plots of vibration amplitude versus engine speed for acceleration and deceleration runs. Separate plots are obtained for each vibration pickup and for vibration synchronous with each rotor. The resulting signature package is a valuable tool in the analysis of engine vibration problems. The system is also used in trim balancing engines using a 1:1 mechanical tachometer to indicate a specific rotor position. The trim balance routine supplies the engine operator with a trim balance weight size and mounting location.

The OC-ALC facilities are capable of performing endurance testing and accelerated mission testing. These tests provide valuable data for Component Improvement Program (CIP) repairs,

serve to validate depot and contractor developed repairs, and can provide "Lead the Fleet" data. OC-ALC is currently involved with interservicing workload by testing the Navy TF30-414 and F110-400 engines.

(6.2) Reasons Required for Maintenance:
Engine testing is required to ensure overhauled and 2-level repaired engines meet or exceed technical data compliance and for verification of field discrepancies. Pre-test screening is necessary to identify required engine rework. Trending of engine data to monitor changes in repair processes and engine configuration, and fault isolation and troubleshooting is included. Software debug and integration is often required. Weapon system readiness is dependent upon overhaul and production testing. Most systems are needed for support of CORE capability in response to war requirements. These facilities provide correct environment necessary for control of dust particles, humidity, and temperature. Jet Engine Test Facilities are constructed to facilitate potential explosive devices used as starters on engines or components. Military readiness and crew safety is dependent upon proper testing of components, engines, and weapon systems.

(6.3) Describe Testing Alternatives:
Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

f. Peculiar Test Facility: **BLDG 3761 - B-1B COMPACT RANGE FACILITY (15.1 Aircraft Components-Avionics/Electronics)**

(6.1) Describe Peculiarity
This facility is the Air Force single source repair and testing capability for the B-1B APQ-164 multi-functional radar antenna. The antenna is tested in two configurations: (1) Phased Array and (2) Low Observable Antenna (LOA). Five intricate and complex test sets used to perform tests on the antenna include Memory Module, Gimbal, Antenna Array, Network Analyzer, and Range Array. The Range Array Test Set is a unique procedure enclosed in an Anechoic Chamber which sits atop an adjustable isolated pad. This unique 19' x 37' isolated pad de-couples the equipment from seismic shock and or vibration induced from heavy trucks, trains, aircraft engine testing or other sources in the area which could affect antenna measurement accuracy. The pad has to be stiff so that the compact range reflector, the test positioner, the source positioner, the LOA tower, and the mirror stand all maintain their relative position during testing of B-1B antennas.

(6.2) Reasons Required for Maintenance:

B-1B Compact Range Facility provides specialized testing, including serviceability testing, which is necessary for technical data compliance and for verification of field discrepancies. Weapon system readiness is dependent upon overhaul and production testing. Most systems are needed for support of CORE capability in response to war requirements. Military readiness and crew safety is dependent upon proper testing of components, engines, and weapon systems.

(6.3) Describe Testing Alternatives:
Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

g. Peculiar Test Facility: **BLDG 3902 - FUEL CONTROL AND ACCESSORIES CONSOLIDATED TEST FACILITY (CTF) (15.1 Engines-Aircraft Total)**

(6.1) Describe Peculiarity
Currently under construction is the Consolidated Test Facility (CTF). This $13.6 Million Class 1 and Division 1 National Fire Protection Association (NFPA) rated state-of-the-art fuel control and accessories test facility is expected to be completed Oct 94. The CTF's 63,500 square feet are designed to be environmentally friendly and to house the Automated Fuel Accessory Test System (AFATS) and current semi-automated General Electric engine controls and accessories test stands. The CTF will have a charcoal filter system which will reduce calibration fluid emissions by 95% and a distillation unit which will recycle up to 67% of the calibration fluid. The calibration fluid storage and pumping system will be double-lined and monitored for leak detection. Also, the CTF will not use any class 1 Ozone Depleting Chemicals (ODCs). The CTF will have the ability to house AFATS which is currently under contract for manufacture with an expected delivery date for the Initial Outfitting Equipment of Sep 95. At that time the AF will have two state-of-the-art fuel test facilities unique in DOD in that other services' depots will not enjoy the capabilities at the AF engine facilities. Other future purchases of AFATS are planned to replace older workload specific test stands. AFATS will not only test older fuel wetted controls and accessories, but will also have flexibility to test new or different workloads. The CTF will also have the ability to support semi-automated General Electric controls and accessories test stands which are currently supporting DoD weapon systems. The CTF will be state-of-the-art at its planned completion date of Oct 94 and well into the future. The CTF was designed to meet or exceed current environmental requirements and also house the AFATS.

(6.2) Reasons Required for Maintenance:
Fuel and Accessories Consolidated Test Facility (CTF) provides specialized testing, including serviceability testing, which is necessary for technical data compliance and for verification of

field discrepancies. The CTF combined with the AFATS and General Electric engine controls and accessories test stands is now and will be in the future, a mission essential facility for supporting the fuel wetted testing needs of DOD. The CTF with its Class 1 Division 1 NFPA rated test areas and environmentally friendly systems will be unequaled in the DOD. The CTF will house the equipment to provide unique support of the Air Force F101-100, F101-102, F108-100, F110-100, F110-129, F118-100, TF33-P3, TF33-P5, TF33-P7, TF33-P9, TF33-P100, TF33-P102, TF33-P103, TF30-P103, TF30-P107, TF30-P109, TF30-P111, and Navy TF30-P414 engines. Pre-test screening is necessary to identify required engine rework. Trending of engine data to monitor changes in repair processes and engine configuration, and fault isolation and troubleshooting is included. Weapon system readiness is dependent upon overhaul and production testing. Most systems are needed for support of CORE capability in response to war requirements. This facility provides correct environment necessary for testing of even the most sensitive components and parts; Facility was constructed to facilitate potential explosive devices used as starters on components. Military readiness and crew safety is dependent upon proper testing of components, engines, and weapon systems.

(6.3) Describe Testing Alternatives

Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

h. Peculiar Test Facility: **MATERIALS TEST FACILITY - BLDG 3220**

(6.1) Materials Test Lab facilitates crack growth rate and fatigue life testing as well as material properties determination. Projects include wing skin panel crack growth rate testing, actuator rod fatigue life testing, and adhesive strength determination. Five servo hydraulic material test systems with programmable digital controllers replicate in-flight cyclic loading of aircraft components. Special requirements include space below floor level for frame base and hydraulic pumps.

(6.2) Reasons Required for Maintenance:
Materials Test Facility provides specialized testing, including serviceability testing, which is necessary for technical data compliance and for verification of field discrepancies. Weapon system readiness is dependent upon overhaul and production testing. Military readiness and crew safety is dependent upon proper testing of components, engines, and weapon systems.

(6.3) Describe Testing Alternatives:

Workload will have to be accomplished in a comparable facility. If comparable facilities within existing capabilities are unavailable, other options such as MILCON or field resources (on-aircraft checkout) would have to be considered. If capability is not available, workload would be subject to availability of contractor and/or field resources at higher cost with potential mission impact.

7. Buildings and Their Condition

7.1 List the buildings used to perform the depot maintenance functions by category code numbers (five or six digit CCNs), identifying their current condition (adequate, substandard, and inadequate) in Table 7.1 in thousands of square feet (KSF).

Table 7.1: **Facility Conditions**

CCN	Facility Type	Condition / Area (# SF)			Comments
		Adequate	Substandard	Inadequate	
121-124	Hydrant Fueling System	.19			B/2111
123-335	Vehicle Fuel Station	.14			B/2103
125-977	Liquid Fuel Pump Station	.84			B/2112
141-391	Radar Transmitter/ Computer Bldg	15.70			B/1017
141-459	Crew Readiness	.96			B/3102
141-763	Technical Laboratory	27.30			B/3220
141-764	Integrated Support Facility	227.15			B/210, 214, 1083, 3220
141-765	Depot Quality Control Lab	33.26			B/2211, 3001, 3125, 3221
211-116	Hangar, Maintenance Depot	1,240.32			B2121, 2136, 3001, 240, 2122, 3102, 3105, 3771

211-152	General Purpose Aircraft Maintenance	255.47			B/210, 229, 230, 2102, 2106, 2121, 2134, 2211, 3117, 3221, 3234, 3707, 3761,3771, 3772, 3773, 2101, 2122, 2124, 2128, 2129, 2210, 2280, 3215, 3703, 2105, 3001, 3108, 214
211-153	Shop, Non-Destructive Inspection	66.38			B/2122, 2211, 3001
211-157	Shop Jet Engine Inspection/Maint	1,098.47			B/3001, 3105, 3221
211-159	Aircraft Corrosion Control	184.53	109.26		B/2121, 2137, 2211, 3001, 3707, 2122, 2280
211-183	Test Cell	79.33			B/3234, 3703, 214
211-251	Shop Turbine Accessory, Overhaul and Test, Depot	116.78			B/212, 213, 210
211-253	Shop, Alternator Drive Overhaul and Test, Depot	67.69			B/2210
211-254	Shop, Aircraft and Engine Access Overhaul, Depot	496.08	179.53		B/229, 1054, 1055, 1062, 2211, 3001, 3123, 3771, 95, 3108
211-256	Shop, Engine Test and Storage	162.45			B/3234, 214, 3703

211-271	Shop, Instrument Overhaul and Test, Depot	70.18			B/230
217-712	Avionics Shop	183.85			B/2121, 2122, 2136, 3707, 3708, 3761
217-735	Shop, Electronics Overhaul and Test, Depot	32.76			B/2121, 2122, 3001
217-736	Shop, Radome Overhaul, Depot	43.46			B/230, 2211, 3507
218-712	Aircraft Support Equipment Shop/Storage Facility	35.46			B/2101, 2124, 2129
218-852	Shop, Survival Equipment	14.51			B/229
218-868	Precision Measurement Equip Lab	28.98	1.65		B/210, 214, 230, 1055, 3001, 3113, 3234, 3108, 3703
442-258	Storage, Liquid Oxygen	2.04			B/1051
610-675	Logistics Facility Depot Operations	668.83			B/210, 230, 240, 2121, 2122, 2136, 2211, 3001, 3108, 3, 18, 3102, 3105
610-711	Data Processing Installation	3.08			B/3220
	Total	5,156.19	290.44	0	

7.2 In Table 7.2.a, identify space available for expansion by building type for those facility category code numbers (five or six digit CCNs) that are most important to your mission. An activity's expansion capability is a function of its ability to reconfigure/rehabilitate existing underutilized facilities to accept new or increased requirements.

Table 7.2.a: **Space Available for Expansion**

Building ID / Type	CCN	Installation Space (KSF)			Total
		Adequate	Substandard	Inadequate	
B3108/Hazard Fuel Test	211-314	49.0			49.0
B3001/General Purpose	211-314	21.2			21.2
B3001/300,000 Class	211-314	4.7			4.7
B3708/Avionics	211-422	29.0			29.0
B3708/Office	610-675	3.0			3.0
B3707/Avionics	211-422	23.5			23.5
B3707/Warehouse	211-422	14.5			
B214/Small Engine Test	211-314	21.9			21.9
B2211/Adv Composites	211-335	11.5			11.5
B230/Elec Cable Repair	211-365	12.0			12.0
B2122/Avionics	211-422	17.0			17.0
B210/Air Accessories	211-314	7.2			7.2
B1055/Gas Generating	211-394	3.0			3.0
B2210/CSD	211-364	15.0			15.0
B2101/Engine Inspection	211-237-I	10.0			10.0
B2101/Engine Reclamation	211-314-B	2.0			2.0
B3001/Engine Cleaning	211-241-A	61.0			61.0

B3001/Engine Disassembly	211-257-A	28.0			28.0
B3001/Plasma Spray	211-241-B	32.0			32.0
B3001/Engine Machine Shop	211-241-C	205.0			205.0
B3001/Nondestructive Test	211-233-A	72.0			72.0
B3001/Engine Overhaul	211-257-A	148.0			148.0
B3001/Rotor Overhaul	211-347-B	26.0			26.0
B3001/Engine Mod/Repair	211-247-D	43.0			43.0
B3001/Gearbox Overhaul	211-348-A	30.0			30.0
B3001/Engine Welding Shop	211-241-E	24.0			24.0
B3001/Material Handlers	211-934-A	23.0			23.0
B3105/Engine Mod/Repair	211-247-D	5.0			5.0
B3105/GSE Maint Shop	211-632-O	4.0			4.0
B3221/Engine Welding Shop	211-241-E	48.0			48.0
B3221/Nondestructive Test	211-233-B	51.0			51.0
B3234/Jet Engine Test Cell	211-833-C	53.0			53.0
B3703/Jet Engine Test Cell	211-833-C	24.0			24.0
B3703/Engine Inspection	211-237-I	6.0			6.0
B3703/Engine Preparation	211-226-O	41.0			41.0
B3705/Warehouse	441-758		390.0		390.0
B2101/Vehicle Maintenance	214-425		139.0		139.0

B260 APOE (Banked)	141-782		146.0		146.0
TOTAL		1168.5	675.0		1843.5

8. Unique and/or Peculiar Capabilities and Capacities

8.1 What unique and/or peculiar capabilities and capacities does the depot maintenance activity possess?

Depot Maintenance Capability/Capacity Describe Why Unique/Peculiar

Aircraft capabilities include:

a. Large Aircraft Robotic Paint Stripping (LARPS): (15.1 & 15.2 Aircraft)

OC-ALC is the only known activity within DoD prototyping a robotic/high pressure water system for as single source of repair paint removal on large thin-skinned aircraft (E-3, C-135, B-52, and B-1B). This one-of-a-kind system will remove aircraft paint without any chemicals or abrasives. LARPS process generates virtually no hazardous materials (Paint chips only). Paint stripping man-hours for this process will be reduced by more than 50 percent over existing methods. In addition, high-pressure water technology requires minimal facility modifications, as OC-ALC is already facilitized to support wet paint removal operations.

b. Paint Proportioning and Mix Systems: (15.1 & 15.2 Aircraft)

OC-ALC is the only single source Air Force facility employing the Paint Proportioning and Mix System. This technology is suited for large aircraft coating applications where large amounts of coatings are mixed. Traditional coating application equipment (i.e. paint pots) requires that unused coatings be discarded as hazardous waste. Paint proportioning equipment automatically measures and mixes on demand only the amount of coating necessary, thus reducing wasted paint. In addition, this equipment reduces process time and personnel exposure to hazardous fumes during paint mixing operations.

c. E-4B Super High Frequency (SHF) System: (15.1 Aircraft Components-Avionics/Electronics)

DOD unique single source for E-4B Super High Frequency (SHF) Computerized Antenna Pointing System (CAPS) component repair. The E-4B SHF CAPS system contains sophisticated items totally unique to the relatively small (4 A/C) E-4B fleet. E-4B SHF unique test equipment and unique programming devices are required to repair these items.

d. Dual Energy Real-Time Microfocus X-Ray System: (15.1 Aircraft -Cargo, Tanker, Bomber)

This equipment is the only Air Force capability sized for single source repair of large B-1B/B-2 composite components. It replaces film radiography which in turn reduces film consumption and man-hours.

e. Automated Ultrasonic Scanning System (AUSS): (15.1 Aircraft-Cargo, Tanker, Bomber)

The AUSS at OC-ALC is the only 13-axis computer controlled robotic ultrasonic scanning machine in the Air Force used for single source for repair on B-1B. It consists of a standard 9-axis scanning system, as found at OO-ALC, for compound contoured parts, plus a 3-axis parts positioner for more highly contoured parts and a one-axis turntable for cylindrical parts. It is sized for large aircraft and engine components. This machine detects delaminations and disbonds in metallic and composite parts. It records total inspection data on optical discs for future reference.

f. Centralized Aircraft Support System: (15.1 Aircraft-Cargo, Tanker, Bomber)

The CASS is a unique DOD capability. It provides hydraulic power, liquid cooling and system air conditioning during performance of single source DoD maintenance and power-on checks to four B-1B aircraft docks in B2122. Four conditioned air/coolanol systems for avionics cooling, 16 Hydraulic Ground Pumping Units to supply 4,000 psi hydraulic fluid, three chillers for chilled water and one 2,000 KVA transformer for electric power are integrated to the facility to minimize the need for ground support equipment. This clears the work area of wires, hoses and equipment by providing much of this support through overhead sources which improves safety in the work
environment.

ENGINE CAPABILITIES INCLUDE:

g. Blade and Vanes Repair Center: (15.1 Engines-Blades & Vanes)

OC-ALC is the only designated single source AF Technology Repair Center (TRC) and Service Center of Excellence for blade and vanes repair. OC-ALC is the only DoD center certified to repair F110 and F101 High Pressure Turbine (HPT) blades. Since repairs are safety-of-flight critical, it is important that repairs have stringent process and quality controls and inspection in order to insure the repair will not fail in flight. The quality and uniformity of these repairs directly affect the performance, efficiency, and fuel consumption of the engine. Repair of jet engine blades and vanes is, in the majority of cases, far more economical and less expensive (50% or less) than the cost of the original or new replacement blade or vane.

OC-ALC embarked on a program to incorporate all the processes required for jet engine blade and vane repair, inspection, repair, recoating, in one blade facility. The consolidated processes and equipment provided a synergy of function to insure uniformity, process control, and quality control. The processes and equipment incorporated are:

Processes:

Automated Cleaning
Manual and Automated NDI Inspection
Welding: Conventional Gas Tungsten Welding
Automated Microplasma Welding
Manual and Automated Superalloy Welding at Elevated Temperatures (S.W.E.T.)
Automated Laser Welding
Machining: Automated Electrical Chemical and Creep Feed Grinding
Conventional Manual Grinding
Automated Milling
Automated Laser Drilling
Advanced Electrophoretic Coating (AEP)
Vibratory Finishing
Air Flow and Water Flow testing
NDI/Inspection: Conventional X-Ray
Computed Tomography
Automated Plasma Spray and High Velocity Plasma Spray ("Gator Guard")
Shot Peening
Activated Diffusion Healing (ADH)
Vane Restrike

Three of these processes, ADH, S.W.E.T. welding, and Gator Guard high velocity plasma spray are proprietary processes and OC-ALC is the only DOD capability certified to perform these processes. Capability to support new thermal spray processes on both General Electric and Pratt Whitney engine blades already exists at OC-ALC and as result, OC-ALC is the only existing DOD facility capable of all three major coating repair procedures.

Specialized Equipment includes:

Automatic Microplasma Welding System
Superalloy Welding at Elevated Temperature Operation
Laser Cladder
Air Flow Test Stand

An Automated Parts Conveyor capable of tracking and queuing parts to specific work stations is integrated in the facility process flow. An additional conveyor system moves parts from the Blade Facility to B3001 to support engine reassembly.

h. Engine Technology Repair Center: (15.1 Engines-Aircraft Total)

OC-ALC is the designated single source TRC and Service Center of Excellence for J57, TF30 (AF and Navy), TF33, F101, F108, F110 (AF and Navy), and F118 and their related engine components. As one of two Air Force engine depots there are similar capabilities existing at both state-of-the-art facility that are unique to DOD in that other services' engine depots do not have the technology or facilities the AF depots enjoy.

With the exception of engine test and blade/vane repair, 90+% of basic engine repair is consolidated in B3001 which houses the varied processes and equipment required as well as the engine sustainment management function. After disassembly, engine component proceed through extensive processing.

Processes found in B3001 include:

CLEANING

To remove greasy soils, carbon, and oxidation which would interfere with the inspection or repair processes, cleaning is performed by either of two methods which are selected based on part base metal, cleanliness level required, and on the type of coatings.

Chemical Cleaning: A computerized chemical cleaning immerses jet engine parts into heating cleaning solutions consisting of caustic, acidic scale conditioning, and solvent based solutions.

Mechanical Cleaning: Mechanical cleaning is accomplished by numerous methods--abrasive blasting, vibratory finishing, C02 pellet blasting, and waterjet stripping. Both C02 blasting and high pressure waterjet stripping processes do not use hazardous chemicals and are environmentally friendly. **C02 cleaning is uniquely used at OC-ALC to clean aircraft engine components which are sensitive to grit entrapment.**

Engine Manifold Cleaning: This computer operated system is designed to remove carbon, coke, varnish, and oxides from manifolds and nozzle sets. With the implementation of this system alkaline permanganate waste disposal was reduced by 3,700 gallons each year. It provides greater cleaning efficiency at reduced operating costs.

OC-ALC aggressive action in pollution prevention initiatives have eliminated many of the previously used hazardous chemicals such as freon and ODC Benzene.

INSPECTION

After a component is clean it is then ready for inspection. OC-ALC is the certified DoD single source for performance of ENSIP on F110, F101, and F118 and has latest technology inspection capability:

Mission-essential eddy current non-destructive inspection is accomplished on rotating engine components using automated and semi-automated equipment to identify cracks and flaws so small that no other method can detect. Most of the eddy current performed by OC-ALC is **mandated by Congress under the Engine Structural Integrity Program (ENSIP)** to assist in managing the life of critical parts. Housed in a climate controlled room, equipment required is:

- an RFC Version 2 station
- seven RFC Version 3 stations
- four ECIIC stations
- one ECIIE station

Additional eddy current equipment (six RFC Version 3 in CY94 and two RFC Version 3 stations in 1995) will be installed. Intervals of inspection are determined by the type of engine and its mission. As the mission changes, so does the inspection interval and critical flaw size. The requirements for inspection are listed in ENSIP Tech Orders 2J-F101-9-1, 2J-F110-9-1, and 2J-F110-19-1. OC-ALC has performed inspections not only for AF engines but also for Israeli F110-100 and Navy F110-400. No other systems have been developed or approved to meet the critical crack limit detection requirements.

Additionally B3001 houses two complete NDI lines: Fluorescent Penetrant Inspection (FPI) and Magnetic Particle Inspection. The FPI was constructed as an overhead conveyor system on which components are suspended for better processing and handling of parts. Each line runs by computer control which keeps track of the processing throughout the shop, controls drying ovens, and provides safety controls. The lines are built for highest flexibility without specialized fixturing. Each line has an automatic pre-rinse, emulsification, and post wash tunnel for removal of the penetrant.

In conjunction with cleaning, specific repaired areas on GE engine cases and rotating parts, undergo a mission-essential process, Acid Etch, dictated by contractor identified requirements, (2J-F101-9, 2J-F110-9, 2J-F110-19, and 2J-F108-3-6, SWP00318). The station is designed for containment of the corrosive chemicals with an acid neutralization fume scrubber system. The equipment and tooling development and procurement was accomplished to ensure compatibility with chemicals, flexibility to accommodate the different sizes and

configuration of jet engine parts, and capability to perform metallurgical examination of samples for metal removal and Intergranular Attack determination.

After inspection, engine components are processed through various combinations of machining, welding, plating, plasma spray and heat treat when required.

MACHINING

Machining is accomplished by many methods:

- Electrical Discharge Machining (EDM) used on nozzle and blades is typically used when conventional machining methods cannot remove metal efficiently or when a complex-shaped cavity must be created. This process is especially useful for materials with high heat resistance and is specifically suited to the repair of turbine nozzles and blades. **The large and small EDM are to our knowledge unique to DOD.** Two large EDMs with capability of machining in all three axis on turbine nozzles up to 36 inches diameter performs all EDM operations on these nozzles with one setup thereby reducing man-hours. OC-ALC also has four smaller EDMs used to effect of unserviceable vane and vane stubs without changing fixtures or removing the nozzle. This has allowed OC-ALC to reduce processing time from as much as 40 hours per part to as little as 12 hours.

Other machining is divided into four areas: (1) drilling, (2) milling, (3) turning, and (4) boring.

Various automated and semi-automated drill presses, mills, and lathes are used. **The fixtures and adapters used are unique to the engines worked by OC-ALC.**

During the overhaul process engine components are measured to maintain the form and relationship. The roundness and Geometric Measurement Systems (RGMS) provides the capability to inspect form and position, such as roundness, flatness, squareness, parallelism, concentricity, and runout. **To our knowledge, OC-ALC's RGMS is unique in size capability (48 inch parts diameter and up to 1000 lbs).** Also, the Coordinate Measuring Machines (CMM) are used where very tight tolerances for components are required. In many cases, there is no alternative to CMM capable of meeting Air Force technical order dimensional requirements. OC-ALC CMM has the capability to automatically change probe and stylus arrangements and configurations several times during the inspection program without changing the component set-up. This is absolutely essential for the required ENSIP dimensional inspection. Two special duty CMMs are unique to DOD having been specifically designed to measure gas turbine engine drive shafts.

HEAT TREAT

The Heat Treat capability at OC-ALC is remarkable. Collocated in B3001, the facility has a variety of equipment to meet the control standards of +/- 10 degrees F for temperatures under 1000 degrees F, +/- 15 degrees up to 1600 degrees F, and +/- 25 degrees up to 2400 degrees F. Twelve modern high-temperature vacuum furnaces are available for treating nickel and cobalt based superalloys. One of these is equipped with an internal oil quench bath to prevent any contamination during the hardening of high-strength alloy steels. Twenty-seven atmosphere furnaces are available for stress relief of weld and plating operations, for aging aluminum components, and for tempering steels. One furnace is equipped to carburize a hard layer into low-alloy steels.

Shot Peening is used to induce compressive stress layers after any Heat Treat, machining, welding, or any other metal removal processes which increases fatigue strength and stress corrosion cracking resistance. Engine performance is dependant on shot peening to prevent increase in crack propagation. The size of shot peening cabinets is designed to accommodate the components (F108 fan blades, six foot engine shafts, etc.).

ELECTROPLATING

The Electroplating capability, an Air Force weapon system mission essential support facility collocated in B3001, has been under phased renovation with the last phase under contract to start Aug 94. Renovation will incorporate state-of-the-art pollution prevention and control technologies to meet or exceed current EPA regulations. These will include: metal recovery systems for cadmium, chromium, and nickel; rejuvenation systems for acids etches and alkaline cleaners; and a waste water pretreatment system. Energy cost reductions will be accomplished by capturing waste heat from the steam condensate through a reboiler system.

Electroplating is used to restore worn surfaces and apply corrosion preventing coatings IAW T.O. 2-1-111 and 42C2-1-7. Several unique capabilities are involved:

- Zinc-Nickel Plating (rack and barrel) - OC-ALC was the first plating shop to eliminate the use of cadmium plating (Nov 91). Most of the parts were switched to zinc-nickel plating which provides superior corrosion protection without the pollution compliance problems of cadmium. **OC-ALC is the only DOD source using this process.** A 900 gallon tank is required to support plating on large parts.

- High-Build Electroless Nickel - OC-ALC is the **only facility** to plate to thicknesses of 0.030 - 0.070 inches.

- Plating electroless nickel on titanium - Titanium plating presents a special problem due to difficulties in activation. OC-ALC has achieved titanium plating capability through the use of electroless nickel plating.

Other special coating capabilities include:

- AEP coating is used in the Blade Repair Facility (the only AF Level II blade/vane repair capability) to protect the blades from sulfidation/corrosion.

- Ion Vapor Deposited (IVD) aluminum coatings are applied to engine parts to provide sacrificial corrosion protection. It is applied in a vacuum chamber where aluminum is evaporated and deposited on a negatively charged part.

- Plasma Spray Shop - OC-ALC is the most versatile metal coating operation in the aerospace industry. The shop houses six major disciplines of thermal spray and produces more than fifty spray coating for more than 300 part geometrics. Automated systems linking computer-controlled process parameters and industrial robot movement are used. Special processes to apply ceramic coatings to entire afterburners and to replace as much as 1/8 inch worn material allows recovery of parts no longer in manufacture. Recent additions include the industry standard for chrome plating replacement, High Velocity Oxygen Facility, PWA 279 abradable coating, and the patented Gator-Guard high energy coating processes. **No other aerospace spray coating facility has the size equipment, technology, and throughput of the OC-ALC shop.**

TEST FACILITIES

After all parts are reworked they are routed to the assembly area for reassembly of the engine. The engine is then sent to one of the OC-ALC jet engine test facilities. Two facilities consist of twelve test cells with thrust capability from 50,000 lbs to 100,000 lbs. Some unique or special capabilities are:

- **Unique F118 engine test capability** which include unique instrumentation and computer systems in addition to the normal test cell system.

- In house adaptation of existing adapters to test TF30, TF33, and F108 engines in the Quick Engine Connect (QEC) configuration to support the 2-Level maintenance concept on these engines.

Engine testing is required to ensure repaired engines meet or exceed the performance specification set forth in Air Force Technical Orders. With a successful engine test, the engine is returned to supply to support user requirements.

In addition to the normal depot overhaul of engines, OC-ALC has assumed 2-Level repair responsibility for its designated engines. This has allowed reduction of personnel at the field locations while maintaining a high state of engine readiness. Engine test cells are being reconfigured to accommodate testing with quick engine test kits. In two years OC-ALC has become the largest Jet Engine Intermediate Maintenance center in the world.

i. Activated Diffusion Brazing Healing (ADH): (15.1 Engines-Aircraft Total, Aircraft Components-Other (Oxygen) - Manufacturing and Fabrication)

OC-ALC is the only single source DOD facility certified and licensed to perform ADH repair. Activated Diffusion Healing/Brazing is a technology that must be thought of as an entire repair concept and not just Brazing. The repair concept is used to repair cracks < or = 0.040" wide on stationary components. The diffusion brazing portion of the repair is described as a wide gap brazing process with one major difference; certain material properties are restored to nearly as high as high substrate/parent material. The ADH/ADB concept also has another distinct advantage over welding. Since it has none of the shrink related problems of welds, post weld cracking and shrinkage is significantly reduced.

ADH/ADB alloys are developed such that they are as close a chemistry as, or at a minimum compatible with the substrate material. There are generally two different sets of powdered alloys used. One is the "high melt", generally parent material powder or an alloy that enhances a particular desired property, and a second "low melt" powder that will lower the melting point of the "high melt" and generate braze flow during the furnace braze repair. The "low melt material is chosen to generate brazing capabilities at a particular temperature to ensure the substrate properties are not jeopardized.

ADH/ADB is capable of healing a crack up to 0.040" wide as long as it is free of oxides. Fluoride Ion Cleaning (FIC) is generally required to reduce the tenacious oxides of aluminum and titanium. Once cleaned the components are ready for braze alloy application, furnace

brazing and blending to contour. Process control samples are checked by the Materials Laboratory with every batch.

This procedure is required by Tech Orders 2J-F110-3-6 and 2J-F101-3-6 for the repair of Low Pressure Turbine (LPT) nozzles. Other components such as F100 flameholders, F110 flaps and TF30 Diffusers have undergone repair development using Vacuum FIC and diffusion brazing to improve or just make possible the repair of these components. F100 flameholders for example, require just about a week of preparation and welding to repair the hundreds of cracks it suffers. This conventional process would also impose warpage that would require restraightening and realignment of the flameholder. With this new developed procedure the repairs are Vacuum FIC, vacuum cleaning, and diffusion brazing; in lieu of v-grooving and welding. The result is a component that is evenly heated, therefore distortion is minimized, and 80% of the cracks are repaired with parent metal diffusion braze alloys.

j. Bearing Overhaul - Level II Bearing Refurbishment: (15.1 Special Interest-Bearings)

OC-ALC is the single source AF TRC and Service Center of Excellence for all Air Force bearing refurbishment. Since designation as TRC in FY74, OC-ALC has pioneered organic bearing refurbishment by effecting design and procurement of special honing machines to perform honing of bearing races to identified tolerances and developing techniques using appropriate bearing stocks to offset material removed from races. **The ability to perform ball and roller replacement is a unique capability.** Over 23,000 bearings are produced per year to an accuracy of one millionth of an inch. This capability is expandable to additional bearings in aircraft, engines, and ground vehicles. Existing special OC-ALC facility and equipment requirements are a Class 100,000 clean room, four specially procured honing machines, sophisticated dimensional inspection equipment, and a computerized inventory tracking system.

k. Constant Speed Drives (CSD)/Integrated Drive Generators (IDG), Air Drive Accessories and Air Valves Systems: (15.1 Aircraft Components-Hydraulic/Pneumatic)
OC-ALC is the single source Air Force Service Center of Excellence for the above listed Hydraulic/Pneudraulic/Pneumatic components.

- Twenty-two types of CSDs and IDGs are overhauled and tested at OC-ALC. The specialized test stands are housed in a controlled area for worker and operator safety during high speed testing.
- Air driven accessories and air valve systems are worked in an environmentally controlled room and tested using the 22 test cells designed to contain high speed rotating components in the event of parts failure. Test parameters requiring conditioned compressed air from ambient temperature to 300 PSIG and 800 degrees F at flow rates up to 8lbs/sec simulating in-flight operational conditions and 800 PSIG, 1400 degrees F. and 3lbs/sec or 9lbs/sec at ambient temperature are accomplished through the facility air compression system and a "Super Cell" critical for support of F-16 items.

l. Carbon Dioxide (CO2) Pellet Blasting System: (15.1 Aircraft, Engines) (15.1 and 15.1 Aircraft Components-Aircraft Structures)

Carbon Dioxide Pellet Blasting System at OC-ALC is a single source unique capability which uses compacted dry ice pellets to clean aircraft engine and component parts. The system cleans carbon, light rust, and light films of rubber from aircraft parts. In particular, the system is ideally suited to cleaning major engine cases which are sensitive to abrasive grit entrapment. CO2 Pellet Blast also acts as a secondary or backup process for parts cleaned in our automated cleaning system. Reprocessing a part due to small patch of carbon or paint has been eliminated. This action saves on costly chemicals and shortens cleaning time. Many of the hazardous chemicals which were previously used for cleaning have been eliminated.

m. Flexible Manufacturing Cell: (15.1 Manufacturing & Fabrication)
The unique Flexible Manufacturing Cell (FMC) at OC-ALC consists of two machining centers "tied" together. The FMC consists of two DeVlieg-Sundstrand 5-axis, horizontal spindle, computer numerically controlled (CNC) machining centers interconnected and serviced by a ten station pallet changing system. Manufacture jobs are fixtured to any of the ten 42 inch diameter pallets, shuttled onto one of the machining centers, machined, and automatically shuttled off. Machine cycle times are reduced up to one-third the time required for a stand alone CNC machine since the setup times are incurred off-line. The duty rated 40 horsepower spindle motor is capable of speeds from 10 to 4000 rpm and accepts 50 V-flange fool holders automatically from the 90 tool capacity magazines. Broken tool detection capabilities and tool length measurement probes assure uninterrupted and accurate machining.

Other unique/peculiar depot maintenance related capabilities and capacities

n. Engine/Automatic Flight Control Instruments: (15.1 Aircraft Components-Instruments)

OC-ALC is the Air Force single Source of Repair (SOR) and Service Center of Excellence for many types of aircraft instrumentation, including, but not limited to:

- Electronic Amplifier
- Flight Director Computer
- Torquemeter Indicator
- Fuel Flow Systems, Indicators and Transmitters
- Tachometers
- Indicators, Turbine Inlet Temperature
- E-4 and FCFS-105 Autopilot Systems
- Flap Position Transmitters
- Flight Services Transmitters

OC-ALC provides in-depth repair and overhaul of automatic flight control (autopilot) systems, from older foreign and Air Force systems to the latest digital systems now being introduced.

o. Secure Electric Power Plant:

-- In 1990, the local utility company completed efforts to relocate a 64 megawatt electric generating plant to a site on base at no cost to the government.

--- Should commercial power be disrupted in the Oklahoma City area, this plant has enough capacity to power all of Tinker during the summer months when the demand for electricity is highest.

--- Should the entire off-base electric distribution system be lost due to natural disaster or sabotage, Tinker has a secure electric power plant capable of supporting the entire base.

---- The plant has a highly reliable design with four gas turbines and two electric generators.

----- The primary fuel is natural gas, which is an abundant Oklahoma resource.

----- Power for the plant can also be generated with jet fuel should the gas supply be disrupted.

-- This plant is owned and operated by the local utility company.

--- Operators can start the plant from either of the remote control centers, and isolate Tinker from the rest of the distribution grid, thus dedicating the plant to Tinker during contingencies.

-- This is a very unique capability that few, if any, DoD installations have.

p. Bomber Programmed Depot Maintenance (PDM) Center of Excellence: (15.1 & 15.2 Aircraft-Cargo, Tanker, Bomber, Aircraft Component-Aircraft Structure)

OC-ALC is the single source of repair for B-52 and B-1B and their related structural components. The uniqueness of the Bomber PDM repair complex offers exceptional experience, diversity, and flexibility of manpower and facilities. Some of the work, skills, and processes can be considered unique. Buildings 2121 and 2122 offer flexibility to work fluctuating numbers of bomber aircraft, as well as large frame aircraft such C/KC-135s. Three B-52 aircraft maintenance docks on the north side of Building 2121 were converted into five C/KC-135 docks in response to an urgent need to increase the cargo/tanker aircraft workload. This facility was changed back to B-52 aircraft maintenance docks with the increase in the bomber workload. Building 2121 has one dock modified, allowing for use of one B-52 dock as a B-1B aircraft maintenance dock when needed. These actions and capabilities demonstrate the flexibility to respond to changing workloads and an experienced skills base that can work multiple weapon system workloads.

As the primary PDM facility for the B-52 aircraft, we have in place the ideal combination of resources and experience to work the B-52 in a manner that best satisfies customer requirements. We have delivered all B-52 aircraft on-time for the past six (6) years, providing the customer the least impact to their operational mission.

Building 2122, north hangar, was converted from three B-52 aircraft maintenance docks to four B-1B aircraft maintenance docks. These docks are available for PDM, special inspections, and modification workloads. The maintenance docks are equipped with a built-in support system that provides hydraulic fluid, air, and liquid coolant to the B-1B during maintenance. The Centralized Aircraft Support System (CASS) provides modern and more convenient services for performing in-dock operations by eliminating the need to use portable Ground Support Equipment (GSE) in the docks.

Bomber Production Capability: The uniqueness of the OC-ALC B-52 PDM Program is demonstrated by the availability of our skilled personnel, knowledge of the airframe, material and equipment requirements, and facility/support shop capabilities. We have proven our capability to perform all aspects of B-52 modifications and depot-level maintenance in a quality manner over the past 35 years. Our outstanding reputation for quality products, on-time delivery, program commitment, and customer satisfaction is well known. The transition of the B-52 depot workload to OC-ALC resulted in a net savings of $12.6 million to the USAF since FY92. OC-ALC represents the best value and lowest risk option available to the government in accomplishing the work on the B-52 fleet. Our proven record of performance demonstrates that we have, we can, and we will continue to support our B-52 customer in an exemplary fashion.

q. Cargo Aircraft Programmed Depot Maintenance Center of Excellence: (15.1 & 15.2 Aircraft-Cargo, Tanker, Bomber, Aircraft Component-Aircraft Structure)

Our Cargo aircraft PDM repair facility is enormously versatile, allowing for exceptional flexibility in workload mix. This mix includes single source for special purpose aircraft PDM, engine repair, and aircraft/engine accessory overhaul and depot repair for -135 airframe structures. The Cargo aircraft maintenance facility is located in the largest covered aircraft repair facility in the Air Force. This unique asset offers the flexibility to realign for new aircraft workloads involving large aircraft as well as fighters. The low bay shop area, adjacent to the high bay line, presents unique operational cost savings potential with regard to material handling. Most of the components removed from aircraft could be repaired, stored, and kitted for return to the aircraft for installation without routing to outside buildings or remote locations. An overhead conveyor system, which is being updated with state-of-the-art computer controls, is available for use in moving aircraft parts to support shops for repair and return.

Described below are some of the unique capabilities of the Cargo aircraft facility.

Building 3001. The major feature of this building is the length of the high bay aircraft line at 3320 linear feet or 5/8ths of a mile. The high bay hangar space capacity is approximately 0.5 million square feet or 11.5 acres under one roof. The entire building has a total or 61 acres of space under one roof. Clearance between columns in the high bay is 148' 6" with vertical clearance of 32' 6". Our facility has an extremely versatile capability for the repair and overhaul of a variety of aircraft. The high bay aircraft line is one of the few aircraft maintenance hangar facilities within the Air Force that is air conditioned. This is important when considering a confined space working environment. Our high bay aircraft line has three five-ton, full coverage, overhead bridge cranes. The cranes are capable of removing and installing engines, horizontal and vertical stabilizers, flight control surfaces, spoilers, wing skins, and outer wing panels.

Unique Cargo Aircraft Repair: **OC-ALC is the single source of PDM repair for C/KC-135 special purpose aircraftsuch as C-135B, RC-135, RC-135C, RC-135E, KC135D, KC-135A (NASA), NKC-135A (Navy), OC-135B and WC-135B.** OC-ALC is centrally located in the Continental United States and has an experienced, multi-skilled aircraft work force on site and within the state of Oklahoma. OC-ALC is the only ALC which has worked the C/KC-135 special purpose aircraft. The first special purpose aircraft was delivered in 1960 and has continued to be worked at Tinker AFB, due to fine workmanship and competitive costs. We have the capability to support field team requirements and accept fly-in work on short notice. OC-ALC's ability to compress or accelerate work requirements has been demonstrated many times in the past. OC-ALC is collocated with the System Program Director and engineering organizations, which facilitates prototyping, testing, and sampling of projects for the C/KC-135 aircraft. This also results in excellent response time for engineering evaluation of aircraft structural problems discovered during depot maintenance. Collocation with the 507th Air Refueling Group benefits both the tenant and the ALC through facility sharing, training for personnel, and reduced delivery cost to the customer.

r. Surveillance Programmed Depot and Expanded Phase Maintenance Center of Excellence: (15.1 & 15.2 Aircraft-Command & Control, Aircraft Component-Aircraft Structure)

- **OC-ALC is the single source of repair for E-3 and E-6. OC-ALC is the single DoD source of repair for all structure on EC-135 aircraft for deport level repairs.** The uniqueness of the E-6 Surveillance Aircraft complex is due to our centralization of PDM maintenance functions for E-3 aircraft in one facility and providing cross-service support for aircraft maintenance. Building 2136 was specifically designed for E-3 aircraft but can accommodate any one of four configurations supporting B-1B, B-52H, C/KC-135, or E-3 aircraft. The Navy E-6 aircraft can also be hangared in the E-3 facility. Building 2136 was designed with sufficient height and contains two 7.5-ton overhead bridge crane systems to remove the 14,000 pound hardback rotodome. The facility is designed for use with "Texas Tower" platform maintenance workstands to service and repair E-3 aircraft rotodomes. The

overhead bridge cranes must be used with the tower platforms to accomplish maintenance on the rotodome system. The bridge cranes can also support the removal and installation of flight control surfaces and horizontal/vertical stabilizers. The facility is provided with a centralized hydraulic system, providing one or two circuits of 3000psi or 4000psi hydraulic fluid flow. A centralized breathing air system is also provided for personnel use in confined space areas of the aircraft. A 400HZ centralized electrical distribution system provides four legs of power in each of three docks for full power operational checks of E-3 aircraft. This facility and Building 240, with the experience of production personnel, make it possible to support the 552nd ACW, Royal Saudi Air Force, and possible future British E-3 aircraft workloads. Specific unique capabilities are as follows:

-- Interservice Maintenance: The Navy Expanded Phase Maintenance (EPM) Program is unique in that OC-ALC is accomplishing airframe depot maintenance requirements on E-6A aircraft in Navy facilities as part of their field-level maintenance schedule. In this unique situation, we have taken the ALC's depot support capability to the customer rather than having the customer send their aircraft to the depot. This program means more available flying hours for the Navy's E-6A aircraft. This is accomplished by eliminating an estimated six months of maintenance downtime per aircraft every six years. The savings results from comparison with the traditional Navy Standard Depot Level Maintenance (SDLM) Program. This innovative program is successfully meeting its primary objectives of providing depot maintenance within the context of the field-level environment. Availability of aircraft to meet their strategic mission is greatly enhanced.

s. Electrical Discharge Machining (EDM) of Nozzles and Blades: (15.1 Engines)

To perform some repairs on gas turbine engine components, electrical discharge machining must be used to remove metal. EDM is typically used on aerospace materials when conventional machining methods cannot remove metal efficiently or when a complex-shaped cavity must be created in a component part. EDM is especially useful for machining complex-shaped cavities in high heat resistant materials. OC-ALC has used the EDM process for many years to machine complex shapes in large and small size component parts that cannot be machined with conventional methods. OC-ALC presently uses electrical discharge machines which are specifically suited to the repair of turbine nozzles and blades used in gas turbine engines. Both of these components are manufactured from materials that are very hard to machine with conventional methods, and must be repaired to exact tolerances. OC-ALC has two very large EDMs which can machine in all three axes on turbine nozzles up to 36 inches diameter, allowing all EDM operations required to be performed on turbine nozzles in one setup. OC-ALC also has four small EDMs which are especially suited to high pressure turbine blade repair by allowing high throughput of blades with minimal floor space requirements. **The very large EDMs used for the turbine nozzle repair are, to our knowledge, unique in the DoD.** Using an off-the-shelf commercial design, the EDMs include cutting capability in both horizontal axes and the

vertical axis. In the case of turbine nozzle repair, this allows us to remove the center of the unserviceable vane and the vane stubs on one machine without having to change fixtures or remove the nozzle from the fixture. With these machines, OC-ALC has been able to reduce processing times from as much as 40 hours per part to as little as 12 hours for the same required repairs. The small EDMs used for turbine blade repair are also, to our knowledge, unique in the DoD. The EDM repairs required on the turbine blades, which are approximately two inches by one inch by one inch in size, involve a very small area of the blade. The small EDMs, which are also off-the-shelf items, are especially well suited for small parts work. Their small size facilitates set-up for the operator, as well as reducing floor space requirements versus standard size EDMs, without sacrificing throughput. This results in a higher quality product and higher productivity per square foot of floor space.

t. Bldg 3220 - Avionics Reliability Center (ARC) for Inertial Navigation Systems (INS), Attitude Heading Reference Systems (AHRS) and Automatic Flight Control Systems (AFCS):

OC-ALC is the single source Air Force management center for INS, AHRS and AFCS for the testing of inertial systems and represents a significant investment of funds. The ARC's unique equipment and weapon system component availability provides the only inertial engineering facility in DOD. ARC supports depot organizations and field activities using commodities managed by OC-ALC/LII by enabling engineers and technicians to investigate/resolve service revealed deficiencies in fielded equipment. Built specifically for inertial navigation testing, the facility includes: **North Star Azimuth Reference Observatory,**
Seismically Stable Test Piers and Co-resident Environmental Stress Screening Equipment. The stable piers are essential to the testing of inertial systems and represent a significant investment of funds.

u. Bldg 210 - Air Accessories Overhaul/test: (15.1 Airrcraft Components-Hydraulic/Pneumatic)

This is the only facility of its kind in the Air Force. Capabilities include single source repair, overhaul, calibration, and testing of any air driven iten in the Air Force inventory. It contains 22 test cells designed to contain high speed otating components, such as air turbine motors, in the event of part failure. It also safely isolates the operator and remainder of the facility from the item under test. Contrary to the OO-ALC Ram Air Test wind tunnel test facility, which utilizes very high volumes of low pressure ambient air through a largediameter duct, this facility tests air driven components, such as valves and cooling turbines, up to nine inches in diameter under compressed air conditions. (Detailed write-up in question 6.1.)

v. Bldg 214 - Cruise Missile Engine Facility: (15.2 Engines-Aircraft Total)

Only DoD single source self-contained maintenance repair/test center specializing in cradle-to-grave overhaul and production testing of air launched cruise missile engines (F107 and F112).

Currently, the Tinker AFB Cruise Missile Engine Facility receives missile engines in containers from both field units and OO-ALC for engine refurbishment and test. During test, automated software monitors engine conditions such as thrust, fuel flow, revolutions per minute, and exhaust temperature to detect ans establish possible sources of error for out-of-limit engine parameters. This greatly increases the reliability of the engine when the missile is fired. The clean room in this building controls dust particles, humidity, and temperature to increase engine reliability. An electrostatic discharge floor prevents static electrical discharge to the engines during uncrating. Without this flooring the explosive device used as a starter for the engine might accidentally be discharged. This facility could be expanded to support other small missile engines and is adaptable to any small jet or reciprocating engine.

w. Bldg 1055 - Oxygen and Associate Equipment Overhaul Facility: (15.1 Aircraft Components-Other (Oxygen))

This facility, which is theonly single source oxygen overhaul facility in the Air Force, is used for the overhaul, test, and acalibration of critical life support systems (Oxygen Breathing Systems) for all types of aircraft in the Air Force inventory. Facility is kept isolated from other facilities due to the requirement for clean, dry, and oil-free systems. The facility consists of specialized chemical cleaning systems, overhaul equipment, calibration equipment, and oxygen purging/filling systems. Over 22 different typoes of life support equipment are overhauled in this facility; over 8,000 items are repaired each year.

x. Bldg 3220 - Avionics Integrated Support Facility (AISF): (15.1 & 15.2 Software-Tactical Systems)

OC-ALC is the only B-1B/E-3/B-52/ALCM and Rotary Launcher complete avionics test facility in the DoD. It provides single source software maintenance and integration of computer programs for the systems listed in question 8.2. AISF performs ground integration and test of avionics systems software thorugh the combined use of weapons system specific avionics components and one-of-a-kind hardware/software thereby reducing full integration design development costs. Only existing world-wide facility capable of resting and integrating E-3, B-1B, B-52, AGM-86, and AGM-129 software changes. Workload cannot be readily moved without impact to software support because of lack of duplicate capability. ASIF was designed and constructed to accommodate resources required to perform Operational FlightProgram (OFP) support for OC-ALC assigned weapon systems. Constructed of specially designed brick and mortar, the reinforced concrete floors, walls, and ceilings, it contains prime mission equipment driven by simulation computers in a laboratory environment which provides the means to accomplish OFP modifications ehich correct design deficiencies, enhance weapon systems operation, and incorporate new capabilities in the B-1B, E-3, and B-52/Air Launched Cruise Missiles (ALCM) integration. A specially designed high bay area was constructed to accommodate the rotary and pylon cruise missile launchers within required collocation distance of the B-52 software integration lab. This construction included facility integration to accommodate the cable tray runs, 400 Hz power, and hydraulics for testing the missile load frames/rotary launcher for the AGM-86 and AGM-129 ALCMs.

y. Bldgs 3234/3703 - Jet Engine Test Facilities (12 Cells): (15.1 Engines-Aircraft Total)

These are the only engine test facilities configured and certified in DoD which house single sourve test cells (4) rated at 100,000 lbs thrust class cells capable of handling up to 4,000 lbs of air per second, up to 150,000 lbs per hour of fuel, and 5500 gallons per minute of afterburner cooling water An eleven foot center line for the engine allows testing of engines up to a 11 foot diameter inlet. **This provides current capability for testing the J57, TF30, TF33, F101, F108, F110, and F118 engines used as powerplants in the B-1B, B-2, B-52, F-14 (Navy), F-16, F-111, C/KC-135, C-141, and E-3 aircraft.** All engine to adapter buildup is acomplished on the prep floor in front of the test cells thus minimizing test cell time. A monorail system is used to transport the engine from the buildup floor into the test cells providing a 5-minute engine installation time once in the test cell. (Detailed write-up inquetion 6.1.)

z. Bldg 3761 - B-1B Compact Range Facility: (15.1 Airraft Components-Avionics/Electronics)

This facility is the Air Force sole source repair and testing capability for th eB-1B APQ-164 multi-functional radar antenna. The Antenna is tested in two configurations: (1) Phased Array and (2) Low Observable Antenna (LOA). Five intricate and complex test sets used to perform tests on the antenna include Memory Module, Gimbal, Antenna Array, Network Analyzer and Range Array. The Range Array Test set is a unique procedure enclosed in an Anechoic Chamber which sits atop an adjustable isolated pad. This unique 19' x 37' isolated pad de-couples the equipment from seismic shock and or vibration induced from heavy trucks, trains, aircraft engine testing or other sources in the area which could affect antenna measurement accuracy. The pad has to be stiff so that the compact range reflector, the test positioner, the source positioner, the LOA tower, and the mirror stand all maintain their relative position during testing of B-1B antennas.

aa. Bldg 3902 - Fuel Control and Accessories Consolidated Test Facility (CTF): (15.1 Engines-Aircraft Total)

Currently under construction is the CTF. This $13.6 Million Class 1 and Division 1 National Fire Protection Association (NPFA) rated state-of-the-art fuel control and accessories test facility is expected to be completed Oct 94. The CTF's 63,500 sq ft are designed to be environmentally friendly and to house the Automated Fuel Accessory Test Systems (AFATS) and current semi-automated General Electric engine controls and accessories test stand. (Detailed write-up in question 6.1.)

bb. Bldg 3001 - Multiple Workload Industrial Complex: (15.1 Aircraft-Cargo, Tanker, Bomber, Engines-Aircraft, Special Interest-Bearings)

It is a unique multi-faceted facility which houses single source DoD and Air Force capability for special purpose -135 aircraft, J57, TF30 (AF and Navy), TF33, F101, F108, F110 (AF and Navy) and F118 and their related engine components and bearings, (Detailed write-up in question 8.2.)

cc. Test Stands for Calibration and Testing of Fuel Wetted Engine Controls and Accessories: (15.1 Engines- Aircraft Total)

The equioment provides single source testing for peculiar controls and accessories which supports the Air Force. The calibration and testing of engine controls and accessories requires the use of unique equipment. The equipment is unique from the standpoint that it controls the physical characteristics of a hazardous calibration fluid, MIL-C-7024 TYPE 2, to simulate conditions the components will be exposed to in its working environment. Design methods for test equipment were to build workload specific test stands which means only the components the test stands were designed for would be able to be calibrated and tested by that equipment. For example, a TF30 main fuel control can only be tested on a TF30 main fuel control test stand. Currently, our equipment is limited to testing peculiar controls and accessories which support the Air Force F101-100, F101-102, F108-100, F110-100, F110-129, F118-100, TF33-P3, TF33-P5, TF33-P7, TF33-P9, TF33-P100, TF330-P102, TF33-P103, TF30-P103, TF30-P107, TF30-P109, TF30-P111, and the Navy TF30-414 engines.

dd. Texas Towe: (15.1 & 15.2 Aircraft-Command and Control)

The Texas Tower is unique single source (only one in US) support duplicate equipment used to perform depot maintenance tasks on the E-3 rotodome. It is jointly utilized between 552 ACW and depot maintenance for ongoing depot maintenance requirements. In the event of relocation, equipment would have to be duplicated to support the organizational requirement, at a cost of approximately $1.6M plus construction costs for suitable building with tracks to house the tower.

ee. Centralized Aircraft Support System (CASS): (15.1 Aircraft-Cargo, Tanker, Bomber)

The CASS is a unique single source and peculiar capability. It was tranported to Tinker AFB in 1991 and is the only one in DoD. It is utilized during performance of maintenance and power-on checks to four B-1B aircraft docks in Bldg 2122. Four conditioned air/collanol systems are used to provide avionics cooling. The hydraulic systems use sixteen Hydraulic Ground Pumping Units to supply 4000 psi hydraulic fluid. Three chillers provide chilled water during operations, and one 200 KVA transformer provides electric power to the entire CASS.

ff. Bldg 2280 - Paint Hangars: (15.1 & 15.2 Aircraft)

The paint hangar is single source paint facility for the E-3, B-52 and B-1B aircraft. This two-bay facility is currently sized to support somplete corrosion control of any weapon system in the Air Force, including the C-5 and 747-size aircraft. Borth docks are designed to allow complete stripping, washing, chemical tretment and painting. (Detailed write-up in question 8.2.)

gg. High Force Axial-torsion Test System:

This testequipment in unique to the DoD. It is the largest combined Axial-Torsional test system (serial number 1) ever produced by the MTS Systems Corporation for the free world. While there are larger pure axial or pure torsional test systems, this is the largest combined test system capable of producing 500,000 pounds axial force and 720,000 in-lbs of torque. It is a coputer controlled, closed loop, servohydraulic material test system which can be programmatically phased to simultaneously control axial force and torque. The aterial test system can be programmed to replicate in-flight loading spectra.

hh. Coordinate Measuring Machines (CMMs): (15.1 Engines-Aircraft Total)

Dimensional inspectionis critical to the overhaul and repair process due to the very tight tolerances required of gas turbine engine components. To ensure that repaired component parts meet the tight dimensioal requirements of Air Force technical orders, OC-ALC uses ten production-oriented CMMs to perform the bulk of dimensional inspection procedures. In many cases, CMMs are the only method of measurement which can accurately characterize the dimensional condition of a component part. Manual methods of dimensional inspection are labor intensive and cannot reproduce the feature analysis functions of the CMM, which are required to ensure accurate dimensional inspection. Dedicated gages can provide the necessary feature analysis, but are also labor intensive, as well as very expensive in comparison to the purchase price and operational expenses of the CMM. In many cases, there is no alternative the CMM inspection capable of meeting Air Force technical order dimensional inspection requirements. This is especially true of ENSIP dimensional inspection requirements identified in T.O. 2J-F110-3-5 and 2J-F110-13-5. OC-ALC has several CMMs that have the capability to automatically change probe and stylus arrangements and configurations several ties during the execution of an inspection program without changing the setuup of the component part being inspected. Thisis absolutely essential for the required simensional inspection of the ENSIP parts. **OC-ALC also has two special duty CMMs designed specifically to measure gas turbine engine drive shafts which are unique in the DoD.**

8.2 Separately list the depot maintenance facilities and equipment which are one of a kind within the Service and/or DoD.

Facility: **BLDG 3001 MULTIPLE WORKLOAD INDUSTRIAL COMPLEX (15.1 & 15.2 Aircraft-Cargo, Tanker, Bomber, Aircraft Component-Aircraft Structures)**

Describe Why It Is One Of A Kind:
Bldg 3001 is the longest covered (61 acres) repair facility in DOD. **It is a unique multi-faceted facility which includes single source for special purpose aircraft PDM, engine repair, and aircraft/engine accessory overhaul and depot repair for -135 airframe structures.** In addition, the facility includes:

- 502,988 SF highbay which has alternately and concurrently handled aircraft which range from -135s to A-7s.

- 1,084,213 SF lowbay which has been reconfigured in many combinations to support wokload peaks and contingency surges in engines, aircraft structures, and aircraft and engine components.
- 39,788 SF Chemical Cleaning facility which provides support for engines and aircraft components.

- 36,683 SF Plating facility and 12,389 SF plating prep area providing support for engines and aircraft components.

- 41,693 SF Heat treat facility supporting all heat treat requirements.

- 21,144 SF Automated stacker providing vertical storage and tracking of production components and parts.

- 12,389 SF Chemical and Metallurgical Labs

Additionally, there is 647,832 SF of administrative space available to collocate weapon system, engine, and commodity management as well as most of the ALC support functions (i.e., Financial Management, Procurement, Personnel, Medical, Plant Services and Command.)

Overhead cranes are available to support the entire high bay area. Automated overhead conveyor systems (26,500 feet or slightly over 5 miles) support movement and routing of components and parts throughout the industrial area. Recently constructed conveyors now link B3001 with Blade Repair Facility and B3705 warehouse which contains a preponderance of the parts required for engine support.

Facility: **B-2 WEAPON SYSTEM SUPPORT CENTER (BLDG 1083)**

Describe Why It Is One Of A Kind:

The "B-2 Datalink" hub is located in the crypto vault of this facility. This Datalink is peculiar to the B-2. It links the various B-2 sites: Northrop, Tinker AFB, Wright-Patterson AFB, Whiteman AFB, Langley AFB, Edwards AFB and the PEO's office in the Pentagon. The link between these sites provides classified electronic logistics management data to and from Northrop via computer terminals, a telephone system between all the sites that allows for classified discussion, and a classified video-teleconferencing capability. There is also a limited capability for personnel at remote sites to "dial into" the Datalink system via use of STU III equipment. B-2 peculiar equipment/facility capabilities include: Work areas are raised floor computer room space with access control. One area has Uninterruptible Power. Entire 124,000 SF facility is built to Class B vault standards, and within the facility are Class B and A vaults. Additionally, due to Special Access Required (SAR) designation of the B-2 program, JSIIDS alarm systems were installed. A high bay space with additional cooling and lighting will house one set of ATE and an actual AARL (Advanced Application Rotary Launcher).

Equipment: **TEST STANDS FOR CALIBRATION AND TESTING OF FUEL WETTED ENGINE CONTROLS AND ACCESSORIES (15.1 Engines-Aircraft Total)**

Describe Why It Is One Of A Kind:

The calibration and testing of engine controls and accessories requires the use of unique equipment. The equipment is unique from the standpoint that it controls the physical characteristics of a hazardous calibration fluid, MIL-C-7024 TYPE 2, to simulate conditions the components will be exposed to in its working environment. Design methods for test equipment were to build workload specific test stands which means only the components the test stands were designed for would be able to be calibrated and tested by that equipment. For example, a TF30 main fuel control can only be tested on a TF30 main fuel control test stand. Currently, our equipment is limited to testing peculiar controls and accessories which support the Air Force F101-100, F101-102, F108-100, F110-100, F110-129, F118-100, TF33-P3, TF33-P5, TF33-P7, TF33-P9, TF33-P100, TF33-P102, TF33-P103, TF30-P103, TF30-P107, TF30-P109, TF30-P111, and the Navy TF30-414 engines.

Equipment: **TEXAS TOWER (15.1 & 15.2 Aircraft-Command and Control)**

Describe Why It Is One Of A Kind:

The Texas Tower is unique single source (only one in U.S.) support equipment used to perform depot maintenance tasks on the E-3 rotodome. It is jointly utilized between 552 ACW and depot maintenance for ongoing depot maintenance requirements. In the event of relocation, duplicate equipment would have to be duplicated to support the organizational

requiremen, at a cost of approximately $1.6M plus construction costs for suitable building with tracks to house the tower.

Equipment: **CENTRALIZED AIRCRAFT SUPPORT SYSTEM (15.1 Aircraft-Cargo, Tanker, Bomber)**

Describe Why It Is One Of A Kind:
The Centralized Aircraft Support System (CASS) is a unique and peculiar capability. It provides hydraulic powe, liquid cooling and system air conditioning during performance of single source DoD aintenance and power-on checks to four B-1B aircraft docks in Bldg 2122. It was transported to Tinker AFB in 1991. Four conditioned air/coolanol systems are used to provide avionics cooling. The hydraulic systems use sixteen Hydraulic Ground Pumping Units to supply 4000 psi hydraulic fluid. Three chillers provide chilled water during operations, and one 2000 KVA transformer provides electric power to the entire CASS.

Facility: **BLDG 2280 - PAINT HANGAR (15.1 & 15.2 Aircraft)**

Describe Why It Is One Of A Kind:

Building 2280 is the premier aircraft paint facility in DoD. This paint hangar is single source paint facility for E-3, B-52, and B-1B aircraft. This two-bay facility is currently sized to support complete corrosion control of any weapon system in the Air Force, including the C-5 and 747-size aircraft. Both docks are designed to allow complete stripping, washing, chemical treating, and painting. Each dock has its own environmentally controlled (temperature and humidity) ventilation system, making the operations in each dock independent of each other. The Clean Air Act Amendments of 1990 (CAAA90) have mandated increasingly stringent emissions for aircraft primers and topcoats. These compliant coatings require strict temperature and humidity conditions to ensure necessary adhesion and durability and to prevent extended production flow time. Accessibility to upper portions of aircraft are by multi-directional operating manlifts. Personnel are protected during hazardous chemical and painting operations by a centralized breathing air system. A centralized chemical distribution system allows for highly efficient dispensing of chemicals used in aircraft surface preparation, significantly accelerating the process. State-of-the-art electrostatic paint spraying equipment results in less wasted paint, less hazardous materials generated, and reduced emissions.

Equipment: **LARGE AIRCRAFT ROBOTIC PAINT STRIP SYSTEM (LARPS) (15.1 & 15.2 Aircraft)**

Describe Why It Is One Of A Kind:

OC-ALC is the only known activity within DoD prototyping a robotic/high pressure water system as single source of repair for paint removal on large thin-skinned aircraft (E-3, C-135, B-52, and B-1B). Use of the LARPS system will reduce man-hours by more than 50 percent when compared to conventional paint removal methods.

Equipment: **HIGH FORCE AXIAL-TORSIONAL TEST SYSTEM**

Describe Why It Is One Of A Kind:

This test equipment is unique to DoD. It is the largest combined Axial-Torsional test system (serial number 1) ever produced by the MTS Systems Corporation for the free world. While there are larger pure axial or pure torsional test systems, this is the largest combined test system, capable of producing 500,000 pounds axial force and 720,000 inch pounds of torque. It is a computer controlled, closed loop, servohydraulic material test system which can be programmatically phased to simultaneously control axial force and torque. The material test system can be programmed to replicate in-flight loading spectra.

Equipment: **AVIONICS INTEGRATED SOFTWARE EQUIPMENT (AISF) (ACM/ALCM/B-52/B-1/E-3) (15.1 & 15. 2 Software-Tactical Systems)**

Describe Why It Is One of A Kind: **OC-ALC is the only B-1B/E-3/B-52/ALCM and Rotary Launcher complete avionics test facility in DoD It provides suingle source software maintenance and integration of computer programs in existence are unique for the listed systems.**

ACM SOFTWARE EQUIPMENT

Mobile Hot Bench
MHU-174 Guided Missile Lift Truck
6 MHU-202/E Rolling Missile Maintenance Stand
SUU-67/A Pylon
Pylon Adapter Kit
Load Frame
Electronic System Test Set
2 MXU-690 Electronic Equipment Cooling Unit
6 AGM-129 Missile Maintenance Trainers
Missile Radar Altimeter Test Assembly
Sensor Test Set
Remote Switching Control Assembly
VAX 3600 Mini-Computer System
Advanced Missile Simulator
Computer Support System

HP 64000UX Logic Development Station
Electronic System Test Set
HP A900 Computer System
Test Edit Software Station (TESS 1/TESS 2)
Test Maintenance Stand Rail Set
Guided Missile Test Maintenance Stand Adapter Kit
ON-211 Interconnecting Group (Level I/II)
ON-211 Adapter Kit (ACM unique cables)

ALCM SOFTWARE EQUIPMENT

8 AGM 86B Missile Maintenance Trainers
Missile Electronics System Simulator
ALCM Subsystem Simulator
Advanced Missile Simulator
Computer Support System
3 Portable Computer Test Units
Computer Test Unit
Load Frame
Common Strategic Rotary Launcher
SUU-67/A Pylon
MHU-174 Guided Missile Lift Truck
8 MHU-159 Guided Missile Handling Unit
3 Racal 14 Channel Tape Recorders
Gould ES1000 Strip Chart Recorder
Test Software Development Station
Electronic System Test Set
2 Missile Radar Altimeter Test Assembly
MHU-123/M Bomb Trailer
MHU-141/M Munitions Handling Trailer
ON-189/GSM263 Pylon Box Group (ALCM Unique)
OF-99/GSM263 Test Adapter Group
ON-271 (ON-189) Breakaway Box Group
ON-289/GSM Box Interconnecting Group (Loaded and Empty Pylon)
ON-189/GSM Box Group
ON-211/GSM Interconnecting Group (Level I/II)

B-52 SOFTWARE EQUIPMENT

Weapon Systems Avionics Automated Test Equipment
Special Test Equipment
B-52 Offensive Avionics System (OAS)
Avionics Integrated Support Facility (AIS)

Weapons System Simulator
Vehicle Systems Simulator
Left Hand Equipment and Power Rack
Right Hand Equipment and Power Rack
Bomb Simulation and Power Rack

Global Positioning System (GPS) Hardware
Antenna Electronics Unit
Receiver/Processor Unit
Personal Computer Data Base Monitor
GPS Interface Unit Hardware

PC Data Recording System
Flight Test Support System (FTSS)
Weapons Pylon Tester (WPT) and Cables
Bomb Navigation Systems Procedure Trainer (BNSPT)
Bomb Navigation System Maintenance Trainer (BNSMT)
Peripheral Interface Unit (PIU) (Three Units)
Guided Missile Systems Trainer/Armament System Trainer (GMST/AST)

IBM 3090 authorized for B-52 w/joint utilization for ALCM/ACM.
NOTE: Also jointly utilized in support of E-3 and B-1. But if these software workloads are not collocated, duplicate equipment will have to be purchased.

Software Control Center includes:
Filenet System
SUN System
Media Production System
Other Hardware Specialized Items

E-3 SOFTWARE EQUIPMENT

Software Control Center supports E-3 Software and includes:
Filenet System
SUN System
Media Production System
Other Hardware Specialized Items

DAPG
DDG
RTSS
IFF

ES175-3
ES177A
PAU
Receivers(5)
EDS-110
ESE-123
AP-101C
ECT-130
ECR Module

If E-3 software workload is not collocated with B-52 software workload, it will drive additional procurement costs estimated at $2.5M to include IBM 3090.

B-1 SOFTWARE EQUIPMENT

B-1 Avionics and Software Development Items
Software Development Laboratory (5 each)
Avionics Development Lab (IBM 3090 System)
B-1B Radar Computer Resources
  Radar Test Bench
  Radar Tower Bench

Inertial Navigation Software Equipment
ACC/MSU Test Station
ALQ-161 Software Equipment
Total Cost of CCP 400-119G
EMUX Level 1 (2 Each)
EMUX Level 2 (2 Each)
CITS Level 1 (2 Each)
CITS Level 2 (2 Each)
Module Test Station (MTS)
Ground Maintenance Circuit
Protection Status Unit (GMCPS)
Memory Loader Verifier (MLV)
CADC Portable Programmer (SIS/1)
CADC Portable Programmer (SIS/SEF)
Program Development Verification Test Station (PDVTS)
CITS Ground Processor

Software Control Center supports B-1 Software and includes:
  Filenet System
  SUN System

Media Production System
Other Hardware Specialized Items

If B-1 software workload is not collocated with B-52 software workload, it will drive additional procurement costs estimated at $2.5M to include IBM 3090.

Equipment: **COORDINATE MEASURING MACHINES (CMMs) (15.1 Engines-Aircraft Total)**

Describe Why It Is One of A Kind

Dimensional inspection is critical to the overhaul and repair process due to the very tight tolerances required of gas turbine engine components. To ensure that repaired component parts meet the tight dimensional requirements of Air Force technical orders, OC-ALC uses ten production-oriented CMMs to perform the bulk of dimensional inspection procedures. In many cases, CMMs are the only method of measurement which can accurately characterize the dimensional condition of a component part. Manual methods of dimensional inspection are labor intensive and cannot reproduce the feature analysis functions of the CMM, which are required to ensure accurate dimensional inspection. Dedicated gages can provide the necessary feature analysis, but are also labor intensive, as well as very expensive in comparison to the purchase price and operational expenses of the CMM. In many cases, there is no alternative to CMM inspection capable of meeting Air Force technical order dimensional inspection requirements. This is especially true of ENSIP dimensional inspection requirements identified in T.O. 2J-F110-3-5 and 2J-F110-13-5. OC-ALC has several CMMs that have the capability to automatically change probe and stylus arrangements and configurations several times during the execution of an inspection program without changing the setup of the component part being inspected. This is absolutely essential for the required dimensional inspection of ENSIP parts. **OC-ALC also has two special duty CMMs designed specifically to measure gas turbine engine drive shafts which are unique in the DoD.**

9. Acreage Available for Building

9.1 What acreage on the installation does the government own in the proximity of the depot maintenance area that could be used for future expansion? Identify in the table below the real estate resources which have the potential to facilitate future development and for which you are the plant account holder or into which, though a tenant, your activity could reasonably expect to expand. Developed area is defined as land currently with buildings, roads, and utilities where further development is not possible without demolition of existing improvements. Report in "Restricted" areas that are restricted for future development due to environmental constraints (e.g. wetlands, landfills, archaeological sites), operational restrictions (e.g. ESQD arcs, HERO, HERP, HERF, AICUZ, ranges) or cultural resources restrictions. Identify the reason for the restriction when providing the acreage.

Table 9.1: **Real Estate Resources**

Land Use	Total Acres	Developed Acreage	Available for Development	
			Restricted	Unrestricted
Maintenance	592	368	134	90
Operational	1,904	594	1,259	51
Training	27	19	0	8
R & D	0	0	0	0
Supply & Storage	430	261	163	6
Admin	115	90	0	25
Housing	339	199	127	13
Recreational	339	304	9	26
Forestry Program	5	5	0	0
Agricultural Outlease Program	18	18	0	0
Hunting/Fishing Programs	14	14	0	0
Other	1,237	199	991	47
Total:	5,020	2,071	2,683	266

The acreage identified in Table 9.1 (Real Estate Resources) as "Available for Development - Restricted" is restricted due to one or more of the following reasons:

a. Airfield Clear Zones

b. Munitions Clear Zones
c. Environmental Constraints
d. Flood Plains
e. Perimeter Easements

10. Administrative Space

10.1 What amount in square feet of administrative space could be made available to the depot maintenance function?

Current Use	Square Feet	Potential Use (Be Specific)
Bldg 3001, Annex 3 & 4 Computer/DISO	**46,586**	**Software Development/Maintenance; Avionics Testing**
Bldg 201 Training/Social Actions	**31,638**	**Gyros, Navigational & Electronic Repair**

11. Industrial Waste

11.1 Are there any inhibiting factors that would limit future expansion on the base? Provide the details if applicable. **NO**

MEASURES OF MERIT

Workload and Capabilities

Answers to the following questions are to reflect programmed amounts by commodity group, by activity in direct labor hours by Fiscal Year for FY 1996 through FY 1999.

12. Core Capabilities (DoD)

12.1 What is the amount of core capability required to support your own Service? Provide your answers in Table 12.1.a by commodity group for the Fiscal Years requested.

Table 12.1.a: **Service Required Core**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
CARGO, TANKER, BOMBER	1,441,092	1,441,092	1,441,092	1,441,092
COMMAND AND CONTROL	42,536	42,536	42,536	42,536
TOTAL	1,483,628	1,483,628	1,483,628	1,483,628
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	132,383	132,383	132,383	132,383
HYDRAULIC/PNEUMATIC	309,270	309,270	309,270	309,270
INSTRUMENTS	1,016,281	1,016,281	1,016,281	1,016,281
AVIATION/ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	225	225	225	225
OTHER	254,559	254,559	254,559	254,559
MANUFACTURING AND FABRICATION	282,667	282,667	282,667	282,667
TOTAL	1,995,385	1,995,385	1,995,385	1,995,385

Table 12.1.a **Service Required Core** (Cont'd)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	2,008,456	2,008,456	2,008,456	2,008,456
BLADES AND VANES	214,830	214,830	214,830	214,830
TOTAL	2,223,286	2,223,286	2,223,286	2,223,286
SOFTWARE				
TACTICAL SYSTEMS	325,418	325,418	325,418	325,418
SUPPORT EQUIPMENT	298,560	298,560	298,560	298,560
TOTAL	623,978	623,978	623,978	623,978
SPECIAL INTEREST				
BEARINGS REFURBISH	34,233	34,233	34,233	34,233
TEST MEASUREMENT & DIAGNOSTIC	30	30	30	30
TOTAL	34,263	34,263	34,263	34,263
TOTAL	6,360,540	6,360,540	6,360,540	6,360,540

NOTE: B-1B has not been tasked for war requirements for this review process, but all indications are that it will be in the future. Currently, OC-ALC B-1B workload is required to retain core skills for those areas where workload war requirement exceed capability; therefore, B-1B is included in OC-ALC core workload allocations.

12.2 What is the amount of capability retained for the performance of other Services core? Provide your answers in Table 12.2.a by commodity group for the Fiscal Years requested.

Table 12.2a: **Core Capability Retained for Other Services**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
CARGO, TANKER, BOMBER	0	0	0	0
COMMAND AND CONTROL	44,015	44,015	44,015	44,015
TOTAL	44,015	44,015	44,015	44,015
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	0	0	0
HYDRAULIC/PNEUMATIC	882	882	882	882
INSTRUMENTS	9	9	9	9
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	0	0
OTHER	13,690	13,690	13,690	13,690
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	14,581	14,581	14,581	14,581

Table 12.2.a **Core Capability Retained For Other Services** (Cont'd)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	215,929	215,929	215,929	215,929
BLADES AND VANES	60,100	60,100	60,100	60,100
TOTAL	276,029	276,029	276,029	276,029
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	0	0	0	0
SPECIAL INTEREST				
BEARINGS REFURBISH	105	105	105	105
TEST MEASUREMENTS & DIAGNOSTIC	0	0	0	0
TOTAL	105	105	105	105
TOTAL	334,730	334,730	334,730	334,730

12.3 What portion of the Service Core capability identified in the 12.1a above is identified as Service-Controlled Core (Title 10 responsibility)? Provide your answer in Table 12.3.a by commodity group for the Fiscal Years requested.

Table 12.3.a: **Service-Controlled Core (Title 10)**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES				
CARGO, TANKER, BOMBER	0	0	0	0
COMMAND AND CONTROL	0	0	0	0
TOTAL	0	0	0	0
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	0	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	0	0
OTHER	0	0	0	0
MANUFACTURING AND FABRICATION	0	0	0	
TOTAL	0	0	0	0

Table 12.3.a: **Service-Controlled Core (Title 10)** (Cont'd)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	0	0	0	0
BLADES AND VANES	0	0	0	0
TOTAL	0	0	0	0
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	0	0	0	0
SPECIAL INTEREST				
BEARING REFURBISH	0	0	0	0
TEST MEASUREMENT & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	0	0	0	0

13. Core Workloads

13.1 What are your total Core Workloads to be applied against capabilities identified in Tables 12.1a and 12.2a)? Provide your answer (DLH) in Table 13.1.a by commodity group for the Fiscal Year requested.

Table 13.1a **Total Core Workloads**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
CARGO, TANKER, BOMBER	2,155,409	2,081,670	2,023,204	2,023,204
COMMAND AND CONTROL	300,900	513,600	512,342	512,342
TOTAL	2,456,309	2,595,270	2,535,546	2,535,546
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	417,216	306,822	333,754	333,754
HYDRAULIC/PNEUMATIC	187,870	181,954	181,160	181,160
INSTRUMENTS	289,790	268,871	263,920	263,920
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	62,349	86,874	92,619	92,619
OTHER	126,241	118,913	131,260	131,260
MANUFACTURING AND FABRICATION	95,342	95,353	96,850	96,850
TOTAL	1,178,808	1,058,787	1,099,563	1,099,563

Table 13.1.a **Total Core Workloads** (Cont'd)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	2,370,347	2,307,563	2,307,635	2,307,635
BLADES AND VANES	54,482	60,296	76,386	76,386
TOTAL	2,424,829	2,367,859	2,384,021	2,384,021
SOFTWARE				
TACTICAL SYSTEMS	325,418	325,418	325,418	325,418
SUPPORT EQUIPMENT	298,560	298,560	298,560	298,560
TOTAL	623,978	623,978	623,978	623,978
SPECIAL INTEREST				
BEARINGS REFURBISH	11,316	12,066	15,202	15,202
TEST MEASUREMENTS & DIAGNOSTIC	30	30	30	30
TOTAL	11,346	12,096	15,232	15,232
TOTAL	6,695,270	6,657,990	6,658,340	6,658,340

14. Other Workloads (Above Core)

14.1 What above core workloads do you perform by these source categories? Use the most appropriate category, but do not duplicate workload on more than one table. Provide answers in Tables 14.1.a through 14.1.g by commodity group for the Fiscal Years requested.

Table 14.1.a: **FMS Above Core Workload**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES				
CARGO, TANKER, BOMBER	0	0	0	0
COMMAND AND CONTROL	0	0	0	0
TOTAL	0	0	0	0
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	0	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	0	0
OTHER	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.a: **FMS Above Core Workload** (Cont'd)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	0	0	0	0
BLADES AND VANES	0	0	0	0
TOTAL	0	0	0	0
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	0	0	0	0
SPECIAL INTEREST				
BEARING REFURBISH	0	0	0	0
TEST MEASUREMENT & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.b: **Interservice Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES				
CARGO, TANKER, BOMBER	0	0	20,507	20,507
COMMAND AND CONTROL	0	0	0	0
TOTAL	0	0	20,507	20,507
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	0	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	0	0
OTHER	0	0	0	0
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.b: **Interservice Above Core Workload** (Cont'd)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	0	0	0	0
BLADES AND VANES	0	0	0	0
TOTAL	0	0	0	0
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	0	0	0	0
SPECIAL INTEREST				
BEARING REFURBISH	0	0	0	0
TEST MEASUREMENT & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	0	0	20,507	20,507

Table 14.1.c: **Other Agency Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES				
CARGO, TANKER, BOMBER	0	0	0	0
COMMAND AND CONTROL	0	0	0	0
TOTAL	0	0	0	0
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	0	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	0	0
OTHER	0	0	0	0
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.c: **Other Agency Above Core Workload** (Cont'd)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	0	0	0	0
BLADES AND VANES	0	0	0	0
TOTAL	0	0	0	0
SOFTWARE				
TACTICAL SYSTEMS	10,698	30,266	38,948	38,948
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	10,698	30,266	38,948	38,948
SPECIAL INTEREST				
BEARING REFURBISH	0	0	0	0
TEST MEASUREMENT & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	10,698	30,266	38,948	38,948

Table 14.1.d: **Last Source of Repair Workload**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES				
CARGO, TANKER, BOMBER	0	0	0	0
COMMAND AND CONTROL	0	0	0	0
TOTAL	0	0	0	0
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	0	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	0	0
OTHER	0	0	0	0
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.d: **Last Source Of Repair Workload** (Cont'd)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	0	0	0	0
BLADES AND VANES	0	0	0	0
TOTAL	0	0	0	0
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	0	0	0	0
SPECIAL INTEREST				
BEARING REFURBISH	0	0	0	0
TEST MEASUREMENT & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.e: **Within Service Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
CARGO, TANKER, BOMBER	19,728	0	131,835	131,835
COMMAND AND CONTROL	0	0	0	0
TOTAL	19,728	0	131,835	131,835
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	37,076	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	35,678	35,678
OTHER	54,850	73,580	77,613	77,613
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	54,850	110,656	113,291	113,291

Table 14.1.e **Within Service Above Core Workload** (Cont'd)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	39,733	39,550	39,548	39,548
BLADES AND VANES	0	0	0	0
TOTAL	39,733	39,550	39,548	39,548
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	76,733	54,986	0	0
TOTAL	76,733	54,986	0	0
SPECIAL INTEREST				
BEARINGS REFURBISH	0	0	0	0
TEST MEASUREMENTS & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	191,044	205,192	284,674	284,674

Table 14.1.f: **Low Quantity Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
CARGO, TANKER, BOMBER	35,732	0	0	0
COMMAND AND CONTROL	54,268	69,990	58,039	58,039
TOTAL	90,000	69,990	58,039	58,039
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	759	21,773	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	350	350	350	350
AVIONICS/ELECTRONICS	0	0	10,398	10,398
OTHER	31,426	11,805	8,499	8,499
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	32,535	33,928	19,247	19,247

Table 14.1.f **Low Quantity Above Core Workload** (Cont'd)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	0	0	0	0
BLADES AND VANES	0	0	0	0
TOTAL	0	0	0	0
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	36,461	35,761	40,591	40,591
TOTAL	36,461	35,761	40,591	40,591
SPECIAL INTEREST				
BEARINGS REFURBISH	0	0	0	0
TEST MEASUREMENTS & DIAGNOSTIC	2,075	2,075	2,075	2,075
TOTAL	2,075	2,075	2,075	2,075
TOTAL	161,071	141,754	119,952	119,952

Table 14.1.g: **All Other Workload (Above Core)**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT AIRFRAMES				
CARGO, TANKER, BOMBER	0	0	0	0
COMMAND AND CONTROL	0	0	0	0
TOTAL	0	0	0	0
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	0	0	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS/ELECTRONICS	0	0	0	0
OTHER	0	0	0	0
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.g: **All Other Workload (Above Core)** (Cont'd)

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	0	0	0	0
BLADES AND VANES	0	0	0	0
TOTAL	0	0	0	0
SOFTWARE				
TACTICAL SYSTEMS	0	0	0	0
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	0	0	0	0
SPECIAL INTEREST				
BEARING REFURBISH	0	0	0	0
TEST MEASUREMENT & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	0	0	0	0

Table 14.1.h: **Total Above Core Workload**
(Sum of Tables 14.1.a through 14.1.g)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
CARGO, TANKER, BOMBER	55,460	0	152,342	152,342
COMMAND AND CONTROL	54,268	69,990	58,039	58,039
TOTAL	109,728	69,990	210,381	210,381
AIRCRAFT COMPONENTS				
AIRCRAFT STRUCTURES	759	58,849	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	350	350	350	350
AVIONICS/ELECTRONICS	0	0	46,076	46,076
OTHER	86,276	85,385	86,112	86,112
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	87,385	144,584	132,538	132,538

Table 14.1.h **Total Above Core Workload** (Cont'd)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
AIRCRAFT TOTAL	39,733	39,550	39,548	39,548
BLADES AND VANES	0	0	0	0
TOTAL	39,733	39,550	39,548	39,548
SOFTWARE				
TACTICAL SYSTEMS	10,698	30,266	38,948	38,948
SUPPORT EQUIPMENT	113,194	90,747	40,591	40,591
TOTAL	123,892	121,013	79,539	79,539
SPECIAL INTEREST				
BEARINGS REFURBISH	0	0	0	0
TEST MEASUREMENTS & DIAGNOSTIC	2,075	2,075	2,075	2,075
TOTAL	2,075	2,075	2,075	2,075
TOTAL	362,813	377,212	464,081	464,081

15. Unique and/or Peculiar Workloads (Refer to Question 8.1)

15.1 What amount of the workload reported in question 8.1 is Core? Provide your answer in Table 15.1 by commodity groups for the Fiscal Years requested.

Table 15.1: **Unique and/or Peculiar Total Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
8.1.a,b,d,e,f,l,p,q,bb,ee,ff CARGO, TANKER, BOMBER	905262	891892	901182	901182
8.1.a,b,l,r,dd,ff COMMAND AND CONTROL	300900	513600	512342	512342
TOTAL	1206162	1405492	1413524	1413524
AIRCRAFT COMPONENTS				
8.1.l,p,q,r AIRCRAFT STRUCTURES	417216	306822	333754	333754
8.1.k,u HYDRAULIC/PNEUMATIC	157412	151496	150702	150702
8.1.n INSTRUMENTS	289790	268871	263920	263920
AVIATION ORDNANCE	0	0	0	0
8.1.c,z AVIONICS/ELECTRONICS	5535	5048	4934	4934
8.1.i,w OTHER	106918	99590	111937	111937
8.1.i,m MAUFACTURING AND FACBRICATION	98	43	44	44
TOTAL	976969	831870	865291	865291

Table 15.1 **Unique and/or Peculiar Total Core Workload** (Cont'd)

COMMODITY GROUP	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
8.1.h,i,l,m,s,y,aa,bb,cc,hh AIRCRAFT TOTAL	2370347	2307563	2307635	2307635
8.1.g,l,m,s BLADES AND VANES	54,482	60,296	76,386	76,386
TOTAL	2424829	2367859	2384021	2384021
SOFTWARE				
8,1,x TACTICAL SYSTEMS	325418	325418	325418	325418
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	325418	325418	325418	325418
SPECIAL INTEREST				
8.1.j,bb BEARINGS REFURBISH	11,316	12,066	15,202	15,202
TEST MEASUREMENTS & DIAGNOSTIC	0	0	0	0
TOTAL	11,316	12,066	15,202	15,202
TOTAL	4944694	4942705	5003456	5003456

Status for specific workload data for the following Unique and/or Peculiar capabilities follows:
Paint Proportioning and Mix Systems - Workload hours are included in overall aircraft hours used to support core.
E-4B Super High Frequency (SHF) System - Workload hours are included in overall aircraft hours used to support core.
Dual energy real-time microfocus x-ray system - Workload hours are included in overall aircraft hours used to support core.
Automated ultrasonic scanning system - Workload hours are included in overall aircraft hours used to support core.
Texas Tower - E-3, ALL workload supports Core
Centralized Aircraft Support System - B-1B, ALL workload supports Core.
Carbon Dioxide (CO2) cleaning process - Core percent cannot be determined.
Flexible Manufacturing Cell - Local manufacturing, ALL workload supports Core.

15. Unique and/or Peculiar Workloads (Refer to Question 8.1), continued

15.2 What amount of the workload reported in question 8.1 is non-Core? Provide your answer in table 15.2 by commodity group for the Fiscal Years requested.

Table 15.2: **Non-Core Unique and/or Peculiar Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
AIRCRAFT				
8.1.a,b,l,p,ff CARGO, TANKER, BOMBER	35732	0	0	0
8.1.a,b,l,r,dd,ff COMMAND AND CONTROL	54268	69990	58039	58039
TOTAL	90000	69900	58039	58039
AIRCRAFT COMPONENTS				
8.1.q,r AIRCRAFT STRUCTURES	759	58849	0	0
HYDRAULIC/PNEUMATIC	0	0	0	0
INSTRUMENTS	0	0	0	0
AVIATION ORDNANCE	0	0	0	0
AVIONICS ELECTRONICS	0	0	0	0
OTHER	0	0	0	0
MANUFACTURING AND FABRICATION	0	0	0	0
TOTAL	759	58849	0	0

Table 15.2: **Non Core Unique and/or Peculiar Workload** (Cont'd)

COMMODITY GROUP	Workloads (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ENGINES (GAS TURB)				
8.1.vAIRCRAFT TOTAL	39733	39550	39548	39548
BLADES AND VANES	0	0	0	0
TOTAL	39733	39550	39548	39548
SOFTWARE				
8.1.x TACTICAL SYSTEMS	10698	30266	38948	38948
SUPPORT EQUIPMENT	0	0	0	0
TOTAL	10698	30266	38948	38948
SPECIAL INTEREST				
BEARINGS REFURBISH	0	0	0	0
TEST MEASUREMENT & DIAGNOSTIC	0	0	0	0
TOTAL	0	0	0	0
TOTAL	141190	198655	137135	137135

Status for specific workload data for the following Unique and/or Peculiar capabilities follows:
Paint Proportioning and Mix Systems - Workload hours are included in overall aircraft hours used to support core.
E-4B Super High Frequency (SHF) System - Workload hours are included in overall aircraft hours used to support core.
Dual energy real-time microfocus x-ray system - Workload hours are included in overall aircraft hours used to support core.
Automated ultrasonic scanning system - Workload hours are included in overall aircraft hours used to support core.
Texas Tower - E-3, ALL workload supports Core.
Centralized Aircraft Support System - B-1B, ALL workload supports Core.
Carbon Dioxide (CO2) cleaning process - Core percent cannot be determined.
Flexible Manufacturing Cell - Local manufacturing, ALL workload supports Core.

16. Scope of Work Performed

16.1 Indicate the services/functions performed at this activity that are associated with depot maintenance, but not generally classified or considered as integral to the depot maintenance functions.

Service/Function	Description
Sustainment Management; Includes Engineering, Procurement, Spares Provisioning and Tech Data Management	
Supply storage/shipping: Defense Logistics Agency Air Force Technical Orders	
Joint Computer-Aided Acquisition Logistics Support (JCALS)	
Comprehensive Engine Management System (CEMS)	
MASIIS - Maintenance and Analysis Structural Integrity Information System	
Computer Program Identification Number Management (CPIN)	
Information processing: DISA	
Safety Programs: Safety Office	
Real property planning and management, fire protection, operations (utility systems, power production, water resources), readiness (disaster preparedness), physical maintenance of shops: 654 Civil Engineering Squadron	
Environmental Management, including environmental compliance, restoration, and pollution prevention	
Security and law enforcement: 654 Security Police Squadron	
Defense Accounting: Defense Finance and Accounting Service (DFAS)	
Defense Reutilization and Marketing Office (DRMO)	

16.2 Describe how these services/functions are related to accomplishment of the depot maintenance mission, and the benefits of these relationships.

Service/Function

Sustainment Management

Relationship/Benefit to Maintenance Mission

- The mission of Air Force Materiel Command (AFMC) depots is to maintain and sustain our MAJCOM forces enabling them to achieve their objectives through deployment/employment operations.

- As with any new system or product, the initial phases of acquisition are of utmost importance in bringing the system to life. However, the focus or "center of gravity" then shifts to weapon system sustainment, which entails management functions, as well as depot maintenance.

- There is a natural, essential link between operational weapon system management functions and depot level maintenance responsibilities.

-- The system and item management of these operational systems includes system engineering support, configuration control, tech data/drawing support, spares availability, inventory management and procurement support.

--- Because the sustaining engineering function is located with maintenance, there is increased effectiveness and response time to support the production line.

---- Engineers work hand-in-hand with maintenance personnel on a daily basis to resolve potential line stoppage problems like corrosion control on the -135 fleet and modification of the B-1 Bellcrank.

---- Engineers can see first hand the part or process in question, allowing quick resolution. This is especially true when problems require unique fixes, and/or are potential work stoppage situations.

---- This open line of communication is evident in cases that require System Support Management (SSM) engineers to answer a Nonconforming Technical Assistance Request. They are required to reply within 5 days if there is a work stoppage situation. Engineers must, in that case, go to the aircraft and examine the part or system first hand, before resolving the problem. There are practically no cases where this could adequately be accomplished from a remote location. Savings in travel and per diem for the management functions are a natural result.

---- One example of the advantage of collocation is when cracks were found in the main landing gear trunnion supports on an E-3. SSM engineers quickly developed replacement procedures, requiring development of a more efficient method of replacement. The new method saves approximately $50,000 in parts per aircraft, and results in returning the aircraft to the user more promptly.

--- The supply function works closely with the depot personnel ensuring delivery of parts/materials through local purchase/manufacture.

---- Having supply function collocated with repair activities also saves shipping cost, investigative cost and ensures timely response.

--- Spares supportability has been significantly enhanced by the collocation of management and maintenance in the E-3 program.

---- For instance, a new system, developed by management, and utilized by both management and depot maintenance, has been successful in identifying 90 percent of super critical program items. These items are located and procured from local source or other vendors to keep the production line moving smoothly.

- It has taken many years and "Lessons Learned" to build an efficient and cost effective infrastructure that ensures pride in accomplishments, high quality products, delivery on or before schedule, and customer satisfaction. To remove or isolate collocated support organizations from the PDM and manufacturing capabilities in place at OC-ALC would destroy the continuity of the "team", and would add significant flow days to PDM schedule. Costs would increase for parts shipment required in the engineering investigation, delivery of required on site investigative support equipment, additional induced delay of support (travel time) for professional expertise to arrive; the now fluid and productive PDM/Management system would, without a doubt, become sluggish and costly. The result of disengaging prime collocated support activities from the Program Depot Maintenance work location will cost in additional man-hours incurred while awaiting answers to problems, awaiting engineering and technical support, lab results, prototyping/trial installation; all of this would increase dramatically and customer satisfaction would decrease.

-- The synergism generated from this sustainment management and depot maintenance partnership is real, and has proven itself time and time again. Our logistical successes in Desert Shield/Desert Storm are tangible results of this very special partnership--results which have drawn praise from the forces on the front line. The joint effort of our program managers and depot maintenance work force in surging our organic base was that of a focused team--a team with the ability for the program manager to have daily "hands-on", from the engineer at the drawing board to the mechanic on the line.

-- The Defense Distribution Depot Oklahoma City, Oklahoma (DDO), is responsible for the receipt, storage, issue, inspection and shipment of material, including material quality control, preservation and packaging, inventory, transportation functions and pickup and delivery services.

--- Incoming shipments, with the exception of munitions, are received and inspected by the Product Receiving and Evaluation Division in Building 506. If there is no immediate requirement, material is then placed in a warehouse location for storage until requriements are generated.

--- All outbound shipments are made by commercial carriers. Utilized modes of transportation range from parcel post, small parcel air and surface carriers, truckload and less-than-truckload carriers, to specialized heavy haulers. Modes of transportation are selected based on supply/transportation priority assigned and UMMIPS standards.

--- Pickup and delivery services are provided from distribution warehouses, collocated disposal activity and on base Air Force customers, including pickup/delivery services for depot base supply items, local purchases, and off base deliveries.

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--- Incoming shipments, with the exception of numitions, are received and inspected by the Product Receiving and Evaluation Division in Building 506. If no immediate requirement exists, material is then placed in a warehouse location for storage until requirements are generated.

--- All outbound shipments are made by commercial carriers. Utilized modes of transportation range from parcel post, small parcel air and surface carriers, truckload and less-than-truckload carriers, to specialized heavy haulers. Modes of transportation are selected based on supply/transportation priority assigned and Uniform Material Movement and Issue Priority Systems (UMMIPS) standards.

--- Pickup and delivery services are provided from distribution warehouses, collocated disposal activity and on base Air Force customers, including pickup/delivery services for depot base supply items, local purchases, and off base deliveries. The Defense Logistics Agency (DLA) performs a vital service to the depot maintenance activity. The absorption of all supply and storage functions under DLA include those OC-ALC supply functions that supported the base as well as the depot requirements. Over $8.9B in total inventory is stored in warehouses located at Tinker, a large portion of which is for support of the depot.

-- **The USAF Technical Order (TO) System is functionally unique within the Air Force.** Areas of functional responsibilities include management of the GO22 System, numbering every TO, compiling and publishing TO indexes, distributing US Air Force TOs to the users, managing the TO Improvement System and Interservice Technical Information Exchange System, providing Occupational Safety and Health Act review capability, and operation and management of the USAF Technical Order System Repository. It provides for the life cycle configuration management, daily operation, and the GO22 system products which support depot level maintenance tasks and management.

-- Joint Computer-Aided Acquisition Logistics Support (JCALS) is an Army managed Major Automated Information System Review Committee (MAISRC) program that will create, manage, transfer, and store acquisition and logistics technical information in digitized format DoD wide. OC-ALC has been selected as the lead site for the Air Force in the JCALS DoD prototyping and one of five test sites for DoD (the only Air Force test site). JCALS will subsume the functionalities of the Logistics Management of Technical Order System (ATOS) within the Air Force. It will interface with the functionality of the Integrated Technical Data System (ITDS) of the B-2 program managed at Tinker. The E-3 aircraft has been selected as the weapon system test bed for the Air Force at the OC-ALC site. The 552 ACW is the field user for this aircraft with Tinker AFB as host. As such, they are an integral part of Tinker's Macro prototyping team.

-- Comprehensive Engine Management System (CEMS) is an automated world wide Central Data Base (CDB) system which provides a wide range of services to the operational base level engine manager, depot engine manager, Command engine manager and depot maintenance functions. These services include: inventory control, allocation/distribution, pipeline analysis, configuration management/parts life tracking, Time Compliance Technical Order (TCTO) management, maintenance management, actuarial analysis, and warranty tracking. CEMS tracks over 80,000 engines and modules consisting of over 1.5 million serialized items. It supports approximately 350 different customer accounts including all USAF, selected Navy and some Foreign Military. **CEMS is uniquely managed, operated and maintained at OC-ALC, one of the Air Force's primary engine repair depots.** Collocation has proven highly beneficial to the overall depot repair function, for instance, during conversion to two-level maintenance.

--- Modifications to CEMS for two-level maintenance have enhanced the already considerable support it provides to Depot Maintenance for jet propulsion units, and provides the means for the depot engine managers to better determine when maintenance is needed, what TCTOs are required, and what parts require repair or replacement under the Reliability Centered Maintenance (RCM) concept.

--- CEMS provides depot personnel with actuarial information to determine what the future maintenance and spares requirements will be for budgeting, spares buys, and workload negotiations. It provides the depot engineering community with world wide maintenance information that can be used to find bad actors and to determine the success of new parts or repair procedures.

-- The Maintenance Analysis and Structural Integrity Information Systems (MASIIS) organization consists of the Aircraft Structural Integrity Management Information System (ASIMIS), the Mishap Analysis and Animation Facility (MAAF), and the Malfunction Detection Analysis and Recording Subsystem/Ground Processing System (MADARS/GPS). The MASIIS is the AFMC office of primary responsibility (OPR) for processing, analyzing, and storing Aircraft Structural Integrity Program (ASIP) data generated through airborne flight recorders, individual aircraft usage records, monitoring devices, and applicable maintenance data collection systems. In addition, they serve as the central Air Force activity for the recovery and analysis of data from flight loads/crash recorders in support of aircraft mishap investigation boards.

--- Potential structural or material problems must be identified early in the life cycle to minimize their impact on the operational force, and a depot maintenance program must be established to provide for the orderly scheduling of inspections and replacement or repair of the airframe and engine components.

-- **The Computer Program Identification Number (CPIN) system is functionally unique within the Air Force.** The areas of specific functional responsibilities include numbering every mission critical software item, indexing these items, collecting and maintaining software requirements, distributing software to the user, and providing management and statistical reports. Concise and comprehensive instructions are provided along with life cycle configuration management from cradle to grave.

-- Defense Information Systems Agency (DISA) personnel operate the computers on which the Command data systems reside. The activity residing at Tinker Air Force Base has been designated a Regional Processing Center. There is no other similar capability on-site to perform the depot support function.

-- The Safety Office (SE) is responsible for OC-ALC safety programs including flight, ground, systems, and weapons. Essential support includes management and staff supervision of safety functions covering planning, developing, organizing, and implementing the ALC and base safety programs. Also provided is technical advice and assistance concerning safety standards and criteria for prime weapon systems, engines, and equipment commodities.

-- 654 Civil Engineering Squadron (CES/CC) provides a multiple of support functions to the ALC. These functions include planning for, and management of Air Force real property, provision of utilities, and maintenance and repair of facilities and real property installed equipment. CES manages the Base Engineering Emergency Force (BEEF) program. CE personnel also administer and provide fire protection to life and property, are responsible for the overall operations of utility systems for cooling, heating, water resources, and all power production. They operate, maintain, install , and repair all electrical power generation systems and components, and collect, process and dispose of industrial waste. The Readiness division (CEX) is responsible for all activities related to Civil Engineering Readiness and Disaster Preparedness. This includes CE input to emergency/contingency plans,

operational plans, and annexes. They also develop, manage, and direct plans, policies, procedures, and training for the Base Disaster Preparedness. The Maintenance division (CEZ) manages resources, logistics, vehicle support, and maintenance activities. They develop plans to improve the physical arrangement and layout of shops, plants, and service areas, manage Simplified Acquisition of Base Engineering Requirements (SABER) and planning functions for recurring work, and accomplish minor maintenance and repair on facilities, including grounds maintenance.

-- Environmental Management (EM) serves as OC-ALC program manager for environmental matters. EM develops and implements policies and procedures which ensure base-wide compliance with environmental requirements and completion of restoration actions. They serve as focal point and spokesperson for environmental matters with regulatory agencies, other governmental units, and civic leaders. EM also ensures and tracks environmental compliance across the installation to comply with the National Environmental Policy Act, the Resource Conservation Act, and federal, state, and local laws. They implement and manage all aspects of the Installation Restoration Program (IRP), provide support to base activities in the identification and elimination of hazardous waste, manage and monitor the base-wide Hazardous Waste Program and Solid waste Program, identify, evaluate, and prepare requirements for procurement of new technologies that reduce or eliminate hazardous materials and waste from industrial processes.

-- The 654 Security Police Squadron is responsible for advising the OC-ALC and Air Base Group Commanders on security and law enforcement matters under the command jurisdiction; directing and controlling all squadron activities; and conducting evaluations and inspections of Security Police and law enforcement functions, emergency operations, special duties, and personnel. They also formulate and enforce policies and procedures for securing the installation and protecting its resources and equip, train, and deploy mobility forces.

-- The Defense Finance and Accounting Service (DFAS) has responsibility for maintaining and processing accounting records, reports, and disbursements made by all Air Force activities on this installation. These functions had previously been accomplished by Air Force personnel. DFAS provides accounting records and reports for appropriated funds exceeding $15B annually. Cost accounting support is also provided to the world-wide depot maintenance mission, recording and preparing management information on over $700M in industrial fund sales annually. Finally, DFAS furnishes local payroll services for over 13,000 employees.

-- Defense Reutilization and Marketing Office (DRMO) Oklahoma City is a tenant activity located at Tinker AFB and receives Inter-service support (ISA) from the depot maintenance function and Tinker AFB. The DRMO mission is to administer property disposal service operations including receipt, control and preparation of disposable property for reutilization, donation, sale or other disposition in support of the Military Services, other federal agencies, contractors and authorized customers within an assigned geographical area. Surplus DOD hazardous property is sent to the DRMO for resale and recycling. The DRMO processing of surplus hazardous property encourages hazardous waste

minimization and increased revenues to the Department of Defense. The DRMO processes also expedite the disposal of hazardous waste and reduce the potential for a spill or release to the environment. The DRMO is the only permitted long term hazardous storage facility on base. Other base storage areas for disposal items are not required, as the DRMO provides this service. Base activities turn in property to the DRMO on a routine basis.

17. Interface with Customers

17.1 Indicate any special functions that the depot maintenance function performs that require close interface with customers, such as on-site workloads (e.g. technical assistance, crash/battle damage repairs, modification/upgrade installations).

Service/Function

Describe Required Interface/Relationship/Benefit

As a member of the Air Force Materiel Command (AFMC), Oklahoma City Air Logistics Center (OC-ALC) will, in coordination with our customers, face the challenge to ensure each has the most capable aircraft and support equipment possible. This customer support effort is culminated in Integrated Weapon System Management (IWSM). The fundamental vision for IWSM is a single face to the user, cradle-to-grave weapon system management, and an organization of seamless processes.

Integrated management requires continuous, close interface with the customer to maintain weapon system supportability and readiness. A combined effort of management, engineering support, equipment specialists, and depot maintenance support is required to support the weapon system over the "long haul" - for the life of the weapon system.

- Aside from the many benefits outlined in previous questions 4, 6, 8, and 16, additional benefits are derived by the customer with the integrated weapon system management and repair support provided by OC-ALC.

Depot Field Teams/CLSS Support 3 Services/Functions

Required Interface/Relationship/Benefit

Depot field teams are used to work special projects and to work projects beyond the capability of the field. The team is sometimes more convenient and often cheaper to send to the field than the customer sending their equipment to the depot.

At the request of the customer, and in coordination with system managers, depot maintenance personnel or CLSS military personnel provide depot field team on-site support for a variety of tasks. Examples include:

- **Crash Battle Damage** - Depot teams have performed on-site work from structural repair to landing gear replacement when aircraft were not in condition to move for maintenance. OC-ALC engineers work closely with users to provide technical assistance. Crash/battle damage

repairs are assessed and engineering assistance provided. When the repairs are beyond the scope authorized by the tech data, OC-ALC engineers develop statements of work or engineering dispositions to support the depot field team. OC-ALC provides aircraft crash recovery removal, reclamation, and salvage of tenant aircraft both on and off Tinker AFB for 552 ACW.

- **Modification/Installation** - A B-1B Center of Gravity modification was accomplished at the user's location as a depot field mod to accommodate user operations and schedules. Engine modifications and upgrades are also accomplished by field teams.

- **On-site Depot Repair** - Depot capability for fuel leak repair is provided at user facility for all weapon systems. OC-ALC's depot maintenance expertise in fuel cell repair is widely recognized by the customers. A depot field team was formed at the request of the customer, ACC, to evaluate and help resolve B-1B production fuel leak problems that plagued early aircraft delivery. It was determined that the contractor was using insufficient sealant and deficient application methods. OC-ALC engineering and maintenance personnel helped develop procedures to correct contractor production deficiencies. Another example occurred in 1990, while the B-1B fleet was grounded for engine failures. OC-ALC mobilized a complete Depot PDM Field Team to perform the PDM program at A B-1B Operational Base because the aircraft could not be flown to Tinker AFB. A full range of PDM tasks and modifications were performed on these aircraft at the customers facility.

Equipment Operation, Maintenance, and Repair (PMEL) for Altus AFB, Oklahoma, FAA, DLA (Memphis), and DLA (Stockton/Ogden)

4 Services/Functions

Required Interface/Relationship/Benefit

- **Heat treat, tube bending, and electroplating** - OC-ALC provides heat treatment, tube/line bending and electroplating of approximately 300 tenant manufactured items varying in size and quantity. Customer is Altus Air Force Base, Oklahoma.

- **Fabrication/Assembly of Aircraft Insulation Panels** - OC-ALC provides support to Altus AFB for fabrication and/or assembly of outsized fabric and aircraft insulation panels, varying in size and quantity.

- **Inspection, Calibration, and Repair**
  -- OC-ALC provides inspection, calibration, and repair of a variety of PMEL items for Altus AFB, Oklahoma.
  -- Calibration and repair are provided on approximately fifteen items for FAA.

Metallurgical Analysis 1 Service/Function

Required Interface/Relationship/Benefit

- **Metallurgical Analysis** - Other support includes Metallurgical analysis including material identification, mode of failure, and material properties for FAA.

Technical Assistance 3 Services/Functions

Required Interface/Relationship/Benefit

- **Software Modification/Troubleshooting** - During Desert Shield, when many contractors were removing personnel from the theater, OC-ALC software personnel went to Saudi Arabia to install software modifications on the E-3s. Additional on-site support is provided by OC-ALC software engineers in identifying and correcting software deficiencies. Automated systems' downtime is substantially reduced by OC-ALC ability to quickly identify problem cause on site and, if necessary, initiate a temporary "work around" solution.

- **Engineering Support** - A complete engineering staff develops new repair processes as required and helps the bases with unusual problems. The depot assists by telephone or sends engineering support to the base for on-site consultation, and can provide instant approval for required repairs. This same support is provided to depot production shops to reduce line stoppages and to ensure on-time deliveries. The Naval Satellite Engineering Office is staffed with Naval personnel who acta as liaison between Navy field units and tinker AFB, Depot Maintenance, on workload accomplished by AF personnel on Navy aircraft.

- **Skill Certification** - OC-ALC certifies welders from Air National Guard and all Air Force Bases, including all five ALCs. OC-ALC is the only government activity that certifies military welders in all metal groups.

On-Equipment Maintenance 3 Services/Functions

Required Interface/Relationship/Benefit

- **Jet Engine Intermediate Maintenance (JEIM)** - OC-ALC provides JEIM support on TF33-P100A engine including all repair and trouble-shooting beyond 552 ACW organizational capability, with partial or quick engine change (QEC) kit removed. This workload is accomplished within a 30 day flow time.

- **Jet Engine Test** - OC-ALC provides jet engine test cell support for TF33-P100A engine in built-up configuration and in bare engine configuration. Priority test cell support is provided to ensure mission requirements.

- **Flight Loads Data Recorder System (FLDRS) Maintenance** -
On-equipment maintenance for the FLDRS including all chemical, materials, and necessary hardware is provided by the depot. Maintenance includes replacement of strain gauges.

Off-Equipment Maintenance 2 Services/Functions

Required Interface/Relationship/Benefit

- A variety of off-equipment maintenance provided to 28 AD for accessory items is listed as follows:
  -- **Buildup and teardown** of wheels, tires, bearings, and Non destructive inspection, and 100 percent battery repair and service,
  -- **Fiberglass/plastic shop repairs** beyond minor surface blemishes or abrasions,
  -- **In-shop check, inspection, test and repair of bladder cells,**
- Additionally, **interior and exterior refurbishment for E-3 and EC/C-135 aircraft** is accomplished.
  -- **Repair for E-3 and -135 series life rafts and escape slides and replacement parts** is provided.

Test and Evaluation 1 Service/Function

Required Interface/Relationship/Benefit

- **Jet Engine Oil Analysis** - OC-ALC provides Spectrographic analysis and analysis of hydraulic fluid to US Marshal's Service. Workload level is contingent upon workload schedule priorities.

Depot Maintenance Enhancements/Special Programs for Improved Customer Service
5 Services/Functions

Required Interface/Relationship/Benefit

- **Area Support** - Area Support or "Drop-In Maintenance" is required for aircraft defects that cannot be repaired by a depot field team and must be returned to the depot. These aircraft are often accompanied by the using activity's crew chief and maintenance personnel. They work in conjunction with the depot technician to ensure maintenance is accomplished and required repairs are completed efficiently and expeditiously.

- **Two Level Maintenance Concept** - Improved responsiveness and interface with customer have been realized with the relocation to and assumption of intermediate level maintenance by the depot under the two level maintenance concept. Closer coordination between user and depot personnel is required to assure the reparable turn-around time supports user's mission requirement.

- **Aircraft Paint Warranty** - The aircraft paint program at OC-ALC has been enhanced by offering a warranty that ensures customer satisfaction. The warranty is provided to correct workmanship and other quality defects on aircraft painted at OC-ALC at no cost to the customer.

- **Aircraft Pre-acceptance Process** - OC-ALC/LAK, 552 ACW and depot maintenance personnel interface at pre-acceptance meetings prior to delivery for maintenance. Instant eye-to-eye feedback on the quality of depot work by wing personnel results in improved customer satisfaction by providing up front agreement on level and specific repair required before induction into depot for maintenance.

- Beyond the aforementioned programs, collocation of active flying wings and an active reserve unit receive benefits as customers of the OC-ALC.

-- These benefits are derived from the fact that the customer resides at the same base with the depot.

-- Collocation of the 552 Air Control Wing (ACW) with OC-ALC was done to the advantage of the ACW. The Navy Strategic Command Wing ONE has experienced similar advantages from location at OC-ALC. Additionally, the Navy and ACW have realized benefits derived from their integrated missions.

--- The 552 Air Control Wing joined Tinker at an initial cost of $194.9M in Military Construction.

---- The collocation of the E-3 weapon system manager and source of repair (SOR) for engines and many of the E-3 commodity items has proven beneficial to the flying mission.

----- Economies in **support equipment (SE) dictate joint utilization** in many instances by both 552 ACW and OC-ALC. In many instances, if the Air Force only bought one piece of SE, without collocation, additional equipment would have been required. An example is the Texas Tower for radome removal and repair.

----- Transportation costs were reduced on reparables for weapon system components collocated with SOR (i.e., engines, oxygen, radomes, etc.).

----- Travel and per diem expenditures have been all but eliminated for depot skills required by the 552 ACW.

----- Force structure reduction impacts on organizational skills are minimized by the availability of depot personnel.

--- Navy Strategic Communications Wing ONE joined Tinker associates in May 92 with an initial MILCON investment of $56.3M. A cost avoidance of $17.3M was realized by joint utilization of the 552 ACW Alert Facility.

---- Tinker was chosen for consolidation of the Navy's Atlantic and Pacific Air Squadrons because of the mid-CONUS location and good weather. The move from high cost-of-living areas (e.g., Hawaii) resulted in DoD savings. Of equal importance to the Navy, OC-ALC is SOR for the AF E-3 and F108-GE-100 engine which have a high percentage of commonality to the E-6 airframe, its CFM-56 engine, and numerous subsystems.

----- **Navy uses AF depot shop support** for many items (i.e., slides, wheels and tires, batteries, etc.), and labs (chemical, metallurgical, and precision measurement).

----- **OC-ALC technical and engineering expertise** have been accessed by the Navy, resulting in savings in travel and per diem.

----- An OC-ALC and Navy coordinated effort is under way for OC-ALC to begin organic depot maintenance on Navy CFM-56 engines.

------ **The E-6 depot program is being worked concurrent with the field phased inspection which will minimize aircraft downtime. This work is being done in the Navy's facilities at Tinker AFB.**

----- Discrepancies between Air Force and Navy manuals, Non-destructive Inspection processes, suitable consumable hardware and funding transfers were a few issues that have been encountered and resolved.

---- Navy and AF joint efforts at Tinker will certainly serve as a prototype for future interservice and joint service ventures.

- Oklahoma City Air Logistics Center has, throughout its history, demonstrated its flexibility to provide our customers in all services with the best support in the Air Force or DoD. We will

strive through improved communication and innovative technology to set the standard for excellence in customer support into the 21st century, and beyond.

MEASURES OF MERIT

Costs [1]

18. Real Property Maintenance (RPM)

18.1 What is your activity's backlog of real property maintenance for facilities performing depot maintenance as of 30 September 1993 (express in $K)? **$5,599K**

18.2 What were your activity's annual RPM expenses (in $K) for Fiscal Years 1990-1993? Provide your answers in Table 18.2.

Table 18.2: **Real Property Maintenance Expenses**

	FY 1990	FY 1991	FY 1992	FY 1993
RPM Expenses ($K)	7,894	4,363	10,129	7,384

19. Annual Operating Costs (Excludes Materials used in Depot Maintenance Workloads)

19.1 What were the total depot maintenance actual annual operating costs for your activity (AOC/$K), excluding materials, used in depot maintenance workloads for Fiscal Years 1990-1993? What was the cost per direct labor hour ($DLH) for actual executed hours reported in the DBOF? Provide your answers in Table 19.1.a.

Table 19.1a: **Annual Operating Costs (DPAH)**

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	342,900	309,284	325,382	335,696
$ / DLH (DPAH)	39.30	40.61	45.07	49.64

[1]There are inherent differences in organizational structure and accounting systems across the Services. Consequently, cost accumulations vary considerably. This severely limits the comparability of the cost per direct labor hour ($/DLH) rates across Service lines.

Costs, continued

20. Environmental Compliance

20.1 What were your total depot maintenance actual and programmed environmental compliance costs (expressed in $K) for Fiscal Years 1990-1997? Provide your answers in Table 20.1.

Table 20.1: **Environmental Compliance Costs**

COST($K)	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997
Actual	4,655	13,430	13,604	32,995	21,256	0	0	0
Programmed	0	0	0	0	0	9,745	11,981	14,838

20.2 If spending is accomplished as programmed above, what will be the remaining costs (backlog at the end of Fiscal Year 1997 expressed in $K) to bring existing facilities/equipment into environmental compliance? **Unknown. Final regulatory, limits, standards, and mandatory control and monitoring systems have not been promulgated by EPA for the 1990 clean air act. The impact will not be known until November 1995. Also, many of the volatile organic compounds in paints and stripping compounds/ solvents are being replaced and, therefore, may reduce the need for high cost equipment/facilities.**

21. Local Wage Rate

21.1 What were your Department of Labor local wage rates for a WG-11, step 3 for Fiscal Years 1991 through 1994?

Table 21.1: **Wage Rate**

Wage Rate	FY 1991	FY 1992	FY 1993	FY 1994
WG-11 / Step 3	14.11	14.70	15.24	15.37

Costs, continued

22. Programmed Capital Investments

22.1 How much is programmed for new mission equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.
22.2 How much is programmed for replacement equipment for Fiscal Years 1996 through 1999? Provide your answer (in $K) in Table 22.1.

Table 22.1: **Programmed Capital Investments**

TYPE	FY 1996	FY 1997	FY 1998	FY 1999
NEW MISSION ($K)	21,025	16,540	19,464	24,729
REPLACEMENT ($K)	3,777	9,492	7,825	9,313