Every page of the datacall is hand-numbered in the bottom right hand corner. When I received the original datacall responses, I immediately numbered them and recorded the numbering system on W/P IV 9.

Data Updates: In the Updated Data binder, there are five divisions:

1. Air Force Volume 1:
   - AMARC
   - Oklahoma City
   - Ogden
2. Air Force Volume 2:
   - San Antonio
   - Sacramento
   - Warner Robins
3. Army
   - Anniston Army Depot
   - Corpus Christi
   - Letterkenny
   - Red River
   - Tobyhanna
4. Navy I/Marines
   - Cherry Point
   - Jacksonville
   - North Island
   - Albany
   - Barstow
5. Navy II
   - Long Beach
   - Norfolk
   - Pearl Harbor
   - Portsmouth
   - Puget Sound
   - Crane
   - Keyport
   - Louisville

Steps Done When I Received Revised Data:

1. In the Updated Data binder, I listed the table and what page it is on in the datacall.
2. I Numbered the revised data page in the lower right hand corner, to go into the datacall. (Example: If old data was on page B-14, revised data page would be B-14-1.)
3. I Recorded the new page number in the Updated Data binder.
4. I Numbered the revised data page at the top in the middle to match the corresponding page number in the Updated Data binder.
5. Using a red pen, I crossed out the old data in the datacall, and put the page number of the Updated Data binder at the top of the slash mark where I recorded the revised data.

At the bottom of the page in the Updated Data binder, I gave the page number to where the certification letter is and any other relevant information.

Purpose: To explain the hand numbering system and subsequent changes to the data call.

Auditor:	Date:	Reviewer:	Date:	File:	W/P:
gs	11-23-94			IV	10

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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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 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.

A2

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A 3

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

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

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JOINT CROSS SERVICE - DEPOT MAINTENANCE

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

A5

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.

(4)

Table 1.1.a: **Capacity Index**

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	1,513,153	1,542,093	1,544,089	1,657,957	1,573,488
(1C4) Acft, Fixed - Trainer (T-38)	507,560	387,923	294,203	122,209	105
(2B) Acft Comp - Acft Structure	114,909	93,049	81,058	89,521	90,441
(2C) Acft Comp - Hydraulic/Pneudraulic	2,557	2,900	2,860	3,197	3,525
(2D) Acft Comp - Instruments	12,095	13,811	9,727	13,297	12,496
(2E) Acft Comp - Landing Gear	6,493	6,333	7,805	8,063	8,297
(2G) Acft Comp - Avionics/Electronics	122,728	119,028	124,756	96,722	97,274
(2H) - Acft Comp - APUs	299,783	292,218	307,243	287,709	288,076
(2I) Acft Comp/Other	514,773	532,527	670,062	676,805	704,685
(3A) Engines (GTEs) - Acft	4,773,595	4,947,819	5,049,901	4,985,091	5,000,818
(4A) Missiles-Strategic - Nuclear	104,118	107,017	107,000	108,711	108,734
(10C) Ground Gen/Purp - Munitions/Ordnance	2,435	2,416	3,150	3,029	3,003
(12B) S/W - Spt Eqt	172,758	198,533	206,593	222,130	227,655

AL

(13C) Spec Interest Item - TMDE Eqt	635,095	651,441	650,372	680,998	684,940
TOTAL	8,782,047	8,897,116	9,058,212	8,955,417	8,803,527
computer total	8,782,052	8,897,108	9,058,819	8,955,439	8,803,537
	+5	-8	+607	+22	+10
	8,782,052	8,897,108	9,058,819	8,955,439	8,803,537
	2	2	2	2	2

4

SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance question number 1.1

SOURCE: Capacity_BY,01,02,03, and 04 files (dated 7 Jun 94 , hard copy of work position totals, atch1) by Resource Control Center (RCC) were developed IAW draft DoD 4151.15H "Depot Maintenance Production Shop Capacity Measurement Handbook" for the Depot Maintenance Strategic Management System (GO29). The work position verification sheets used for GO29 (also in atch1), were supplied by Product Directorates (PD) LA (2 May 94), LD (27 & 31 Jan and 30 May 94), LP (21 Apr and 18 May 94), NW (4 Feb 94), and TI,(24 &31 Jan 94). Funded workload data was extracted from the Depot Maintenance Workload Planning and Control System (G004C) (hard copy dated 17 Jun 94, atch 2) and projected Production data agreed upon at the April 1994 Depot Maintenance FY94 Workload Review. Data was accessible via the G030 Maintenance Workloading Management System (data diskett #1 used for question numbers 3.1.a and 3.1.b).

METHOD: Work Positions (WPs) by RCC from Capacity_ files were multiplied by the percent of hours each RCC funded per commodity in order to determine amount of work positions used per commodity. The sum of WPs per commodity were entered into the equation (WP x .95 x 1615 hrs) in order to convert them to DPAHs for the Capacity Index per commodity. Totals for each fiscal year were computed by using the total Depot Maintenance work positions from same source Capacity_BY,01,02,03,and 04 files (dated 7 Jun 94) and entered into same equation used above. The computer rounding of each commodity group's capacity index is the reason for the slightly different totals. However, we did have a typographic error in FY97 commodity group 3A that we corrected in table below.

CONCLUSION:

Table 1.1.a: **Capacity Index**

6

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft. Fixed - Transport (C-5)	1,513,153	1,542,093	1,544,089	1,657,957	1,573,488
(1C4) Acft. Fixed - Trainer (T-38)	507,560	387,923	294,203	122,209	105
(2B) Acft Comp - Acft Structure	114,909	93,049	81,058	89,521	90,441
(2C) Acft Comp - Hydraulic/Pneudraulic	2,557	2,900	2,860	3,197	3,525
(2D) Acft Comp - Instruments	12,095	13,811	9,727	13,297	12,496

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Version 1.5

(c-1.1a)

(2E) Acft Comp - Landing Gear	6,493	6,333	7,805	8,063	8,297
(2G) Acft Comp - Avionics/Electronic - Other	122,728	119,028	124,756	96,722	97,274
(2H) - Acft Comp - APUs	299,783	292,218	307,243	287,709	288,076
(2I) Acft Comp/Other	514,773	532,527	670,062	676,805	704,685
(3A) Engines (GTEs) - Acft	4,773,595	4,947,819	5,049,301	4,985,091	5,000,818
(4A) Missiles- Strategic - Nuclear	104,118	107,017	107,000	108,711	108,734
(10C) Ground Gen/Pump - Munitions/Ordnance	2,435	2,416	3,150	3,029	3,003
(12B) S/W - Spt Eqt	172,758	198,533	206,593	222,130	227,655
(13C) Spec Interest Item - TMDE Eqt	635,095	651,441	650,372	680,998	684,940
TOTAL	8,782,047	8,897,116	9,058,212	8,955,417	8,803,527
	8782052	8,897,108	OK	8,955,439	8,303,5[illegible]

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Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 8 July 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Donald L. Lucht Date 27 JUL 94
DONALD L. LUCHT
HQ AFMC/LGPE
DSN 787-5611

SA-ALC (C1.1a)
Version 1.5

A7-2

SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - **Depot Maintenance** question number 1.1

SOURCE: Capacity_BY,O1,O2,O3, and O4 files (dated 7 Jun 94 , hard copy of work position totals, atch1) by Resource Control Center (RCC) were developed IAW draft DoD 4151.15H "Depot Maintenance Production Shop Capacity Measurement Handbook" for the Depot Maintenance Strategic Management System (GO29). The work position verification sheets used for GO29 (also in atch1), were supplied by Product Directorates (PD) LA (2 May 94), LD (27 & 31 Jan and 30 May 94), LP (21 Apr and 18 May 94), NW (4 Feb 94), and TI (24 &31 Jan 94). Funded workload data was extracted from the Depot Maintenance Workload Planning and Control System (G004C) (hard copy dated 17 Jun 94, atch 2) and projected Production data agreed upon at the April 1994 Depot Maintenance FY94 Workload Review. Data was accessible via the G030 Maintenance Workloading Management System (data diskett #1 used for question numbers 3.1.a and 3.1.b).

METHOD: Work Positions (WPs) by RCC from Capacity_ files were multiplied by the percent of hours each RCC funded per commodity in order to determine amount of work positions used per commodity. The sum of WPs per commodity were entered into the equation (WP x .95 x 1615 hrs) in order to convert them to DPAHs for the Capacity Index per commodity. Totals for each fiscal year were computed by adding the applicable Capacity index of each commodity.

CONCLUSION:

Table 1.1.a: **Capacity Index**

6 (back)

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	1,513,153	1,542,093	1,544,089	1,657,957	1,573,488
(1C4) Acft, Fixed - Trainer (T-38)	507,560	387,923	294,203	122,209	105
(2B) Acft Comp - Acft Structure	114,909	93,049	81,058	89,521	90,441
(2C) Acft Comp - Hydraulic/Pneudraulic	2,557	2,900	2,860	3,197	3,525
(2D) Acft Comp - Instruments	12,095	13,811	9,727	13,297	12,496
(2E) Acft Comp - Landing Gear	6,493	6,333	7,805	8,063	8,297
(2G) Acft Comp - Avionics/Electronic - Other	122,728	119,028	124,756	96,722	97,274

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4 Oct 94

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6 (back

(2H) - Acft Comp - APUs	299,783	292,218	307,243	287,709	288,076
(2I) Acft Comp/Other	514,773	532,527	670,062	676,805	704,685
(3A) Engines (GTEs) - Acft	4,773,595	4,947,819	5,049,301	4,985,091	5,000,818
(4A) Missiles- Strategic - Nuclear	104,118	107,017	107,000	108,711	108,734
(10C) Ground Gen/Purp - Munitions/Ordnance	2,435	2,416	3,150	3,029	3,003
(12B) S/W - Spt Eqt	172,758	198,533	206,593	222,130	227,655
(13C) Spec Interest Item - TMDE Eqt	635,095	651,441	650,372	680,998	684,940
TOTAL	8,782,052	8,897,108	9,058,219	8,955,439	8,803,537

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 3 Oct 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Tom Spitler Date 4 Oct 94
Tom Spitler, GM-13
HQ AFMC/LGPE,
DSN: 787-5610

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SA-ALC
VERSION 1.7
4 OCT 94

SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - **Depot Maintenance** question number 1.1

SOURCE: Capacity_BY,O1,O2,O3, and O4 files (dated 7 Jun 94 , hard copy of work position totals, atch1) by Resource Control Center (RCC) were developed IAW draft DoD 4151.15H "Depot Maintenance Production Shop Capacity Measurement Handbook" for the Depot Maintenance Strategic Management System (GO29). The work position verification sheets used for GO29 (also in atch1), were supplied by Product Directorates (PD) LA (2 May 94), LD (27 & 31 Jan and 30 May 94), LP (21 Apr and 18 May 94), NW (4 Feb 94), and TI (24 &31 Jan 94). Funded workload data was extracted from the Depot Maintenance Workload Planning and Control System (G004C) (hard copy dated 17 Jun 94, atch 2) and projected Production data agreed upon at the April 1994 Depot Maintenance FY94 Workload Review. Data was accessible via the G030 Maintenance Workloading Management System (data diskett #1 used for question numbers 3.1.a and 3.1.b).

METHOD: Work Positions (WPs) by RCC from Capacity_ files were multiplied by the percent of hours each RCC funded per commodity in order to determine amount of work positions used per commodity. The sum of WPs per commodity were entered into the equation (WP x .95 x 1615 hrs) in order to convert them to DPAHs for the Capacity Index per commodity. Totals for each fiscal year were computed by adding the applicable Capacity index of each commodity.

CONCLUSION:

Table 1.1.a: **Capacity Index**

10

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	1,513,153	1,542,093	1,544,089	1,657,957	1,573,488
(1C4) Acft, Fixed - Trainer (T-38)	507,560	387,923	294,203	122,209	105
(2B) Acft Comp - Acft Structure	114,909	93,049	81,058	89,521	90,441
(2C) Acft Comp - Hydraulic/Pneudraulic	2,557	2,900	2,860	3,197	3,525
(2D) Acft Comp - Instruments	12,095	13,811	9,727	13,297	12,496
(2E) Acft Comp - Landing Gear	6,493	6,333	7,805	8,063	8,297
(2G) Acft Comp - Avionics/Electronic - Other	122,728	119,028	124,756	96,722	97,274

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10 OCT 94

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(2H) - Acft Comp - APUs	299,783	292,218	307,243	287,709	288,076
(2I) Acft Comp/Other	219,398	234,740	247,014	265,425	288,439
(2J) Manuf/Fabrication	* 295,375	* 297,787	* 423,048	* 411,380	* 416,246
(3A) Engines (GTEs) - Acft	* 4,773,595	* 4,947,819	* 5,049,301	* 4,985,091	* 5,000,818
(4A) Missiles- Strategic - Nuclear	104,118	107,017	107,000	108,711	108,734
(10C) Ground Gen/Purp - Munitions/Ordnance	2,435	2,416	3,150	3,029	3,003
(12B) S/W - Spt Eqt	172,758	198,533	206,593	222,130	227,655
(13C) Spec Interest Item - TMDE Eqt	635,095	651,441	650,372	680,998	684,940
TOTAL	8,782,052	8,897,108	9,058,219	8,955,439	8,803,537

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 7 Oct 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date 8 OCT 94
Donald Lucht, GM-14
HQAFMC/LEPE
DSN 787-5610

SA-ALC
VERSION 1.8
10 OCT 94

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance question number 1.1

SOURCE: Capacity_BY,01,02,03, and 04 files (dated 7 Jun 94 , hard copy of work position totals, atch1) by Resource Control Center (RCC) were developed IAW draft DoD 4151.15H "Depot Maintenance Production Shop Capacity Measurement Handbook" for the Depot Maintenance Strategic Management System (GO29). The work position verification sheets used for GO29 (also in atch1), were supplied by Product Directorates (PD) LA (2 May 94), LD (27 & 31 Jan and 30 May 94), LP (21 Apr and 18 May 94), NW (4 Feb 94), and TI (24 &31 Jan 94). Funded workload data was extracted from the Depot Maintenance Workload Planning and Control System (G004C) (hard copy dated 17 Jun 94, atch 2) and projected Production data agreed upon at the April 1994 Depot Maintenance FY94 Workload Review. Data was accessible via the G030 Maintenance Workloading Management System (data diskett #1 used for question numbers 3.1.a and 3.1.b).

METHOD: Work Positions (WPs) by RCC from Capacity_ files were multiplied by the percent of hours each RCC funded per commodity in order to determine amount of work positions used per commodity. The sum of WPs per commodity were entered into the equation (WP x .95 x 1615 hrs) in order to convert them to DPAHs for the Capacity Index per commodity. Totals for each fiscal year were computed by adding the applicable Capacity index of each commodity.

CONCLUSION:

Table 1.1.a: Capacity Index

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	* 1,495,932	1,542,093	1,544,089	1,657,957	1,573,488
(1C4) Acft, Fixed - Trainer (T-38)	* 524,781 524,781	387,923	294,203	122,209	105
(2B) Acft Comp - Acft Structure	114,909	93,049	81,058	89,521	90,441
(2C) Acft Comp - Hydraulic/Pneudraulic	2,557	2,900	2,860	3,197	3,52 3,52
(2D) Acft Comp - Instruments	12,095	13,811	9,727	13,297	12,49
(2E) Acft Comp - Landing Gear	6,493	6,333	7,805	8,063	8,29
(2G) Acft Comp - Avionics/Electronic - Other	122,728	119,028	124,756	96,722	97,27

BRAC 95
Maintain Records Thru Yr 2005

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(2H) - Acft Comp - APUs	299,783	292,218	307,243	287,709	288,076
(2I) Acft Comp/Other	219,460	234,785	247,002	265,062	287,674
(2J) Manuf/Fabrication	295,301	297,755	423,064	411,738	417,010
(3A) Engines (GTEs) - Acft	4,773,595	4,947,819	5,049,301	4,985,091	5,000,818
(4A) Missiles- Strategic - Nuclear	104,118	107,017	107,000	108,711	108,734
(10C) Ground Gen/Purp - Munitions/Ordnance	2,435	2,416	3,150	3,029	3,003
(12A) S/W - Tactical Sys.	* 21,066	* 19,013	* 20,231	* 20,016	* 20,240
(12B) S/W - Spt Eqt	151,693	* 179,518	* 186,361	* 202,113	* 207,414
(13C) Spec Interest Item - TMDE Eqt	635,095	651,441	650,372	680,998	684,940
TOTAL	* 8,782,041	* 8,897,119	* 9,058,222	* 8,955,433	* 8,803,539

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 17 Oct 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Tom Spitler Date 18 Oct 94
Tom Spitler
HQ AFMC/LGPE
DSN 787-5610

BRAC 95
Maintain Records Thru Yr 2005

A7-6

SA-ALC VERSION 1.9

REC'D 19 OCT 94

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 (%)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	84	65	47	51	52
(1C4) Acft, Fixed - Trainer (T-38)	67	88	78	43	88
(2B) Acft Comp - Acft Structure	71	61	58	60	63
(2C) Acft Comp - Hydraulic/Pneudraulic	96	88	87	95	96
(2D) Acft Comp - Instruments	64	57	56	54	54
(2E) Acft Comp - Landing Gear	70	66	53	57	55
(2G) Acft Comp - Avionics/Electronics	90	81	88	81	81
(2H) Acft Comp - APUs	60	55	55	51	51
(2I) Acft Comp - Other	59	57	51	49	48
(3A) Engines (GTEs) - Acft	79	74	69	68	68
(4A) Missiles- Strategic - Nuclear	98	92	97	94	92
(10C) Ground Gen/Purp - Munitions/Ordnance	99	93	98	95	93
(12B) S/W - Spt Eqt	99	92	84	88	85
(13C) Spec Interest Item - TMDE Eqt	74	69	70	70	70
TOTAL	78	72	65	64	64

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - **Depot Maintenance** question number 1.2.

SOURCE: Capacity_BY,O1,O2,O3, and O4 files (dated 7 Jun 94, hard copy of work position totals, atch 1) by Resource Control Center (RCC) were developed IAW draft DoD 4151.15H "Depot Maintenance Production Shop Capacity Measurement Handbook" for the Depot Maintenance Strategic Management System (GO29). The work position verification sheets used for GO29 files (also atch1), were supplied by Product Directorates (PD) LA (2 May 94), LD (27 & 31 Jan and 30 May 94), LP (21 Apr and 18 May 94), NW (4 Feb 94), and TI (24 & 31 Jan 94). Funded workload data was extracted from the Depot Maintenance Workload Planning and Control System (G004C) (hard copy dated 17 Jun 94, atch 2) and projected Production data agreed upon at the April 1994 Depot Maintenance FY94 Workload Review. Data was accessible via the G030 Maintenance Workloading Management System (data diskett #1 used for question numbers 3.1.a and 3.1.b).

METHOD: Work Positions (WP) from capacity files were multiplied by the percent of hours each RCC funded per commodity in order to determine amount of work positions used per commodity. The sum of WPs per commodity were entered into the equation (WP x .95 x 1615 hrs) in order to convert them to DPAHs. The funded DPAHs per commodity were divided by the WPs in DPAHs to compute the utilization index of each commodity. Totals for fiscal years were computed by dividing the total funded DPAHs (Table 3.1b) by respective fiscal year total Capacity Index (Table 1.1a).

CONCLUSION:

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**

10

COMMODITY GROUP	INDEX (%)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	84	65	47	51	52

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(1C4) Acft, Fixed - Trainer (T-38)	67	88	78	43	88
(2B) Acft Comp - Acft Structure	71	61	58	60	63
(2C) Acft Comp - Hydraulic/Pneudraulic	96	88	87	95	96
(2D) Acft Comp - Instruments	64	57	56	54	54
(2E) Acft Comp - Landing Gear	70	66	53	57	55
(2G) Acft Comp - Avionics/Electronic - Other	90	81	88	81	81
(2H) - Acft Comp - APUs	60	55	55	51	51
(2I) Acft Comp - Other	* 80	* 76	* 71	* 67	* 65
(2J) Manuf/Fabrication	* 43	* 41	* 40	* 37	* 37
(3A) Engines (GTEs) - Acft	79	74	69	68	68
(4A) Missiles- Strategic - Nuclear	98	92	97	94	92
(10C) Ground Gen/Purp - Munitions/Ordnance	99	93	98	95	93
(12B) S/W - Spt Eqt	99	92	84	88	85
(13C) Spec Interest Item - TMDE Eqt	74	69	70	70	70
TOTAL	78	72	65	64	64

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 7 Oct 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

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Date 8 OCT 94
Donald Lucht, GM-14 HQAFMC/LGPE

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance question number 1.2.

SOURCE: Capacity_BY,O1,O2,O3, and O4 files (dated 7 Jun 94, hard copy of work position totals, atch 1) by Resource Control Center (RCC) were developed IAW draft DoD 4151.15H "Depot Maintenance Production Shop Capacity Measurement Handbook" for the Depot Maintenance Strategic Management System (GO29). The work position verification sheets used for GO29 files (also atch1), were supplied by Product Directorates (PD) LA (2 May 94), LD (27 & 31 Jan and 30 May 94), LP (21 Apr and 18 May 94), NW (4 Feb 94), and TI (24 & 31 Jan 94). Funded workload data was extracted from the Depot Maintenance Workload Planning and Control System (G004C) (hard copy dated 17 Jun 94, atch 2) and projected Production data agreed upon at the April 1994 Depot Maintenance FY94 Workload Review. Data was accessible via the G030 Maintenance Workloading Management System (data diskett #1 used for question numbers 3.1.a and 3.1.b).

METHOD: Work Positions (WP) from capacity files were multiplied by the percent of hours each RCC funded per commodity in order to determine amount of work positions used per commodity. The sum of WPs per commodity were entered into the equation (WP x .95 x 1615 hrs) in order to convert them to DPAHs. The funded DPAHs per commodity were divided by the WPs in DPAHs to compute the utilization index of each commodity. Totals for fiscal years were computed by dividing the total funded DPAHs (Table 3.1b) by respective fiscal year total Capacity Index (Table 1.1a).

CONCLUSION:

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 (%)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	84	65	47	51	52

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(1C4) Acft, Fixed - Trainer (T-38)	* 66	88	78	43	88
(2B) Acft Comp - Acft Structure	71	61	58	60	63
(2C) Acft Comp - Hydraulic/Pneudraulic	96	88	87	95	96
(2D) Acft Comp - Instruments	64	57	56	54	54
(2E) Acft Comp - Landing Gear	70	66	53	57	55
(2G) Acft Comp - Avionics/Electronic - Other	90	81	88	81	81
(2H) - Acft Comp - APUs	60	55	55	51	51
(2I) Acft Comp - Other	80	76	71	67	65
(2J) Manuf/Fabrication	43	41	40	37	36
(3A) Engines (GTEs) - Acft	79	74	69	68	68
(4A) Missiles- Strategic - Nuclear	98	92	97	94	92
(10C) Ground Gen/Purp - Munitions/Ordnance	99	93	98	95	93
(12A) S/W - Tac Sys	* 122	* 98	* 83	* 81	* 79
(12B) S/W - Spt Eqp	* 96	92	84	88	* 86
(13C) Spec Interest Item - TMDE Eqt	74	69	70	70	70
TOTAL	78	72	65	64	64

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 17 Oct 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Tom Spitler Date 18 Oct 94
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For BRAC 95 TOM SPITLER HQ AFMC/LGDE DSN 787-5610

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REC'D 19 OCT 94

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) Acft, Fixed - Transport (C-5)	2,470,356	2,470,356	2,470,356	2,470,356	2,470,356
(1C4) Acft, Fixed - Trainer (T-38)	675,055	675,055	675,055	675,055	675,055
(2B) Acft Comp - Acft Structure	148,233	148,233	148,233	148,233	148,233
(2C) Acft Comp - Hydraulic/Pneudraulic	3,666	3,666	3,666	3,666	3,666
(2D) Acft Comp - Instruments	19,750	19,750	19,750	19,750	19,750
(2E) Acft Comp - Landing Gear	12,031	12,031	12,031	12,031	12,031
(2G) Acft Comp - Avionics/Electronics	139,727	139,727	139,727	139,727	139,727
(2H) Acft Comp -APUs	445,502	445,502	445,502	445,502	445,502
(2I) Acft Comp - Other	1,071,121	1,071,121	1,071,121	1,071,121	1,071,121
(3A) Engines (GTEs) Acft	6,614,584	6,614,584	6,614,584	6,614,584	6,614,584
(4A) Missiles-Strategic - Nuclear	183,649	183,649	183,649	183,649	183,649
(10C) Ground Gen/Purp - Munitions/Ordnance	5,433	5,433	5,433	5,433	5,433
(12B) S/W - Spt Eqt	261,803	261,803	261,803	261,803	261,803
(13C) Spec Interest Item - TMDE Eqt	890,422	890,422	890,422	890,422	890,422
TOTAL	12,941,332	12,941,332	12,941,332	12,941,332	12,941,332

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - **Depot Maintenance** question number 1.3

SOURCE: Capacity data from tables of question numbers 1.1 and 1.2 and data supplied by Product Directorates for maximum capacity purposes based on capability of adding more work positions for Missiles-Strategic-Nuclear (4A) and Ground Gen/Purpose-Munitions/Ordnance (10C) commodities (hard copy of data and computations dated 2 Jun and 17 Jun 94, atch 1). There is no DoD regulation that addresses maximum potential capacity as requested in subject question. Data titles /dates are the same as used for questions 1.1 and 1.2.

METHOD: Work Positions (WPs) were reviewed by each Product Directorate (PD) to increase or decrease for changes in capacity for current and future planned workload mixes. Work positions from these capacity files were used to determine utilization factors for FY95-FY99 based on workload mixes by commodity. The highest index of each commodity and its corresponding utilization factor were used to compute the maximum potential capacity for each commodity. The maximum potential capacity was computed by multiplying one plus the unused capacity index by the corresponding Index (DLHs) except for commodities 4A and 10C where maximum potential capacity was based on utilizing more work positions.

CONCLUSION:

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

10

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	2,470,356	2,470,356	2,470,356	2,470,356	2,470,356
(1C4) Acft, Fixed - Trainer (T-38)	675,055	675,055	675,055	675,055	675,055

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(2B) Acft Comp - Acft Structure	148,233	148,233	148,233	148,233	148,233
(2C) Acft Comp - Hydraulic/Pneudraulic	3,666	3,666	3,666	3,666	3,666
(2D) Acft Comp - Instruments	19,750	19,750	19,750	19,750	19,750
(2E) Acft Comp - Landing Gear	12,031	12,031	12,031	12,031	12,031
(2G) Acft Comp - Avionics/Electronic - Other	139,727	139,727	139,727	139,727	139,727
(2H) - Acft Comp - APUs	445,502	445,502	445,502	445,502	445,502
(2I) Acft Comp - Other	* 389,393	* 389,393	* 389,393	* 389,393	* 389,393
(2J) Manuf/Fabrication	* 678,481	* 678,481	* 678,481	* 678,481	* 678,481
(3A) Engines (GTEs) Acft	6,614,584	6,614,584	6,614,584	6,614,584	6,614,584
(4A) Missiles-Strategic - Nuclear	183,649	183,649	183,649	183,649	183,649
(10C) Ground Gen/Purp - Munitions/Ordnance	5,433	5,433	5,433	5,433	5,433
(12B) S/W - Spt Eqt	261,803	261,803	261,803	261,803	261,803
(13C) Spec Interest Item - TMDE Eqt	890,422	890,422	890,422	890,422	890,422
TOTAL	12,938,085	12,938,085	12,938,085	12,938,085	12,938,085

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 7 Oct 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date 8 OCT 94
Donald Lucht, GM-14
AQAFMC/LGPE
DSN 787-5610

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance question number 1.3

SOURCE: Capacity data from tables of question numbers 1.1 and 1.2 and data supplied by Product Directorates for maximum capacity purposes based on capability of adding more work positions for Missiles-Strategic-Nuclear (4A) and Ground Gen/Purpose-Munitions/Ordnance (10C) commodities (hard copy of data and computations dated 2 Jun and 17 Jun 94, atch 1). There is no DoD regulation that addresses maximum potential capacity as requested in subject question. Data titles /dates are the same as used for questions 1.1 and 1.2.

METHOD: Work Positions (WPs) were reviewed by each Product Directorate (PD) to increase or decrease for changes in capacity for current and future planned workload mixes. Work positions from these capacity files were used to determine utilization factors for FY95-FY99 based on workload mixes by commodity. The highest index of each commodity and its corresponding utilization factor were used to compute the maximum potential capacity for each commodity. The maximum potential capacity was computed by dividing the highest index of each commodity by its corresponding utilization factor except for commodities 4A and 10C where maximum potential capacity was based on utilizing more work positions and then dividing by its corresponding utilization factor.

CONCLUSION:

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) Acft, Fixed - Transport (C-5)	3,250,896	3,250,896	3,250,896	3,250,896	3,250,896

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(1C4) Acft, Fixed - Trainer (T-38)	795,123	795,123	795,123	795,123	795,123
(2B) Acft Comp - Acft Structure	161,844	161,844	161,844	161,844	161,844
(2C) Acft Comp - Hydraulic/Pneudraulic	3,672	3,672	3,672	3,672	3,672
(2D) Acft Comp - Instruments	24,230	24,230	24,230	24,230	24,230
(2E) Acft Comp - Landing Gear	15,085	15,085	15,085	15,085	15,085
(2G) Acft Comp - Avionics/Electronic - Other	141,768	141,768	141,768	141,768	141,768
(2H) - Acft Comp - APUs	558,624	558,624	558,624	558,624	558,624
(2I) Acft Comp - Other	442,575	442,575	442,575	442,575	442,575
(2J) Manuf/Fabrication	1,057,660	1,057,660	1,057,660	1,057,660	1,057,660
(3A) Engines (GTEs) Acft	7,317,828	7,317,828	7,317,828	7,317,828	7,317,828
(4A) Missiles- Strategic - Nuclear	199,618	199,618	199,618	199,618	199,618
(10C) Ground Gen/Purp - Munitions/Ordnance	5,544	5,544	5,544	5,544	5,544
(12A) S/W - Tac Sys	25,620	25,620	25,620	25,620	25,620
(12B) S/W - Spt Eqp	241,179	241,179	241,179	241,179	241,179
(13C) Spec Interest Item - TMDE Eqt	978,486	978,486	978,486	978,486	978,486
TOTAL	15,219,752	15,219,752	15,219,752	15,219,752	15,219,752

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

George G. Appelt Date 17 Oct 94
George G. Appelt, GS-12, FMPF, DSN 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

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Tom Spittler Date 18 Oct 94
Tom Spittler, HQ AFMC/LEPE DSN 787-5610

BRAC 95

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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	672,076	687,332	703,210	719,665	736,145
Equipments	712,013	732,791	754,955	777,119	800,668
TOTAL	1,384,089	1,420,123	1,458,165	1,496,784	1,536,813

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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
(1C1) Acft, Fixed - Transport (C-5)	122,478	107,373	82,297	99,455	91,440
(1C4) Acft, Fixed - Trainer (T-38)	20,859	21,879	15,127	3,502	5
(2B) Acft Comp - Acft Structure	4,844	4,083	3,728	3,967	4,274
(2C2) Acft Comp - Hydraulic/Pneudraulic	180	196	213	323	264
(2D) Acft Comp - Instruments	938	994	845	924	887
(2E) Acft Comp - Landing Gear	555	520	527	584	598
(2G) Acft Comp - Avionics/Electronics	17,050	13,472	17,451	10,540	11,303
(2H) Acft Comp - APUs	17,970	18,365	18,012	18,005	18,080
(2I) Acft Comp - Other	14,623	14,898	16,276	16,193	16,318
(3A) Engines (GTEs) - Acft	709,665	752,053	767,214	799,313	775,775
(4A) Missiles- Strategic - Nuclear	6,736	6,675	7,164	7,181	7,193
(10C) Ground Gen/Purp - Munitions/Ordnance	151	145	203	193	191
(12B) S/W - Spt Eqt	13,388	15,340	15,046	15,073	15,105
(13C) Spec Interest Item - TMDE Eqt	36,642	36,729	37,127	37,597	37,924
TOTAL	966,080	992,722	981,230	1,012,759	979,355

A-G884C-FAI-PR-8FJ)CAPABILITY (LONG RANGE RGC/PCN WORKLOAD 10/ 6/1994
RCS: LOG MA(AR)-7735 - RECAPITULATION (** DOLLARS **) - REV ** 4 ** BRAC QUESTIONNAIRE

COM GRO	SUB GRP	COMMODITY DESCRIPTION	FY95 DOLLARS	FY96 DOLLARS	FY97 DOLLARS	FY98 DOLLARS	FY99 DOLLARS
1	C 1	ACFT AIRFRAMES(FIXED WINGTRN/BM	121,932,282	107,372,556	82,296,860	99,454,760	91,439,840
1	C 4	AIRFRAMESADM/TRNR	21,404,916	21,879,176	15,127,316	3,501,848	5,004
1			143,337,198	129,251,732	97,424,176	102,956,608	91,444,844
2	B	ACFT COMPNTS ACFT STRCT	4,844,067	4,083,282	3,727,785	3,967,409	4,273,881
2	C	ACFT COMPNTS HYDRAL/PNEUMTC	179,923	195,509	213,280	* 232,074	263,719
2	D	ACFT COMPNTS INSTRMENTS	938,109	993,720	844,796	923,928	886,956
2	E	ACFT COMPNTS LANDING GR	554,688	520,176	527,056	583,868	597,668
2	G	ACFT COMPNTS AVIONIC/ELECT	17,050,348	13,472,358	17,450,859	10,539,775	11,302,727
2	H	AIRCRAFT COMPONTS **APU**	17,970,247	18,365,403	18,012,058	18,004,978	18,879,538
2	I	ACFT COMPONENTS OTHER	* 8,857,224	* 8,679,186	* 8,588,328	* 8,701,402	* 8,817,023
~~2 J~~ 15		MANUF/FABRICATION	* 5,765,381	* 6,219,289	* 7,687,410	* 7,492,856	* 7,500,591
2			56,159,946	52,528,923	57,051,572	50,445,490	51,722,103
3	A	ENGINES(GTES) AIRCRAFT	709,665,420	752,052,637	767,214,475	799,312,796	775,774,734
4	A	MISSLS/CMPS STRTGIC - NUCLEAR	6,736,036	6,675,000	7,163,588	7,180,668	7,193,816
10	C	GRND GEN PUR MUNTN/ORD	151,208	144,660	203,104	192,764	191,228
12	B	SOFTWARE - SUPPORT EQUIPMENT	13,307,709	15,339,804	15,846,188	15,072,921	15,185,844
13	C	SPEC INT ITM TMDE EQP	36,641,996	36,728,816	37,126,922	37,597,209	37,924,261
			966,079,553	992,721,572	981,230,025	1,012,758,436	979,355,030

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Table 3.1.b: **Programmed Workload**

COMMODITY GROUP	DLHs				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	1,268,539	1,005,992	730,532	852,596	821,402
(1C4) Acft, Fixed - Trainer (T-38)	339,876	340,712	230,584	52,244	92
(2B) Acft Comp - Acft Structure	81,144	56,325	47,274	53,577	56,665
(2C) Acft Comp - Hydraulic/Pneudraulic	2,455	2,565	2,499	3,047	3,387
(2D) Acft Comp - Instruments	7,718	7,847	5,411	7,133	6,692
(2E) Acft Comp - Landing Gear	4,532	4,209	4,164	4,570	4,574
(2G) Acft Comp - Avionics/Electronics	110,269	96,285	109,958	78,563	78.565
(2H) Acft Comp - APUs	179,543	159,335	168,357	147,747	147,747
(2I) Acft Comp - Other	303,095	302,182	343,071	331,840	340,031
(3A) Engines (GTEs) - Acft	3,793,072	3,664,729	3,494,121	3,394,225	3,395,521
(4A) Missiles-Strategic - Nuclear	102,231	98,733	103,973	102,145	99,937
(10C) Ground Gen/Purp - Munitions/Ordnance	2,416	2,248	3,096	2,880	2,792
(12B) S/W - Spt Eqt	171,315	183,434	173,313	194,912	193,324
(13C) Spec Interest Item - TMDE Eqt	472,891	448,011	452,719	477,926	477,618
TOTAL	6,839,096	6,372,607	5,869,072	5,703,405	5,628,347

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A-G004C-PAI-PR-8FJ >CAPABILITY < LONG RANGE RGC/PCN WORKLOAD 10/ 6/1994
RCS: LOG MA(AR)-7735 - RECAPITULATION (** DPANS **) - REV ** 4 ** BRAC QUESTIONNAIRE

COM GRO	SUB GRP	COMMODITY DESCRIPTION	FY95 DPAN	FY96 DPAN	FY97 DPAN	FY98 DPAN	FY99 DPAN
1	C 1	ACFT AIRFRAMES FIXED WING TRN/BM	1259851	1005992	730532	852596	821402
1	C 4	AIRFRAMES ADM/TRNR	348564	340712	230584	52244	92
1			1608415	1346704	961116	904840	821494
2	B	ACFT COMPNTS ACFT STRCT	81144	56325	47274	53577	56665
2	C	ACFT COMPNTS HYDRAL/PNEUMTC	2455	2565	2499	3047	3387
2	D	ACFT COMPNTS INSTRMENTS	7718	7847	5411	7133	6692
2	E	ACFT COMPNTS LANDING GR	4532	4209	4164	4570	4574
2	G	ACFT COMPNTS AVIONIC/ELECT	110269	96285	109958	78563	78565
2	H	AIRCRAFT COMPONTS **APU**	179543	159335	168357	147747	147747
2	I	ACFT COMPONENTS OTHER	176320	179463	174835	178531	187995
15 2	~~J~~	MANUF/FABRICATION	126775	122719	168236	153309	152036
2			688756	628748	680734	626477	637661
3	A	ENGINES(GTES) AIRCRAFT	3793072	3664729	3494121	3394225	3395521
4	A	MISSLS/CMPS STRTGIC - NUCLEAR	102231	98733	103973	102145	99937
10	C	GEND GEN PUR MONTH/GRD	2416	2248	3036	2880	2792
12	B	SOFTWARE - SUPPORT EQUIPMENT	171315	183434	173313	194912	193324
13	C	SPEC INT ITM TRDE EQP	472891	448011	452719	477926	477618
			6039096	6372607	5869072	5703405	5628347

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3.1.6

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.

a. SA-ALC is the Air Force Center of Excellence for **Aircraft Engines and Engine-Related workloads**. State-of-the-art inspections, repair and test technologies to ensure engine availability, safety, reliability and quality are all functions of SA-ALC's effort at maintaining engine excellence. Programs planned for the near future will keep SA-ALC on the leading edge of aircraft engine technology. Programmed production data for FY93, showing direct labor efficiency (DLE), follows:

The SA-ALC is also the Center of Excellence for the repair of ***Engine-Related Exchangeables***. A major factor in our performance excellence is the vast industrial complex in which tasks are accomplished. A modern facility, it is complete with precision tooling and state of the art equipment, secured with on-site fire and police protection, and staffed with trained, experienced, dedicated craftsmen. SA-ALC has, on site, every link in the repair chain and is constantly striving to make each link stronger. Finally, SA-ALC plans to continue to set the standard of excellence for others to follow throughout the future.

PROGRAMMED COMPONENTS PRODUCED IN FY93: 63,724
FY93 DPAH: 2,595,785 FY93 DPSH: 2,414,080 DLE: 93%

- ***INDUSTRIAL FACILITY UPGRADES SINCE FY88***

-- Our large facility encompasses 13 modern buildings and each one has automated sprinkler systems. The **majority** of our 1.2 million square feet of repair and overhaul complex is environmentally controlled. The 651st Air Base Group provides police and security, while the on-base fire department is less than five minutes from our outermost structure. Every shop contains the right combinations of precision tooling and equipment. This totally self-contained complex is a forerunner in the demanding aerospace engine industry.

1) ***Phase II of Retirement for Cause (RFC) Facility*** - Construction increased floor space by 3,000 square feet to accommodate mission required Eddy Current inspection system. The upgrade houses 18 additional inspection stations bringing the system to a total of 25 stations, each capable of inspecting all existing F100 engine parts, and will be able to inspect the critical rotating parts of the advanced F100-229 engine planned for future workload.

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2) ***Vertical Assembly/ Disassembly Engine Elevators*** - This maintenance upgraded 12

pits, providing our craftsmen the equipment to vertically assemble/disassemble F100 engines, rather than using the horizontal assemble/ disassembly. This frees up floor space on the shop floor, provides maximum safety for employees by enabling them to always work at floor level, and reduces risk of damage to the engine. Because the engine is more accessible to technicians at any one time, and because 'hard-to-reach' areas have been eliminated, engine productivity has been increased.

3) ***Dust Collectors for Plating and Mechanical Cleaning*** - The 'wet scrubber' concept for removing dust from the work environment has been replaced with an efficient, environmentally safe dry cartridge filtration system. The improved dry cartridge system is completely pneumatic with no mechanical parts to water. The dust is collected and transported through pneumatic tubes to a central location, protecting the work environment for the craftsmen and expensive assets and material.

4) ***Loading Docks*** - Before the addition of this new drive-through facility, loading and unloading was done outside without benefit of a covered facility. Material was moved as needed by forklift across the shop floor and through congested work areas. Now, with the upgrade in place, shipping/receiving of assets and material is done in an area protected from the elements and away from heavy personnel traffic. The docks are weatherproofed, providing parts protection and employee safety.

5) ***Production Mezzanine*** - This addition of mezzanine work space opened up an area for bench work which, in turn, makes additional space available for heavy equipment on the floor level of the shop. The added 3400 square feet of work space is used for blending/polishing of F100 engine components.

- NEW REPAIR TECHNOLOGIES IMPLEMENTED SINCE FY88

1) ***Eddy Current Inspection Station for F100-229*** - Critical engine parts go through our closed-loop computer controlled Eddy Current inspection system in a procedure that provides part inspection at a faster rate with a greater accuracy (.0001 inch). Validation/verification of Tech Order Requirements from the F100-229 engine has been successfully prototyped at SA-ALC. The increase of our Eddy Current inspection capability to include this technologically advanced engine of the future will ensure the safe use of its rotating hardware up to its design life. Because we can now do it faster and with greater accuracy, turnaround time will be reduced and customer service will be enhanced.

2) ***Robotic Shot Peening*** - This technology provides us the capability to do 'selective shot peening' as opposed to a 'shotgun effect' used in the past. Only needed areas are shot peened, reducing damage to the rest of the asset and to the equipment itself; thereby reducing both short-range costs on engine components and equipment.

3) ***Sutton Barrel*** - This controlled honing process removes material by rounding out sharp edges on the machined knife edges of fan airseals. The removal of these sharp edges provides increased reliability and improved quality by reducing the susceptibility of the

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airseal to failure.

4) ***Chromium Monitoring System*** - The addition of this technology to our repair process will ensure repeatability and consistency for a given dimensional requirement. This is just one of the many improvements we are constantly striving for -- an improvement not visibly apparent to our customer, but increasingly evident as assets are delivered consistently and reliably. For us, the improvement delivers longer rectifier life and reduced maintenance costs. To our customer, it delivers quality in a timely manner and that is what our customer have come to expect.

5) ***Laser Holography*** - Through the use of the improved technology of Laser Holography, bonding and delamination defects for the F100-100, -200, and -220 compressor stators can be detected, reducing the cost of an unscheduled repair, and the possibility of a mishap or loss of life. Incomplete bonding can result in abradable material releasing and fodding the high speed compressor.

6) ***High-Speed Grinder*** - This machine automatically measures and grinds blades to an accuracy of 0.0001 inches. This precision provides an improved air flow and, subsequently, increased fuel efficiency for the engine. Blade rub into the case and downstream resultant damages are eliminated as are stalls and stagnation's, both usually due to inappropriate clearances.

7) ***Laser Cutter*** - This technologically advanced equipment provides increased capability to cut F100 augmentor liners and T56 combustors for patching and material replacement. Able to cut thin wall sheet metal components to .001 inch, with minimal material removal, this valuable link in our repair chain reduces costs in material and increases accuracy. One of the features of this cutter is its versatility. It can be used on very thin materials and cut up to 50 inches per minute, and maintain its accuracy of plus or minus .001 inch.

8) ***Water-jet Cutter*** - This environmentally safe cutter provides a means to cut materials at a speed of up to seven inches per minute (dependent on thickness). If the material being cut is very thin, the water-jet cutter cuts at 5-7 inches per minute. Two-inch thick aluminum can be cut at 3-4 inches per minute, and up to two-inch thick stainless steel can be cut at .2 inches per minute, making this a versatile tool adaptable to the needs of the user. It is used in the repair and manufacturing of fixtures for our internal customers and is another example of 'downstream' benefits for our external customers. As we are able to improve and streamline our repair processes, we are able to pass the savings in time and material on to our customers.

9) ***Five Axis Machining Center*** - The ability of this five axis machining center to locate and machine the bosses/ports required to modify/upgrade F100-100, -200, engine front and rear fan ducts for modification to the -220 configuration enhances our effort to provide customers in the field with a more reliable engine. This versatile equipment has other engine hardware applications, as it can maintain tolerances of .001 inch.

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10) ***Inventory Tracking System (ITS)*** - This computerized inventory management system is used to track work in process inventories throughout the manufacturing/repair processes. Its many features include the capability to collect capacity planning data and provide management visibility of resource constraints. The evolution to a formal tracking system is at approximately 20% of goal and will continue to be developed and improved in the future. This tracking system enables us to 'get engines out the door, which is 'the bottom line for us and our customer. It improves our delivery forecasts as it tracks parts and processes to keep us apprised of where we are in the repair cycle.

- ***INDUSTRIAL FACILITY AND TECHNOLOGY UPGRADES PROGRAMMED THROUGH FY97***

-- SA-ALC has a team of superior craftsmen and managers who stand at the top of the aerospace industry utilizing one of the most complete, self-contained aerospace repair centers in the world. We will continue to march into the future encountering and solving problems, using proven methods, but always looking for improved processes to accomplish our goal of quality production, on schedule, with minimal risk to our customer.

1) ***Engine Sprayed Abradable Compressor Tip Shrouds (ESACTS)*** - The parameter, fixtures and equipment necessary to remove, spray, finish machine, and inspect the abradable material used on high compressor stators will be developed by the JERs contract. The implementation of this previously proprietary process will enable repair that will make SA-ALC the only DoD repair facility with this capability. Our customers will benefit from their engines possessing increased reliability and durability, since the alloy PWA279 used in this process will improve compressor efficiency. There will be less chance for FOD, greater durability and improved engine performance.

2) ***High Temperature Graphite Polymide*** - This technology will develop the capability to repair the graphite polymide external augmentor flaps on the F100-PW-229. The system can be modified to repair F117 (C-17 engine), and F119 (Advanced Tactical Fighter engine) composite parts. The development of a portable composite curing system is the unique aspect of this project. The 'bladder pack' technology will eliminate the need for a large, expensive autoclave and allow composite repairs to be performed in a safer, more cost efficient manner. The payoff for our customer is that previously condemnable assets can now be repaired and returned to serviceable, reducing customer investment of new buys.

3) ***Upgrade Cleaning Area*** - Perform Pareto analysis to deterine most critical clearning processes. Develop conceptual drawings for improvement of cleaning area to include sodium bicarbonate cleaning, waterjet cleaning, CO^2 blating and vibratory cleaning. This effort reduces production costs, allowing us to pass savings to our customers. It enhances our efforts to meet or exceed the goals set forth by the environmental regulations.

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4) ***Close Loop Dimensional Manufacturing*** - Establishes a dimensional inspection area to determine serviceability of engine components and networks with numerical computer control equipment for process control. This will enhance statistical process control and will reduce machining variations, improving quality and reducing costs.

5) ***Combustion Rework Cell*** - The cell will include water-jet stripping, grit blasting removal and plasma spray application of the Thermal Barrier Coating (TBC) on the F100-PW-220 combustion chamber.

6) ***Computer-Aided Engine Component Balancer*** - The system will automate static balancing of compressor and turbine disks. It will determine optimum blade placement on the disk after weighing and sorting of blades, resulting in greater operating efficiency and a reduction in flowtime for repair.

7) ***Jet Engine Part Marking*** - Older techniques of marking engine parts are inadequate because part numbers and serial numbers are sometimes obliterated/removed during repair processes. The Dot Peen method will be used to perform this function. Parameters for marking different material parts will be developed to ensure there is no life debit incurred as a result of material deformation. This will reduce replacement factors, thus reducing costs to customer.

8) ***Automated Fluorescent Penetrant Inspection System*** - This environmentally safe system will afford San Antonio ALC the capability to detect smaller flaw sizes with increased reliability and to inspect hard to reach areas, such as inside a drum rotor. It is versatile and can be used on all engine workloads from T56 to TF39 and throughout the F100 series, including the future repair of F117 and F119. Inspection capability for whole field is .070" and focused is .040".

9) ***Non-Contact Dimensional Inspection System*** - Fulfilling a need to measure critical engine component dimensions with improved accuracy, this less expensive system will perform dimensional inspection of parts faster than existing contact methods with the accuracy and repeatability of CNC coordinate measuring machines. It is applicable to all engine workloads and will allow for high throughput for blade and vane inspection.

10) ***Industrial Area Improvement Project*** - Designed to provide greater throughput, this movement toward group technology/modular repair centers will reduce flowtime and reduce operating expense.

11) ***Environmentally-Sensitive Process Improvements:***

One priority at SA-ALC has always been to be a good neighbor, and we live that ideal by remaining in complete compliance with local, state and federal standards in our environment. Through our many years of experience, SA-ALC has developed an active program to minimize the volume and toxicity of waste. The Center will continue

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ongoing research to find cleaner, more environmentally safe, methods to accomplish our important task with the lowest possible risk to our neighbor and our environment.

a. High Pressure Aqueous Stripping (Water-jet) - This system will enable the removal of various coatings from engine components by using highly pressurized water. This will eliminate utilization of hazardous chemicals and their disposal.

b. Chemical Rejuvenation - This process will allow chemicals used to clean parts to be rejuvenated for prolonged use. This will eliminate the need for immediate disposal of the chemical whenever its composition is deemed to be weakened.

c. Bearing Cleaning - Replaces freon cleaning with aqueous solution to reduce ozone depletion.

d. Part Washer Arqueous Cleaner - Replaces perchloroethelene and vapor degreasers to reduce hazardous waste disposal.

e. Waterbased Masking - Will reduce all solvent based maskant.

f. Chromium Plating - High velocity oxy fuel, plasma, electroless nickel and brush plating. These procedures will reduce the need for chrome plating.

g. Ivadizer, Electroless Nickel, Zinc Nickel, Sermetel - Replaces Cadmium plating. Cadmium is a heavy metal toxic to the central nervous system and dangerous to the environment.

h. Vapor Liquid Incinerator System - Incinerates spent calibration fluid, JP5/JP8 and their vapors. This system will eliminate the disposal of 250,000 gallons per year of hazardous waste.

12) *Secondary Power F-15/F-16:*

a. Test Cell Facility Upgrade - Replaces electric starter with shop air pneumatic starter, thereby reducing operational costs and improving reliability and maintainability of the starter system.

b. Plastic Bead Blast - This upgrade replaced sand blast rework of airseals, resulting in a smoother surface finish. This upgrade requires less rework while reducing the possibility of part structural damage.

c. Glass Bead Blast - This environmentally-conscious technology will eliminate chemical paint strippers, reducing volatile organic compound emissions and hazardous waste disposal.

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b. As the Department of Defense (DoD) Center of Excellence for ***Gas Turbine Engines (GTEs)***, San Antonio Air Logistics Center (SA-ALC) continues to refine processes to produce the finest GTEs anywhere in the world. SA-ALC repairs approximately 1,000 GTEs annually. GTE repairs for mission support of the C-141, C-130 and other critical aircraft continue to be very cost effective. In addition to airborne units, the center repairs GTEs in support of ground cart systems and missile launchers. GTEs are auxillary power units that provide compressed air and/or electrical current to airborn or ground based systems, such as the Patriot Missile Launcher. The Patriot engine repair program has been in existence since 1992 in SA-ALC facilities. The program consists of complete overhaul, turbine engine repairs resulting from "Turbine Bursts" and modifications of gearboxes for field replacement. Construction of a new 132,949 sq ft, $16.5M Gas Turbine Engine Repair Facility (Building (Bldg) 331) was completed in September 1993.

- SA-ALC has been recognized by its customers for the superior work in the GTE arena. To quote John E. McClure, Chief, Depot Production Division of the HQ US Army Aviation and Troup Command, "As a result of your many technical abilities and the rpofessionalism of your staff, the initial prototype effort and actual production (of the GTE for the PATRIOT Missile system) was started ahead of schedule. You have since identified numerous required corrections/changes to the Army technical manuals, physically fabricated spare parts, refurbished several parts and are developing new procedures to expand the number of parts being fabricated or refurbished. All of you efforts to include the application of two depot level Material Changes to the engine which you began applying in 1993 will mean improved reliability, maintainability and supportability." Despite this high degree of customer satisfaction, SA-ALC has adopted a continuous improvement philosophy that stresses teamwork and innovation in every facet of the GTE repair process.

c. SA-ALC is the AFMC Center of Excellence for ***Transport Aircraft*** workloads. These include C-5 and C-17 aircraft.

- ***C-5 Aircraft Programmed Depot Maintenance (PDM)***

-- SA-ALC has been the designated depot Source of Repair (SOR) for C-5 aircraft for over 20 years. During this period, more than 630 of these vital transport aircraft have received depot level inspections, maintenance, and modifications during various PDM, Speedline, and Drop-in programs at SA-ALC. The Center's readiness to support USAF mission contingencies was demonstrated during Operations Desert Shield/Desert Storm when ten C-5 aircraft were surged for the liberation of Kuwait.

-- More than 20 years in the making, SA-ALC aircraft facilities offer the best environment in the industry for C-5 PDM. Building **375** is the main hangar in which C-5 aircraft are worked. The building is 2,000 feet long and 300 feet wide and will accommodate mulitple mixes of C-5, T-38 or TF39 Quick Engine Change (QEC) bays that can include up to six C-5 aircraft, 40 T-38 or 26 TF39 QEC bays. Supporting back shops and adjacent ramp facilities are established with modern equipment and industrial processes for accomplishing complex

off-aircraft maintenance operations.

-- Since FY89, SA-ALC has produced 83 C-5 PDM aircraft involving more than two-million manhours of work. Twenty-four (24) aircraft were produced in FY93, and 13 have been produced so far in FY94. Ten C-5 PDM aircraft and two Speedline aircraft are currently in work receiving major modifications/repairs on their landing gear, avionics, and structural systems. (The Speedline contract was awarded to SA-ALC after competition with private industry. To date, all Speedline aircraft have been delivered on or ahead of schedule.)

- ***C-17 Analytical Condition Inspection (ACI)***

-- SA-ALC is preparing to support the C-17 ACI program, which will include in-depth inspections of various aircraft areas that are susceptible to high stress and corrosion. The ACI program is scheduled to begin in FY97. SA-ALC is also the designated depot source of repair for approximately 300 C-17 components, most of which are structural. Depot repair of components could begin as soon as the capability is in place and the need arises.

d. SA-ALC is the Center of Excellence for ***Paint and Corrosion Control for Large-Bodied Aircraft.*** The Strip and Paint facilities supporting transport and smaller aircraft include Bldgs 379 and 365. Bldg 379 is a one-of-a-kind aircraft hangar. The 76,500 square foot building was designed as an Aircraft Corrosion Control Facility, utilizing plastic media blasting for paint stripping cargo size aircraft, i.e,. C-5 or smaller aircraft. This environmentally clean process eliminated the need to toxic chemical strippers, thus reducing volatile organic compounds by more than 50 tones annually. The facility provides a safer working environment, reduces operational manhours, improves flow times, reduces material and disposal costs, and increases corrosion control capability. Bldg 365 is a hangar designed to totally enclose a C-5 aircraft for aircraft corrosion control. It supports washing, chemical treating and painting for the entire C-5 or smaller aircraft. The facility is connected to the base industrial waste treatment plant for disposal of all chemical waste as required by current environmental standards. The facility has recently been upgraded to include temperature and humidty control system, lighting and ventilation, wall and ceiling insulation, and renovated office, storage and locker rooms. Also included is a breathing air system, air powered personnel lifting devices and a telescoping overhead crane. Safety considerations such as personnel restraint, access and egress, and equipment guarding have received particular attention in the production environment.

e. SA-ALC is a Service Center of Excellence for ***Fuel Accessories.*** When an aircraft component fails in service, it is replaced on the flight line and returned to the depot for repair through the supply system. At the depot, the item is repaired and then tested to make sure it operates within prescribed performance limits. Testing of these fuel accessories has been accomplished on aging, manually operated test stands (10 to 45 years old) with special designs dedicated to a single item or a group of items. This has created a proliferation of peculiar equipment with limited adaptability to new workload. To improve on this situation,

SA-ALC embarked on a program to replace that special equipment with a system that encompassed a wide range of technical capabilities and provided improvements over existing technologies and design philosophies. The Advanced Fuel Accessories Test System (AFATS) is a unique system of equipment, designed for reduced energy cost, improved testing reliability, improved production flexibility, increased throughput and capability to support future workloads. Test stations are fully automated and test a large suite of different engine and airframe fuel accessories (pumps, valves, fuel controls, atomizers, etc.), using MIL-C-7024 Calibration Fluid (CalFluid). Noise producing supply pumps are remotely located in separate pump rooms. Pump modules provide CalFluid to a group of Test Stations and produce only that amount of flow required at any time by all the Test Stations served. This reduces energy consumption. Testing reliability is improved through "smart automation", which will not allow an item to be certified unless it passes all applicable tests. Built in Adjustment Diagnostics assists the operator in identifying which adjustment to make, how much to adjust and which tool to use. Fault Isolation tells the operator that the item cannot be calibrated and what repairs are needed or parts needing replacement. Flexibility is improved by having a large number of Test Stations with the capability to test a large group of Fuel Accessories. Interface Test Adapters eliminate the need for manually connecting the fuel accessory to the test stand. Productivity improvement, which translates to customer cost savings, ranges from 25% to 45% test time reduction. This means reduced numbers of test stands and personnel needed for existing workloads or increased capacity to accept new and different workloads. The system is partially operational now, with additional capability and capacity added in July 1994, January 1995, July 1996 and incrementally thereafter.

f. SA-ALC is the Service Center of Excellence for ***Automatic Test Equipment (ATE).***

- Collocation of the division which manages ATE, and the division which repairs ATE, improves response times to problems occurring in the field. Our facilities include approximately 200,000 square feet of air conditioned space for the repair and calibration of ATE. Some of the ATE supported are the F-15 Avionics Intermediate Station (AIS), F-16 AIS, F-11 AIS, B-1B, DATSA, AGETS, B-52 MIDATS, AN/USM-603, 607, LANTIRN, AWEST, ESTS, and A-10 IATS test stations. Equipment in our facilities, such as two Schlumberger 645 digital circuit combinational test systems, has provided the advanced in circuit testing capability of integrated circuits, and microprocessor chip components, as well as functional testing of circuit cards. Electrostatics Discharge (ESD) Flooring, provides for the protection of very sensitive electronic components. This reduces repairs due to components that have ESD damage and increases the reliability of the units repaired. A contract has recently been awarded to alter approximately 23,000 square feet in our repair facility. This project will install raised flooring which will permit flexible and efficient use of floor space, improve lighting, provide utilities and add electrical service. We are currently providing electronics training for 33 of our employees through the Texas A&M Extension Service, in order to insure the quality of the products we produce. The quality defect rate for the items we repair is approximately 2%.

- IN SUMMARY: SA-ALC electronics repair capabilities range from repair of circuit cards

to entire bays and stand alone end items. We offer our customers a wide range of depot repair capabilities. Our capabilities, experience and training allow us to repair and refurbish virtually any of our customer's most complex digital and analog systems and electronic workloads. We currently perform repair for workloads with surface mount devices, various types of conformal coatings, and multi-layer boards. We have extensive experience in Environmental Stress Screening (ESS) - both vibration and temperature.

g. SA-ALC, as the Center of Excellence for ***Nuclear Components,*** provides repair and in-service test support for nuclear components known as Nuclear Ordnance Commodity Managed (NOCM) items at the Technology Repair Center (TRC) located in Bldg 1420. This worldwide mission involves test and repair of equipment involved in nuclear weapon handling, test, delivery, launch, firing, and weapon control. Items as diverse as munitions lift trailer components and delicate ICBM reentry vehicle (RV) microcircuits are repaired under one roof. SA-ALC has a 55,000 square foot facility that accommodates a wide variety of workloads. The majority of work performed is related to Minuteman and Peacekeeper ICBM programs, however, work critical to gravity and tactical nuclear weapons programs is also a significant portion of this TRCs mission. Nuclear delivery equipment such as trailers, launchers, racks and controllers in support of B-1, B-2 and B-52 bombers and fighter aircraft including the F-15, F-16, F-111 and NATO Tornado are repaired. Testing RV components to determine reliability utilizes specialized equipment such as an underground multi-use centrifuge (MUC), Ling shakers, drop tables and an anechoic chamber. Selected RV components are subjected to aging effects in an isothermal room. A 100,000 class clean room is available for specialized applications. Cutting edge virtual environment (VE) test technology is used in support of trailer controllers, F-15E weapon controllers and multi-system environmental stress screening (ESS). An array of automatic test stations run detailed tests of bomber and fighter NOCM avionics items to isolate reported faults. A total nuclear hardened cable repair and test capability resides at SA-ALC. Alternative is to replicate facilities or to locate contractors with expertise and security clearance.

h. SA-ALC is the Air Force Center of Excellence for ***Organic Manufacturing***. Highly skilled craftsmen and state-of-the-art equipment provide timely support to Air Force and interservice customers. Depot manufacturing workloads often generate because there are existing logistical problems to which the commercial sector either has not or cannot respond. In some cases, the manufacturing workload represents a new modification prototype, application of new technology or engineering development, or limited quantities of parts of an aging weapon system for which there is no longer a commercial source.

- The SA-ALC ***Rubber Products Shop*** has, by far, the greatest rubber forming capability in the Air Force. SA-ALC is the Air Force Center of Excellence and has the only Air Force facility with the capability for developing and custom compounding any rubber formulation to meet the physical requirements of the customer. This shop is also unique in the wide variety of forming methods that allow the manufacture and/or repair of an even greater variety of parts. Notable among these is the capabiltiy to mold and bond

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rubber onto metal parts such as aircraft jet engine fan cases to form new air seals. This capability is a central requirement for jet engine overhaul and must be transferred or replicated in the event of transfer of the work.

- SA-ALC is the Center of Excellence for ***Stereolithography (SLA) capable of Rapid Foundry Pattern/Part Development.*** The only DoD production facility for the rapid development and manufacture of casting patterns using Stereolithography and the only Air Force production facility to progress to rapid prototyping technology for engineering fit and form function testing. This technology also has wide-spread applications within the DoD and private industry under a Flexible Computer-Integrated Manufacturing (FCIM) environment. Continuation of this technology in support of manufacturing, reverse engineering, rapid prototyping foundry pattern and rubber shop mold development must be transferred or replicated in the event of a base closure or workload transfer. The software used to support the pattern development does not existing elsewhere in the world.

- The SA-ALC ***Foundry*** is an Air Force Center of Excellence. A unique DoD facility capable of producing high grade (x-ray quality) aluminum sand castings, and also the first DoD production facility utilizing Stereolithography (SLA) for the manufacture of casting patterns. The foundry features state-of-the-art induction melting furnaces, an automated chemically bonded sand mold system and a mechanized green sand (clay bonded) sand system. It is the only DoD installation which manufactures all plastic drop hammer dies in lieu of conventional kirksite (zinc) dies, allowing faster production of drop hammer dies. The foundry capabilities have proven to be a critical DoD industrial capability.

- The ***Computerized Industrial Tomographic Analyzer (CITA)*** is a unique system which provides computed tomography capability, as well as, digital radiography and digital laminography methodologies for the nondestructive testing of aircraft engine and airframe components. The CITA was designed to accommodate the inspection of small to intermediate size components and provide accurate measurement and defect characterization data. Data accumulated from the CITA has been utilized for Reverse Engineering/Rapid Prototyping applications and for use with the Artificial Intelligence - Neural Network X-ray Image Analysis System. The latter system is integrated with the CITA to provide defect characterization and part disposition. The CITA is the only industrial computed tomography system within DoD to be utilized for the inspection of mission critical aircraft engine and airframe components.

i. As the Technology Application Program Management (TAPM) function, SA-ALC is the Air Force Center of Excellence for ***Advanced Metals and Ceramics (AMC).*** The mission of the AMC TAPM is to utilize advanced metals and ceramics technologies to solve reliability and maintainability problems existing on Air Force weapon systems. Each technology concentrated on is mature and was developed by the Super Labs or industry. Technology infusion and insertion efforts of this scale are best accomplished at a depot where there exists

current working relationships to systems engineers and needs are easily and accurately defined. Successful projects include: (1) T-38 Dorsal Cover redesign and manufacture where cracking and corrosion were causing excessive time for field repairs and the new covers were not procurable; and (2) B-52 Breech Cap where a thermal barrier coating was applied to increasing firing capability more than five fold. The same coating as applied to the gun ports of the F-16 and to the leading edges of supersonic aircraft to provide completely maintenance-free paint jobs for many Guard units. In another effort, SA-ALC has compiled a High Technology Metals Handbook to be used as a guide for engineers and designers on the advantages and disadvantages, including costs, experience and uses, of various advanced allows and manufacturing techniques. Publication is anticipated by Fall 1994 with distribution across DoD and industry.

j. SA-ALC is also the TAPM for the ***Robotics and Automation Center of Excellence (RACE).*** As the AFMC focal point for advanced robotics and applied research, SA-ALC accomplishes its mission by utilizing the assets in its Prototype Center. The robots in the center span the gamut of conventional robot applications. The Prototype Center also has extensive computer and visualization assets. With this equipment, RACE is able to develop a robotic solution to a process from the conceptualization and visualization stage through validation and prototyping. This center is unique to the Air Force and is poised to assist customers in inserting robotics technology into their processes. RACE can develop an original concept, evaluate off-the-shelf technology for suitability of a given application, simulate any robotic system and prototype most of them on physical hardware. In addition to using its simulation and prototyping capabilities, which are generally used to explore methods of utilizing commercial automation equipment for ALC workloads, RACE is developing new ways of implementing robotics in the depots. Currently, the greatest obstacle to depot automation is the non-traditional nature of the workload, i.e., small batch sizes and high feature uncertainty. RACE has sponsored several studies geared towards creating a framework where a human can direct a robot's motion while the robot retains tight control over key process parameters. This arrangement utilizes the human's superior cognitive skills while exploiting the robot's precision and tirelessness. This concept, called telerobotics, is a key enabling technology that will push depot remanufacturing processes into the future.

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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.

a. ***Activity:*** Logistics Support of Wartime/Contingency Operations

Location: Central/South America and the Caribbean, Worldwide

Description of Strategic Importance/Military Value: The geographical location of SA-ALC is of exceptional strategic value for operations in Central/South America and the Caribbean. Its location makes it the natural departure point or en route stop for troops, equipment and supplies headed for any of these critical areas. During the Panama Operation, 275 en route aircraft with 5,500 military personnel and 250 tons of cargo were supported by Kelly AFB. A record two million gallons of aviation fuel was provided to the transiting aircraft. Additionally, 268 casualties from the operation were received and processed. Because of its location, Kelly AFB would be the embarkation point for Army personnel and equipment being deployed to any contingency in the world. During Desert Shield, approximately 5,000 Army troops and their equipment were received and processed by Kelly AFB on their way to the war. Its extensive ramp space and modern refueling capabilities make it particularly valuable to planners in the strategic lift business. Further, because SA-ALC is a major storage point for munitions, the central location in the CONUS affords optimum support to combat units operating anywhere in the world. For example, many of the air munitions destined for the Persian Gulf War, a total of 17 million pounds, were prepared and shipped by Kelly AFB. Close proximity to Wilford Hall Medical Center (WHMC) and Brooke Army Medical Center (BAMC) also makes the base extremely vital to aeromedical evacuation operations originating in Central/South America or the Caribbean. Also, the main burn treatment center operated by the U.S. military is located at BAMC, and Kelly AFB is the main receiving base for burned personnel flown in from all over the world for treatment. Most recently, burn victims of the catastrophe at Pope AFB landed at Kelly AFB on their way to BAMC. In addition, Kelly AFB can be expected to serve as a destination for aircraft involved in Noncombatant Evacuation Operations associated with emergencies originating in one of these areas. Evacuation of casualties and noncombatants will receive top priority in time of an emergency or contingency. SA-ALC's valuable geographical location will continue to be a key factor in future military operations.

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b. ***Activity:*** Logistics Support

Location: SA-ALC and Kelly AFB

Description of Strategic Importance/Military Value:

- SA-ALC and Kelly AFB are centrally located in the southwest which makes San Antonio a major hub of interstates, highways, and transportation methods due to the North American Trade Agreement. San Antonio International Airport is expanding its departing flights to accommodate increase of customer destinations. Kelly AFB is also adjacent to rail lines and a shipping port with within easy commuting distance, if the need should arise.

- Weather is another key factor to both depot maintenance and our collocated activity, Defense Logistics Agency (DLA). Being centrally located in the south we have less severe weather conditions than many other depots and most other DLA sites. Outdoor work is easily accomplished and travel and transportation is not detained. Therefore, we have less wear and tear on our equipment, less personnel on sick leave or annual due to road conditions.

c. ***Activity:*** C-5 Operations

Location: Central to CONUS

Description of Strategic Importance/Military Value: Kelly AFB TX, is centrally located between Travis AFB CA, and the northeast bases of Dover AFB DE, Westover AFB MA, and Stewart AFB NY. Altus AFB OK is only an hour away and the 433 Airlift Wing is located on Kelly AFB. This centralized location minimizes the flying time requirements for C-5 input and delivery. Since SA-ALC, located on Kelly AFB, is a major overhaul and supply depot, aircraft flying here can deliver cargo and then be reloaded prior to departure, resulting in reduced shipping costs and pipeline times. This is particularly advantageous with respect to reparables, considering the recent decision for the Air Force to transition to Two Level Maintenance (2LM). Our location in an area of prevailing Sun Belt weather patterns provides us the ability to effectively work the aircraft outside, on the ramp, with minimal risk of weather extremes which could cause unneccessary schedule delays. The Air Mobility Command Airfield Suitability Report lists Kelly AFB as a military airfield rated suitable for C-5 operations without restriction. Therefore, no further certifications or approvals are required for C-5 operation. The weight bearing capacity (LCN 130) (TDT 840) allows C-5 operations up to 840,000 pounds without a waiver from the Base Operations Officer. The runway lighting includes High Intensity Runway Lights, High Intensity Approach Lights, Runway End Identifier Lights, and Precision Approach Path I.

d. ***Activity:*** Precision Measurement Equipment Lab (PMEL)

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Location: Sections of North and South America, Mexico

Description of Strategic Importance/Military Value: The SA-ALC Precision Measurement Equipment Laboratory (PMEL) is assigned the responsibility to provide calibration support for a geographical region that includes parts of North and South America as well as Mexico. Relocation of this function would impact transportation costs and turn around times to our customers especially those south of the United States border. The current location of this facility shares a culturally similar environment as that of one of the Foreign Military Sales customers, the Mexican Air Force. Personnel from this activity perform site visits to the facilities in the Mexican Air Force in support of unique problems that are solved by the personnel in the PMEL facility as well as personnel in the other support equipment repair business. The collocation of the Automatic Test Equipment Product Group Manager has also enhanced our repair support of the customers in the area. The Aerospace Equipment Directorate has been successful in recent endeavors of equipment technical support and repair because of the unique cultural similarities and Spanish speaking abilities of our workforce which are necessary to effectively communicate with counterparts of the Mexican government.

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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?

The State of Texas has issued three enforcement actions (EA) to Kelly AFB for violation of state underground storage tanks, hazardous waste management, and drinking water requirements.

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.

Programmed Work	***Restriction/Delay***	***Describe Impact***
None		

Currently there are NO projects or programmed work which has been delayed or restricted with respect to environmental considerations.

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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.

There are NO environmental restrictions imposed at Kelly AFB which restrict our maintenance operations.

3.2 Within what provisions must the activity operate with regard to disposal of hazardous wastes and radioactive materials?

There are NO environmental restrictions imposed at Kelly AFB which restrict our maintenance operations.

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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.

Collocated Activity Benefit/Relationship Describe Impact

4.2 Do collocated activities support, or are they supported by, the depot maintenance activity?

Collocated Activity Describe Relationship

4.3 How would these activities and the depot maintenance activity function if they were not collocated?

a. Collocated Activity: Operational Customers

(4.1) Benefit/Relationship Impact:

- *433rd Airlift Wing (AW):* SA-ALC is fortunate in being collocated with the 433rd AW. There are a number of advantages that the ALC has realized by being collocated with a customer. The primary advantage is that it allows for direct, immediate customer feedback at both the shop floor and management levels. Engineering support and technical interchange is facilitated by the proximity and the option to "see" the problems firsthand. This also allows for immediate feedback on Quality Deficiency Reports (QDRs) and Material Deficiency Reports (MDRs). Problems found "in the field" can be brought back to the "shop" without the delays normally associated with customers located farther away.

- *149th Fighter Group (FG):* SA-ALC is also collocated with the 149th FG (Air National Guard). A realized advantage is that collocation allows for certain amount of direct routing between the depot and the customer and also the opportunity to "share" equipment unique to the depot or the field unit it supports. Most directly, SA-ALC's test cells support both collocated activities. This is especially helpful for the customer. At that same time, the ALC can take advantage of the collocated activity by using the customers' assets to "test" fit and function of the prototype repairs and modifications to engines, components and sub-systems. The collocated activities also provide the depot with the opportunity to use specialized equipment desiged for field use without really having to leave the depot (for example, the 149th FG's hush house and AGATS data gathering system). At Kelly, abridged testing may be performed at the 149th's hush house with its M-37 Test System.

(4.2) Describe Relationship: The relationship is a two-way partnership between the depot and the collocated customer. The depot provides direct customer support to the collocated

customers resulting in reduction in delays and transportation costs. The collocation with the 433rd AW and the 149th FG enhances the depot maintenance activity on modifications and repairs with testing on the actual system and easy accessiblity to "field-level" processes. Both the depot and the customer benefit from the potential for sharing of resources.

(4.3) Describe Impact if Not Collocated: If these customers were not collocated, both the depot and the customer would be negatively impacted. From a depot perspective, lack of collocation with these customers could require increased TDY and/or shipment of modified items for verification on the C-5 and F-16 weapon systems and engines. In general, the collocation allows the depot to produce a better product and provides the collocated activies an opportunity to take advantage of depot level skills and equipment.

b. Collocated Activity: Depot Maintenance and Management

4 *(4.1) Describe Benefit/Relationship/Impact:* The Air Force has long operated under the concept of collocated maintenance and management functions to provide the best possible customer support. In recent years, the Air Force has adopted the Integrated Weapon System Management (IWSM) approach, which re-emphasizes the joint support operation by a cohesive team and ensures the increased awareness and communications by all parties involved. Examples of these relationships at SA-ALC include: Automatic Test Equipment (ATE) Product Group Manager (PGM) and the depot maintenance activity; the Propulsion PGM collocated with the engine manager and depot maintenance functions for the F100, TF39 and T56 engines; the C-5 System Program Director (SPD) collocated with depot maintenance; the Air Force Gas Turbine Engine Materiel Group Manager (MGM) collocated with depot maintenance and the management and repair of nuclear components collocated at SA-ALC. Collocation has created the environment for enhanced teamwork in the repair, management and acquisition planning of logistics requirements. The result is faster resolution of repair problems and better service to the customer. 4

(4.2) Describe Relationship: The collocation provides for two-way support. The industrial function is supported by the technical specialists and engineers of the management organization. The management organization is in turn supported by the industrial function through quality and timely repair of assets for return to the customer.

(4.3) Describe Impact if Not Collocated: If the industrial and management functions were not collocated, primary impact would be less efficiency which would translate into longer repair turn-around times and greater cost to the customer. The repair time would increase as would the number of assets in the pipeline. Communications and timely resolution of production support problems would be difficult.

c. Collocated Activity: Propulsion Product Group Manager (PPGM) 4 A31

4 *(4.1) Describe Benefit/Relationship/Impact:* ~~The~~ PPGM is located at SA-ALC. This collocation ~~of the~~ PPGM and the Designated Acquisition Command (DAC) provides for better

communication between the activities involved for the acquisition and maintenance of Air Force Propulsion Systems. SA-ALC was chosen as the location for the PPGM since the majority of current and future PPGM activity involves sustainment, and because of the large dollar value of propulsion systems resident at SA-ALC.

(4.2) Describe Relationship: Under the IWSM concept, the PPGM has the direct responsibility for the overall Air Force propulsion systems, both from a maintenance and management perspective.

(4.3) Describe Impact if Not Collocated: If the PPGM was not collocated with the maintenance and management source of the majority of the propulsion workload, the first-hand communications between the depot and the PPGM would be negatively impacted and would potentially impact customer support.

d. Collocated Activity: Depot Maintenance and the C-17 System Support Manager

(4.1) Describe Benefit/Relationship/Impact. The C-17 System Support Manager is located at SA-ALC. As the center of gravity of the program transitions to SA-ALC, having the System Program Director (SPD) collocated with the depot maintenance provides management efficiencies and direct customer support. Having the SPD at SA-ALC allows the past experience on large transport aircraft of managers and maintainers to be brought to bear on the C-17.

(4.2) Describe Relationship. The C-17 SPD supports the depot maintenance activity by providing programmatic funds and direction.

(4.3) Describe Impact if Not Collocated. Having the SPD separated from the depot will result in inefficiencies in providing engineering fixes, in managing modifications, and would result in greater costs and longer schedules.

e. Collocated Activity: Defense Distribution San Antonio (Defense Logistics Agency)

(4.1) Describe Benefit/Relationship/Impact: Defense Logistics Agency (DLA) provides receiving, storage and shipping (pickup and delivery) functions.

(4.2) Describe Relationship:

- DLA receiving and storage facilities, collocated with the depot, minimize transportation time and costs for frequently used depot components. Collocated storage provides ready access to assets needed to respond to unexpected increases in production, whereas production would experience lengthy delays in overhaul should on-hand stock not meet production swings. Depot Maintenance Supply Centers (DMSC) (in-shop supply) exist to handle some productions swings, but are only authorized to store 15 to 30 days supply of materiels.

This level is determined by the production lines ordering pattern over the past six months and does not reflect current needs.

- DLA Receiving provides immediate credit for turn-ins and back-order release as new assets are received at Kelly AFB.

- DLA Receiving provides pick up and delivery service which minimizes processing and transportation time between central receiving at the High Volume Distribution Point (HVDP) and DMSC areas. Air Force, other service, and DLA stock is stored at Kelly AFB and it would be highly desirable if DLA Inventory Control Point (ICP) stock be stored at the depot with the highest usage further minimizing transportation cost and delivery timeframes.

- DLA also provides shipping services to include packing and routing of material being released to field activities and between repair facilities.

(4.3) Describe Impact if Not Collocated: If the DLA function is not collocated with the depot, maintenance delays and work stoppages would increase. Particularly for the Jet Engine Intermediate Maintenance (JEIM) which provides direct support to the operational units, the maintenance turn around time is critical to mission capability. Flexibility to respond to production swings would decrease and transportation costs would increase.

f. Collocated Activity: Det 1, 60th Logistics Group

(4.1) Benefit/Relationship Impact: Provides field level (isochronal) scheduled and unscheduled maintenance and modification on C-5 aircraft that is not covered as part of the Programmed Depot Maintenance (PDM). This reduces downtime when the aircraft are returned to the Air Mobility Command (AMC).

(4.2) Describe Relationship: The customers' mission is accomplished in conjunction with PDM on a non-interference basis. Non-specification and delayed discrepancies are worked while the aircraft is in PDM.

(4.3) Describe Impact if Not Colloated: Additional down time (approximately 10 days) would be incurred on the C-5 aircraft at the home station. This saves downtime on approximately 14 aircraft per year.

g. Collocated Activity: Jet Engine Intermediate Maintenance (JEIM)

(4.1) Describe Benefit/Relationship/Impact:

- The primary F100-220 Jet Engine Intermediate Maintenance (JEIM) shop, which is part of the Two Level Maintenance (2LM) Branch, is collocated with the depot in Bldg 310. The

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movement of JEIM shops from the field level units to the depot has resulted in improvements in the quality of the engines produced and the overall customer service that the field level units receive. The collocation allows the JEIM shop to use the sophisticated equipment and the test, repair and inspection procedures only available at the depot in procedures normally designated as JEIM, essentially creating a "JEIM plus." This added "quality," now being built into the customers' engines through 2LM, will yield longer on-wing time while reducing the cost of maintenance previously required by the different Air Force wings. The close proximity of the JEIM shop to the depot allows for greater flexibility in parts routing and also brings the cognizant engineering function to within reach of the JEIM shop floor when support is required. Collocation also helps maximize the velocity of inventory throughout. Finally, the duplication of tooling and support equipment, as well as skilled personnel, are reduced as a result of consolidating the numerous field JEIMs.

- The TF39 and T56 JEIM will have much the same impacts and benefits as that for the F100-220 engine. The JEIM processes for these two engines are currently being prototyped in the F100 JEIM shop while facilities are prepared for the workload. Both the T56 and TF39 JEIM shops are expected to be fully operational by 1 October 1994.

(4.2) Describe Relationship

- Effectively, the depot supports 2LM by drawing serviceable modules from supply (DLA), and after repairs are completed, returning the overhauled modules to supply where JEIM shops can use them. This is the primary interaction between the two functions. However, the "JEIM plus" concept involves using some of the depot's overhaul equipment and capabilities to improve the quality of the engines processed through JEIM. So the support role of the depot is more involved and direct than simply repairing modules and sending them to DLA. However, the JEIM shops also provide some support to the depot overhaul function. They will take over the disassembly and reassembly processes for "whole-up" engines currently performed as part of the overhaul process. This will free up manpower and floor space for other functions. So, in effect 2LM both supports and is supported by depot processes.

(4.3) Describe Impact if Not Collocated:

- Currently, manpower cutbacks in the skill areas required for JEIM are underway in the user commands. In 1994, Nellis AFB and Luke AFB are scheduled for conversion to 2LM. Mountain Home AFB will follow in 1995, with Eglin, Seymour Johnson and Lakenheath AFB's completing their conversion in 1996. Guard and reserve units will convert after 1996. The field users have been given considerable flexibility in how they will undertake the cutbacks , so it is impossible to tie specific manpower reductions to specific engine families. However, the reductions have been programmed into the field activities budgets. As the manpower in the field JEIMs is reduced under the directed transition to 2LM , the impact of sending the JEIM workload back to the field would be that there would not be enough skilled mechanics there to do the work. In any case, moving the workload to another source or another depot would result in the same situation as before the transition to 2LM and the benefits described above would be lost.

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h. Collocated Activity: DISO/Defense Megacenter (DMC) San Antonio

(4.1) Describe Benefit/Relationship/Impact:

- Provides information processing services and products that support the needs and requirements of depot maintenance functions of San Antonio Logistics Center (SA-ALC). This service is provided through the efficient, effective, and economic utilization of information systems personnel, products, and technology. The primary functions performed fall into four categories: application support, operational support, technical support, and business management support.

(4.2) Describe Relationship:

- DMC San Antonio currently runs 61 application systems that directly or indirectly support the depot maintenance activities. DMC San Antonio provides application monitoring and recovery, database recovery management, job setup, control and management of report distribution, and implementation and control of application software releases. DMC San Antonio supports the software design activities in isolating production problems. Personnel in application system support provide depot maintenance customers with recommendations to optimize processing and to customize processing to meet special user requirements.

- DMC San Antonio provides operations support for the depot maintenance activities 24 hours a day, seven days a week. These services include operational support of mainframe and mid-tier systems, management of the tape library system, workload job scheduling, coordination of special processing requests, recovery and restart of failed jobs, help desk management for single-point customer problem reporting and tracking, management of network software and hardware, and maintenance of data communications hardware and software.

- DMC San Antonio provides technical support to the depot maintenance functions at SA-ALC for both mainframe and mid-tier processing. This area provides capacity and configuration monitoring and planning, analyzes workload capacity and assists depot maintenance customers in forecasting resource requirements, maintains and manages resource utilization to minimize cost and maximize efficiency, coordinates migrations and new workload requirements, provides operating systems problem identification and resolution, and supports interactive and database system software.

- DMC San Antonio provides business management support to assist the depot maintenance activities to budget for information processing resources. The business management function also establishes and negotiates service level agreements with the depot and provides customer assistance in use of all DMC San Antonio services.

- Specific data systems provide a wide range of support to the depot maintenance activity. Examples include:

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-- Depot Activation Planning System
-- Workload Planning and Control System
-- F100 Engine Supportability System
-- Depot Maintenance Actual Material Cost System
-- Depot Maintenance Budget and Management Cost System
-- Depot Maintenance Production Cost System
-- Depot Maintenance Requirements and Program Management System
-- Depot Maintenance Material Support System
-- Management of Items Subject to Repair Requirements, Scheduling and Analysis System
-- Maintenance Engineering Data Support

(4.3) Describe Impact if Not Collocated:

- Information systems are associated with depot maintenance, but are not generally classified considered as integral to the depot maintenance functions. Software development of appropriate information systems is crucial for the accomplishment of the maintenance mission. The benefit of the relationship toward the maintenance mission is the emphasis on improved productivity, reliability and overall success. The collocation provides a direct responsiveness to the needed of the depot maintenance function. If this function was not collocated, this ready accessibility would be lost and delays would be incurred.

i. Collocated Activity: Cryptologic Depot Maintenance and the HQ Air Intelligence Agency

(4.1) Describe Benefit/Relationship/Impact. HQ AFMC and HQ Air Intelligence Agency (AIA) are currently in the process of transitioning the Air Force Cryptologic Support Center (AFCSC) to SA-ALC under the Intelligence Normalization effort. Both HQ AIA and AFCSC are located at Kelly AFB. The transition is scheduled to occur on 1 Oct 94. The AFCSC provides the depot support for Air Force Communications Security (COMSEC) and Signals Intelligence (SIGINT) items. This is a very specialized, secure activity which supports Air Intelligence Agency units world-wide.

(4.2) Describe Relationship. With the primary customer, HQ AIA, collocated with the SA-ALC cryptologic depot maintenance operation this transition should be transparent to the world-wide customers. HQ AIA will continue providing programmatic funds and direction and be readily available to assist with any problems which may occur in the depot operation. The depot maintenance will be immediately responsive to changing customer needs and will continue to provide the highest quality COMSEC and SIGINT products.

(4.3) Describe Impact if Not Collocated. Geographically separating HQ AIA from the depot will result in inefficiencies in providing engineering fixes, in managing modifications, and would result in greater costs and longer schedules. In addition, any relocation of the cryptologic depot maintenance work would result in extensive MILCON costs to the Air Force.

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance Measures of Merit questions 4.1, 4.2 and 4.3 (Other Collocated Activities)

SOURCE: AFMC Pamphlet 800-60, IWSM Guide, 31 Mar 93; AFMCR 500-11, 1 Nov 92; SA-ALC Organizational Chart, April 1994; Executive Summary to Concept of Operations (CONOP) for the Propulsion PGM, 11 May 93; Executive Summary to C-17 CONOP, 4 Mar 93; Wayne Daniels (10 years experience in the Automatic Test Equipment PGM organization), SA-ALC/LDSIE, DSN 945-4243; and Mr Roger Lozano (industrial engineer with 5 years experience GTE experience), SA-ALC/LDTI, DSN 945-4275

METHOD: Source documents were reviewed and individuals interviewed. In all cases, the stated individual experience is based upon a direct working relationship of the depot maintenance organization supporting and being supported by the management organization. With the exception of the C-17 SSM, the production organization and the management organizations ultimately report to the same authority (either directorate or commander). All data collected was summarized.

CONCLUSION: *Collocated Activity:* Depot Maintenance and Management

(4.1) Describe Benefit/Relationship/Impact: The Air Force has long operated under the concept of collocated maintenance and management functions to provide the best possible customer support. In recent years, the Air Force has adopted the Integrated Weapon System Management (IWSM) approach, which re-emphasizes the joint support operation by a cohesive team and ensures the increased awareness and communications by all parties involved. Examples of these relationships at SA-ALC include: Automatic Test Equipment (ATE) Product Group Manager (PGM) and the depot maintenance activity; the Propulsion PGM (PPGM) collocated with the engine manager and depot maintenance functions for the F100, TF39 and T56 engines; the C-5 System Program Director (SPD) collocated with depot maintenance; the Air Force Gas Turbine Engine Materiel Group Manager (MGM) collocated with depot maintenance and the management, the C-17 System Support Manager (SSM) who will ultimately become the C-17 SPD collocated with the depot maintenance function; and management and repair of nuclear components collocated at SA-ALC. Collocation has created the environment for enhanced teamwork in the repair, management and acquisition planning of logistics requirements. The result is faster resolution of repair problems and better service to the customer.

(4.2) Describe Relationship: The collocation provides for two-way support. The industrial function is supported by the technical specialists and engineers of the management organization.

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(MU1 - MU3)

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The management organization is in turn supported by the industrial function through quality and timely repair of assets for return to the customer.

(4.3) Describe Impact if Not Collocated: If the industrial and management functions were not collocated, primary impact would be less efficiency which would translate into longer repair turn-around times and greater cost to the customer. The repair time would increase as would the number of assets in the pipeline. Communications and timely resolution of production support problems would be difficult.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Deborah Wilson Date 8 Aug 94
Deborah Wilson, GS-13, SA-ALC/FMPF, 945-4211

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Samuel H. Rizzetta Date 8 Aug 94
Samuel H. Rizzetta Sr
HQ AFMC/XPX
DSN 787-2622

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SA-ALC/MMR 1.6
(MMR-11.3)

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~~*Collocated Activity:* Propulsion Product Group Manager (PPGM)~~

~~*(4.1) Describe Benefit/Relationship/Impact:* The PPGM is located at SA-ALC. This collocation of the PPGM and the Designated Acquisition Command (DAC) provides for better communication between the activities involved for the acquisition and maintenance of Air Force Propulsion Systems. SA-ALC was chosen as the location for the PPGM since the majority of current and future PPGM activity involves sustainment, and because of the large dollar value of propulsion systems resident at SA-ALC.~~

~~*(4.2) Describe Relationship:* Under the IWSM concept, the PPGM has the direct responsibility for the overall Air Force propulsion systems, both from a maintenance and management perspective.~~

~~*(4.3) Describe Impact if Not Collocated:* If the PPGM was not collocated with the maintenance and management source of the majority of the propulsion workload, the first-hand communications between the depot and the PPGM would be negatively impacted and would potentially impact customer support.~~

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Collocated Activity: Defense Distribution San Antonio (Defense Logistics Agency)

(4.1) Describe Benefit/Relationship/Impact: Defense Logistics Agency (DLA) provides receiving, storage and shipping (pickup and delivery) functions.

(4.2) Describe Relationship:

- DLA receiving and storage facilities, collocated with the depot, minimize transportation time and costs for frequently used depot components. Collocated storage provides ready access to assets needed to respond to unexpected increases in production, whereas production would experience lengthy delays in overhaul should on-hand stock not meet production swings. Depot Maintenance Supply Centers (DMSC) (in-shop supply) exist to handle some productions swings, but are only authorized to store 15 to 30 days supply of materiels. This level is determined by the production lines ordering pattern over the past six months and does not reflect current needs.

- DLA Receiving provides immediate credit for turn-ins and back-order release as new assets are received at Kelly AFB.

- DLA Receiving provides pick up and delivery service which minimizes processing and transportation time between central receiving at the High Volume Distribution Point (HVDP) and DMSC areas. Air Force, other service, and DLA stock is stored at Kelly AFB and it would be highly desirable if DLA Inventory Control Point (ICP) stock be stored at the depot with the highest usage further minimizing transportation cost and delivery timeframes.

(M-4.1 thru M-4.3)

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- DLA also provides shipping services to include packing and routing of material being released to field activities and between repair facilities.

(4.3) Describe Impact if Not Collocated: If the DLA function is not collocated with the depot, maintenance delays and work stoppages would increase. Particularly for the Jet Engine Intermediate Maintenance (JEIM) which provides direct support to the operational units, the maintenance turn around time is critical to mission capability. Flexibility to respond to production swings would decrease and transportation costs would increase.

d. ~~Collocated Activity:~~ ~~Depot Maintenance and the C-17 System Support Manager~~

~~*(4.1) Describe Benefit/Relationship/Impact.* The C-17 System Support Manager is located at SA-ALC. As the center of gravity of the program transitions to SA-ALC, having the System Program Director (SPD) collocated with the depot maintenance provides management efficiencies and direct customer support. Having the SPD at SA-ALC allows the past experience on large transport aircraft of managers and maintainers to be brought to bear on the C-17.~~

~~*(4.2) Describe Relationship.* The C-17 SPD supports the depot maintenance activity by providing programmatic funds and direction.~~

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~~*(4.3) Describe Impact if Not Collocated.* Having the SPD separated from the depot will result in inefficiencies in providing engineering fixes, in managing modifications, and would result in greater costs and longer schedules.~~

Collocated Activity: Det 1, 60th Logistics Group

(4.1) Benefit/Relationship Impact: Provides field level (isochronal) scheduled and unscheduled maintenance and modification on C-5 aircraft that is not covered as part of the Programmed Depot Maintenance (PDM). This reduces downtime when the aircraft are returned to the Air Mobility Command (AMC).

(4.2) Describe Relationship: The customers' mission is accomplished in conjunction with PDM on a non-interference basis. Non-specification and delayed discrepancies are worked while the aircraft is in PDM.

(4.3) Describe Impact if Not Colloated: Additional down time (approximately 10 days) would be incurred on the C-5 aircraft at the home station. This saves downtime on approximately 14 aircraft per year.

e. Collocated Activity: Jet Engine Intermediate Maintenance (JEIM)

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(M-4.1 - 4.3)

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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*
None		

5.2 Indicate any encroachment constraints on current or future operations that would restrict future expansion.

Type of Encroachment	*Constraint on Expansion*	*Describe*
None		

There are no encroachment constraints on current or future operations that would restrict future expansion. The City of San Antonio passed an ordinance in 1987, Military Airport Overlay Zone (MAOZ), which specifies land use zoning compatible with Kelly AFB's Air Installation Compatible Use Zone (AICUZ) plan. The ordinance was reaffirmed in 1993. This will protect from further encroachment which would constrain operations.

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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.).

Test Facility Describe Uniqueness/Peculiarity

6.2 Indicate the reasons that these facilities are required by the depot maintenance function.

Test Facility Reasons Required for Maintenance

6.3 How could the depot maintenance functions be performed without these specialized facilities?

Test Facility Describe Testing Alternatives

*a. **Test Facility:*** Jet Engine Test Cell Facility

(6.1) Describe Uniqueness/Peculiarity:

- The SA-ALC Engine Test Facility provides for the testing of the F100-PW-100/200/220E/ 220/229 (F-15 & F-16 A/C) engines, the TF39-GE-1C (C-5 A/C) engine, and the TF39 EBU (Engine Build-Up Unit). In addition, SA-ALC is the only DoD installation that currently has the capability to test the Allison T56 engine in both propeller and dynamometer turboshaft cells. Engine testing is one of the most critical, mission essential elements in the depot overhaul process as it provides the most accurate, quantifiable measure of system effectiveness. The Jet Engine Test facility at SA-ALC is a state-of-the-art complex with eight independent cells as well as the engine adapters, software, test equipment and skilled jet engine mechanics and test cell operators required to perform all mandatory testing procedures as well as other specialized procedures for the engines mentioned above. Although other similar test cell facilities exist within the DoD and the Air Force, none can match SA-ALC's current capabilities without extensive MILCON costs along with the purchase of engine adapters and other specialized support equipment unique to SA-ALC.

- The modernization and construction of the current test cell complex at SA-ALC began in FY86, and was completed in 1991. The Military Construction Project provided for the modernization and upgrade of 40 year old test cells and added 55,000 square feet of new environmental controlled production (build-up) areas with twenty one engine work stations. Additional follow-on AF projects provided for test cell and preparation equipment and an overhead mechanized crane/monorail material handling system. Because of the flexibility and versatility stressed in the overall design of test cell modernization and upgrade efforts, with the proper engine adapters, the facility is capable of testing any turbofan, turbojet or turboshaft

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engine in the DoD inventory.

- The current test cell configuration includes four universal, turbofan and turbojet, multi-engine capable test cells, two T56 turboshaft propeller test cells, and two T56 dynamometer test cells. All test cells utilize the SA-ALC Pacer Comet III Automated/Computerized Engine Test and Data Acquisition engine test system. The four universal cells are capable of testing any 100,000 pound thrust class High By-Pass Turbofan engine or any 60,000 pound thrust class After-Burning engine with the proper adapter equipment. The Test Cell Facility employs Quick Engine Connect (QEC) Test Adapters, a Mechanized Material Handling System, Inlet Air Turning Vanes, and a Noise Abatement Treatment System. The mechanized material handling systems allows for the speedy exchange of engines being readied in the prep area with engines in the test cells so that the cells can be used almost continuously if required. Test cells in the field would have to be "loaded" and "unloaded" manually.

- The Pacer Comet (PC III) engine test system currently used at Kelly AFB, Edwards AFB, and Tinker AFB was completely organically developed and installed, both hardware and software, by SA-ALC personnel. It incorporates standard "off the shelf" equipment and modular software design to make it easily maintainable. PC III also features fully automated closed loop testing control while still allowing the operator the option to perform the testing manually. It is a user friendly system with color parameters on large display monitors. It has been in use at Kelly since September 1983 to test over 17,000 engines. Development is currently underway to install PC III system at Charleston AFB to test the F117 engine from the C-17. Saudi Arabia has also requested a bid from SA-ALC personnel for PC III installation costs in their country. Additionally, modifications are also underway to allow for testing of the Allison 0404 GTE from the Patriot Missile Launcher for the Army.

- The SA-ALC Test Cell Facility has an Automatic Vibration Diagnostic (AVID) system which combines electronic hardware and software with installed vibration pickups and test cell instrumentation allowing SA-ALC to collect and analyze vibration data from F100 models 100,200,220, TF39-1C, and T56 models A7, A9, and A15 engines. Excessive engine vibration causes the AVID System to generate diagnostic information. This information is presented to the test cell operator who can adjust the engine in the test cell. Such adjustments include trim balancing or other minor repairs. The vibration malfunction may not be correctable in the test cell, in which case, diagnostic indications of low or high rotor anomalies are available to rework personnel to identify and repair the malfunction. The diagnostics consist of frequency spectrum plots, other charts, and tables indicating sources of vibration such as low/high rotor imbalance, shift, increased flexibility, bowing, seal rub and accessories vibrations.

- The SA-ALC Facility is also capable of performing Accelerated Mission Testing (AMT) or Accelerated Accelerated Mission Testing (A2MT) for the F100-PW-100/200 engines in test cells 57-60. These tests duplicate in-service conditions of a seven year period in the field in a compressed time frame. Usually, these tests are approximately 3000-4000 cycles long and can be performed in a couple of months. Current test profiles include F-15 and F-16 air-to-ground and air-to-air missions or sorties. These tests provide valuable information concerning Component Improvement Program (CIP) repairs, serve to validate depot- and contractor-developed repairs, can be used to certify new vendors, and allow for the collection of disc crack growth and Lead the Fleet data.

- One final capability of the SA-ALC Test Cell Facility is its Gas Path

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Analysis (GPA) system. GPA is the process of determining engine overall performance, individual module performance, and sensor performance from any specified set of engine related measurements through the thermo-mathematical relationships that exist among them. The method involves relating independent and dependent parameters through the fundamental physical equations that describe gas turbine engine operation. The dependent parameters are generally the measurable physical quantities such as pressure and temperature at various stations, engine RPM, fuel flow and thrust. The independent parameters consist of performance quantities such as compressor and turbine efficiency, pumping capacity, turbine inlet temperature, compressor bleed air and turbine nozzle area, items which are normally not measurable directly but best describe performance of individual engine components. Discernible changes taking place in observable parameters are used by the GPA model to detect physical faults. Typically these faults encompass some combination of problems such as erosion, corrosion, fouling, built up dirt, foreign object damage (FOD), worn seals, and burned or bowed blades. Currently the GPA models, developed by Hamilton Standard, available for use at SA-ALC include F100 models 100,200,220 bare engine, TF39-1C bare engine, and TF39-1C EBU.

*(6.2) **Reasons Required for Maintenance:*** Engine testing is required to ensure overhauled engines meet or exceed the specifications set in Air Force Technical Orders.

*(6.3) **Describing Testing Alternatives:*** Depot (100,000 lb. rated) test cells are required to perform engine testing for depot maintenance for the F100, TF39 and T56 engines. However, abridged testing may be performed in field level test cells and hush houses. At Kelly AFB, abridged testing for the F100 engine may be performed at the Texas Air National Guard (149th) hush house with its M-37 Test system. As noted earlier, with the proper software and adapters, the testing for the TF39 engine can be accomplished in the single test cell recently completed at Charleston AFB. Also, test cells at Dover AFB, Travis AFB and Altus AFB are capable of testing the TF39 Engine. However, even together , these cells (accounting for increased routing time) would be hard pressed to accommodate the volume and schedule requirements driven by the combined needs of the depot and JEIM at SA-ALC.

*b. **Test Facility:*** Advanced Fuel Accessories Repair and Test

*(6.1) **Describe Uniqueness/Peculiarity:*** Bldg 345, the Advanced Fuel Accessories Test Facility (AFATF) houses the Advanced Fuel Accessories Test System (AFATS). The facility was constructed with special design features to accommodate the configuration and goals of AFATS. The design features include reduced air conditioned space, test areas to house and support test stations and operators, pump rooms built to keep pump noise from the test areas, and utility distribution designed to provide for optimum utilization of space. AFATF and AFATS represent a totally new concept of equipment and facility overtly designed in concert to produce specifically identified improvements.

*(6.2) **Reasons Required for Maintenance:*** The Advanced Fuel Accessories Test System (AFATS) is a unique system of equipment designed to include AFATS for reduced energy cost, improved testing reliability, improved production flexibility, increased throughput and capability

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to support future workloads. Test Stations are fully automated and test a large suite of different engine and airframe fuel accessories (pumps, valves, fuel controls, atomizers, etc.).

(6.3) Describe Testing Alternatives: Alternatives to AFATS/AFATF would be to use various separate manually-operated antiquated equipment designed with test capability for a few items. Test capability for new workload could not be integrated into existing equipment and would require purchase of additional equipment. Productivity would decrease and additional manpower and equipment maintenance would be required.

c. Test Facility: Cryogenic Spin Test Facility

(6.1) Describe Uniqueness/Peculiarity:

- The Cryogenic Spin Test Facility at SA-ALC is an unique form of possibly destructive testing. The Cryogenic Spin Test is used to screen for flaws which, due to their size or location within the part, are not reliably detectable through other non-destructive means. This process, used exclusively to test 1st, 2nd , and 3rd Stage disks of the F100-PW-100/-200/-220 engines, was designed to test the titanium 6-2-4-6 alloy which is subject to low cycle fatigue failure.
- The first step of the process is a pre-balance of the disk test assembly, the test assembly being comprised of the disk, tooling weights, and a dishpan mounted on a 1/2 inch titanium shaft. The dishpan assembly is designed to simulate the operational effects of other engine stages during the test.
- The balanced assembly is loaded into the spin pit, mounted by the shaft, through a high speed motor. The insulated pit is then flooded with liquid nitrogen and the assembly is cooled to approximately -320°F. The pit is actually a containment vessel design to safely absorb the impact of a failure at 15,000 rpm. The insulation liner is backed by a wall of lead brick and an outer wall of laminated steel six inches thick.
- After cooling, the pit is drained and a vacuum is pulled to eliminate turbulence in the pit during the spin. The test assembly is spun to 15,000 rpm and held at speed for one minute. The high speed motor is then disengaged and the assembly free spins to a stop some twenty minutes later. At this super cooled temperature any flaws in the disk will rapidly propagate to failure and the disk will shatter.
- A successful test is a reliable indication that no critical flaws exist in the component. Due to realignment of the intermetallic bonds during the spin process the strength of the alloy is actually improved. The overhaul interval for the part is extended from 1800 to 3000 cycles and follow on tests can extend the component life from 6000 to 9000 cycles.
- The facility consists of 5 cryogenic spin systems, a computerized control system in a raised control room, two liquid nitrogen plumbing systems, two vacuum plumbing systems, balancing machines, and work benches for fixturing and general set up procedures. Each spin system includes an insulated spin pit, liquid nitrogen and vacuum plumbing connections, high speed motor and a control panel. The five spin pits are plumbed on two vacuum systems allowing two simultaneous tests and continued system operations following a test failure.
- The facility at SA-ALC is unique and is not matched at any other DoD installation.

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This is also the only facility of its type in the U.S.

(6.2) Reasons Required for Maintenance:

- There is a TCTO for the F100 inlet fan that requires this specific type of test. Since there is no other source for this type of testing, it must be performed at the depot.

(6.3) Describe Testing Alternatives:

- As noted, there is no other suitable, cost effective alternative in the DoD to perform these tests. Cryogenic spin testing is unique to SA-ALC and would have to be relocated or duplicated if Kelly were closed. The original equipment manufacturer estimates that it would cost $10 million to relocate the equipment alone and $37.5 million to duplicate the entire facility.

d. Test Facility: Gas Turbine Engine (GTE) Repair and Test

6.1 Describe Uniqueness/Peculiarity: Construction of a unique 132,949 sq ft, $16.5M GTE Repair Facility (Bldg 331) was completed in September 1993. It will take approximately 18 months from construction completion to relocate 23 test systems, seven assembly shops, five routed items shops and nine administrative support areas. The GTE facility maximizes efficiencies by collocating the various assembly and test processes in a specialized facility. The new facility provides controlled environments for component assembly areas and is also designed for maximum flexibility so that new workloads can be easily accommodated. The test cells have current technology utility; systems which provide improved test parameter control. Bldg 331 also provides improved safety for the workers. Product flow through high traffic areas has been eliminated and the carbon dioxide (CARDOX) fire protection system has been replaced by a water based foam system which eliminates the suffocation hazard associated with CARDOX. An additional feature of Bldg 331 is an approximate 42,212 sq ft of controlled areas (Class 300,000) used for assembling GTEs and Secondary Power System components. The 300,000 Classification means "no more than 300,000 particles 0.5 micron and larger per cubic foot of air" which we refer to as "near" clean room conditions. By achieving this is Bldg 331, SA-ALC has become compliant with Air Force Tech Orders and no longer operates under waivers. In addition, the 28 Voltage Direct Current (VCD) electrical system serves the facility test cells and the water brake system provides recalculating water for the water dynamometer which simulates load on GTEs and SPS components during testing.

6.2 Reasons Required for Maintenance: Bldg 331 is a mission essential unique facility which supports various Weapon Systems in the Air Force. SA-ALC repairs approximately 1,000 GTEs annually.

6.3 Describe Testing Alternatives: Depot Maintenance could not be performed without these unique specialized facilities. Efficient and quality production of serviceable engines and components is dependent upon this or a like facility constructed with the same state-of-the-art capability and capacity.

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e. Test Facility: Unified Fuel Control Test Facility

(6.1) Describe Uniqueness/Peculiarity:

- The Unified Fuel Control Test Facility at SA-ALC is an unique facility dedicated to perform all of the inspections, repairs, and testing procedures required to produce serviceable Unified Fuel Controls (UFCs) for the F100-100/200 engines. Although it is primarily dedicated to On Condition Maintenance (OCM) for the F100 UFC, it also possesses the capability to overhaul and test fuel nozzles for the F100, T56, and TF39 engines, the fuel controls for the TF39 and T56 engines, and finally fuel atomizers for smaller Gas Turbine Engines. These latter capabilities are not unique or peculiar to SA-ALC but are still an important part of the facilities capabilities.

- Since its inception in March 1977, the UFC Repair Section has processed over 13,500 F100 Engine UFC's. The facility has the capability to perform major and minor repair, safety enhancement modifications, and reliability upgrades on the components listed above. All inspection, maintenance and testing tasks are developed and accomplished in compliance with Air Force T.O.'s. The extent of the repair under the OCM concept is determined by the in-place OCM team, which reviews historical data, analyses malfunction data, and determines the most expeditious method for the specific repairs.

- The most unique feature of the entire facility is its testing capability. The **UFC test stands** are computer controlled electro- and hydromechanical systems designed to simulate the conditions and inputs the UFCs and fuel nozzles will face in operation to see if they respond and operate correctly. They display information through both analog gauges and computer screens. Software allows operators to troubleshoot and identify faults and then suggests the proper repairs. The control system that manipulates all of the various inputs and measures the results is the key to the technology. The **fuel nozzle test stands** operate in much the same fashion. They are also electro-and hydromechanical computer controlled stands. They measure flow rate and allow for the manual measurement of flow pattern. These stands are unique in that they are designed to specifically test F100 engine fuel controls and that it is impossible to simply place these types of controls onto other stands and test them.

- Overall, there are 89 test stands dedicated to testing the UFC, whether as a total assembly or one of its major sub-assemblies. More specifically, there are: 33 stands to test the (whole up) UFC main fuel control; 10 stands to test the gas generator section; 6 stands to test the augmentor section; 17 stands to test the augmentor computer; 7 stands to test miscellaneous UFC sub-assemblies; and finally 16 stands that act as Electronic Engine Control (EEC) simulators. The fuel nozzle test stand capability includes: 5 F100 fuel nozzle test stands; 2 TF39 fuel nozzle test stands; 2 T56 fuel nozzle test stands; and 2 GTE Jet Fuel Starter fuel atomizer test stands. Finally, the facility has the capability to test TF39 and T56 engine fuel controls with 6 TF39 Fuel Control test stands and 8 T56 Fuel Control test stands.

- The UFC testing area is classified as a Class I, Division II, group D hazardous testing area. This means that there are flammable gases and vapors in a location where there is high probability that an explosive concentration is present during normal plant operation. This mandates special facility and safety requirements. B348 meets all special ventilation, fire

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detection and suppression, and blast-proofing requirements. Along with the in-house repair and overhaul capabilities mentioned, this adds to the overall uniqueness of the UFC Test facility as a whole.

- Replacement cost for the 89 stands dedicated to the F100 UFC is estimated at $243 Million in FY90 dollars. It is important that this facility not be confused the Advanced Fuel Accessories Test Facility (AFATF) in B345 which houses the Advanced Fuel Accessories Test System (AFATS). While the facility is specially designed to test a number of fuel accessories for the various F100 engine models, it does not possess the capability to test the Unified Fuel Control, and there a re no current plans to relocate any of the F100 UFC test stands to B345. The best generic explanation is that the UFC facility in B348 concentrates exclusively on testing F100 Unified Fuel Controls, while the AFATF in B345 concentrates on testing all other Non-UFC fuel accessories. While many of the processes are similar, and to some degree the test stands are similar, the capabilities do not in any way overlap. The equipment in each facility has been designed and modified to perform specific and separate tasks. However, the combination of the two facilities provides SA-ALC with one of the most advanced jet engine fuel accessory repair and test capabilities in the Air Force, and the DoD.

(6.2) Reasons Required for Maintenance:

- UFC testing is required to ensure overhauled UFCs meet or exceed the specifications set in Air Force Technical Orders. Stands must be tested both as "whole up" units as well as major sub-assemblies in order to assure the highest quality product is provided to the customer. The testing procedures also serve to simulate both the engine itself and the electronic engine controls in order to aid in trouble shooting and facilitate the evaluation of "real life" performance.

(6.3) Describe Testing Alternatives:

- As noted, the test stands described above are unique and the process cannot be readily completed on other equipment without extensive programming and physical changes.

f. Test Facility: Aircraft Non-Destructive Inspection (NDI)/X-Ray Facility

(6.1) Describe Uniqueness/Peculiarity: Completion of FY94 Add/Alter Military Construction Program (MCP) for NDI/X-ray Facility (Bldg 361) will provide state-of-the-art inspection capability and substrate evaluation for C-17, C-5 and smaller aircraft. This MCP will begin in June 1994 and is scheduled for completion in September 1995. The MCP will renovate 56,000 square feet of existing hangar space with 44 foot clear height. New NDI film processing, evaluation, and office space will be constructed in the hangar for complete NDI capabilities within one facility. An additional 17,000 square feet of high bay hangar space will be constructed with 80 feet clear height and supporting two new overhead telescoping platforms which will be used to perform the inspection on the aircraft. One is for personnel access and the other for positioning of the X-ray tube.

(6.2) Reasons Required for Maintenance: This NDI/X-ray facility is mission essential and

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will allow for complete NDI of large cargo aircraft, such as the C-5 and C-17. Complete NDI requires the use of equipment requiring a controlled, closed environment.

(6.3) Describe Testing Alternatives: The NDI equipment for a complete inspection cannot be accomodated for outdoor use. The limited NDI that can be accomplished outdoors is subject to the weather and other uncontrollable environmental influences. A MILCON would be required to provide full inspection capabilties at another site. This is based on a dedicated single use facility for hands-on access to the entire cargo sized aircraft and for inspection of composite materials.

g. Test Facility: Service Star Lab

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(6.1) Describe Uniqueness/Peculiarity: The only way currently possible to insure reliability of the Air Force Intercontinental Ballistic Missile (ICBM) re-entry vehicles (RV) which carry the warhead to target is to simulate re-entry through the atmosphere in four SA-ALC centrifuges including the multi-use centrifuge (MUC). Discovery of problems in the test program result in critical modifications and repairs. The SA-ALC centrifuges are peculiar in the Air Force. Selected components are tested in centrifuges to insure reliability under these extreme conditions. The MUC underground facility is beneath Bldg 1420. Three centrifuges have a capacity of 22,500 G pounds on each arm. The largest SA-ALC centrifuge, the MUC, has a capacity of 50,000 G pounds. The MUC maximum acceleration is 200 Gs.

(6.2) Reasons Required for Maintenance: The Service Star Lab with its centrifuges is mission essential to the Air Force ICBM programs. There is no way to know that the ICBMs warhead will reach its target with current degrees of certainty unless critical components are tested under realistic (re-entry) conditions.

(6.3) Describe Testing Alternatives: Testing would have to be contracted out after locating companies having the necessary security clearances, proper test equipment and facilities.

h. Test Facility: Shielded Microwave Anechoic Antenna Test Facility

(6.1) Describe Uniqueness/Peculiarity: The only facility currently capable of supporting tests on the Minuteman III Intercontinental Ballistic Missile (ICBM) MK-12 Reentry Vehicle (RV) radar antenna is the anechoic chamber at SA-ALC. The RV delivers the warhead to target. Tests are critical to assess reliability. No other anechoic chamber in the Air Force is capable of absorbing the frequency range of MK-12 radar only (frequency is classified). The Radio Frequency (RF) shielded rectangular enclosure has an overall dimension of 36 feet deep by 25 feet wide by 12 feet high.

(6.2) Reasons Required for Maintenance: An anechoic chamber designed to specific classified radar frequencies is mission essential to assessment of ICBM reliability.

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(6.3) Describe Testing Alternatives: Another Air Force anechoic chamber would have to be retrofitted with unique absorbent material for a specific frequency range and could not be utilized for non-nuclear operations without another retrofit.

i. Test Facility: Textile Laboratory

(6.1) Describe Uniqueness/Peculiarity:

- SA-ALC owns the only Air Force industrial laboratory with the peculiar capability of providing textile testing. It is equipped with a variety of test equipment such as computerized tensile testers, weatherometers, laundrometers, a thermoanalyzer, and an infrared spectrophotometer.

(6.2) Reasons Required for Maintenance:

- This facility performs and develops test procedures on textile materials and any components used in end item life-support equipment. It performs all first article life-support inspections. The laboratory also supports the Navy, Army and Forestry Service with their testing requirements for life-support materials and equipment.

(6.3) Describe Testing Alternatives:

- Requires a search and qualification of a suitable contractor.

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g. Test Facility: Service Star Lab

(6.1) Describe Uniqueness/Peculiarity: The SA-ALC Nuclear Weapon Components Repair and Test (Environmental Stress Screening) Facility provides for the repair and testing of ICBM reentry vehicle components; nuclear related aircraft components and nuclear munitions handling equipment. SA-ALC is the only DoD installation that has the capability to test these components due to the unique test equipment and associated facilities.

The Multi-Use Centrifuge which is located underground thereby providing an added degree of protection to operation personnel, is capable of obtaining a maximum acceleration rate of 200 Gs. It has a capacity of 50,000 G-lbs and has an on-set rate of 50 Gs per second. Maximum payload capacity is 1000 lbs. It is used to test components by simulating the G forces and timing intervals required to arm the fuses or reentry vehicles and certain missiles.

The High Impulse Transducer Test System is the only known tester capable of testing the High Impulse (impact) Transducers found on ICBM reentry vehicles. The MK21 High Impulse Transducer is a high performance piezoelectric accelerometer for operation up to 100 kgs of acceleration. The test system conducts performance tests by producing a controlled haversine mechanical shock event which produces up to 100 kgs to excite the High Impulse Transducer. The electrical response is recorded and analyzed for proper response.

The Altitude Temperature Test Chamber provides a thermal cycle/altitude test environment. Temperature ranges from -10 to +350 degrees Fahrenheit; holding time is indefinite throughout the range; and temperature is redundant after stabilization at the control sensor. The chamber can simulate altitudes to 200,000 feet. Internal dimensions are 3 feet deep by 3 feet high by 3 feet wide. The chamber is used to simulate the conditions in which nuclear components will experience in flight or to stress the components to certain maximum limits.

The Shielded Cable Tester uses a pass/fail criteria that is based on the component's original specifications, weapon system level Electromagnetic Pulse (EMP) test data, and the cable's baseline test data. The resulting pass/fail criteria allows for a reasonable amount of degradation in most cables, thereby reducing cable repair requirements while insuring the survivability of the host system (reentry vehicle, attack missile, etc.).

The three above ground Accelerator, Rotary Centrifuges have a capability of accelerating a 150 lb payload to 150 Gs at a radius of 63 inches. The unit has a capacity of 22,500 G-lbs and the payload radius can be set from 36 to 63 inches. The payload areas is made up of a 24-inches by 24-inch platform. These centrifuges provide an auto balance capability which will balance loads up to a 10 lb difference thereby decreasing unnecessary vibration and wear. The maximum acceleration/deceleration rates range from 0 Gs to 150 Gs to 0

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Gs in 15 seconds. These centrifuges are used to test individual weapon system components by simulating the G forces and timing intervals needed to trigger certain responses in reentry vehicle and missile components.

A Shock Machine Test System is also available to subject components to various levels and types of shock stress. A Lansmont 65/81 free-fall shock test machine is controlled from a rack mounted pane. The table size is 25 inches by 32 inches, which a maximum specimen weight of 500 lbs. There is an acceleration monitoring instrument with maximum acceleration of 600 Gs or 30,000 Gs (with dual mass shock amplifier) and a minimum/maximum pulse duration of 2 msec minimum/80 msec maximum velocity change of 32 feet per second. This test machine produces half sign and terminal peak sawtooth pulse wave forms using the shock pulse program for control.

A special storage room is used for the storage of ICBM test components. This room, known as the Isothermal Storage Room, is a controlled access storage area. The room is dust-free and temperature/humidity controlled. The room is monitored for operation limits of 70+/- degrees Fahrenheit and 40%+/- 20% humidity.

The Thermotron Temperature Chamber is used to stress components. The temperature chamber is programmable with a temperature variance capability of -100 degrees Fahrenheit to +300 degrees Fahrenheit. It has a capability to control the rate of temperature change from 0 to 9 degrees Fahrenheit per minute.

(6.2) Reasons Required for Maintenance: The SA-ALC Service Star Lab nuclear weapon system component testing is required to ensure repaired systems and components meet or exceed the specification set in Air Force Technical Orders.

(6.3) Describe Testing Alternatives: Testing would have to be contracted out after locating companies having the necessary security clearances, proper test equipment and facilities.

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance Measures of Merit question number 6.1, 6.2 and 6.3 (Unique and Peculiar Test Facilities)

SOURCE: William Autrey, SA-ALC/NWTE, DSN 945-9635; Rotary Centrifuge Marketing Brochure (copy attached); and SA-ALC/Nuclear Weapons Directorate Capabilities (undated document, copies attached)

Ref Technical Manuals:
Multi-use Centrifuge System, TO 11N-TRV5126-2, 23 May 85
High Impulse Transducer Test System, TO 11N-TRV5487-1, 1 Aug 94
Altitude Temperature Test Chamber, Instruction Manual 2787-35350, undated
Shielded Cable Test System, TO 11N-CRV5036-1, 1 Jul 93
Precision Centrifuge System, TO 11N-TRV5445-2, 11 Aug 92
Shock Machine Test System, User Manual MM-482, 21 Jun 88
Thermotron, Operator Manual, Model F-CHV, undated

METHOD: Professional judgment based upon 8 years experience as an NW supervisory engineer and data extracted from source documents.

CONCLUSION:

Test Facility: Nuclear Weapons Component Repair and Test Facility (Environmental Stress Screening).

(6.1) Describe Uniqueness/Peculiarity: The SA-ALC Nuclear Weapon Components Repair and Test (Environmental Stress Screening) Facility provides for the repair and testing of ICBM reentry vehicle components; nuclear related aircraft components, and nuclear munitions handling equipment. SA-ALC is the only DoD installation that has the capability to test these components due to the unique test equipment and associated facilities.

The Multi-Use Centrifuge which is located underground thereby providing an added degree of protection to operation personnel, is capable of obtaining a maximum acceleration rate of 200 G's. It has a capacity of 50,000 G-lbs and has an on-set rate of 50 Gs per second. Maximum payload capacity is 1000 lbs. It is used to test components by simulating the G forces and timing intervals required to arm the fuses of reentry vehicles and certain attack missiles. (TO 11N-TRV5126-2, 23 May 85)

The High Impulse Transducer Test System is the only known tester capable of testing the High Impulse (impact) transducers found on ICBM reentry vehicles. The MK21 High Impulse transducer is a high performance piezoelectric accelerometer for operation up to 100 kgs of acceleration. The test System conducts performance tests by producing a controlled havetsine mechanical shock event which produces up to 100 kgs to excite the High Impulse Transducer. The electrical response is recorded and analyzed for proper response. (TO 11N-TRV5487-1, 1 Aug 94)

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The Altitude Temperature Test Chamber provides a thermal cycle/altitude test environment. Temperature ranges from -10 to +350 degrees Fahrenheit; holding time is indefinite throughout the range; and temperature is redundant after stabilization at the control sensor. The chamber can simulate altitudes to 200,000 feet. Internal dimensions are 3 feet deep by 3 feet high by 3 feet wide. The chamber is used to simulate the conditions in which nuclear components will experience in flight or to stress the components to certain maximum limits. (Instruction Manual 27ST-35350, undated)

The Shielded Cable Tester uses a pass/fail criteria that is based on the components original specifications, weapon system level Electromagnetic pulse (EMP) test data, and the cables baseline test data. The resulting pass/fail criteria allows for a reasonable amount of degradation in most cables, thereby reducing cable repair requirements while insuring the survivability of the host system (reentry vehicle, attack missile, etc.) (TO 11N-CRV5036-1, 1 Jul 93)

The three above ground Accelerator, Rotary Centrifuges have a capability of accelerating a 150 lb payload to 150 G's at a radius 63 inches. The unit has a capacity of 22,500 G-lbs and the payload radius can be set from 36 to 63 inches. The payload area is made up of a 24 inch by 24 inch platform. These centrifuges provide a autobalance capability which will balance loads up to a 10 lb difference thereby decreasing unnecessary vibration and wear. The maximum acceleration/deceleration rates range from 0 G's to 150 G's to 0 G's in 15 seconds. These centrifuges are used to test individual weapon system components by simulating the G forces and timing intervals needed to trigger certain responses in reentry vehicle and missiles components. (TO 11N-TRV5445-2, 11 Aug 1992)

A Shock Machine Test System is also available to subject components to various levels and types of shock stress. A Lansmont 65/81 free-fall shock test machine is controlled from a rack mounted pane. The table size is 25 inches by 32 inches, with a maximum specimen weight of 500 lbs. There is an acceleration monitoring instrument with maximum acceleration of 600 G's or 30,000 G's (with dual mass shock amplifier) and a minimum/maximum pulse duration of 2 msec minimum/80 msec maximum velocity change of 32 feet per second. This test machine produces half sign and terminal peak sawtooth pulse wave forms using the shock pulse program for control. (Users Manual MM-482, 21 Jun 88)

A special storage room is used for the storage of ICBM test components. This room, known as the Isothermal Storage Room, is a controlled access storage area. The room is dust free and temperature / humidity controlled. The room is monitored for operation limits of 70+/- degrees Fahrenheit and 40% +/- 20% humidity.

The Thermotron Temperature Chamber is used to stress components. The temperature chamber is programmable with a temperature variance capability of -100 degrees Fahrenheit to +350 degrees Fahrenheit. It has a capability to control the rate of temperature change from 0 to 9 degrees Fahrenheit per minute. (Operator Manual, Model F-CHV, Undated)

(6.2) Reasons Required for Maintenance: Nuclear Weapon System Component testing is required to ensure repaired systems and components meet or exceed the specifications set in Air Force Technical Orders.

(6.3) Describe Testing Alternatives: Testing would have to be contracted out after locating companies having the necessary security clearances, proper test equipment and facilities.

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Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date: 17 Oct '94

WILLIAM AUTREY, GM-13, NWTE, 945-9635

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

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REC'D 19 OCT 94

SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance question number 6.1.

SOURCE: TIS product extracted from G072E, dated 14 Oct 94. Professional judgment of Rod Staggs/TISTS, DSN 945-6557, Project Engineer for the building of the Integrated Support Facility.

METHOD: Extracted from source documents and interview with functional experts.

CONCLUSION:

Test Facility: Integrated Support Facility (Bldg 178)

(6.1) Describe Uniqueness/Peculiarity: The Integrated Support Facility (ISF) is unique in that it is the only building designed, from the outset, as a software engineering facility to support Mission Critical Computer Resources (MCCR) workloads. The unique workloads supported within this building include; C-5 and C-17 Operation Flight Programs, Turbine Engine Monitoring System (TEMS) for the A-10 and F-111, MADARS, F16 AIS, and many testers that have been specifically set up to test items which only Kelly AFB repairs. The facility currently provides 80,000 square feet of space with closely controlled air conditioning, conditioned power, and raised flooring all designed to enhance the efficiency and effectiveness of software engineering efforts. The entire building is designed with software development and testing in mind. Half the building is set up to house testers and test equipment that provides unique testing and software support efforts. The other half of the building was designed to allow communications with the tester side while providing a programming atmosphere. Currently a $4.1 million addition is underway which will add an additional 40,000 square feet (20,000 square feet of which was justified for C-17 OFP support). Unique equipment includes; MADARS (which supports data recording on the C-5 aircraft), IATS (which provides testing capability for monitoring equipment on-board the A-10, KC-135R and the F-111 aircraft), and many other small testers that have been modified to support specific workloads. In addition to its' unique equipment and workload, the ISF houses a diverse group of professionals built from the local community and surrounding area. These include engineers and technicians that have vast experience and capabilities in the areas of Automatic Test Equipment (ATE), Operational Flight Programs (OFP), and many other software and hardware areas.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Kimberly Wheeler Date 17 OCT 94
Kimberly Wheeler, GS-09, TICR, 945-5290

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

A47-6

REC'D 19 OCT 94

SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance question number 6.2.

SOURCE: TIS product extracted from G072E, dated 14 Oct 94. Professional judgment of Rod Staggs/TISTS, DSN 945-6557, Project Engineer for the building of the Integrated Support Facility.

METHOD: Extracted from source documents and interview with functional experts.

CONCLUSION:

Test Facility: Integrated Support Facility (Bldg 178)

(6.2) Reasons Required for Maintenance: SA-ALC's ISF was specifically designed and equipped to provide software engineering support to unique assigned MCCR workloads.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Kimberly Wheeler Date 17 OCT 94
Kimberly Wheeler, GS-09, TICR, 945-5290

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Diane Phillips Date 19 OCT 94
Diane Phillips
HQ AFMC/LGPE
DSN 787-5610

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REC'D 19 OCT 94

SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group - Depot Maintenance question number 6.3.

SOURCE: TIS product extracted from G072E, dated 14 Oct 94. Professional judgment of Rod Staggs/TISTS, DSN 945-6557, Project Engineer for the building of the Integrated Support Facility.

METHOD: Extracted from source documents and interview with functional experts.

CONCLUSION:

Test Facility: Integrated Support Facility (Bldg 178)

(6.3) Describe Testing Alternatives: Testing alternatives would require establishment of another software facility(ies) with the testers specifically modified to support the unique workloads. To provide maximum efficiency, the alternative facilities should be collocated with the source of repair for the MCCR's correllary weapon system or end item application.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Kimberly Wheeler Date 17 OCT 94
Kimberly Wheeler, GS-09, TICR, 945-5290

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Diane L. Phillips Date 19 Oct 94
DIANE L. PHILLIPS
HQ AFMC/LGPE
DSN 787-5610

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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	
121124	Hydr Fl, Bldg	1			
125977	Pmp Stn, LF	1			
111311	Comm Fclty	1			
141764	Integr Spt Fclty	79			
141765	Lab, Q/C Dep	39	16		
141821	Mat Proc Dep	42			
141763	Tech Lab	11			
171621	Tech Tng Clsrm	3			
211116	HG, Maint Dep	571			
211152	Shp Acft Gen/Pur	409	167	1	
211153	Shp NDI	10			
211154	Shp A/M Orgl	96	7		
211157	Shp Jet Eng I/Mnt	663	50		
211159	Acft Cor Con	244	13		
211174	Consol Acft Maint	3			
211175	Maint Dock, M/A	17			
211183	Test Cell	114	19		
211193	Test Std				
211251	Shp Turbine Dep	137	206	43	
211254	Shp Acft Eng Dep	239	88		
211256	Shp Eng Tst & Stor/D	28			
211271	Shop Instm Ovhl Dep		3		
215553	Shp, A/WPN/O Dep	6			
217712	Shp, Avionic	185	26		
217736	Shp, Radom O&T/D	37			
217762	Shp, Navaid		7		
218852	Shp Surv Equip	29			
218868	Lab, PME	48	33		
218712	Shp A/SE Stor Fclt	4			
221229	Prod Acft Comp Mfg	15			
228228	Prod Misc Proc	40			

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319441	Equip Rsch Lab	6			
441257	Hazard Stor, Dep	8	6	10	
441628	Shed Sup & Equip Dep	71			
441758	Whse Sup & Equip Dep		94	76	
442628	Shed Sup & Equip Bse	1			
610675	Log Fclty Dep Ops	318	375		
610711	DPI	10			
723392	San Latrine	21			
730839	Traffic Chk Hse	6			
821117	Htg Fclty Bldg		2		
821156	Steam Fclty	1			
821168	Wst Trmt Bldg	1			
890123	Air Cond Plnt Bldg	16	4		
890136	Cmprs Air Plt Bldg	20			
890187	Util Vault	2			
890197	Weight Scale	1			
	TOTAL	3554	1116	130	

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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	
B178	141764	2.5			2.5
B301	211152	1.3			1.3
B324	211152	137.8			137.8
B360	211157	12.3			12.3
B329	211251	54.3			54.3
B348	211254	4.9			4.9
B375	211254	22.5			22.5
B333	211254	.4			.4
B323	211254	11.0			11.0
B347	211254		76.5		76.5
B308	217712	57.0			57.0
B305	217712	16.0			16.0
B300	218868	10.0			10.0
B326	217712	9.4			9.4
B351	211254	2.0			2.0
B306	217712	16.0			16.0
	TOTAL:	357.5	76.5		434.0

* ADDITIONAL 999.8 KSF AVAILABLE IF REMOVED FROM THE DEMOLITION LIST

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Table 7.2.a Space Avail. for Expansion

Building ID / Type	CCN	Installation Space (KSF)			Total
		Adequate	Substandard	Inadequate	
B178	141764	33000			33000
B300	218868	10000			10000
B301	211152	1287			1287
B305	217712	16000			16000
B306	217712	16000			16000
B308	217712	58108			58108
B323	211254	24815			24815
B324	211152	105887			105887
B326	217712	9400			9400
B329	211251	53390			53390
B333	211254	357			357
B347	211254		70267		70267
B348	211254	4968			4968
B351	211254	2000			2000
B360	211157	61825			61825
B375	211254	12669			12669
B655	211183	1505			1505
B1420	610675	7100			7100
SUBTOTAL		418311	70267	0	488578
ON DEMO LIST					
B340		42685			42685
B170			60801		60801
B172				91,122	91,122
B184			5695		5695
B343				1533	1533
B366				113,107	113,107
B1566			162810		162810
B1562			60000		60000
B1560			167307		167307
B1564				128612	128612
B1556				166096	166096
SUBTOTAL		42685	456613	500,470	999,768
	TOTAL:	460996	526880	500,470	1,488,346

* ADDITIONAL 999.8 KSF AVAILABLE IF REMOVED FROM THE DEMOLITION LIST

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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

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

a. Depot Maintenance Capability/Capacity: Aircraft Maintenance Hangar (Bldg 375)

(8.1) Describe Why Unique/Peculiar: Bldg 375 is one of the largest hangars of its type (permanent bridge construction) in the world and is still recognized as a major engineering structural feat. Initially built at a cost of $11 million, Bldg 375 has a present replacement cost of over $88 million.

(8.2) Facility/Equipment: The entire building contains over one million square feet of floor space. The hangar floor covers a 600,000 square foot area; 300 feet wide by 2,000 feet long. The backshop area covers over 412,000 square feet of floor space and provides manufacture/repair support for aircraft exchangeable workloads. The administrative area is located on the second floor and has 63,000 square feet of office space.

Describe Why It is One of a Kind: This unique building contains a number of facility characteristics which enhance the C-5 production capability. The 59-foot high hangar doors and three track-mounted bridge cranes in the hangar have enabled the facility to accommodate up to six C-5 aircraft simultaneously for Depot Level Maintenance. An additional 10,000 pound capacity remote controlled hoist has been installed inside the southwest corner of the hangar for removal of the C-5 horizontal stabilizer. This allows floor level PDM inspection and repair of the horizontal stabilizer and allows access to the vertical stabilizer per T.O. IC-5A-3. The hangar has been modified to accept four C-5s in the jacked configuration by providing pockets in the overhead structure to allow clearance for the vertical stabilizer. This allows the four aircraft to remain on jacks without exposure to weather restrictions and additional aircraft can be nosed in through the two west side doors for on-aircraft maintenance. These two aircraft can be totally enclosed when placed in the kneeled position, allowing a total of six C-5s to be secured inside the hangar.

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b. Depot Maintenance Capability/Capacity: Aircraft Corrosion Control/Depaint (Bldg 379)

(8.1) Describe Why Unique/Peculiar: This facility is the only one of its size in DoD which utilizes a relatively new process, the Plastic Media Blasting (PMB), to remove coatings from airframes. SA-ALC has the only capability to strip C-5 cargo size or smaller aircraft. This revolutionary process eliminates the carcinogenic chemical paint strippers utilized for decades. In addition to the health benefits, substantial economic benefits are realized by replacing chemicals with the PMB process. Reduced manpower requirements, improved flow times, and reduction in material acquisition and disposal costs all contribute to the annual savings.

(8.2) Facility/Equipment: This new 76,500 square foot facility is the primary aircraft depainting facility at SA-ALC. State-of-the-art accessibility is afforded to any aircraft type or size via overhead "stacker" cranes. These platforms provide three-dimensional capability, traversing laterally and longitudinally along rails mounted in the truss work of the hangar structure. The work platform is mounted on, and can rotate around the bottom of a telescoping mast, providing the workers with excellent articulation and hands-on access to the entire aircraft.

Describe Why It is One of a Kind: SA-ALC has the only capability in DOD to accommodate large-bodied aircraft in conjunction with depot maintenenance that utilizes Plastic Media Blasting, an environmentally "clean" process, to remove airframe coatings from C-5A/B and smaller aircraft. It eliminates carcinogenic chemical paint strippers and reduces hazardous chemical waste by 72,000 gallons per year.

c. Depot Maintenance Capability/Capacity: Advanced Fuel Accessories Repair and Test

(8.1) Describe Why Unique/Peculiar: The Advanced Fuel Accessories Test Facility (AFATF) houses the Advanced Fuel Accessories Test System (AFATS). The facility was constructed with special design features to accommodate the configuration and goals of AFATS. The design features include reduced air conditioned space, test areas to house and support Test Stations and operators, pump rooms built to keep pump noise from the test areas, utility distribution is designed to provide for optimum utilization of space. AFATF and AFATS represent a totally new concept of equipment and facility overtly designed in concert to produce specifically identified improvements.

(8.2) Facility/Equipment: SA-ALC, faced with limited performance of antiquated equipment, embarked on a program to replace that special equipment with a system that encompassed a wide range of technical capabilities and provided improvements over existing technologies and design philosophies. The Advanced Fuel Accessories Test System (AFATS) is a unique system of equipment, designed for reduced energy cost, improved testing reliability, improved production flexibility, increased throughput and capability to support future workloads. Test Stations are fully automated and test a large suite of different engine and airframe fuel accessories (pumps, valves, fuel controls, atomizers, etc.), using MIL-C-7024 Calibration Fluid (CalFluid). Noise producing supply pumps are remotely located in separate pump rooms. Pump modules provide CalFluid to a group of Test Stations and produce only that amount of flow required at any time by all of the Test Stations served. This reduces energy consumption. A 52

Testing reliability is improved through "smart automation", which will not allow an item to be certified unless it passes all applicable tests. Built in Adjustment Diagnostics assists the operator in identifying which adjustment to make, how much to adjust and which tool to use. Fault Isolation tells the operator that the item cannot be calibrated and what repairs are needed or parts need replacement. Flexibility is improved by having a large number of Test Stations with the capability to test a large group of Fuel Accessories for the F-15, F-16, KC-135, C-130, C-5, A-10 and B-52 aircraft as well as ground power units. Interfaced Test Adapters eliminate the need for manually connecting the fuel accessory to the test stand. Productivity improvement,, which translates to customer cost savings, ranges from 25% to 45% test time reduction. This means reduced numbers of test stands and personnel needed for existing workloads or increased capacity to accept new and different workloads.

Describe Why It is One of a Kind: The combination of the facility and equipment is not found anywhere else in the DOD.

d. Depot Maintenance Capability/Capacity and Facility/Equipment: T56 Dynamometer Test Cells

- **Description of Technology:** This capability allows the depot to test a variety of turboprop engines under a wide range of simulated operating conditions without actually using a propeller. They are, in effect, more adaptable than actual prop test cells and so are capable of testing any turboshaft engine in the DoD inventory.

(8.1) Describe Why Unique/Peculiar: - These dynamometer test cells and the skills and equipment required to operate them are unique to SA-ALC. No other DoD facility currently employs this means to test the Air Force -7 and -15 versions of the Allison T56 engine. It would require extensive MILCON and equipment costs to even move the dynamometers to another test cell facility. The cost of duplication depends on the scenario at the receiving center. It would cost roughly $12 million to construct two new cells and install the dynamometers and control systems and provide other necessary support equipment. It would cost roughly $7 million to modify existing cells and to install the dynamometers. Testing is mission essential as it is the only way to confirm all engine performance and specification requirements have been met.

(8.2) Facility/Equipment: Two of the test cells in SA-ALC's Test Cell facility are equipped with Zollner 7500 Shaft Horsepower Universal Heavy Turboshaft Dynamometers. Specialized engine adapter equipment, test procedure software, the Pacer Comet III Automated/ Computerized Engine Test and Data Acquisition engine test system, the cells themselves along with the requisite facility hookups for fuel, water, and electricity, cooling water towers, emergency water system, and finally the jet engine mechanics and test cell operators make the capability complete.

Describe Why It is One of a Kind: - The Universal Heavy Turboshaft Dynamometers are unique pieces of equipment in their own right. They can be programmed to simulate the conditions an engine would experience if it were attached to an actual propeller. Both torque and

speed requirements can be entered manually or through automated programming. Testing is mission essential as it is the only way to confirm all engine performance and specification requirements have been met.

e. Depot Maintenance Capability/Capacity: Gas Turbine Engine (GTE) and Secondary Power System (SPS) Repair and Overhaul

(8.1) Describe Why Unique/Peculiar: The combination of the equipment listed in 8.2 (below) creates a one-of-a-kind capability in the Air Force.

(8.2) Facility/Equipment: The following equipment. housed in Bldg 331, are essential to produce GTEs and SPSs. Without the GTE Pacer Comet III Tester and B-1 ADG Tester which are exclusively Air Force or one-of-a-kind, the GTE center of excellence performance could not be maintained.

- F-15 Jet Fuel Starter/CGB Test (2 each)
- GTE Test (8 each) - Pacer Comet III (Air Force proprietary)
- F-16 ADG Test (1 each) - only 4 each worldwide
- F-16 JFS Test (2 each)
- Conventional Starters (4 each)
- B-1B ADG Test (1 each) - one-of-a-kind
- B-1B Torque/Clutch (1 each)
- Valve Test (1 each)
- Oil Pump Test Stands, SPS (3 each)
- Oil Pump Test Stands, GTE (1 each)
- Electrical Starter Test Stands (3 each)

Describe Why It is One of a Kind: The combination of the equipment listed in 8.2 creates a one-of-a-kind capability in the Air Force.

f. Depot Maintenance Capability/Capacity and Facility/Equipment: Unified Fuel Control (UFC) Facility

- Description of Technology: - The Unified Fuel Control Test Facility at SA-ALC is an unique facility dedicated to perform all of the inspections, repairs, and testing procedures required to produce serviceable Unified Fuel Controls (UFCs) for the F100-100/200 engines. Although it is primarily dedicated to On Condition Maintenance (OCM) for the F100 UFC, it also possesses the capability to overhaul and test fuel nozzles for the F100, T56, and TF39 engines, the fuel controls for the TF39 and T56 engines, and finally fuel atomizers for smaller Gas Turbine Engines. These latter capabilities are not unique or peculiar to SA-ALC but are still an important part of the facility's capabilities.

- Since its inception in March 1977, the UFC Repair Section has processed over 13,500 F100 Engine UFC's. The facility has the capability to perform major and minor repair, safety

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enhancement modifications, and reliability upgrades on the components listed above. All inspection, maintenance and testing tasks are developed and accomplished in compliance with Air Force T.O.'s. The extent of the repair under the OCM concept is determined by the in-place OCM team, which reviews historical data, analyses malfunction data, and determines the most expeditious method for the specific repairs.

(8.1) Describe Why Unique/Peculiar: - The repair process for these components can be quite complicated due to the large number of parts involved (4500+) and the tight tolerances required by the nature of its operation and its importance to optimum engine performance. As a repair facility, the capability in question lies mainly in the expertise of the craftsmen who perform the majority of the rework by hand. Specialized tooling, fixturing and equipment facilitates the delicate and sometimes tedious tasks. These essential skills are the core of the repair capability and cannot be easily duplicated elsewhere. The test stand operators are also highly trained and have to undergo an extensive apprenticeship program.

(8.2) Facility/Equipment: The UFC Repair Facility area is classified as a Class I, Division II, group D hazardous testing area. This means that there are flammable gases and vapors in a location where there is high probability that an explosive concentration is present during normal plant operation. This mandates special facility and safety requirements. Bldg 348 meets all special ventilation, fire detection and suppression, and blast-proofing requirements. Along with the in-house repair and overhaul capabilities mentioned, this adds to the overall uniqueness of the UFC Test Facility as a whole. These capabilities are mission essential as there is no contract vehicle currently available or any other DoD capability present to effect these repairs.

Describe Why It is One of a Kind:

- The primary driver behind the uniqueness of the UFC Test Facility is its automated test stands. Overall, there are 89 test stands dedicated to testing the UFC, whether as a total assembly or one of its major sub-assemblies. More specifically, there are: 33 stands to test the (whole up) UFC main fuel control; 10 stands to test the gas generator section; 6 stands to test the augmentor section; 17 stands to test the augmentor computer; 7 stands to test miscellaneous UFC sub-assemblies; and finally 16 stands that act as Electronic Engine Control (EEC) simulators. The fuel nozzle test stand capability includes: 5 F100 fuel nozzle test stands; 2 TF39 fuel nozzle test stands; 2 T56 fuel nozzle test stands; and 2 GTE Jet Fuel Starter fuel atomizer test stands. Finally, the facility has the capability to test TF39 and T56 engine fuel controls with 6 TF39 Fuel Control test stands and 8 T56 Fuel Control test stands. A Halon fire suppression system is in place to meet regulations. The test stands are operated with a pressurized solvent (volatile calibration fluid) compound selected for its flow characteristics which are similar to JP-4 jet fuel. This is used for both UFC and fuel nozzle testing. A calibration fluid-fueled, vapor incinerator is currently on contract to replace the current filter/condensation system.

- The Unified Fuel Control Facility is unique to SA-ALC and would have to be relocated or duplicated if Kelly were closed. There is no other or DoD system that can duplicate the UFC facility. Replacement cost for the 89 test stands is estimated at $240 Million. This would be a major undertaking due to the size and complexity of the facility and equipment

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respectively. Test stands are 12 years old but only had an original 7 year life span. They have been refitted and repaired as required to keep them operational. There is, in effect, no "replacement" technology. These capabilities are mission essential as there is no contract vehicle currently available or any other DoD capability present to effect these repairs.

g. Depot Maintenance Capability/Capacity: Rubber Products Manufacturing

(8.1) Describe Why Unique/Peculiar:

- The SA-ALC Rubber Products Manufacturing function is completely peculiar to the Air Force in its ability to manufacture rubber parts. Although other ALCs have some capability to repair rubber on jet engines (which is also done here), this shop is uniquely able to fully support the manufacture of new rubber parts from beginning to end of the production cycle. All that is needed from the customer is a part design and a statement of the physical requirements.

- The Rubber Products Manufacturing Shop, in conjunction with the Chemical Laboratory, uses that information to develop a custom rubber formulation (or recipe) when necessary. We are able to develop formulations to meet the stringent requirements of all applicable technical orders, military specifications, or customer specifications.

- Next, a custom mold for shaping the rubber is designed by the Rubber Products Manufacturing support staff, which is then constructed at SA-ALC. Often this process involves designing a mold to hold a metal part so that rubber can be directly applied to it, such as aircraft arresting cable connectors, or fuel access door seals. Because of local control over the design and manufacture process of the molds, we are able to anything from the smallest o-ring (the size of a pencil eraser) to large engine parts (over 3 feet in diameter).

- Continuing the production cycle requires that the rubber formulation be mixed or compounded, a very significant capability at SA-ALC. Again, meeting the strict requirements of our customers is vastly aided by our ability to make our own rubber.

- The final step is to actually mold the rubber into the desired shape, which is done before using a variety of techniques unique to the Air Force. Examples of these techniques are extrusion and compression molding.

- All of these steps taken together give this ALC a unique capability.

(8.2) Facility/Equipment: One unique category of equipment in the Rubber Products Manufacturing Shop is used for compounding or mixing of rubber. This includes a Banbury mixer, a hand mixer, and two compounding mills for large or small amounts of rubber. With these, the shop can make all types for short runs or high volume runs. The primary forming

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methods used in the Rubber Products Manufacturing Shop include standard molding, compression molding, extrusion, and gasket cutting. Peculiar to the Air Force in supporting these methods are 8 large capacity ovens, 10 compression presses, 2 extruders, and a variety of support equipment. All of this supports the wide variety of rubber parts, in both size and shape, that can be manufactured at SA-ALC.

Describe Why It is One of a Kind: The SA-ALC Rubber Products Manufacturing Shop is the only Air Force facility with the capability to compound rubber to virtually any specified formulation, using so many rubber forming methods. The wide range of product capabilities, in both size and material, along with the proven experience that can put it all together, make this shop peculiar to the Air Force.

h. Depot Maintenance Capability/Capacity: Production of X-Ray Quality Aluminum Castings

(8.1) Describe Why Unique/Peculiar: A unique DoD facility capable of producing high grade (x-ray quality) aluminum sand castings, and also the first DoD production facility utilizing Stereolithography (SLA) for the manufacture of casting patterns. The foundry capabilities have proven to be a critical DoD industrial capability.

(8.2) Facility/Equipment: The SA-ALC foundry features state-of-the-art induction melting furnaces, an automated chemically bonded sand mold system and a mechanized green sand (clay bonded) sand system.

Describe Why It is One of a Kind: It is the only DoD installation which manufactures all plastic drop hammer dies in lieu of conventional kirksite (zinc) dies, allowing faster production of drop hammer dies. SA-ALC's foundry is the only one in DoD capable of producing high grade (x-ray quality) aluminum sand castings.

i. ***Depot Maintenance Capability/Capacity:*** Stereolithography (SLA) capable of Pattern/Part Development

(8.1) Describe Why Unique/Peculiar: StereoLithography technology supports both manufacturing and engineering. While Stereolithography is now a segment of manufacturing, our application of it is not currently organic to other DoD facilities. One other Air Force facility and several other Navy and Army organizations have this or other rapid prototyping capabilities, but their uses and applications are largely restricted to supporting engineering organizations through generation of design prototypes for fit-form-function testing. Organic foundry casting and rubber shop capabilities at SA-ALC afforded the opportunity to broaden the application of this technology beyond prototyping for fit-form-function to rapid tooling support for these and other net-shape or near-net-shape (NS/NNS) manufacturing processes. This is only possible because these discrete capabilities reside within the same organization. Proof of concept for applying StereoLithography to these capabilities led to development of computer-aided,

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automated casting pattern design, a capability that, until now, has not been available from any other source. Nor was there much advantage to such capability prior to the recent existence (1989) of StereoLithography and other forms of rapid prototyping. Computer-aided pattern design, coupled with StereoLithography for rapid physical pattern or mold generation has not existed **anywhere** within DoD prior to the installation and development of this capability at SA-ALC. The uniqueness of the foundry and the rubber shops stand on their own; as does the StereoLithography capability. However, the support of one for the other multiplies the effect of that uniqueness far beyond the sum of the two or three capabilites added together. In that the StereoLithography installation at SA-ALC can also support other Air Force and DoD facilities with the same or similar, NS/NNS pattern, mold, or tooling requirements, it retains its uniqueness because these other manufacturing facilities do not have organic rapid prototyping capability, nor the requisite computer-aided pattern design expertise in residence to support such an undertaking.

The similar case can be argued for the integration of the Computer Industrial Tomographic Analyzer (CITA) system and the StereoLithography installation through RE*CAD software. Reverse engineering capability is enhanced in that items requiring reverse engineering due to lack of supporting tech data packages can be addressed by the unique capability of regenerating a computer-aided design (CAD) solid model file from CITA generated x-ray scans output of the item by the RE*CAD software.

(8.2) Facility/Equipment: Software used will automatically convert a Computer Aided Design (CAD) part file to a foundry pattern configuration, including the shrink factors, draft angles, gating system, risers, cores coreboxes and matchplates. Additional capabilities of this technology, when linked with the industrial CT-Scan in the laboratory, provides a powerful tool for reverse engineering tasks, including novel applications impossible to perform otherwise.

Describe Why It is One of a Kind: Only facility in DoD to provide rapid prototyping and pattern/part development. The supporting software was developed through a PRAM funded project for this operation and exists nowhere else in the world. This evolving process is revolutionizing the foundry pattern making process.

j. Depot Maintenance Capability/Capacity: C-5 Engine Pylon Repair

(8.1) Describe Why Unique/Peculiar: The C-5 Engine Pylon Repair is a unique capability that has been successfully performed to quality standards at SA-ALC although no other source has proven their ability to perform the workload. A variety of skills coupled with production experience allows SA-ALC to support the overhaul, repair and modfication required to produce a serviceable asset. Work specifications include removal/installation, inspection, corrosion control, repair and modification, static checks and miscellaneous support for C-5 pylons.

(8.2) Facility/Equipment: The support equipment includes two fixtures designed exclusively to hold four pylons each are utilized during the performance of the inspection, repair and

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modification.

Describe Why it is one of a Kind: Since 1991, SA-ALC has provided the C-5 PDM pipeline with top quality engine pylons. Work specification includes removal/installation, inspection, corrosion control, repair, modify, static check and miscellaneous support.

k. Depot Maintenance Capability/Capacity: Halon Recovery, Recycling, and Recharging Facility (HRRR)

(8.1) Describe Why Unique/Peculiar: SA-ALC has the only reclamaation system that can restore Halon 1301 to MILSPEC in the Air Force. The HRRR system reclaims for use more than 99 percent of the 250,000 lbs of Halon 1301 on the 35,000 aircraft fire suppression system halon storage bottles managed by SA-ALC. This has eliminated any need for the USAF to purchase Halon 1301 in the future. The system cost was $260,000. The payback period will be less than two years due to the rise in cost of Halon 1301 to $20 per pound. The HRRR became operational in January 1994.

(8.2) Facility/Equipment: Installation of this state-of-the-art HRRR system has a significant impact on the use of high Ozone Depletion Potential (ODP) halon by the USAF in its aircraft. Other depots have a recovery system that collects and stores Halon 1301 to prevent release into the atmosphere. However, SA-ALC is the only depot that recovers, filters, and recycles Halon 1301 to military specifications for immediate reuse in the Air Force.

Describe Why It is One of a Kind: This HRRR system is the only such system in the Air Force that can recover, recycle, and recharge Halon 1301 and is the first installation of its type in DoD.

l. Depot Maintenance Capability/Capacity: Bicarbonate of Soda Blast Stripping of Components

Description of Technology: Provides paint removers for corrosion treatment and cleaning for aircraft and jet engine parts and components with exemplary results. Process uses abrasive blasting techniques in a component walk in booth (14' by 34' by 14'). SA-ALC currently uses the process for depainting components with sensitive substrates.

(8.1) Describe Why Unique/Peculiar: Bicarbonate of Soda Blast is a unique Air Force capability resident at both SA-ALC and WR-ALC, though the application of the technology is different at the two depots. SA-ALC is the only Air Force depot that utilizes Bicarbonate of Soda Blast to depaint and clean thin skinned aircraft components in a dedicated booth. This process produces a zero hazardous waste stream, including air emissions, liquid effluent, and solid waste. SA-ALC's process uses the abrasive nature of the bicarbonate of soda as the primary removal agent and the water is injected for dust control. WR-ALC uses bicarbonate of soda to strip aircraft; however, their process relies predominately on the water for paint removal and the

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bicarbonate of soda is an additive to enhance stripping rates.

(8.2) Facility/Equipment: Bicarbonate of Soda Blast provides an environmentally safe alternative to chemical degreasers, carbon removal agents, and paint removers for corrosion treatment and cleaning for aircraft and jet engine parts and components with exemplary results. The process utilizes abrasive blasting techniques in a component walk-in booth (14 ft X 34 ft X 14 ft).

Describe Why It is One of a Kind: SA-ALC has the only Air Force depot that utilizes Bicarbonate of Soda Blast to depaint and clean thin skinned aircraft components in a dedicated booth.

m. Facility/Equipment: T56 Gearbox Test Stand

- **Description of Technology:** The purpose of this testing is to ensure that the gearboxes are operating within their design specifications; which is vital toward engine performance. As an extra step in quality assurance, every twenty-fifth gearbox is tested assembled to a production engine in the primary engine test cell. This engine/gearbox assembly testing feature can be used as temporary back-up or alternate means for testing gearboxes in cases of maintenance downtimes.

(8.1) Describe Why Unique/Peculiar: The SA-ALC Engine Test Facility has a peculiar complementary testing feature in that it is the only The prime function of these gearbox units is to provide the means for reducing the engine power section speed to the range of efficient propeller operation. T56 Gearbox testing is required to ensure overhauled gearboxes meet or exceed the specifications set in Air Force Technical Orders.

(8.2) Facility/Equipment: This testing requirement is accomplished on a specialized gear reduction test stand that has been designed to simulate the T56 engine in operation.

Describe Why It is One of a Kind: SA-ALC is the only Air Force installation with the capability to test T56 engine series propeller speed reduction gearbox units.

n. Depot Maintenance Capability/Capacity: Engine Sprayed Abradable Compressor Tip Shrouds (ESACTS) Thermal Spray Procedure

- **Description of Technology:** The ESACTS thermal spray procedure project gives SA-ALC the parameters, fixturing and equipment necessary to remove, spray, finish machine, and inspect the PWA279 abradable material used on F100 engine high compressor stators.

(8.1) Describe Why Unique/Peculiar: SA-ALC has a "turn-key" capability to perform this procedure without requiring any special waiver or oversight from the Original Engine Manufacturer (OEM). SA-ALC is the only source in DoD certified to perform this process. A60

(8.2) Facility/Equipment: ESACTS thermal spray procedure uses an existing robotic plasma spray and water jet stripping systems with modifications, a new laser holography inspection system, hardness tester and thickness gauge to remove existing abradable and replace it with PWA 279 on the F100-PW-220/220E 4th through 12th stage compressor stators. Included is all necessary fixturing and tooling required to perform the procedure.

Describe Why It is One of a Kind: This process is unique to SA-ALC as it is the only source in DoD certified to perform this process.

o. Facility/Equipment: - T56 Blade Depinning System

- **Description of Technology:** This procedure incorporates removing the T56 engine's compressor wheel's blades and pins automatically and simultaneously at two diametrically opposed stations. removal.

(8.1) Describe Why Unique/Peculiar: The Blade Disk Disassembly Machine (BDDM) at SA-ALC is a one-of-a-kind machine that disassembles compressor wheels (stages 6-14) for the T56 turboprop engine.

(8.2) Facility/Equipment: The deblading station consists of an electric impact hammer (Electropunch) which drives a special tool through the blade slot, shearing the holding pin, allowing the blade to fall free. The turntable automatically rotates a precise amount to the next blade. The disk stops at the pin removal station where a video camera takes a close-up view of the pin. With the image being displayed on a monitor, the craftsman is able to vertically align the station position to ensure precise pin

Describe Why It is One of a Kind: This system is unique in the DoD and was designed specifically for this application at SA-ALC. In the past, the process was completed by hand. This process was time consuming and tedious and often resulted in damaged wheels. REPTECH funding was used to contract out the design for the BDDM. This equipment is mission essential due to the fact that the parts damage caused by the old method made the process economically unfeasible.

p. Facility/Equipment: Robotic Shot Peening System

- **Description of Technology:** The Robotic Shot Peening System at SA-ALC treats the surfaces of parts as required by T.O. by bombarding the part surface with round steel shot or glass beads (media) under computer controlled conditions to induce a layer of uniform compression.

(8.1) Describe Why Unique/Peculiar: The system was developed specifically to meet SA-ALC requirements and was funded through REPTECH.

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(8.2) Facility/Equipment: The system uses advanced robotics (two independently controlled robots) and computerized control equipment now eliminate or minimize the need for the operator's presence within the machining environment; in effect, manual control of the processes has been computerized. Improved airborne particle removal techniques are used to minimize airborne particle hazards. The operator is removed from the cell environment and is isolated from it by sound-insulating walls . This sound insulation is beneficial to the operator as well as any other personnel in the general area. Multiaxis, programmable, manipulating devices are used to manipulate the guns, reducing operator fatigue and intervention. A supervisory control system located away from the blasting cell, permits an operator to monitor all activities of the entire system. An industrial process controller programmed for the selected engine components automatically controls the appropriate functions involved. Part loading and transfer are accomplished using automated part handling roller conveyors, reducing the need for operators to enter the hazardous blast cell, except for periodic maintenance of the system components.

Describe Why It is One of a Kind: - The Robotic Shot Peening system is peculiar to the AF in that it can be programmed to automatically shot peen a wide range of engine components. The Navy has purchased an identical system and it will be on line by the end of the summer. While other systems in the AF and DoD are automated, they do not have programmable robotic, multi-axis capability of this particular system. Currently parts worked by the system include: 1st, 2nd, 3rd Stage F100 fan disks and the 8th Stage F100 compressor disk.

q. Facility/Equipment: Non-Contact Dimensional Inspection (NCDI) System

- Description of Technology: The NCDI system provides SA-ALC with the ability to undertake precise geometrical inspections of a wide variety of engine components without actually having to touch the part physically. The system can measure any part that will fit in its 2'x2'x2' gauging envelope. This system permits gauging resolutions of over 100 times better than other techniques. The resolution allows the detection of flaws down to two ten thousandths of an inch in size. The system can be used to measure roundness, eccentricity, and a number of other geometrical measurements common to jet engine component inspection procedures.

(8.1) Describe Why Unique/Peculiar: This particular system is peculiar to the Air Force, but not unique in the DoD as there are similar non-contact systems used by the Navy to inspect blades. However, the particular application of the NCDI system at SA-ALC is unique. The NCDI system is currently used to inspect the 10th and 12th stage compressor disks of the F100-100/200 engines for radial discontinuities.

(8.2) Facility/Equipment: The system takes measurements by projecting a set of parallel, equally spaced lines using filtered white light onto the part surface. The pattern is distorted by the curved part surface. Using a combination of the traditional moiré pattern analysis technique and the optical interferometry technique, the distorted patterns are converted into 3-Dimensional coordinate points. The system's computers then use these points to calculate the precise measurements required.

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Describe Why It is One of a Kind: While there are other types of measurement equipment, such as Coordinate Measurement Machines (CMMs), that could perform this type of inspection, the NCDI system can perform the inspection in much less time. Currently it is processing disks in 10-12 minutes that would take up to 1.5 hours to measure using other methods. This particular application is mission essential as it is called out in a specific TCTO in order to identify disks with the manufacturing defect mentioned above.

r. Depot Maintenance Capability/Capacity: Heated Compressed Air Systems & Centrifugal Air Compressor

(8.1) Describe Why Unique/Peculiar: The Heated Compressed Air System is a unique capability possessed by the depot. Building 333 houses two specialized Heated Compressed Air Systems. The first system is capable of supplying 5000 SCFM air at pressures up to 800 psig at both ambient temperatures and up to 1000 degrees Fahrenheit. The primary use for this air is to test F100 Engine Convergent Exhaust Nozzle Controls (CENC) and the F100-229 Augmentor Fuel Pump. The second system is a natural gas fired Gas Turbine Engine driven Centrifugal Air compressor. This system is capable of supplying up to 1000 degrees Fahrenheit. A boost compressor is in line with one test cell to raise the pressure to 700 psig and still maintain the 1000 degree Fahrenheit temperature. The primary use for this system is to supply test air for Fuel Accessory Pneumatic Valves and Regulators as well as Air Frame mounted Pneumatic Accessories. Aircraft supported include the F-16, F-15, B-52, C-130, KC-135, F-111 and B-1.

(8.2) Facility/Equipment: The Heated Compressed Air System and Centrifugal Air Compressor are located in Bldg 333. Special equipment and configuration are required to provide the necessary air temperature.

Describe Why It is One of a Kind: These facilities are configured specifically to provide 1000 degrees Fahrenheit air for workloads TRC at SA-ALC and are not available elsewhere in the Air Force.

s. Depot Maintenance Capability/Capacity: Auto Prompting Inspection System (APIS)

(8.1) Describe Why Unique/Peculiar: The APIS is a unique capability that the depot possesses in B329. The APIS software is a step-by-step instructional guide on how an aircraft part is to be inspected. It combines graphics and verbage to assist the craftsman through the work control document (WCD) and tech order requirements. These dimensional inspection requirements include diameter reading concentricity, run out, out-of-roundness, parallelism between centerlines or planes, perpendicularity, flatness and true positioning. Items being inspected in the APIS are from 13 models of GTEs, 17 models of aircraft starters, F-15 Secondary Power System (SPS) and the F-16 Engine Start System. Plans are in the works to interface hand-held tools such as micrometer calipers, vernier calipers, height gages, and bore gages.

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(8.2) Facility/Equipment: The APIS includes 20 coordinate measurement machines for dimensional inspection of aircraft parts.

Describe Why It is One of a Kind: The SA-ALC APIS is unique to DoD. SA-ALC procured the hardware and then developed the software to fit our peculiar needs.

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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	240.3	240.3	0	0
Operational	240.0	240.0	0	0
Training	3.0	3.0	0	0
R & D	.5	.5	N/A	N/A
Supply & Storage	798.2	798.2	0	0
Admin	156.5	156.5	0	0
Housing	95.1	92.1	0	3.0
Recreational	589.0	571.0	18*	0
Forestry Program	0	N/A	N/A	N/A
Agricultural Outlease Program	0	N/A	N/A	N/A
Hunting/Fishing Programs	0	N/A	N/A	N/A
Community	1,873.4	1,699.4	0	174.0
Easements	665	0	665**	0
Total:	4661	3801	683	177

* Area restricted due to environmental clean-up of Installation Restoration Program (IRP) sites.

** Area restricted from development because they are easements where AF cannot build.

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Table 9.1: **Real Estate Resources**

Land Use	Total Acres	Developed Acreage	Available for Development	
			Restricted	Unrestricted
Maintenance	240.3	240.3	0	0
Operational	240.0	240.0	0	0
Training	3.0	3.0	0	0
R & D	.5	.5	N/A	N/A
Supply & Storage	798.2	798.2	0	0
Admin	156.5	156.5	0	0
Housing	95.1	95.1	0	0
Recreational*	589.0	571.0	18	0
Forestry Program	0	N/A	N/A	N/A
Agricultural Outlease Program	0	N/A	N/A	N/A
Hunting/Fishing Programs	0	N/A	N/A	N/A
Community**	1,873.4	911.1	0	962.3
Easements***	665	0	665	0
Total:	4661	3015.7	683	* 962.3

* Area restricted due to environmental clean-up of Installation Restoration Program (IRP) sites.

** For the JCSG-DM land use categories, "Community" was determined to consist of the following Air Force land use categories:

Community	41.9 acres
Airfield	825.3 acres
Medical	16.3 acres
Water	27.6 acres
Other unused land	962.3 acres
Total	1873.4 acres

*** Area restricted from development because they are easements where AF cannot build.

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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	SF	Potential Use
Bldg 308, 1st floor Admin offices	2,000	Electronic shop
Bldg 308, 2nd floor Admin offices	40,000	Electronic Shop
Bldg 324, Classrooms	3,500	Engine or GTE production shop
Bldg 360, T.O. file area	10,000	Assembly/disassembly, specialized repair, or inspection equipment
Bldg 329, Admin space	1,500	Shop space
Bldg 351, Source Selection Team	2,000	Production shop
Bldg 1420, Admin offices	5,100	Production shop for nuclear components
Bldg 305, Admin offices	4,000	Production shop
Bldg 306, Admin offices	16,000	Production shop
Bldg 375, Admin offices, hangar	5,000	Aircraft components production shop
Bldg 375, Admin offices, backshop	5,000	Aircraft components production shop
Bldg 326, Admin offices (raised floor)	9,400	Electronic/Electrical/Software production
Bldg 324, Admin offices	5,800	Production Shop
TOTAL	109,300	

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11. Industrial Waste

11.1 Are there any inhibiting factors that would limit future expansion on the base? Provide the details if applicable.

There are no inhibiting factors which impact the future expansion capabilities at Kelly AFB. On the contrary, based on a permitted daily treatment capacity of 2.4 million gallons per day, the Environmental Process Control Facility (EPCF) has the capability to easily increase treatment capacity by 20% without EPCF modification or addition. This will allow additional workloads to relocate to Kelly AFB without additional upgrade costs. In addition, the existing collection system is currently being used at 50% of its capacity. The current system will adequately handle any additional demands to the plan which has been identified as 20% without any additional construction requirements.

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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**

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COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1C1 Trans/Tnkr/Bmbr	832,605	832,605	832,605	832,605
2B Acft Structures	90,060	90,060	90,060	90,060
2C Hydraul/Pneudraul	7,702	7,702	7,702	7,702
2D Instruments	2,514	2,514	2,514	2,514
2E Landing Gear	6,503	6,503	6,503	6,503
2F	8	8	8	8
2I Acft Comp - Other	364,715	364,715	364,715	364,715
3A Engines - Acft	2,654,827	2,654,827	2,654,827	2,654,827
4A Missiles-Strategic	50,587	50,587	50,587	50,587
12A Software-Tactical	17,337	17,337	17,337	17,337
12B S/W - Spt Equip	281,273	281,273	281,273	281,273
13C Spec Int Item TMDE	113,385	113,385	113,385	113,385
TOTAL	4,421,516	4,421,516	4,421,516	4,421,516

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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
1C1 Trans/Tnkr/Bmbr	832,605	832,605	832,605	832,605
2B Acft Structures	90,060	90,060	90,060	90,060
2C Hydraul/Pneudraul	7,702	7,702	7,702	7,702
2D Instruments	2,514	2,514	2,514	2,514
2E Landing Gear	6,503	6,503	6,503	6,503
2F	8	8	8	8
2G Acft Comp - Avionics/Electronics	28,482	28,482	28,482	28,482
2H Acft Comp - APU	102,322	102,322	102,322	102,322
2I Acft Comp - Other	336,233	336,233	336,233	336,233
3A Engines - Acft	2,552,505	2,552,505	2,552,505	2,552,505
4A Missiles-Nuclear	50,587	50,587	50,587	50,587
12A Software-Tactical	17,337	17,337	17,337	17,337
12B S/W - Spt Equip	281,273	281,273	281,273	281,273
13C Spec Int Item TMDE	113,385	113,385	113,385	113,385
TOTAL	4,421,516	4,421,516	4,421,516	4,421,516

NOTE: WORKLOADS REQUIRED TO SATISFY THE CORE CAPABILITY ARE NOT ADDRESSED IN THIS TABLE. TOTAL CORE WILL CHANGE AS A RESULT OF WORKLOAD MIX AND SKILL TRANSFERS.

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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
(1C1) Acft, Fixed - Transport (C-5)	832,605	832,605	832,605	832,605
(2B) Acft Comp - Acft Structure	90,060	90,060	90,060	90,060
(2C) Acft Comp - Hydraulic/Pneudraulic	7,702	7,702	7,702	7,702
(2D) Acft Comp - Instruments	2,514	2,514	2,514	2,514
(2E) Acft Comp - Landing Gear	6,503	6,503	6,503	6,503
(2F) Acft Comp - Aviation Ordnance	8	8	8	8
(2G) Acft Comp - Avionics/Electronics	28,482	28,482	28,482	28,482
(2H) Acft Comp - APU	102,322	102,322	102,322	102,322
(2I) Acft Comp - Other	* 181,503	* 181,503	* 181,503	* 181,503
15 ~~(2J)~~ MFG & Fabrication	* 154,730	* 154,730	* 154,730	* 154,730
(3A) Engines - Acft	2,552,505	2,552,505	2,552,505	2,552,505
(4A) Missiles- Nuclear	50,587	50,587	50,587	50,587
(12A) S/W - Tactical	17,337	17,337	17,337	17,337
(12B) S/W - Spt Eqt	281,273	281,273	281,273	281,273
(13C) Spec Interest Item - TMDE Eqt	113,385	113,385	113,385	113,385
TOTAL	4,421,516	4,421,516	4,421,516	4,421,516

NOTE: By direction, this table is based on the FY95 workload used to develop the initial core. Workload projections used in the rest of the series 12, 13, and 14 tables are as revised at the early 1994 workload reconciliation. Therefore, this table has little relationship to the other tables in those series.

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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)			
	FY 1996	FY 1997	FY 1998	FY 1999
(3A) Engines - Acft	7,025	7,025	7,025	7,025
TOTAL	7,025	7,025	7,025	7,025

NOTE: To be provided by HQ AFMC/LGPW

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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.

Table 12.3.a: **Service-Controlled Core (Title 10)**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
Not applicable				
TOTAL				

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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**

COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	832,605	730,532	832,605	821.402
(1C4) Acft, Fixed - Trainer (T-38)	0	102,073	0	92
(2B) Acft Comp - Acft Structure	16,811	15,879	16,699	19,200
(2C1) Acft Comp - Hydraulic/Pneudraulic	2,447	2,499	2,773	2,979
(2D) Acft Comp - Instruments	5,610	4,317	5,203	4,965
(2E) Acft Comp - Landing Gear	4,164	4,164	4,164	4,164
(2G) Acft Comp - Avionics/ Electronics	33,327	40,661	28,482	30,506
(2H) - Acft Comp - APUs	111,974	117,871	102,375	102,322
(2I) Acft Comp - Other	211,159	212,238	212,195	213,005
(3A) Engines - Acft	2,614,653	2,602,778	2,620,135	2,625,971
(4A) Missile Comp	57,798	57,361	57,452	57,467
(10C) Ground Gen/Purp - Munitions/Ordnance	1,286	1,744	1,637	1,620
(12B) S/W - Spt Eqt	170,480	169,565	169,095	169,059
(13C) Spec Interest Item - TMDE Eqt	400,375	401,008	409,875	409,935
TOTAL	4,462,690	4,462,690	4,462,690	4,462,689

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**

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COMMODITY GROUP	Capability (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	832,605	730,532	832,605	821,402
(1C4) Acft, Fixed - Trainer (T-38)	0	102,073	0	92
(2B) Acft Comp - Acft Structure	16,811	15,879	16,699	19,200
(2C) Acft Comp - Hydraulic/Pneudraulic	2,447	2,499	2,773	2,979
(2D) Acft Comp - Instruments	5,610	4,317	5,203	4,965
(2E) Acft Comp - Landing Gear	4,164	4,164	4,164	4,164
(2G) Acft Comp - Avionics/ Electronics	33,327	40,661	28,482	30,506
(2H) - Acft Comp - APUs	111,974	117,871	102,375	102,322
(2I) Acft Comp - Other	* 91,290	* 92,368	* 92,325	* 93,138
(2J) Mfg & Fabrication	* 119,870	* 119,870	* 119,870	* 119,870
(3A) Engines - Acft	2,614,653	2,602,778	2,620,135	2,625,971
(4A) Missile Comp	57,798	57,361	57,452	57,467
(10C) Ground Gen/Purp - Munitions/Ordnance	1,286	1,744	1,637	1,620
(12B) S/W - Spt Eqt	170,480	169,565	169,095	169,059
(13C) Spec Interest Item - TMDE Eqt	400,375	401,008	409,875	409,935
TOTAL	4,462,690	4,462,690	4,462,690	4,462,690

NOTE 1: Total Core is greater than in Table 12.1a due to skills transfers required to compensate for low requirements or lack of funding.

NOTE 2: Small discrepancies in the total may occur due to rounding.

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		TABLE 13.1.a			
	TOTAL CORE WORKLOADS				
REGROUP WITH 6/15/94 DATA					
PER 6/15/94 REVISION RECEIVED 6/16/94					
PER 1/18/94 TELECOM WITH MIKE POWERS, WE SHOULD DEGRADE					
WHEN USING SKILLS TRANSFERS.					
JCSG	DESCRIPTION	FY96	FY97	FY98	FY99
COMM		CORE	CORE	CORE	CORE
1C1	ACFT, FIXED-TRANSPORT	832,605	730,832	832,605	821,402
1C4	ACFT, FIXED-TRAINER	0	102,073	0	92
2B	ACFT COMP-ACFT STRUCTURE	18,811	16,879	16,699	19,200
2C	EXCH, HYD/PNU	2,447	2,499	2,773	2,979
2D	ACFT INSTRUMENTS	5,610	4,317	5,208	4,965
2E	ACFT LANDING GEAR	4,164	4,164	4,164	4,164
2G	ACFT COMP-AVIONICS/ELECTR	33,327	40,661	28,482	30,506
2H	ACFT APUs	111,974	117,871	102,378	102,322
2I	ACFT COMP-OTHER	91,290	92,368	92,325	93,138
2J	MFG & FABRICATION	119,870	119,870	119,870	119,870
3A	ACFT ENGINES	2,614,653	2,602,778	2,620,135	2,625,971
4A	MISSILE COMPNENTS	57,798	57,361	57,492	57,467
10C	NUCLEAR COMP	1,286	1,744	1,637	1,620
12A	SOFTWARE (TACTICAL)	17,544	16,776	14,308	14,178
			152,785		
12B	SOFTWARE (SE)	152,935	152,789	154,787	154,881
13C	TM&DE	400,375	401,008	409,575	409,935
	TOTAL	4,462,690	4,462,690	4,462,690	4,462,690
NOTE 1: TOTAL CORE IS GREATER THAN IN TABLE 12.1.a DUE TO SKILLS TRANSFERS					
REQUIRED TO COMPENSATE FOR LOW REQUIREMENTS OR LACK OF FUNDING.					
NOTE 2: HQ AFMC/LGP AND HQ USAF/RT DIRECTED REMOVING THE AIR FORCE MANUFACTURING					
COMMODITY FROM THE JCSG CATEGORY 2I AND PUTING IT INTO ITS OWN CATEGORY, 2J.					
THE COMMODITY BREAKOUT ATTACHMENT TOTHIS PACKAGE IDENTIFIES A CORE OF					
119,870 HOURS FOR THIS NEW CATEGORY. ACCORDINGLY, THAT AMOUNT IS NOW REFLECTED					
AS CATEGORY 2J AND THE REMAINDER IS LEFT IN 2I.					
NOTE 3: COMMODITY 12 WAS ADJUSTED AS AT ATTACHMENT 1 TO THIS CHART TO REFLECT					
THE AMOUNT ATTRIBUTED TO TACTICAL SYSTEMS AS SHOWN IN ATTACHMENT 2 TO THIS CHART					

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13.1a

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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
(2I) Acft Comp, Other	96	104	100	100
(3A) Acft Engines	208,654	32,881	33,388	33,388
(13C) Spec Interest TMDE	993	803	885	913
TOTAL	209,743	33,788	34,373	34,401

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Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.b: **Interservice Above Core Workload**

4

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
(2H) Acft Comp - APUs	27,340	30,318	26,343	26,343
(2I) Acft Comp - Other	5,108	4,771	4,614	6,987
(3A) GTEs - Acft	196,204	195,289	198,230	182,245
(13C) Spec Interest Item - TMDE Eqt	216	257	128	128
TOTAL	228,868	230,635	229,315	215,703

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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
(2H) Acft Comp - APUs	27,340	30,318	26,343	26,343
(2I) Acft Comp - Other	5,108	4,771	4,614	6,987
(3A) GTEs - Acft	196,204	195,289	198,230	* 198,230
(13C) Spec Interest Item - TMDE Eqt	216	257	128	128
TOTAL	228,868	230,635	229,315	* 231,688

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Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.c: **Other Agency Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
12B-Software - SE (Coast Guard)	2,612	3,748	3,684	3,604
13B-Spec Interest - TMDE	152	147	187	187
TOTAL	2,764	3,895	3,871	3,791

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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
Not appliable				
TOTAL				

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Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.e: **Within Service Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	173,387	0	19,991	0
(1C4) Acft, Fixed - Trainer (T-38)	340,712	128,551	52,244	0
(2B) Acft Comp - Acft Structure	39,514	31,395	36,878	37,465
(2C) Acft Comp - Hydraulic	118	0	274	408
(2D) Acft Comp - Instruments	2,237	1,094	1,930	1,727
(2E) Acft Comp - Landing Gear	45	0	406	410
(2G) Acft Comp - Avionics/Electr	62,958	69,297	50,081	48,059
(2H) - Acft Comp - APUs	20,021	20,168	19,029	19,082
(2I) Acft Comp - Other	85,819	125,958	114,931	119,939
(3A) Engines - Acft	645,218	663,173	542,472	537,932
(4A2) Missiles-Nuclear	40,935	46,612	44,693	42,470
(10C) Ground Gen/Purp - Munitions/Ordnance	962	1,352	1,243	1,172
(12B) S/W - Spt Eqt	10,342	0	22,133	20,661
(13C) Spec Interest Item - TMDE Eqt	46,275	50,504	66,851	66,455
TOTAL	1,468,542	1,138,064	973,156	895,778

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Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.e: Within Service Above Core Workload

10

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	173,387	0	19,991	0
(1C4) Acft, Fixed - Trainer (T-38)	340,712	* 128,511	52,244	0
(2B) Acft Comp - Acft Structure	39,514	31,395	36,878	37,465
(2C) Acft Comp - Hydraulic	118	0	274	408
(2D) Acft Comp - Instruments	2,237	1,094	1,930	1,727
(2E) Acft Comp - Landing Gear	45	0	406	410
(2G) Acft Comp - Avionics/Electr	62,958	69,297	50,081	48,059
(2H) - Acft Comp - APUs	20,021	20,168	19,029	19,082
(2I) Acft Comp - Other	* 85,819	* 80,904	* 84,680	* 93,358
(2J) Mfg & Fabrication	* 0	* 45,054	* 30,251	* 26,581
(3A) Engines - Acft	645,218	663,173	542,472	537,932
(4A) Missiles- Nuclear	40,935	46,612	44,693	42,470
(10C) Ground Gen/Purp - Munitions/Ordnance	962	1,352	1,243	1,172
(12B) S/W - Spt Eqt	10,342	0	22,133	20,661
(13C) Spec Interest Item - TMDE Eqt	46,275	50,504	66,851	66,455
TOTAL	1,468,543	1,138,064	973,156	895,780

NOTE: Small discrepancies in the total may occur due to rounding.

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TABLE 14.1.e

WITHIN SERVICE ABOVE CORE WORKLOAD
REGROUP WITH 6/15/94 DATA
PER 6/15/94 REVISION RECEIVED 6/15/94
PER 1/18/94 TELECOM WITH MIKE POWERS, A/E SHOULD
DEGRADE WHEN USING SKILLS TRNSFERS

JCSG COMM	FY96 ABOVE CORE	FY97 ABOVE CORE	FY98 ABOVE CORE	FY99 ABOVE CORE
1C1	173,387	0	19,891	0
1C4	340,712	128,511	52,244	0
2B	39,514	31,395	38,878	37,485
2C	118	0	274	408
2D	2,237	1,094	1,930	1,727
2E	45	0	408	410
2G	52,962	69,297	50,081	49,059
2H	20,021	20,168	19,029	19,082
2I	85,819	80,904	84,880	93,358
2J	0	46,054	30,251	29,881
3A	645,218	663,173	642,472	637,932
4A	40,935	46,612	44,693	42,470
10C	982	1,352	1,243	1,172
12A	*1,054	0	*1,673	*1,733
12B	*9,278	0	*20,280	*18,928
13C	46,275	50,504	66,881	66,485
TOTAL	1,468,542	1,138,064	973,156	895,778
	1,468,542	1,138,064	973,156	895,778
	1,468,543	1,138,066	973,156	895,778

NOTE: COMMODITY 12 WAS ADJUSTED AS AT ATTACHMENT 1 TO THIS CHART TO REFLECT THE AMOUNT ATTRIBUTED TO TACTICAL SYSTEMS AS SHOWN IN ATTACHMENT 2 TO THIS CHART

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Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.f: **Low Quantity Above Core Workload**

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
Not applicable				
(Navy peculiar)				
TOTAL				

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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
Not applicable				
TOTAL				

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Workloads and Capabilities, continued

14. Other Workloads (Above Core), continued

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) Acft, Fixed - Transport (C-5)	173,387	0	19,991	0
(1C4) Acft, Fixed - Trainer (T-38)	340,712	128,511	52,244	0
(2B) Acft Comp - Acft Structure	39,514	31,395	36,878	37,465
(2C) Acft Comp - Hydraulic/Pneudraulic	118	0	274	408
(2D) Acft Comp - Instruments	2,237	1,094	1,930	1,727
(2E) Acft Comp - Landing Gear	45	0	406	410
(2G) Acft Comp - Avionics/ Electronics	62,958	69,297	50,081	48,059
(2H) - Acft Comp - APUs	47,361	50,486	45,372	45,425
(2I) Acft Comp - Other	91,023	130,833	119,645	127,026
(3A) Engines - Acft	1,050,076	891,343	774,090	769,550
(4A) Missiles - Nuclear	40,935	46,612	44,693	42,470
(10C) Ground Gen/Purp - Munitions/Ordnance	962	1,352	1,243	1,172
(12B) S/W - Spt Eqt	12,954	3,748	25,817	24,265
(13C) Spec Interest Item - TMDE Eqt	47,636	51,711	68,051	67,683
TOTAL	1,909,917	1,406,382	1,240,715	1,165,658

NOTE: Cannot be computed until HQ AFMC/LGPW provides Interservice data and other core categories are completed.

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Workloads and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.h: **Total Above Core Workload**

(Sum of Tables 14.1.a through 14.1.g)

10

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	173,387	0	19,991	0
(1C4) Acft, Fixed - Trainer (T-38)	340,712	128,511	52,244	0
(2B) Acft Comp - Acft Structure	39,514	31,395	36,878	37,465
(2C) Acft Comp - Hydraulic/Pneudraulic	118	0	274	408
(2D) Acft Comp - Instruments	2,237	1,094	1,930	1,727
(2E) Acft Comp - Landing Gear	45	0	406	410
(2G) Acft Comp - Avionics/ Electronics	62,958	69,297	50,081	48,059
(2H) - Acft Comp - APUs	47,361	50,486	45,372	45,425
(2I) Acft Comp - Other	* 91,023	* 85,779	* 89,394	* 100,442
(2J) Mfg & Fabrication	* 0	* 45,054	* 30,251	* 26,581
(3A) Engines - Acft	1,050,076	891,343	774,090	769,550
(4A) Missiles - Nuclear	40,935	46,612	44,693	42,470
(10C) Ground Gen/Purp - Munitions/Ordnance	962	1,352	1,243	1,172
(12B) S/W - Spt Eqt	12,954	3,748	25,817	24,265
(13C) Spec Interest Item - TMDE Eqt	47,636	51,711	68,051	67,683
TOTAL	1,909,918	1,406,382	1,240,715	1,165,657

NOTE: Small discrepancies in the total may occur due to rounding.

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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) Acft, Fixed - Transport (C-5)	173,387	0	19,991	0
(1C4) Acft, Fixed - Trainer (T-38)	340,712	128,511	52,244	0
(2B) Acft Comp - Acft Structure	39,514	31,395	36,878	37,465
(2C) Acft Comp - Hydraulic/Pneudraulic	118	0	274	408
(2D) Acft Comp - Instruments	2,237	1,094	1,930	1,727
(2E) Acft Comp - Landing Gear	45	0	406	410
(2G) Acft Comp - Avionics/ Electronics	62,958	69,297	50,081	48,059
(2H) - Acft Comp - APUs	47,361	50,486	45,372	45,435
(2I) Acft Comp - Other	91,023	85,779	89,394	100,442
(3A) Mfg & Fabrication	0	45,054	30,281	26,981
(3A) Engines - Acft	1,050,076	891,343	774,090	769,550
(4A) Missiles - Nuclear	40,935	46,612	44,693	42,670
(10C) Ground Gen/Purp - Munitions/Ordnance	962	1,352	1,243	1,173
(12A) S/W - Tactical	1,064	0	1,873	1,733
(12B) S/W - Spt Eqt	11,890	3,748	23,944	22,932
(13C) Spec Interest Item - TMDE Eqt	47,636	51,711	68,051	67,683
TOTAL	1,909,918	1,406,382	1,240,715	1,165,657

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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**

4

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
Manufacturing*				
(1C1) Acft, Fixed - Transport (C-5)	832,605	832,605	832,605	832,605
(1C4) Acft, Fixed - Trainer (T-38)	0	0	0	0
(2B) Acft Comp - Acft Structure	90,060	90,060	90,060	90,060
(2I) Acft Comp - Other	22,999	22,489	22,739	22,964
(3A) GTEs - Acft	425,292	425,292	425,292	425,292
(4A) Missiles - Nuclear	184	184	184	184
TOTAL	1,372,140	1,370,636	1,370,886	1,371,111

NOTE: Three unique and peculiar capabilities at SA-ALC primarily support Organize Manufacturing. Organic manufacturing is classified as an unprogrammed workload, which means outyear workloads remain largely undefined and understated in terms of manhour projections. Turn manhour projections become visible only within the current quarter of the current year, at the time a customer requests manufacture of a specific item.

AFMC Depot Manufacturing Policy is reflected in AF Instruction (AFI) 21-102, and is limited to five conditions which are intended to restrict government competition with commercial activities. These imposed limitations channel most manufacturing to commercial sources. Consequently, depot manufacturing workloads, with few exceptions, generate because there are existing logistical problems to which the commercial sector either has not or cannot respond. In some cases, the manufacturing workload represents a new prototype, application of new technology or engineering development, or limited quantities of parts of an aging weapon system for which there is no longer a commercial source. Situations such as these warrant organic involvement as a cost effective method for task accomplishment. Unfortunately, these tasks are not well suited for outyear projection and end up a drop-in workload. Given these circumstances, it is imperative to give adequate recognition to the relatively small and

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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

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COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
Manufacturing*				
(1C1) Acft, Fixed - Transport (C-5)	832,605	832,605	832,605	832,605
(1C4) Acft, Fixed - Trainer (T-38)	0	0	0	0
(2B) Acft Comp - Acft Structure	90,060	90,060	90,060	90,060
(2I) Acft Comp - Other	22,999	22,489	22,739	22,964
(3A) GTEs - Acft	* 428,981	* 428,981	* 428,981	* 428,981
(4A) Missiles - Nuclear	184	184	184	184
TOTAL	* 1,374,829	* 1,374,319	* 1,374,569	* 1,374,794

input to JSI LA54-94 TW

NOTE: Three unique and peculiar capabilities at SA-ALC primarily support Organize Manufacturing. Organic manufacturing is classified as an unprogrammed workload, which means outyear workloads remain largely undefined and understated in terms of manhour projections. Turn manhour projections become visible only within the current quarter of the current year, at the time a customer requests manufacture of a specific item.

AFMC Depot Manufacturing Policy is reflected in AF Instruction (AFI) 21-102, and is limited to five conditions which are intended to restrict government competition with commercial activities. These imposed limitations channel most manufacturing to commercial sources. Consequently, depot manufacturing workloads, with few exceptions, generate because there are existing logistical problems to which the commercial sector either has not or cannot respond. In some cases, the manufacturing workload represents a new prototype, application of new technology or engineering development, or limited quantities of parts of an aging weapon system for which there is no longer a commercial source. Situations such as these warrant organic involvement as a cost effective method for task accomplishment. Unfortunately, these tasks are not well suited for outyear projection and end up a drop-in

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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

10

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
Manufacturing*				
(1C1) Acft, Fixed - Transport (C-5)	832,605	832,605	832,605	832,605
(1C4) Acft, Fixed - Trainer (T-38)	0	0	0	0
(2B) Acft Comp - Acft Structure	90,060	90,060	90,060	90,060
(2I) Acft Comp - Other	* 13,327	* 13,327	* 13,327	* 13,327
(2J) Mfg & Fabrication	* 9,672	* 9,162	* 9,412	* 9,637
(3A) GTEs - Acft	428,981	428,981	428,981	428,981
(4A) Missiles - Nuclear	184	184	184	184
TOTAL	1,374,829	1,374,319	1,374,569	1,374,794

NOTE 1: Small discrepancies in the total may occur due to rounding.

NOTE 2: Three unique and peculiar capabilities at SA-ALC primarily support Organic Manufacturing. Organic manufacturing is classified as an unprogrammed workload, which means outyear workloads remain largely undefined and understated in terms of manhour projections. These manhour projections become visible only within the current quarter of the current year, at the time a customer requests manufacture of a specific item.

AFMC Depot Manufacturing Policy is reflected in AF Instruction (AFI) 21-102, and is limited to five conditions which are intended to restrict government competition with commercial activities. These imposed limitations channel most manufacturing to commercial sources. Consequently, depot manufacturing workloads, with few exceptions, generate because there are existing logistical problems to which the commercial sector either has not or cannot respond. In some cases, the manufacturing workload represents a new prototype, application of new technology or engineering development, or limited quantities of parts of an aging weapon system for which there is no longer a commercial source. Situations such as these warrant organic involvement as a cost effective method for task accomplishment. Unfortunately, these tasks are not well suited for outyear projection and end up a drop-in workload. Given these circumstances, it is imperative to

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give adequate recognition to the relatively small and understated manufacturing manhours which are absolutely paramount to sustainment of the war fighting capabilities of the front-line weapon systems. The workload manhour figures for the manufacturing workload is approximately 30,000 to 40,000 hours per year understated from real world historical data.

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		TABLE 15.1			
	UNIQUE AND/OR PECULIAR TOTAL CORE WORKLOAD				
ALSO TABLE 13.1 a					
FROM FILE CORE4A					
JCSG					
COMM					
	DESCRIPTION	FY96	FY97	FY98	FY99
		CORE	CORE	CORE	CORE
1C1	ACFT, FIXED-TRANSPORT	832,605	730,532	832,605	821,402
1C4	ACFT, FIXED-TRAINER	0	102,073	0	92
				15	
2B	ACFT COMP-ACFT STRUCTURE	16,811	16,879	16,699	19,200
2C	EXCH, HYD/PNU	2,447	2,499	2,773	2,979
2D	ACFT INSTRUMENTS	5,610	4,317	5,203	4,965
				4,154	
2E	ACFT LANDING GEAR	4,164	4,164	4,164	4,164
2G	ACFT COMP-AVIONICS/ELECTR	33,327	40,661	28,482	30,506
2H	ACFT APUs	111,974	117,871	102,375	102,322
2I	ACFT COMP-OTHER	91,260	92,368	92,325	93,138
15 2J	MFG & FABRICATION	119,870	119,870	119,870	119,870
				2,620,135	
3A	ACFT ENGINES	2,614,853	2,602,778	2,620,135	2,625,971
4A	MISSILE COMPNENTS	57,798	57,361	57,452	57,467
10C	NUCLEAR COMP	1,286	1,744	1,637	1,620
12A	SOFTWARE (TACTICAL)	17,544	16,778	14,308	14,178
12B	SOFTWARE (SE)	152,935	152,789	154,787	154,881
				7	
13C	TM&DE	400,375	401,008	408,875	409,935
	TOTAL	4,462,690	4,462,690	4,462,690	4,462,690

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understated manufacturing manhours which are absolutely paramount to sustainment of the war fighting capabilities of the front line weapon systems. The workload manhour figures for the manufacturing workload is approximately 30 000 to 40,000 hours per year understated from real world historical data.

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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**

4

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
(1C1) Acft, Fixed - Transport (C-5)	227,355	128,511	72,235	(11,000)
(1C4) Acft, Fixed - Trainer (T-38)	286,744	44,308	0	0
(2B) Acft Comp - Acft Structure	47,661	52,246	29,605	34,575
(2I) Acft Comp - Other	0	0	0	0
(3A) GTEs - Acft	80,390	78,074	78,074	78,074
(4A) Missiles-Nuclear	16	0	0	0
TOTAL	642,166	303,139	179,914	101,649

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(4)

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

10

COMMODITY GROUP	Workload (DLHs)			
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(1C1) Acft, Fixed - Transport (C-5)	227,355	128,511	72,235	(11,000)
(1C4) Acft, Fixed - Trainer (T-38)	286,744	44,308	0	0
(2B) Acft Comp - Acft Structure	47,661	52,246	29,605	34,575
(2I) Acft Comp - Other	0	0	0	0
(3A) GTEs - Acft	76,701	74,385	74,385	74,385
(4A) Missiles-Nuclear	16	0	0	0
TOTAL	638,457	299,450	176,225	97,960

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original all changes. 1130 2404 94

with only changes 1055 1995 2404 94

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		TABLE 15.2		
NON-CORE UNIQUE AND/OR PECULIAR WORKLOAD				
ALSO TABLE 14.1 e				
FROM WORKSHEET CORE 4				
AS PER THE 14 OCT 94 GUIDANCE				
JCSG	FY96	FY97	FY98	FY99
COMM	ABOVE	ABOVE	ABOVE	ABOVE
	CORE	CORE	CORE	CORE
1C1	173,387	0	19,991	0
1C4	340,712	128,511	52,244	0
2B	39,514	31,395	36,878	37,465
2C	118	0	274	408
2D	2,237	1,094	1,930	1,727
2E	48	0	408	410
2G	62,958	69,297	50,081	48,059
2H	20,021	20,158	19,029	19,082
2I	85,819	80,904	84,680	93,358
2J	0	45,054	30,251	26,581
3A	645,218	663,173	542,473	527,932
4A	40,935	46,612	44,693	42,470
10C	962	1,352	1,243	1,172
12A	1,064	0	1,873	1,733
12B	9,278	0	20,280	18,928
13C	46,275	50,504	66,851	66,455
TOTAL	1,468,542	1,138,064	973,158	895,778

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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.

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

a. Service/Function: Logistics Management

4

(16.1) Description: The Air Force has long operated under the concept of collocated maintenance and management functions to provide the best possible customer support. In recent years, the Air Force has adopted the Integrated Weapon System Management (IWSM) approach, which re-emphasizes the joint support operation by a cohesive team and ensures the increased awareness and communications by all parties involved. The result is faster resolution of repair problems and better service to the customer. This relationship is further enhanced by the collocation with the Defense Logistics Agency which provides timely transportation support as well as storage of both reparable and serviceable assets. Collocation has created the environment for enhanced teamwork in the repair, management and acquisition planning of logistics requirements. Examples can readily be found across the depot, such as:

- The Propulsion Product Group Manager (PPGM), located at SA-ALC manages propulsion activities through the existing infrastructures. the PPGM has life cycle management responsibility for planning, analysis, technology development and insertion through design, development, production, sustainment, modification and retirement. This functions are accomplished by the PPGM using a Propulsion Integrated Product Team (PIPT) comprised of propulsion personnel from OC-ALC, SA-ALC and ASC. The use of IPT management assures the appropriate balance between acquisition and sustainment needs to optimize resources and support to our customers. The PPGM plans and executes the Concept of Operations for Integrated Weapon System Management of Propulsion Systems. They also serve as the single face for Propulsion, recommending policies and procedures, developing and administering the Propulsion Master Plan, serving as the Propulsion advocate in the budget and manpower allocation processes, improving propulsion technology and serving as the Air Force senior representative on all joint service propulsion committees as the Joint Propulsion Coordinating Committee (JPCC). In essence, under the IWSM concept, the PPGM has the direct responsibility for the overall Air Force propulsion systems, both from a maintenance and management perspective.

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- Aircraft

  -- The collocation of the C-5 System Program Director (SPD) at SA-ALC with the depot maintenance function, the TF39 Engine Manager, the 313th Flight Test Squadron (FLTS) and the 433rd Airlift Wing (AW), best supports the concept to satisfy the customer through realized logistics efficiencies. The 313th FLTS is readily available for C-5 functional check flight saving the Air Force test pilots travel cost/time, and more importantly, C-5 schedule time. The collocation of the 433rd AW enables direct immediate contact between the SPD and the customer, testing new methods, procedures, and performing prototypes. This collocation significantly shortens the user's pipeline, creating the ability of that wing to respond quicker than other tasked units in the event of a contingency.

  -- The C-17 System Support Manager (SSM) is located at SA-ALC. As the center of gravity of the program transitions to SA-ALC, having the System Program Director (SPD) collocated with the depot maintenance provides management efficiencies and direct customer support. Having the SPD at SA-ALC allows the past experience on large transport aircraft of managers and maintainers to be brought to bear on the C-17.

- Commodities

  -- The Commodity Production Management Division (SA-ALC/LDT) is the primary organic source of repair for Gas Turbine Engines, Secondary Power Systems and Fuels System components managed by the Power System Program Management Division (Materiel Group Manager (MGM), SA-ALC/LDP). These two organizations are collocated in Bldgs 326 and 329.

  -- The Electronics and Automatic Test Equipment (ATE) Support Division (SA-ALC/LDS) is the primary organic source of repair for the ATE managed by the Automatic Test Program Management Division (the Product Group Manager). These two organizations are collocated in Bldg 308.

- HQ AFMC and HQ Air Intelligence Agency (AIA) are currently in the process of transitioning the Air Force Cryptologic Support Center (AFCSC) to SA-ALC under the Intelligence Normalization effort. Both HQ AIA and AFCSC are located at Kelly AFB. The transition is scheduled to occur on 1 Oct 94. The AFCSC provides the depot support for Air Force Communications Security (COMSEC) and Signals Intelligence (SIGINT) items. This is a very specialized, secure activity which supports Air Intelligence Agency units world-wide. With the primary customer, HQ AIA, collocated with the SA-ALC cryptologic depot maintenance operation this transition should be transparent to the world-wide customers. HQ AIA will continue providing programmatic funds and direction and be readily available to assist with any problems which may occur in the depot operation. The depot maintenance will be immediately responsive to changing customer needs and will continue to provide the highest quality COMSEC and SIGINT products.

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Workload and Capabilities, continued 4

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.

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

a. Service/Function: Logistics Management

(16.1) Description: The Air Force has long operated under the concept of collocated maintenance and management functions to provide the best possible customer support. In recent years, the Air Force has adopted the Integrated Weapon System Management (IWSM) approach, which re-emphasizes the joint support operation by a cohesive team and ensures the increased awareness and communications by all parties involved. The result is faster resolution of repair problems and better service to the customer. This relationship is further enhanced by the collocation with the Defense Logistics Agency which provides timely transportation support as well as storage of both reparable and serviceable assets. Collocation has created the environment for enhanced teamwork in the repair, management and acquisition planning of logistics requirements. Examples can readily be found across the depot, such as:

- The Propulsion Product Group Manager (PPGM), located at SA-ALC manages propulsion activities through the existing infrastructures. ~~t~~The PPGM has life cycle management responsibility for planning, analysis, technology development and insertion through design, development, production, sustainment, modification and retirement. Th~~is~~ese functions are accomplished by the PPGM using a Propulsion Integrated Product Team (PIPT) comprised of propulsion personnel from OC-ALC, SA-ALC and ASC. The use of IPT management assures the appropriate balance between acquisition and sustainment needs to optimize resources and support to our customers. The PPGM plans and executes the Concept of Operations for Integrated Weapon System Management of Propulsion Systems. They also serve as the single face for Propulsion, recommending policies and procedures, developing and administering the Propulsion Master Plan, serving as the Propulsion advocate in the budget and manpower allocation processes, improving propulsion technology and serving as the Air Force senior representative on all joint service propulsion committees as the Joint Propulsion Coordinating Committee (JPCC). In essence, under the IWSM concept, the PPGM has the direct responsibility for the overall Air Force propulsion systems, both from a maintenance and management perspective.

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- Aircraft

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  -- The C-17 System Support Manager (SSM) is located at SA-ALC. ~~As the center of gravity of the program transitions to SA-ALC, having the System Program Director (SPD) collocated with the depot maintenance provides management efficiencies and direct customer support. Having the SPD at SA-ALC allows the past~~The SSM reports to the C-17 System Program Director (SPD) at Aeronatucial System Center (ASC) at Wright-Patterson AFB OH. As the C-17 program matures (i.e., transitions from Production to Sustainment), the program management center of ~~experience on large transport aircraft of managers and maintainers to be brought to bear on the C-17~~gravity will shift from ASC to SA-ALC. In the coming years, there will be more and more activity and responsibility for the sustainment of the C-17. Eventually, the C-17 SPD will be at SA-ALC. Having the SPD collocated with the depot maintenance will allow engineering and technical specialists to plan and execute engineering changes that are compatible with the repair and test facilities. Further, collocation enables the formation of truly integrated product teams.

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- Commodities

  -- The Commodity Production Management Division (SA-ALC/LDT) is the primary organic source of repair for Gas Turbine Engines, Secondary Power Systems and Fuels System components managed by the Power System Program Management Division (Materiel Group Manager (MGM), SA-ALC/LDP). These two organizations are collocated in Bldgs 326 and 329.

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- HQ AFMC and HQ Air Intelligence Agency (AIA) are currently in the process of transitioning the Air Force Cryptologic Support Center (AFCSC) to SA-ALC under the

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development, production, sustainment, modification and retirement. This functions are accomplished by the PPGM using a Propulsion Integrated Product Team (PIPT) comprised of propulsion personnel from OC-ALC, SA-ALC and ASC. The use of IPT management assures the appropriate balance between acquisition and sustainment needs to optimize resources and support to our customers. The PPGM plans and executes the Concept of Operations for Integrated Weapon System Management of Propulsion Systems. They also serve as the single face for Propulsion, recommending policies and procedures, developing and administering the Propulsion Master Plan, serving as the Propulsion advocate in the budget and manpower allocation processes, improving propulsion technology and serving as the Air Force senior representative on all joint service propulsion committees as the Joint Propulsion Coordinating Committee (JPCC). In essence, under the IWSM concept, the PPGM has the direct responsibility for the overall Air Force propulsion systems, both from a maintenance and management perspective.

- Aircraft

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  -- The Commodity Production Management Division (SA-ALC/LDT) is the primary organic source of repair for Gas Turbine Engines, Secondary Power Systems and Fuels System components managed by the Power System Program Management Division (Materiel Group Manager (MGM), SA-ALC/LDP). These two organizations are collocated in Bldgs 326 and 329.

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(16.2) Describe Relationship and Benefit to Maintenance Mission:

- The collocation provides for two-way support. The industrial function is supported by the technical specialists and engineers of the management organization. The management organization is in turn supported by the industrial function through quality and timely repair of assets for return to the customer.

- If the industrial and management functions were not collocated, primary impact would be less efficiency which would translate into longer repair turn-around times and greater cost to the customer. The repair time would increase as would the number of assets in the pipeline. Communication and resolution of production support problems would be difficult.

- Collocation has enhanced the environment for teamwork in the repair, management and acquisition planning of the equipment requirements for the depot. Regular meetings are held on various workloads to solve problems caused by data inadequacies, equipment layouts, contractor support, installation and training. These meetings in a Total Quality Management environment would be impossible if the management and production functions were not located in close proximity. We would be unable to efficiently work problems that we now solve with a 30 minute meeting with the cognizant engineers, equipment specialists, item managers, production specialists and the repair craftsman.

- Specifically, in the case of the PPGM, the collocation of the PPGM and the Designated Acquisition Commander (DAC), also at SA-ALC, provides for better communication between the activities involved for the acquisition and maintenance of Air Force Propulsion Systems. SA-ALC was chosen as the location for the PPGM since the majority of current and future PPGM activity involves sustainment and because of the large dollar value of propulsion systems resident at SA-ALC. Under the IWSM concept, the PPGM has the direct responsibility for the overall Air Force propulsion systems, both from a maintenance and management perspective.

b. Service/Function: 313th Flight Test Squadron (FLTS)

(16.1) Description: The FLTS accomplishes test flights and certifies aircraft air worthiness of all aircraft repaired at SA-ALC prior to clearance for major command (MAJCOM) use and world-wide delivery. The FLTS also provides Test and Evaluations services to the various ALC directorates.

(16.2) Describe Relationship and Benefit to Maintenance Mission: The FLTS at SA-ALC has the responsibility to monitor quality of workmanship along with performing final quality control evaluation and acceptance on the C-5 and T-38 aircraft undergoing Programmed Depot Maintenance (PDM) or modifications. The FLTS also acts as its focal point for Developmental Test and Evaulations (DT&E) projects on behalf of single managers in support of the SA-ALC mission. The FLTS provides management for all ALC DT&E and actually conducts DT&E in circumstances where size and scale of program warrants.

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c. Service/Function: Financial Management

(16.1) Description: Advises and acts for SA-ALC Commander and staff on financial matters, policy, programs and plans for depot level maintenance and logistical support of assigned weapon systems. Provides policy guidance and procedures for reparable and maintenance requirements, budgeting, accounting and finance, cost management, and logistics systems management. Establishes command/control for contingency and readiness functions under the Program Control Division. MAJCOM, two SOAs and two flying units are supported through FM. Provides payroll for over one-half billion dollars covering over 17,000 personnel including military. Depot level maintenance payroll support is provided to approximately 6,318 employees.

(16.2) Describe Relationship and Benefit to Maintenance Mission: Responsible for management in providing logistics and acquisition policies, and inventory management systems support to all Center directorates. Guides development, submission, defense and allocation of all annual requirements budgets, and oversees execution of those budgets. Ensures procedures are developd to provide for the transition of the ALC from a peacetime to wartime baseline and provide wartime or contingency command and control. Assists in the management of the financial functions of travel, civilian and military pay, and funds certification. Provides cost analysis and general analytical capability to SA-ALC staff as well as policy and procedural guidance to achieve logistical and financial evaluations. Develops and implements policy for the Center and assists in management of total resource utilization: people, land, facilities, equipment, energy, and dollars.

d. Service/Function: Contracting

(16.1) Description: Manages and executes SA-ALC contracting assignments and programs according to applicable public laws, Air Force and AFMC directives.

(16.2) Describe Relationship and Benefit to Maintenance Mission: Responsible for reviewing and interpreting procurement policy. Advises Center directorates on contracting policy, practices and procedures, business strategy, quality management initiatives, and process improvements. Responsible for the award and administration of orders and contracts in support of centrally funded requirements. A fully supported contracting division is matrixed to each of the product directorates to provide contracting support. The Weapon Systems/Major Equipment Contracting Divison provider Weapons and Aerospace Fules services/functions. Focal point for Basic Ordering Agreements, and contracting officer warrant issuance. Responsible for the award and administration of construction and architectural and engineering contracts for the Center. Construction includes new construction, building renovation and modification, and miscellaneous real property maintenance. Serves as the business strategy advisor on complex, highly visible procurements, depot maintenance competitions, and best value contracting.

e. Service/Function: Civilian Personnel

(16.1) Description: The Consolidated Civilian Personnel Flight (CCPF) administers personnel programs at the SA-ALC and hosted units including, but not limited to, Classification

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and Position Management services, Data Management and Support, administration of Labor-Employee Management Relations Program, administration of Affirmative Employment and Career Programs, and overall management of civilian personnel resources.

(16.2) Describe Relationship and Benefit to Maintenance Mission: The CCPF works hand in glove with functional managers providing advisory services on the effective and efficient use of civilian human resources, position management, personnel administration and operational requirements. The CCPF develops utilization/employment plans in conjunction with functional managers to assist in establishing and maintaining a flexible workforce responsive to mission, budget, and activity affirmative employment goals. The CCPF is also responsible for advising the Commander and subordinate levels of management on labor management issues relating to contract, labor statute, Unfair Labor Practices, etc. As a result, Kelly AFB is able to maintain positive relations between management and the unions.

f. Service/Function: Safety

(16.1) Description: Manages the overall SA-ALC Safety Program.

(16.2) Describe Relationship and Benefit to Maintenance Mission: Provides Center guidance on all safety issues. Responsible for ground, flight, explosives and systems safety programs. Annually conducts safety program and facilities evaluations of all Kelly AFB organizations, including the the depot maintenance.

g. Service/Function: Environmental Management

(16.1) Description: SA-ALC has established high integrity environmental programs with continuous quality improvement to ensure all programs, processes, systems, and procedures are in full regulatory compliance with federal, state and local laws. The focus is to maintain a base-wide strategy for ensuring compliance while continuing to take a proactive approach with the regulatory community to improve our effectiveness in managing and implementing an integrated environmental program.

(16.2) Describe Relationship and Benefit to Maintenance Mission: SA-ALC/EM focuses on providing excellence in customer support. Acting as the regulatory interface for Kelly AFB, the majority of our efforts are in support of the depot mission and tenant organizations. This support is enhanced with personal interaction of the environmental staff with the staffs of the aircraft maintenance organizations. We provide responsive service to our customers by effectively monitoring the environmental programs and implement change identified by customer needs and services. By focusing our efforts on quality, participation management and continuous improvement, we assist the maintenance organizations in developing environmental programs which comply with the intent of Congress to address the environmental issues facing DoD and lower the cost of depot maintenance.

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h. Service/Function: Plant Management

(16.1) Description: The Plant Management Division has the capability to install major industrial plan equipment (IPE), maintain that equipment and perform select construction tasks on a limited basis.

(16.2) Describe Relationship and Benefit to Maintenance Mission: These services are provided in support of the industrial components of the depot maintenance organizations of SA-ALC. They are responsible for the installation of all IPE in the maintenance complex. Installation can be either of new equipment or relocation of existing equipment. This organization also accomplishes shop relocations, connects utilities and construct minor facilities when incidental to the installation of equipment. Plant Management troubleshoots, analyzes, repairs, overhauls, modifies and tests IPE, such as lathes, mills, grinders, boring machines, vertical turrent lathes, radial drills, elox machines and vacuum furnaces. In addition, they modify and repair numerical control and computer numerical control machines and repairs industrial systems, such as, robotics metalizing spray system, aircraft painting systems, monorail systems, test stands, material handling systems and electronic beam welders.

i. Service/Function: Defense Distribution San Antonio (Defense Logistics Agency)

(16.1) Description: Defense Logistics Agency (DLA) provides receiving, storage and shipping (pickup and delivery) functions.

(16.2) Describe Relationship and Benefit to Maintenance Mission:

- DLA receiving and storage facilities, collocated with the depot, minimize transportation time and costs for frequently used depot components. Collocated Storage provides ready access to assets needed to respond to unexpected increases in production, whereas production would experience lengthy delays in overhaul should on-hand stock not meet production swings. Depot Maintenance Supply Centers (DMSC) (in-shop supply) exist to handle some productions swings, but are only authorized to store 15 to 30 days supply of materiels. This level is determined by the production lines ordering pattern over the past six months and does not reflect current needs.

- DLA Receiving provides immediate credit for turn-ins and back-order release as new assets are received at Kelly AFB.

- DLA Receiving provides pick up and delivery service which minimizes processing and transportation time between central receiving at the High Volume Distribution Point (HVDP) and DMSC areas. Air Force, other service, and DLA stock is stored at Kelly AFB and it would be highly desirable if DLA Inventory Control Point (ICP) stock be stored at the depot with the highest usage further minimizing transportation cost and delivery timeframes.

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- DLA also provides shipping services to include packing and routing of material being released to field activities and between repair facilities.

j. Service/Function: DISO/Defense Megacenter (DMC) San Antonio

(16.1) Description:

- Provides information processing services and products that support the needs and requirements of depot maintenance functions of San Antonio Logistics Center (SA-ALC). This service is provided through the efficient, effective, and economic utilization of information systems personnel, products, and technology. The primary functions performed fall into four categories: application support, operational support, technical support, and business management support.

- DMC San Antonio currently runs 61 application systems that directly or indirectly support the depot maintenance activities. DMC San Antonio provides application monitoring and recovery, database recovery management, job setup, control and management of report distribution, and implementation and control of application software releases. DMC San Antonio supports the software design activities in isolating production problems. Personnel in application system support provide depot maintenance customers with recommendations to optimize processing and to customize processing to meet special user requirements.

- DMC San Antonio provides operations support for the depot maintenance activities 24 hours a day, seven days a week. These services include operational support of mainframe and mid-tier systems, management of the tape library system, workload job scheduling, coordination of special processing requests, recovery and restart of failed jobs, help desk management for single-point customer problem reporting and tracking, management of network software and hardware, and maintenance of data communications hardware and software.

- DMC San Antonio provides technical support to the depot maintenance functions at SA-ALC for both mainframe and mid-tier processing. This area provides capacity and configuration monitoring and planning, analyzes workload capacity and assists depot maintenance customers in forecasting resource requirements, maintains and manages resource utilization to minimize cost and maximize efficiency, coordinates migrations and new workload requirements, provides operating systems problem identification and resolution, and supports interactive and database system software.

- DMC San Antonio provides business management support to assist the depot maintenance activities to budget for information processing resources. The business management function also establishes and negotiates service level agreements with the depot and provides customer assistance in use of all DMC San Antonio services.

- Specific data systems provide a wide range of support to the depot maintenance activity. Examples include:

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-- Depot Activation Planning System
-- Workload Planning and Control System
-- F100 Engine Supportability System
-- Depot Maintenance Actual Material Cost System
-- Depot Maintenance Budget and Management Cost System
-- Depot Maintenance Production Cost System
-- Depot Maintenance Requirements and Program Management System
-- Depot Maintenance Material Support System
-- Management of Items Subject to Repair Requirements, Scheduling and Analysis System
-- Maintenance Engineering Data Support

(16.2) Describe Relationship and Benefit to Maintenance Mission:

- Information systems are associated with depot maintenance, but are not generally classified considered as integral to the depot maintenance functions. Software development of appropriate information systems is crucial for the accomplishment of the maintenance mission. The benefit of the relationship toward the maintenance mission is the emphasis on improved productivity, reliability and overall success. The sample information systems listed above in para. 16.1 are included showing specific benefits. The information systems' usefulness is attributed to the development and maintenance of its code, data and its integrity, and timeliness.

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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).

a. Service/Function: 433rd Airlift Wing (AW)

Describe Required Interface/Relationship/Benefit: SA-ALC is fortunate in being collocated with the 433rd AW (Air Force Reserves) which utilizes the C-5 aircraft powered with the TF39 engine. Since the customer uses the the weapon system, engine and equipment that we repair, synergism is gained by all organizations because of the close proximity of our locations. The primary advantage is that the collocation allows for direct, immediate customer feedback at both the shop floor and management levels. Engineering support and technical interchange is facilitated by the proximity and the option to "see" the problems firsthand. This also allows for immediate feedback on Quality Deficiency Reports (QDRs) and Material Deficiency Reports (MDRs). Problems found "in the field" can be brought back to the "shop" without the delays normally associated with customers located farther away. The 433rd AW directly benefits from the use of the depot's jet engine test cells and the depot benefits by having the wing available to perform prototyping, such as on the Malfunction Detection Analysis Reporting System (MADARS). Various depot functions benefit by using the 433rd AW to check out and verify field-level repair procedures using their support equipment, C-5 aircraft and engine. The relationship is a two-way partnership between the depot and the collocated customer.

b. Service/Function: 149th Fighter Group (FG)

Describe Required Interface/Relationship/Benefit: SA-ALC is also collocated with the 149th FG (Air National Guard) which flies the F-16 aircraft, powered by the F100 engine. A realized advantage is that collocation allows for certain amount of direct routing between the depot and the customer and also the opportunity to "share" equipment unique to the depot or the field unit it supports. Most directly, SA-ALC's engine test cells support the 149th FG. This is especially helpful for the customer. At that same time, the ALC can take advantage of the collocated activity by using the customers' assets to "test" fit and function of the prototype repairs and modifications to engines, components and sub-systems. The collocated activity also provides the depot with the opportunity to use specialized equipment designed for field use essentially without having to leave the depot. For example, abridged engine testing may be performed at the 149th FG's hush house with its M-37 Test System. Using the equipment at the 149th FG such as the ~~AGATS~~ data gathering system, the ALC is able to confirm the field reported failures on components such as Engine Electronics.

AGETS

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c. Service/Function: Organic Warranty Program

Describe Required Interface/Relationship/Benefit: San Antonio Air Logistics Center provides quality products to its customers. One successful quality effort pioneered by the Center is an Organic Warranty Program (OWP). SA-ALC's OWP covers Reparable Support Division funded items overhauled, manufactured, or repaired at this Center. The program applied to the Air Force, Reserve and Air National Guard customers. This warranty guarantees that times repaired at SA-ALC will be free of material and workmanship defects for a period of 30 days after installation initial operational use.

d. Service/Function: Propulsion Product Group Manager

Describe Required Interface/Relationship/Benefit: The Propulsion Product Group Manager (PPGM), located at SA-ALC manages propulsion activities through the existing infrastructures. The PPGM has life cycle management responsibility for planning, analysis, technology development and insertion through design, development, production, sustainment, modification and retirement. This functions are accomplished by the PPGM using a Propulsion Integrated Product Team (PIPT) comprised of propulsion personnel from OC-ALC, SA-ALC and ASC. The use of IPT management assures the appropriate balance between acquisition and sustainment needs to optimize resources and support to our customers. The PPGM plans and executes the Concept of Operations for Integrated Weapon System Management of Propulsion Systems. They also serve as the single face for Propulsion, recommending policies and procedures, developing and administering the Propulsion Master Plan, serving as the Propulsion advocate in the budget and manpower allocation processes, improving propulsion technology and serving as the Air Force senior representative on all joint service propulsion committees as the Joint Propulsion Coordinating Committee (JPCC). In essence, under the IWSM concept, the PPGM has the direct responsibility for the overall Air Force propulsion systems, both from a maintenance and management perspective.

e. Service/Function: 651st Combat Logistics Support Squadron (CLSS)

Describe Required Interface/Relationship/Benefit: The mission of the 651st Combat Logistics Support Squadron (CLSS) is to provide highly trained, worldwide deployable military teams to accomplish aircraft battle damage repair (ABDR) and augment supply and surface freight management operations. This mission is enhanced by performing depot level maintenance, crash recovery/damage repairs, limited Standard Base Supply System (SBSS) operations/augmentation, surface freight operations, and rapid area distribution support to include warehousing/re-warehousing and special logistics projects as directed. The peacetime role is supported by four flights assigned to the CLSS. Maintenance, Propulsion, Supply and Transportation flights provide on station support as well as Depot Field Teams and Rapid Area Distribution Support (RADS) Teams. Propulsion technicians are heavily involved in Two Level Maintenance transition, as well as, providing depot field teams to numerous active duty and Air National Guard bases.

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f. Service/Function: Precision Measurement Equipment Laboratory and Automatic Test Equipment (ATE) Upgrades

Describe Required Interface/Relationship/Benefit: The equipment used by the Mexican Air Force is similar, and many times, the same as that used by the United States Air Force. Many times, the Mexican Air Force experiences the same problems as experienced by craftsmen in the SA-ALC. The problems are generally in the supportability, repair and calibration areas. Because of our location and ability to efficiently communicate in the same language, we have developed a level of trust with our customer and have been successful in solving unique problems with some of the equipment used by the Mexican Air Force. SA-ALC recently dispatched a team to study a disk drive problem in a piece of equipment used by the Mexican Air Force in support of one of their weapon systems similar to the one used by the USAF. We made recommendations showing options for improved levels of support and included a variety of suggestions ranging from simple modification to major upgrade and replacement. Usually these requests come to the USAF at a high political level and it is very important that we respond with clarity, timeliness and quality demanded by the situation. SA-ALC has gained the respect of the Mexican government with the support provided in the past.

g. Service/Function: Science and Engineering Laboratory

Describe Required Interface/Relationship/Benefit: The Science and Engineering Laboratory performs the following functions: Analytical Chemistry, Environmental Testing, Metallurgical Evaluation, Failure Analysis of Materials, Non-destructive Testing, Reliability & Service Testing and Geometric Dimensioning and Tolerancing. The SA-ALC Science and Engineering Laboratory is modern aerospace industrial laboratory capable of meeting all the materials and component testing requirements of the Air Force.

- The Air Force uses a wide variety of chemical materials in the operation and maintenance of aircraft. These chemicals include petroleum products, organic and inorganic coatings, sealants and adhesives, and cleaning materials. All these materials must be tested to verify serviceability and quality control during use. Industrial processes generate chemical waste. This chemical waste must be tested to comply with federal law. Environmental compliance samples must be collected and tested to comply with laws on environmental protection.

- Most structural materials used on Air Force aircraft are metal. These metals must be evaluated to verify conformance to requirements. When metal parts fail, the cause of failure must be determined to avoid future occurrences. Failure analysis is an essential part of the depot maintenance mission.

- Non-destructive inspection is used to detect flaws in parts without destroying the parts. Aircraft and engines are prone to developing cracks and other flaws that if not detected will cause loss of the aircraft. Items returned to the depot, especially airframe and engine parts, must be inspected for flaws.

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- When items fail in service or when a forecast of anticipated failure life is needed, then reliability and service testing must be performed. These dates include temperature, humidity, vibration, and shock testing. Recently, aircraft fuel pump failures were studies to determine cause of failure and corrective action. Most such service failures are referred to the depot for testing and corrective action.

- The correct manufacturing of machined parts is vital to proper form, fit, and function. A very common problem is that parts have not been made to the correct dimensions. Parts made by contractors and organically must be tested with advanced dimensional testing equipment to verify correct geometry before entering service. Dimensional verification will save many problems down the road and is a vital part of the depot maintenance mission.

h. Service/Function: Computerized Industrial Tomographic Analyzer (CITA)

Describe Required Interface/Relationship/Benefit: The CITA provides efficient, quality inspection services for testing of F100, T56 and TF39 engine components. In addition, CITA supports T-38/F-5, B-52, C-5/B, F-15, F-16, B-1B and C-130 aircraft airframe components. A unique nondestructive evaluation tool for specialized radiographic inspection of engine and airframe components, the SA-ALC CITA supports computed tomography, digital radiography and digital laminography inspections. CITA is an analytical technique which can be used where other NDI methods are inadequate, such as internal wall thickness measurements of components. It also aids in Failure Analysis studies where destructive testing could mask the cause of failure; therefore, is a valuable source for nondestructive inspection of engine and airframe components. The SA-ALC CITA is the only industrial facility which has an integrated Artificial Intelligence-Neural Network X-ray Image Processing System for evaluating aerospace engine and airframe components.

i. Service/Function: Software support to HSC/YA, Brooks AFB.

Describe Required Interface/Relationship/Benefit: SA-ALC/TIS provides software support for the Maintenance Skills Tutor (MST) program. Several software engineers travel to Brooks AFB two or three times per week to provide the customer with timely support. The proximity of HSC/YA eliminates the need for TDY to accomplish this workload and lowers the overall cost to the customer. This face to face interface with the customer makes for good communications and excellent customer support.

j. Service/Function: Plant Management

Describe Required Interface/Relationship/Benefit: Plant Management provides installation, repair, and preventative maintenance of industrial plant equipment, facility maintenance repair, and minor construction; vehicle support, scrap recovery and disposal; and service contract cupport for the SA-ALC product directorates. The division has developed a customer survey A94

form to gather information about the quality of our services. The feedback provides important data after production equipment has been repaired by the crews and drives our process to improve in several ways. The Branch Chiefs come in contact with dissatisfied customers and assures them of immediate support of anything unfinished. First line supervisors and personnel are informed so as to avoid similar incidents in the future. The main focus is customer satisfaction. The process improves because the division is aware of what is needed by the customer; therefore, that kind of services becomes Plant Management's way of doing things all the time.

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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)?

The SA-ALC RMPA backlog as of 30 September 1993 is $16,370.6K.

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**

DMBA	FY 1990	FY 1991	FY 1992	FY 1993
RPM Expenses ($K)	4,766	8,579	11,173	2,226

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.

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Table 19.1: **Annual Operating Costs**

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	327,561	299,907	329,687	337,881
$ / DLH	37.13	36.77	42.36	44.97

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[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.

3

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)?

The SA-ALC RMPA backlog as of 30 September 1993 is $16,370.6K.

No change

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**

DMBA	FY 1990	FY 1991	FY 1992	FY 1993
RPM Expenses ($K)	4,766	8,579	11,173	2,226

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)**

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EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	327,561	299,907	329,687	337,881
$ / DLH (DPAH)	37.13	36.77	42.36	44.97

ok already in 10/5, 29 Sep 94

Table 19.1b: **Annual Operating Costs (DPSH)**

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	327,561	299,907	329,687	337,881
$ / DLH (DPSH)	40.14	39.71	47.22	55.60

[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.

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SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group-Depot Maintenance question number 19.1a and 19.1b.

SOURCE: G004C Workload and Program Control System, Product G004C-HLA as of 30 Sep 90, 30 Sep 91, 30 Sep 92, 30 Sep 93 and Depot Maintenance Business Area Organic Statement of Revenue and Expense as of 30 Sep 90, 30 Sep 91, 30 Sep 92, 30 Sep 93.

METHOD: Total Expenses, excluding material, from the Statement of Revenue and Expense were divided by Direct Product Actual Hours from the G004C-HLA (rounded to thousands) for each fiscal year.

CONCLUSION: 19.1a Annual Operating Costs (DPAH)

Expense	FY 1990	~~FY 1991~~	~~FY 1992~~	~~FY 1993~~
AOC ($K)	327,661	299,909	329,648	337,882
$/DLH (DPAH)	37.13	36.77	42.36	44.97

signed 1100, 25 Aug 94 RW

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Sylvia Rodriguez Date 25 Aug 94
Sylvia Rodriguez, GS-12, FMPW, 945-6606

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Alex E. Bilbrey DATE: 8 Sep 94
Alex E. Bilbrey, HQ AFMC/LGPW, DSN 787-4361

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SA-ALC,
Version 1.4 19.1a (DPAH)

(B)

SA-ALC DEPOT MAINTENANCE WORKSHEET
Kelly AFB, Texas

PURPOSE: To document the answer to the Joint Cross Service Group-Depot Maintenance question number 19.1a and 19.1b.

SOURCE: Organic Production Factors, Budget Exhibit IF3-1, 26 Aug 91, for FY90, 27 Jul 93, for FY91/92, 3 Aug 94, for FY93, and Depot Maintenance Business Area Organic Statement of Revenue and Expense as of 30 Sep 90, 30 Sep 91, 30 Sep 92, 30 Sep 93.

METHOD: Total Expenses, excluding material, from the Statement of Revenue and Expense were divided by Direct Product Standard Hours produced from the IF3 (rounded to thousands) for each fiscal year.

CONCLUSION: 19.1b Annual Operating Costs (DPSH)

Expense	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($K)	327,561	299,909	329,648	337,862
$/DLH (DPSH)	40.14	39.71	47.22	55.60

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Gregory R. Padilla 23 Aug 94
Gregory R. Padilla, GM-13, FMPW, 945-6606

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Alex E. Bilbrey 8 Sep 94
Alex E. Bilbrey, HQ AFMC/LGPW, DSN 787-4361

SA-ALC, VERSION 1.4, 19.1b(DPSHa)

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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	3081	2880	7679	15294	8327*	-	-	-
Programmed	3070	2880	7679	15291	8285	7021	3463	3463

The amounts shown for each fiscal year include minimum Environmental Compliance Program requiremetns (permits and fees), approved MILCON, Environmental Process Control Facility (EPCF) operation costs, Depot Maintenance Business Area (DMBA) costs and operation and services (O&S) for Pollution Prevention requirements. The costs for managing Low Level Radioactive Waste (LLRW) have been excluded since Kelly AFB currently manages LLRW for the Air Force. This annual cost has been excluded to ensure true base-to-base comparisons can be accomplished. Compliance and Pollution Prevention manpower salaries, as well as, Defense Environmental Restoration Account (DERA) are **not** included in the totals.

(*)The actual FY94 funding shown in the table represents funding received as of 1 Jun 94.

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?

Kelly AFB will continue to meet and/or exceed the mandated deadlines identified by the environmental regulations as they pertain to air, water, waste water, pollution prevention and restoration. If all spending is accomplished as programmed above, there will be no backlog at the end of FY97. This does not discount the fact that environmental regulations will be promulgated in FY97 and require additional funding in the future. All military depots in every department will be required to plan years in advance to minimize the impact environmental regulations, and compliance thereof, will have on their respective missions.

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?

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Table 21.1: **Wage Rate**

Wage Rate	FY 1991	FY 1992	FY 1993	FY 1994
WG-11 / Step3	11.73	12.21	12.72	13.19

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 ($K)	24,192	27,821	32,828	40,051
REPLACEMENT ($K)	3,017	3,469	4,094	4,994

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Document Separator

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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DATA CALL SUPPLEMENT FOR JOINT CROSS SERVICE GROUP -- SM-ALC 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 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

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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.

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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

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

12. Software
    Tactical Systems
    Support Equipment

13. Special Interest Items
    Bearings Refurbishment
    Calibration (Type I)
    TMDE

14. Other

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JOINT CROSS SERVICE - DEPOT MAINTENANCE

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

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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	881,896	880,502	880,473	880,480	880,480
1C3	LIGHT COMBAT	1,571,905	1,569,421	1,569,368	1,569,379	1,569,379
	1 SUB-TOTAL	2,453,801	2,449,923	2,449,841	2,449,860	2,449,859
2B	ACFT STRUCTURES	246,732	246,400	246,424	246,413	246,413
2C	HYD/PNEU	524,480	525,799	528,352	528,827	528,827
2D	INST	302,890	302,482	302,511	302,497	302,497
2G	AVIONICS/ELEC	486,989	488,357	490,906	491,383	491,383
	2 SUB-TOTAL	1,561,091	1,563,038	1,568,193	1,569,120	1,569,120
5B	COMPONENTS	19,798	19,955	19,955	19,955	19,955
6D	COMPONENTS	12,625	12,745	12,742	12,746	12,746
7A	RADAR	798,044	778,065	763,882	755,222	755,222
7B	RADIO	355,859	356,728	356,734	356,893	356,893
7C	WIRE	228,925	229,483	229,487	229,589	229,589
7E	NAV AIDS	286,458	287,157	287,162	287,289	287,289
7F	E-O NIGHT VISION	147,196	170,393	193,592	193,678	193,678
7G	SATELLITE	185,272	185,724	185,727	185,810	185,810
	7 SUB-TOTAL	2,001,754	2,007,550	2,016,584	2,008,481	2,008,481

7

INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to for DOD Joint Cross-Service Working Group DM question (1.1) Calculate the capacity index for the commodity groupd 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.

SOURCE: Capacity data is resident in FMPB. The workload data used was the figures from the latest Workload Review, 19-20 Apr 94. Also used G029, 18 May 94 and DoD 4152.15H (draft) 22 Aug 91. Work breakout sheet with RGCs P and R identified and other categories decremented porportionally.

METHOD: We were directed to use 7025K hours as our capacity data and the newest Workload Review figures for our workload data by HQ AFMC/LGPW. The capacity number is based on our FY93 data. As a result of this, the RCCs did not match the ones currently in the data systems for FY96-98 and proved to be a minor problem in doing this analysis. FY99 data was not available for either capacity or funded workload so FY98 data was straightlined. The G029 system was used to determine workload spread and the corresponding capacity spread by the commodity groups. This is the same capacity data that was used in response to question 1.2. Per HQ USAF/RT request to identify all manufacturing and fabraication workload in subgroup 2.j, this new subgroup has been added. The data was taken from the RGC P and R, but not broken into associated commodity groups. Thus, 2.j contains all manufacuring, irrespective of associated commodites. Current data systems do not permit a reasonable breakout. All other categories were adjusted by factors in order not to inflate the totals.

CONCLUSION:

(All data is new)

TABLE 1.1.a: CAPACITY INDEX

	FY95	FY96	FY97	FY98	FY99
1 AIRCRAFT AIR FRAME					
1C1 TRANS/TNKR/BOMB	818055	843263	795168	820939	818908
1C2 LIGHT COMBAT	1458121	1503045	1417319	1463251	1459632
TOTAL	2276179	2346308	2212487	2284190	2278540
2 AIRCRAFT COMPONENTS					
2B AIRCRAFT STRUCTURES	228872	235979	222549	229750	229181
2C HYDRAULIC/PNEUMATIC	486515	503561	477162	493066	491846
2D INSTRUMENTS	280965	289689	273202	282041	281343
2G AVIONICS/ELECTRIC	451738	467703	443344	458154	457020
2J MANUFACTURING/FABRICATION	511649	298940	684818	477986	494288
TOTAL	1959738	1795872	2101076	1940996	1953679
5 AMPHIBIANS					

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5B COMPONENTS	18365	19111	18022	18606	18560
6 GROUND COMBAT VEHICLES					
6D COMPONENTS	11711	12206	11507	11884	11855
7 GRND & SHIP COM & ELEC					
7A RADAR	740277	745158	681745	704151	702409
7B RADIO	330100	341641	322172	332759	331935
7C WIRE	212354	219777	207253	214063	213534
7E NAVIGATION AIDS	265722	275012	259340	267861	267199
7F ELEC-OPTIC/NIGHT VISION	136541	163187	174836	180581	180134
7G SATELLITE CONT/SENSORS	171861	177869	167733	173245	172816
TOTAL	1858854	1922645	1813078	1872660	1868027
9 TACTICAL VEHICLES					
9B COMPONENTS	8349	8619	8128	8391	8371
10 GROUD GEN PURPOSE					
10D GROUND GENERATORS	96777	103912	97957	101131	100881
10E OTHER	74209	68955	60509	61537	61385
TOTAL	170986	172867	158466	162668	162266
12 SOFTWARE					
12A TACTICAL SYSTEMS	401036	413882	390254	402459	401464
12B SUPPORT EQUIPMENT	328121	338631	319299	329284	328470
TOTAL	729157	752513	709553	731744	729934
14 OTHER	36974	38173	35999	37164	37072
TOTAL	7068314	7068315	7068315	7068302	7068302

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

Preparer: _____ Date: 8-Oct-94.

Garry L Gerick, SM-ALC/FMPB,DSN 633-4373

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

MAJCOM Reviewer: _____ Date: 8 OCT 94

Donald Lucht GM-14
~~HQ~~AFMC/LGPE
DSN 787-5616

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10 OCT 94

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MOM_1-1.DOC McClellan AFB
10/08/94(1:54 PM)

INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to OD Joint Cross-Service Working Group DM question (1.1) Calculate the capacity index for the commodity groupd 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.

SOURCE: Capacity data is resident in FMPB. The workload data used was the figures from the latest Workload Review, 19-20 Apr 94. Also used G029, 18 May 94 and DoD 4152.15H (draft) 22 Aug 91. Work breakout sheet with RGCs P and R identified and other categories decremented porportionally.

METHOD: We were directed to use 7025K hours as our capacity data and the newest Workload Review figures for our workload data by HQ AFMC/LGPW. The capacity number is based on our FY93 data. As a result of this, the RCCs did not match the ones currently in the data systems for FY96-98 and proved to be a minor problem in doing this analysis. FY99 data was not available for either capacity or funded workload so FY98 data was straightlined. The G029 system was used to determine workload spread and the corresponding capacity spread by the commodity groups. This is the same capacity data that was used in response to question 1.2. Per HQ USAF/RT request to identify all manufacturing and fabrication workload in subgroup 2.j, this new subgroup has been added. The data was taken from the RGC P and R, but not broken into associated commodity groups. Thus, 2.j contains all manufacuring, irrespective of associated commodites. Current data systems do not permit a reasonable breakout. All other categories were adjusted by factors in order not to inflate the totals.

CONCLUSION:

TABLE 1.1.a: CAPACITY INDEX

COMMODITY GROUP	FY95	FY96	FY97	FY98	FY99
1 AIRCRAFT AIR FRAME					
1C1 TRANS/TNKR/BOMB	818059	809279	795168	820939	818908
1C3 LIGHT COMBAT	1458121	1442471	1417319	1463251	1459632
TOTAL	2276180	2251749	2212487	2284190	2278540
2 AIRCRAFT COMPONENTS				REC'D 19 OCT 94	
2B AIRCRAFT STRUCTURES	228872	226469	222549	229750	229181
2C HYDRAULIC/PNEUMATIC	486515	483267	477162	493066	491846

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REC'D 19 OCT 94

2D INSTRUMENTS	280965	278014	273202	282041	281343
2G AVIONICS/ELECTRIC	451738	448854	443344	458154	457020
2J MANUFACTURING/FAB	530012	590095	702839	496591	512847
TOTAL	1978102	2026699	2119096	1959602	1972237
7 GRND & SHIP COM & ELEC					
7A RADAR	740277	715127	681745	704151	702409
7B RADIO	338449	336145	330300	341150	340306
7C WIRE	212354	210920	207253	214063	213534
7E NAVIGATION AIDS	277433	275643	270847	279745	279054
7F ELEC-OPTIC/NIGHT VISION	136541	156610	174836	180581	180134
7G SATELLITE CONT/SENSORS	171861	170701	167733	173245	172816
TOTAL	1875915	1865146	1832714	1892935	1888253
10 GROUD GEN PURPOSE					
10D GROUND GENERATORS	96777	99724	97957	101131	100881
10E OTHER	74209	66176	60509	61537	61385
TOTAL	170986	165900.3	158466	162668	162266
12 SOFTWARE					
12A TACTICAL SYSTEMS	401036	397202	390254	402459	401464
12B SUPPORT EQUIPMENT	328121	324984	319299	329284	328470
TOTAL	729157	722186	709553	731743	729934
14 OTHER	36974	36635	35999	37164	37072
TOTAL	7068314	7068315	7068315	7068302	7068302

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

Preparer: [signature] Date: 18-Oct-94.

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: [signature] Date: 18 Oct 94

Tom Spitler
HQAFMC/LGPE
DSN 787-5610

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MOH_1-1.DOC MacGuffin AFB
10/18/94@2:39 AM

SM-ALC VERSION 1.8

REC'D 19 OCT 94

			95	96		
9B	COMPONENTS	9,000	9,000	9,000	9,000	9,000
10D	GROUND GEN	104,329	108,501	108,466	108,466	108,466
10E	OTHER	80,000	72,000	67,000	66,000	66,000
	10 SUB-TOTAL	184,329	180,501	175,466	174,466	174,466
12A	TACTICAL SYS	432,332	432,159	432,121	431,649	431,649
12B	SUPPORT EQUIP	353,726	353,585	353,553	353,167	353,167
	12 SUB-TOTAL	786,058	785,744	785,674	784,816	784,816
14	OTHER	39,859	39,859	39,861	39,859	39,859
	GRAND TOTAL	7,068,315	7,068,314	7,068,316	7,068,302	7,068,302
		ok	7,608,315	7,077,316	OK	OK

7,068,315 + 9000 = 7,077,316

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	90.79%	86.86%	81.70%	76.75%	76.75%
1C3	LIGHT COMBAT	94.44%	90.36%	84.99%	79.83%	79.83%
	1 SUB-TOTAL	93.13%	89.10%	83.81%	78.73%	78.73%
2B	ACFT STRUCTURES	89.41%	85.52%	80.43%	75.56%	75.56%
2C	HYD/PNEU	95.88%	91.35%	85.51%	80.26%	80.26%
2D	INST	89.40%	85.50%	80.42%	75.55%	75.55%
2G	AVIONICS/ELEC	96.37%	91.79%	85.89%	80.61%	80.61%
	2 SUB-TOTAL	93.75%	89.44%	80.41%	78.72%	78.72%
5B	COMPONENTS	96.82%	91.76%	86.30%	81.08%	81.08%
6D	COMPONENTS	92.79%	87.79%	82.60%	77.57%	77.57%

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to for DOD Joint Cross-Service Working Group DM question (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.

SOURCE: Capacity data is resident in FMPB. The workload data used was the figures from the latest Workload Review, 19-20 Apr 94. Also used G029, 18 May 94 and DoD 4152.15H (draft) 22 Aug 91.

METHOD: We were directed to use 7025K hours as our capacity data and the newest Workload Review figures for our workload data by HQ AFMC/LGPW. The capacity number is based on our FY93 data. As a result of this, the RCCs did not match the ones currently in the data systems for FY96-98 and proved to be a minor problem in doing this analysis. FY99 data was not available for either capacity or funded workload so FY98 data was straightlined. The G029 system was used to determine workload spread and the corresponding capacity spread by the commodity groups.

CONCLUSION:

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		FY95 UTIL %	FY96 UTIL %	FY97 UTIL %	FY98/99 UTIL %
1	ACFT AIRFRAME				
1C1	TRANS/TNKR/BOMB	90.79%	86.86%	81.70%	76.75%
1C3	LIGHT COMBAT	94.44%	90.36%	84.99%	79.83%
	TOTAL	93.13%	89.10%	83.81%	78.73%
2	ACFT COMPONENTS				
2B	ACFT STRUCTURES	89.41%	85.52%	80.43%	75.56%
2C	HYD/PNEU	95.88%	91.35%	85.51%	80.26%
2D	INST	89.40%	85.50%	80.42%	75.55%
2G	AVIONICS/ELEC	96.37%	91.79%	85.89%	80.61%
	TOTAL	93.75%	89.44%	80.41%	78.72%
5	AMPHIBIANS				
5B	COMPONENTS	96.82%	91.76%	86.30%	81.08%
6	GRD COMBAT VEH				
6D	COMPONENTS	92.79%	87.79%	82.60%	77.57%
7	GRND/SHIP/COM/ELEC				
7A	RADAR	75.81%	74.27%	71.15%	67.61%
7B	RADIO	79.42%	75.67%	71.18%	66.83%

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7C	WIRE	79.41%	75.68%	71.16%	66.82%
7D	ELECTRONIC WARFARE				
7E	NAV AIDS	79.39%	75.65%	71.15%	66.81%
7F	E-O NIGHT VISION	104.18%	85.97%	71.17%	66.83%
7G	SATELLITE	79.43%	75.68%	71.18%	66.84%
	TOTAL	79.80%	76.00%	71.16%	67.12%
9	TACTICAL VEHICLES				
9B	COMPONENTS	85.92%	91.62%	86.18%	80.96%
10	GROUND GEN PURP				
10D	GROUND GEN	113.53%	104.27%	98.11%	92.16%
10E	OTHER	103.97%	110.34%	111.53%	106.36%
	TOTAL	109.38%	106.69%	103.23%	97.53%
12	SOFTWARE				
12A	TACTICAL SYS	94.08%	89.90%	84.57%	79.53%
12B	SUPPORT EQUIP	94.08%	89.90%	84.56%	79.53%
	TOTAL	94.08%	89.90%	84.56%	79.53%
14	OTHER	101.53%	96.98%	91.21%	85.69%
*	GRAND TOTAL	90.08%	86.04%	80.93%	76.03%

1

Verify in 1105, 28/4/94 PL

* Grand Total was obtained by taking Grand Total of Workload / Grand Total of Capacity, EB 28 Jul 94

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

NOTE: Conclusion

How were the totals determined?

Date: 8-Jul-94.

DSN 633-1280

* the totals were determined by taking Grand Total of workload / Grand Total of capacity

rate and complete to the best of my knowledge and belief.

Date: 27 JUL 94

/HQ AFMC/LGPE/DSN 787-5611

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SM-ALC V/4

	7 SUB-TOTAL	2,001,754	2,007,550	2,016,584	2,008,481	2,008,481
9B	COMPONENTS	9,000	9,000	9,000	9,000	9,000
10D	GROUND GEN	104,329	108,501	108,466	108,466	108,466
10E	OTHER	80,000	72,000	67,000	66,000	66,000
	10 SUB-TOTAL	184,329	180,501	175,466	174,466	174,466
12A	TACTICAL SYS	432,331	432,159	432,121	431,649	431,649
~~12A~~	~~TACTICAL SYS~~	~~432,332~~	~~432,159~~	~~432,121~~	~~431,649~~	~~431,649~~
12B	SUPPORT EQUIP	353,726	353,585	353,553	353,167	353,167
	12 SUB-TOTAL	786,058	785,744	785,674	784,816	784,816
14	OTHER	39,859	39,859	39,861	39,859	39,859
	GRAND TOTAL	7,068,315	7,068,315	7,068,316	7,068,302	7,068,302
	~~GRAND TOTAL~~	~~7,068,315~~	~~7,068,314~~	~~7,068,316~~	~~7,068,302~~	~~7,068,302~~

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.

see next page 1

Table 1.2.a: Utilization Index

COMMODITY GROUP		INDEX (%)				
		FY95	FY96	FY97	FY98	FY99
1C1	TRANS/TNKR/BOMB	90.79%	86.86%	81.70%	76.75%	76.75%
1C3	LIGHT COMBAT	94.44%	90.36%	84.99%	79.83%	79.83%
	1 SUB-TOTAL	93.13%	89.10%	83.81%	78.73%	78.73%
2B	ACFT STRUCTURES	89.41%	85.52%	80.43%	75.56%	75.56%
2C	HYD/PNEU	95.88%	91.35%	85.51%	80.26%	80.26%
2D	INST	89.40%	85.50%	80.42%	75.55%	75.55%
2G	AVIONICS/ELEC	96.37%	91.79%	85.89%	80.61%	80.61%
	2 SUB-TOTAL	93.75%	89.44%	80.41%	78.72%	78.72%

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~~DATA CALL SUPPLEMENT FOR JCSG DM~~

5B	COMPONENTS	96.82%	91.76%	86.30%	81.08%	81.08%
6D	COMPONENTS	92.79%	87.79%	82.60%	77.57%	77.57%
7A	RADAR	75.81%	74.27%	71.15%	67.61%	67.61%
7B	RADIO	79.42%	75.67%	71.18%	66.83%	66.83%
7C	WIRE	79.41%	75.66%	71.16%	66.82%	66.82%
7E	NAV AIDS	79.39%	75.65%	71.15%	66.81%	66.81%
7F	E-O NIGHT VISION	104.18%	85.97%	71.17%	66.83%	66.83%
7G	SATELLITE	79.43%	75.68%	71.19%	66.84%	66.84%
~~7G~~	~~SATELLITE~~	~~79.43%~~	~~76.00%~~	~~71.19%~~	~~67.12%~~	~~67.12%~~
	7 SUB-TOTAL	79.80%	76.00%	71.16%	67.12%	67.12%
	~~7 SUB-TOTAL~~	~~79.80%~~	~~75.66%~~	~~71.16%~~	~~66.82%~~	~~66.82%~~
9B	COMPONENTS	95.92%	91.62%	86.16%	80.96%	80.96%
10D	GROUND GEN	113.53%	104.27%	98.11%	92.16%	92.16%
10e	OTHER	103.97%	110.34%	111.53%	106.36%	106.36%
	10 SUB-TOTAL	109.38%	106.69%	103.23%	97.53%	97.53%
12A	TACTICAL SYS	94.08%	89.90%	84.57%	79.53%	79.53%
12B	SUPPORT EQUIP	94.08%	89.90%	84.56%	79.53%	79.53%
	12 SUB-TOTAL	94.08%	89.90%	84.56%	79.53%	79.53%
14	OTHER	101.53%	96.98%	91.21%	85.69%	85.69%
	GRAND TOTAL	90.08%	86.04%	80.93%	76.03%	76.03%

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

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to for DOD Joint Cross-Service Working Group DM question (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.

SOURCE: Capacity data is from JCSG DM table 1.1a - Capacity Index. The workload data used was from JCSG DM table 3.1b - Programmed Workload.

METHOD: We were directed by HQ AFMC/LGPW to divide the Programmed Workload figures from table 3.1b by the Capacity Index figures from table 1.1a. This does not provide a true utilization of our capacity, since table 3.1b reflects new orders only, and does not take into account a significant carry-in /carry-out differnce in SM-ALC's workload.

CONCLUSION: (all new data)

TABLE 1.2a: UTILIZATION INDEX

	FY95 UTIL %	FY96 UTIL %	FY97 UTIL %	FY98 UTIL %	FY99 UTIL %
1 AIRCRAFT AIR FRAME					
1C1 TRANS/TNKR/BOMB	78.76%	78.68%	73.04%	71.94%	69.57%
1C3 LIGHT COMBAT	81.94%	81.85%	75.98%	74.84%	72.37%
TOTAL	80.80%	80.71%	74.92%	73.80%	71.36%
2 AIRCRAFT COMPONENTS					
2B AIRCRAFT STRUCTURES	77.57%	77.46%	71.90%	70.82%	68.49%
2C HYDRAULIC/PNEUMATIC	83.18%	82.75%	76.44%	75.23%	72.75%
2D INSTRUMENTS	77.60%	77.15%	71.90%	70.82%	68.49%
2G AVIONICS/ELECTRIC	83.61%	83.15%	76.78%	75.56%	73.07%
2J MANUFACTURING/FABRAICATION	78.15%	77.94%	72.35%	71.27%	68.92%
TOTAL	80.50%	80.50%	74.11%	73.17%	70.74%
5 AMPHIBIANS					
5B COMPONENTS	84.00%	83.11%	77.15%	76.00%	73.49%
6 GROUND COMBAT VEHICLES					
6D COMPONENTS	80.50%	79.53%	73.84%	72.71%	70.31%
7 GRND & SHIP COM & ELEC					
7A RADAR	65.77%	67.27%	64.37%	63.37%	61.28%
7B RADIO	68.90%	68.55%	63.63%	62.65%	60.58%
7C WIRE	68.89%	68.54%	63.62%	62.64%	60.57%
7E NAVIGATION AIDS	68.87%	68.52%	63.61%	62.62%	60.56%
7F ELEC-OPTIC/NIGHT VISION	90.38%	77.87%	63.62%	62.64%	60.57%
7G SATELLITE CONT/SENSORS	68.91%	68.55%	63.64%	62.66%	60.59%

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TOTAL	69.23%	68.84%	63.90%	62.92%	60.84%
9 TACTICAL VEHICLES					
9B COMPONENTS	83.21%	82.99%	77.03%	75.88%	73.38%
10 GROUD GEN PURPOSE					
10D GROUND GENERATORS	98.49%	94.45%	87.70%	86.39%	83.54%
10E OTHER	90.20%	99.95%	99.70%	99.70%	96.41%
TOTAL	94.89%	96.64%	92.29%	91.42%	88.41%
12 SOFTWARE					
12A TACTICAL SYSTEMS	81.62%	81.43%	75.60%	74.55%	72.09%
12B SUPPORT EQUIPMENT	81.62%	81.43%	75.60%	74.55%	72.09%
TOTAL	81.62%	81.43%	75.60%	74.55%	72.09%
14 OTHER	88.08%	87.84%	81.54%	80.32%	77.67%
TOTAL	78.15%	77.94%	72.35%	71.27%	68.92%

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

Preparer: Date: 8-Oct-94

Garry L Gerick, SM-ALC/FMPB, DSN 633-4374

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

MAJCOM Reviewer: Date: 8 OCT 94

Donald Lucht GM-14
HQ AFMC/LGPE
DSN 787-5610

SM-ALC
VERSION 1.7
10 OCT 94

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to for DOD Joint Cross-Service Working Group DM question (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.

SOURCE: Capacity data is from JCSG DM table 1.1a - Capacity Index. The workload data used was from JCSG DM table 3.1b - Programmed Workload.

METHOD: We were directed by HQ AFMC/LGPW to divide the Programmed Workload figures from table 3.1b by the Capacity Index figures from table 1.1a.

CONCLUSION:

TABLE 1.2a: UTILIZATION INDEX

Commodity Group	FY95	FY96	FY97	FY98	FY99
1 Aircraft Air Frame					
1c1 Trans/Tnkr/Bomb	0.787634	0.786001	0.73035	0.719393	0.695668
1c2 Light Combat	0.819396	0.817696	0.759803	0.748406	0.723722
Total	0.807981	0.806305	0.749218	0.737979	0.713639
2 Aircraft Components					
2b Aircraft Structures	0.775669	0.773877	0.718992	0.708244	0.684887
2c Hydraulic/Pneumatic	0.831808	0.826692	0.764424	0.752287	0.727476
2d Instruments	0.77557	0.77378	0.718904	0.708156	0.684801
2g Avionics/Electric	0.836082	0.830698	0.767851	0.755602	0.730681
2j Manufacturing/Fab	0.783539	0.78029	0.724735	0.714429	0.690808
Total	0.805367	0.800909	0.741337	0.731953	0.707647
7 Grnd & Ship Com & Elec					
7a Radar	0.657663	0.672091	0.643661	0.633726	0.612825
7b Radio	0.692518	0.688353	0.639582	0.62972	0.608952
7c Wire	0.688883	0.684701	0.636189	0.626372	0.605712
7e Navigation Aids	0.693652	0.689233	0.64041	0.630531	0.609735
7f Elec-Optic/Night Vision	0.903846	0.811383	0.636219	0.626406	0.605744
7g Satellite Cont/Sensors	0.689086	0.684901	0.636374	0.626552	0.605887
Total	0.63049	0.629166	0.581982	0.573002	0.554104
10 Groud Gen Purpose					
10d Ground Generators	0.984934	0.943592	0.877048	0.863889	0.8354

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REC'D 19 OCT 94

10e Other	0.901966	0.998518	0.997025	0.996961	0.964063
Total	0.948926	0.965502	0.92286	0.91423	0.884073
12 Software					
12a Tactical Systems	0.816196	0.81354	0.755985	0.745462	0.720874
12b Support Equipment	0.81619	0.813533	0.755978	0.74546	0.720873
Total	0.816193	0.813537	0.755982	0.745461	0.720873
14 Other	0.880808	0.877613	0.815384	0.803197	0.776705
Total	0.781511	0.779401	0.723503	0.712657	0.689153

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

Preparer: Steve Bennett Date: 18-Oct-94.
J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Tom Spitler Date: 18 Oct 94
Tom Spitler
HQ AFMC/LGPE
DSN 787-5610

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MOM_1-2.DOC McClellan AFB
10/18/94@3:39 AM

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7A	RADAR	75.81%	74.27%	71.15%	67.61%	67.61%
7B	RADIO	79.42%	75.67%	71.18%	66.83%	66.83%
7C	WIRE	79.41%	75.66%	71.16%	66.82%	66.82%
7E	NAV AIDS	79.39%	75.65%	71.15%	66.81%	66.81%
7F	E-O NIGHT VISION	104.18%	85.97%	71.17%	66.83%	66.83%
7G	SATELLITE	79.43%	76.00%	71.19%	67.12%	67.12%
	7 SUB-TOTAL	79.80%	75.66%	71.16%	66.82%	66.82%
9B	COMPONENTS	95.92%	91.62%	86.16%	80.96%	80.96%
10D	GROUND GEN	113.53%	104.27%	98.11%	92.16%	92.16%
10e	OTHER	103.97%	110.34%	111.53%	106.36%	106.36%
	10 SUB-TOTAL	109.38%	106.69%	103.23%	97.53%	97.53%
12A	TACTICAL SYS	94.08%	89.90%	84.57%	79.53%	79.53%
12B	SUPPORT EQUIP	94.08%	89.90%	84.56%	79.53%	79.53%
	12 SUB-TOTAL	94.08%	89.90%	84.56%	79.53%	79.53%
14	OTHER	101.53%	96.98%	91.21%	85.69%	85.69%
	GRAND TOTAL	90.08%	86.04%	80.93%	76.03%	76.03%

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).

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Table 1.3.a: **Maximum Potential Capacity**

COMMODITY GROUP	INDEX (DLHs)				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
1c1. Trans/Tank	1,032,102	1,028,657	1,049,546	1,056,807	1,056,807
1c3. Light Combat	1,590,393	1,584,252	1,621,485	1,634,427	1,634,427
1d. Other	175,978	175,978	175,978	175,978	175,978
2b. Aircraft Structures	729,058	727,137	647,678	540,398	564,398
2c. Hydraulic/Pneumatic	771,007	802,269	891,382	876,528	876,528
2d. Instruments	554,975	570,003	582,568	582,231	582,231
2g. Avionics/Electronics	784,488	850,159	934,698	934,989	934,989
5b. Components	32,748	27,770	25,785	22,634	22,634
6d. Components	32,311	39,768	50,814	50,814	50,814
7a. Radar	1,121,816	1,333,762	1,351,283	1,328,119	1,328,119
7b. Radio Communications	899,867	728,640	777,790	779,602	779,602
7c. Wire Communications	250,000	250,000	250,000	250,000	250,000
7d. Electronic Warfare	10,540	10,540	10,540	7,027	7,027
7e. Navigational Aids	579,716	484,854	481,340	488,367	488,367
7f. Electro-Optics/Night Vis	147,196	181,164	231,488	231,488	231,488
7g. Sat Control/Space	200,000	200,000	200,000	200,000	200,000
9b. Components	10,000	10,000	10,000	10,000	10,000
10d. Ground Generators	104,329	121,206	121,206	121,206	121,206
10e. Other	80,000	72,000	67,000	66,000	64,000
12a. Tactical Systems	507,576	495,543	465,598	485,808	485,808
12b. Support Equipment	481,724	493,279	453,128	384,384	384,384
14. Other	40,000	40,000	40,000	40,000	40,000
Total	10,135,824	10,226,981	10,439,307	10,290,807	10,290,807
	ok	ok	ok	10,266,807	10,288,807

– 24,000 B9 – 2,000

INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to for DOD Joint Cross-Service Working Group DM question (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).

SOURCE: Input was provided by the following product directorate representatives: Gary Yuki, LARF, 3-2892; Richard Carr, LHL, 3-0892; Don Garner, LICA, 3-5049; Dave Netherton, TIC-1, 3-6617. Documentation used included FY90 capacity dated 5-4-90, current capacity dated 5-18-94, Draft DOD 4151.15H dated 22 Aug 91, G072E-715 requirements dated 4-27-94 and 5-4-94, LI facility drawings, LH's core data from question 14.1h and 13.1a, and SM-ALC/WR profit loss report.

METHOD: We were instructed to use our FY87 capacity numbers as the baseline by HQ AFMC/LGP. According to HQ AFMC/LGPE, our capacity for FY87 was 8.5M hours. We had no documentation for the capacity spread for that year. We had documentation for FY90, which showed our capacity at over 10M hours, so decided to use this as our baseline instead. LA looked at their FY90 capacity and adjusted it for changes to their facilities through FY94. LH started with their FY90 capacity data and looked at G072E requirements to determine workload mix in the out years. LI performed field and drawing reviews to determine areas that could be relocated, downsized, or eliminated. They then identified the amount of capacity that could be included in these areas which could then be included as production areas. TI used a ratio to develop their maximum capacity. They looked at G072E requirements by commodity RGC grouping, compared it to their current FY94 capacity to get their percentage, then applied the percentages to their FY90 capacity in order to project their maximum capacity.

CONCLUSION:

TABLE 1.3a: MAXIMUM POTENTIAL CAPACITY

	FY95	FY96	FY97	FY98	FY99
1 AIRCRAFT AIR FRAME					
1C1 TRANS/TNKR/BOMB	957362	985153	947860	985342	982904
1C2 LIGHT COMBAT	1475270	1517250	1464386	1523901	1520131
1D OTHER	163240	168535	158828	164078	163672
TOTAL	2595902	2670939	2571175	2673320	2666707
2 AIRCRAFT COMPONENTS					
2B AIRCRAFT STRUCTURES	676284	696385	584927	526231	524929
2C HYDRAULIC/PNEUMATIC	715197	768339	805020	817254	815232
2D INSTRUMENTS	514802	545896	526126	542858	541515

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2G AVIONICS/ELECTRIC	727702	814204	844139	871761	869605
2J MANUFACTURING/FABRICATION	733695	432523	1011419	695905	719639
TOTAL	3367680	3257347	3771631	3454010	3470921
5 AMPHIBIANS					
5B COMPONENTS	30377	26596	23287	21103	21051
6 GROUND COMBAT VEHICLES					
6D COMPONENTS	29972	38086	45891	47378	47261
7 GRND & SHIP COM & ELEC					
7A RADAR	1040612	1277354	1220363	1238306	1235243
7B RADIO	834729	697824	702433	726882	725084
7C WIRE	231903	239427	225779	233094	232517
7D ELECTRONIC WARFARE	9777	10094	9519	6552	6536
7E NAVIGATION AIDS	537753	464348	434705	455342	454215
7F ELEC-OPTIC/NIGHT VISION	136541	173502	209060	215834	215300
7G SATELLITE CONT/SENSORS	185523	191542	180623	186475	186014
TOTAL	2976838	3054092	2982482	3062485	3054910
9 TACTICAL VEHICLES					
9B COMPONENTS	9276	9577	9031	9324	9301
10 GROUD GEN PURPOSE					
10D GROUND GENERATORS	96777	116080	109463	113010	112730
10E OTHER	74209	68955	60509	61537	61385
TOTAL	170986	185035	169972	174546	174115
12 SOFTWARE					
12A TACTICAL SYSTEMS	470834	474585	420488	452956	451835
12B SUPPORT EQUIPMENT	446854	472417	409226	358390	357504
TOTAL	917688	947002	829715	811346	809339
14 OTHER	37105	38308	36125	37295	37203
TOTAL	10135824	10226981	10439307	10290807	10290807

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

Preparer: _____ Date: 8 Oct 1994

Garry L Gerick, SM-ALC/FMPB, DSN 633-4374

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

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VERSION 1.7
10 OCT 94

B9-2

INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question (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).

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METHOD: We were instructed to use our FY87 capacity numbers as the baseline by HQ AFMC/LGP. According to HQ AFMC/LGPE, our capacity for FY87 was 8.5M hours. We had no documentation for the capacity spread for that year. We had documentation for FY90, which showed our capacity at over 10M hours, so decided to use this as our baseline instead. LA looked at their FY90 capacity and adjusted it for changes to their facilities through FY94. LH started with their FY90 capacity data and looked at G072E requirements to determine workload mix in the out years. LI performed field and drawing reviews to determine areas that could be relocated, downsized, or eliminated. They then identified the amount of capacity that could be included in these areas which could then be included as production areas. TI used a ratio to develop their maximum capacity. They looked at G072E requirements by commodity RGC grouping, compared it to their current FY94 capacity to get their percentage, then applied the percentages to their FY90 capacity in order to project their maximum capacity.

CONCLUSION:

TABLE 1.3a: MAXIMUM POTENTIAL CAPACITY

COMMODITY GROUP	FY95	FY96	FY97	FY98	FY99
1 AIRCRAFT AIR FRAME					
1C1 TRANS/TNKR/BOMB	957392	945451	947860	985342	982904
1C2 LIGHT COMBAT	1475270	1456105	1464386	1523901	1520131
1D OTHER	163240	161743	158928	164078	163672
TOTAL	2595902	2563299	2571174	2673321	2666707
2 AIRCRAFT COMPONENTS					
2B AIRCRAFT STRUCTURES	676284	668321	524927	526231	524929
2C HYDRAULIC/PNEUMATIC	715197	737375	805020	817254	815232

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10/18/94 (8 AM)

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2D INSTRUMENTS	514802	523896	526126	542858	541515
2G AVIONICS/ELECTRIC	727702	781391	844139	871761	869605
3I MANUFACTURING/FAB	764072	852765	1034706	717007	740691
TOTAL	3398057	3563749	3794918	3475111	3491972
7 GRND & SHIP COM & ELEC					
7A RADAR	1040612	1225877	1220363	1238306	1235243
7B RADIO	844005	678893	711464	736206	734385
7C WIRE	231903	229778	225779	233094	232517
7D ELECTRONIC WARFARE	9777	9687	9519	6552	6536
7E NAVIGATION AIDS	567725	482186	480596	502720	501476
7F ELEC-OPTIC/NIGHT VISION	136541	166510	209060	215834	215300
7G SATELLITE CONT/SENSORS	185523	183823	180623	186475	186014
TOTAL	3016086	2976753	3037404	3119187	3111471
10 GROUD GEN PURPOSE					
10D GROUND GENERATORS	96777	111402	109463	113010	112730
10E OTHER	74209	66176	60509	61537	61385
TOTAL	170986	177578	169972	174546	174115
12 SOFTWARE					
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	10135824	10226981	10439307	10290807	10290807

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

Preparer: J. Steve Bennett Date: 18-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Tom Spitler Date: 18 Oct 94

Tom Spitler
HQ AFMC/LGPE
DSN 787-5610

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CAP_1-3.DOC McClellan AFB
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SM-ALC VERSION 1.8

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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

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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	7	0	0	0	0
1b Vistol	0	0	0	0	0
1c Fixed Wing	0	0	0	0	0
1c1 Trans/Tnkr/Bomb	60,395	60,625	57,262	57,876	57,285
1c2 Comm And Cont	0	0	0	0	0
1c3 Light Combat	111,991	112,417	106,181	107,318	106,223
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	16,640	16,704	15,777	15,946	15,783
2c Hydraulic/Pneumatic	37,933	38,077	35,965	36,350	35,979
2d Instruments	20,425	20,503	19,366	19,573	19,373
2e Landing Gear	0	0	0	0	0
2f Ordanance	0	0	0	0	0
2g Avionics/Electric	35,402	35,537	33,566	33,925	33,579
2h Apu	0	0	0	0	0
2i Other	0	0	0	0	0
3 Engines	0	0	0	0	0
3a Aircraft	0	0	0	0	0
3b Ship	0	0	0	0	0

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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	1,446	1,451	1,371	1,386	1,372
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	884	887	838	847	838
7 Grnd & Ship Com & Elec	0	0	0	0	0
7a Rdr	45,634	45,808	43,267	43,731	43,284
7b Rdo	21,318	21,400	20,212	20,429	20,220
7c Wire	13,712	13,764	13,001	13,140	13,006
7d Electronic Warfare	0	0	0	0	0
7e Nav Igation Aids	17,155	17,220	16,265	16,439	16,271
7f Elec-Optic/Night Vision	11,568	11,612	10,968	11,085	10,972
7g Satellite Cont/Sensors	11,101	11,143	10,525	10,637	10,529
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	651	654	617	624	618
10 Ground Group	0	0	0	0	0
10a Ground Support	0	0	0	0	0

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10b Small Arms/Pers Wpns	0	0	0	0	0
10c Munitions/ Ordnance	0	0	0	0	0
10d Ground Generators	8,935	8,969	8,471	8,562	8,474
10e Other	6,274	6,298	5,948	6,012	5,951
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	30,681	30,798	29,089	29,401	29,101
12b Support Equipment	25,103	25,198	23,800	24,055	23,810
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	3,053	3,064	2,894	2,925	2,895
Total	480,307	482,130	455,382	460,261	455,565

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 -	694,611	692,736	643,054	633,412	612,522
1c2 Comm And Cont	0	0	0	0	0
1c3 Light Combat	1,288,013	1,284,535	1,192,410	1,174,532	1,135,794
1c4 Admin/Training	0	0	0	0	0
1d Other	0	0	0	0	0

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2 Aircraft Components	0	0	0	0	0
2a Dynamic Components	0	0	0	0	0
2b Aircraft Structures	191,382	190,866	177,177	174,521	168,765
2c Hydraulic/Pneumatic	436,267	435,089	403,885	397,830	384,709
2d Instruments	234,912	234,278	217,476	214,215	207,150
2e Landing Gear	0	0	0	0	0
2f Ordnance	0	0	0	0	0
2g Avionics/Electric	407,163	406,064	376,942	371,290	359,044
2h Apu	0	0	0	0	0
2i Other	0	0	0	0	0
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	16,630	16,585	15,396	15,165	14,665
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	10,163	10,136	9,409	9,268	8,962
7 Grnd & Ship Com & Elec	0	0	0	0	0
7a Rdr	524,845	523,429	485,889	478,604	462,819
7b Rdo	245,183	244,521	226,985	223,581	216,207

	95	96			
7c Wire	157,702	157,277	145,997	143,808	139,065
7d Electronic Warfare	0	0	0	0	0
7e Navigation Aids	197,296	196,764	182,652	179,913	173,980
7f Elec-Optic/Night Vision	133,042	132,683	123,167	121,321	117,319
7g Satellite Cont/Sensors	127,668	127,323	118,192	116,420	112,580
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 Componets	7,489	7,469	6,933	6,829	6,604
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	102,757	102,479	95,130	93,703	90,613
10e Other	72,157	71,962	66,801	65,800	63,629
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	352,867	351,914	326,676	321,778	311,165
12b Support Equipment	288,707	287,928	267,278	263,271	254,588
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	35,108	35,014	32,502	32,015	30,959

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Total	5,523,962	~~5,509,052~~	5,113,951	5,037,274	4,871,140
	OK	OK	OK	5037296 +2	4871135 +1

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to for DOD Joint Cross-Service Working Group DM question (3)

SOURCE: Customer Program Authority dollars from managing Air Logistic Centers and HQ AFMC approved sales rates by commodity.

METHOD: Commodity dollars were divided by rates to determine Direct Product Standard Hours (DPSH). The DPSH were divided by the projected labor efficiency to determine DLHs. Per HQ USAF/RT request, all manufacturing and fabrication has been identified in subgroup 2.j. This was taken from RGCs P and R, but not broken into respective commodity groupings. Our data systems do not permit these RGCs to be further broken down. In order not to inflate the total, each commodity group was adjusted by a factor to account for the manufacturing category. Otherwise, the adjusted toatl would have been overstated.

CONCLUSION: (all new data)

TABLE 3.1.a
COMMODITY GROUP

Programmed Workload $K

	FY1995	FY1996	FY1997	FY1998	FY1999
1 AIRCRAFT AIR FRAME	0	0	0	0	0
1A ROTARY	6	0	0	0	0
1B VISTOL	0	0	0	0	0
1C FIXED WING	0	0	0	0	0
1C1 TRANS/TNKR/BOMB	55870	57900	51343	53678	53087
1C2 COMM AND CONT	0	0	0	0	0
1C3 LIGHT COMBAT	103600	107365	95206	99534	98439
1C4 ADMIN/TRAINING	0	0	0	0	0
1D OTHER	0	0	0	0	0
	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	15953	14146	14789	14626
2C HYDRAULIC/PNEUMATIC	35091	36366	32248	33714	33343
2D INSTRUMENTS	18895	19582	17364	18153	17953
2E LANDING GEAR	0	0	0	0	0
2F ORDANANCE	0	0	0	0	0
2G AVIONICS/ELECTRIC	32750	33940	30097	31464	31118
2H APU	0	0	0	0	0
2I OTHER	0	0	0	0	0
2J MANUFACTURING/FABRICATION	35987	21666	47069	33383	33383
	0	0	0	0	0
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
	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
	0	0	0	0	0
5 AMPHIBIANS	0	0	0	0	0
5A VEHICLES	0	0	0	0	0
5B COMPONENTS	1338	1386	1229	1285	1271
	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	818	847	751	786	777
	0	0	0	0	0
7 GRND & SHIP COM & ELEC	0	0	0	0	0
7A RDR	42215	43749	38795	40559	40112
7B RDO	19721	20438	18123	18947	18738
7C WIRE	12685	13145	11657	12187	12053
7D ELECTRONIC WARFARE	0	0	0	0	0
7E NAV IGATION AIDS	15870	16446	14584	15247	15079
7F ELEC-OPTIC/NIGHT VISION	10701	11090	9834	10281	10168
7G SATELLITE CONT/SENSORS	10269	10642	9437	9865	9757
	0	0	0	0	0
8 AUTO/CONSTR EQUIPMENT	0	0	0	0	0
	0	0	0	0	0
9 TACTICAL VEHICLE	0	0	0	0	0
9A TACTICAL AUTO VEHICLE	0	0	0	0	0
9B COMPONETS	602	625	553	579	573
	0	0	0	0	0
10 GROUND GROUP	0	0	0	0	0
10A GROUND SUPPORT	0	0	0	0	0
	0	0	0	0	0
	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	8588	7595	7941	7853
10E OTHER	5804	6015	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
	0	0	0	0	0
12 SOFTWARE	0	0	0	0	0
12A TACTICALSYSTEMS	28382	29414	26082	27269	26969
12B SUPPORT EQUIPMENT	23222	24066	21340	22310	22065
	0	0	0	0	0
13 SPECIAL INTEREST ITEMS	0	0	0	0	0
13A BEARINGS REFURBISH	0	0	0	0	0

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13B CALIBRATION	0	0	0	0	0
13C TEST MEASUREMENT	0	0	0	0	0
	0	0	0	0	0
14 OTHER	2824	2926	2595	2713	2683
	0	0	0	0	0
TOTAL	480308	482129	455383	460261	455563

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TABLE 3.1.b
COMMODITY GROUP

Programmed Workload DLHs

(all new data)

	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	644330.7	663438	580751	590578	569688
1C2 COMM AND CONT	0	0	0	0	0
1C3 LIGHT COMBAT -	1194779	1230208	1076883	1095106	1056368
1C4 ADMIN/TRAINING	0	0	0	0	0
1D OTHER	0	0	0	0	0
	0	0	0	0	0
2 AIRCRAFT COMPONENTS	0	0	0	0	0
2A DYNAMIC COMPONENTS	0	0	0	0	0
2B AIRCRAFT STRUCTURES	177528.6	182794	160011	162719	156963
2C HYDRAULIC/PNEUMATIC	404687.2	416688	364754	370927	357806
2D INSTRUMENTS	217907.6	224370	196406	199729	192664
2E LANDING GEAR	0	0	0	0	0
2F ORDNANCE	0	0	0	0	0
2G AVIONICS/ELECTRIC	377690	388890	340422	346182	333936
2H APU	0	0	0	0	0
2I OTHER	0	0	0	0	0
2J MANUFACTURING/FABRICATION	399859	232994	495468	340640	340640
	0	0	0	0	0
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
	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
	0	0	0	0	0
5 AMPHIBIANS	0	0	0	0	0
5A VEHICLES	0	0	0	0	0
5B COMPONENTS	15426.22	15884	13904	14139	13639
	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

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6C TOWED	0	0	0	0	0
6D COMPONETS	9427.338	9707	8497	8641	8335
	0	0	0	0	0
7 GRND & SHIP COM & ELEC	0	0	0	0	0
7A RDR	486853.4	501292	438813	446239	430454
7B RDO	227435.1	234179	204993	208462	201088
7C WIRE	146286.5	150625	131852	134083	129340
7D ELECTRONIC WARFARE	0	0	0	0	0
7E NAVIGATION AIDS	183014.5	188442	164956	167747	161814
7F ELEC-OPTIC/NIGHT VISION	123411.6	127071	111234	113117	109115
7G SATELLITE CONT/SENSORS	118426.8	121938	106741	108547	104707
	0	0	0	0	0
	0	0	0	0	0
8 AUTO/CONSTR EQ	0	0	0	0	0
	0	0	0	0	0
9 TACTICAL VEHICLES	0	0	0	0	0
9A TACTICAL AUTO VEHICLES	0	0	0	0	0
9B COMPONETS	6946.899	7153	6261	6367	6142
	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	95318.8	98145	85913	87366	84276
10E OTHER	66933.82	68919	60329	61350	59179
	0	0	0	0	0
11 SEA SYSTEMS	0	0	0	0	0
11A SHIPS	0	0	0	0	0
11B WEAPON SYSTEM	0	0	0	0	0
	0	0	0	0	0
12 SOFTWARE	0	0	0	0	0
12A TACTICAL SYSTEM	327324.3	337031	295026	300018	289405
12B SUPPORT EQUIPMENT	267808.6	275751	241383	245468	236785
	0	0	0	0	0
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
	0	0	0	0	0
14 OTHER	32566.66	33533	29353	29850	28794
	0	0	0	0	0
TOTAL	5523962	5509052	5113951	5037276	4871139

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

Preparer: Date: 8 Oct 94

Garry L Gerick, SM-ALC/FMPB, DSN 633-4374

INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question (3)

SOURCE: Customer Program Authority dollars from managing Air Logistic Centers and HQ AFMC approved sales rates by commodity.

METHOD: Commodity dollars were divided by rates to determine Direct Product Standard Hours (DPSH). The DPSH were divided by the projected labor efficiency to determine DLHs. Per HQ USAF/RT request, all manufacturing and fabrication has been identified in subgroup 2.j. This was taken from RGCs P and R, but not broken into respective commodity groupings. Our data systems do not permit these RGCs to be further broken down. In order not to inflate the total, each commodity group was adjusted by a factor to account for the manufacturing category. Otherwise, the adjusted toatl would have been overstated.

CONCLUSION:

TABLE 3.1.a

COMMODITY GROUP	Programmed Workload $K				
	FY1995	FY1996	FY1997	FY1998	FY1999
1 AIRCRAFT AIR FRAME	0	0	0	0	0
1A ROTARY	7	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	96439
1C4 ADMIN/TRAINING	0	0	0	0	0
1D OTHER	0	0	0	0	0
	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	14148	14769	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/FABRICATION	37325	42676	48298	34668	34654
	0	0	0	0	0
3 ENGINES	0	0	0	0	0
3A AIRCRAFT	0	0	0	0	0

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3B SHIP	0	0	0	0	0
3C TANK	0	0	0	0	0
3D BLADES/VANES	0	0	0	0	0
	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
	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
	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
	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 NAV IGATION AIDS	16687	16516	15335	16033	15856
7F ELEC-OPTIC/NIGHT VISION	10701	11812	9834	10281	10168
7G SATELLITE CONT/SENSORS	10259	10163	9437	9865	9757
	0	0	0	0	0
8 AUTO/CONSTR EQUIPMENT	0	0	0	0	0
	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
	0	0	0	0	0
10 GROUND GROUP	0	0	0	0	0
10A GROUND SUPPORT	0	0	0	0	0
	0	0	0	0	0
	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	8268	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
	0	0	0	0	0
12 SOFTWARE	0	0	0	0	0
12A TACTICALSYSTEMS	28382	28091	26082	27269	26969
12B SUPPORT EQUIPMENT	23222	22983	21340	22310	22065
	0	0	0	0	0
13 SPECIAL INTEREST ITEMS	0	0	0	0	0
13A BEARINGS REFURBISH	0	0	0	0	0

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13B CALIBRATION	0	0	0	0	0
13C TEST MEASUREMENT	0	0	0	0	0
	0	0	0	0	0
14 OTHER	2824	2794	2595	2713	2683
	0	0	0	0	0
TOTAL	480309	482129	455381	480260	455552

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Start →

TABLE 3.1.b
COMMODITY GROUP

Programmed Workload
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	1179503	1076883	1095106	1056368
1C4 ADMIN/TRAINING	0	0	0	0	0
1D OTHER	0	0	0	0	0
	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	372882	340422	346182	333936
2H APU	0	0	0	0	0
2I OTHER	0	0	0	0	0
15 2J MANUFACTURING/FABRICATION	415285	460445	509372	354779	354279
	0	0	0	0	0
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
	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
	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
	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

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6C TOWED	0	0	0	0	0
6D COMPONENTS Dist	0	0	0	0	0
	0	0	0	0	0
7 GRND & SHIP COM & ELEC	0	0	0	0	0
7A RDR	466853	480831	438813	446239	430454
7B RDO	234382	231386	211254	214829	207230
7C WIRE	146287	144417	131852	134083	129340
7D ELECTRONIC WARFARE	0	0	0	0	0
7E NAVIGATION AIDS	192442	189982	173453	176388	170149
7F ELEC-OPTIC/NIGHT VISION	123412	127071	111234	113117	109118
7G SATELLITE CONT/SENSORS	118427	116913	106741	108547	104707
	0	0	0	0	0
	0	0	0	0	0
8 AUTO/CONSTR EQ	0	0	0	0	0
	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
	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
	0	0	0	0	0
11 SEA SYSTEMS	0	0	0	0	0
11A SHIPS	0	0	0	0	0
11B WEAPON SYSTEM	0	0	0	0	0
	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
	0	0	0	0	0
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
	0	0	0	0	0
14 OTHER	32587	32151	29353	29850	28794
	0	0	0	0	0
TOTAL	5523964	5509051	5113950	5037275	4971138

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

Preparer: J. Steve Bennett Date: 18-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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CAP_3.DOC McClellan AFB
10/18/94(8:52 AM)

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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

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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/

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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 Records
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

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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

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Merteorological 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:

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Laser Designator
Sights
Optical Sighting/Ranging
Imaging Equipment

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 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

4

Vision Goggles
AN/AVS-6 Aviators Night
Vision Imaging System

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)
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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. 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

his facility entirely unique. The combination of so many NDI disciplines makes the SM-ALC operation the premier NDI facility in DoD.

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

Preparer: Sandra L McDonald Date: 21-Sep-94

SANDRA L. MCDONALD, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Marie E Mobley Date: 21 Sep 94

MARIE E. MOBLEY, GM-14, HQ AFMC/LGPW, DSN 787-5969

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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 through out 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

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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).

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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 (Reline	(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

McClellan AFB has an open enforcement action (EA) for hazardous waste management violations. The State of California issued the action in January 1994 for violations at Bldg 375. McClellan AFB is located in an air quality non-attainment area for CO, particulates (PM-10), and ozone. Cultural and Natural resources associated with McClellan AFB would have to be considered prior to any related constructions activities.

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/S	N/A	N/A

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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		

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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 is 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)

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-manage Software Configuration Control Center -develop and manage Adā 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.

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

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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

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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 Gaurd. 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

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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

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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

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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.

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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.

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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.

B40

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.

B41

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.

B42

11

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. (#) 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.

11

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.
Radome Test	This facility was designed to test F-111 aircraft radomes. It is unique because it can test the F111's TFR (Terrain Following Radar) and ARS (Attack Radar System) systems for beam deflection, antenna pattern distortion, and RF transmission efficiency. These are the three ways a radome can be adpated to test C-5 radomes for 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.
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.

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11

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.

B45

preponderance of information came from the professional knowledge of the above listed individuals, who posses an estimated combined total depot maintenance experience approaching 1,000 years.

METHOD: The primary method used to develop the answer to this question was professional judgment and professional knowledge of the individuals listed above. Multiple meetings were held among various groups of the personnel listed above. Individuals would suggest certain testing facilities as possible candidates for the list of unique facilities. Others would provide information that would either support this position or show that perhaps the facility was not unique. This process was repeated several times at all levels. The beginning level was at the working level where individuals that actually work in the shop with the cited facility would suggest candidates. These were then reviewed by the individual Product Directorate Business Offices for appropriateness, and additional information describing the facility was developed from personal knowledge and from researching a variety of marketing literature.

After the Product Directorate Business Offices developed their list of candidates and descriptions, they were reviewed by the appropriate SPD or SSM (if applicable) and by the appropriate Director. Once they were approved at this level, they were forwarded to the center Business Office (SM-ALC/FMPB), where all candidates were again reviewed using knowledge of this center's and other centers' capabilities and facilities. They were also reviewed for adequacy and accuracy of descriptions, spelling, and grammar.

Once the candidates were consolidated, they were reviewed by a base level steering group composed of all center directors and other "two-digit" offices, and chaired by SM-ALC/CD. During this review some candidates were eliminated and others were suggested for addition. Added candidates were then researched by the appropriate Product Directorates and processed through the same process as described above.

After the original candidates were submitted to HQ AFMC, a meeting with representatives from all centers was held in Dayton, Ohio. At this meeting, facilities reported by all the Air Logistics centers were compared with each other. Each center's data was reviewed by other center representatives to determine if a facility was reported by one center that was not truly unique. At this meeting, decisions were made to both add and eliminate candidates. These decisions were then taken back to SM-ALC, where the new capabilities were researched and passed through the process described above and eliminated candidates were removed from the worksheets.

CONCLUSION:

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	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	No alternatives acceptable for certification and no such capabilities exist elsewhere. SM-ALC is the only assigned Air Force source of repair for this workload.

B45-1

INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question (3)

SOURCE: Customer Program Authority dollars from managing Air Logistic Centers and HQ AFMC approved sales rates by commodity.

METHOD: Commodity dollars were divided by rates to determine Direct Product Standard Hours (DPSH). The DPSH were divided by the projected labor efficiency to determine DLHs. Per HQ USAF/RT request, all manufacturing and fabrication has been identified in subgroup 2.j. This was taken from RGCs P and R, but not broken into respective commodity groupings. Our data systems do not permit these RGCs to be further broken down. In order not to inflate the total, each commodity group was adjusted by a factor to account for the manufacturing category. Otherwise, the adjusted total would have been overstated.

CONCLUSION:

TABLE 3.1.A		Programmed Workload			
Commodity Group			$K		
	FY1995	FY1996	FY1997	FY1998	FY1999
1 Aircraft Air Frame	-	-	-	-	-
1a Rotary	-	-	-	-	-
1b Vistol	-	-	-	-	-
1c Fixed Wing	-	-	-	-	-
1c1 Trans/Tnkr/Bomb	55,870	55,297	51,343	53,678	53,087
1c2 Comm And Cont	-	-	-	-	-
1c3 Light Combat	103,600	102,537	95,206	99,534	98,439
1c4 Admin/Training	-	-	-	-	-
1d Other	-	-	-	-	-
	-	-	-	-	-
2 Aircraft Components	-	-	-	-	-
2a Dynamic Components	-	-	-	-	-
2b Aircraft Structures	15,393	15,236	14,146	14,789	14,626
2c Hydraulic/Pneumatic	35,091	34,730	32,248	33,714	33,343
2d Instruments	18,895	18,701	17,364	18,153	17,953
2e Landing Gear	-	-	-	-	-
2f Ordanance	-	-	-	-	-
2g Avionics/Electric	32,750	32,414	30,097	31,464	31,118
2h Apu	-	-	-	-	-

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2i Other	-	-	-	-	-
2j Manufacturing/Fab	37,325	42,676	48,298	34,668	34,654
	-	-	-	-	-
3 Engines	-	-	-	-	-
3a Aircraft	-	-	-	-	-
3b Ship	-	-	-	-	-
3c Tank	-	-	-	-	-
3d Blades/Vanes	-	-	-	-	-
	-	-	-	-	-
4 Missiles	-	-	-	-	-
4a Strategic	-	-	-	-	-
4b Tactical/Mlrs	-	-	-	-	-
	-	-	-	-	-
5 Amphibians	-	-	-	-	-
5a Vehicles	-	-	-	-	-
5b Components	-	-	-	-	-
	-	-	-	-	-
6 Ground Combat Vehicles	-	-	-	-	-
6a Self-Propelled	-	-	-	-	-
6b Tanks	-	-	-	-	-
6c Towed	-	-	-	-	-
6d Components	-	-	-	-	-
	-	-	-	-	-
7 Grnd & Ship Com & Elec	-	-	-	-	-
7a Rdr	42,215	41,783	38,795	40,559	40,112
7b Rdo	20,323	20,116	18,676	19,526	19,311
7c Wire	12,685	12,554	11,657	12,187	12,053
7d Electronic Warfare	-	-	-	-	-
7e Nav Igation Aids	16,687	16,516	15,335	16,033	15,856
7f Elec-Optic/Night Vision	10,701	11,612	9,834	10,281	10,168
7g Satellite Cont/Sensors	10,269	10,163	9,437	9,865	9,757
	-	-	-	-	-
8 Auto/Constr Equipment	-	-	-	-	-
	-	-	-	-	-
9 Tactical Vehicle	-	-	-	-	-
9a Tactical Auto Vehicle	-	-	-	-	-
9b Components	-	-	-	-	-
	-	-	-	-	-
10 Ground Group	-	-	-	-	-
10a Ground Support	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
10b Small Arms/Pers Wpns	-	-	-	-	-

no changes

B16-10a

10c Munitions/Ordnance	-	-	-	-	-
10d Ground Generators	8,266	8,181	7,595	7,941	7,853
10e Other	5,804	5,745	5,333	5,576	5,515
11 Sea System	-	-	-	-	-
11a Ships	-	-	-	-	-
11b Weapon Systems	-	-	-	-	-
	-	-	-	-	-
12 Software	-	-	-	-	-
12a Tacticalsystems	28,382	28,091	26,082	27,269	26,969
12b Support Equipment	23,222	22,983	21,340	22,310	22,065
	-	-	-	-	-
13 Special Interest Items	-	-	-	-	-
13a Bearings Refurbish	-	-	-	-	-
13b Calibration	-	-	-	-	-
13c Test Measurement	-	-	-	-	-
	-	-	-	-	-
14 Other	2,824	2,794	2,595	2,713	2,683
	-	-	-	-	-
Total	480,302	482,129	455,381	460,260	455,562

TABLE 3.1.B		Programmed Workload			
Commodity Group			DLHs		
	FY1995	FY1996	FY1997	FY1998	FY1999
1 Aircraft Air Frame	-	-	-	-	-
1a Rotary	-	-	-	-	-
1b Vistol	-	-	-	-	-
1c Fixed Wing	-	-	-	-	-
1c1 Trans/Tnkr/Bomb	644,331	636,094	580,751	590,578	569,688
1c2 Comm And Cont	-	-	-	-	-
1c3 Light Combat -	1,194,779	1,179,503	1,076,883	1,095,106	1,056,368
1c4 Admin/Training	-	-	-	-	-
1d Other	-	-	-	-	-
	-	-	-	-	-
2 Aircraft Components	-	-	-	-	-
2a Dynamic Components	-	-	-	-	-
2b Aircraft Structures	177,529	175,259	160,011	162,719	156,963
2c Hydraulic/Pneumatic	404,687	399,513	364,754	370,927	357,806
2d Instruments	217,908	215,122	196,406	199,729	192,664
2e Landing Gear	-	-	-	-	-
2f Ordnance	-	-	-	-	-

No Changes

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2g Avionics/Electric	377,690	372,862	340,422	346,182	333,936
2h Apu	-	-	-	-	-
2i Other	-	-	-	-	-
2j Manufacturing/Fab	415,285	460,445	509,372	354,779	354,279
	-	-	-	-	-
3 Engines	-	-	-	-	-
3a Aircraft	-	-	-	-	-
3b Ship	-	-	-	-	-
3c Tank	-	-	-	-	-
3d Blades/Vanes	-	-	-	-	-
	-	-	-	-	-
4 Missiles	-	-	-	-	-
4a Strategic	-	-	-	-	-
4b Tactical/Mlrs	-	-	-	-	-
	-	-	-	-	-
5 Amphibians	-	-	-	-	-
5a Vehicles	-	-	-	-	-
5b Components	-	-	-	-	-
	-	-	-	-	-
6 Ground Combat Vehicles	-	-	-	-	-
6a Self-Propelled	-	-	-	-	-
6b Tanks	-	-	-	-	-
6c Towed	-	-	-	-	-
6d Components	-	-	-	-	-
	-	-	-	-	-
7 Grnd & Ship Com & Elec	-	-	-	-	-
7a Rdr	486,853	480,631	438,813	446,239	430,454
7b Rdo	234,382	231,386	211,254	214,829	207,230
7c Wire	146,287	144,417	131,852	134,083	129,340
7d Electronic Warfare	-	-	-	-	-
7e Navigation Aids	192,442	189,982	173,453	176,388	170,149
7f Elec-Optic/Night Vision	123,412	127,071	111,234	113,117	109,115
7g Satellite Cont/Sensors	118,427	116,913	106,741	108,547	104,707
	-	-	-	-	-
	-	-	-	-	-
8 Auto/Constr Eq	-	-	-	-	-
	-	-	-	-	-
9 Tactical Vehicles	-	-	-	-	-
9a Tactical Auto Vehicles	-	-	-	-	-
9b Components	-	-	-	-	-
	-	-	-	-	-
10 Ground Group	-	-	-	-	-
10a Ground Support	-	-	-	-	-

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10b Small Arms/Pers Wpns	-	-	-	-	-
10c Munitions/Ordnance	-	-	-	-	-
10d Ground Generators	95,319	94,099	85,913	87,366	84,276
10e Other	66,934	66,078	60,329	61,350	59,179
	-	-	-	-	-
11 Sea Systems	-	-	-	-	-
11a Ships	-	-	-	-	-
11b Weapon System	-	-	-	-	-
	-	-	-	-	-
12 Software	-	-	-	-	-
12a Tactical System	327,324	323,140	295,026	300,018	289,405
12b Support Equipment	267,809	264,385	241,383	245,468	236,785
	-	-	-	-	-
13 Spec Interest Items	-	-	-	-	-
13a Bearings Refurb	-	-	-	-	-
13b Calibration	-	-	-	-	-
13c Test Measurement	-	-	-	-	-
	-	-	-	-	-
14 Other	32,567	32,151	29,353	29,850	28,794
	-	-	-	-	-
Total	5,523,964	5,509,051	5,113,950	5,037,275	4,871,138

No changes

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

Preparer: J. Steve Bennett Date: 26-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Harold T. Crews Date: 26 OCT 94

HAROLD T. CREWS, GS-12, HQ AFMC/LGPW, DSN 787-358

NOTE! NO CHANGES IN 3.1B

{ CHANGES IN SM-ALC 3.1A (1a) B16-13
VERSION 1.9

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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, Gearboxres/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

	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.	of aircraft. Testing is designated mission essential, and is mandated by Air Force wide flight safety requirements.	
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	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	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.

B45-2

	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.	SM-ALC operation the premier NDI facility in DoD.	
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.

B45-3

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	The high tolerance and specialized grinding equipment is necessary to overhaul close tolerance hydraulic/pneudraulic components.	No current alternatives available.

B45-4

	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. (#) 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!		
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 F111'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

MOM_E.DOC McClellan AFB
10/18/94(7:43 AM)

B45-5

REC'D 19 OCT 94

			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	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.

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	equipment, depot training, and depot tech data were designed for this system. They also serve as management tools for the Inventory Control point function.		
Electronic Warfare (EW) ISF.	Integrated Logistics 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.	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 Support Facility (ISF). Overhaul, parts repair and modification testing including software support. Test equipment was 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 F-111 and A-10 avionics systems and insertion of technology upgrades into 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 "bot-mockups" used for testing and repair is attached.	This set of facilities is required to perform test and repair of all AF Ground Communications-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 comprehensive Instrument and Electronic Component Test and Repair facility in DoD. This facility (90K Sq Ft) provides test and repair of a full range of pressure, temperature, humidity and time measurement instruments; flight control and navigational instruments; and flight data cockpit recorders.	McClellan is the soul 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.

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

Preparer: Steve Bennett Date: 18-Oct-94

Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Tom Spitler Date: 18 Oct 94

Tom Spitler, HQ AFMC/LGPE, DSN 787-5610

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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		

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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**

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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			.861
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

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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
3722	510-176	5.4			5.4
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
5389	740-668	1.4			1.4
412	218-842			5.3	5.3
431	211-183			52.3	52.3
	Total	159.9	273.1	741.9	1175.0

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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

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1048	211-152	32.0			32.0
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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
250I	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

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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

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Facilities and Equipage, continued

8. Unique and/or Peculiar Capabilities and Capacities

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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.

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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 facility 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 can 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.

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.

7. **A-10 and F-14 CADC Transducer.** The only capability within DOD to test and repair.

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.

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 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.

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.

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.

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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.

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.

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.

18. Electronic Warfare (EW) Integrated Support Facility. 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.

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.

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was repeated several times at all levels. The beginning level was at the working level where individuals that actually work in the shop with the cited capability would suggest candidates. These were then reviewed by the individual Product Directorate business offices for appropriateness, and additional information describing the capability was developed from personal knowledge and from researching a variety of marketing literature.

After the Product Directorate Business Offices developed their list of candidates and descriptions, they were reviewed by the appropriate SPD or SSM (if applicable) and by the appropriate Director. Once they were approved at this level, they were forwarded to the center Business Office (SM-ALC/FMPB), where all candidates were again reviewed using knowledge of this center's and other centers' capabilities. They were also reviewed for adequacy and accuracy of descriptions, spelling, and grammar.

Once the candidates were consolidated, they were reviewed by a base level steering group composed of all center directors and other "two-digit" offices, and chaired by SM-ALC/CD. During this review some candidates were eliminated and others were suggested for addition. Added candidates were then researched by the appropriate Product Directorates and processed through the same process as described above.

After the original candidates were submitted to HQ AFMC, a meeting with representatives from all centers was held in Dayton, Ohio. At this meeting, capabilities reported by all the Air Logistics centers were compared with each other. Each center's data was reviewed by other center representatives to determine if a capability was reported by one center that was not truly unique. At this meeting, decisions were made to both add and eliminate candidates. These decisions were then taken back to SM-ALC, where the new capabilities were researched and passed through the process described above and eliminated candidates were removed from the worksheets.

CONCLUSION:

8.

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.

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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

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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 the F/EF-111 aircraft.

2. <u>Comprehensive Integrated Process to Resolve Parts Obsolescence.</u> 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.

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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 capability of its kind in the world. It is the largest aircraft-related hydraulic and pneudraulic overhaul and repair capability in 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 build 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 to 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 soul source for this capability for the Air Force.

5. Flow Grind Capability. Precision match fitting/grinding and precision spool and sleeve grinding.

6. Airborne Generator Rewind Capability for Flat & Rectangular Wire. Rewind process for rotors, stators, coils, armatures, and exitors 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 AFB 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 F-111 radomes. It is unique because it can test the Terrain Following Radar (TFR) and Attack Radar System. McClellan AFB 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.

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10. Non-Destructive Inspection (NDI). SM-ALC has the most comprehensive NDI capability in the defense industry, public or private. 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 the only 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 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

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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 possesses the only capability in DoD to provide the complete range of depot maintenance required by all models of the F-111/EF-111 aircraft. In addition to the Cold Proof capability described above, this includes but is not limited to hush house support, full wiring services, extensive modifications, complete overhaul and repair of radomes, control 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, corrosion and wear. SM-ALC is the sole DoD source of repair for this aircraft.

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21. A-10 Aircraft Modification, and Repair Capability. McClellan possesses the only capability in 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 wiring services, extensive modifications, complete overhaul and repair of radomes, control 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, 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 hand 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 side and multiple side band radios. tropospheric 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), radar (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 backscatters 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, or, 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 frequencies, 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 of electronics technology from vacuum tube through hybrid and Very High Speed Integrated Circuits (VHSIC). Scope of repair includes complete ground-up overhaul, repair, manufacture, system modification and integration, and mock-up design and fabrication. McClellan is the soul-source for this capability in the Air Force.

23. Ground Communications-Electronics Operational Software Development and Maintenance Capability. McClellan posses the only comprehensive capability in the Air Force for development and maintenance of Ground C-E operational software. Capabilities include operational program development, operational program maintenance, simulation modeling, mission software

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development, integration testing, test data analysis, case tools engineering, and technology insertion. SM-ALC is the sole Air Force source for this capability.

24. **Instrument and Electronic Component Repair Capability.** McClellan is home to the largest, most modern, most comprehensive Instrument and Electronic Component Test and Repair capability in DoD. This facility provides test and repair of a full range of pressure, temperature, humidity and time measurement instruments; flight control and navigational instruments; and flight data cockpit recorders. Skills and capabilities include reverse engineering, unsupportable electronic equipment 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 soul-source for this capability in the Air Force.

25. **Aircraft Operation Flight Software Development and Maintenance.** McClellan has 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 soul Air Force source for this capability.

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

Preparer: Steve Bennett Date: 18-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Tom Spitler Date: 18 Oct 94

Tom Spitler, SM-13, HQ AFMC/LGPE
DSN 787-5610

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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

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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.

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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.

was not unique. This process was repeated several times at all levels. The beginning level was at the working level where individuals that actually work in the shop with the cited facility or equipment would suggest candidates. These were then reviewed by the individual Product Directorate business offices for appropriateness, and additional information describing the facility or equipment was developed from personal knowledge and from researching a variety of marketing literature.

After the Product Directorate Business Offices developed their list of candidates and descriptions, they were reviewed by the appropriate SPD or SSM (if applicable) and by the appropriate Director. Once they were approved at this level, they were forwarded to the center Business Office (SM-ALC/FMPB), where all candidates were again reviewed using knowledge of this center's and other centers' facilities and equipment. They were also reviewed for adequacy and accuracy of descriptions, spelling, and grammar.

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CONCLUSION:

8.2

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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.

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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

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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.

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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) Integrated Support Facility (ISF). This is the only facility that provides support to worldwide CNCE requirements and depot level overhaul in the world.

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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 level overhaul worldwide of the 35 separate electronic combat subsystems that comprise the 806L system in the world.

25. Ground Wave Emergency Network (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 Overhauls 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.

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

Preparer: Steve Bennett Date: 18-Oct-94

Steve Bennett, SM-ALC/FMPB, DSN 633-1280.

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MOM_8-2.DOC McClellan AFB
10/18/94 (7:32 AM)

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

MAJCOM Reviewer: Tom Spitler Date: 18 Oct 94

Tom Spitler, GM-13, HQ AFMC/LGPB
DSN: 787-5610

B58-5

MOM_8-2.DOC McClellan AFB
10/18/94(7:52 AM)

REC'D 19 OCT 94

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.

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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)	1,187(10)	996(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.

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(5) Existing nose docks could be converted to accommodate large aircraft (+/- 9 acres).
(6) Number includes Camp Kohler (13 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 (13 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.

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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	-	191(12)
Hunting/Fishing Programs	0	0	-	- 22Sept91
Other (4)	1,357(10)	1,166(11)	-	~~191(12)~~
~~Other (4)~~	~~1,187(10)~~	~~996(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.

1,357(10) 22Sept94 1,166(11) 22Sept94

(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 (~~135~~ 5 acres), Davis Comm Site (4 acres) and Lincoln Comm Site (4 acres). 22 Sept 94

(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). 8 22 Sept 94

(11) Number includes Camp Kohler (~~138~~ 5 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
	1,558	Comm-Elect Line Replaceable Units (LRU) Repair
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
	26,640	Comm-Elect Line Replaceable Units (LRU) Repair
FLD TRN FCLTY	1,832	Aircraft/Airframe Admin/Training

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.

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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	188,338	

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

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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	522,651	522,651	522,651	522,651
1c3 Light Combat	853,295	853,295	853,295	853,295
2 Aircraft Components				
2b Aircraft Structures	237,454	237,454	237,454	237,454
2c Hydraulic/Pneumatic	422,554	422,554	422,554	422,554
2d Instruments	311,665	311,665	311,665	311,665
2g Avionics/Electric	407,300	407,300	407,300	407,300
2h APU	0	0	0	0
2i Other	653	653	653	653
7 Grnd & Ship Com & Elec				
7a Rdr	379,630	379,630	379,630	379,630
7b Rdo	209,860	209,860	209,860	209,860
7c Wire	5,292	5,292	5,292	5,292
7d Electronic Warfare	3,929	3,929	3,929	3,929
7e Navigation Aids	185,571	185,571	185,571	185,571
7g Satellite Cont/Sensors	38,228	38,228	38,228	38,228
10 Ground Group				
10d Ground Generators	59,993	59,993	59,993	59,993

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12 Software				
12a Tactical System	249,632	249,632	249,632	249,632
12b Support Equipment	217,561	217,561	217,561	217,561
14 Other	473	473	473	473
Total	4,105,740	4,105,740	4,105,740	4,105,740

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question number (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.

SOURCE: Information was provided by the following Product Directorate representatives:

W.D. Hale, LARF, 3-6401
John Sells, LHPB, 3-1789
Shelia McFall, LICL, 3-0528
Dave Netherton, TIC-1, 3-6617

METHOD: G072E-715 requirements data were reviewed by all directorates. Once core requirments were determined, (question 13.1), the first step was to break the core workload out into core capability required to support either the Air Force or non-Air Force customers. LA does not do any other service aircraft at this time, so all their core capability is in support of the Air Force. LH and LI applied percentages to their core workload to determine the Air Force required core capability (exception: LI's "fighter/combat" aircraft workload was distributed among the three primary airframes using the same spread as appears in the budget PLA). TI does not track their workload by customer and did not break out their core capability into customer supported. Instead, they provided data at RCC level. As a result, TI's numbers were distributed into commodity groups by FMPB using the same spread of workload reported in the budget PLA. The result of the above actions were then totalled for completion of table 12.1.a below. Commodity group category 2j Manufacturing/Fabrication has been added using the HQ AFMC/LGP computed core value.

CONCLUSION:

(all new data)

TABLE 12.1a: Service Required Core

COMMODITY GROUP	CAPABILITY (DLH)			
	FY96	FY97	FY98	FY99
1 Aircraft Air Frame				
1a Rotary	0	0	0	0
1b Vistol	0	0	0	0
1c Fixed Wing	0	0	0	0
1c1 Trans/Tnkr/Bomb	515,342	470,348	520,564	520,564
1c2 Comm And Cont	0	0	0	0
1c3 Light Combat	841362	878285	840658	840628
1c4 Admin/Training	0	0	0	0
1d Other	0	0	0	0
2 Aircraft Components				
2a Dynamic Components	0	0	0	0

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2b Aircraft Structures	234,133	234,133	241,157	241,157
2c Hydraulic/Pneumatic	416,645	411,266	395,939	395,939
2d Instruments	307,207	307,285	286,215	286,215
2e Landing Gear	0	0	0	0
2f Ordnance	0	0	0	0
2g Avionics/Electric	401,604	400,165	388,700	388,700
2h Apu	0	0	0	0
2i Other	644	859	644	644
15 ~~2j~~ Manufacturing/Fabrication	639836	639836	639836	639836
3 Engines				
3a Aircraft	0	0	0	0
3b Ship	0	0	0	0
3c Tank	0	0	0	0
3d Blades/Vanes	0	0	0	0
4 Missiles				
4a Strategic	0	0	0	0
4b Tactical/Mlrs	0	0	0	0
5 Amphibians				
5a Vehicles	0	0	0	0
5b Components	0	0	0	0
6 Ground Combat Vehicles				
6a Self-Propelled	0	0	0	0
6b Tanks	0	0	0	0
6c Towed	0	0	0	0
6d Components	0	0	0	0
7 Grnd & Ship Com & Elec				
7a Rdr	374,321	415,386	400,464	400,464
7b Rdo	206,925	214,215	213,732	213,732
7c Wire	5,218	5,218	5,283	5,283
7d Electronic Warfare	3,874	4,304	3,713	3,713
7e Navigation Aids	182,976	170,532	170,499	170,499
7f Elec-Optic/Night Vision	0	0	0	0
7g Satellite Cont/Sensors	37,693	38,170	38,991	38,991
8 Auto/Constr Eq	0	0	0	0
9 Tactical Vehicles				
9a Tactical Auto Vehicles	0	0	0	0
9b Componets	0	0	0	0
10 Ground Group				
10a Ground Support	0	0	0	0
10b Small Arms/Pers Wpns	0	0	0	0
10c Munitions/Ordnance	0	0	0	0
10d Ground Generators	59,154	59,227	59,196	59,196
10e Other	0	0	0	

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11 Sea Systems				
11a Ships	0	0	0	0
11b Weapon System	0	0	0	0
12 Software				
12a Tactical System	246,141	247,450	277,274	277,274
12b Support Equipment	214,519	211,599	216,251	216,251
13 Spec Interest Items				
13a Bearings Refurb	0	0	0	0
13b Calibration	0	0	0	0
13c Test Measurement	0	0	0	0
14 Other	466	466	466	466
Total	4,688,160	4,708,744	4,699,582	4,699,552

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

Preparer: Date: 10-Oct-94

Garry L Gerick, SM-ALC/FMPB, DSN 633-4374

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

MAJCOM Reviewer: Michael J. Powers Date: 10 OCT 94

MICHAEL J. POWERS AFMC/LGPW 787-3588

BL4-3

SM-ALC
VERSION 1.7

10 OCT 1994

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Randall H Lanier Date 6 Oct 94
Signature

RANDALL H. LANIER, GS-13, FMIIC, DSN468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Michael J Powers Date 10 OCT 94
Signature

MICHAEL J. POWERS, HQ AFMC/LGPW, DSN-787-3588
Typed Name, Rank, Office Symbol, DSN Number

B64-4

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.

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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	4675	4675	4675	4675
7A	RADAR	105	105	105	105
7B	RADIO				
7C	WIRE				
7E	NAV AIDS				
7F	E-O NIGHT VISION	1011529	1011529	1011529	1011529
7G	SATELLITE				
	TOTAL	1011634	1011634	1011634	1011634
10D	GROUND GEN	10980	10980	10980	10980
12A	TACTICAL SYS				
12B	SUPPORT EQUIP				

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TOTAL	0	0	0	0
14 OTHER	0	0	0	0
GRAND TOTAL	1027289	1027289	1027289	1027289

None				
TOTAL				

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question number (12.2). What is the amount of capability retained for the performance of other Services core? Provide your answers in Table 12.2a by commodity group for the Fiscal Years requested.

SOURCE: The Army and Marines have provided a list of their core workloads that are repaired by the Air Force. Army source is John Connally, DSN 298-7851.

METHOD: We took the list of core workloads provided by the Army and Marines, and identified those systems that are repaired organically at SM-ALC. We took these workload hours, identified which commodity groups they should be in, and put those numbers in spreadsheet form below.

CONCLUSION:

TABLE 12.2a: Core Capability Retained for Other Services

Commodity Group	FY96	FY97	FY98	FY99
6d Components	* Ø	* Ø	* Ø	* Ø
7 Grnd & Ship Com & Elec				
7a Rdr	105	105	105	105
7e Navigation Aids	* 4,675	* 4,675	* 4,675	* 4,675
7f Elec-Optic/Night Vision	127,071	111,234	113,117	109,115
*				
10 Ground Group				
10d Ground Generators	10,980	10,980	10,980	10,980
Total	142,831	126,994	128,877	124,875

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

Preparer: J. Steve Bennett Date: 18-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

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MAJCOM Reviewer: Harold T. Crews Date: 26 OCT 94

HAROLD T. CREWS, GS-12, HQ AFMC/LGPW, DSN 787-3588

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

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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**

5

		FY96	FY97	FY98	FY99
1C1	TRANS/TNKR/BOMB	522,651	522,651	522,651	522,651
1C3	LIGHT COMBAT	979,158	1,057,440	1,075,064	1,113,252
	TOTAL	1,501,809	1,580,091	1,597,715	1,635,903
2B	ACFT STRUCTURES	190,866	177,177	174,521	168,765
2C	HYD/PNEU	422,554	403,885	397,830	384,709
2D	INST	234,278	217,476	214,215	207,150
2G	AVIONICS/ELEC	406,064	376,942	371,290	359,044
	TOTAL	1,253,762	1,175,480	1,157,856	1,119,668
6D	COMPONENTS	4,675	4,675	4,675	4,675
7A	RADAR	383,664	385,583	389,322	395,255
7B	RADIO	209,860	209,860	209,860	209,860
7C	WIRE	5,292	5,292	5,292	5,292
7E	NAV AIDS	185,571	182,652	179,913	173,980
7F	E-O NIGHT VISION	132,683	123,167	121,321	117,319
7G	SATELLITE	38,228	38,228	38,228	38,228
	TOTAL	955,298	945,782	943,936	939,934
10D	GROUND GENERATORS	70,973	70,973	70,973	70,973
12A	TACTICAL SYS	249,632	249,632	249,632	249,632
12B	SUPPORT EQUIP	217,561	217,561	217,561	217,561
	TOTAL	467,193	467,193	467,193	467,193
14	OTHER	473	473	473	473
	GRAND TOTAL	4,254,183	4,244,667	4,242,821	4,238,819

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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
		~~FY96~~	~~FY97~~	~~FY98~~	~~FY99~~
1C1	TRANS/TNKR/BOMB	522,651	522,651	522,651	522,651
1C3	LIGHT COMBAT	979,158	1,057,440	1,075,064	1,113,252
	TOTAL	1,501,809	1,580,091	1,597,715	1,635,903
2B	ACFT STRUCTURES	190,866	177,177	174,521	168,765
2C	HYD/PNEU	422,554	403,885	397,830	384,709
2D	INSTRUMENTS	234,278	217,476	214,215	207,150
~~2D~~	~~INST~~	~~234,278~~	~~217,476~~	~~214,215~~	~~207,150~~
2G	AVIONICS/ELEC	~~407,064~~	376,942	371,290	359,044
~~2G~~	~~AVIONICS/ELEC~~	~~406,064~~	~~376,942~~	~~371,290~~	~~359,044~~
	TOTAL	1,253,762	1,175,480	1,157,856	1,119,668
6D	COMPONENTS	4,675	4,675	4,675	4,675
7A	RADAR	383,664	386,583	389,322	395,255
~~7A~~	~~RADAR~~	~~383,664~~	~~385,583~~	~~389,322~~	~~395,255~~
7B	RADIO	209,860	209,860	209,860	209,860
7C	WIRE	5,292	5,292	5,292	5,292
7E	NAV AIDS	185,571	182,652	179,913	173,980
7F	E-O NIGHT VISION	132,683	123,167	121,321	117,319
7G	SATELLITE	38,228	38,228	38,228	38,228
	TOTAL	955,298	945,782	943,936	939,934
10D	GROUND GEN	70,973	70,973	70,973	70,973
~~10D~~	~~GROUND GENERATORS~~	~~70,973~~	~~70,973~~	~~70,973~~	~~70,973~~

INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question number (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 13.1a by commodity group for the Fiscal Years requested.

SOURCE: The data from Question 12.1, 12.2 and 3.1 were used as a baseline.

METHOD: The data from Question 12.1 and 12.2 were totaled to provide our total core workload by commodity. Where this total exceeded the total for that commodity on 3.1b, judgements were made to move some of the workload into categories for which there was available capability. Excess Aircraft Structure workload was moved to Light Combat Aircraft. Instruments and AC Other workload was moved to Ground Wire. Manufacturing workload was distributed to Light Combat Aircraft (50%), Radar (35%), and Ground Wire (15%). Avionics was moved to Radar. Electronic Warfare was move to Nav Aids.

CONCLUSION:

Table 13.1a: Total Core Workload

	COMMODITY GROUP	FY96	FY97	FY98	FY99
1	Aircraft Air Frame				
1c1	Trans/Tnkr/Bomb	441,201	441,201	441,201	441,201
1c3	Light Combat	835,204	825,988	900,577	906,583
	Total	1,276,405	1,267,189	1,341,778	1,347,784
2	Aircraft Components				
2b	Aircraft Structures	175,259	160,011	162,719	156,963
2c	Hydraulic/Pneumatic	356,703	356,703	356,703	356,703
2d	Instruments	215,122	196,406	199,729	192,664
2g	Avionics/Electric	343,827	340,422	343,827	333,936
2i	Other	0	0	0	0
2j	Manufacturing/Fab	460,445	509,372	354,779	354,279
	Total	1,551,356	1,562,914	1,417,757	1,394,545
7	Grnd & Ship Com & Elec				
7a	Rdr	383,361	369,641	420,344	430,410
7b	Rdo	177,156	177,156	177,156	177,156
7c	Wire	79,900	91,277	111,143	118,283
7d	Electronic Warfare	0	0	0	0
7e	Navigation Aids	164,644	164,644	164,644	164,644

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13.1a

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7f	E-O Night Vision	127,071	111,234	113,117	109,115
7g	Satellite Cont/Sensors	32,271	32,271	32,271	32,271
	Total	964,403	946,223	1,018,675	1,031,879
10d	Ground Generators	61,624	61,624	61,624	61,624
10E	Ground Other	0	0	0	0
12	Software				
12a	Tactical System	210,729	210,729	210,729	210,729
12b	Support Equipment	183,656	183,656	183,656	183,656
	Total	394,385	394,385	394,385	394,385
14	Other	399	399	399	399
	Total	4,248,571	4,232,734	4,234,617	4,230,615

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

Preparer: J. Steve Bennett Date: 18-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Harold T. Crews Date: 18 OCT 94

HAROLD T. CREWS, GS-12, HQ AFMC/LGPW, DSN 787-3588

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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**

3

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1c3. Light Combat	0	502	353	80
6d. Ground Combat Vehicles-Components	151	131	127	118
7a. Radar	1172	827	749	567
7b. Radio Communications	39	30	22	10
7c. Wire Communications	116	108	104	100
7e. Navigational Aids	19	0	0	0
Total	1497	1598	1355	875

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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
6d. Ground Combat Vehicles-Components	151	131	127	118
7a. Radar	1172	827	749	567
7b. Radio Communications	39	30	22	10
7c. Wire Communications	116	108	104	100
7e. Navigational Aids	19	0	0	0
Total	1497	1598	1355	875

Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.b: **Interservice Above Core Workload**

3

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
6d. Ground Combat Vehicles - Components	5310	4603	4466	4169
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	7627	5377	4866	3689
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	17616	13367	11760	9879

Table 14.1.c: **Other Agency Above Core Workload**

3

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
	0	0	0	0
TOTAL	0	0	0	0

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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
5b. Components	16585	15396	15165	14665
6d. Ground Combat Vehicles - Components	5310	4603	4466	4169
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	7627	5377	4866	3689
7b. Radio Communications	257	182	145	67
7c. Wire Communications	699	647	623	602
7e. Navigational Aids	121	0	0	0
9b. Components	7469	6933	6829	6604
12b. Support Equipment	3602	2558	1660	1352
Total	41670	35696	33754	31148

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

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Workload and Capabilities, continued

14. Other Workloads (Above Core), continued

Table 14.1.d: **Last Source of Repair Workload**

3

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
7a. Radar	28631	20011	18263	13784
7b. Radio Communications	967	682	546	254
7c. Wire Communications	3610	3342	3221	3111
7e. Navigational Aids	155	0	0	0
TOTAL	33363	24035	22030	17149

Table 14.1.e: **Within Service Above Core Workload**

3

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
1c1. Transport/ Tanker/Bomber	170,085	120,403	110,761	89,871
1c3. Light Combat	305,377	134,468	99,115	22,462
2. Aircraft Components				
2c. Hydraulic/Pnuematic	12535	0	0	0
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	90812	64011	57928	43917
7b. Radio Communications	33011	15957	12789	5913
7c. Wire Communications	147560	136608	134567	129960
7e. Navigational Aids	10409	0	0	0
7g. Satellite Control/Space Sensors	89095	79964	78192	74352

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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	18263	13784
7b. Radio Communications	967	682	546	254
7c. Wire Communications	3610	3342	3221	3111
7e. Navigational Aids	155	0	0	0
TOTAL	33363	24035	22030	17149

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	170,085	120,403	110,761	89,871
1c3. Light Combat	305,377	134,468	99,115	22,462
2. Aircraft Components				
2c. Hydraulic/Pnuematic	12535	0	0	0
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	90812	64011	57928	43917
7b. Radio Communications	33011	15957	12789	5913
7c. Wire Communications	147560	136608	134567	129960
7e. Navigational Aids	10409	0	0	0
7g. Satellite Control/Space Sensors	89095	79964	78192	74352

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12. Software				
12a. Tactical Systems	102282	77044	72146	61533
12b. Support Equipment	66765	47159	44050	35675
TOTAL	1,027,931	675,614	609,548	463,683

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	7315	5522
7b. Radio Communications	387	274	219	102
7e. Navigational Aids	489	0	0	0
TOTAL	12399	8289	7534	5624

Workload and Capabilities, continued

14. All Other Workloads (Above Core), continued

Table 14.1.g: **All Other Workload (Above Core)**

(3)

COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
5b Components	16585	15396	15165	14665
7a. Radar	0	1065	162	86
9b Components	7469	6933	6829	6604
10d Ground Gen Purpose	31506	24157	22730	19640
10e Other	71962	66801	65800	63629
14 Other	34541	32029	31540	30487
TOTAL	162063	146381	142226	135111

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question number (15.2). What amount of the workload reported in question 8.1 is non-Core? Provide your answers in Table 15.2 by commodity groups for the Fiscal Years requested.

SOURCE: Information was provided by the following Product Directorate representatives:

W.D. Hale, SM-ALC/LARF, DSN 633-6401
John Sells, SM-ALC/LHPB, DSN 633-1789
Shelia McFall, SM-ALC/LICL, DSN 633-0528
Dave Netherton, SM-ALC/TIC-1, DSN 633-6617

METHOD: Review of the responses provided in Question 8.1, Unique and/or Peculiar Capabilities and Capacities, along with review of the G072E-715 workload were evaluated in order to determine if the capabilities or capacities should be considered non-core. Workloads included in 3.1b were compared with the totals in 15.1.

CONCLUSION:

Table 15.2: Non-Core Unique and/or Peculiar Workload

COMMODITY GROUP	FY96	FY97	FY98	FY99
1 Aircraft Air Frame				
1a Rotary	0	0	0	0
1b Vistol	0	0	0	0
1c Fixed Wing	0	0	0	0
1c1 Trans/Tnkr/Bomb	0	0	0	0
1c2 Comm And Cont	0	0	0	0
1c3 Light Combat	2787	2787	2871	2871
1c4 Admin/Training	0	0	0	0
1d Other	0	0	0	0
2 Aircraft Components				
2a Dynamic Components	0	0	0	0
2b Aircraft Structures	52129	49859	32514	35222
2c Hydraulic/Pneumatic	0	0	0	0
2d Instruments	0	0	0	0
2e Landing Gear	0	0	0	0
2f Ordnance	0	0	0	0
2g Avionics/Electric	0	0	0	0

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2h Apu	0	0	0	0
2i Other	0	0	0	0
2j Manufacturing/Fabrication	0	0	0	0
3 Engines				
3a Aircraft	0	0	0	0
3b Ship	0	0	0	0
3c Tank	0	0	0	0
3d Blades/Vanes	0	0	0	0
4 Missiles				
4a Strategic	0	0	0	0
4b Tactical/Mlrs	0	0	0	0
5 Amphibians				
5a Vehicles	0	0	0	0
5b Components	0	0	0	0
6 Ground Combat Vehicles				
6a Self-Propelled	0	0	0	0
6b Tanks	0	0	0	0
6c Towed	0	0	0	0
6d Components	0	0	0	0
7 Grnd & Ship Com & Elec				
7a Rdr	103,492	110,990	18,469	15,829
7b Rdo	57,226	54,230	34,098	37,673
7c Wire	66,387	53,140	20,709	15,800
7d Electronic Warfare	0	0	0	0
7e Navigation Aids	27,798	25,338	8,809	11,744
7f Elec-Optic/Night Vision	0	0	0	0
7g Satellite Cont/Sensors	86,156	84,642	74,470	76,276
8 Auto/Constr Eq	0	0	0	0
9 Tactical Vehicles				
9a Tactical Auto Vehicles	0	0	0	0
9b Components	0	0	0	0
10 Ground Group				
10a Ground Support	0	0	0	0
10b Small Arms/Pers Wpns	0	0	0	0
10c Munitions/Ordnance	0	0	0	0

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10d Ground Generators	33,695	32,475	24,289	25,742
10e Other	0	0	0	0
11 Sea Systems				
11a Ships	0	0	0	0
11b Weapon System	0	0	0	0
12 Software				
12a Tactical System	0	0	0	0
12b Support Equipment	0	0	0	0
13 Spec Interest Items				
13a Bearings Refurb	0	0	0	0
13b Calibration	0	0	0	0
13c Test Measurement	0	0	0	0
14 Other	1527	1527	1527	1527
Total	431198	414988	217757	222685

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

Preparer: Steve Bennett Date 18-Oct-94

Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Harold T. Crews Date: 19 OCT 94

HAROLD T. CREWS, GS-12, HQ AFMC/LGPW, DSN 787-2

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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.

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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

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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

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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. **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.

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):***

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a. Procurement

(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)

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(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.

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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.

14. C4I - Army, Navy, USMC, National Weather Service.

Close customer interface required as we negotiate and develop inter service workloads.

15. C4I - Sacramento Regional Transit, County of Sacramento, California Highway Patrol & Southern Pacific Railroad.

Close customer interface required as we negotiate and develop dual use workloads.

16. C4I - Defense Logistics Agency & Federal Aviation Agency.

Close customer interface required as we negotiate and develop non-DOD federal workloads.

17. C4I - World Wide Mobile Depot Maintenance.

In support of the shelter repair program and to sustain the life of systems in the field, our Mobile Depot Maintenance teams perform emergency and planned repairs, installations, modifications, and upgrades to fielded systems. We repair the shelters, electronics, antennas and all system component parts. This effort requires close coordination with the customers to plan for system downtime, weather considerations, and the most cost effective schedule for on-site work.

18. C4I - Tailored support to Air Force Space Command (AFSPC).

AFSPC has a unique requirement at or near their headquarters in Colorado Springs, CO. A huge amount of complex software is maintained in Colorado Springs in support Cheyenne Mountain Complex, Defense Support Program, the Defense Meteorological Satellite Program and other 1-1 priority programs. SM-ALC software engineers are stationed on site to provide the quickest assistance possible. They provide engineering assistance to on site personnel on software corrections, Software Change Requests, and associated documentation. In addition, they assist in the rehost of operational mission software from older systems to newer platforms. All of these tasks are performed up front and personal with AFSPC operators and maintainers.

MEASURES OF MERIT

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)?

McClellan's backlog of real property maintenance for facilities performing depot maintenance as of 30 Sep 93 was $3,188K

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)	$5,450	$6,613	$5,000	$5,558

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 19.1: **Annual Operating Costs**

3

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	$292,254	$280,912	$309,064	$320,485
$ / DLH	$42.19	$44.03	$49.72	$52.33

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MEASURES OF MERIT

~~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)?

McClellan's backlog of real property maintenance for facilities performing depot maintenance as of 30 Sep 93 was $3,188K

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)	$5,450	$6,613	$5,000	$5,558

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)	$292,254	$280,912	$309,064	$320,485
$ / DLH (DPAH)	$42.19	$44.03	$49.72	$52.33

already in 1000, 29 Sept 94

Table 19.1b: **Annual Operating Costs (DPSH)**

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	$292,254	$280,912	$309,064	$320,485
$ / DLH (DPSH)	$46.93	$45.15	$52.34	$56,29

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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**

Actual	1990	1991	1992	1993	1994
Total	1,022	1,101	2,122	7,017	19,867

Programmed	1995	1996	1997
Total	3,893	5,619	5,880

(These Totals are obtained from Environmental operations and services (O&S) money spent on DMBA facilities, Base Civil engineering (CE) operation and maintenance (O&M) money spent on industrial waste treatment (IWT) operation and maintenance repair costs directly supporting DMBA facilities, and mandated equipment replacement costs, and disposal costs. RAY Bill money is included in 1993 and 1994. A DMBA military construction project (MCP) of $11,000 for plating shop renovation and updating is included in 1994.)

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?

> $ Zero. At this time, all DMIF facilities or equipment are scheduled to be in full compliance at the end of FY97.

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

3

12. Software				
12a. Tactical Systems	102282	77044	72146	61533
12b. Support Equipment	66765	47159	44050	35675
TOTAL	1,027,931	675,614	609,548	463,683

Table 14.1.f: **Low Quantity Above Core Workload**

3

COMMODITY GROUP	**Workload (DLHs)**			
	FY 1996	**FY 1997**	**FY 1998**	**FY 1999**
7a. Radar	11523	8015	7315	5522
7b. Radio Communications	387	274	219	102
7e. Navigational Aids	489	0	0	0
TOTAL	12399	8289	7534	5624

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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	162	86
10d Ground Gen Purpose	31506	24157	22730	19640
10e Other	71962	66801	65800	63629
14 Other	34541	32029	31540	30487
TOTAL	138009	124052	120232	113842

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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	170085	120403	110761	89871
1c3. Light Combat	305377	134970	99468	22542
2. Aircraft Components				
2c. Hydraulic/ Pneumatic	12535	0	0	0
5b Components	16585	15396	15165	14665
6d. Ground Combat Vehicles - Components	5461	4734	4593	4287
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	139765	99306	89282	67564
7b. Radio Communications	34661	17125	13721	6347
7c. Wire Communications	151985	140705	138516	133773
7e. Navigational Aids	11193	0	0	0
7g. Satellite Control/Space Sensors	89095	79964	78192	74352
9b Components	7469	6933	6829	6604
10d. Ground General Purpose	31506	24157	22730	19640
10e Other	71962	66801	65800	63629
12. Software				
12a. Tactical Systems	102282	77044	72146	61533
12b. Support Equipment	70367	49717	45710	37027
14. Other	34541	32029	31540	30487
TOTAL	1,254,869	869,284	794,453	632,321

3

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	170085	120403	110761	89871
1c3. Light Combat	305377	134970	99468	22542
2. Aircraft Components				
2c. Hydraulic/ Pneumatic	12535	0	0	0
5b Components	16585	15396	15165	14665
6d. Ground Combat Vehicles - Components	5461	4734	4593	4287
7. Grnd & Ship Comm & Elect Equip				
7a. Radar	139765	99306	89282	67564
7b. Radio Communications	34661	17125	13721	6347
7c. Wire Communications	151985	140705	138516	133773
7e. Navigational Aids	11193	0	0	0
7g. Satellite Control/Space Sensors	89095	79964	78192	74352
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12. Software				
12a. Tactical Systems	102282	77044	72146	61533
12b. Support Equipment	70367	49717	45710	37027
14. Other	34541	32029	31540	30487
TOTAL	1,254,869	869,284	794,453	632,321

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question (14.a-h.) 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.h by commodity group for the Fiscal Years requested.

SOURCE: Data from the following Product Directorate representatives were used: W.D. Hale, SM-ALC/LARF, DSN 633-6401; John Sells, SM-ALC/LHPB, DSN 633-1789; Shelia McFall, SM-ALC/LICL, DSN 633-0528; Dave Netherton, SM-ALC/TIC-1, DSN 633-6617. Data from questions 13.1a, and 3.1b were used.

METHOD: The 12 Aug 94 letter from HQ AFMC/LGP provided supplemental guidance on calculating our core and non-core workloads. Tables 14a through 14g were calculated by percentages of the data previously reported by the product directorates.

CONCLUSION:

TABLE 14.1a: FMS Above Core Workload

	FY96	FY97	FY98	FY99
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

TABLE 14.1b: Interservice Above Core Workload

	FY96	FY97	FY98	FY99
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

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SM-ALC VERSION 1.8

SM-ALC
14.1a - 14.1h
Version 1.8

REC'D 19 OCT 94

Total	12306	8764	2428	2021

TABLE 14.1c: Other Agency Above Core Workload

FY96	FY97	FY98	FY99
0	0	0	0

TABLE 14.1d: Last Source of Repair Workload

	FY96	FY97	FY98	FY99
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 14.1e: Within Service Above Core Workload

	FY96	FY97	FY98	FY99
1 Aircraft Air Frame				
1c1 Trans/Tnkr/Bomb	194893	139550	149377	128487
1c3 Light Combat	344300	250393	194177	149706
2 Aircraft Components				
2c Hydraulic/Pneumatic	42810	8051	14224	1103
2g Avionics/Electric	29035		2355	
7 Grnd & Ship Com & Elec				
7a Rdr	48317	33877	25,146	44
7b Rdo	52580	32,930	36741	29641
7c Wire	60092	36478	18992	7244
7e Navigation Aids	24554	8809	11744	5505
7g Satellite Cont/Sensors	84642	74470	76276	72436
12 Software				
12a Tactical System	112411	84297	89289	78676
12b Support Equipment	77127	55169	60152	51777
Total	1070761	724024	678473	524619

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SM-ALC
14.1a-14.1e
Version 1.8

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TABLE 14.1f: Low Quantity Above Core Workload

	FY96	FY97	FY98	FY99
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

TABLE 14.1g: All Other Above Core Workload

	FY96	FY97	FY98	FY99
7a. Radar	0	1065	0	0
10d Ground Generators	32475	24289	25742	22652
10e Other	66078	60329	61350	59179
14. Other	31752	28954	29451	28395
Total	130305	114637	116543	110226

TABLE 14.1h: Total Above Core Workload

	FY 96	FY 97	FY 98	FY 99
1 Aircraft Air Frame				
1c1 Trans/Tnkr/Bomb	194893	139550	149377	128487
1c3 Light Combat	344300	250895	194530	149786
2 Aircraft Components	0	0	0	0
2c Hydraulic/Pneumatic	42810	8051	14224	1103
2g Avionics/Electric	29035	0	2355	0
7 Grnd & Ship Com & Elec	0	0	0	0
7a Rdr	97270	69172	25895	44
7b Rdo	54230	34,098	37673	30074
7c Wire	64517	40575	22940	11057
7e Navigation Aids	25338	8809	11744	5505
7g Satellite Cont/Sensors	84642	74470	76276	72436

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SM-ALC
14.1a - 14.1h
Version 1.

REC'D 19 OCT 94

10 Ground Group	0	0	0	0
10d Ground Generators	32475	24289	25742	22652
10e Other	66078	60329	61350	59179
12 Software	0	0	0	0
12a Tactical System	112411	84297	89289	78676
12b Support Equipment	80729	57727	61812	53129
14 Other	31752	28954	29451	28395
Total	1260480	881216	802658	640523

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

Preparer: J. Steve Bennett Date: 18-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Harold T. Crews Date: 18 OCT 94

HAROLD T. CREWS, GS-12, HQ AFMC/LGPW, DSN 787-3588

B74-5

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REC'D 19 OCT 94

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**

3

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	23,649	24,140	25,082	25,082
2 Aircraft Components				
2b Aircraft Structures	125,400	125,400	127,497	127,497
2c Hydraulic/Pneumatic	373,483	368,103	351,481	351,481
2g Avionics/Electronics	60,426	60,477	59,835	59,690
6 Ground Combat Vehicles				
6d Components	41,532	42,843	42,601	42,560
7 Grnd & Ship Com & Elec				
7a Rdr	268,521	255,055	255,055	255,055
7b Rdo	134,476	120,960	120,960	120,960
7c Wire	0	0	0	0
7d Electronic Warfare	0	0	0	0
7e Navigation Aids	47,266	33,750	33,750	33,750
7f Elec-Optic/Night Vision	6,637	6,601	6,626	6,701
7g Satellite Cont/Sensors	0	0	0	0
14 Other	2,000	2,000	2,000	2,000
Total	1,083,390	1,039,329	1,024,887	1,024,776

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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	23,649	24,140	25,082	25,082
2 Aircraft Components				
2b Aircraft Structures	125,400	125,400	127,497	127,497
2c Hydraulic/Pneumatic	373,483	368,103	351,481	351,481
2g Avionics/Electronics	60,426	60,477	59,835	59,690
6 Ground Combat Vehicles				
6d Components	4,675	4,675	4,675	4,675
7 Grnd & Ship Com & Elec				
7a Rdr	268,521	255,055	255,055	255,055
7b Rdo	134,476	120,960	120,960	120,960
7c Wire	0	0	0	0
7d Electronic Warfare	0	0	0	0
7e Navigation Aids	47,266	33,750	33,750	33,750
7f Elec-Optic/Night Vision	6,637	6,601	6,626	6,701
7g Satellite Cont/Sensors	0	0	0	0
14 Other	473	473	473	473
Total	1,045,006	999,634	985,434	985,364

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INSTALLATION WORK SHEET

McCLELLAN AFB, CA

PURPOSE: To document answer to DOD Joint Cross-Service Working Group DM question number (15.1). What amount of the workload reported in question 8.1 is Core? Provide your answers in Table 15.1 by commodity groups for the Fiscal Years requested.

SOURCE: Information was provided by the following Product Directorate representatives:

W.D. Hale, SM-ALC/LARF, DSN 633-6401
John Sells, SM-ALC/LHPB, DSN 633-1789
Shelia McFall, SM-ALC/LICL, DSN 633-0528
Dave Netherton, SM-ALC/TIC-1, DSN 633-6617

METHOD: Review of the responses provided in Question 8.1, Unique and/or Peculiar Capabilities and Capacities, along with review of the G072E-715 workload were evaluated in order to determine if the capabilities or capacities should be considered core. LH and LI applied percentages to their workload to determine if these capabilities and capacities were core. LA looked at the nature of the workload done in these unique and/or peculiar facilities and felt two facilities were a unique core capability. TI looked at the minimum workload that would be needed to maintain their capability identified in question 8.1 and determined that 70% of their workload run through these facilities were core.

CONCLUSION

Table 15.1: Unique and/or Peculiar Total Core Workload

COMMODITY GROUP	FY1996	FY1997	FY1998	FY1999
1 Aircraft Air Frame				
1c3 Light Combat	745,204	735,988	810,577	816,583
2 Aircraft Components				
2b Aircraft Structures	125,400	125,400	127,497	127,497
2c Hydraulic/Pneumatic	356,703	356,703	356,703	356,703
2d Instruments	215,122	196,406	199,729	192,664
2g Avionics/Electric	60,426	60,477	59,835	59,690
7 Grnd & Ship Com & Elec				
7a Rdr	383,361	369,641	420,344	430,410
7b Rdo	177,156	177,156	177,156	177,156
7c Wire	79,900	91,277	111,143	118,283
7e Navigation Aids	164,644	164,644	164,644	164,644

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7f Elec-Optic/Night Vision	127,071	111,234	113,117	109,115
7g Satellite Cont/Sensors	32,271	32,271	32,271	32,271
10d Ground Generators	61,624	61,624	61,624	61,624
12 Software				
12a Tactical System	196,329	196,329	196,329	196,329
12b Support Equipment	183,656	183,656	183,656	183,656
14 Other	399	399	399	399
Total	2,909,266	2,863,205	3,015,024	3,027,024

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

Preparer: Steve Bennett Date: 19-Oct-94

J. Steve Bennett, SM-ALC/FMPB, DSN 633-1280

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

MAJCOM Reviewer: Harold T. Crews 19 OCT 94

HAROLD T. CREWS, GS-12, HQ AFMC/LGPW, DSN 787-3

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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	53,167	53,367	55,305	55,905
6d Components	36,857	38,168	37,926	37,885
7 Grnd & Ship Com & Elec				
7a Rdr	43,813	53,888	51,454	51,454
7b Rdo	9,428	13,629	13,584	13,584
7c Wire	0	0	0	0
7d Electronic Warfare	0	0	0	0
7e Navigation Aids	5,529	7,473	7,473	7,473
7f Elec-Optic/Night Vision	0	0	0	0
7g Satellite Cont/Sensors	0	0	0	0
10 Ground Group				
10d Ground Generators	400	400	400	400
14 Other	1,527	1,527	1,527	1,527
Total	153,508	171,239	170,540	171,099

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	2,787	2,787	2,871	2,871
2 Aircraft Components				
2b Aircraft Structures	53,167	53,367	55,305	55,905
7 Grnd & Ship Com & Elec				
7a Rdr	43,813	53,888	51,454	51,454
7b Rdo	9,428	13,629	13,584	13,584
7c Wire	0	0	0	0
7d Electronic Warfare	0	0	0	0
7e Navigation Aids	5,529	7,473	7,473	7,473
7f Elec-Optic/Night Vision	0	0	0	0
7g Satellite Cont/Sensors	0	0	0	0
10 Ground Group				
10d Ground Generators	400	400	400	400
Total	115,124	131,544	131,087	131,687

Document Separator

DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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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

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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
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	387,939	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

2a deleted

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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

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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					
Dynamic Components	162,214	162,214	162,214	162,214	162,214
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
Other	657,150	657,150	657,150	657,150	657,150
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

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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.

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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					
Dynamic Components	162,214	162,214	162,214	162,214	162,214
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	225,625	225,625	225,625	225,625	225,625
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

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TOTAL	8,186,758	8,186,758	8,186,758	8,186,758	8,186,758

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DATA CALL SUPPLEMENT FOR JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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	[redacted] 72	[redacted] 71	[redacted] 78	[redacted] 74	[redacted] 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

2a > deleted

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DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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					
Dynamic Components	72	72	78	74	73
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	71	72	78	73	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

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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					
Dynamic Components	72	72	78	74	73
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
Other	72	72	78	74	73
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

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DATA CALL SUPPLEMENT
FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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					
Dynamic Components	72	72	78	74	73
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	* 72	* 72	* 78	* 74	* 73
Other	* 72	* 72	* 78	* 74	* 73
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

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FOR
JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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).

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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					
Dynamic Components	198,058	198,058	198,058	198,058	198,058
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
Manufacturing & Fabrication	* 514,172	* 514,172	* 514,172	* 514,172	* 514,172
Other	* 264,876	* 264,876	* 264,876	* 264,876	* 264,876
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

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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					
Dynamic Components	198,058	198,058	198,058	198,058	198,058
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
Other	779,048	779,048	779,048	779,048	779,048
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

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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
Manufacturing & 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

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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)

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JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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	149,918	132,948	108,221
Light Combat	91,908	78,958	84,460	116,648	116,536
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	29,536
Landing Gear	83	85	94	89	90
Aviation Ordnance	56	57	63	59	60
Avionics/Electronics	117,069	120,730	133,710	126,094	126,938
Manufacturing & 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	38,988	37,100	36,628	37,803
TOTAL	636,989	628,362	604,813	603,883	583,131

2a > deleted

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Table 3.1.a: Programmed Workload

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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					
Dynamic Components	10,771	11,108	12,302	11,601	11,661
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
Other	43,636	45,001	49,839	47,000	47,240
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

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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					
Dynamic Components	10,771	11,108	12,302	11,601	11,661
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
Manufacturing & Fabrication	28,800	29,701	32,894	31,020	31,178
Other	14,836	15,300	16,945	15,980	16,062
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

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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	984,162	1,310,270	1,267,169
ACFT COMPONENTS					
Aircraft Structures	473,770	471,864	514,555	485,388	476,571
Hydraulic/Pneumatic	152	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	1,272,358	1,267,247	1,381,908	1,303,569	1,279,889
Manufacturing & 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	7,652,303	7,375,889	7,250,313	7,195,036	6,763,218

2a deleted

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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

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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					
Dynamic Components	117,069	116,598	127,147	119,940	117,761
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
15 Manufacturing & Fabrication	* 313,010	* 311,751	* 339,956	* 320,686	* 314,861
Other	* 161,248	* 160,599	* 175,129	* 165,202	* 162,201
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

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Table 3.1.b: Programmed Workload

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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					
Dynamic Components	117,069	116,598	127,147	119,940	117,761
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
Other	474,258	472,350	515,085	485,888	477,062
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

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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

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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.

The State of Georgia has issued Robins AFB a notice of violation on 10 February 1994 for hazardous waste management deficiencies.

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.

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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

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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

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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.

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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

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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.

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5. Encroachment[redacted]

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.

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Test Facility: Buildings 640/645 Avionics Complex

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

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pad.

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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

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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.

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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

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.

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INSTALLATION WORKSHEET
Robins Air Force Base, Georgia

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 6.1.

SOURCE: LJPLE Worksheet, 5/9/94; LNPD Worksheet, 5/10/94; TICP Worksheet, 5/12/94; LKSS Worksheet, 5/16/94; LFPLE Worksheet, 5/17/94; LBPL Worksheet, 10/17/94, LYRP Worksheet, 5/17/94

METHOD: The undersigned edited, compiled and provided the ALC response based on the information gathered from the above organizations. All the unique or peculiar facilities were identified and provided to HQ AFMC. A meeting was held at HQ AFMC with all ALCs to determine if the identified facilities were truly unique. These decisions were then taken back to WR-ALC, appropriately researched and duplicate candidates were removed from the input. HQ AFMC/LGP letter, 14 Oct 94, established new criteria for determining peculiar and unique facilities. Based on this criteria, Mr. Lanier and Ms. Hall, utilizing the above product directorate inputs, recomputed the conclusion as shown below.

CONCLUSION:

Test Facility: Buildings 640/645 Avionics Complex (15.1. 2g. 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:

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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.

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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

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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.

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208 Volts AC, 60 Hz, single (1) phase (standard capacity 20 Amps)
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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

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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.

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REC'D 19 OCT 94

Test Facility: Building 231 Security Assistance Electronic Warfare Support Facility (15.1, 12.a)

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: Buildings 675/676 Radome Range (15.1, 2.b and 2.g)

WR-ALC is the single source of repair for the DOD for F-15 nose radome.

Test Facility: Building 91 Special Operations Forces Aircraft Maintenance Hangar (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.

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REC'D 19 OCT 94

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: Building 140 F-111 Crew Escape Module Parachute (15.1, 2.i.)

WR-ALC is the single source of repair in the DoD for the F-111 Crew Escape Module Parachutes.

Test Facility: F-15 Aircraft Component Complex (15.1, 2.b. and 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. and 2.j.)

WR-ALC is the single source of repair in the Air Force for the C-130 aircraft field generated structural components.

Test Facility: Building 158 Gyro Repair Facility (15.1, 2.d)

Building 158, totaling 69,075 square feet, was specifically designed to support organic overhaul and testing of gyroscopes, accelerometers and indicators. It contains 47,285 square feet of Class 300,000 certified controlled space, and 12,258 square feet 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 inplace for automated and manual test stations required to support this workload. All work stations are elecro-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 balancers, 2 random drift automated test stations and a host of other specialized equipment.

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REC'D 19 OCT 94

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Randall H Lanier Date 10/19/94
Signature

RANDALL H. LANIER, GS-13, FMIIC, DSN468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Tom Spitler Date 19 Oct 94
Signature

Tom Spitler, GS-13, HQ AFMC/LGXE DSN 787-5610
Typed Name, Rank, Office Symbol, DSN Number

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REC'D 19 OCT 94

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Test Facility: Building 231 Security Assistance Electronic Warfare Support Facility

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; 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.

6.2 Indicate the reasons that these facilities are required by the depot maintenance function.

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Test Facility: Buildings 640/645 Complex

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

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

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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.

6.3 How could the depot maintenance functions be performed without these specialized facilities? Describe testing alternatives.

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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)

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)

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.

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INSTALLATION WORKSHEET
Robins Air Force Base, Georgia

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 8.1.

SOURCE: TICP updated input, 6/10/94; LBPL Worksheet, 10/17/94; LFPLE Worksheet, 5/17/94; LKSS Worksheet, 5/11/94; LIPLE Worksheet, 5/9/94; LNPD-2 Worksheet, 5/10/94; LYPRP Worksheet, 5/11/94; TICP Worksheet, 5/12/94; TIEA Worksheet, 5/10/94; LFER Worksheet, 5/18/94

METHOD: Al Waldrep/LKJ, 468-6753, Randy Lanier/FMIIC, 468-5057 and Betty Hall/FMPX, 468-5542 reviewed, edited, and merged information gathered from the above organizations in order to compile the WR-ALC consolidated response. All the possible capabilities and capacities were identified and provided to HQ AFMC. A meeting was held at HQ AFMC with all ALCs to determine if the capabilities and capacities were truly unique. These decisions were then taken back to WR-ALC, appropriately researched and duplicate candidates were removed from the input. HQ AFMC/LGP letter, 14 Oct 94, established new criteria for determining peculiar and unique facilities. Based on this criteria, Mr. Lanier and Ms. Hall, utilizing the above product directorate inputs, recomputed the conclusion as shown below.

CONCLUSION:

Capability: Avionics Complex (15.1, 2.g. and 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

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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 9,135 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 (IRC) 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.

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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.

Capability/Capacity: 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.

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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.

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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.l.)

Only Depot level repair and packing facility in the DoD capable of handling F-111 Crew Escape Module parachutes. These parachutes deploy when an 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 within DoD possessing all the requirements for repairing and packing these parachutes.

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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 capacity and high forming pressure, 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

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Capability/Capacity: F-15 Aircraft Component Complex (15.1, 2.b. and 2.j.)

WR-ALC is the single source of repair in the DoD for the total refurbishmet of the F-15 wings and other associated field generated components.

Capability/Capacity: C-130 Aircraft Component Complex (15.1, 2.b. and 2.j.)

WR-ALC is the single source of repair in the Air Force for the C-130 aircraft field generated structural components.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Randall H Lanier Date 10/19/94

RANDALL H. LANIER, FMIIC, DSN 468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Tom Spitler Date 19 Oct 94

Signature

Tom Spitler, GM-13, HQ AFMC/LGE, DSN 787-5210

Typed Name, Rank, Office Symbol, DSN Number

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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: 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)

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:

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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

INSTALLATION WORKSHEET
Robins Air Force Base, Georgia

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 6.2.

SOURCE: LJPLE Worksheet, 5/9/94; LNPD Worksheet, 5/10/94; TICP Worksheet, 5/12/94; LKSS Worksheet, 5/16/94; LFPLE Worksheet, 5/17/94; LYRP Worksheet, 5/11/94

METHOD: The undersigned edited, compiled and provided the ALC response based on the information gathered from the above organizations. All the unique or peculiar facilities were identified and provided to HQ AFMC. A meeting was held at HQ AFMC with all ALCs to determine if the identified facilities were truly unique. These decisions were then taken back to WR-ALC, appropriately researched and duplicate candidates were removed from the input. HQ AFMC/LGP letter, 14 Oct 94, established new criteria for determining peculiar and unique facilities. Based on this criteria, Mr. Lanier and Ms. Hall, utilizing the above product directorate inputs, recomputed the conclusion as shown below.

CONCLUSION:

Test Facility: Buildings 640/645 Complex (15.1, 2.g. and 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

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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 (15.1, 12.a.)

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.)

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: Buildings 675/676 Radome Range (15.1, 2.b and 2.g.)

WR-ALC is the single source of repair for the DOD for F-15 nose radome.

Test Facility: Building 91 Special Operations Forces Aircraft Maintenance Hangar (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 (15.1/15.2, 1.c.(1))

WR-ALC is the single source of repair in the DoD for the C-141 aircraft.

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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: Building 140 F-111 Crew Escape Module Parachute (15.1, 2.i.)

WR-ALC is the single source of repair in the DoD for the F-111 Crew Escape Module Parachutes.

Test Facility: F-15 Aircraft Component Complex (15.1, 2.b. and 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. and 2.j.)

WR-ALC is the single source of repair in the Air Force for the C-130 aircraft field generated structural components.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Randall H Lanier Date 12/14/94
Signature

RANDALL H. LANIER, GS-13, FMIIC, DSN468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Tom Spitler Date 18 Oct 94
Signature

Tom Spitler, GM13, HQ AFMC/LGPE, DSN787-5210
Typed Name, Rank, Office Symbol, DSN Number

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Test Facility: Building 231 Security Assistance Electronic Warfare Support Facility

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.

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).

(See Table on following page)

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INSTALLATION WORKSHEET
Robins Air Force Base, Georgia

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 6.3.

SOURCE: LJPLE Worksheet, 5/9/94; LNPD Worksheet, 5/10/94; TICP Worksheet, 5/12/94; LKSS Worksheet, 5/16/94; LFPLE Worksheet, 5/17/94;, LYRP Worksheet, 5/11/94

METHOD: The undersigned edited, compiled and provided the ALC response based on the information gathered from the above organizations. All the unique or peculiar facilities were identified and provided to HQ AFMC. A meeting was held at HQ AFMC with all ALCs to determine if the identified facilities were truly unique. These decisions were then taken back to WR-ALC, appropriately researched and duplicate candidates were removed from the input. HQ AFMC/LGP letter, 14 Oct 94, established new criteria for determining peculiar and unique facilities. Based on this criteria, Mr. Lanier and Ms. Hall, utilizing the above product directorate inputs, recomputed the conclusion as shown below.

CONCLUSION:

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. and 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.

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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: Buildings 675/676 Radome Range (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 Hangar (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 (15.1/15.2, 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.

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Test Facility: Building 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. 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: C-130 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: 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 review.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Randall H Lanier Date 10/19/94
Signature

RANDALL H. LANIER, GS-13, FMIIC, DSN468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Tom Spitler Date 19 Oct 94
Signature

Tom Spitler, GM-13, MA AFMC/LGS DSN 787-5610
Typed Name, Rank, Office Symbol, DSN Number

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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	
11-271	Shp Instm Ovhl Dep	67	0	0	
17-712	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	

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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	
323/Tech Lab	141-763	9.7	0	0	9.7
231/Prod & Support	141-764	4.6	0	0	4.6
226B/Prod & Support	141-764	3.9	4.6	0	8.5
227/Prod & Support	141-764	23.0	0	0	23.0
110/Acft Hangar	211-116	120.8	0	0	120.8
125/Acft Hangar	211-116	117.8	0	0	117.8
125/Shp Acft Gen Purpose	211-152	9.5	0	0	9.5
158/Shp Acft Gen Purpose	211-152	4.2	0	0	4.2
Wing Repair Fac	211-152	5.1	0	0	5.1
Composites Fac	211-152	72.2	0	0	72.2
Depot Plant Svc	211-154	87.6	0	0	87.6
44/Maint Doc, L/A	211-173	0	30.0	0	30.0
47/Maint Doc, L/A	211-173	40.5	0	0	40.5
48/Maint Doc, L/A	211-173	40.5	0	0	40.5
640/Avionics Shop	217-712	116.9	0	0	116.9
645/Avionics Shop	217-712	0	20.2	0	20.2
Acft GSE Paint Fac	218-712	3.6	0	0	3.6
GSE Maint Shop	218-712	47.0	0	0	47.0
125/Admin	610-675	5.0	0	0	5.0
301/Admin	610-675	4.4	0	0	4.4
640/Admin	610-675	2.4	0	0	2.4
645/Admin	610-675	0	1.4	0	1.4
TOTAL:		718.7	56.2	0	774.9

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8. Unique and/or Peculiar Capabilities and Capacities

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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

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

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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.

Capability/Capacity: Avionics Integrated Support Facilities (AISFs)

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,

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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

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.

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

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.

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Capability/Capacity: Electronic Failure Analysis

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

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 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)

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)

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

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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

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

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

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.

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Capability/Capacity: Gyro Overhaul

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

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

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.

Capability/Capacity: C-130 Propellers

As the single source of repair for C-130 propellers, WR-ALC has complete capability to balance and functional test propellers after overhaul. Only C-130 propeller overhaul/repair facility within the DoD.

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types of presses. Hand forming processes are practically eliminated by high side pressures produced by a flexible diaphragm hydrostatically backed by pressurized fluid.

Capability/Capacity: C-130 Propellers (15.1, 2.a.)

As the single source of repair for C-130 propellers, WR-ALC has complete capability to balance and functional test propellers after overhaul. Only C-130 Propeller overhaul/repair facility within the DoD.

Capability/Capacity: 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.

Capability/Capacity: Buildings 675/676 Radome Range (15.1, 2.b and 2.g.)

WR-ALC is the single source of repair for the DOD for F-15 nose radome.

Capability/Capacity: Building 91 Special Operations Forces Aircraft Maintenance Hangar (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.

Capability/Capacity: C-141 Aircraft Maintenance Complex (15.1/15.2, 1.c.(1))

WR-ALC is the single source of repair in the DoD for the C-141 aircraft.

Capability/Capacity: 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.

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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.

One of a Kind Facility/Equipment: Joint Tactical Information Distribution System Centralized Software Support Activity (JTIDS CSSA) AISF

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

One of a Kind Facility/Equipment: Special Operations Forces Extendible Integration Support Environment (SOF EISE) AISF

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

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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

One of Kind Facility/Equipment: C-130 Self Contained Navigational System (SCNS) AISF

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

One of a Kind Facility/Equipment: Miniature Receiver Transmit Software Maintenance Facility (MRT SMF) AISF

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

One of a Kind Facility/Equipment: PAVE TACK AISF

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

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One of a Kind Facility/Equipment: Extendible Communication Integration Support Environment (ECOMISE) AISF

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.

One of a Kind Facility/Equipment: AN/GSM-285

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.

One of a Kind Facility/Equipment: Advanced Radar Test Bench Set (ARTBS)

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.

One of a Kind Facility/Equipment: F-15 Radar

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.

One of a Kind Facility/Equipment: F-15 Robotic Paint/Depaint Equipment

The robotic paint and depaint equipment is the only one of its kind in DoD.

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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

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

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)

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

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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

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

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

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

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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

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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.

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One of a Kind Facility/Equipment: RTBS

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)

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)

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)

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)

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.

One of a Kind Facility/Equipment: Cockpit Integration Bench (CIB)

The CIB is the facility for the integrated development and support of the VHSIC Central Computer (CC) and Programmable Signal Data Processor

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(PSDP) OFPs for MSIP configuration F-15 aircraft.

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One of a Kind Facility/Equipment: Avionics Integration Bench (AIB)

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.

One of a Kind Facility/Equipment: Central Computer Workstation

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.

One of a Kind Facility/Equipment: Programmable Armament Control Set Workstation (PACS WS)

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.

One of a Kind Facility/Equipment: Multi-Purpose Display Processor Workstation (MPDP WS)

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.

One of a Kind Facility/Equipment: Automatic Flight Control System Workstation (AFCS WS)

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.

One of a Kind Facility/Equipment: Avionics Integration Unit Workstation (AIU WS)

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.

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One of a Kind Facility/Equipment: Thermal Wave Enhanced Thermography System

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.

One of a Kind Facility/Equipment: Scanning Acoustic Microscope

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.

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INSTALLATION WORKSHEET
Robins Air Force Base, Georgia

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 8.2.

SOURCE: LBPL Worksheet, 5/17/94; LFPLE Worksheet, 5/17/94; LKSS Worksheet, 5/11/94; LJPLE Worksheet, 5/9/94; LNPD-2 Worksheet, 5/10/94; LYPRP Worksheet, 5/17/94; TICP Worksheet, 5/12/94; TIEA Worksheet, 5/10/94; LFER Worksheet, 5/18/94

METHOD: Al Waldrep/LKJ, 468-6753 and Randy Lanier/FMIIC, 468-5057 reviewed,edited, and merged information gathered from the above organizations in order to compile the WR-ALC consolidated response. All the possible capabilities and capacities were identified and provided to HQ AFMC. A meeting was held at HQ AFMC with all ALCs to determine if the capabilities and capacities were truly unique. These decisions were then taken back to WR-ALC, appropriately researched and duplicate candidates were removed from the input. HQ AFMC/LGP letter, 14 Oct 94, established new criteria for determining peculiar and unique facilities. Based on this criteria, Mr. Lanier and Ms. Hall, utilizing the above product directorate inputs, recomputed the conclusion as shown below.

CONCLUSION:

<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.

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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.

One of a Kind Facility/Equipment: Low Altitude Navigation and Targeting Infra-Red for Night (LANTIRN) (15.1, 12.a. and 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.

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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.

One of a Kind Facility/Equipment: 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:

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JTIDS Terminal Acceptance Test Set

JTIDS Formal Qualifications Test Equipment

JTIDS Communications, Navigation Dynamic Simulator

JTIDS Integrated Test Set

One of a Kind Facility/Equipment: 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

One of Kind Facility/Equipment: 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

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One of a Kind Facility/Equipment: 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

One of a Kind Facility/Equipment: 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

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

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One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: Electron Beam Welder (15.1, 2.b. and 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.

One of a Kind Facility/Equipment: 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

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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.

One of a Kind Facility/Equipment: Automated Aircraft Rework System (AARS) (15.1, 2.b. and 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.

One of a Kind Facility/Equipment: Metallograph Image Analysis System (15.1, 2.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.

One of a Kind Facility/Equipment: Rheometrics Spectrometric Materials (15.1, 2.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.

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One of a Kind Facility/Equipment: 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 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

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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.

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One of a Kind Facility/Equipment: 70 Radar Test Bench Set (RTBS) (15.1, 12.a.)

The 70 RTBS 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 simuation capability for development and support of APG-70 OFPs.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

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One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: 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.

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One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: Buildings 675/676 Radome Range (15.1, 2.b and 2.g.)

WR-ALC is the single source of repair for the DOD for F-15 nose radome.

One of a Kind Facility/Equipment: Building 91 Special Operations Forces Aircraft Maintenance Hangar (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.

One of a Kind Facility/Equipment: C-141 Aircraft Maintenance Complex (15.1/15.2, 1.c.(1))

WR-ALC is the single source of repair in the DoD for the C-141 aircraft.

One of a Kind Facility/Equipment: 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.

One of a Kind Facility/Equipment: Building 140 F-111 Crew Escape Module Parachute (15.1, 2.j.)

WR-ALC is the single source of repair in the DoD for the F-111 Crew Escape Module Parachutes.

One of a Kind Facility/Equipment: F-15 Aircraft Component Complex (15.1, 2.b. and 2.j.)

WR-ALC is the single source of repair in the DoD for the total refurbishmet of the F-15 wings and other associated field generated components.

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One of a Kind Facility/Equipment: C-130 Aircraft Component Complex (15.1, 2.b. and 2.j.)

WR-ALC is the single source of repair in the Air Force for the C-130 aircraft field generated structural components.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief

Randall H Lanier Date 10/17/94
Signature

RANDALL H. LANIER, GS-13, FMIIC, DSN468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief

Tom Spitler Date 18 Oct 94
Signature

Tom Spitler, GM-13, HQ AFMC/LGDE DSN 787-
Typed Name, Rank, Office Symbol, DSN Number

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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.**

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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)

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Table 12.1.a: Service Required Core

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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				
Dynamic Components	**81,283**	**81,283**	**81,283**	**81,283**
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**
Other	**580,889**	**580,889**	**580,889**	**580,889**
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**

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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				
Dynamic Components	81,283	81,283	81,283	81,283
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	* 97,998	* 97,998	* 97,998	* 97,998
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

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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

2a deleted

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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)

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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				
Dynamic Components	116,598	127,147	119,940	117,761
Aircraft Structures	471,864	514,555	485,388	476,571
Hydraulic/Pneumatics	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
Other	472,350	515,085	485,888	477,062
MISSILE COMPONENTS				
Tactical/MLRS	13,014	14,192	13,387	13,144
GRND COMM & ELEC 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	68	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 (6,490,572) shown in Table 12.1.a. This creates a situation where core capability exceeds available dollars.**

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JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

Table 13.1a Total Core Workloads

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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				
Dynamic Components	116,598	127,147	119,940	117,761
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	* 160,599	* 175,129	* 165,202	* 162,201
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	68	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

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*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)~~

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DATA CALL SUPPLEMENT FOR JOINT CROSS SERVICE GROUP - DEPOT MAINTENANCE

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	551,871	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	68	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.

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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**

***Assumes no change by AFMC due to Interservice Core**

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**

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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

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COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME				
Transport	**26,110**	**30,520**	**27,580**	**15,540**
Light Combat	**93,240**	**146,160**	**161,280**	**170,100**
ACFT COMPONENTS				
Dynamic Components	**116,598**	**127,147**	**119,940**	**117,761**
Instruments	**137,693**	**153,824**	**143,976**	**140,725**
Avionics/Electronics	**1,267,247**	**1,381,900**	**1,303,569**	**1,279,889**
Other	**19,176**	**20,172**	**25,997**	**24,334**
SOFTWARE				
Tactical	**676,794**	**675,193**	**675,127**	**745,597**
Support Equipment	**451,195**	**451,129**	**450,084**	**497,441**
TOTAL	**2,788,053**	**2,986,045**	**2,907,553**	**2,991,387**

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.

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INSTALLATION WORKSHEET
Robins Air Force Base, Georgia
(Supplemental Data)

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 15.1.

SOURCE: William B. Lyles/LBPL/468-2411, Joel Murphy/LFPL/468-4340, Harold Lowery/LFER/468-4669, Audley Swafford/LJPLE/468-7049, Joel Archer/LKSS/468-0811, Sylvia King/LNPD-2/468-1458, Billy D. Edwards/TICP/468-5930, Harold Scott/TICP/468-3035, Robert Colson/LYPRP/468-2958, Randy Lanier/FMIIC/468-5057, Al Waldrep/LKJ/468-6753.

METHOD: On 5 Oct 94, we received an unsigned/undated USAF/RT letter directing a breakout of manufacturing from the Other category (2.I). HQ AFMC/LG advised this was an official tasking. Mr. Lanier and Ms. Hall used the G029 CDY-CA-XYC report, 5/19/94, to identify the Manufacturing and Fabrication capacity (2.j). We developed a standard ratio by dividing the Manufacturing and Fabrication capacity number, 431,525 by the total Other capacity number, 756,150. This resulted in a 66% factor. This factor was applied in all cases where Other occurred in the Depot Maintenance Data Call. All remaining figures on the worksheets were unchanged.

CONCLUSION:

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COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
ACFT/AIRFRAME				
Transport	26,110	30,520	27,580	15,540
Light Combat	93,240	146,160	161,280	170,100
ACFT COMPONENTS				
Dynamic Components	116,598	127,147	119,940	117,761
Instruments	137,693	153,824	143,976	140,725
Avionics/Electronics	1,267,247	1,381,900	1,303,569	1,279,889
Manufacturing & Fabrication	* 12,656	* 13,314	* 17,158	* 16,060
Other	* 6,520	* 6,858	* 8,839	* 8,274
SOFTWARE				
Tactical	676,794	675,193	675,127	745,597
Support Equipment	451,195	451,129	450,084	497,441
TOTAL	2,788,053	2,986,045	2,907,553	2,991,387

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WR-ALC, Version 1.4, 10/6/94

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INSTALLATION WORKSHEET
Robins Air Force Base, Georgia

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 15.1.

SOURCE: William B. Lyles/LBPL/468-2411, Joel Murphy/LFPL/468-4340, Harold Lowery/LFER/468-4669, Audley Swafford/LJPLE/468-7049, Joel Archer/LKSS/468-0811, Sylvia King/LNPD-2/468-1458, Billy D. Edwards/TICP/468-5930, Harold Scott/TICP/468-3035, Robert Colson/LYPRP/468-2958, Randy Lanier/FMIIC/468-5057, Al Waldrep/LKJ/468-6753.

METHOD: All of the commodity groups were from 8.1. For light combat the workload numbers used were from LFPL. For aircraft structures, instruments, manufacturing and fabrication, and other, the workload numbers were provided by TICP (Mr Scott). All other workload data was obtained by the undersigned from 13.1.a.

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CONCLUSION:

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				
Dynamic Components C-130 Propellers	116,598	127,147	119,940	117,761
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 (Parachutes)	2,582	2,884	2,700	2,639
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

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WR-ALC, 15.1
Version 1.5

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

NO Change

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	178,190
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	1,381,906	1,303,569	1,279,889
Manufacturing & Fabrication	198,819	192,405	192,405	192,405
Other	119,188	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

2a deleted

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.

INSTALLATION WORKSHEET
Robins Air Force Base, Georgia

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 15.2.

SOURCE: Answers in questions 8.1 and 14.1.h and expertise of the undersigned.

METHOD: Determined which workloads in 14.1.h. were identified as peculiar/unique in 8.1. Extracted workload numbers for that peculiar/unique workload from 14.1.h. In this case, only the transport work identified below was appropriate.

CONCLUSION:

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

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Randall H. Lanier Date 10/12/94
Signature

RANDALL H. LANIER, GS-13, FMIIC, DSN468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Harold T. Crews Date 18 OCT 94
Signature
HAROLD T. CREWS, GS-12, HQ AFMC/LGPW, DSN-787-3588
Typed Name, Rank, Office Symbol, DSN Number

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Table 15.2: Non-Core Unique and/or Peculiar Workload

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COMMODITY GROUP	Workload (DLHs)			
	FY 1996	FY 1997	FY 1998	FY 1999
TOTAL	0	0	0	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

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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"

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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.

<u>Service/Function:</u> 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.

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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.

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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

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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.

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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

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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

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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.

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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 19.1: Annual Operating Costs

(3)

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	**320,933**	**294,383**	**324,850**	**331,507**
$ / DLH	**38.48**	**39.87**	**43.67**	**43.64**

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~~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

No change

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**

already in 1035, 29 Sep 94 [illegible]

Table 19.1b: Annual Operating Costs (DPSH)

EXPENSE	FY 1990	FY 1991	FY 1992	FY 1993
AOC ($ K)	**320,933**	**294,383**	**324,850**	**331,507**
$ / DLH (DPSH)	**44.36**	**43.51**	**47.85**	**47.66**

C65-1

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**

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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**

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INSTALLATION WORKSHEET
Robins Air Force Base, Georgia
(Supplemental Data)

PURPOSE: To document the answer to Data Call Supplement for Joint Cross Service Group - Depot Maintenance question number 12.1a.

SOURCE: AFMC Core Capability Assessment for WR, as provided by Mike Powers/AFMC-LGP/DSN787-3588. AFMC/LGP Ltr, 15 Apr 94, Depot Workload Identification Process to Retain Core Capabilities.

METHOD: On 5 Oct 94, we received an unsigned/undated USAF/RT letter directing a breakout of manufacturing from the Other category (2.I). HQ AFMC/LG advised this was an official tasking. Mr Mike Powers advised in a FAX, 10/10/94, that the manufacturing core capability had to equal the amount as computed by AFMC/LGP as reflected in AFMC core capability assessment for WR-ALC. The manufacturing number was 482,891. Mr Lanier and Ms Hall computed the Other by subtracting the 482,891 from the 580,889 originally reported as Other resulting in a new Other of 97,998. These new numbers are shown in the conclusion below. All remaining figures on the worksheet were unchanged.

CONCLUSION: See attached sheet.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Randall H. Lanier Date 10 Oct 94
RANDALL H. LANIER, GS-13, FMIIC, DSN468-5057

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Michael J. Powers Date 10 Oct 94
Signature
MICHAEL J. POWERS AFMC/LGPW 787-3588
Typed Name, Rank, Office Symbol, DSN Number

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WR-ALC
V 1.4
10 Oct 94

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11d - Sea Sys - ShipYd Spt (Commodity)

Naval Shipyard, Puget Sound (Depot)

III. Unique / Peculiar Core Workload Test Facilities (Maximum 15 points)

6.0 Tot Points III

a. U/P core workload test facilities related to this commodity? 1.0 points
[per Qs 6.1-6.3] Service scored 10 points maximum

Manually entered. (Zero if no Unique/Peculiar values in Table 15.1)

b. This testing done by another Service? 5.0 points
DAT scored 0 / 3 / 5 points

Manually entered. (Zero if no Uniq/Pec values in Table 15.1 or no test faciity!)

IV. Other Workloads (Maximum 30 points)

10.0 Tot Points IV

a. % last source of total above core workload 10.0 points
[last source (14.1d) / total above core workload (14.1h]
DAT scored 10 points maximum

82,564 / 82,564 = 100.0% Calculates to 10 points

b. % other w/in Service workloads of total above core 0.0 points
[w/in Service above core (14.1e) + oth workload above core (14.1f)+ all other workload above core (14.1g) / total Above core (14.1h)]
DAT scored 10 points maximum

(0 + 0 + 0) / 82,564 = 0.0% Calculates to 0 points

c. % other workloads from outside Service of total Above core 0.0 points
[FMS workload (14.1a) + interservice above core (14.1b) + other agency above core (14.1c)/ total abovecore (14.1h)]
DAT scored 10 points maximum

(0 + 0 + 0) / 82,564 = 0.0% Calculates to 0 points

V. Environmental Issues / Questions (Maximum 10 points)

10.0 Tot Points V

a. Do environment issues limit depot's ability to assume more work? 5.0 points
[Qs 2.1 (page 12) 3.1 - 3.2 (page 13)]
Service scored 0 / 2.5 / 5 points

Scored by depot location (All commodity groups for a depot receive same score)

b. Is depot currently environment compliant? [Q 2.1 (page 12)] 5.0 points
Service scored 0 / 2.5 / 5 points

Scored by depot location (All commodity groups for a depot receive same score)

6:41 28-Nov-94

11d - Sea Sys - ShipYd Spt (Commodity)

Naval Shipyard, Pearl Harbor (Depot)

III. Unique / Peculiar Core Workload Test Facilities (Maximum 15 points)

6.0 Tot Points III

a. U/P core workload test facilities related to this commodity? 1.0 points
[per Qs 6.1-6.3] Service scored 10 points maximum

Manually entered. (Zero if no Unique/Peculiar values in Table 15.1)

b. This testing done by another Service? 5.0 points
DAT scored 0 / 3 / 5 points

Manually entered. (Zero if no Uniq/Pec values in Table 15.1 or no test faciityl)

IV. Other Workloads (Maximum 30 points)

10.0 Tot Points IV

a. % last source of total above core workload 10.0 points
[last source (14.1d) / total above core workload (14.1h]
DAT scored 10 points maximum

15,132 / 15,132 = 100.0% Calculates to 10 points

b. % other w/in Service workloads of total above core 0.0 points
[w/in Service above core (14.1e) + oth workload above core (14.1f)+ all other workload above core (14.1g) / total Above core (14.1h)]
DAT scored 10 points maximum

(0 + 0 + 0) / 15,132 = 0.0% Calculates to 0 points

c. % other workloads from outside Service of total Above core 0.0 points
[FMS workload (14.1a) + interservice above core (14.1b) + other agency above core (14.1c)/ total abovecore (14.1h)]
DAT scored 10 points maximum

(0 + 0 + 0) / 15,132 = 0.0% Calculates to 0 points

V. Environmental Issues / Questions (Maximum 10 points)

10.0 Tot Points V

a. Do environment issues limit depot's ability to assume more work? 5.0 points
[Qs 2.1 (page 12) 3.1 - 3.2 (page 13)]
Service scored 0 / 2.5 / 5 points

Scored by depot location (All commodity groups for a depot receive same score)

b. Is depot currently environment compliant? [Q 2.1 (page 12)] 5.0 points
Service scored 0 / 2.5 / 5 points

Scored by depot location (All commodity groups for a depot receive same score)