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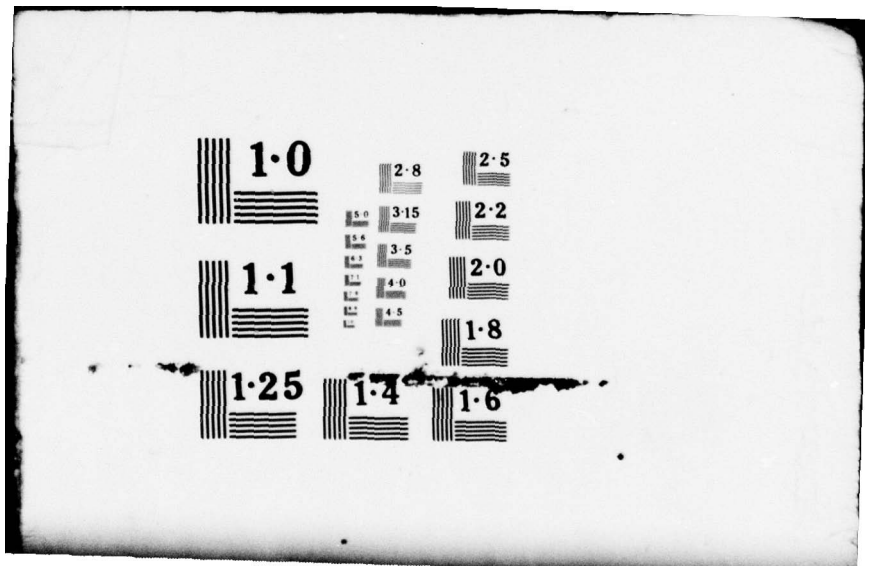
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IDA PAPER P-1334

GUIDELINES FOR THE DEVELOPMENT AND IMPLEMENTATION OF A LOGISTIC RESOURCE ANNEX TO THE FIVE YEAR DEFENSE PROGRAM

VOLUME III: A Logistic Resource Annex for the Air Force F&FP

John D. Morgan, *Project Leader*
Norman B. Davis
Aaron B. Fuller

October 1978

Prepared for

Office of the Assistant Secretary of Defense (MRA&L)

INSTITUTE FOR DEFENSE ANALYSES
COST ANALYSIS GROUP

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This study provides guidelines that could be used by each of the military Services in providing Logistic Resource annexes (LRA) to their Five Year Defense Programs (FYDP). The LRAs would be updated concurrent with each updating of the FYDPs and would show logistic resources by logistic function and, for some type of resources, by selected

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19. Control; Materiel.

20. weapon system. The paper provides comprehensive coverage of the Air Force, Navy and Marine Corps. Coverage is less comprehensive on the Army because of work on this topic by the General Research Corporation.

Volume I establishes the framework for the research. It includes considerable material relating to the characteristics of logistic data and thw ways in which financial manpower logistic data should be treated in the Service LRAs. This volume also contains the results of research on an LRA for the Army, and presents recommendations on an OSD-level LRA data system.

Volumes II, III, and IV cover the Navy, Air Force, and Marine Corps respectively. Each of these volumes discusses in depth the Service data systems that are applicable to the LRA and describes the Service LRA data base coverage. A data element reference guide is presented for each Service to show explicitly how the Service could support each line in the LRA and the relevant data systems. Each of the volumes contains an appendix in which there is extensive discussion of how the particular Service could treat each category of logistic resources in satisfying the LRA requirement.

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GUIDELINES FOR THE DEVELOPMENT AND IMPLEMENTATION OF A LOGISTIC RESOURCE ANNEX TO THE FIVE YEAR DEFENSE PROGRAM

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GLOSSARY

AF/AC	Air Force Comptroller
AF/ACB	Directorate of Budget
AF/ACBO	Operating Appropriations Division, Directorate of Budget
AF/ACMC	Cost Analysis Division, Directorate of Management Analysis
AFCOMS	Air Force Commissary Service
AF/DA	Directorate of Administration
AF/DP	Deputy Chief of Staff, Personnel (DCS/Pers)
AF/DPP	Directorate of Personnel Programs
AFEE	Air Force Element of Expense
AFIF	Air Force Industrial Fund
AFLC	Air Force Logistics Command
AF/LG	Deputy Chief of Staff, Systems and Logistics (DCS/S&L)
AF/LGXW	Aircraft/Missiles Programs Division, Directorate of Logistics Plans and Programs
AF/PR	Deputy Chief of Staff, Programs and Resources (DCS/P&R)
AF/PRM	Directorate of Manpower and Organization
AF/PRP	Directorate of Programs
AF/PRPL	Allocations Division, Directorate of Programs
AFR	Air Force Reserve
AF/RD	Deputy Chief of Staff, Research and Development (DCS/R&D)
AF/RDXI	Production Resources Division, Directorate of Planning, Programming and Analysis
AFSC	Air Force Systems Command
AGE	Aerospace Ground Equipment
AGMC	Aerospace Guidance and Metrology Center

ALC	Air Logistics Center
AMREP	Aircraft/Missile Maintenance Production Compression Report System (DO-39)
ANG	Air National Guard
APAF	Aircraft Procurement, Air Force
ASIF	Airlift Services Industrial Fund
AVGAS	Aviation Gas
AVPOL	Aviation Petroleum, Oil, and Lubricants
BAC	Budget Activity Code
BOS	Base Operations Support
BPC	Budget Project Code
CAS	Contract Administration Services
CCN	Change Control Number
CMC	Contract Management Center
CMDB	Command Manpower Data Base
CMDS	Command Manpower Data System
DLA	Defense Logistics Agency
DM	Description Master
DMIF	Depot Maintenance Industrial Fund
DNFYP	Department of Navy Five-Year Program
DPEM	Depot Purchased Equipment Maintenance
DPPC	Defense Planning and Programming Category
DPS	Decision Package Set
EEIC	Element of Expense/Investment Code
F&FP	Force and Financial Program
FYDP	Five Year Defense Program
GSM	General Support Materiel
ICP	Inventory Control Point
IF	Industrial Fund
LCMS	Logistics Capability Measurement System
LGTX	Plans and Program Division, Directorate of Transportation (DCS/S&L)
LGX	Directorate of Logistics Plans and Programs (DCS/S&L)

LGY	Directorate of Maintenance Engineering and Supply (DCS/S&L)
LMI	Logistics Management Institute
LRA	Logistic Resource Annex
MAJCOM	Major Command
MASDC	Military Aircraft Storage and Disposition Center
MAC	Military Airlift Command
MDS	Mission, Design, and Series
MPAF	Missiles Procurement, Air Force
MSC	Military Sealift Command
MTMC	Military Traffic Management Command
NON-IF	Non-Industrial Fund
MILPERS	Military Personnel
NGPERSAF	National Guard Personnel--Air Force
OA	Obligational Authority
OASD/MRA&L	Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics
OASD/PA&E	Office of the Assistant Secretary of Defense for Program Analysis and Evaluation
OBMR	Operating Budget and Management Reporting System
OBRC	Operating Budget Review Committee
O&M	Operations and Maintenance
O&MAF	Operations and Maintenance, Air Force
O&MAFR	Operations and Maintenance, Air Force Reserve
O&MANG	Operations and Maintenance, Air National Guard
OMEI	Other Major Equipment Item
OOB	Operations Operating Budget
OPAF	Other Procurement, Air Force
OSD	Office of the Secretary of Defense
PBD	Program Budget Decision
PCD	Program Change Decision
PCR	Program Change Request
PDM	Program Decision Memorandum
PE	Program Element

PMEL	Precision Measuring Equipment Laboratory
POL	Petroleum, Oil, Lubricants
POM	Program Objective Memorandum
PPBS	Planning, Programming, and Budgeting System
PRAM	Productivity, Reliability, Availability, and Maintainability Program Office
RDX	Directorate of Planning, Programming, and Analysis (DCS/R&D)
RDT&E	Research, Development, Test, and Evaluation
RESPERSAF	Reserve Personnel--Air Force
RIC	Resource Identification Code
RPMA	Real Property Maintenance Activities
RPIE	Real Property Installed Equipment
ROBIN	Air Force Budget Fund Control System
SABLE	Systematic Approach to Better Long-Range Estimates
SAMTEC	Space and Missile Technical Evaluation Center
SDT	Second Destination Transportation
SECDEF	Secretary of Defense
SSM	System Support Materiel
TCTO	Time Compliance Technical Order
TOA	Total Obligational Authority
TRAP	Tanks, Racks, Adapters, and Pylons
UE	Unit Equipment
WMP	War Mobilization Plan
WPC	Work Performance Category
WRM	War Reserve Material
ZBB	Zero-Based Budgeting

SUMMARY

In this volume we present our analysis of how the Air Force could produce the data elements required for a Logistic Resource Annex (LRA) to the DoD Five Year Defense Program (FYDP). This LRA includes all logistic resources financed by Air Force appropriations, for both the active and reserve forces.

A. THE LOGISTIC RESOURCE ANNEX STRUCTURE

The LRA structure developed by OASD/MRA&L is suitable for use in categorizing Air Force logistic resources. Minor changes are recommended in some sections of the structure, including those that cover modification and conversion hardware and alteration materiel procurement, transportation, logistic support equipment, and facilities construction.

Exhibit 1, page 3 shows the recommended LRA structure which incorporates changes proposed as a result of research on all of the Services. Existing Air Force data management systems, if revised as recommended, can provide the required LRA information using existing Air Force data sources.

B. THE AIR FORCE PLANNING, PROGRAMMING, AND BUDGETING SYSTEM

The Air Force Planning, Programming, and Budgeting System (PPBS) is utilized on a centralized basis when needed to conduct studies, make decisions, and prepare program and budget documents. However, Air Force information systems regularly produce comprehensive field data that are used to establish the data bases from which PPBS data are derived.

The formal Air Force PPBS procedures and time schedules are essentially identical to those in the other Services. The major differences are a result primarily of institutional variations among the Services. The variant Air Force procedures can be adjusted readily to enable an LRA to be produced with each regular updating of the FYDP.

C. AIR FORCE PPBS DATA MANAGEMENT SYSTEMS

The Force and Financial Program (F&FP) data system is the primary data management system used by the Air Force to support the PPBS. The F&FP data base is the official source of information used to update the DoD FYDP; it also includes a large amount of detailed information not required by OSD for the three updates. The Air Force counterpart of the OSD-produced FYDP is generally referred to as the Air Force Force and Financial Program--a product of the F&FP data base. The F&FP data system (formally entitled the Air Force Budget/Program Control System) contains several subsystems that permit it to perform a variety of functions in planning and programming Air Force resources. One of these, the factor file subsystem, contains various cost factors, phasing factors, and proportions used in F&FP cost models.

The effects of changes resulting from decisions made at any time during the PPBS process can be reflected quickly in the F&FP. Such changes are often in the form of program changes, rather than actions directly concerning resource levels, but the F&FP data system can translate such program changes into effects on resource requirements.

The F&FP is supported by many resource monitors throughout the Air Staff. Most of the inputs to the system are provided manually rather than through interaction with other automated data systems. The F&FP already contains many of the required LRA data elements, and it is feasible to change the various

data support systems so that all of the required LRA information can be incorporated into the F&FP data base.

D. AIR FORCE ELEMENTS OF EXPENSE

Air Force Elements of Expense (AFEEs) are internal Air Force accounting and budgeting categories that are utilized for detailed programming of O&M and Military Personnel appropriation dollars in the F&FP data base. For O&M dollars, the AFEEs provide functional line items that in some cases are equivalent to functional lines in the LRA structure. For military personnel dollars the AFEEs are not functionally oriented, so they are not currently equivalent to the LRA categories.

The coding system used with the F&FP permits AFEEs to be related to program elements. If more of the existing AFEEs were used and new AFEEs created to display functional details currently submerged in broad AFEEs, the F&FP data base could be made to produce the information needed to satisfy the LRA requirements for operating resource data. However, developing the basic information to be placed in the F&FP data base through use of the AFEEs will require some new distribution of costs by resource monitors and, in some cases, prorations based on analyst judgment or statistical methods.

E. MANPOWER

In the Air Force the Director of Manpower and Organization is responsible for determining the military and civilian end-strength data to be included in the F&FP data base and displayed in the FYDP.[1] Current DoD FYDP update procedures require manpower data only at the PE level; to show manpower data according to LRA functional categories will require an increase in the

[1]Unless otherwise indicated all references in this paper to military manpower assume that data will be shown separately for officers and enlisted personnel.

quantity of data that must be developed and processed by the Air Force for each FYDP update.

The allocation of Air Force manpower authorizations to the field is managed by the use of the Command Manpower Data System (CMDS). One of the capabilities of the CMDS is to display all Air Force military and civilian manpower by functional category. Even though the CMDS functional categories differ somewhat from the LRA categories, it should be possible to make existing Air Force functional groupings congruent with the LRA categories. Thus, the manpower data could be processed into the F&FP data base and used to produce an LRA with each FYDP update.

Civilian manpower cost data are computed in a civilian pay cost model in the F&FP system. For military personnel, the costs are prepared as required by the Directorate of Personnel Programs in the office of the Deputy Chief of Staff, Personnel. Ratios derived from the CMDS or cost factors can be used to allocate civilian and military manpower costs to LRA categories.

F. PROCUREMENT

Logistic support resources that are provided by the Congress through the Air Force procurement appropriations are to be included in the LRA. Because a high degree of central management is exercised over these procurement appropriations, considerable data are available in the various offices of the Air Staff on these resources.

Most of the data required to support the LRA are regularly published in the FYDP Procurement Annex, so those data can be displayed directly in the necessary LRA categories. New requirements imposed by the LRA involve distribution of some spares and repair parts by materiel category and by weapon system. We recommend that these requirements be satisfied by proration of resources using analytic judgment and statistical methods.

To fulfill some of the LRA procurement requirements, it will be necessary for the Air Force to enter into the F&FP data base information that currently is produced manually to be used for budget backup or retained in resource monitors' records for management of their resource areas. Some of these data relate to modification programs and identify not only procurement resources, but also resources used for the installation of specific equipment procured for modification programs.

G. THE DATA ELEMENT REFERENCE GUIDE

The data element reference guide (Table 4, pages 47ff) identifies the location of data, reporting channels, and methods of calculation or estimation for each logistic function and subfunction in the LRA. By using this guide the reader can quickly determine the major requirements for the Air Force to produce data by logistic function and selected weapon system.

There are basically three methods to be used in obtaining data--one for procurement resources, one for central- and field-managed operating resources, and one for construction and housing resources. These methods are summarized below. The procurement resource method relies heavily on the extensive data in the Procurement Annex and in the files and management materials of the various resource sponsors. The central- and field-managed operating resource method stresses the usefulness of the AFEE coding structure and the detailed programming and management data maintained by resource sponsors. Finally, the construction and housing data are readily available in the Air Force FYDP data bases.

Appendix A contains a detailed narrative analysis of how the Air Force can provide the necessary logistic resource data for all sections of the LRA, not only by logistic function and materiel category, but also by selected weapon system. The data element reference guide is a summary display of these narrative analyses. Appendix B shows the current summary level Air Force Elements of Expense.

SUMMARY OF BASIC METHODS OF OBTAINING AIR FORCE LRA DATA

Procurement Resource Data

To obtain these data:

-- Use Procurement Annex information with greater detail from Air Staff offices--available in budget backup and program management displays.

-- Allocate categories of resources by budget activities and, in some cases, subactivities to materiel categories and weapon systems.

Central- and Field-Managed Operating Resource Data

To obtain these data:

-- Use some data directly available by FYDP Program Element.

-- Use budget forms for some data elements and for allocation factors.

-- Acquire through Air Staff analyses.

-- Use existing Air Force Element of Expense structure with creation of new AFEEs as required.

Construction and Housing

To obtain these data:

-- Use F&FP data system.

Chapter I

INTRODUCTION

In this volume we present the results of our research on the means by which the Air Force can produce a Logistic Resource Annex. In Volume I we discussed the research objectives of the study as a whole and established a framework for our research on all of the Services. It is therefore recommended that the reader review Volume I.

In this volume we first present some material that relates specifically to an LRA for the Air Force. Chapter II discusses the Air Force Planning, Programming, and Budgeting System (PPBS), and describes the data systems that could be used to support the Air Force LRA. The chapter includes a rather extensive treatment of the Air Force Force and Financial Program (F&FP) because we recommend that the F&FP be the basic system used to produce LRA information.

Chapter III describes the coverage required of the Air Force LRA data base and contains our data element reference guide, which summarizes the data systems or methods for estimating data required by the LRA.[1] In Appendix A we treat more extensively the various sections of the LRA so the analyst can understand more completely the data elements and related information systems. Appendix B contains the current Air Force Elements of Expense.

---

[1]Data systems and methods refer to formal mechanized, perhaps computerized, data reporting systems like the operating expense budgeting and accounting system; formal computerized data management systems, like the Air Force Budget/Program Control System, which accepts data from reporting systems; and nonmechanized staff analyses conducted by resource monitors and managers.

OASD/MRA&L provided us with a proposed LRA structure for use in this study; therefore, most of the research done in this portion of the study was devoted to an examination of those Air Force data systems that might be used to support that structure. If these systems were found to be insufficient, we have proposed methods by which to provide the required data elements by modifying or expanding existing systems, or by allocating data using judgment or statistical methods, where required. We basically assumed that the LRA data requirements should be fulfilled to the maximum extent possible by using existing sources of data. We have explicitly avoided methods that would require the Air Force to develop new data sources, because our research convinces us that existing sources are sufficient to support the LRA.

Our task order requested that we validate the proposed OSD LRA structure, and we have suggested relatively small changes in some areas of that structure. Exhibit 1 shows the structure with our proposed changes incorporated; we have concluded, on the basis of our research, that it provides a valid framework within which the totals of Air Force logistic dollars and manpower in the FYDP can be displayed, by logistic function and by selected weapon systems. The reasons for the recommended changes are given in Appendix A, which contains detailed discussions of each of the functional categories shown in the structure.

Throughout this paper references will be made to materiel categories shown in the LRA structure, primarily in section IA. For the purposes of this study materiel categories are aircraft, ships, missiles, combat vehicles, weapons and ordnance, electronics and telecommunications equipment, and other equipment.[1]

---

[1]See Paragraph D1 and Enclosure 2 of DoDI 4151.15, *Depot Maintenance Programming Policies*, November 22, 1976; and Paragraph 3.5 of MIL-STD-881, *Military Standard, Work Breakdown Structures for Defense Materiel Items*, November 1, 1968.

Exhibit 1.

I. LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS

A. MAINTENANCE, MODIFICATION AND TECHNICAL SUPPORT OF EQUIPMENT

1. Depot-Level Maintenance and Modification/Alteration Installation
   - a. Aircraft
     - (1) Airframe Reworks
     - (2) Engine Overhaul
     - (3) Component Repair
     - (4) Modification Installation
     - (5) Other Maintenance and Support
   - b. Ships
     - (1) Scheduled Overhaul
     - (2) Other Overhaul and Repair (RA/TA)
     - (3) Shipboard Equipment/Component Repair
     - (4) Alterations Installation (FMP)
     - (5) Conversions Installation
     - (6) Other Maintenance and Support
   - c. Missiles
     - (1) Equipment Overhaul and Repair
     - (2) Component Repair
     - (3) Modification Installation
     - (4) Other Maintenance and Support
   - d. Combat Vehicles
     - (1) Equipment Overhaul and Repair
     - (2) Component Repair
     - (3) Modification Installation
     - (4) Other Maintenance and Support
   - e. Weapons and Ordnance
   - f. Electronics and Telecommunications Equipment
   - g. Other Equipment
2. Manpower in Air Force Organic Depot Maintenance Activities
   - a. Directorate of Maintenance, Oklahoma City ALC
   - b. Directorate of Maintenance, Ogden ALC
   - c. Directorate of Maintenance, San Antonio ALC
   - d. Directorate of Maintenance, Sacramento ALC
   - e. Directorate of Maintenance, Warner Robbins ALC
   - f. Guidance Center, G&MC, Newark AFS
   - g. Precision Measuring Equipment Laboratory, Guidance and Metrology Center, Newark AFS
   - h. Combat Logistics Squadrons
   - i. Other Activities
3. Sustaining Engineering and Technical Support
   - a. Aircraft
   - b. Ships
   - c. Missiles
   - d. Combat Vehicles
   - e. Weapons and Ordnance
   - f. Electronic and Telecommunications Equipment
   - g. Other Equipment

I. LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS, Cont.

4. Intermediate-Level Maintenance
   - a. Aircraft
   - b. Ships
   - c. Missiles
   - d. Combat Vehicles
   - e. Weapons and Ordnance
   - f. Electronic and Telecommunications Equipment
   - g. Other Equipment
5. Organizational/Unit-Level Maintenance
   - a. Aircraft
   - b. Ships
   - c. Missiles
   - d. Combat Vehicles
   - e. Weapons and Ordnance
   - f. Electronic and Telecommunications Equipment
   - g. Other Equipment
6. Initial Spares and Repair Parts (Procurement)
   - a. Aircraft
   - b. Ships and Shipboard Equipment
   - c. Missiles
   - d. Combat Vehicles
   - e. Weapons and Ordnance
   - f. Electronic and Telecommunications Equipment
   - g. Other Equipment
7. Replenishment Spares and Repair Parts (Procurement)
   - a. Aircraft
   - b. Ships and Shipboard Equipment
   - c. Missiles
   - d. Combat Vehicles
   - e. Weapons and Ordnance
   - f. Electronic and Telecommunications Equipment
   - g. Other Equipment
8. Modification/Conversion Hardware and Alteration Materiel (Procurement)[a]
   - a. Aircraft
     - (1) Conversion in Lieu of Procurement (CILOP)
       - (a) Service Life Extension (SLEP)
       - (b) Other (CILOP)
     - (2) Operational/Military Capability Improvements
     - (3) Safety
     - (4) Reliability and Maintainability
     - (5) Other
   - b. Ships
     - (1) Conversions (SCN-funded)
       - (a) Service Life Extension
       - (b) Other
     - (2) Alterations
       - (a) Operational/Military Capability Improvements
       - (b) Safety
       - (c) Reliability and Maintainability

I. LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS, Cont.

   - c. Missiles
     - (1) Operational/Military Capability Improvements
     - (2) Safety
     - (3) Reliability and Maintainability
     - (4) Other
   - d. Combat Vehicles
   - e. Weapons and Ordnance
   - f. Electronics and Telecommunications
   - g. Other Equipment

B. SUPPLY SYSTEM OPERATIONS

1. Depot-Level Storage and Distribution Activities
2. Central Inventory Management Activities
3. Procurement Operations and Contract Administration Services
   - a. Central Procurement Operations
   - b. Central Contract Administration
   - c. Other Procurement Operations (Non-BOS)
4. Supply Operations
   - a. Intermediate Level
   - b. Organizational Level

C. TRANSPORTATION

1. Second Destination Transportation
   - a. Transportation
     - (1) MAC
     - (2) MSC
     - (3) Other
   - b. Terminal Services
2. Airlift Operations (MAC)
3. Sealift Operations (MSC)
4. Traffic Management and Terminals (MTMC)
5. Transportation Services
   - a. Intermediate Level
   - b. Organizational Level

D. LOGISTIC SUPPORT OF FORCE OPERATIONS AND TRAINING

1. Fuel
   - a. Aircraft
   - b. Ships
   - c. Vehicles
   - d. Other
2. Personnel Support Materiel
   - a. Subsistence
   - b. Clothing and Medical Supplies
3. Other Consumable Supplies and Materials
4. Munitions: Peacetime Operations and Training (Procurement)
   - a. Ammunition
   - b. Tactical Missiles
   - c. ASW and Other Munitions

II. LOGISTIC SUP… SUSTAINABIL…

A. WAR RESERVE …

1. Munitions (
   - a. Ammun…
     - (1) …
     - (2) …
     - (3) …
   - b. Tactic…
     - (1) …
     - (2) …
     - (3) …
     - (4) …
   - c. Other …
     - (1) …
     - (2) …
     - (3) …
2. Aviation W…
3. Spares and …
4. Stock Fund…
   - a. Repair …
   - b. Clothi…
   - c. Other …

B. INDUSTRIAL P…

1. Ammunition…
2. Other Indu…
3. Manufactur…
4. Industrial …
   - a. Layaw…
   - b. Layaw…
   - c. Industr…
   - d. IPE M…
   - e. Manufa…

III. LOGISTICS M…

A. LOGISTICS M…

B. LOGISTIC SUP…

1. Aircraft L…
2. Ship Logis…
3. Missiles L…
4. Combat V…
5. Weapons …
6. Electronic…
7. Civil Engi…
8. Maintenan…
9. Supply Su…
10. Logistic A…
11. Productivi…

C. OTHER CENT…

1. Property …
2. Inactive …
3. Other Lo…

[a]Non-add entries will be provided for all programs to show installation costs separately.

Exhibit 1. LOGISTIC RESOURCE ANNEX: OSD FUNCTIONAL CATEGORY STRUCTURE

I. LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS, Cont.

- c. Missiles
  - (1) Operational/Military Capability Improvements
  - (2) Safety
  - (3) Reliability and Maintainability
  - (4) Other
- d. Combat Vehicles
- e. Weapons and Ordnance
- f. Electronics and Telecommunications
- g. Other Equipment

B. SUPPLY SYSTEM OPERATIONS

1. Depot-Level Storage and Distribution Activities
2. Central Inventory Management Activities
3. Procurement Operations and Contract Administration Services
   - a. Central Procurement Operations
   - b. Central Contract Administration
   - c. Other Procurement Operations (Non-BOS)
4. Supply Operations
   - a. Intermediate Level
   - b. Organizational Level

C. TRANSPORTATION

1. Second Destination Transportation
   - a. Transportation
     - (1) MAC
     - (2) MSC
     - (3) Other
   - b. Terminal Services
2. Airlift Operations (MAC)
3. Sealift Operations (MSC)
4. Traffic Management and Terminals (MTMC)
5. Transportation Services
   - a. Intermediate Level
   - b. Organizational Level

D. LOGISTIC SUPPORT OF FORCE OPERATIONS AND TRAINING

1. Fuel
   - a. Aircraft
   - b. Ships
   - c. Vehicles
   - d. Other
2. Personnel Support Materiel
   - a. Subsistence
   - b. Clothing and Medical Supplies
3. Other Consumable Supplies and Materials
4. Munitions: Peacetime Operations and Training (Procurement)
   - a. Ammunition
   - b. Tactical Missiles
   - c. ASW and Other Munitions

II. LOGISTIC SUPPORT OF POST-D-DAY COMBAT SUSTAINABILITY

A. WAR RESERVE STOCKAGE

1. Munitions (Procurement)
   - a. Ammunition
     - (1) Ground
     - (2) Air
     - (3) Ship Gun
   - b. Tactical Missiles
     - (1) Surface-Surface
     - (2) Surface-Air
     - (3) Air-Air
     - (4) Air-Surface
   - c. Other Munitions
     - (1) Sonobouys
     - (2) Torpedoes and Mines
     - (3) All Other Munitions
2. Aviation War Consumables (Procurement)
3. Spares and Repair Parts (Procurement)
4. Stock Fund Materiel
   - a. Repair Parts
   - b. Clothing
   - c. Other Supplies

B. INDUSTRIAL PREPAREDNESS

1. Ammunition Production Base Investment (Procurement)
2. Other Industrial Facilities Investment (Procurement)
3. Manufacturing Technology (Procurement)
4. Industrial Preparedness Operations
   - a. Layaway/Maintenance of Reserve Plants
   - b. Layaway/Maintenance of Reserve IPE
   - c. Industrial Preparedness Planning
   - d. IPE Management and Control
   - e. Manufacturing Technology (O&M-funded)

III. LOGISTICS MANAGEMENT AND SUPPORT ACTIVITIES

A. LOGISTICS MANAGEMENT HEADQUARTERS

B. LOGISTIC SUPPORT EQUIPMENT (Procurement)

1. Aircraft Logistic Support
2. Ship Logistic Support
3. Missiles Logistic Support
4. Combat Vehicles Logistic Support
5. Weapons and Ordnance Logistic Support
6. Electronics and Telecommunications Logistic Support
7. Civil Engineering Logistic Support
8. Maintenance Support Equipment
9. Supply Support Equipment
10. Logistic ADP
11. Productivity Enhancement Investment

C. OTHER CENTRAL LOGISTIC SUPPORT

1. Property Disposal
2. Inactive Equipment Storage and Maintenance
3. Other Logistics Activities

IV. INSTALLATIONS AND FACILITIES SUPPORT

A. FACILITIES CONSTRUCTION (LESS HOUSING)

1. Logistic Facilities Construction
   - a. Supply and Storage Facilities
     - (1) Ammunition
     - (2) POL
     - (3) POMCUS
     - (4) Other
   - b. Maintenance Facilities
2. Other Facilities Construction
   - a. Administrative Facilities
   - b. Community Facilities
   - c. Medical Facilities
   - d. R&D Facilities
   - e. Operations and Training Facilities
   - f. Telecommunications Facilities
   - g. NATO Infrastructure
   - h. Guard and Reserve Facilities
   - i. Utilities and Real Estate Acquisition
   - j. Air Pollution Control
   - k. Water Pollution Control
   - l. Nuclear Security
   - m. Energy Conservation Investment
   - n. Minor Construction
   - o. Planning and Design
   - p. Contingency
3. Personal Property Collateral Equipment
   - a. Logistics Facilities Equipment
   - b. Other Facilities Equipment

B. HOUSING

1. Family Housing
   - a. New Construction
   - b. Improvements
   - c. Leasing
   - d. Operation
   - e. Maintenance
   - f. Debt Payment
2. Troop Housing Construction

C. REAL PROPERTY MAINTENANCE ACTIVITIES

1. Maintenance and Repair
2. Minor Construction
3. Utilities Operation
4. Other Engineering Support

D. BASE OPERATIONS: OTHER SERVICES AND SUPPORT

1. Administrative Services
2. Installation Level Supply Services
3. Installation Level Maintenance Services
4. Installation Level Transportation Services
5. Installation Level Procurement Services
6. All Other Base Services

References to operating- or investment-appropriation-financed resources (dollars and manpower) will cover the corresponding relevant appropriated resources for active and reserve forces. Since the LRA requires display of resources by appropriation, the Air Force will be required to show those resources financed by reserve appropriations separately throughout the LRA.

Chapter II

AIR FORCE SUPPORT OF THE LRA

The LRA will be produced as a regular element of the Air Force PPBS, the system that produces the F&FP. In this chapter we present a brief overview of the Air Force PPBS and discuss those elements of the system that are of greatest relevance to producing an LRA.[1]

A. THE AIR FORCE PPBS AND THE F&FP

1. Overview

The Air Force calls its portion of the DoD FYDP the Force and Financial Program (F&FP).[2] Because the DoD FYDP is updated and printed in hard copy three times a year (in January, May, and October), and because a computer processable tape is provided by the Air Force with each of these updates, it is necessary to distinguish between that portion of the F&FP used for officially updating the FYDP and the entire F&FP data base. The data base contains a larger amount of data and more detailed information than is required by OSD for the three updates. Throughout this discussion of the Air Force PPBS, the tri-annual hard copy and tape FYDP updates will be referred to as the F&FP, while the Air Force data management system that produces the

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[1]Logistics Management Institute Report 75-12, *Development of the Structure for an Improved Logistics Resource Data Base for the FYDP* (May 1977) defines a logistic resource information element structure and data sources for the Air Force. This report provided us with useful information on sources of logistic information in the Air Force and the characteristics of the Air Force F&FP and the Accounting System for Operations.

[2]The printed F&FP is called the Blue Book. It is made up of a summary volume and separate volumes for each major FYDP program.

hard copy and tape updates will be referred to as the F&FP data system. In addition to the FYDP updates, the F&FP data system also produces a Procurement Annex, an RDT&E Annex, and a series of six major command program-guidance documents called the P-series documents.[1]

Many of the line item data in the F&FP data system are not included in the printed F&FP and FYDP hard copy or in the computer processable tape. To illustrate, in Exhibit 2 we show those appropriation data elements that appear in the printed F&FP for a single FYDP program element, 72207, and compare them to the detailed appropriation data elements that are identifiable to the same PE in the F&FP data system. As can be seen, while only 5 summary data elements appear in the FYDP, 1 for each of 5 appropriations, a total of 111 detailed data elements are identifiable to the 5 appropriations in the F&FP data system. As this example illustrates, extensive detailed data are contained in the F&FP data system that are not printed in the DoD FYDP. The existence of these detailed appropriation data, combined with the existence of the detailed functional manpower information contained in the Command Manpower Data Base (CMDB) discussed below, provide the basis for our conclusion that most of the required LRA information elements can be provided by using existing Air Force data sources.

The line item data entered into the F&FP data system are the result of a cumulative process that involves several Air Staff offices and other Air Force agencies. This process is shown in Exhibit 3. As shown, the Air Staff offices monitor and institute programming changes to the line item data in the F&FP system. Line item data for the operating appropriations

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[1]The P-series documents provide the major commands with displays of programmed resources such as bases, aircraft, missiles, munitions, and personnel, which are derived from the programs contained in the F&FP. These programmed resource displays are utilized by the commands in developing their financial operating programs and budget submissions.

Exhibit 2. COMPARISON OF APPROPRIATION SUMMARY DATA ELEMENTS SHOWN IN THE PRINTED F&FP WITH APPROPRIATION DATA ELEMENTS CONTAINED IN THE F&FP DATA SYSTEM FOR PE 72207, DEPOT MAINTENANCE (NON-IF)

Data Category	Printed F&FP (FYDP) Data Elements	F&FP Data System Detailed Data Elements
Aircraft Procurement Appropriation	Dollar total by fiscal year	16 line items adding to the printed F&FP dollar total for each fiscal year
Other Procurement Appropriation	Dollar total by fiscal year	1 line item equivalent to the printed F&FP dollar total for each fiscal year
Military Construction Appropriation	Dollar total by fiscal year	4 line items adding to the printed F&FP dollar total for each fiscal year
Operations and Maintenance Appropriation	Dollar total by fiscal year	88 line items adding to the printed F&FP dollar total for each fiscal year
Military Personnel Appropriation	Dollar total by fiscal year	2 line items adding to the printed F&FP dollar total for each fiscal year
Total	5 dollar-totals by fiscal year	111 data elements adding to the 5 printed F&FP dollar totals

Sources: DoD FYDP, January 13, 1978 update, and a data output resulting from an inquiry into the F&FP data system for PE 72207, March 1978.

Exhibit 3. HIGHLIGHTS OF THE AIR STAFF ROLE IN PROGRAMMING LINE ITEM DATA IN THE F&FP DATA SYSTEM

1. *Air Staff offices review, coordinate, and adjust line item data in the F&FP data base:*

   - Operating line item data by AFEE.
   - Procurement line item data by appropriation budget activity and subactivity.

2. *Air Staff produces POM base in line item detail for use in POM and budget exercises, based on:*

   - Approved January F&FP data.
   - Major command POMs, which:
     -- Are submitted to Air Staff prior to spring POM exercise.
     -- Provide line item data for budget and outyears.
   - Program adjustments known prior to exercises.

3. *Marginal changes to line items during exercises made by:*

   - Factors based on operating experience accounting data.
     -- Applied to incremental changes in flying hours, forces, manpower.
     -- Coordinated through Air Force Comptroller.
   - Direct line item adjustments made for fact-of-life changes.
   - Direct line item adjustments made for Program Decision Memoranda and Decision Package Sets.

are presented and programmed by the Air Staff offices as Air Force Elements of Expense (discussed below); data for the procurement appropriations are programmed as appropriation budget activity and subactivity line items.

The critical temporal milestones for the PPBS process are the January Presidential budget FYDP update, the May POM FYDP update, and the October Air Force budget FYDP update. In between these official FYDP updates, the Air Staff offices engage in POM and budget exercises, which adjust the last approved set of line item data. The line item data entered into the F&FP system during the exercises preceding the May POM FYDP update are derived from three major sources: the line item data that are consistent with the approved January FYDP; the detailed line item POMs submitted to the Air Staff by each major command (with most resources represented by the AFLC and AFSC POMs); and those program adjustments that are made prior to the commencement of the exercises.

Once produced, the May POM is part of the base for the Air Staff exercises leading to the October Air Force budget and FYDP update, along with information exchanged between major commands and the Air Staff, and the latest program adjustments. The final FYDP update is produced in January, consistent with the Presidential budget and based on the October FYDP update, continued internal Air Staff interaction among offices, and external Air Staff interaction with commands (although less than takes place during the POM and Air Force budget exercises).

2. Air Staff Offices and Relationships in the F&FP System

The Deputy Chief of Staff for Programs and Resources (AF/PR) coordinates the Air Force resource planning and programming system. His office interacts with the OSD staff, primarily OASD/PA&E, and with the Air Force offices that are involved in the more detailed planning and programming of Air Force resources.

Since the DoD PPBS is an integrated system that includes budgeting as well as planning and programming, AF/PR also works closely with the Air Force Comptroller (AF/AC).

The AF/PR Director of Programs (AF/PRP) issues guidance and exercises primary staff direction over all USAF program documentation, including the POM, Program Change Requests (PCRs), Program Decison Memoranda (PDM), Program Change Decisions (PCDs), and other OSD and USAF initiated program adjustments. In order to fulfill these responsibilities, AF/PRP issues program exercise guidance to be used in developing the POM and the annual budget submission, and also issues program guidance for PCRs. In this respect, AF/PRP is the Air Force counterpart to OASD/PA&E. Figure 1 shows the milestones in the PPBS process and includes those exercises referred to as POM exercises A-1 and A-2 and budget exercises for the Air Force budget (exercise B-1) and for the Presidential budget. These exercises are the extensive Air Staff modeling and data analyses that lead to the three FYDP updates. These data analyses comprise iterations and adjustments of force, manpower, and cost data to illustrate the effects of alternative force structures. Through these exercises, the Air Force arrives at a balanced program congruent with OSD fiscal and program guidance. The data base used is the F&FP data base. AF/PRP verifies and coordinates those program change data entered into the F&FP data base, from which the POM is produced.

The preparation and submission of the October Air Force budget and the Air Force portion of the January Presidential budget is the responsibility of the AF/AC. In order to fulfill these responsibilities, the Directorate of Budget (AF/ACB) administers the budget exercises that occur following the May POM and the October FYDP update and that lead to the publication of the October and January FYDP updates. These budget exercises are similar to the POM exercises administered by AF/PRP; the

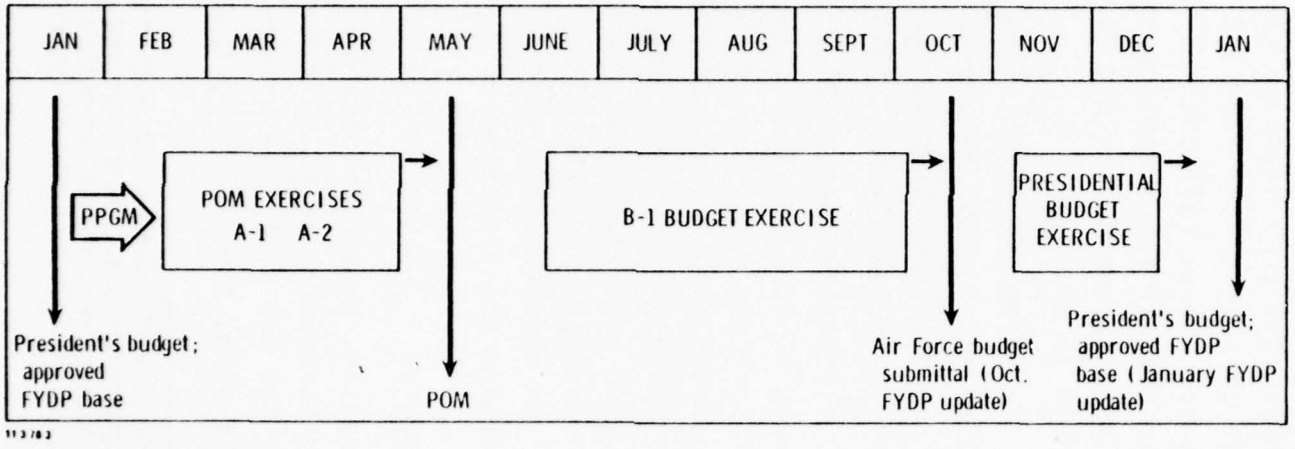

Figure 1. MILESTONES IN THE AIR FORCE PPBS PROCESS

PCRs, PDM, and PCDs of the earlier exercises are replaced by Decision Package Sets (DPSs) issued by the Secretary of Defense and overseen by AF/ACB. The DPSs indicate the changes to be made to the Air Force portion of the FYDP and are incorporated into the F&FP data base. These F&FP changes must be made regardless of whether the Air Force will reclama the DPSs. (In fact, OSD makes the DPS changes to its Air Force FYDP tape before sending the DPSs to AF/AC.)

Although it is the AF/PR who administers the POM exercises and records the results in the F&FP data base, it is the AF/AC, through AF/ACB, who monitors and controls the update of the F&FP data base and provides all official data to OSD.

Other Air Staff offices besides AF/PR and AF/AC are responsible for changes to the F&FP data bases. Exhibit 4 lists these major staff offices and their data responsibilities. These are the offices that are involved in the various program and budget exercises administered by PRP and ACB and that develop program and cost element data to register changes to the F&FP data bases resulting from PDM, PCDs, DPSs, and other actions that affect the approved FYDP program. The responsibilities of these offices are discussed in detail in Appendix A.

3. The F&FP Data System

The F&FP data system, which contains the official Air Force PPBS data bases,[1] is the source of all Air Force data submitted to OSD for producing the DoD FYDP, the Procurement Annex, and the RDT&E Annex.[2] As such, the F&FP data system contains program

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[1]A data system is a collection of programs and subsystems sufficient to accomplish specific output functions. Data bases and data files associated with a data system are collections of data accessible to the internal computer routines required to process the logic of the programs and subsystems in the system.

[2]The Telecommunications Annex and the Military Construction Annex are FYDP documents produced outside the automatic computer routines of the F&FP system.

Exhibit 4. F&FP DATA BASE ITEMS AND RESPONSIBLE AIR STAFF OFFICES

Item	Responsible Office	Office Code
Cost and Funding data	Directorate of Budget	ACB
Force structure and guidance	Directorate of Programs	PRP
Aircraft and missiles procurement requirements	Directorate of Programs	PRP
Aircraft, missile, and other procurement costs	Directorate of Logistic Plans and Programs	LGX
Production schedule data	Directorate of Logistic Plans and Programs	LGX
R&D programs data and costs	Directorate of Development and Acquisition	RDP
Bases and units data	Bases and Units Division	PRPO
Aircraft inventory and flying hour	Allocations Division	PRPL
Manpower authorizations	Directorate of Manpower and Organization	PRM
Manyear factors for all military personnel costing, training load requirements, and military personnel impact (including cost) statements	Directorate of Personnel Programs	DPP
Aerospace ground equipment and spares and repair parts	Directorate of Logistic Plans and Programs	LGX
Modifications	Directorate of Logistic Plans and Programs	LGX
Class V MOD proposals and for defining new weapon systems	Directorate of Operational Requirements	RDQ
MILCON, family housing, RPMA	Directorate of Engineering and Services	PRE
Command, control, and communications	Directorate of Programs	PRP
Aircraft required, student loads, and graduates of combat crew training	Directorate of Operations and Readiness	XOO
Material programming	Directorate of Logistic Plans and Programs	LGX
Munitions programming	Directorate of Logistic Plans and Programs	LGX

data on forces, flying hours, operating aircraft, and manpower end-strengths and contains the costs associated with them. Most data are entered into the F&FP data system manually, as opposed to being automatically extracted or updated from other computerized data bases. Some of these data come from the detailed POMs submitted by the various Air Force commands as adjusted by the responsible Air Staff offices to reflect fact-of-life changes and program decisions.[1] For example, AFLC submits its Depot Purchased Equipment Maintenance program POM to cover the budget year plus the upcoming POM 5-year period. These data are then used by LGX to develop the base for the next POM exercises. Cost factors based on accounting experience data assist the Air Staff in costing changes in the operating aircraft inventory and the flying-hour program.

The F&FP data system is formally called the Budget/Program Control (BPC) system. The data are organized into five separate data files, each of which can be drawn upon as required to produce the DoD FYDP, the Procurement Annex, and the RDT&E Annex. The five data files are the factor file, the civilian manpower file, the F&FP data base file, the net change file, and the description master file.

The factor file contains various cost factors, phasing factors, and proportions used in the F&FP cost models. Most of the factors in the file are updated manually, although the civilian pay factors can be derived from computerized data covering actual accounting experience, and the POL factors can be derived from computerized base consumption rates. Flying-hour operating aircraft factors for depot maintenance, system

[1]The Major Command POMs are submitted to the Air Staff in order to provide line item programming and budgeting details. Based on these POMs, the Air Staff offices are able to pursue specific areas of priority and interest with the commands. The bulk of the resources are accounted for by the AFLC and AFSC POMs, which are formal documents. Other commands provide less formal data to the Air Staff.

support, general support, replenishment spares, and common AGE spares are usually updated manually prior to the POM exercises. For logistics resources, the most important use of manual factor inputs in the F&FP data system is the procedure involved in costing the "flying hour bridge tape." This procedure assigns costs to the flying hour program developed by AF/PRPL, resulting in depot maintenance, AVPOL, replenishment spares, and common AGE spares costs per flying hour.[1]

The civilian manpower file contains only civilian manyear data derived from the civilian pay cost model in the F&FP system. Unlike most other data files in the system, this file is updated in its entirety, not on a net change or incremental basis.

The F&FP base file is also called the FYDP base file, and it contains unit of equipment data, buy and delivery data, flying hours, aircraft inventories, manpower end-strength data, and cost data.

The net change file records all changes to the base file that result from PPBS decisions.

The description master (DM) is a set of data tables that permits cross-references and translations between related data elements. These capabilities reduce the need for redundant input coding. The data code tables include nine-digit cost element codes, six-digit PE codes, two-digit appropriation codes, five-digit AFEE and DoD elements of expense codes, and the Resource Identification Codes (RIC) and weapon system codes that are prescribed by OSD for FYDP inputs.

These five BPC data files support several data routines or subsystems that make up the F&FP data system. These subsystems

[1]This procedure is typified by the replenishment spares factor, which is provided to AF/ACB by AF/LGXW for input into the F&FP system factor file; the factor is developed by LGXW and AFLC using historical experience data and expected program data.

include costing models for flying hours, procurement, other military support, and military and civilian pay; output routines for the OSD FYDP tape, the Procurement Annex, and the RDT&E Annex; and data manipulations for the flying-hour bridge conversions, POL factor derivation, military and civilian manpower actual strengths, manpower authorizations, and overseas manpower.

In addition to the basic F&FP data system, several other Air Staff data systems are related to the PPBS including ROBIN, OBMR, SABLE, and the PBD status report tracking system. ROBIN tracks obligations for funds and actual expenditures during budget execution, prepares funding documents, maintains ledger entries, and summarizes fund control activities for ACB. The OBMR (Operating Budget and Management Reporting) system tracks the O&M dollars spent from the current budget. These data are provided by the Air Force Accounting and Finance Center, which receives expenditure data from Major Commands. The manpower funds actually spent are entered into the F&FP system during the budget estimate cycle.[1]

SABLE (Systematic Approach to Better Long-Range Estimates) provides ACB with reports on the "typical" cost of specified forces by producing a list of the costs associated with operating a typical squadron of each Air Force weapon system. SABLE utilizes the F&FP data base and factor files as part of its basic data. The PBD (Program Budget Decision) report records the current status of OSD PBDs that alter the F&FP, tracking reclamas and decisions through to their final resolution. These data systems are not interactive; that is, they are not capable of entering each other's data files or of automatically requesting and receiving routines.

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[1]Unless otherwise indicated, references to military manpower assume that cost and strength data for officer and enlisted personnel will be shown separately.

4. The F&FP System for Support of the LRA

Our research to determine the capability of the Air Force to provide the required LRA data elements stressed the importance of the F&FP system. The Air Force's ability to support the LRA would clearly be improved if the required data elements were already included, or could be included, in the computerized data files that support the F&FP subsystems discussed above. In Chapter III we present an Air Force data element reference guide that identifies those LRA functional line items that can be supported by the current F&FP data files, those that can be supported by extending the F&FP files, and those that cannot be supported by the F&FP system and for which new procedures will therefore be required. A comprehensive examination of the data element coverage of the F&FP system is presented here as background to these detailed LRA line item assessments.

As shown in Exhibit 5, there are two basic categories of data in the F&FP system: program data and cost data. There are 7 types of program data and 20 types of cost data. All cost data and the force and manpower program data are reported to OSD.

Each of the 27 data types listed in Exhibit 5 is coded in the F&FP data files using some combination of 25 different sets of codes. Four of these sets are applicable to all the data types in the F&FP system and identify all data elements according to Program Element (PE), Air Force Command (e.g., AFLC, Pacific Air Forces, AF Academy), Defense Planning and Programming Category (DPPC), and a Change Control Number (CCN) that specifies the change authority for data elements entered into the F&FP net change file.

There is a 48-character limit to the total number of code digits that can be attached to a single data element, but all 27 data types currently carry unused character spaces that would permit application of additional codes if desired.

Exhibit 5. CATEGORIES AND TYPES OF DATA IN THE F&FP SYSTEM

Data Type	Reported to OSD in FYDP Tape
Program Data	
Forces	Yes
Buys and deliveries	No
Flying hours	No
Aircraft inventories	No
Manpower, active	Yes
Manpower, ANG	Yes
Manpower, AFR	Yes
Cost Data	
Aircraft procurement (3010)[a]	Yes
Missile procurement (3020)	Yes
Other procurement (3080)	Yes
Military Construction (3300)	Yes
RDT&E (3600)	Yes
O&M, active (3400)	Yes
Military personnel (3500)	Yes
Reserve personnel (3700)	Yes
Military construction, AFR (3730)	Yes
O&M, AFR (3740)	Yes
Military construction, ANG (3830)	Yes
O&M, ANG (3840)	Yes
ANG personnel (3850)	Yes
Stock fund, AF (4921)	Yes
Stock fund, DLA (4921)	Yes
AFIF (FA 4922)[b]	Yes
Retirement pay	Yes
Family housing defense (FA 0030)	Yes
Homeowners association fund (FA 4090)	Yes
Special foreign currency (FA 0800)	Yes

[a]Most of the cost data types are identical to specific appropriations received by the Air Force and shown in parentheses; e.g., the Aircraft Procurement Appropriation is coded 3010.

[b]Although not monies appropriated to the Air Force, these are special Fund Accounts (FA) transferred to the Air Force.

In addition to the 4 basic code identifiers mentioned above, each of the 20 types of cost data has its data elements coded to identify both the applicable appropriation and 1 of the 3 OSD cost categories (investment, operating, and research and development). In addition, the O&M and Military Personnel costs for both active and reserve forces are coded according to AFEE and DoD element of expense. The more than 100 AFEEs are detailed subcategories of the 18 DoD elements identified in DoDI 7220.20 *(Expense Data Reporting)*, and they provide the Air Force with an internal functional management language for programming, budgeting, and accounting for operating resources. Many of the AFEEs can be equated with LRA functional categories, and the Air Force could use the data elements thus coded into the F&FP system to provide many of the functional operating data elements for the LRA.

The cost types shown in Exhibit 5 (other than O&M, MILPERS, and O&M Reserve) are not identified by AFEE. Instead, they carry weapon system, procurement annex line item, and OSD resource identification codes, as applicable. The procurement costs (aircraft, missiles, other) are also coded to identify the budget activity and subactivity.

Expanded use of the various codes currently utilized in the F&FP system should permit the Air Force to produce most of the data elements required for the LRA. Table 1 summarizes the existing data code sets used for cost and program data elements in the F&FP data files.

An example of the data codes identifying a single operating appropriation data element is provided in Exhibit 6. The appropriation is coded in the first 2 digits of the 48-digit coding field, the AFEE in the next 5 digits, and so on. A specific example is given in Exhibit 7, which shows a civilian personnel overtime pay increase for personnel in PE 72207. Exhibit 8 shows the categories in the procurement coding field, and

Table 1. DATA CODES FOR COST AND PROGRAM DATA ELEMENTS IN THE F&FP FILES

Data Type \ Data Code Set	Appropriation or Fund	Program Element	DPPC	Command	Change Control Number	Air Force Expense Element	OSD Expense Element	DoD Cost Category (DCC)	Budget Activity, Subactivity	Type of Force (UE A/C, UE MSL, etc.)	Resource Identification Code (RIC)	Country	Type of Financial Transaction	Manpower Cost Code (General, wage bd., Mil; Direct or Indirect)	System MGMT Code (Weapon System)	Buy Identifier	Delivery Year	Fly Identifier	Mission Category	Manpower Identifier (Officer, Airman, etc.)	Region (Part of Geographic U.S.)	Cost or Program Data Type (OSD P1D)	Air Force PE	Object Class
Forces		X	X	X	X					X	X	X										X		
Manpower		X	X	X	X							X		X						X	X	X	X	X
Manpower--guard		X	X	X	X							X		X						X	X	X	X	X
Manpower--reserve		X	X	X	X							X		X						X	X	X	X	X
Buy and delivery		X	X	X	X										X	X	X	X	X			X		
Flying hours		X	X	X	X										X	X	X	X	X			X		
Aircraft inventory		X	X	X	X										X			X	X			X		
Aircraft procurement	X	X	X	X	X			X	X													X		
Missile procurement	X	X	X	X	X			X	X													X		
Other procurement	X	X	X	X	X			X	X													X		
Military construction	X	X	X	X	X			X														X		
RDT&E	X	X	X	X	X			X														X		
O&M	X	X	X	X	X	X	X	X					X									X		X
Military personnel	X	X	X	X	X	X	X	X					X									X		X
Reserve personnel	X	X	X	X	X	X		X														X		
Military construction--reserve	X	X	X	X	X			X														X		
O&M reserve	X	X	X	X	X	X	X	X					X									X		X
Military construction--guard	X	X	X	X	X			X														X		
O&M guard	X	X	X	X	X	X		X														X		
Guard personnel	X	X	X	X	X			X														X		
Stock fund--AE	X	X	X	X	X			X														X		
Stock fund--DSA	X	X	X	X	X			X														X		
AFIF	X	X	X	X	X			X														X		
Retirment pay	X	X	X	X	X			X														X		
Family housing defense	X	X	X	X	X			X														X		
Homeowners assistance fund	X	X	X	X	X			X														X		
Special foreign currency	X	X	X	X	X			X														X		

Exhibit 6. OPERATING APPROPRIATIONS LINE ITEM DETAIL IN THE F&FP DATA FILES

Digits	Code
1-2	Appropriation
3-7	Air Force Element of Expense
8	Base or Escalation Identifier
9	OSD Cost Category (Investment, Operating, R&D)
10-15	Program Element
16-21	Unused
22-24	Command, Operating Agency
25-26	DoD Element of Expense
27-30	Unused
31-34	DPPC
35-40	Unused
41-48	Change Control Number

Exhibit 7. OPERATING DATA ELEMENT CODING EXAMPLE

Digits	Code	
1-2	30	(Operations and Maintenance Appropriation)
3-7	39200	Civilian Personnel Overtime (AFEE)
8	0	Base Cost (Not Escalation)
9	5	Operating (OSD Cost Category)
10-15	72207F	Depot Maintenance NON-IF (PE)
16-21	000000	Unused
22-24	630	AFLC (Command)
25-26	01	Civilian Personnel (DoD EE)
27-30	0000	Unused
31-34	ESJO	Central Logistics Maintenance, Operations (DPPC)
35-40	000000	Unused
41-48	12C1VP14	New Pay Increase, Wage Board (CCN)

Exhibit 9 shows a specific coding example--A-10 initial spares in PE 26131.

By utilizing these coding capabilities, it is possible to extract data from the F&FP data base in great detail. For example, an inquiry made to the F&FP data base file for line item detail for PE 72207 would yield the following data. The relevant appropriations by fiscal year from 1977 to 1984 would be listed, as follows: Missile Procurement (3020); Aircraft Procurement (3010); Other Procurement (3080); Military Construction (3300); Operations and Maintenance (3400); and Military Personnel (3500). As shown in Exhibits 10 and 11 cost element line items of detail would be provided for each appropriation, with a "base" and an "escalation" entry for each item for each fiscal year (as applicable). The operating cost elements identify AFEEs, and the procurement cost elements identify procurement annex budget activity/subactivity cost lines.

5. *Air Force Elements of Expense*

AFEEs are Air Force accounting and budgeting categories that are utilized for detailed programming of O&M and Military Personnel appropriation dollars for both active and reserve forces in the F&FP data base. When used for O&M dollars, the AFEEs provide functional line items that in some cases equate with functional lines in the LRA structure. When used for Military Personnel dollars, the AFEEs are not functionally oriented, but provide military personnel assignment details (i.e., Air Force, other military departments, DoD agencies) and distinguish between officer and enlisted expenses.

Each AFEE is identified by a five-digit numeric code called an Element of Expense/Investment Code (EEIC).[1] The

[1]AFEEs and EEICs are defined in Air Force Manual 300-4, Volume X, March 1976. In addition to their use in the F&FP data base, AFEEs are used in budget preparation, operating budget and financial (continued on page 28)

Exhibit 8. PROCUREMENT APPROPRIATIONS LINE ITEM DETAIL IN THE F&FP DATA FILES

Digits	Code
1-2	Appropriation
3-7	Budget Activity/Subactivity Cost
8	Base or Escalation Identifier
9	OSD Cost Category (Investment, Operating, R&D)
10-15	Program Element
16-21	Procurement Annex Weapon System or Equipment Line Item
22-23	Command
24-25	Budget Activity
26-27	Budget Subactivity
28-30	Unused
31-34	DPPC
35-40	Unused
41-48	Change Control Number

Exhibit 9. PROCUREMENT DATA ELEMENT CODING EXAMPLE

Digits	Code	Title
1-2	10	Aircraft Procurement (Appropriation)
3-7	16100	Weapon System Initial Spares (BA/BSA Cost)
8	0	Base Cost (Not Escalation)
9	4	Investment (OSD Cost Category)
10-15	26131F	A-10 Squadrons (PE)
16-21	A01000	A-10 Aircraft (Weapon System)
22-23	06	Tactical Air Command (Command)
24-25	01	Combat Aircraft (Procurement Annex BA)
26-27	03	Tactical Forces (Procurement Annex BSA)
28-30	000	Unused
31-34	BB00	Tactical Air Forces (DPPC)
35-40	000000	Unused
41-48	B416R000	Spares Adjustment (CCN)

Exhibit 10. SAMPLE AIRCRAFT PROCUREMENT DETAIL

Cost Element	Title	FY 78[a]	FY 79[a]
101200004	Common AGE (Base)	$ 134	$ 171
101200014	Common AGE (Escalation)	0	16
101300004	Component Improvement (Base)	13,356	9,990
101300014	Component Improvement (Escalation)	0	958
101500004	Replenishment Spares (Base)	560	560
101500014	Replenishment Spares (Escalation)	0	53
101630004	Common AGE Spares (Base)	7	6
101630014	Common AGE Spares (Escalation)	0	1
101200304	Common AGE, Depot Modernization (Base)	13,304	13,605
101200314	Common AGE, Depot Modernization (Escalation)	0	1,293

[a]TOA in thousands of dollars.

Exhibit 11. SAMPLE O&M DETAIL

Cost Element	Title	FY 78[a]	FY 79[a]
303900005	Civilian Reimbursements	$ -5,896	$ -2,680
303920005	Other Civilian Personnel Costs	121,818	14,714
304090005	TDY Per Diem	60	95
305410005	Aircraft Maintenance DMIF	0	2,438
305411005	Airframe Overhauls 1 (Contract)	68,077	65,217
305411105	Airframe Overhauls 2 (Organic)	140,671	148,587
305412005	Aircraft Mods 1 (Contract)	35,409	70,449
305412105	Aircraft Mods 2 (Organic)	62,539	68,845
305420005	Missile Maintenance--DMIF	0	0
305423005	Missile Maintenance--Major Equipment 1 (Contract)	7,463	7,279
305423105	Missile Maintenance--Major Equipment 2 (Organic)	3,794	8,876
305424005	Missile Maintenance--Mods	3,093	3,424

[a]TOA in thousands of dollars.

first three digits of the code describe the basic AFEE, and the last two digits can be used to establish detailed subcategories of expenses that provide additional details. Exhibit 12 shows two basic AFEEs--54100, "Aircraft Depot Maintenance" and 54300, "Engine Depot Maintenance"--and the detailed EEICs and expense subcategories associated with them.

Exhibit 12. AIRCRAFT AND ENGINE DEPOT MAINTENANCE AFEES

54100	Aircraft Depot Maintenance
54110	Airframe Overhauls--Organic AF
54111	Airframe Overhauls--Commercial Contract
54120	Aircraft Modifications--Organic AF
54121	Aircraft Modifications--Commercial Contract
54300	Engine Depot Maintenance
54310	Aircraft Engine Maintenance--Organic AF
54320	Aircraft Engine Maintenance--Commercial Contract
54330	Other Engine Maintenance--Organic AF
54331	Other Engine Maintenance--Commercial Contract

These five-digit EEICs are part of the nine-digit O&MAF and MILPERS cost elements used in the coding structure of the F&FP data base. Each of these cost elements is also identified with a PE code, so that every operating cost element in the F&FP data base can be identified according to PE. Since each nine-digit operating cost element includes a five-digit EEIC as digits 3 through 7, it is possible to retrieve from the F&FP data base specific EEICs and the PEs by which each EEIC identifies O&MAF or MILPERS data, or, alternatively, specific PEs and the EEICs that contribute to the total O&MAF and MILPERS

(cont'd) plans, appropriation obligation and reimbursement accounting, operating budget accounting, and international balance of payments accounting.

appropriations lines in each PE. For example the Aircraft Depot Maintenance Expense element (541) identifies O&MAF expenses in 1 PE, 72207 (Depot Maintenance Non-IF), while the Fuels for Utilities expense element (600) identifies O&MAF dollars in 14 PEs, including all 8 of the Air Force Real Property Maintenance Activity PEs.[1] PE 72207, Depot Maintenance Non-IF, contains 88 AFEEs in its O&MAF appropriation total, and 2 AFEEs (1 for Air Force officer expenses and 1 for airmen expenses) in its MILPERS appropriation total.

AFEEs can be used to report data according to LRA logistic functions by accomplishing the following. First, retain existing AFEEs that equate with LRA functions. Second, create new AFEEs to display the functional details currently submerged in broad AFEEs that contain dollars in more than one functional category. The AFEE structure will then provide a logical, comprehensive means of reporting operating dollars from the F&FP data base in the categories required for the LRA.

B. MANPOWER DATA REQUIRED TO SUPPORT THE LRA

The LRA requires that all Air Force manpower (active and reserve forces) programmed to provide logistic support be identified by function. Manpower levels are to be expressed in terms of authorized end-strengths and related dollars (TOA) by appropriation, consistent with the DoD FYDP. Current DoD FYDP update procedures require manpower data only at the PE level, but identification of manpower resources according to logistic function for the LRA will generally require information below the PE level. Therefore, the implementation of the LRA will require an increase in the quantity of data that must be developed and processed by the Air Force for each FYDP update.

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[1]The 14 PEs are 11894, 12894, 27428, 27430, 27594, 28011, 31027, 33126, 35110, 41894, 72894, 78094, 85794, and 87794.

As the following list shows, LRA data on authorized manpower end-strengths are required at the function or major subfunction level. The LRA also requires separate identification of military and civilian manpower assigned to IF and non-IF activities. Manpower end-strengths need not be identified according to weapon system in the LRA; however, manpower costs included in the total cost of the "Maintenance, Modification and Technical Support of Equipment" functional category will be so identified.

LRA FUNCTIONAL CATEGORIES FOR WHICH MANPOWER END-STRENGTHS ARE REQUIRED

Manpower in Organic Depot Maintenance Facilities[1]
Sustaining Engineering and Technical Support[1,2]
Intermediate-Level Maintenance[1]
Organization/Unit-Level Maintenance[1]
Depot-Level Storage and Distribution Activities
Central Inventory Management Activities
Central Procurement Operations
Central Contract Administration
Field Procurement Operations
Supply Operations - Intermediate Level
Supply Operations - Organizational Level
Transportation Services - Intermediate Level
Transportation Services - Organizational Level
Industrial Preparedness Operations
Logistics Management Headquarters
Property Disposal
Inactive Equipment Storage and Maintenance
Other Logistics Activities (As Required)
Real Property Maintenance Activities
Base Operations - Other Services and Support

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[1]For these categories, end-strengths will be identified according to materiel category (i.e., aircraft, missiles, weapons and ordnance, electronics and communications equipment, and other equipment).

[2]Depot- and intermediate-level data will be separately identified.

1. Current Procedures for Manpower Programming

The basic building blocks for manpower programming in the F&FP are military and civilian authorized end-strengths by PE. The Directorate of Manpower and Organization, DCS Plans and Programs (AF/PRM), is responsible for determining programmed civilian and military manpower end-strengths. These are the basic manpower data entered into the Air Force F&FP system.

The Directorate of Personnel Programs, DCS Personnel (AF/DPP), uses various data, including historical costs and costing algorithms, to derive the total MILPERS funds needed to support the military manpower levels. In the F&FP model these funds are allocated to the PEs to which military manpower are assigned on the basis of the percentage of total manpower in each PE. Civilian manpower costs are computed for all PEs to which civilian end-strengths are assigned utilizing cost factors in the F&FP model. Separate factors derived from historical data on average civilian salaries for each PE are used to compute a civilian personnel element of expense for each PE.[1] Although this element of expense is identifiable within Air Force F&FP backup data, in the data provided to OSD it is combined with other expenses in the same appropriation.

As the Air Force F&FP data base currently includes total civilian and military end-strengths by PE, and since funds to finance military personnel are identifiable at the PE level, these costs are currently available in the F&FP data base. In addition, since funds to finance civilian manpower are identified within each PE as a separate element of expense, these costs are also currently available. However, current F&FP programming systems will provide the data elements in the detail required to support the LRA only to the extent to which an entire PE is equivalent to an LRA functional category.

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[1]The Air Force Accounting and Finance Center provides a detailed account of actual costs for civilian personnel by PE within MAJCOM annually.

2. The Command Manpower Data System

Even though it is not currently being used to determine programmed manpower requirements, the Air Force has a computerized manpower data system that is being used to allocate approved manpower authorizations to the major commands and, ultimately, to the field. This is the Command Manpower Data System (CMDS) supported by the Command Manpower Data Base (CMDB). In this system individual manpower end-strength authorizations are identified according to over a dozen categories including PE, organization, Air Force Specialty Code, and function. The functional categories, prescribed in detail in AFM 300-4, are used to identify historical and F&FP-projected manpower authorizations in terms of duties actually performed, rather than by job title (e.g., a clerk in a maintenance unit is coded in the same series as a mechanic).

Exhibit 13 shows some of the codes and functional categories used in the CMDS. Even though the CMDS functional categories are somewhat different than the LRA categories, it should be possible either to reconcile the differences or modify the existing Air Force functional groupings to make them congruent with the LRA categories. The end-strength data lag the F&FP data somewhat, due to the time it takes for programmed manpower levels to be approved and allocated to the major commands; however, this lag should not be a major problem because the end-strength differences are generally rather small and can easily be reconciled. Thus, the CMDS provides a feasible means by which the Air Force can develop the data required to support the LRA.

3. Air Force Support of the LRA

In order to use the CMDB to support the Air Force LRA, the following steps must be taken. First, map the existing CMDB structure and, if required, establish new codes so that each

Exhibit 13. SOME FUNCTIONAL CATEGORIES IN THE AIR FORCE CMDB[a]

CMDB Code	Functional Category
2200	Organizational Maintenance
2300	Field Maintenance
2400	Avionics Maintenance
2500	Munitions Maintenance
2700	Depot Maintenance
4010	Unit Level Supply
4100	Chief of Supply
4200	Transportation

[a]AFM 300-4 lists over 1,500 codes used by the Air Force to identify approved authorizations by function performed. The codes listed here include several of primary interest to the LRA.

applicable Air Force manpower authorization is associated with a single LRA category. When this is accomplished, the CMDB can be used to produce data about Air Force civilian and military authorized end-strengths by LRA function either at the total Air Force level or by program element.

Second, determine costs for the desired end-strengths, either by using ratios of individual LRA categories to total PE military and civilian costs as contained in the F&FP data base, or by computing costs for the logistic categories using average pay rates.

Third, identify separately the industrial-fund and nonindustrial-fund financed manpower. This identification generally can be accomplished by using PE titles.[1]

[1]If desired, codes for identifying costs on this basis could be incorporated into the CMDB.

Fourth, identify end-strengths and costs according to materiel category supported; this can generally be done based on PE or organization (see footnote 1, above). Allocation of end-strengths on the basis either of historical workload or programmed manpower projections may be required for PEs and organizations supporting more than one materiel category.

Fifth, identify manpower costs according to selected weapon systems using PEs or organization title, or by prorating costs on the basis of historical workload or projected manpower requirements.

When these steps have been completed, all of the manpower data elements required to support the LRA will be available. The Air Force then must decide if these data should be incorporated into the F&FP data base, which would necessitate the development of additional input codes, or if the manpower information required to support the LRA should be prepared directly from a CMDB run of authorized end-strengths by logistic function.

C. PROCUREMENT

The LRA will display data on five types of logistic support equipment provided to the Air Force through procurement appropriations:

- Initial and replenishment spares and repair parts
- Modification hardware and support equipment
- Munitions and war consumables
- Industrial preparedness procurement
- Logistic support equipment.

The process of planning, programming, and budgeting of procurement resources is highly centralized in the Services. Since many of the items financed by the procurement appropriations are very expensive, Service headquarters and the OSD

require that procurement appropriations program dollars be highly visible. Consequently the Procurement Annex is published with each updating of the FYDP to provide recurring up-to-date displays, by line item, of data on equipment purchased through the procurement appropriations.

Since procurement line item information is already available in the Air Force F&FP data base, the major problem in producing the procurement data for the LRA is to associate the line items with the proper LRA category and identify them according to weapon system supported for the Maintenance, Modification and Technical Support of Equipment function. In some cases, established budget activity codes (BAC) permit easy identification of these line items. For example, BAC APAF-06, in the aircraft procurement appropriation, covers aircraft initial and replenishment spares and repair parts; this entire BAC can be allocated to the aircraft materiel category. Some initial spares are shown by weapon system in BACs APAF-01, 02, 03, and 04, enabling identification of the logistic support hardware in these BACs according to the proper selected weapon system.[1]

The major difficulty encountered in providing procurement data for the LRA will be in allocating replenishment spares and repair parts data to the weapon system supported. Currently the DoD PPBS does not require that replenishment spares data be shown by individual weapon system. Furthermore, the Services are reluctant to program these resources by weapon system, since future demand and failure rates, which affect replenishment spares requirements, are very uncertain. Not surprisingly, the Services wish to be very flexible in managing replenishment spares resources. Nevetheless, the Air Force does have the capability to identify these spares according to weapon system,

[1]Initial spares for modifications and common AGE spares are shown in aggregated categories.

as is evidenced by the backup data prepared to support the FY 79 budget submission. Also, these spares are distributed to weapon and support system PEs in the F&FP data base.

Another problem lies in defining and identifying what is logistic support equipment. Much of this equipment is purchased along with the weapon system, and it may be necessary to separate items procured as part of the weapon system acquisition process from replacement items, since the LRA will exclude all procurement costs associated with program acquisition except for the costs of initial spares. Other equipment, such as computers, may have several functions and cannot be identified exclusively as logistic support equipment.

We recommend the following approach to the problem of identifying procurement line items according to materiel categories and weapon systems. Those items that are clearly relatable to given materiel categories or weapon systems should be so identified. In some cases entire BACs can be identified as belonging to specific materiel categories and weapon systems. Items programmed in other BACs may have to be examined individually to determine how they should be shown. Those items that have general application cannot be categorized according to BAC or procurement line item data. These cases will have to be handled by using analytic judgment or statistical methods to assign them to an LRA category. Although it is generally possible to identify most resources according to materiel category, it may not be possible to associate them in a meaningful way with weapon systems supported. No attempt should be made to distribute these resources according to weapon system; they should be retained in an "Other Equipment" grouping.

Procurement appropriation items purchased for Logistic Support of Post D-Day Combat Sustainability are also very visible. Air Force program monitors should have no difficulty in providing information on these items, despite the fact that

current F&FP update procedures do not require the level of detail required for the LRA.

D. WEAPON SYSTEM DATA

In addition to identifying those resources (dollars and manpower) programmed to support the Maintenance, Modification and Technical Support of Equipment functional category according to materiel category,[1] the Air Force LRA requires that some of the dollar resources (not manpower) be further identified according to weapon system by type and model (e.g., F-4, F-15). OSD will provide a list of the specific weapon systems with which resources are to be identified.

In most cases, the information needed to show these resources by weapon system is currently available, although in some cases allocation by use of statistical methods will be required. Details of how the Air Force could provide the required data elements are given in Appendix A. The following LRA functional categories are affected by this requirement:

- Depot Maintenance and Modification Installation
- Sustaining Engineering and Technical Support
- Intermediate-Level Maintenance
- Organizational-Level Maintenance
- Initial Spares and Repair Parts (Procurement)
- Replenishment Spares and Repair Parts (Procurement)
- Modification Hardware (Procurement).

E. SUMMARY

The Air Force PPBS contains well-defined procedures for regularly examining force structure alternatives, logistic and manpower support requirements, and funds required to support

[1]The manpower data in category IA2 (see Exhibit 1) will be identified by facility only.

approved programs. The system is used to program and budget forces and resources over an extended time period. This enables the resource estimator and programmer to determine resource requirements incrementally at the intervals dictated by the necessity to produce the POM, budget submittals, and Presidential budget determinations. Even though zero-based budget methods are employed, there is always an approved baseline against which new resource requirements can be measured.

The LRA will be a regular product of the Air Force PPBS. The requirement to produce the LRA will necessitate very little change in basic Air Force PPBS procedures. Generally, two Air Force actions will be required. First, some logistic resource information is currently included in the F&FP or budget backup materials at a lower level of detail than required for updating the FYDP; these data can be assigned to LRA materiel categories and weapon systems. In some instances it may be necessary to use judgment or statistical methods to develop these data for all years. Second, some additional AFEE and CMDB codes must be established so that operating resources can be grouped into LRA categories. The relevant data can then be placed in the F&FP data base and used to produce an LRA with each updating of the FYDP.

The greatest effect of the LRA requirements on the Air Force PPBS will be that additional data on logistic operations will have to be obtained at a lower level of detail than is currently required. However, the basic data systems necessary to develop this information and process it regularly into an LRA already exist within the Air Force. The relevant resource monitors (see Exhibit 4) should be able to obtain suitable data on a routine basis after the LRA procedures become established.

Chapter III

LRA DATA BASE COVERAGE AND REFERENCE GUIDE

In Chapters I and II we presented the proposed Air Force LRA structure and discussed those features of the Air Force financial and manpower data systems that can be used to provide the data needed to support this structure. At this point it is appropriate to identify the kinds of resource information that should be included in the LRA data base. Such an information base will enable the development of numerous displays consistent with the basic LRA structure, including display of all financial and manpower resources for all LRA functional categories and specified weapon systems. This resource information will be identified specifically in the data element reference guide provided at the end of this chapter.

A. THE DATA BASE TO SUPPORT THE LRA

Tables 2 and 3 identify those data elements required for the LRA data base by logistic function and subfunction as shown in Exhibit 1.[1] The data base required to support the LRA may be thought of as a multidimensional matrix in which each dimension is one type of information that must be provided for each data input. The cells of the matrix represent data elements that describe the resources programmed by the Air Force for logistic support. All data on programmed dollar resources are identified by DoD appropriation and fiscal year. These dollars are Air Force resources that are programmed either to purchase

[1]The four major logistic categories in Exhibit 1 have been divided into two tables merely for convenience. Table 2 covers only section I of Exhibit 1; all other sections are shown in Table 3.

services from commercial, interservice, or industrial-fund activities (i.e., customer dollars), or to provide services directly. All data on programmed manpower levels are projected authorized end-strengths by fiscal year as reflected in the DoD FYDP.

In addition to these general requirements, particular functional categories may require individual data coverage. For example, special coverage is required for AFIF activities. The dollars shown in the depot maintenance materiel categories (aircraft, missiles) in the LRA structure are customer funds used to purchase services from AFIF activities. The AFIF billing rates that are charged against these customer funds do not include the cost of military personnel and major investment items for AFIF facilities, so these costs are shown in appropriate categories elsewhere in the LRA. The costs for military personnel assigned to AFIF activities are shown in the "Manpower in Air Force Organic Depot Level Maintenance Activities" category, and the investment costs are shown in the applicable equipment procurement or facilities construction category.

The data base required to support the Air Force LRA will increase the volume of data that must be prepared by the Air Force to support each FYDP update. As discussed in Chapter II, we found that most of the data required to support the LRA are already available within the Air Force. Some work will be necessary to formulate these data for entry into the LRA data base and in many cases allocation procedures will be required to develop individual data elements. Revised input procedures and discipline will also be required if the F&FP data base is to be the primary data management system used to generate the LRA. The F&FP data base appears to be capable of supporting the LRA without major modification to its basic structure, concept, input data fields, or input coding formats. However, the Air Force must implement expanded and mandatory use of

Table 2. OVERVIEW OF
LOGISTIC SU
READINESS

Logistic Function[a]	Air Force Funds Identified Separately by						
	Appropriations	Type of Activity Projected to Perform Work				Cost to Selected Weapon System Supported[b]	Mi
		AF IF	AF Non-IF	Commercial	Inter-Service		
MAINTENANCE, MODIFICATION AND TECHNICAL SUPPORT OF EQUIPMENT[d]							
Depot-Level Maintenance and Modification/Alteration Installation[e]	X	X	X	X	X	X	
Manpower in Air Force Organic Depot-Level Maintenance Facilities[f]	X						
Sustaining Engineering and Technical Support[g]	X	X	X	X	X	X	
Intermediate-Level Maintenance	X		X			X	
Organization/Unit-Level Maintenance	X		X			X	
Initial Spares and Repair Parts (Procurement)	X					X	
Replenishment Spares and Repair Parts (Procurement)	X					X	
Modification/Conversion Hardware and Alteration Materiel (Procurement)[h]	X	X	X	X		X	
SUPPLY SYSTEM OPERATIONS							
Depot-Level Storage and Distribution Activities	X						
Central Inventory Management Activities	X						
Procurement Operations and Contract Administration	X						
Supply Operations	X						
TRANSPORTATION							
Second Destination Transportation[i]	X						
Airlift Operations (MAC)	X	X					
Sealift Operations (MSC)[j]							
Traffic Management and Terminals (MTMC)							
Transportation Services[i]	X		X				
LOGISTIC SUPPORT OF FORCE OPERATIONS AND TRAINING							
Fuel[i]	X						
Personnel Support Materiel[i]	X						
Other Consumable Supplies and Materials	X						
Munitions[i]	X						

[a] See Exhibit 1 for complete list of functions and subfunctions.

[b] OSD will designate the specific aircraft (by MD) and missiles (by type) to which resources must be identified.

[c] For all military personnel assigned to IF activities, MILPERS dollars will be shown since these costs are not included in rates used to bill customers

[d] By materiel category. A materiel category is a grouping of homogenous items of materiel. The LRA groups the categories prescribed by Enclosure 2 of

[e] Includes detail by work performance category. A work performance category is a mutually exclusive classification of maintenance workload based on wha categories, the LRA groups the categories prescribed by Enclosure 3 of DoDI 4151.15 into the summary groups shown in Exhibit 1. No work performance c

[f] Manpower will be listed by major types of IF facility (e.g., ALC, Directorates of Maintenance).

[g] Includes both depot and intermediate level activities. Resources will be separately identified for each level.

[h] Includes detail by mod category. For the aircraft and missile materiel categories, resources will be identified by type of mod as shown in Exhibit 1 shown on a non-add basis since these resources are included in aggregate totals presented elsewhere in the LRA.

[i] Same coverage for all categories within this subfunction.

[j] No Air Force resources are programmed to operate MSC.

Table 2. OVERVIEW OF LRA DATA BASE COVERAGE: LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS

	Air Force Funds Identified Separately by						Air Force Manpower Identified Separately by					
		Type of Activity Projected to Perform Work				Cost to Selected Weapon System Supported[b]	Assigned to IF Activities			Assigned to Non-IF Activities		
	Appropriations	AF IF	AF Non-IF	Commercial	Inter-Service		Military[e]	Civilian	Total	Military	Civilian	Total
tion[e]	X	X	X	X	X	X						
ties[f]	X						X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X	X
	X		X			X				X	X	X
	X		X			X				X	X	X
	X					X						
	X					X						
	X	X	X	X		X						
	X									X	X	X
	X									X	X	X
	X									X	X	X
	X									X	X	X
	X											
	X	X					X	X	X			
							X	X	X			
	X		X							X	X	X
	X											
	X											
	X											
	X											

which resources must be identified.

e shown since these costs are not included in rates used to bill customers.

of materiel. The LRA groups the categories prescribed by Enclosure 2 of DoDI 4151.15 into seven summary categories as shown in Exhibit 1.

s a mutually exclusive classification of maintenance workload based on what is done. For the aircraft, missiles, and combat vehicle materiel 4151.15 into the summary groups shown in Exhibit 1. No work performance category detail is included for other materiel categories.

es of Maintenance).

parately identified for each level.

egories, resources will be identified by type of mod as shown in Exhibit 1. For all materiel categories, mod installation and spares will be als presented elsewhere in the LRA.

Table 3. OVERVIEW OF LRA DATA BASE COVERAGE: ALL OTHER LOGISTIC SUPPORT CATEGORIES

Logistic Functions[a]	Air Force Funds Identified Separately by				Air Force Manpower Identified Separately by					
		Type of Facility Projected to Perform Work			Assigned to *IF* Activities			Assigned to *Non-IF* Activities		
	Appropriations	*AF IF*	*AF Non-IF*	*Commercial*	Military	Civilian	Total	Military	Civilian	Total
Logistic Support of Post D-Day Combat Sustainability										
War Reserve Stockage	X									
Industrial Preparedness										
Ammunition Production Base Investment (*Procurement*)	X									
Other Industrial Facilities Investment (Procurement)	X									
Manufacturing-Technology (Procurement)	X									
Industrial Preparedness Operations[b]	X							X	X	X
Logistics *Management and Support* Activities										
Logistics Management Headquarters	X							X	X	X
Logistic Support Equipment (Procurement)[b]	X									
Other Central Logistic Support										
Property Disposal	X									
Inactive Equipment Storage and Maintenance	X							X	X	X
Other Logistics Activities[c]	X	X	X		X	X	X	X	X	X
Installations and Facilities Support										
Facilities Construction (Less Housing)[b]	X									
Housing[b]	X									
Real Property Maintenance Activities[b]	X							X	X	X
Base Operations: Other Services and Support	X							X	X	X

[a] See Exhibit I for complete list of all functions and subfunctions. All data are to be shown separately for active and reserve forces.

[b] Same coverage for all categories within this subfunction.

[c] This category includes all FYDP Program 7 resources not included elsewhere in the LRA. See Section X, Appendix A for a complete list of PEs in this category.

existing codes, and additional codes will have to be developed, so that each entry will define one particular data element needed to support the LRA.

B. DATA ELEMENT REFERENCE GUIDE

The information summarized below describes the three basic methods to be used to obtain the necessary data for the LRA: one approach for procurement resources, one for central- and field-managed operating resources, and one for construction and housing resources. The Air Force LRA Data Element Reference Guide, Table 4, identifies the locations of data, reporting channels, and methods of calculation or estimation for each logistic function in the LRA. A description of each function and the associated data elements is presented in Appendix A.

SUMMARY OF BASIC METHODS OF OBTAINING AIR FORCE LRA DATA

Procurement Resource Data

To obtain these data:

-- Use Procurement Annex information with greater detail from Air Staff offices--available in budget backup and program management displays.

-- Allocate categories of resources by budget activities and, in some cases, subactivities to materiel categories and weapon systems.

Central- and Field-Managed Operating Resource Data

To obtain these data:

-- Use some data directly available by FYDP Program Element.

-- Use budget forms for some data elements and for allocation factors.

-- Acquire through Air Staff analyses.

-- Use existing Air Force Element of Expense structure with creation of new AFEEs as required.

Construction and Housing

To obtain these data:

-- Use F&FP data system.

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS	ALLOCATIONS REQUIRED	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS
1. LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS A. MAINTENANCE, MODIFICATION AND TECHNICAL SUPPORT OF EQUIPMENT 1. Depot-Level Maintenance and MOD/ALT Installation a. Aircraft	F&FP	New AFEEs must be created to enter existing data by LRA category into the F&FP data base.	None	None
b. Ships	None	None	None	None
c. Missiles	F&FP	New AFEEs must be created to enter existing data by LRA category into the F&FP data base.	None	None
d. Combat Vehicles	None	None	None	None
e. Weapons and Ordnance f. Electronics and Telecommunications Equipment g. Other Equipment	F&FP	New AFEEs must be created to enter existing data by LRA category into the F&FP data base.	None	None
2. Manpower in Air Force Organic Depot Level Maintenance Activities	CMDB	None	None	Information in the CMDB can be used to identify manpower end-strengths in PEs 72007 and 72207 to the required LRA category. Manpower ratios derived from the CMDB can then be used to distribute total MILPERS dollars to various AFIF facilities.
3. Sustaining Engineering and Technical Support	F&FP CMDB	None	None	Ratios of total manpower in the Service Engineering Divisions to total manpower in PE 71112 can be determined from CMDB or by staff analysis in AF/PRM, and these ratios can be used to factor the portion of PE 71112 operating costs that will be identified to this functional category. Weapon system allocations required, perhaps based on each weapon systems share of total workload at each ALC or on workload data available in the Divisions.

[a]See Exhibit 1 for full list of categories in each function.

[b]All resources for reserve forces (Air Force Reserve and Air National Guard) appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 4. AIR FORCE LRA DATA ELEMENT REFERENCE GUIDE

ALLOCATIONS REQUIRED	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	AIR FORCE STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[b]	REMARKS
None	None	LGX will have to review items in the "Other" AFEEs to align to LRA, and some of these items may go into Aircraft Maintenance.	O&MAF APAF	Weapon system identification already available in systems supporting F&FP programming.
None	None	None	None	No Air Force resources programmed in this category.
None	None	LGX will have to review items in the "Other" AFEEs to align to LRA, and some of these items may go into Missiles Maintenance.	O&MAF MPAF	Weapon system identification already available in systems supporting F&FP programming.
None	None	None	None	No Air Force resources programmed in this category.
None	None	LGX will have to review items in the "Area/Base Support" and "Other" AFEEs to align to LRA. Items in the OMEI AFEE will have to be aligned to proper LRA materiel categories.	O&MAF OPAF	Not applicable.
None	Information in the CMDB can be used to identify manpower end-strengths in PEs 72007 and 72207 to the required LRA category. Manpower ratios derived from the CMDB can then be used to distribute total MILPERS dollars to various AFIF facilities.	None	MILPERS	CMDB can provide all manpower end-strength data through allocation methods discussed at left. MILPERS costs for personnel assigned to IF activities will appear here since these are not included in the customer funds shown in LRA category 1A1 above.
None	Ratios of total manpower in the Service Engineering Divisions to total manpower in PE 71112 can be determined from CMDB or by staff analysis in AF/PRM, and these ratios can be used to factor the portion of PE 71112 operating costs that will be identified to this functional category. Weapon system allocations required, perhaps based on each weapon systems share of total workload at each ALC or on workload data available in the Divisions.	Review IDA recommendation that maintenance elements assigned to Combat Logistics Squadrons by AFLC be included in the depot maintenance functional category.	O&MAF MILPERS	Authorized manpower end-strengths and operating funds for Service Engineering Divisions at the ALC included in aggregate dollar and manpower totals in PE 71112 and cannot be broken out separately. For commercial services two AFEEs, 583 and 584, currently provide the F&FP capability to display resources as required for the LRA. Because these resources are distributed to PEs that include the weapon and support systems for which the services are required, the resources can be associated with materiel categories and weapon systems by PE titles.

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS	IMPLEMENTATION REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED
4. Intermediate-Level Maintenance 5. Organizational-Level Maintenance	F&FP CMDS	AFEE 609, which currently includes maintenance and nonmaintenance materiel, will have to be separated into two AFEEs.	None	Manpower costs can be determined either by using ratios of organizational and intermediate maintenance end-strengths derived from CMDS to total end-strengths to allocate manpower costs or by using average pay rates. Weapon system allocations required in PEs with multiple weapon systems.
6. Initial Spares and Repair Parts (Procurement)	F&FP, particularly Procurement Annex data.	None	None	Common AGE spares must be allocated to weapon systems by appropriate methods such as the relative acquisition costs of the systems.
7. Replenishment Spares and Repair Parts (Procurement)	F&FP, particularly Procurement Annex data. Recoverable consumption item Requirements Computation System (DO 41).	F&FP must be coded to accept replenishment spares data by weapon system.	None	None
8. Modification/Conversion Hardware and Alteration Materiel (Procurement) a. Aircraft	F&FP if adapted to accept modification data produced in AFR 57-4 modification Program Approval process.	F&FP must be revised to accept additional data.	None	None
b. Ships	None	None	None	None

[a] See Exhibit 1 for full list of categories in each function.

[b] All resources for reserve forces (Air Force Reserve and Air National Guard) appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 4. Continued

	IMPLEMENTATION REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	AIR FORCE STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[b]	REMARKS
	None	Manpower costs can be determined either by using ratios of organizational and intermediate maintenance end-strengths derived from CMDB to total end-strengths to allocate manpower costs or by using average pay rates. Weapon system allocations required in PEs with multiple weapon systems.	Materiel costs can be identified to maintenance echelon based either on PE title or on CMDB manpower ratio.	O&MAF MILPERS	AFEEs 605 and 609 provide data for "base" maintenance materiel, but these are not broken into separate elements for organizational and intermediate. Weapon system identification can be made based on PEs to which manpower is assigned. PEs that are weapon system unique will provide required identification, and those PEs that contain multiple weapon systems will have to have resources allocated to each weapon system category based on some appropriate methodology such as flying hours.
	None	Common AGE spares must be allocated to weapon systems by appropriate methods such as the relative acquisition costs of the systems.	LGX must develop allocation methodology for Common AGE.	APAF MPAF OPAF	Most initial spares data are available by materiel categories and weapon system supported. Modifications and Common AGE spares not displayed by weapon system in Procurement Annex, but modifications spares are so identified by the F&FP data system.
	None	None	DO 41 data on spares by weapon system must be coded to be placed in F&FP system.	APAF MPAF OPAF	Replenishment spares data are currently available by materiel categories. DO 41 can identify spares to weapon system.
	None	None	Some modification LRA categories may overlap actual Air Force modification programs, so RDX and LGY may have to assign individual mod programs to LRA categories based on a standard criterion, such as the predominant purpose of the mod.	O&MAF APAF	The AFR 57-4 process can provide all required data. Initial spares will be displayed here on a non-add basis since they are already shown in the LRA initial spares category. Installation costs are shown on a non-add basis since they are already included in the LRA maintenance category. Narrative may be required on Special Emphasis, generally temporary high priority programs that may fall into any one or more of the standard LRA categories.
	None	None	None	None	No Air Force resources are programmed in this category.

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS	IMPLEMENTATION REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED
c. Missiles	F&FP if adapted to accept modification data produced in AFR 57-4 Modification Program Approval process.	F&FP can be revised to accept additional data, or data can be presented to OSD for LRA coding separately.	None	None
d. Combat Vehicles	None	None	None	None
e. Weapons and Ordnance	F&FP, Procurement Annex	None	None	None
f. Electronics and Communications	F&FP, Procurement Annex	None	None	None
g. Other Equipment	F&FP, Procurement Annex	None	None	None
B. SUPPLY SYSTEM OPERATIONS				
1. Depot-Level Storage and Distribution Activities	F&FP CMDB	F&FP can be revised to accept additional data, or data can be used to produce the LRA manually.	None	Ratios of manpower with 48XX CMDB code to total manpower in PE 71111 can be used to allocate F&FP total operating funds and end-strengths to this functional category.
2. Central Inventory Management Activities	F&FP CMDB	F&FP can be revised to accept additional data, or data can be used to produce the LRA manually.	None	Ratios of manpower with 39XX CMDB codes to total manpower in PE 71112 can be used to allocate F&FP total operating funds and end-strengths to this category.
3. Procurement Operations and Contract Administration Services	F&FP	F&FP can be revised to accept additional data, or data can be used to produce the LRA manually.	None	CMDB codes in the 125X series can be aligned to the required LRA categories. These ratios can be used to allocate F&FP total PE 71113 operating funds and end-strengths to these two categories.

[a] See Exhibit 1 for full list of categories in each function.

[b] All resources for reserve forces (Air Force Reserve and Air National Guard) appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 4. Continued

TO	IMPLEMENTATION REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	AIR FORCE STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[b]	REMARKS
addi- re-	None	None	Some mod LRA categories may overlap actual AF mod programs, so RDX and LGY may have to assign individual mods programs to LRA categories based on a standard criterion such as predominant purpose of mod.	O&MAF MPAF	The AFR 57-4 process can provide all required data. Initial spares and installation costs shown on a non-add basis since they are already shown elsewhere in the LRA. Narrative may be required on Special Emphasis, generally temporary high priority programs that may fall into any one or more of the standard LRA categories.
	None	None	None	None	Air Force resources not programmed in this category.
	None	None	None	O&MAF OPAF, Budget Activity 01	Initial spares and installation costs are shown on a non-add basis since they are already shown elsewhere in the LRA.
	None	None	None	O&MAF OPAF, Budget Activity 03	Initial spares and installation costs are shown on a non-add basis since they are already shown elsewhere in the LRA.
	None	None	None	O&MAF OPAF, Budget Activities 02 and 04	Initial spares and installation costs are shown on a non-add basis since they are already shown elsewhere in the LRA.
addi- sed to	None	Ratios of manpower with 48XX CMDB code to total manpower in PE 71111 can be used to allocate F&FP total operating funds and end-strengths to this functional category.	None	O&MAF MILPERS	PE 71111 data in the F&FP data base are not shown in proper distribution to support this category.
addi- sed to	None	Ratios of manpower with 39XX CMDB codes to total manpower in PE 71112 can be used to allocate F&FP total operating funds and end-strengths to this category.	None	O&MAF MILPERS	PE 71112 data in the F&FP data base are not shown in proper distribution to support this category.
addi- sed to	None	CMDB codes in the 125X series can be aligned to the required LRA categories. These ratios can be used to allocate F&FP total PE 71113 operating funds and end-strengths to these two categories.	None	O&MAF MILPERS	Data for central contract and procurement operations are contained in PE 71113 but are not separately available in F&FP for these two categories.

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED
4. Supply Operations a. Intermediate Level b. Organizational Level	F&FP CMDS	None	None	CMDB codes can be used to determine manpower in required categories; then these ratios can be used to identify manpower end-strengths and costs to the required LRA category.
C. TRANSPORTATION 1. Second Destination Transportation	F&FP	None	None	None
2. Airlift Operations (MAC)	F&FP	None	None	None
3. Sealift Operations (MSC)	None	None	None	None
4. Traffic Management and Terminals (MTMC)	F&FP	None	None	None
5. Transportation Services	F&FP CMDB	None	None	CMDB codes can be used to determine manpower in required categories; then these ratios can be used to identify manpower end-strengths and costs to the required LRA category.
D. LOGISTIC SUPPORT OF FORCE OPERATIONS AND TRAINING 1. Fuel	F&FP	None	None	None
2. Personnel Support Material	F&FP	None	None	For O&M funded costs, ACBO can identify the portion of O&M support derived from use of cost factors or derive directly by applying factors to total manyears.
3. Other Consumable Supplies and Materials	F&FP	None	None	Factors must be developed from OOB data to separate AFEEs 609, 604, and 606 into maintenance and nonmaintenance items.

[a] See Exhibit 1 for full list of categories in each function.

[b] All resources for reserve forces (Air Force Reserve and Air National Guard) appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 4. Continued

TO	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	AIR FORCE STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[b]	REMARKS
	None	CMDB codes can be used to determine manpower in required categories; then these ratios can be used to identify manpower end-strengths and costs to the required LRA category.	None	O&MAF MILPERS	None
	None	None	None	O&MAF	All resources programmed in eight AFEEs which can be aligned to LRA categories. The AFEEs are 451, 454, 461, 462, 463, 464, 465, 469. SDT resources currently allocated to Major Commands should be included under this LRA category.
	None	None	None	MILPERS	All data available in Program 4 since LRA category is defined as aggregation of resources at PE level. Include both IF and Non-IF resources.
	None	None	None	None	Air Force resources not programmed in this category.
	None	None	None	MILPERS	All data available in Program 4 since LRA category is defined as aggregation of resources at PE level.
	None	CMDB codes can be used to determine manpower in required categories; then these ratios can be used to identify manpower end-strengths and costs to the required LRA category.	None	O&MAF MILPERS	None
	None	None	None	O&MAF	All data available in AFEEs that align with LRA categories. These AFEEs are 600, 602, 612, 641, 642, 698, 699.
	None	For O&M funded costs, ACBO can identify the portion of O&M support derived from use of cost factors or derive directly by applying factors to total manyears.	For MILPERS funded costs, ACBO can use average rates to determine required data.	O&MAF MILPERS	Average manpower rates include portions of subsistence and clothing and medical supplies. These rates can be utilized to identify the appropriate portions from the total dollars. O&MAF dollars provided in these categories must be allocated as explained at left. These data will be non-add here to avoid double-counting.
	None	Factors must be developed from OOB data to separate AFEEs 609, 604, and 606 into maintenance and nonmaintenance items.	None	O&MAF	AFEEs 609, 604, and 606 contain the required data, but they are not separately identified to maintenance and nonmaintenance materials.

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED
4. Munitions: Peacetime Operations and Training (Procurement)	Air Force POM, Section VI, Logistics and Base Operations Annual budget data	None	None	None
II. LOGISTIC SUPPORT OF POST D-DAY COMBAT SUSTAINABILITY A. WAR RESERVE STOCKAGE	F&FP	None	None	None
B. INDUSTRIAL PREPAREDNESS	F&FP	None	None	None
III. LOGISTICS MANAGEMENT AND SUPPORT ACTIVITIES A. LOGISTICS MANAGEMENT HEADQUARTERS	F&FP	None	None	None
B. LOGISTIC SUPPORT EQUIPMENT (PROCUREMENT)	F&FP, particularly Procurement Annex data.	None	None	None
C. OTHER CENTRAL LOGISTIC SUPPORT 1. Property Disposal	None	None	None	None
2. Inactive Equipment Storage and Maintenance	F&FP	None	None	None
3. Other Logistics Activities	F&FP	None	None	None

[a]See Exhibit 1 for full list of categories in each function.

[b]All resources for reserve forces (Air Force Reserve and Air National Guard) appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 4. Continued

TO	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	AIR FORCE STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[b]	REMARKS
	None	None	None	OPAF	All data available in required LRA categories in the AF POM. LGXP and RDXP can provide required data for other F&FP updates.
	None	None	WRM spares are not separately programmed in the F&FP system, but they are visible in data maintained at the Air Staff level. To the extent that WRM spares are aggregated with operating and training spares data shown in LRA spares sections, it will be necessary to identify WRM spares as non-add information entries here.	OPAF	End item munitions information programmed in PE 28030 and F&FP system contains line item information that can be aligned to LRA categories. Secondary items are programmed in PEs 28031, 28032, and 28033, and F&FP system contains line item information that can be aligned to LRA categories.
	None	None	RDXI will have to align procurement funded resources to the required LRA category.	APAF MPAF OPAF O&MAF	PE 78011 carries all Air Force resources programmed in this category. O&MAF funded resources only apply to the LRA line "Layaway/Maintenance of Reserve Plants."
	None	None	Resources for BOS functions must be subtracted from each PE and added to LRA BOS section.	O&MAF MILPERS	Data available in PEs 72898 and 72829.
	None	None	LGXP and LGXW should examine all specific equipments to ensure that they have been placed in appropriate categories.	APAF OPAF MPAF	Selected line items available in: OPAF BA 01, 02, 03, 04; APAF BA 07; MPAF BA 05.
	None	None	None	None	This is a DLA responsibility, and no Air Force resources are programmed in this category.
	None	None	None	O&MAF MILPERS	PE 78016 contains all required data.
	None	None	None	O&MAF MILPERS	All required data contained in the following PEs: 72035, 72891, 72892, 78012, 78022, 78023, 78026, 78032, 78034, 78110.

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEM	ALLOCATIONS REQUIRED
IV. INSTALLATIONS AND FACILITIES SUPPORT				
A. FACILITIES CONSTRUCTION (LESS HOUSING)				
1. Logistic Facilities	F&FP	None	None	None
2. Other Facilities[c]				
3. Personal Property Collateral Equipment				
a. Logistic Facilities Equipment	F&FP, Procurement Annex	None	None	None
b. Other Facilities Equipment	F&FP	None	None	None
B. HOUSING				
1. Family Housing	F&FP	None	None	None
2. Troop Housing	F&FP	None	None	None
C. REAL PROPERTY MAINTENANCE ACTIVITIES	F&FP	None	None	AFEE 533 must be divided between utilities operations and other engineering support by appropriate methodology such as OOB accounting data.
D. BASE OPERATIONS: OTHER SERVICES AND SUPPORT	F&FP	New AFEEs will have to be created to provide the necessary level of detail.	None	Manpower ratios derived from the CMDB could be used to identify end-strengths and costs to LRA categories.

[a]See Exhibit 1 for full list of categories in each function.

[b]All resources for reserve forces (Air Force Reserve and Air National Guard) appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

[c]No Air Force resources programmed for NATO infrastructure. Data in air pollution, water pollution, energy conservation, and nuclear security are non-add here.

Table 4. Continued

S TO	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEM	ALLOCATIONS REQUIRED	AIR FORCE STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[b]	REMARKS
	None	None	Non.	MILCON	AF Military Construction funds are programmed in the required categories. POMCUS is not an Air Force program, so there are no entries in the Air Force.
	None	None	LGXP will have to identify equipment purchased in this category.	OPAF	Equipment purchased with OPAF for construction projects is not separately identified in the F&FP procurement data.
	None	None	None	O&MAF	Resources programmed in this category in AFEE 635.
	None	None	None	Family Housing, Defense	All data available in required categories in PEs 88741, 99742, 88743, 88744, 88745, 88746.
	None	None	None	MILCON	All data available in cost element 24200004 in F&FP data base.
	None	AFEE 533 must be divided between utilities operations and other engineering support by appropriate methodology such as OOB accounting data.	None	O&MAF	Data available in AFEEs 521 and 522 for maintenance and repair. AFEE 533 contains utilities operation, some other engineering support data, and other data. AFEE 529 equates directly to minor construction. AFEE 531 is entirely other engineering support.
cre- ry	None	Manpower ratios derived from the CMDB could be used to identify end-strengths and costs to LRA categories.	None	O&MAF MILPERS O&MAFR	BOS PEs are 11896, 12896, 27596, 35896, 41896, 59296, 72896, 85796, 85896, and 91296. Total end-strengths and dollars available, but not by LRA categories.

Appendix A

AIR FORCE LRA FUNCTIONAL DETAIL

CONTENTS

EXHIBITS

FIGURES

TABLES

AIR FORCE LRA FUNCTIONAL DETAIL

In this appendix we discuss the location of data, reporting channels, and issues affecting the calculations or estimations necessary for each logistic function in the LRA. This is the detailed supporting research material upon which Table 4, the Data Element Reference Guide, is based.

We discuss the functions in the LRA structure in order, but we do not discuss every line in the structure. In many cases the discussion of data sources, data management systems, reporting channels, and other pertinent information applies to the detail lines listed under a single heading in the structure. For example, a single narrative presentation covers the category "Facilities Construction," which includes 27 lines of functional detail.

The specific functional write-ups contained in this appendix are listed on p. A-iii.

A. DEPOT-LEVEL MAINTENANCE AND MODIFICATION INSTALLATION

The LRA requires that data on dollar resources programmed for depot-level work be shown by materiel category, work-performance-oriented subcategory within the aircraft and missiles materiel categories, and weapon system supported for designated systems.[1] Dollars programmed to purchase services (i.e., customer funds) from commercial, organic Air Force industrial fund, and interservice facilities will be identified separately.

In the Air Force, AFLC manages both the producer resources and the majority of the customer resources of the depot maintenance program. On the producer side, AFLC manages work accomplished under the Depot Maintenance Industrial Fund (DMIF) at organic and contract facilities. AFLC accomplishes depot maintenance primarily in organizations assigned to the Directorates of Maintenance at the five Air Logistics Centers (ALC),[2] at the Aerospace Guidance and Metrology Center (AGMC), and on contract with commercial organizations. Projected costs and revenues for the DMIF are shown in PEs 72007 and 72008, respectively.

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[1]See Exhibit 1 for a complete list of subfunctions within this logistic category. Data about authorized depot-level maintenance manpower end-strengths are also included in the LRA, but since this is included in a separate section of the LRA data base, this requirement will be discussed below.

[2]Each ALC is assigned central maintenance responsibility for specific commodities, systems, and weapon system programs. Thus, depot-level maintenance workloads for given items are accomplished by the ALC that is prime for those items of equipment.

On the customer side, AFLC manages the Air Force Depot Purchased Equipment Maintenance (DPEM) program which provides the majority of the revenues of the DMIF.[1] This program is financed by the O&M Air Force appropriation in PE 72207. For management purposes, the DPEM program is subdivided into six major functional repair categories:

(1) Aircraft maintenance and modification
(2) Missile maintenance
(3) Engine overhaul/repair
(4) Maintenance on other major equipment items (OMEI)
(5) Exchangeable component repair
(6) Area/base support.

At the lowest level, depot maintenance resources are managed by line item (generally Federal stock number). These line items are aggregated at various levels for daily operations and, ultimately, into the above six categories for use in programming depot maintenance resources. At the Air Staff, the Directorate of Logistics Plans and Programs, DCS/S&L (LGX) is the office of primary responsibility for coordination and review of all depot maintenance programs. Within the Directorate, the Aircraft/Missiles Program Division (LGXW) is assigned specific responsibility for the entire DPEM.

1. Current Depot Maintenance Programming Procedures

Current Air Force capability to support the LRA is partially determined by the level of detail that is routinely available through use of current depot maintenance programming procedures. An overview of this PPB cycle is shown in Figure A-1. For the purposes of this discussion, the annual PPB cycle

[1]For FY 79, these funds represent over 85 percent of the estimated DMIF revenues. An additional 10 percent is composed of purchases by the AFIF, the AFR, and ANG O&M appropriations. The balance is composed of purchases by other AF appropriations and miscellaneous DoD and non-DoD agencies.

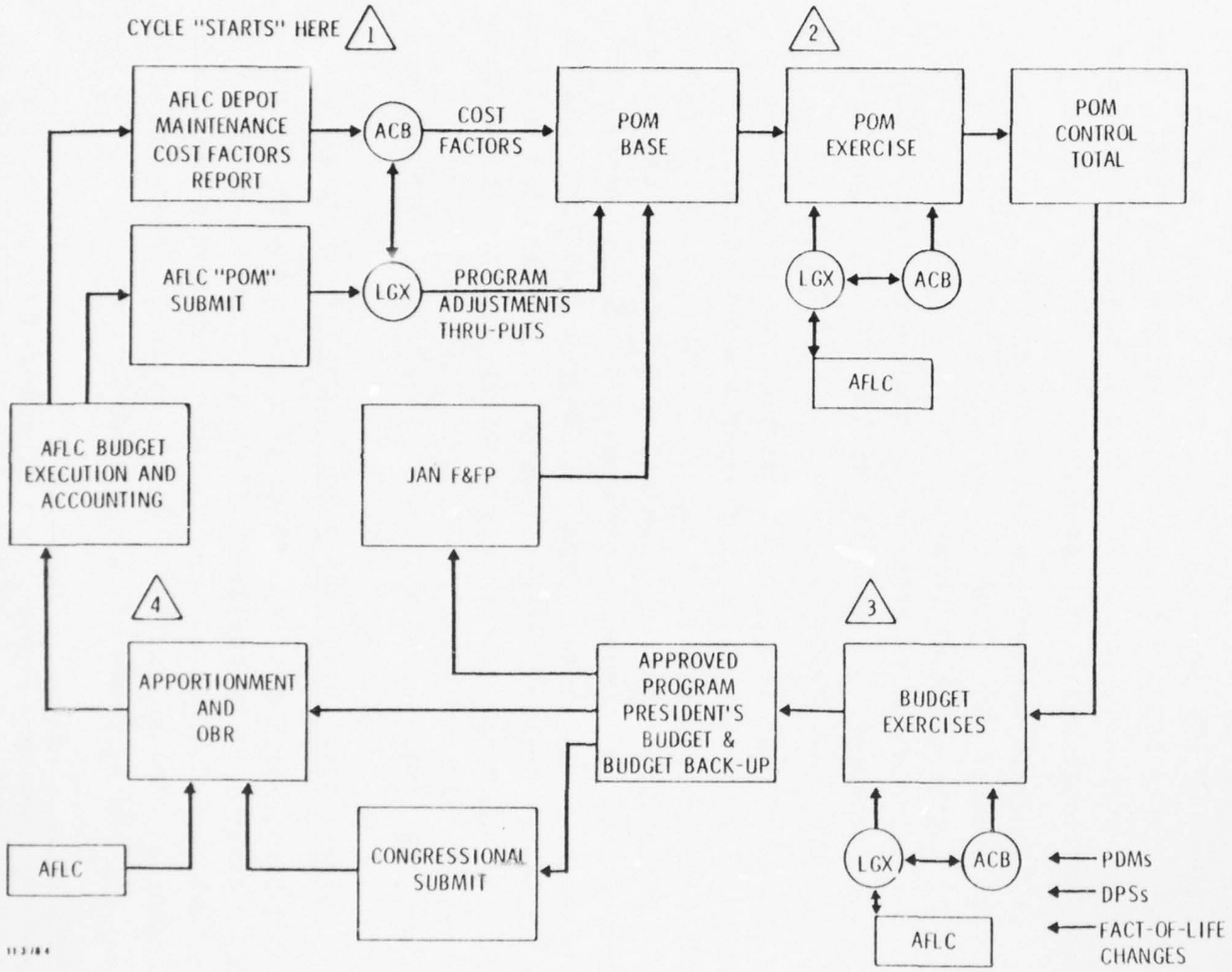

Figure A-1. OVERVIEW OF AIR FORCE PPB CYCLE

may be considered to begin with the activities that take place in preparation for the POM, and to culminate in AFLC's execution of the budget.

a. The AFLC POM Submission

Each October AFLC submits an updated DPEM program which is referred to as the AFLC POM. This submission addresses the Air Force depot maintenance requirements that are budgeted and financed by AFLC. Funds in this program are "customer" dollars used to purchase services provided by various depot maintenance activities. Requirements budgeted and financed by other Air Force appropriations, military departments, and other agencies are excluded.

During the year following its last program submission, AFLC is regularly advised of all program and budget changes that have occurred. As a result, this October submission, which covers the upcoming budget year plus the 5-year period to be covered by the next POM, reflects AFLC requirements based on anticipated financing as provided by HQ USAF. It is used by LGX as one source of data to develop the baseline for the next POM cycle, as shown in Figure A-1.

Within the AFLC DPEM management system, requirements are stratified to six major functional repair categories as follows

(1) Aircraft--programmed depot maintenance, major repair, and modification installation accomplished on a complete aircraft.

(2) Missile--all work accomplished on the complete missile including repair and modification.

(3) Engine--all engine overhauls including repair and modification.

(4) Other major equipment item (OMEI)--repair of all major equipment not included in above categories (e.g., communications and electronics systems ground generator sets, fire fighting equipment, construction equipment, etc.).

(5) Exchangeables--repair of recoverable investment items handled and managed within the AFLC materiel system.

(6) Area support/base support/manufacture--unscheduled support not included in the above categories, support of tenant activities, and manufacture of emergency items as well as items for the stock fund.

Funding for the exchangeables and aircraft categories generally accounts for over 60 percent and 20 percent, respectively, of total program requirements.

b. Use of Depot Maintenance Cost Factors in the F&FP Exercise

The Air Force F&FP system uses cost factors to compute variable depot maintenance costs. This procedure is used extensively during the POM exercise to estimate variations in aircraft depot maintenance resource requirements as a function of changes in operating aircraft inventory and the flying-hour program. Factors are used to a lesser extent in the POM exercise to determine variable missile depot maintenance requirements and are rarely, if ever, used to adjust depot maintenance requirements during budget exercises.

Depot maintenance cost factors are derived by the Cost Analysis Division of the Air Force Comptroller (AF/ACMC) from data submitted by AFLC on the HAF-ACM(A) 7109 report.[1] This report shows the actual depot maintenance costs for the last 5 years for aircraft (by mission, design, and series) and missiles (by type); costs for nonaeronautical equipment such as vehicles and ground communications are excluded.[2] Upon receipt of each report, ACMC and LGXW review and adjust the data to reflect

[1]In accordance with AFR 173-4, *Aircraft and Missile Depot Maintenance Cost Factors,* October 16, 1972, this report is submitted annually, approximately 90 days after the close of the fiscal year.

[2]For FY 76, the 7109 Report included approximately 80 percent of the total depot-purchased equipment maintenance cost. ACM reports that in prior years this percentage has been approximately the same.

cost changes forecast for future years and identify that portion assumed to be variable as a function of changes in the number of operational aircraft and the annual flying-hour program (generally 80 to 85 percent of the report total). Finally, two depot maintenance cost factors are calculated: dollar cost per active aircraft and dollar cost per flying hour. Table A-1 provides an overview of how the detail in the FY 76 7109 report is used to calculate the cost factors that are entered into the F&FP model.

Table A-1. PERCENTAGE OF LINE ITEM DATA IN THE FY 76 7109 REPORT ALLOCATED TO THE AIRCRAFT DEPOT MAINTENANCE COST FACTORS

Line Item In 7109 Report	Flying Hours[a]	Number of Operational Aircraft[b]
Aircraft Repair	--%	100%
Engine Overhaul	100	--
Avionics	65	35
Engine Accessories	100	--
Other Aircraft Accessories	65	35

[a]Included in per flying hour factors.

[b]Included in per operational aircraft factors.

Source: ACMC, March 1978.

Once these two factors have been computed, they are used in the various exercises to compute marginal changes in the total funds required for aircraft depot maintenance as the aircraft inventory and flying hour programs are varied. The per-flying-hour cost factor varies the costs for the exchangeable component repair functional category while the per-operational-aircraft cost factor varies the costs for the aircraft maintenance and modification functional repair category. When combined with the changes to the depot maintenance program that are entered

directly into the F&FP systems by LGXW and ACB, the result of the final exercise is a new total depot maintenance program cost which becomes the baseline cost for the remainder of the PPB cycle. Even though variable depot maintenance costs are computed on the basis of data in weapon system PEs, for use in the FYDP, all funds are displayed in PE 72207.

c. The POM Base

The POM base for depot maintenance is developed jointly by the Directorate of the Budget (ACB) and LGX and is based on the January F&FP as modified by program adjustments reflecting changes in the program that occurred subsequent to the publication of the F&FP. The entire depot maintenance program is summarized, in terms of the six functional repair categories described earlier, in PE 72207. The updated cost factors described above are also entered into the F&FP data base at this time.

During the POM exercise, a new depot maintenance control total is established by an iterative process that balances projected depot maintenance resource requirements against changes in total available funds. In addition to this overall control total, the F&FP system provides backup data by functional repair category which, although not binding, do provide some basis for the next step in the PPB process. During the POM exercise, LGXW is responsible for providing direct program adjustments to the depot maintenance program as well as for reviewing the consistency of the use of cost factors to compute the impact of changes in programmed inventory levels and the 5-year flying-hour program.

d. The Budget Exercises

During the period between the development of the POM control total for the depot maintenance program and the submission

of the President's budget in January, budget exercises using the same computerized F&FP data base are conducted to develop an approved 5-year depot maintenance program. The effects of PDMs, DPSs, and various fact-of-life changes are recorded in the six functional repair categories used in the F&FP data base. AFLC is in informal contact with the Air Staff throughout this period to ensure that changes in estimated AFLC requirements that result from program revisions reflect reasonable funding. The actual development of the new 5-year program, however, is essentially an Air Staff exercise. It is an iterative process in which program changes are evaluated against available resources to provide a balanced Air Force program.

The output of this process is a new 5-year depot maintenance control total with supporting detail. These data provide the basis for the President's budget submission, the request for apportionment, and the January update of the DoD FYDP.

e. O&M Operations Budget

When OSD submits the President's budget to Congress, ACB issues a "call" letter requesting the commands to submit their operations operating budget (OOB).[1] The call includes a dollar limit that represents ACB's estimate of how much O&M money the command will have for the upcoming fiscal year. This estimate uses the President's budget as a baseline but is adjusted by ACB based on possible Congressional actions.

ACB usually receives the Commands' OOBs in March and they serve (after review and approval by the OBRC) as one basis for the Air Force request for apportionment obligation authority (OA) from the OMB. ACB distributes this apportionment of

[1]The operating budget is an itemized list of the funds provided to carry out the objectives of an activity. The budget serves two purposes: (1) it allows HQ, USAF to arrive at a more accurate distribution of funds among the MAJCOMS; and (2) after HQ, USAF approval, it becomes the priced programs under which commands will operate during the fiscal year.

obligation authority to the Commands, which in turn distribute authorities to subordinate organizations. This distribution authorizes the organizations to incur expenses and obligate funds for services and materials.

2. The F&FP Data Base

The Air Force has developed AFEEs for each of the six major functional repair categories used by AFLC and the Air Staff to manage the depot maintenance program. These AFEEs are the primary building blocks used to enter information about the depot maintenance program into the F&FP data base. The basic three-digit AFEE codes used for depot maintenance are:[1]

(1) 541, Aircraft Maintenance, DMIF
(2) 542, Missile Maintenance, DMIF
(3) 543, Engine Maintenance, DMIF
(4) 544, (Other) Major Items Maintenance, DMIF
(5) 545, Exchangeable Item Maintenance, DMIF
(6) 546, Area/Base Support, DMIF.

In response to the requirements of the October 1977 F&FP submission (i.e., ZBB formatting), the Air Force expanded the AFEE codes by utilizing two previously unused positions in the cost element codes. The primary purpose of this change was to separate the aircraft maintenance/modification AFEE into maintenance and modification categories, to separate exchangeables into aircraft and other items, and to identify whether work was projected to be accomplished in organic or contractor facilities.[2] Exhibit A-1 shows the information contained in the current F&FP data base. The fourth digit is generally used to distinguish aircraft related resource data. The fifth digit

[1]The basic three-digit codes are called "element of expense/investment codes" (EEICs). The expanded four- and five-digit codes are also called EEICs.

[2]The planning process used to estimate installation costs for modifications is discussed in section F, below.

Exhibit A-1. DEPOT MAINTENANCE ELEMENT OF EXPENSE DETAIL IN THE CURRENT F&FP DATA BASE

EEIC[a]	Element
54100	Aircraft Maintenance
54110, 1	Airframe Overhaul
54120, 1	Aircraft Mods
54230, 1	Missile Maintenance
54240	Missile Mods
54310, 1	Aircraft Engine Maintenance
54330, 1	Other Engine Maintenance
54430, 1	Other Major Equipment Maintenance
54500	Exchangeable Repair--Other Support
54510, 1	Exchangeable Repair, Aircraft Components
54530, 1	Exchangeable Repair, Other Components
54610	Area Support, Aircraft
54630	Base Support, Other

[a]The fifth digit is used to identify resources on the basis of whether work is programmed to be accomplished at an organic or commercial contractor facility.

indicates whether work is to be accomplished in an organic or commercial contractor facility.

3. AFLC Data Systems

AFLC uses a multitude of data systems both to support daily operations and to derive the 5-year depot maintenance program provided to the Air Staff in the AFLC POM submission.[1] While time did not permit a detailed study of these systems,

[1]For a complete listing of all AFLC data systems, see "Data System Assignments and Status Master List," AFLC, July 31, 1977, as revised. The systems discussed in this paper are listed under Code D, "Materiel Management Systems," and Code G, "Maintenance Systems." The document also provides a brief description of each system.

we have made an effort to identify the major systems that are used to derive the AFLC 5-year DPEM program.

Figure A-2 is a simplified overview of the primary data systems used by AFLC to develop its depot maintenance program submission. The GO-72C system in the center of the figure may be thought of as the focal point of all the systems. This data management system is the basic AFLC maintenance and long-range planning system that is used to develop the baseline for depot maintenance planning. The GO-35 system is used to aggregate the results of all depot maintenance planning, by weapon system, into the six major repair categories used by AFLC for depot maintenance programming and budgeting. Also shown in Figure A-2 are the major systems used to develop data about each of the major functional repair categories used in AFLC planning. (In actuality, a vast number of additional data systems support the planning and management of resources for each major functional repair category.) These major systems are discussed below.

a. DO-41, Recoverable Consumption Item Requirements System

This system is designed to compute future buy and repair requirements for Air Force recoverable items. The computations are based primarily on past and projected usage, asset and program data. It is run quarterly to support AFLC planning and produces stratification products for preparation of budget/apportionment submissions. It is an extremely complex system that both uses data from and provides data to many other systems.

b. GO-79, Systems and Equipment Modification/Maintenance Program

This system is a basic management system used to control the funding and scheduling of Class V and USAF-directed Class IV modifications and/or aircraft and missile depot repair.

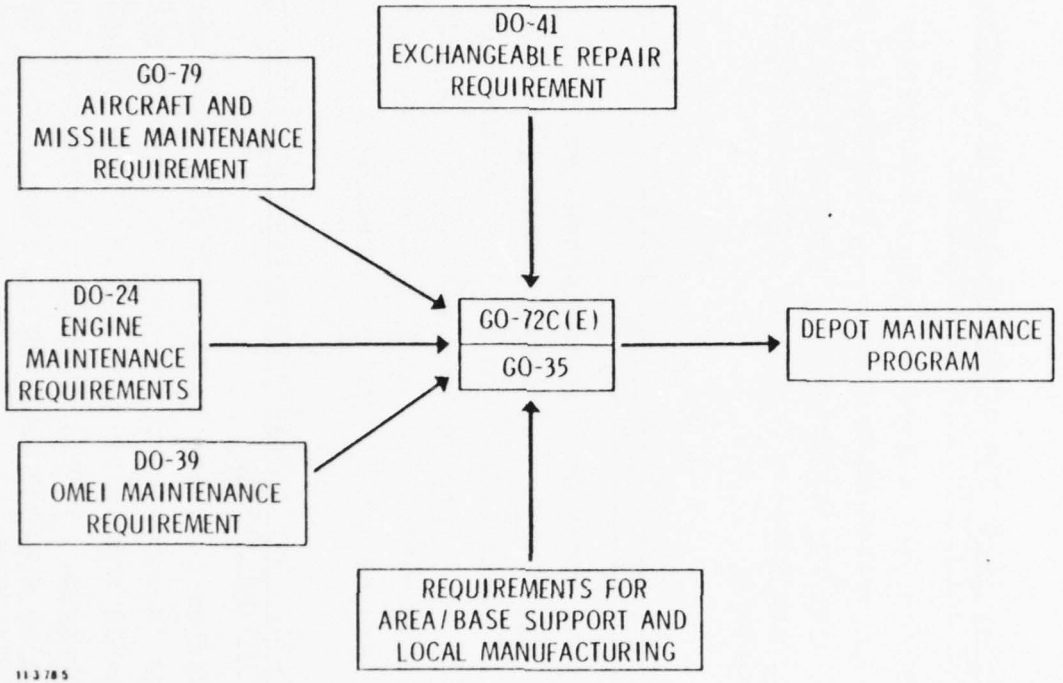

Figure A-2. AFLC PRIMARY DATA SYSTEMS

The GO-79 receives data from many systems including the HO-57 Central Procurement system that provides the procurement status of maintenance and mod programs. It also receives projected supply inventory data and the Air Force projected flying hour program.

c. DO-24, Subsystem of Propulsion Unit Logistics System--Data Collection Status Reporting

This system is designed to manage information and records for propulsion system management. It provides current status of engines, history changes, and inventory and actuarial data, all of which are used as inputs to engine maintenance requirements projections.

d. DO-39, Aircraft/Missile Maintenance Production Compression Report System (AMREP)

This system provides for automated reporting of the status of aircraft and missiles undergoing maintenance at AFLC depot or contractor facilities. The DO-39 is a multipurpose system that, in addition to being an input to the aircraft and missile requirements determination, is also identified as a key input into the determination of OMEI requirements.

e. GO-72C, Depot Maintenance Program and Long-Range Planning System

This system portrays total worldwide depot maintenance requirements in support of the program manager, rate of production on organic workloads, and status of the annual approved operating program. It encompasses all workloads whether accomplished by organic facilities, contract, or by other DoD agencies. The GO-72C is programmed to be replaced by the GO-72E system to improve the capability of computerized systems to support long-range requirements determination.

f. GO-35, Depot Maintenance Data Translation System

This system is designed to translate customer quantitative requirements into the maintenance manpower required to support the customer program. Both direct and overhead manpower are estimated in terms of planned/negotiated activity.

g. The Logistics Capability Measurement System (LCMS)[1]

The Air Force is developing a prototype LCMS which is designed to relate changes in budgets and resources to levels of logistics readiness and sustained capability. Long-range planning calls for the development of four new analytical models.

The FYDP Model. This model will define full budget requirements over the FYDP period by aircraft and other weapon systems.

The Resource and Budget Allocation Model. This model will optimize the allocation of dollars for procurement of reparable spares and predict the effect of budget changes on weapon system availability for a specified flying-hour program. Subsequently, depot repair of major equipment, levels of initial spares, and repair of exchangeables will also be considered.

The Weapon System Support Assessment Model. This model will assess sortie generation for a given set of resources (for example, aircraft, crews, spares, and manpower).

The Resource Monitoring and Distribution Model. This model is intended to assist resource balancing actions.

Air Force planners at all levels should have access to the LCMS, as an online logistics data base will support the system. In all, the LCMS is an ambitious undertaking that should be extremely useful to the LRA. For example, at AFLC the system

[1]This discussion is based on narrative in AF POM 79, Vol. 2, May 1977. The current status of this project is not known.

will rely on information from current and emerging systems and models to evaluate AFLC's capability to support a given MDS aircraft logistically. We were unable to determine the extent to which this new system will augment or replace existing AFLC systems. Regardless, once the data base is developed it should be useful in supporting the LRA since it must necessarily contain much of the information about the depot maintenance program required by the LRA.

4. Changes Required to Current Air Force Programming Procedures

Exhibit A-2 shows how the AFEEs used in the most recent F&FP data base update might be assigned to LRA functional categories. As indicated, by expanding the number of AFEEs used for entering data on depot maintenance functions into the F&FP data base, the Air Force has already created the capability to provide some of the LRA data elements. However, several problems remain.

First, additional research will be required to determine what line items are included in the various "other" AFEEs currently being used. For this reason, no entries are shown for these AFEEs, although it is assumed that most of the line items will relate to LRA "Other Maintenance and Support" categories.[1] As pointed out earlier, since the Air Force generally manages logistic resources by line item, there should be no difficulty in assigning these groups to the proper LRA categories.

Even though information on aircraft exchangeables has been entered separately into the FYDP data base, other exchangeables generally are included in a single category. Similarly, all maintenance and repair of OMEI end-items are included in a single category. These AFEEs will have to be separated so that all

[1]In implementing the LRA the Air Force may wish to add an "Other" AFEE within the missile materiel category. This action could facilitate the assignment of missile depot maintenance resources to the LRA categories.

Exhibit A-2. ILLUSTRATION OF HOW DATA IN CURRENT AFEES MIGHT BE ASSIGNED TO THE LRA DEPOT MAINTENANCE CATEGORIES

AFEEs Used in Current F&FP Data Base[a]	Equivalent LRA Depot Maintenance Category
AIRCRAFT MAINTENANCE/MOD	
Other (5410)	AIRCRAFT, Airframe Reworks
Maintenance (5411)	
Mod Installation (5412)	AIRCRAFT, Modifications Installation
MISSILE MAINTENANCE/MOD	
Maintenance (5423)	MISSILES, Equipment Overhaul and Repair
Mod Installation (5424)	MISSILES, Modifications Installation
ENGINE MAINTENANCE	
Aircraft (5431)	AIRCRAFT, Engine Overhaul
Other (5433)	
OMEI MAINTENANCE (5443)	WEAPONS AND ORDNANCE
	ELECTRONICS AND TELECOMMUNICATIONS EQUIPMENT
	OTHER EQUIPMENT
EXCHANGEABLE ITEM MAINTENANCE	
Other (5450)	AIRCRAFT, Component Repair
Aircraft (5451)	MISSILES, Component Repair
OMEI (5453)	
AREA/BASE Support	
Area Support, Aircraft (5461)	
Base Support, Other (5463)	

[a]Four-digit EEICs are shown in parentheses.

items can be identified according to one of the equipment categories in the LRA structure. Several Air Force documents demonstrate that the capability to do this already exists. For example, in AFLC POM-80, the DPEM OMEI category was grouped into five equipment-oriented categories: Electronics and Communications; General Purpose Equipment; Munitions; Vehicles; and Miscellaneous. Also, the OP-19 Budget Exhibit prepared to support the October budget submission included a breakout of the OMEI exchangeable requirements by stock number.

Finally, additional research will be required to determine the best way to allocate the resources in the Area/Base Support AFEE. AFEE 5461 will probably equate directly with the LRA Aircraft, Other Maintenance and Support category. Review of line items in AFEE 5463 may indicate that resources in this AFEE will relate to several of the LRA materiel categories.

As described earlier, the Air Force has already prescribed codes to identify whether projected workloads are to be accomplished at organic or commercial facilities.

5. Weapon System Data Elements

In the AFLC data systems supporting logistic planning, programmed resources are routinely related to weapon systems. This is possible because inventory/system managers essentially manage at the stock number level. Items peculiar to a single weapon system can be easily identified. For items used by more than one weapon system, a common item factoring technique is used by AFLC to allocate costs. For example, for aircraft common items, data from several data systems, which contain information about the number of an item installed on each aircraft that uses the item, the percentage of aircraft in each MDS category that uses the items, and the flying hours for each MDS, are used to develop a percentage factor for each MDS.

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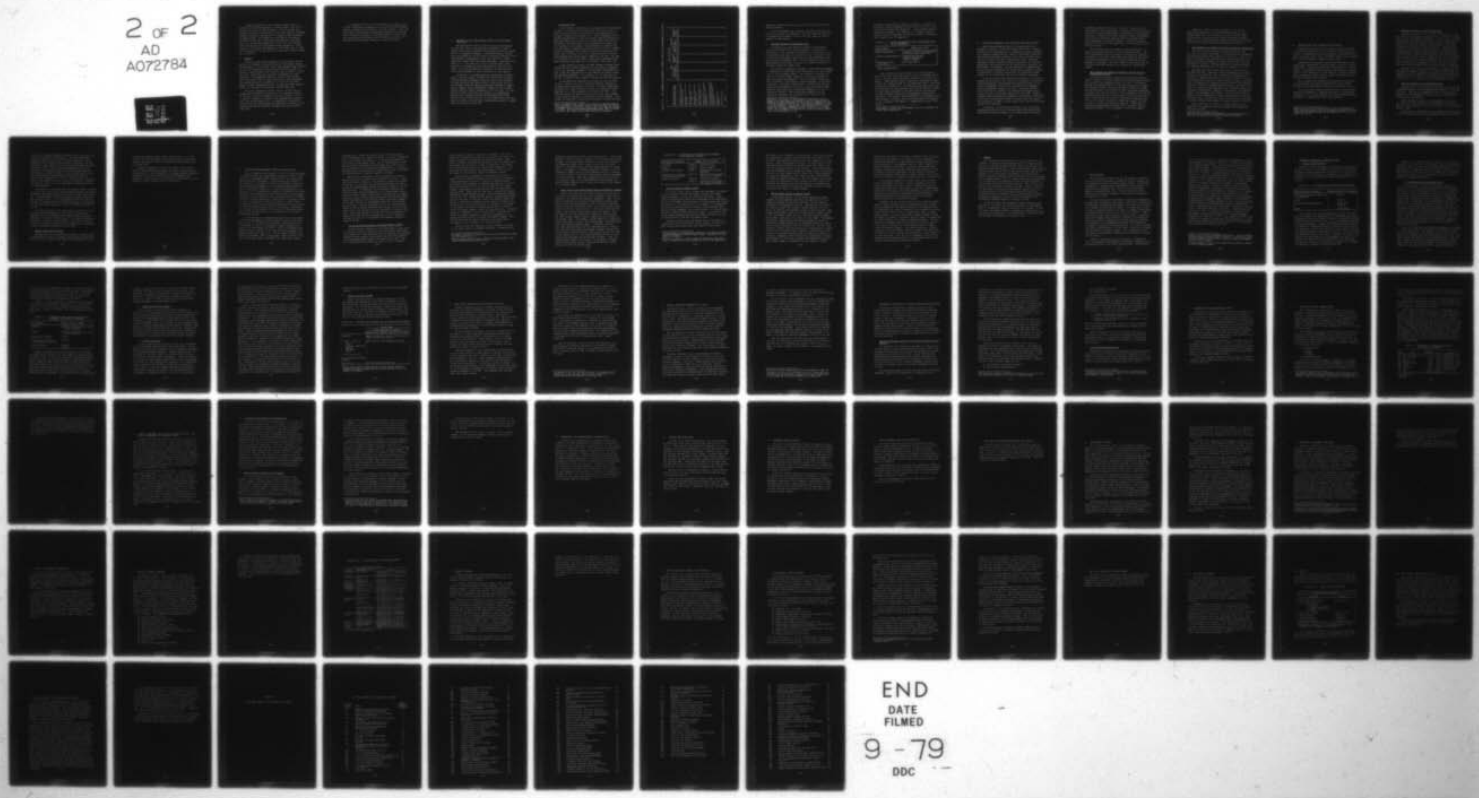

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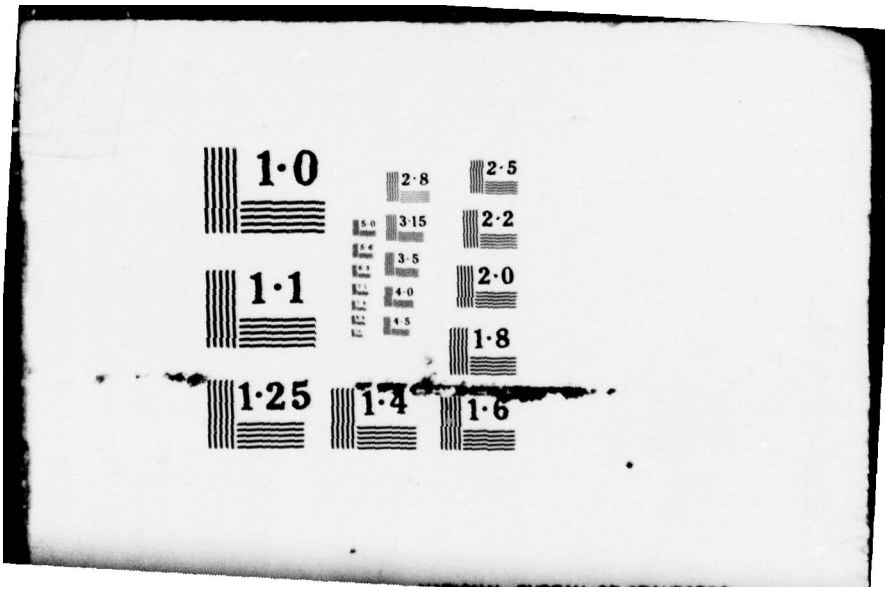
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A detailed analysis of the procedures used by AFLC to develop total DPEM requirements by weapon system could not be accomplished with the time available. For the initial LRA, however, it should be sufficient to know that AFLC has developed standard procedures that are used to support program estimates by weapon system. For example, in AFLC POM 80, one exhibit displayed 75 percent of total DPEM requirements by aircraft (i.e., by mission and design--F-4, F-15), with the remaining 25 percent grouped into equipment-related categories. Since items in this category are managed by line items, the Air Force has the capability to identify these according to weapon system, as appropriate.

6. Summary

In the Air Force, AFLC manages both the producer and the majority of customer resources allocated to the depot maintenance program. At the lowest level, AFLC manages these resources by line item, generally by stock number and stock class. An extensive computer-based data system is used by AFLC to support both daily operations and long-range programming for these resources. For management purposes, the Air Force divides depot maintenance into six major functional repair categories and (beginning with the preparation of the FY 79 Air Force Budget) several subcategories that contain basic depot maintenance cost information included in the F&FP data base.

The basic categories currently used by the Air Force to manage depot maintenance resources do not correspond exactly to the LRA functional categories but can be revised to do so. In addition, primarily because of the comprehensive computerized data systems used by AFLC to manage depot maintenance, the Air Force has demonstrated the capability to identify these resources according to materiel category and weapon system supported.

We recommend that the Air Force revise the current number of depot maintenance categories so that each depot maintenance resource category can be matched to an LRA category. Also, the EEICs used to enter data on operating resources into the F&FP can be revised to provide the increased number of input codes. Once these actions are taken, the Air Force will be able to develop the data elements required to support the LRA.

B. MANPOWER IN AIR FORCE ORGANIC DEPOT-LEVEL MAINTENANCE FACILITIES

The LRA requires that all data on projected authorized military and civilian end-strengths programmed to support organic depot-level maintenance facilities be listed by organization in a separate category. As described above, inhouse depot maintenance in the Air Force is provided primarily by the Directorates of Maintenance at the five AFLC ALCs. These activities operate under the Depot Maintenance Industrial Fund (DMIF); i.e., the ALCs incur costs to provide depot level services to customers who have contracted for specific workloads. ALCs are subsequently reimbursed for these services from funds programmed by their customers for this purpose.

In addition to the DMIF-operated Directorates of Maintenance, depot maintenance services are provided by the DMIF-operated guidance equipment repair activity at the Aerospace Guidance and Metrology Center (AG&MC), Newark AFS, Ohio; by the non-DMIF Precision Measuring Equipment Laboratory (PMEL), also at Newark; and by maintenance elements in the non-DMIF Combat Logistics Support Squadrons at the five ALCs. All manpower for these activities are included in the aggregated military and civilian authorized end-strength data in PEs 72007F (IF) and 72207F (Non-IF), so the current F&FP data base cannot be used to identify depot maintenance manpower by organization as required by the LRA.

1. The Initial LRA

In the initial LRA data base we recommend that end-strengths for each of the major depot maintenance activities listed be identified as military or civilian, and as assigned to an IF or non-IF facility (see Exhibit A-3). Funds programmed in the MILPERS appropriation to support military personnel assigned to DMIF facilities will be shown here, since these costs are not included in the rates used to bill customers and, hence, are not included in the customer funds displayed by materiel and work performance categories in section IA1 of the LRA. MILPERS dollars for manpower in non-DMIF facilities are included here rather than in section IA1 so that total authorized military end-strengths and dollars appear together in the LRA. The last row in Exhibit A-3 is included to cover depot maintenance manpower resources that might not be included in the other rows.

As was pointed out above, the CMDB already includes information that will permit identification according to organization of all manpower assigned to the two depot maintenance PEs. Even though the manpower data in the CMDB do not exactly match the F&FP end-strengths,[1] it is feasible to use these data to provide the manpower data elements required by this LRA category.

We recommend that manpower ratios derived from the CMDB be used to obtain the cost of military personnel assigned to the major depot maintenance activities. For each organization, the CMDB can be used to develop the ratio of manpower in that organization to total manpower in PEs 72007 and 72207. The resultant ratios can then be used to distribute total MILPERS dollars among the various IF activities in this category. Even though the resources in this PE could probably be more precisely

[1]Data in the CMDB are used to control the allocation of approved authorization end-strengths to the MAJCOMs. Thus, to the extent that total approved end-strengths have not been fully allocated, data in the CMDB will lag data in the F&FP. The actual differences are generally small (from 0 to 9 percent based on spot checks) and are easily reconciled if necessary.

Exhibit A-3. LRA COVERAGE OF MANPOWER IN ORGANIC DEPOT-LEVEL MAINTENANCE FACILITIES

Air Force Depot Level Maintenance Facilities	Type of Facility					
	DMIF			Non-DMIF		
	Authorized End Strengths		MILPERS Costs	Authorized End Strengths		MILPERS Costs
	Military	Civlian	Dollars	Military	Civilian	Dollars
Maintenance Directorate, Oklahoma City ALC						
Maintenance Directorate, Ogden ALC						
Maintenance Directorate, San Antonio ALC						
Maintenance Directorate, Sacramento ALC						
Maintenance Directorate, Warner-Robins ALC						
Guidance Center, Guidance and Metrology Center, Newark AFS						
Precision Measuring Equipment Laboratory, Guidance and Metrology Center, Newark AFS						
Combat Logistics Squadrons						
Other Activities						
Total						

assigned, the above described allocation scheme should satisfy LRA requirements.

Once the necessary data elements have been developed, the results can either be entered into the F&FP data base directly, by increasing the number of input lines and codes, or used to prepare the LRA manually.

2. Expanded Coverage in Subsequent LRAs

Information on total manpower assigned to maintenance facilities provides only limited visibility of workloads accomplished. The coverage recommended for the initial LRA is an important first step in improving overall visibility of projected depot maintenance resources, but added visibility could be included in subsequent LRAs. This is especially true for DMIF-operated activities, for which only limited visibility is available beyond the budget year.

One method of expanding coverage of total manpower assigned to industrially funded depot-level activities is to use information in the A-2 Budget Exhibit, the Statement of Revenue and Costs, in the DMIF budget submission to allocate manpower to work performance subcategories. Work performance categories (WPC) represent a functionally oriented breakdown of all depot activities. Although a large number of WPC-oriented revenue categories are available for use in preparing the DMIF budget, these can be grouped into three broad categories for use in supporting the LRA.[1] While additional research would be required to determine how the WPCs can be related to LRA

[1]Specifically, AFR 170-10, *Air Force Industrial Fund*, May 18, 1972 (as amended), which prescribes the procedures for the DMIF Budget Submission prescribes 16 revenue categories that are intended to accommodate all types of services ordered for IF activities. These revenue categories are based on the work performance categories which are prescribed for use in depot workload accounting and programming by DODIs 7220.29 and 4151.15, respectively. See, for example, DoD 7220.29H for a complete listing and description of all WPCs available for use.

categories, the method is certainly feasible. In Exhibit A-4 we show an initial assignment of the depot-level WPCs to the three major relevant LRA categories. A more refined breakout is probably feasible. For example, it is possible and may later be useful to separate the Overhaul, Repair, and Renovation category into its components.

Exhibit A-4. SAMPLE ASSIGNMENT OF DEPOT MAINTENANCE WPCS TO LRA CATEGORIES

LRA Category	Depot Level WPC[a]
Depot Maintenance	Overhaul, Repair, and Renovation Alteration and Modification
Sustaining Engineering	Engineering Services Quality Evaluation Logistic Support
Other Depot Level Activities	All Other WPC's

[a]From A-2 Budget Exhibit.

Once the WPCs have been related to the LRA categories, factors derived from revenue data in the A-2 statements can be used to allocate depot maintenance manpower to the LRA categories. These factors would be derived by computing the ratio of the total revenues shown in the applicable WPCs to the total revenue for a given year.[1] The resulting data base would permit expanding the total manpower data for each activity listed in this overall category to show more clearly the functions for which manpower resources are programmed at depot-level activities. For example, each Directorate of Maintenance could show military, civilian, and total end-strengths for manpower in the categories "Maintenance," "Engineering Services," and "Other."

[1]This assumes, of course, that the coverage in the A-2 is extended to the entire 5-year program period.

C. SUSTAINING ENGINEERING AND TECHNICAL ASSISTANCE SUPPORT

Sustaining engineering support is engineering effort designed to correct a proven performance deficiency, increase reliability and maintainability of equipment, achieve equipment and component standardization, simplify maintenance operations, make existing equipment compatible with newer equipment entering the inventory, and many other similar tasks. Technical assistance support involves advising, assisting, and training operational force personnel on the installation, operation, and maintenance of equipment. The LRA requires that manpower and dollar resources programmed for these types of logistic support be identified by materiel category and for designated weapon systems within the aircraft and missile materiel categories.

In the Air Force these services are provided by the Service Engineering Divisions at the ALCs and by commercial contractors. Authorized manpower end-strengths and operating funds for the Service Engineering Divisions are included in the aggregate dollar and manpower totals in PE 71112, "Inventory Control Point Operations"; therefore, the required LRA manpower data elements cannot be extracted directly from the F&FP. Funds to purchase these services from commercial contractors are included within total O&M resources shown in various force and support PEs throughout the FYDP so these dollars also cannot be extracted directly from the F&FP.

In addition to the services provided by the ALC Service Engineering Divisions, AFLC provides depot-level support with maintenance elements assigned to the Combat Logistics Support

Squadrons colocated with each of the ALCs. These units perform primarily depot maintenance ("hands-on") services, although some of the work performed might be considered to be technical assistance. Because the primary workload is depot maintenance, in the initial LRA these resources will be included in the depot maintenance functional category. Subsequent research and review by the Air Force might result in a revision of this initial approach.

The Air Force does not program resources separately for technical assistance support at the intermediate level. Air Force intermediate-level maintenance activities are generally colocated with the units they support and technical assistance is therefore considered a part of normal operations and not separately identified. For this reason in the initial LRA the technical assistance category will include only depot-level support.

1. Data Elements for Support Provided by the ALC Service Engineering Division

As pointed out above, authorized manpower and operating funds to support the direct-funded Service Engineering Divisions are included in the aggregate data in PE 71112. Authorized manpower end-strength data for these divisions can, of course, be provided by direct input from AF/PRM or derived from CMDB data as described in the section on depot maintenance manpower. In either case, once the ratios of total manpower in the Service Engineering Divisions to total manpower in PE 71112 are determined, these ratios can be used to distribute operating costs (pay and allowances) included in AFEEs that support PE 71112 in general to this LRA functional category. AFEEs unique to the Service Engineering Divisions (e.g., contractor service engineering support) can be assigned to this LRA category.

Currently, logistic support provided by the Service Engineering Divisions is not identified routinely by weapon systems supported. For the LRA this could be accomplished statistically, using as a basis either each weapon system's share of the total maintenance workload at each ALC or workload data available within the Service Engineering Divisions.

2. Data Elements for Support Provided by Commercial Contractors

The F&FP data base already contains information that identifies resources programmed to purchase service engineering and technical support from commercial contractors. Since FY 77, funds to purchase these services have been distributed to the PEs that include the weapon and support systems for which the services are required. Services purchased to support systems with general application are included in Program 7, PE 71112.

Two AFEEs are used to enter data about these funds into the F&FP data base. AFEE 583, "Service Engineering by Contract," provides for contractual costs incurred for determining the integrity of material and services in order to insure and maintain operational reliability, approve design changes, and assure their conformance with established specifications and standards. AFEE 584, "Contractor Engineering and Technical Services," provides for contractor furnished services of liaison, advice, and training in installation, operation, maintenance, and logistics support of AF equipment and systems. Thus, the Air Force can extract the data required to support the LRA directly from the F&FP data base.[1] For the LRA, these resources can be associated to materiel category and probably to weapon system by PE title.

The primary point of contact for this category is the Directorate of Logistics Plans and Programs, DCF/Systems and Logistics (AF/LGX).

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[1]These data are not currently shown separately in the published F&FP; the data are in the proper PE but included in the total O&M dollars.

D. ORGANIZATIONAL AND INTERMEDIATE MAINTENANCE

Organizational maintenance functions are those performed in the using organization. Such functions include but are not limited to cleaning and servicing aircraft, unscheduled maintenance, preflight checks, basic postflight checks, and accomplishment of time compliance technical orders (TCTOs).

Intermediate maintenance functions are performed by units specifically established to provide logistic support to operational units. These maintenance functions include but are not limited to intermediate level repairs, modifications, corrosion control, local manufacture, engine removal, component replacement, on-equipment repair, and the repair and modification of powered aerospace ground equipment.

Major commands may designate some maintenance activities as "consolidated maintenance organizations" which combine elements of both organizational and field maintenance units.[1]

The LRA requires separate identification of all Air Force resources programmed for organizational and for intermediate maintenance. It is also necessary to identify these resources separately to designated aircraft weapon systems.

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[1]Examples of such activities include special avionics and communication units, rescue and recovery units, and base support activities such as war reserve material (WRM) maintenance and housekeeping activities (*Air Force Manual 66-1*, Volume 7).

1. Manpower Resources in the F&FP Data Base

Manpower resources are not currently programmed into the F&FP data base in logistic categories that correspond to organizational and intermediate maintenance. The Air Force computerized manpower data system, the CMDB, is used to manage the allocation of approved manpower authorizations to the Major Commands and ultimately to the field levels. Relating CMDB functional codes to LRA categories would be a feasible means of developing the manpower data required to support this portion of the LRA. The consolidated maintenance organizations, which combine elements of both organizational and field maintenance activities, will require attention; the Air Force will have to decide how the manpower in these combined activities will be allocated between field and organizational categories.

Manpower costs would be determined in accordance with the procedures discussed in Chapter II, either by using ratios of organizational and intermediate maintenance end-strengths (as determined from the CMDB) to total end-strengths and total manpower costs, or by computing costs using average pay rates.

2. Materials Resources in the F&FP Data Base

Organizational and intermediate maintenance materials are programmed together, as base maintenance materials, in the F&FP data base. They are not programmed in such a way that base materials can be separately identified as for intermediate or organizational maintenance.

Base maintenance materials are programmed by the use of two factors that are applied to flying hours--one factor for general support material (GSM) and one factor for system support material (SSM).

GSM material is purchased from the General Support Division of the Air Force Stock Fund, and represents more than 900,000

national stock number expendable items for which the Air Force is not the inventory control point. The DoD-wide Defense Logistics Agency (DLA) is the ICP for GSM materials. These materials include expense-type aircraft, electronic, and communications repair parts as well as base consumables like soap and paper towels. These items are programmed as AFEE 609. Because all of these materials are not exclusively aircraft maintenance, the data in AFEE 609 must be separated into data for maintenance and nonmaintenance materials in order to satisfy the requirements of the LRA. Since the GSM factor is based on OOB experience data, it should be possible to develop two separate factors, one for maintenance expendables and one for nonmaintenance.

SSM material is purchased from the Systems Support Division of the Air Force Stock Fund, and represents aircraft and missile expendable maintenance materials for which the Air Force is the ICP. These materials include nonrepairable peculiar spares as well as repair parts. SSM is programmed as AFEE 605, and the SSM factor is developed from OOB experience data. Because SSMs are all maintenance materials, data in the AFEE can be used in the LRA.

The major difficulty with using AFEEs 605 and 609 is that the dollars-per-flying-hour factors used to program these resources are for intermediate and organizational materials combined. In order to identify these two categories separately, the factors will have to be separated. This could be done on the basis of prorations based on the intermediate and organizational end-strengths developed from the CMDB.

3. Weapon System Identification

Manpower data can be identified according to weapon system by taking CMDB functional categories and examining the PEs into which they fall. PEs that are weapon system unique will then

provide the required weapon system identification. PEs that contain more than one weapon system will require that the manpower be allocated by use of an appropriate methodology, such as flying hours.

Because the materials factors for AFEEs 605 and 609 are based on flying hours, and because any likely modifications to these factors (to show intermediate and organizational materials separately or to show maintenance and nonmaintenance GSM separately) will be based on flying hours, the materials can be aligned to weapon systems without difficulties.

E. INITIAL AND REPLENISHMENT SPARES AND REPAIR PARTS

The LRA requires identification of total dollars programmed to procure initial and replenishment spares by materiel category and by designated weapon systems within the aircraft and missile materiel categories. These spares, also referred to as investment or recoverable spares, are reparable items which are funded for procurement out of investment appropriations and for depot-level repair out of the O&M appropriations. At the end of FY 77, these spares composed an inventory worth about $8 billion and identified by over 130,000 master stock numbers. Generally, initial spares are those spares procured in conjunction with initial acquisition of major weapon or support systems in order to establish initial stock levels to support these systems until AFLC has consumption information that can be used to determine regular supply support requirements. Replenishment spares can be thought of as the pool of investment spares used to meet worldwide Air Force requirements for follow-on recoverable spares.

In the Air Force an overwhelming majority of total spares dollars are programmed to purchase aircraft spares and, thus, are included in the Aircraft Procurement (APAF) appropriation. For example, in the FY 79 President's budget submission (as reflected in the January 1978 FYDP), funds for aircraft spares made up about 94 percent of the total dollars programmed for spares in both FY 78 and FY 79. Missile spares, funded in the Missile Procurement (MPAF) appropriation, made up about 5 percent of the total spares requirement for these same 2 years.

The remaining 1 percent was funded in the Other Procurement (OPAF) appropriation to support equipment in materiel categories other than aircraft and missiles. All spares are managed and controlled at stock-number level, but for programming and budgeting purposes are grouped by procurement line items by BACs and subcodes within the three major appropriations. As will be discussed later, this grouping of spares data by BAC facilitates the identification of spares by materiel category.

The Air Force Procurement Annex includes spares data by appropriation, BAC, sub-BAC, and procurement line item. Since these data relate directly to the materiel categories required by the LRA, the Air Force can provide information about total initial and replenishment spares by materiel category from the F&FP data base. In addition, the Procurement Annex and the F&FP data base contain information, on a non-add basis, about initial spares by weapon system within the APAF and MPAF appropriations. Thus, the Air Force can provide the required weapon system information for the initial spares functional category in the LRA. Neither the Procurement Annex nor the F&FP data base, however, contains information about total replenishment spares by weapon system supported even though, as will be discussed later, the Air Force has the capability to provide these data. Thus, some changes in current Air Force procedures for updating the F&FP will be required before the Air Force can routinely provide all of the spares data elements required to support the LRA.

1. The Recoverable Consumption Item Requirements System

The Recoverable Consumption Item Requirements System (DO-41) is the basic source of data about Air Force spares requirements. The information in this system is used for managing and planning reparable spares support and provides the basis for budgeting and programming spares support data shown in the F&FP. The DO-41 computerized data system is used by AFLC to estimate

future inventory needs to support all customers. The DO-41 system is run quarterly by each ALC to compute the need to buy, repair, terminate procurement, and dispose of supply items based on current and projected inventory levels and usage rates. These needs are projected in terms of quantities and dollars for 75 months from the "as of" date of the computation.[1] The projected buy requirements are consolidated by AFLC to form the basis for the Air Force spares procurement program.

Since spares requirements are addressed at the stock-number level in the DO-41 system, the Air Force has a detailed listing throughout the year to support its spares program. For example, the September 30 listing from each ALC is consolidated and reviewed by AFLC to form the basis for the spares program (requirements) included in the AFLC POM submitted to the Air Staff. These data are used both to support the January President's budget submission and to form the baseline program for the next POM. During the POM exercise, replenishment spares factors[2] are used to size the aircraft and missile spares program as a function of changes in force levels and flying hours. At the end of the POM exercise AFLC is informed of the amount of the budget allocated for spares and the DO-41 is rerun to adjust the spares program to this funding constraint. Similarly, during the remainder of the PPB cycle, AFLC is informed of the effect of program decisions on the funds programmed to buy spares and uses the DO-41 to adjust the spares program. Thus, the Air Force has a complete listing of projected spares requirements by stock number on a quarterly basis.

The DO-41 can also identify all stock numbers according to the weapon system or equipment supported. System-peculiar

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[1]For example, the end FY 77 quarterly run would project requirements through the first quarter of FY 84.

[2]These factors are derived jointly by AF/LGX and AF/ACB and based on historical consumption data provided by AFLC.

spares are identified directly by system supported. These items generally represent about 75 percent of the replenishment spares program. For program/budget purposes, the Air Force prorates the remaining spares--those common to more than one weapon system--to individual weapon systems based generally on flying hours. For example, in material prepared to support the FY 80 President's budget, the Air Force identified all but 1 percent of the FY 79 and FY 80 aircraft replenishment spares requirement to 21 MDS aircraft. These data demonstrate that the Air Force can associate items in its replenishment spares program with weapon system supported even though these resources are managed on a line-item basis.

2. Total Initial and Replenishment Spares by Materiel Category

Exhibit A-5 shows how the budget activity and subactivity codes used to identify spares in the Procurement Annex can be related to the required LRA materiel categories. Thus, the Air Force can extract the required LRA information elements that define initial and replenishment spares by materiel category directly from the Procurement Annex. In the Procurement Annex, APAF-06 and MPAF-04 each consist of three lines--total initial spares, total replenishment spares, and total spares. Thus, the required LRA data elements are defined at the BAC level. For OPAF procured spares, however, spares data are defined at the sub-BAC level. For example, sub-BAC OPAF-01-05 consists of three lines--total initial, total replenishment, and total munitions and support equipment spares. Similarly, sub-BACs OPAF 02-06 and OPAF 04-05 provide these same data for vehicle and other base maintenance and support equipment respectively. Within OPAF-03, several readily identifiable sub-BACs are used to show spares data for the various groupings within the electronics and telecommunications materiel category. Thus, for OPAF-procured spares, even though it is necessary to extract data at levels below the BAC, the required data are readily available in the Procurement Annex.

Exhibit A-5. PROCUREMENT ANNEX SPARES DATA ACCORDING TO LRA MATERIEL CATEGORY

LRA Materiel Category	Budget Activity Codes	
Aircraft	APAF-06	Aircraft Spares
Missile	MPAF-04	Missile Spares
Weapons and Ordnance	OPAF-01	Munitions and Support Equipment
Electronic and Telecommunications Equipment	OPAF-03	Electronics and Telecommunications Equipment
Other Equipment	OPAF-02	Vehicular Equipment
	OPAF-04	Other Base Maintenance and Support Equipment

3. Initial Spares by Weapon System

In the Air Force, initial spares are programmed for support of new production aircraft and missile systems, for common support equipment, and for the modification program. These funds are initially estimated as a percentage of the acquisition cost of the hardware being procured so initial spares are readily identifiable to the weapon system or equipment to be supported.[1] For major aircraft and missile systems, the Procurement Annex displays funds programmed for initial spares, on a non-add basis, along with weapon system acquisition funds.[2] As a result, most of the weapon system-related initial spares information can be extracted directly from the Procurement Annex.

Modification and common AGE spares are not displayed by weapon system in the Procurement Annex; however, Air Force program monitors have backup data that identify these spares

[1]A factor approach is used pending the completion of the weapon system provisioning conference, at which time spares support requirements are determined by stock number.

[2]Generally, the majority of initial spares are identified on this basis (e.g., 72 percent for FY 79 and 56 percent for FY 80 in the January FYDP).

according to the equipment to be supported. Modification spares are identified by weapon system in the F&FP data base so the Air Force can provide the required LRA data elements for these spares. Common AGE spares would have to be distributed to systems supported by statistical methods using (for example) the relative acquisition costs of the systems. Since common spares for this equipment are not managed by weapon system, statistical proration of these spares may not assist OSD in decisionmaking for logistics resources but the results of such procedures may be useful as general information. For this reason, and because the amount of resources in this category is small relative to resources for weapon system peculiar spares, we recommend that the Air Force identify all aircraft and missile spares, including common AGE spares, by weapon systems.

4. Replenishment Spares by Weapon System

As described earlier, the Air Force manages its spares program by stock-numbered line items and uses the DO-41 computerized information system as the basic source of data to accomplish this management function. Because the DO-41 system can identify spares line items by system supported, the Air Force can identify replenishment spares by weapon system. Even though replenishment spares are not displayed by weapon system in the Procurement Annex, the Air Force does prepare program backup data, using the DO-41 system, on this basis. For example, in material supporting the APAF spares program in the FY 79 President's budget submission, replenishment spares are identified by weapon system for both FY 79 and FY 80. The Air Force cautions, however, that the allocation of these spares to weapon systems should be viewed only as general information since the nature of the process dictates that the system be dynamic and constantly changing. This is because the computation of spares requirements is a continuous process, involving predictions of when a great number of components will be required. These

predictions are based on historical consumption data, projected usage rates that depend on the tempo of system operations, planned improvements in system reliability and maintainability, and adjustments by item managers based on expert judgment and imposed financial constraints. Obviously, these predictions are more accurate for the near years and less accurate for the outyears in the FYDP; therefore, the Air Force is willing to show replenishments spares data by weapon system for FY 79 and FY 80 but reluctant to display such data for FY 81 through FY 84.

As the spares program for a given fiscal year is implemented, adjustments are made to reflect changes in both projected requirements and price levels. These alterations of projections made over a year earlier in the DO-41 requirements computation are based on the best information available. They cause the lists of spares requirements by weapon system to change significantly, even though the total of projected required funds may be reasonably accurate.

We agree with the Air Force that lists of projected spares funds by weapon systems that are prepared more than one year before programs are implemented should not be viewed as firm. We acknowledge that actual consumption data captured in accounting systems can best be used to evaluate the level of weapon system support, but lists of predicted usage by weapon system are useful for general information and as a basis for evaluating the effectiveness of the spares programming process. For this reason, we recommend that the Air Force use the DO-41 system to provide the required LRA replenishment spares by weapon system information elements. As these data are not currently contained in the Procurement Annex or the F&FP data base, the Air Force will have to devise new procedures to input them into the F&FP data base. This should not represent a major effort because the data already exist and the F&FP data base and its related coding system are extremely flexible.

5. Summary

The LRA requires identification of total dollars for procurement of initial and replenishment spares by materiel category and by designated weapon systems within the aircraft and missile materiel categories. Since the Procurement Annex already includes spares data at the BAC and sub-BAC level that can be assigned to the LRA materiel categories, the Air Force can extract these data directly from the F&FP data base that supports the Procurement Annex. The Procurement Annex also includes data, on a non-add basis, identifying the initial spares required to support major aircraft and missile systems. The Air Force can thus provide these data to support the LRA. Finally, since the Air Force uses a computerized information system, the DO-41, to manage spares at the stock-number line-item level, and because the DO-41 can identify all aircraft and missile spares by equipment supported, the Air Force can provide all the information elements required to support the LRA.

In the Air Force, AFLC manages the spares inventory and provides the Air Staff with projected spares buy requirements based on requirements computed using the DO-41 system. At the Air Staff, the spares program is managed, by appropriation, by program monitors assigned to the Directorate of Logistics Plans and Programs, DCS/Systems and Logistics (LGX).

F. MODIFICATIONS

The modifications section of the LRA requires information on the Air Force modification program by materiel category and by designated aircraft and missile weapon system. In addition, information is required about modification type (purpose), the modification procurement cost, the cost of initial spares support, and installation cost. The Air Force will have to revise its F&FP update procedures to provide this information in support of the LRA.

In the Air Force the Directorate of Planning, Programming and Analysis, DCS/Research and Analysis (RDX) and the Directorate of Maintenance Engineering and Supply, DCS/Systems and Logistics (LGY) manage the modification program. Although there is some overlap in responsibilities, the former is primarily responsible for Class V modifications and the latter for Class IV. When a modification line item is funded, the Directorate of Logistics Plans and Programs, DCS/Systems and Logistics, in conjunction with the Air Staff program monitor and the applicable MAJCOM, is responsible for programming procurement and installation resources to accomplish the required work. For control purposes, individual modifications in the Air Force's Modification Program are identified by separate numbers. All information such as modification applicability, scheduling, and funding is recorded at this level.

AFR 57-4, *Modification Program Approval,* (December 15, 1977), prescribes the procedures for planning, documenting, and obtaining approval of Air Force modifications. Modifications

are used in the Air Force to change the configuration of existing equipment and nonnuclear munitions to correct deficiencies or to improve capabilities. AFR 57-4 also prescribes modification classifications. Classifications IV, V, and Update are of particular relevance to the LRA since they are the categories used by the Air Force to program logistic resources for modifications.[1] Class IV (approving authority is AFLC[2]) is required to ensure safety, correct a deficiency, or for logistic support purposes. It is further divided into Class IVA, which ensures safety of personnel, systems, or equipment by eliminating operational, nuclear, or physical hazards; Class IVB, which corrects a deficiency including one that affects reliability and maintainability, electromagnetic compatibility, or communications security; and Class IVC, which provides one of the following benefits: significant improvement in maintainability or service life, improved logistic support or cost reduction by modification of present equipment in lieu of new procurement, or cost reduction by standardizing equipment configuration. Class V (approving authority is HQ USAF) is required to provide a new or improved operational capability. Update (approving authority is AFSC[2]) is required to satisfy a Class-IV type requirement revealed before transfer of program management responsibility from AFSC to AFLC. This category provides funds to retrofit equipment to production line configuration. These modification classifications can be related to the classifications prescribed by the LRA structure.

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[1]Classes I and II are used for temporary modifications. Class III modifications are required to ensure production continuity. Modifications in these classes are funded as they occur and no logistic resources are programmed for these specific purposes.

[2]AF/LGY must approve if the total cost exceeds $5M for aircraft or missiles or $0.5M for ground equipment.

1. Information Required to Support the LRA

a. Types of Modifications

Exhibit A-6 lists the types of modifications prescribed by the LRA for display of information about aircraft and missile modifications and relates them to the AFR 57-4 classification structure. For other materiel categories in the LRA structure, no identification of resources by type of modification is required.

Exhibit A-6. AIR FORCE AND LRA MODIFICATION CATEGORIES

LRA Modification Category	Comparable AFR 57-4 Category
Operational/Military Capability Improvements	Class V
Safety	Class IVA
Reliability/Maintainability	Class IVB Class IVC
Other	As required

We recognize that many modifications will fit into more than one category and categorization of individual modification programs may have to be done on the basis of criteria developed jointly by OSD and the Air Force (e.g., the predominant purpose of the modifications). Update modifications would also have to be categorized individually since by definition their purpose is the same as a Class IV modification, which means an individual update requirement might fit into any one of the last three LRA categories shown in the exhibit. Finally, the "Other" category has been established to cover programs that may not fit clearly into one of the other categories in the initial LRA. It should be possible in the future to eliminate this category as experience is gained in developing the LRA.

Because the Air Force routinely classifies all modifications into one of the AFR 57-4 groupings, the LRA data elements required to identify aircraft and missile modifications by type are available. These data are not, however, currently in the F&FP data base, so the Air Force will either have to add additional input codes for use in updating the F&FP data base or provide the information manually.

b. Direct Modification Procurement Costs

Total procurement to support modification programs is funded in all three procurement appropriations and includes the direct cost of the modification plus the cost of modification spares. Direct procurement provides for nonrecurring costs as well as for such items as kits, data, tooling, and other support equipment that may be required to accomplish the modification. Within each of the appropriations, direct procurement costs are funded in BACs and sub-BACs that relate directly to the materiel categories required by the LRA. The Procurement Annex, published with each updating of the FYDP from data included in the F&FP data base, includes this information. Moreover, within the aircraft and missile appropriations, these data are identified by weapon system so the Air Force is able to provide most of the information required by the LRA for resources programmed for direct procurement of modification materiel.

Most of the modification resources programmed and consumed in the Air Force are for aircraft and are, therefore, funded in the APAF appropriation. For example, in FY 79 and FY 80, as shown in the January 1978 FYDP, approximately 94 percent of the total program was funded in the APAF appropriation. For these same 2 years, the MPAF and OPAF appropriations each funded about 3 percent of the total program. All modification procurement is documented extensively in material prepared to

support the OSD and Congressional Budget submissions--primarily in the P-3a Budget Exhibits and similar displays in the Budget Justification Books. In addition, the Air Force publishes a 5-year "Aircraft Modification Funding Plan" to support the modification program in the January and May FYDPs.

Exhibit A-7 shows the materiel categories in which information about the modification resources are to be included in the LRA. Also shown for each category are the BACs and sub-BACs used to identify the direct costs of modification procurement.

Exhibit A-7. PROCUREMENT ANNEX MODIFICATION DATA AND COMPARABLE LRA MATERIEL CATEGORIES

LRA Category	Budget Activity Codes
Aircraft	APAF-05, Modification of In-service Aircraft
Missile	MPAF-03, Modification of In-service Missiles
Weapons and Ordnance	OPAF-01
Electronics and Tele-communications Equipment	OPAF-03
Other Equipment	OPAF-02 OPAF-04

APAF-05 and MPAF-03 are used exclusively to show funding of modifications, and each lists requirements by weapon system supported. Thus, the Air Force can provide the LRA information elements required to relate procurement of modification equipment to weapon systems. Data for OPAF procured modification equipment, however, are shown at either the sub-BAC or the line item level within each of the BACs listed in the exhibit. For example, sub-BAC OPAF-03-08 is used exclusively for funding modifications for equipment in the Electronics and Communications

materiel category, while funds for modifying equipment within the other OPAF BACs listed are shown at the line item level. Therefore, although it is necessary to extract data below the BAC level to identify modifications according to materiel category to support the LRA for OPAF, the required data are readily available in the Procurement Annex.

c. Modification Initial Spares

Initial spares to support modification programs, as described in the preceding section, are included in BACs within each procurement appropriation and are not listed separately. However, for programming purposes these spares generally are estimated as a percentage of the acquisition cost of the modification hardware. Thus, the Air Force has the necessary capability to identify modification initial spares to materiel category and to weapon system supported for the LRA. These spares data will be included within the LRA Modification category on a non-add basis to avoid double counting (modification spares are included in the data in the LRA Initial Spares category).

d. Installation Costs

Aircraft modification kits are procured on a time-phased basis, procurement lead-time away from installation. To the maximum extent possible, installations are scheduled concurrent with normal maintenance programs. Complex modifications are performed at Air Force depots or contractor facilities concurrent with programmed depot maintenance. Where the installation tasks are less complex, installation may be accomplished in the field by field organization personnel or by specialized teams dispatched from the depot or provided by contractors. In all cases, for Air Force funded depot-level modifications, installation expenses are funded in the O&M appropriations. As described in appendix section A, the costs of installing

modifications at the depot level can be identified separately. The installation costs of modifications performed in the field by other than depot-level personnel are not, however, identified separately. This is because the work is accomplished by regularly assigned military personnel at the same time as regular recurring maintenance and the pure modification installation costs cannot be isolated.

Early in the modification approval process, an estimate is made of the cost to install the modification on all applicable aircraft. This planning estimate generally considers installation cost in isolation (i.e., as if it were the only modification to be performed on each aircraft and is independent of schedule). As the modification approval and funding process progresses, these planning estimates are refined, especially for the near years in the FYDP, as aircraft modification installation plans are developed that attempt to schedule all planned modifications for each aircraft during scheduled depot maintenance. These time-phased planning estimates are used in the P-3 Budget Exhibits that support the October Service budget submissions and are the basis for the aggregated P-3 Budget Exhibits prepared to support the subsequent Presidential budget submission. It is important to note that the O&M installation data shown in the P-3 may not be identical with data shown in the Air Force O&M budget submission since they are merely planning estimates, and the data used in the O&M submission are derived from the Depot Maintenance Long Range Planning System. For the budget year these two estimates are probably identical, but as uncertainty in PDM modification schedules increases in the outyears, it is probably more difficult to reconcile the two. Nevertheless, the Air Force should be able to use these data to provide the information elements required to support the LRA. These installation data will be included within the LRA Modification category on a non-add basis to avoid double-counting (i.e., customer funds for modification installations

costs are included on an add basis in the LRA Depot Maintenance category).

2. Overview of LRA Coverage

Exhibit A-8 shows the cost coverage required by the LRA. Both spares and installation costs will be included on a non-add basis since they are included on an add basis in other LRA categories. All of the data required to support this data base already exist in the Air Force (although not necessarily in the F&FP data base) in a form that will support the LRA. Thus, the Air Force will have to revise its F&FP update procedures if the LRA is to be produced from the F&FP data base.

Exhibit A-8. LRA DATA BASE COVERAGE FOR THE MODIFICATION CATEGORY

	Fiscal Year			
	Cost (Dollars, Millions)			
	Modification	Spares	Installation	Total
Aircraft[a]	Same for missiles; totals only shown for other materiel categories			
Weapon System "A"	Same for all other designated systems			
CILOP				
OPNL/Mil Capability				
Safety				
Rel/Maint				
Other				
Total Wpn Sys "A"				
Total Aircraft Materiel Category				
Grand Total	For all materiel categories			

[a]OSD may require narrative identification of special emphasis, generally temporary high priority programs that may fall into any one or more of the standard LRA categories.

G. DEPOT-LEVEL STORAGE AND DISTRIBUTION ACTIVITIES

Centrally managed depot-level storage, warehousing, distribution, and traffic management activities in the Air Force are conducted primarily by the Directorates of Distribution at the five AFLC Air Logistics Centers (ALCs). Resources to finance these efforts are included in PE 71111F. The Directorate of Logistics Plans and Programs, DCS/Systems and Logistics (LGXW), is the Air Staff office of primary responsibility for coordinating and reviewing all central supply programs during the POM and budget exercises.

The LRA requires only data on the total resources for this function--i.e., total authorized military and civilian end-strengths and operating funds by appropriation for a single line in the LRA structure. Unfortunately, PE 71111 includes resources for activities other than central supply. As a result, the current F&FP data base will not provide the data elements required to support the LRA.

Personnel assigned to the 5 Directorates of Distribution at the 5 ALCs account for approximately 50 percent of the total military manpower and over 80 percent of the total civilian manpower assigned to PE 71111. These manpower authorizations are all identified by CMDB functional codes in the 48XX series, "Supply Depot Operations." In addition, another 25 percent of the total military manpower, also identified by functional codes in the 48XX series, is assigned to the Combat Logistics Support Squadrons assigned to the ALCs. This manpower also provides depot level supply support.

The majority of the remaining manpower is assigned to logistic support units at various AFLC installations. As evidenced by CMDB codes, this manpower performs base level supply and transportation functions. Even though the Air Force finances these resources in PE 71111, all or part of these resources should be assigned to the LRA base installation supply function. Pending completion of additional research on central supply activities in all three Services, our recommendation is that all resources for these support activities be assigned to the LRA installation (BOS) and organizational level supply functions.

Even though the manpower data in the CMDB do not match the F&FP end-strengths exactly,[1] it is feasible to use manpower ratios developed from these data to provide LRA data elements. As a result, we recommend that the ratio of manpower with 48XX functional codes to total manpower in PE 71111 in the CMDS be used to allocate F&FP total operating funds and end-strengths to Depot Level Storage and Distribution. The remaining PE 71111 operating funds and end-strengths should be allocated separately to Installation (BOS) and to Organizational Level Supply Operations.

Once the resources in PE 71111 have been assigned to the appropriate LRA functions, the results can either be entered into the F&FP data base directly, by increasing the number of input lines and codes, or used to prepare the LRA manually from PE totals.

[1]For example, for PE 71111, the CMDS run for end FY 79, dated April 1978, reflects totals that are within 5 and 9 percent, respectively, of the military and civilian end-strengths in the January F&FP.

H. CENTRAL INVENTORY MANAGEMENT ACTIVITIES

Depot-level stock control, cataloging, item management, and associated activities in the Air Force are accomplished primarily by the Directorates of Materiel Management at the five AFLC ALCs. Resources to fund these efforts are included in PE 71112F. The Aircraft/Missiles Programs Division in the Directorate of Logistics Plans and Programs, DCS/Systems and Logistics (LGXW) is the Air Staff office of primary responsibility for coordinating and reviewing all central inventory management programs during the POM and budget exercises.

The LRA requires only data concerning the total resources for this function--i.e., total authorized military and civilian end-strengths and operating funds by appropriation for a single line in the LRA structure. Unfortunately, PE 71112 includes resources for service engineering functions, which make up a separate LRA functional category. For this reason, the F&FP data base will not currently provide the data elements required to support the LRA.

Personnel assigned to the 5 Directorates of Materiel Management account for approximately 50 percent of the total military manpower and over 80 percent of the total civilian manpower assigned to PE 71112. These manpower authorizations are all identified by CMDB functional code 1269, "Special Logistics Management Activities," and by various codes in the 39XX series, "Materiel Management." The remaining authorizations are scattered over a large number of operating locations. The CMDB also provides separate codes within the 39XX series

to identify various activities within the Directorates of Materiel Management. For example, code 3930 identifies resources authorized for service engineering activities.

For the initial LRA we recommend that all resources included in PE 71112, except those programmed for service engineering, be identified to the LRA Central Inventory Management functional category.[1] Even though the manpower data in the CMDB do not match the F&FP end-strengths exactly,[2] it is feasible to use manpower ratios developed from this data base to provide LRA data elements. As a result, we recommend that to obtain the entries for the LRA Central Inventory Management function a ratio first be computed on the basis of manpower by function shown in the CMDB. This should be the ratio of PE 71112 manpower minus those manpower in the service engineering category to total PE 71112 manpower. This ratio then could be applied to the operating funds and manpower shown in PE 71112 in the F&FP to determine the funds and manpower end-strengths to be shown in the Central Inventory Management function in the LRA.

Once the resources in PE 71112 have been identified in this way, the results can either be entered into the F&FP data base directly, by increasing the number of input lines and codes, or used to prepare the LRA manually by adjusting the PE totals.

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[1]Resources for service engineering activities are addressed on page A-26.

[2]For example, for PE 71112, the CMDS end run for FY 79, dated April 1978, reflects totals that are within -9 percent and +2 percent, respectively, of the military and civilian end-strengths in the January F&FP.

I. PROCUREMENT OPERATIONS AND CONTRACT ADMINISTRATION SERVICES

The LRA includes separate categories under the Supply System Operations category for Central Procurement Operations, Central Contract Administration, and Other Procurement Operations (non-BOS). The latter category is included to capture logistic resources programmed to accomplish this function at other than the depot level but not financed as part of BOS. All of the data needed to provide the data elements required to support the LRA are available. However, these data are not separately identified in the F&FP data base, so some modification to existing procedures and data systems must be considered if the Air Force elects to produce the LRA data directly from the F&FP data base.

1. Central Procurement Operations and Contract Administration Services

All resources for centralized procurement of supplies and services and for contract administration services (CAS) of all contracts for which the Air Force has been assigned CAS responsibilities are included in PE 71113F. These functions are categorized as prime procurement and contract management and are accomplished primarily by the Procurement Directorates at the five AFLC ALCs, by AFLC Contract Management Centers (CMCs) at various locations, and by the Contract Management Division of AFSC.

The prime procurement function includes negotiation, award, amendment, revision, and termination of contracts for the

procurement of electronic systems and follow-on spares and for modification and overhaul of major weapon systems and subsystems. The contract management function provides for the management and administration of prime and subcontracts performed at the contractors' plants. This function includes quality assurance and other tasks that provide continuous and direct observation of contractor performance. The Directorate of Logistics Plans and Programs, DCS/Systems and Logistics (LGXW), is the Air Staff office of primary responsibility for coordinating and reviewing all resources identified to this category during the POM and budget exercises.[1]

The LRA structure includes separate subfunctional categories for central procurement operations and for central contract administration--i.e., a separate display of authorized military and civilian end-strengths and operating funds by appropriation for each subfunction. The F&FP data base for PE 71113 does not identify resources on this basis, and therefore will not provide the data elements required by the LRA; however, data in the CMDB can be used to derive the required data elements.

Only about one-third of the manpower in PE 71113 is assigned to the five Procurement Directorates. The remaining authorizations are scattered over a large number of operating locations. All of these authorizations are identified by CMDB functional codes, most of which are in the 125X series. These codes can be related to the two LRA categories and thereby provide a basis for developing the LRA data elements. Examples of some of the functional codes used are:

- 1252--Central Procurement Operations
- 1254--Contract Administration

[1]This description is based on the narrative contained in the *Air Force Operations Budget Justification Book* for the FY 79 President's Budget.

- 1255--Quality Assurance
- 1256--Pricing

We recommend that in the initial LRA all resources included in PE 71113 be allocated to one of the two central subfunctional categories. Even though the manpower data in the CMDB do not exactly match the F&FP end-strengths,[1] it is feasible to use manpower ratios developed from this data base to provide LRA data elements. As a result, we recommend the following two-step procedure to develop the required data elements:

(1) Assign all CMDB codes used in PE 71113 to one of the two LRA subfunctional categories.

(2) Develop ratios of manpower in each category to total manpower in PE 71113.

Once the ratios are determined, they can be used to allocate total operating funds and end-strengths in the F&FP to the proper LRA category.

Once the resources in PE 71113 have been identified on this basis, the results can either be entered into the F&FP data base directly, by increasing the number of input lines and codes, or used to prepare the LRA manually by adjusting the PE totals.

2. Field Procurement Operations

Resources to accomplish the procurement operations function in the field are not currently identified separately but are generally included in the base operations functions at the local level. For this reason, we have included these resources in the Installations and Facilities Support section of the LRA.

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[1]For example, for PE 71113, the CMDS end run for FY 79, dated April 1978, reflects totals that are within ± 1 percent of the military and civilian end-strengths in the January F&FP.

J. INTERMEDIATE AND ORGANIZATIONAL SUPPLY

Organizational supply functions are those performed in the using organization; intermediate functions are performed by units specifically established to provide logistic support to operational units. Manpower in intermediate and organizational supply activities is not programmed separately in the F&FP data base. Because manpower is not functionally identified as being in supply or other logistics categories in the current F&FP data base, some other functional data system must be utilized. As explained in Chapter II, the CMDB data base can feasibly provide functional manpower program data in LRA logistics categories, including these supply categories.

Manpower costs would be determined in accordance with the procedures discussed in Chapter II, either by using ratios of intermediate and organizational supply end-strengths (as determined from the CMDB) to total end-strengths and total manpower costs, or by computing the end-strength ratios and then determining costs by using average pay rates.

Stock fund consumable materials are included in AFEE 609 (General Support Items) and are shown in the "Other Consumables" portion of the LRA.

K. SECOND DESTINATION TRANSPORTATION

Second destination transportation (SDT) applies to the shipment of materiel among worldwide DoD supply activities.[1] The dollar resources programmed for this function pay for the movement of materiel whether by MAC, MSC, the commercial contract LOGAIR system, or by commercial surface and air. The Plans and Programs Division, Directorate of Transportation (LGTX), is the office of primary responsibility on the Air Staff for this function.

The original OSD-proposed LRA structure required identification of resources programmed for this function in only two subfunctional categories--surface (land and sea) and air. We recommend that this coverage be expanded, consistent with the OP-5 and OP-16 Budget Exhibits, so that the relevant categories in the LRA are as follows:

(a) Transportation
    (1) MAC
    (2) MSC
    (3) Other
(b) Terminal Services

In the Air Force approximately 75 percent of the funds estimated to be required for SDT are programmed in PE 78010F. Of this total, about 85 percent are allocated and centrally managed by AFLC. The other 15 percent are managed by the Air

[1]The shipment of materiel from the procurement source to the first point of entry into the DoD supply system—first destination transportation—is excluded. These costs are generally funded along with the acquisition cost.

Force Directorate of Administration (AF/DA) to provide SDT services to miscellaneous USAF activities such as base exchanges and base theaters.

The remaining 25 percent of total estimated SDT resources are allocated to the MAJCOMs, primarily to fund movements not directed by AFLC. The majority of these funds are used by overseas commands for intratheater movements.

Eight AFEEs are prescribed for use in programming SDT resources. Table A-2 shows the categories in the F&FP SDT data base and is based on the FY 79 President's Budget Submission. The eight categories listed in the table are easily equated with categories included in the LRA structure. To support the LRA, we recommend that SDT data elements be defined at the AFEE level. Although some problems might possibly result from this approach, it appears that assigning the entire AFEE to a single LRA category is probably sufficiently accurate. Tentatively, the assignments shown in Table A-2 seem reasonable. Except for AFEE 469, which is used to program miscellaneous costs such as packing, crating, and temporary storage, this assignment is quite straightforward.

Table A-2. AIR FORCE FY 79 SECOND DESTINATION TRANSPORTATION PROGRAM[a]

AFEE	Title	MFP 7 Only (PE 78010)	Total	LRA Category
451	ASIF--unit rotations (MAC)	$ 0	$ 3,977	Transportation - MAC
454	ASIF--other (MAC)	147,064	199,144	Transportation - MAC
461	MSC	74,195	77,280	Transportation - MSC
462	Commercial air	2,359	9,458	Transportation - Other
463	Commercial surface	27,878	55,629	Transportation - Other
464	LOGAIR	46,464	46,710	Transportation - Other
465	Port handling	14,309	19,094	Terminal Services
469	Other	17	3,917	Terminal Services
	Total	$312,286	$415,209	

[a]As of January 1978.

Source: LGTX

Note that Air Force treatment of the SDT function may not be consistent with Navy treatment of this function. As near as could be determined, the Navy programs all resources for SDT in PE 78010N. To promote consistent treatment among the Services, we recommend that all Air Force SDT resources, including the 25 percent allocated to the MAJCOMS, be included within section IC1 of the LRA.

L. AIRLIFT OPERATIONS (MAC), SEALIFT OPERATIONS (MSC), AND TRAFFIC MANAGEMENT AND TERMINALS (MTMC)

The OSD LRA structure includes total authorized manpower end-strengths and non-IF dollars (direct funds) programmed to support each of these activities. Since these activities are well defined at the PE level, all data required to support the LRA are readily available in the F&FP data base. While a display of total manpower and dollar resources derived by aggregating PE totals may be adequate for the initial LRA, additional data should be helpful for OSD decisionmaking on the allocation of resources to provide these services. For this reason, we recommend additional research to improve the visibility in subsequent LRAs of resources consumed in providing Major Force Program 4 transportation services.

In the DoD FYDP, Major Force Program 4 is divided into three major categories: 4.1, Airlift; 4.2, Sealift; and 4.3, Traffic Management and Water Terminals. The Airlift category is of prime importance to the Air Force input into the LRA, both because the Air Force is the DoD single-manager operating agency for providing these industrially funded services and because the Air Force programs substantial amounts of direct-funded resources in Program 4. LRA coverage of these latter resources should be examined in detail to determine if it is sufficient. The Air Force programs only limited manpower and MILPERS funds in Program 4.3, and data on these resources are readily identifiable in the F&FP data base. No Air Force resources are programmed in support of Program 4.2 in the current FYDP.

1. LRA Data for IF-Funded Airlift Operations

In order to develop the Air Force input into the LRA for IF-funded airlift operations, it is necessary to consider only the authorized manpower end-strengths and direct appropriation dollars in the IF PEs in Program 4. These PEs are readily identifiable by PE title, and the information required to support the LRA can be derived by aggregating PE appropriation and manpower data. The direct-funded investment data in the appropriate PEs will not be included in the LRA Transportation category, since these data are already treated as part of the various procurement categories in the LRA. MILPERS dollars will be required in the operating cost category because these are direct-funded resources that are not included in the rates used to bill MAC customers and, therefore, are not included elsewhere in the LRA. This approach is consistent with the treatment of IF activities elsewhere in the LRA. The manpower data required to support the LRA can be derived by summing the military and civilian data included in the appropriate PEs. Thus, the Air Force can provide all of the data required to support the LRA.

2. Data for Non-IF-Funded Airlift Expenses

In the Air Force, the resources in FYDP Major Force Program 4, all managed by MAC, include two types of funds. First, Program 4 includes producer (Airlift Service Industrial Fund or ASIF) dollars to provide airlift support to all DoD activities. Second, Program 4 includes Air Force funds to purchase airlift from MAC,[1] to finance and reimburse MAC for expenses not included in the rates used to bill MAC customers, and to provide direct-funded airlift services. The resources

[1]These include special airlift missions such as the Presidential support that are funded out of Program 4. MAJCOMs, such as SAC, purchase airlift services directly from MAC with resources in the MAJCOM budget.

to support these activities are included in various non-IF PEs in Program 4. The direct-funded investment dollars required to support these activities will not be included in the LRA Transportation category since these data are treated as part of the various procurement categories in the LRA. Provision must be made, however, to include manpower and direct operating funds in the Transportation function.

In the F&FP data base, the manpower direct-fund operating dollars to finance the non-IF expenses are included primarily in PE 41216, "Airlift Mission Activities (Non-IF)," and PE 41314, "Operational Support Aircraft." PE 41216 is composed primarily of funds to reimburse MAC for operating expenses that are not included in the ASIF. For example, this PE includes funds to support training of MAC crews and subsidize the C-5A program because of the cargo limit restriction.[1] PE 41314 includes resources to support small numbers of aircraft such as the C-9 (excluding medical evacuation aircraft), C-12, C-6, and T-39, which are used by the Air Force for non-IF airlift missions. These missions support both training and administrative requirements.

Until additional research into Air Force Program 4 resources is completed, we do not recommend that an additional LRA functional category be established to provide coverage of these non-IF airlift operating expenses. For the initial LRA, we recommend that the data displayed for the Airlift (MAC) category be expanded to include these non-IF operating resources. This approach is consistent with our objective of capturing all direct-fund operating resources not included in the customer billing rates.

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[1]In general terms, the C-5As operate with reduced cargo loads because of weight-limit restrictions placed on the aircraft. This causes the cargo cost per mile to be higher than it otherwise would be. Rather than pass this cost on to ASIF customers, DoD has elected to subsidize the program.

Because these non-IF PEs are readily identifiable by PE title, and because the information required to support the LRA can be derived by aggregating appropriations and manpower data by PE, the Air Force can provide all of the data required to support the LRA.

The primary Air Staff point of contact for this logistic category is the Plans and Programs Division, Directorate of Transportation, DCS/S&L (LGTX).

M. INTERMEDIATE AND ORGANIZATIONAL TRANSPORTATION

Organizational transportation functions are those performed in the using organization; intermediate functions are performed by units specifically established to provide logistic support to operational units. These categories include mainly manpower for vehicles assigned to organizational and field maintenance squadrons. Drivers, schedulers, and maintenance personnel instrumental to specific activities are identified in CMDB functional categories; by adopting the CMDB procedures discussed in Chapter II the Air Force can provide the manpower data required to meet the LRA needs. Materials for these activities are not shown separately in this portion of the LRA. Vehicle POL is shown in the appropriate fuel category in the LRA, reparable vehicle spares are shown in the spares procurement portion of the LRA, and non-POL stock-fund consumables are shown in the other consumables portion of the LRA (part of the current AFEE 609 GSM items).

N. AIRCRAFT AND OTHER FUELS

Aircraft fuels (aviation petroleum, oil, and lubricants, or AVPOL) are of two types, aviation gas (AVGAS) and jet fuel (JP-4). These fuels are used both for flying and for other purposes, and they are programmed in the F&FP data base in two separate Air Force Elements of Expense: AFEE 698, AVPOL, other than flying; and AFEE 699, AVPOL, flying. Although these data are available in the F&FP by MDS and PE for current, budget, and outyears, the LRA only requires a single AVPOL dollar total for each FYDP year. This total can easily be extracted from the F&FP data base by obtaining a printout of all AFEE 698 and 699 entries for each fiscal year and summing them by year.

Vehicle fuels are programmed in AFEE 641, "Ground Fuels," and this total also can be extracted from the F&FP data base to be shown in the LRA.

Other fuels are programmed in several AFEE's and can be extracted from the F&FP data base and shown in the LRA. These AFEE's include AFEE 600, fuels for utilities; AFEE 602, packaged POL; AFEE 612, other fuels, lubricants, and oils; and AFEE 642, utility fuels.

0. PERSONNEL SUPPORT MATERIEL

The costs for subsistence, clothing, and medical supplies are included in the average rates used in the F&FP for costing military personnel. These rates are identified in DoD Handbook 7220.9H, *DoD Accounting Guidance Handbook*. Although the data are not programmed into the F&FP data base in these particular categories, they can be developed by the Operating Appropriations Division of the Directorate of the Budget (AF/ACBO). Because these data are already included in the LRA display of military personnel costs (in the average costs), the data will be entered in the personnel support materiel portion of the LRA as non-add information.

Additional support materials are provided for in the F&FP by O&M factors that are multiplied by man-years in each PE. One factor (052 in the F&FP factor file) represents personal equipment, and another (053) represents other materiel support for medical facilities (linen, medical supplies, etc.). Each of these factors can be multiplied by total man-years to provide the necessary data entries in the LRA data base for this personnel support category.

P. OTHER CONSUMABLE SUPPLIES AND MATERIALS

The "Other Consumable Supplies and Materials" category includes nonmaintenance expendables utilized in the Air Force. Some of these are programmed as part of AFEE 609 (general support materials purchased from the Air Force Stock Fund). In order to separate nonmaintenance consumables from maintenance consumables, additional factors will have to be developed using the OOB data that are currently used to develop the single GSM factor for AFEE 609.

Medical-dental-veterinary stock fund consumables (AFEE 604) and educational stock fund consumables (AFEE 606) are programmed in separate AFEEs and can be extracted from the F&FP data base in their current form for inclusion as part of the LRA "Other Consumables Supplies" category.

Fuels are programmed in separate AFEEs and are shown in the fuels portion of the LRA.

Q. MUNITIONS FOR PEACETIME OPERATIONS AND TRAINING

Munitions data not entered into the F&FP data base and budget data submitted with the annual Air Force budget are available at the Air Staff level to satisfy this LRA requirement. Section IV, "Logistics and Base Operations," of the Air Force POM for the fiscal years from 1979 through 1983 displays these data in the categories required for the LRA. Points of contact are LGXP and RDXP.

R. WAR RESERVE STOCKAGE

War reserve materiel (WRM) is that materiel required in addition to peacetime assets to meet the planned wartime requirements of a combat activity for a specified time period (Air Force Regulation 400-24, *War Reserve Material Policy*). The Air Force War and Mobilization Plan (WMP) documents wartime requirements standards, combat activities, and applicable WRM time periods. WRM generally comprises end items such as munitions, including ammunition and tactical missiles, and secondary items such as spares (items for which the air base is the level of repair), repair parts (kits and pieces used to repair higher assemblies), and equipment with a unit cost of less than $1,000.

The annual SecDef Consolidated Guidance requires that the Air Force develop and submit to OSD extensive information on funding requirements for meeting the Air Force's materiel support goals. Similar detailed information must be developed to support the annual budget submission and to update the FYDP once approved budget levels have been determined. The detailed information developed for the POM and each FYDP update permit the Air Force to satisfy all of the LRA information requirements in this logistic support category in accordance with the Air Force WMP.

End-item munitions information is available in the FYDP and the Air Force POM. In the FYDP it is programmed in PE 28030, "WRM Ammunition." The F&FP data base contains line item data on these munitions that can be aggregated into the categories required for the LRA. These data have been used to prepare the

WRM munitions programmed data shown in Section VI, "Logistics and Base Operations," of the Air Force POM for the fiscal years from 1979 through 1983. The categories shown there are "air munitions" and "tactical missiles," both of which are required for the LRA.

Secondary item information is programmed in three PE's in the FYDP: PE 28031, "WRM Equipment/Secondary Items"; PE 28032, "Stock Funded WRM (Service Controlled)"; and PE 28033, "Stock Funded WRM (DLA Controlled)." The specific items programmed in these PEs are in the F&FP data base by line item, and can be aggregated into the categories required for the LRA.

The LRA category "Aviation War Consumables" is programmed as a separate line item in the F&FP data base and the Procurement Annex in the Aircraft Procurement appropriation (budget subactivity 0704). In the Air Force these items are called TRAP (tanks, racks, adapters, and pylons).

WRM spares are not separately programmed in the FYDP or the Procurement Annex, although they are distinguished from operating and training spares in the backup data available at the Air Staff level. Spares purchased with Other Procurement (3080 Appropriation) dollars are separately identifiable in the F&FP data base and can be extracted in various report formats. Spares purchased with Aircraft Procurement (3010 Appropriation) dollars are not separately identifiable in the F&FP data base but can be identified in the Air Staff backup data. To the extent that WRM spares data are aggregated with operating and training spares data shown elsewhere in the LRA, it may be necessary to identify the WRM spares as non-add information entries either here in the WRM portion of the LRA or in the broader spares LRA categories.

Points of contact for WRM data in the Air Staff are LGXP, LGXW, and RDXP.

S. INDUSTRIAL PREPAREDNESS OPERATIONS

Industrial preparedness activities include operations necessary to establish and maintain the industrial base (both government-owned and privately owned) needed to support current, wartime, or other contingency military requirements. These activities include modernization and replacement of facilities and equipment. This program is outlined in various DoD regulations and DODI 7220.17 prescribes a minimum cost account structure for use by the Services.[1] PE 78011, "Industrial Preparedness," has been established to provide a standard PE for all Services to use to display these resources.

In addition to industrial preparedness procurement resources, the LRA requires display of all operating funds and manpower programmed for industrial preparedness operations in the categories shown in section IIB4. In the Air Force the only operating funds that are programmed for this LRA functional category are included in PE 78011.[2] These funds provide for caretaker maintenance of reserve plants through contractor operation of layaway maintenance, and decontamination of Building D at AF Plant #36, Evendale, Ohio. Since caretaker maintenance is properly included in the LRA functional category "Layaway/Maintenance of Reserve Plants," this category is the

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[1] *Cost Accounting for Central Supply Management, Industrial Preparedness and Terminal Operations,* DODI 7220.17, December 22, 1966.

[2] In addition to the limited operating funds included in PE 78011, sizeable investment funds are included to support industrial preparedness activities (e.g., over $83 million in the FY 79 President's budget).

only one relevant to the Air Force LRA. The limited operating funds (less than $700,000 in FY 79) in PE 78011 provide the information required for this functional category. The Air Force identifies no manpower to PE 78011.

The Air Staff office of primary responsibility for this LRA functional category is the Directorate of Planning, Programming and Analysis, DCS/Research and Development (AF/RDXI).

T. LOGISTICS MANAGEMENT HEADQUARTERS

This LRA functional category includes total manpower and dollar resources programmed for Headquarters, AFLC and the headquarters of the five Air Logistics Centers. In the Air Force these resources are identified in PEs 72898, "Management Headquarters (Logistics)," and 72829, "Logistics Administration Support." In addition, the Reserves identify resources for this function in PE 57198.

Except for adjusting the operating appropriations totals by subtracting the resources that are included in these PEs to accomplish Base Operations Support (BOS) functions, the data required to support the LRA can be extracted at the PE level. The CMDB will readily identify all personnel assigned to BOS activities such as support squadrons. Manpower factors, derived from these data, can be used to allocate resources in all elements of expense in which resources are programmed to support both headquarters and support units. Thus, the Air Force should be able to provide the data elements required to support the LRA.

U. LOGISTIC SUPPORT EQUIPMENT

The general category "Logistic Support Equipment" has two broad characteristics: such equipment is purchased with procurement appropriations dollars and is not included in the various other LRA equipment procurement categories (initial and replenishment spares, modification kits, munitions, war reserve stocks, industrial preparedness equipment, and severable equipment purchased for a military construction facility project). This general equipment category is difficult to subdivide into more specific subcategories because of the diverse nature of the equipment. It is reasonable to suggest that this equipment be categorized into any of several alternative subcategories depending upon OSD requirements for equipment visibility. We have selected one set of subcategories on the basis of discussions with OSD and Service personnel; however, alternative equipment categories could be selected just as easily to meet OSD needs. The suggested LRA subcategories are:

- Aircraft Logistic Support
- Ship Logistic Support (Navy only)
- Missiles Logistic Support
- Combat Vehicles Logistic Support
- Weapons and Ordnance Logistic Support
- Electronics and Telecommunications Logistic Support
- Civil Engineering Support
- Maintenance Support Equipment
- Supply Support Equipment
- Logistic ADP
- Productivity Enhancement Investment

Exhibit A-9 identifies Procurement Annex equipment categories congruent with the LRA Logistics Support Equipment subcategories. Although the categories in the exhibit seem comprehensive, it is possible that specific items of equipment may be located in other budget activities that should be included in the LRA. It will be necessary to identify all specific equipment that is legitimately classified as logistic support equipment. The points of contact for such identification are LGXP and LGXW.

Exhibit A-9. AIR FORCE LOGISTIC SUPPORT EQUIPMENT

Exhibit A-9. AIR FORCE LOGISTIC SUPPORT EQUIPMENT

LRA Category	F&FP Data Case and Procurement Annex Category	Funding[a]
Aircraft Logistic Support Equipment	Common Ground Equipment	Aircraft Procurement (3010); BA 07, Aircraft Support Equipment and Facilities; BSA 01, Common Ground Equipment Other Procurement (3080); BA 01, Munitions and Associated Equipment
Missiles Logistic Support Equipment	Selected Other Support Equipment	Missile Procurement (3020); BA 05, Other Support
	Selected Munitions and Associated Equipment	Other Procurement (3080); BA 01, Munitions and Associated Equipment
Weapons and Ordnance Logistic Support Equipment	Selected Munitions and Associated Equipment	Other Procurement (3080); BA 01, Munitions and Associated Equipment
Electronics and Telecommunications Logistic Support	Selected Electronics and Tele-Equipment	Other Procurement (3080); BA 03 Electronics and Telecommunications Equipment
Civil Engineering Support Equipment	Passenger Vehicles	Other Procurement (3080); BA 02, Vehicular Equipment; BSA 01, Passenger Vehicles
	Cargo and Utility Vehicles	Other Procurement (3080); BA 02, Vehicular Equipment; BSA 02, Cargo and Utility Vehicles
	Special Purpose Vehicles	Other Procurement (3080); BA 02, Vehicular Equipment; BSA 03, Special Purpose Vehicles
	Fire Fighting Equipment	Other Procurement (3080); BA 02 Vehicular Equipment; BSA 04, Fire Fighting Equipment
Maintenance Support Equipment	Test Equipment	Other Procurement (3080); BA 04, Other Base Maintenance and Support Equipment; BSA 01, Test Equipment
	Base Maintenance Support Vehicles	Other Procurement (3080); BA 02, Vehicular Equipment; BSA 06, Base Maintenance Support
	Selected Electrical Equipment	Other Procurement (3080); BA 04, Other Base Maintenance and Support Equipment, BSA 04, Electrical Equipment
	Base Support Equipment, Excluding Productivity Enhancing Equipment (Shown in a separate LRA category)	Other Procurement (3080); BA 04, Other Base Maintenance and Support Equipment, BSA 05, Base Support Equipment, excluding Productivity Enhancing Equipment. (Procurement Annex Equipment Code 845370)
	Selected Special Support Project Equipment	Other Procurement (3080); BA 04, Other Base Maintenance and Support Equipment; BSA 06, Special Projects
Supply Support Equipment	Depot Plant and Materials Handling Equipment	Other Procurement (3080); BA 04, Other Base Maintenance and Support Equipment; BSA 03, Depot Plant and Materials Handling Equipment
	Selected Special Support Project Equipment	Other Procurement (3080); BA 04, Other Base Maintenance and Support Equipment; BSA 06, Special Projects
	Materials Handling Equipment	Other Procurement (3080); BA 02, Vehicular Equipment; BSA 05, Materials Handling Equipment
Logistic ADP	Selected Electronics and Telecommunications Equipment	Other Procurement (3080); BA 03, Electronics and Telecommunications Equipment
Productivity Enhancement Investment	Productivity Enhancement Equipment	Other Procurement (3080); BA 04, Other Base Maintenance and Support Equipment; BSA 05, Base Support Equipment, Equipment Code 845370 Productivity Enhancing Equipment

[a] Appropriations, budget activity (BA), and budget subactivity (BSA).

V. PROPERTY DISPOSAL

The LRA requires that resources programmed for the centrally managed property disposal function be displayed in a separate LRA functional category.

In the DoD, the Defense Logistics Agency (DLA) is responsible for DoD-wide disposal of excess property. Over 5,000 people, assigned to a network of worldwide Defense Property Disposal Offices, provide this service. The operation is conducted under a management fund concept which essentially covers costs. In the FYDP, resources are included in PE 78012S.

Discussions with personnel in LGX and LGY revealed that the Air Force has no activities for which the property disposal function represents a significant workload. Transactions processed for property disposal are considered to be an insignificant part of daily routine operations at central supply. As a result, resources are not separately identifiable. This is true also for the property disposal function accomplished in conjunction with the operation of the Military Aircraft Storage and Disposition Center (MASDC). MASDC is operated by the Air Force, under charter to DLA, as a single-manager operating agency for storage, disposal, and reclamation of aerospace vehicles for the DoD. (The MASDC operation is included in a separate LRA category--"Inactive Equipment Storage and Maintenance.")

For these reasons, we have concluded that the limited Air Force resources that might be consumed in support of property

disposal activities need not be identified in a separate LRA property disposal function. In terms of the overall LRA structure, however, this function should be retained to display associated DLA resources if OSD subsequently decides to display resources programmed by the Defense Agencies in the LRA. In terms of location in the structure, it may be more appropriate at a later time to include this function under Central Supply Operations.

W. INACTIVE EQUIPMENT STORAGE AND MAINTENANCE

AFLC serves as the single-manager operating agency for storage, disposal, and reclamation of aircraft for the DoD. Prior to Program Change Decision (PCD) No. X-7-009, October 17, 1977, the Air Force accounted for all resources for this function in PE 72207, "Depot Maintenance (Non-IF)." This PCD directed the Air Force to transfer all resources to PE 78016, "Inactive Aircraft Storage and Disposal."

The Military Aircraft Storage and Disposition Center (MASDC) is the organization that accomplishes this function. Approximately 50 military and 750 civilians are assigned to MASDC; the primary operating expense is pay and allowances. Since MASDC is the only organization included in PE 78016, the F&FP data base already includes the data elements required to support the LRA. In POM-80, the Air Force plans to seek approval to change the MASDC operation from direct-fund to contract-operated. In this case, PE 78016 will still include the resources needed to accomplish this function, but purchased equipment services will become the primary element of expense.

X. OTHER CENTRAL LOGISTIC SUPPORT

The LRA requires that all resources in FYDP Major Program 7, Central Supply and Maintenance, be included in the LRA. The purpose of the LRA functional category "Other Central Logistic Support" is to display all Program 7 manpower and dollars in the operating appropriations that are not included elsewhere in the LRA. This category will include no investment-related resources, since all of these resources are included in other categories in the LRA.

In this initial assignment of Air Force Program 7 operating resources to LRA categories, the data elements in this LRA functional category are defined at the PE level to include the following activities:

- Laundries (IF) (PE 72035)
- Commissary retail sales (PE 72891)
- Commissary subsistence (troop issue) support (PE 72892)
- Other logistics support (PE 78012)
- Eastern Test Range (PE 78022)
- Eastern Test Range communications (PE 78023)
- Productivity, reliability, availability, and maintainability (PRAM) program office (PE 78026)
- Space/Missile Test Center (Western Test Range) (PE 78032)
- SAMTEC communications (PE 78034)
- Service support to DLA (PE 78110)

This list includes all of the Air Force Program 7 PEs that are not included elsewhere in the LRA. Since the LRA requires only appropriation and manpower data at the PE level, the Air Force

can provide the required LRA data elements directly from the F&FP data base.

The Air Force provides laundry and dry cleaning services to organizational units of the Military Departments and Defense Agencies. Since this is an industrially funded activity, only total authorized manpower end-strength data are required in the LRA.[1] Funds to purchase these services are included in the operating budgets of all customers requiring these services but will not be separately identified in the LRA because these funds are not separately identified by the Air Force but rather are included in general level-of-effort support categories.

Beginning in FY 77, the operation of all Air Force commissary resale stores and troop issue outlets was consolidated under the Air Force Commissary Service (AFCOMS). Supervision, administration, warehousing, and store operations is performed at Headquarters, AFCOMS, four regional offices, and at worldwide troop and resale stores. The resources in PEs 72891 and 72892 provide for the management, storage, and issue of retail and troop-issue subsistence items, respectively.

PE 78012 includes funds for miscellaneous activities such as printing services for HQ USAF and AFLC, reimbursement to the U.S. Postal Service, and similar programs centrally managed by AFLC.

PE 78026 includes funds for investment in opportunity efforts which will lead to reduced operational and support costs of in-service and future systems. Projects to be funded in this PE include those that will lead to improvements in the efficiency of maintenance and support organizations, improve the reliability, maintainability, and supportability of systems, and achieve broader applications of common equipment and

[1]PE 72036 is the corresponding revenue PE for the industrially funded laundries operation.

simplicity in support concepts. The Air Force includes no operating funds or manpower to support these projects currently but, at least for the initial LRA, this PE is listed both to highlight the existence of these logistics projects and, pending additional research, to provide a category for operating funds or manpower that might be programmed in the future.

PE 78110 includes manpower and MILPERS dollars programmed to support the Defense Logistics Agency. Since the MILPERS dollars are offset by funds included in PE 7xxxxF, "Service Support to Defense Agencies," the LRA will include only authorized manpower end-strengths.

The remaining program elements listed in this category provide funds for test center programs for which AFLC is assigned management responsibility. Even though opinions in the Air Force differ as to whether these are properly logistic support activities, we have elected to include them, pending additional research, on the basis that support of operational testing for weapon systems for which AFLC has system support responsibility is properly a logistics function.

The above list of LRA subfunctional categories, all defined at the PE level, is considered preliminary. During the LRA implementation phase it may be found that this list should be adjusted to provide the desired coverage. The Air Force will be able to provide all of the data required for this category to support the initial LRA since all subfunctions are defined at the PE level.

The primary point of contact for this category is the Directorate of Logistics Plans and Programs, DCS/Systems and Logistics (AF/LGX).

Y. FACILITIES CONSTRUCTION (LESS HOUSING)

Air Force Military Construction Funds (Appropriation 3300) are programmed in the F&FP data base using nine-digit military construction cost elements congruent with the construction categories required for the LRA. Thus, the F&FP data base currently contains the program detail required for the LRA.

Z. COLLATERAL EQUIPMENT

The Air Force does not use the term "collateral equipment," which in the other Services is used to refer to equipments purchased to go into military construction project structures. Equipment that is permanently attached to a structure, installed at the time the structure is built, and paid for out of the Military Construction, Air Force, appropriation is referred to in the Air Force as "installed equipment." That portion of the cost of a military construction project accounted for by installed equipment is not separately displayed in the Air Force LRA.

Equipment that is purchased to go into a military construction project structure but is not permanently attached is purchased with Other Procurement, Air Force, appropriation funds if it has a unit value of $1,000 or more, and is purchased with O&M funds if it has a unit value less than $1,000. The equipment purchased with Other Procurement funds is not separately identified in the Procurement Annex as designated for military construction projects. Such identification will have to be performed by the responsible Air Staff office, LGXP. The equipment purchased with O&M funds is carried in the F&FP data base in a unique Air Force Element of Expense (AFEE 635), titled "real property installed equipment (RPIE)."

AA. HOUSING

Family Housing and troop housing construction data are available as such in the F&FP data base. Family housing data are currently displayed in six discrete PEs in the FYDP that are equivalent to the LRA Housing categories, as shown below.

Exhibit A-10. FAMILY HOUSING FUNCTIONS

Family Housing Functions	
FYDP PEs	OSD-LRA
88741--New Construction 88742--Improvements[a] (1) Upgrade (2) Energy Conservation (3) Minor Construction (4) Design	Construction
88743--Debt Payment	Debt Service
88744--Leasing	Leasing
88745--Operations	Operations
88746--Maintenance	Maintenance

[a]Subelements (1) through (4) are to be shown separately in the Air Force LRA at the request of the Air Force.

Troop housing construction is entered in the F&FP data base as a discrete cost element (code 242000004), and these data are directly available for inclusion in the LRA.

BB. REAL PROPERTY MAINTENANCE ACTIVITIES

Real property maintenance activities are programmed in the F&FP data base in more than 50 detailed 5-digit AFEEs. Many of these detailed AFEEs are summarized in several 3-digit AFEEs, particularly AFEE 521, "Maintenance Projects," AFEE 522, "Repair Projects," AFEE 529, "Minor Construction Projects," AFEE 533, "Other Civil Engineering Support," AFEE 531, "Custodial Services," and AFEE 580, "SARPMA" (San Antonio Real Property Maintenance Agency). Other 5-digit AFEEs containing RPMA O&M dollars can be identified by AF/LEE (Directorate of Engineering Services).

These AFEEs can be assigned to the four basic LRA categories of maintenance and repair (primarily AFEEs 521 and 522), minor construction (primarily AFEE 529), and utilities operation and other engineering support (primarily AFEEs 531 and 533). Other AFEEs representing programmed RPMA resources (such as AFEE 580, "SARPMA") will have to be aligned to the appropriate LRA categories.

Manpower can be identified in CMDB functional categories for RPMA in accordance with the procedures established in Chapter II of this volume.

CC. BASE OPERATIONS: OTHER SERVICES AND SUPPORT

The LRA category "Base Operations: Other Services and Support" is less comprehensive than the conventional base operations category appearing in Air Force budget and Congressional justification documents. The conventional category is made up of three major elements: Real Property Maintenance Activities (RPMA), Base Communications, and Base Operations Support; in the LRA, however, RPMA is a separate functional category disaggregated from Base Operations.

Base communications and base operations support are currently shown in the FYDP as discrete PEs in various major force programs. The base communications PEs include 11895, 12895, 27595, 35895, 41895, 72895, 85795, 87795, and 91295, and they show O&M dollars and manpower that can be directly utilized in the LRA if "Base Communications" is identified as a separate subfunction of "Base Operations: Other Services and Support." The base operations support PEs are 11896, 12896, 27596, 35896, 41896, 59296, 72896, 85796, 85896, and 91296. Although total manpower end-strengths and O&M dollars are shown for each PE, these data are not available by functional category in the FYDP. The F&FP data base does identify the O&M dollars in each PE according to AFEE, and some AFEEs are comparable to the "Base Operations: Other Services and Support" categories in the LRA. Administrative services and data automation equipment rentals can be identified by AFEE, but other services such as installation supply, maintenance, and transportation are not so identified. New AFEEs could be created to provide the necessary visibility.

As an alternative, the CMDB could be utilized to identify functional manpower as the factor for allocating O&M dollars in each base operations support PE. For example, the proportion of installation supply end-strength to total end-strength in the base operations support PEs could be used to allocate a portion of the total base operations O&M dollars to the installation supply function. Similar allocations could be made for the various other base operations subcategories required for the LRA. Use of either method--creation of new AFEEs or CMDB-based allocations--would provide the necessary LRA data.

Currently OSD is involved in a BOS evaluation study designed to introduce consistency among the Services in their treatment of BOS functions. When available, the results of this study can be incorporated into the LRA BOS functional structure.

Appendix B

AIR FORCE SUMMARY LEVEL ELEMENTS OF EXPENSE

AIR FORCE SUMMARY LEVEL ELEMENTS OF EXPENSE

Air Force Code	Title	DoD Element of Expense
120	Supplies and Materials Other Than Medical, Dental and Veterinary	16
130	Expense Equipment Other Than Medical, Dental and Veterinary	17
134	Medical, Dental and Veterinary Expense Equipment	17
140	Non-expense Equipment Other Than Medical, Dental and Veterinary	17
144	Medical, Dental and Veterinary Non-expense Equipment	17
201	Air Force Personnel	20
210	Military Trainees	20
211	Military Personnel Retirement Accrual	20
291	Military Personnel Retirement Accrual	20
386	Separation Allowances for Foreign National Employees, Direct Hire Employees	01
388	Accrued Earned Leave (Civilian)	01
390	Civilian Reimbursements	01
391	Civilian Personnel Compensation(Overtime)	01
392	Other Civilian Personnel Compensation	01
393	Civilian Personnel Benefits	01
394	Civilian Clothing Allowance	01
395	Civilian Moving Allowance and Miscellaneous	01
396	Lump Sum Payments	01

397	Civilian Personnel Reimbursable/ Refundable Labor	01
398	Civilian Personnel Borrowed	01
399	Civilian Personnel Loaned	01
407	Expense of ASIF Transportation	02
408	Expenses of Transportation Other ASIF Transportation	02
409	Per Diem and Incidental Expenses	02
410	PCS-Military Transportation Costs of Persons and Things	02
421	PCS-Civilian Employees and Dependents	02
431	Rental of Passenger Motor Vehicles-Full Time	02
432	Rental of Passenger Motor Vehicles-Part Time	02
440	Transportation of Things-Military	03
451	Transportation via ASIF-Unit Rotation	03
454	Transportation via ASIF-Other	03
461	Transportation via MSTS	03
462	Transportation via Commercial Air	03
463	Transportation via Commercial-Surface	03
464	LOGAIR Transportation	03
465	Port Handling Costs	03
469	Other Transportation Charges	03
471	Leased Space	05
472	Rental of Data Automation Equipment	05
473	Rental of Other Equipment	05
474	Standard Level User Charges	04
480	Purchased Utilities	05
491	Commercial Communications System and Networks (Non-DCS)	06
492	Administrative Switchboard Systems	06
493	Non-Tactical Radio Systems	06
494	Wire Communications Services	06
495	Official Tolls and Similar Charges	06
496	Other Commercial Communications Charges	06

497	Unofficial Class "B" Tolls and Reimburseable Charges	06
498	Commercial Communications Systems and Networks (DCS)	06
499	Alaska Communication Service Industrial Fund	06
501	Printing and Duplicating Except Industrial Fund	07
502	Air Force Industrial Funded Printing and Duplicating Services	07
511	Foreign National Personnel Base Cost	08
512	Foreign National Personnel Serverance Pay	08
513	Foreign National Personnel Reimbursements	08
514	Mobile Equipment Rental	08
515	Civilian Labor Refunds/Reimbursements	13
516	Other Direct Cost Refunds/Reimbursements	13
517	Other Refunds/Reimbursements	13
521	Maintenance (Class M) Projects	13
522	Repair (Class R) Projects	13
529	Minor Construction (Class MC) Projects	13
531	Custodial Services	13
532	Engineering Services	13
533	Other Civil Engineering Services	13
540	Depot Maintenance	10
541	Aircraft Maintenance-DMIF	10
542	Missiles Maintenance-DMIF	10
543	Engine-Maintenance-DMIF	10
544	Other Major Item Maintenance-DMIF	10
545	Exchangeable Item Maintenance-DMIF	10
546	Area/Base Support-DMIF	10
549	Purchases from Other DoD Sources	11
551	Air Force Personnel Education Services	13
552	Dependents Education Services	13
553	Contract Education and Training Costs	13
568	Data Automation-Air Force Owned Equipment	09

610	Base Procured Non-Stock Fund Material for Direct Consumption	16
612	Fuels, Oils, and Lubricants, Other Than Aviation, Non-AFSF	16
614	Medical, Dental and Veterinary Supplies, Non-AFSF	16
615	Ammunition, Non-AFSF	16
618	Clothing and Textiles, Non-AFSF	16
619	Other Supplies and Materials, Non-AFSF	16
624	Medical, Dental Division, AFSF	17
626	Air Force Academy Division, AFSF	17
628	General Support Division, AFSF	17
634	Medical, Dental and Veterinary Equipment Non-AFSF	17
635	BCE-Real Property Installed	17
639	Other Equipment, Non-AFSF	17
641	Bulk Ground Fuels	16
642	Utility Fuels-AFSF	16
671	Payments in Lieu of Taxes	18
679	Other Grants, Subsidies, and Contributions	18
689	Aviation POL Reimbursements	14
690	Aviation POL (Special Fuels)	14
691	Aviation POL Variance	14
692	Insurance Claims and Indemnities	18
693	Aviation POL-Other Than Flying	14
695	Aviation POL-Flying Requirements	14
696	POL-Discounts	14
716	Cost Distribution-Motor Vehicles	10
840	Material-Maintenance-Service-Credit	19

569	Purchased Maintenance of Equipment-Other	09
570	Contract Operated Installations	13
580	SARPMA (San Antonio Real Property Maintenance Agency) -AFIF	12
581	MAC ASIF Mission Account	12
582	Contract Data Processing Services	13
583	Service Engineering by Contract	13
584	Contractor Engineering and Technical Services (CETS)	13
585	Contract Logistic Support (CLS)	13
586	Property Disposal in Support of R&M	13
587	Value Engineering by Contract	13
589	Contract Conversions	13
591	Reimbursement to Other Services	13
592	Miscellaneous Contractual Services	13
593	Laundry and Dry Cleaning Services Purchased from AFIF	12
594	Procurement of Technical Data	13
595	CHAMPUS	13
596	Medical Transfers	13
597	Overseas Dependents-Education Transfers	13
598	Payments to Military Personnel for Incentive Awards and Clothing Allowances	13
599	Reimbursement Received (Credit)	13
600	Utility Fuels (Solids)	16
601	Aviation POL-AFSF	14
602	Packaged Aviation Oils and Lubricants	16
603	Missile Propellants-AFSF	16
604	Medical-Dental Division AFSF Issues/Turn-Ins	16
605	System Support Division-AFSF Issues/Turn-Ins	16
606	Air Force Academy Division-AFSF, Issues/ Turn-Ins	16
607	Commissary Division-AFSF, Issues/Turn-Ins	16
608	Clothing Division-AFSF, Issues/Turn-Ins	16
609	General Support Division-AFSF, Issues/Turn-Ins	16