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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 the 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

VOLUME IV: A Logistic Resource Annex for the Marine Corps Section of the DNFYP

John D. Morgan, *Project Leader*
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GLOSSARY

ADP	Automatic Data Processing
ASW	Anti-Submarine Warfare
BA	Budget Activity
BCC	Budget Classification Code
BPC	Budget Project Code
BSA	Budget Subactivity
BOS	Base Operations Support
CNA	Center for Naval Analyses
CINCPAC	Commander in Chief, Pacific
DC/S MC-A	Deputy Chief of Staff, Aviation
DC/S MC-L	Deputy Chief of Staff, Logistics
DC/S MC-M	Deputy Chief of Staff, Manpower
DC/S MC-OT	Deputy Chief of Staff, Operations and Training
DC/S MC-P	Deputy Chief of Staff, Plans and Policy
DC/S MC-RD	Deputy Chief of Staff, Research, Development and Studies
DC/S MC-RP	Deputy Chief of Staff, Requirements and Programs
DLA	Defense Logistics Agency
DNFYP	Department of Navy Five Year Plan
DOD	Department of Defense
DON	Department of Navy
DODEE	Department of Defense Element of Expense
F&FP	Force and Financial Plan
FMF	Fleet Marine Forces
FSSG	Force Service Support Group
FYDP	Five Year Defense Plan
HQMC	Headquarters, Marine Corps
ICP	Inventory Control Point

IF	Industrial Fund
IPP	Industrial Preparedness Program
ISSA	Inter-Service Support Agreement
LAAM	Light Anti-Aircraft/Missile Battalion
LANDFOR	Land Forces
LRA	Logistics Resource Annex
MAC	Military Airlift Command
MC-CC	Command, Control, Communications and Computer Systems Division
MC-FD	Fiscal Division
MC-FDB	Budget Branch, Fiscal Division
MCIF	Marine Corps Industrial Fund
MC-INT	Director of Intelligence
MC-LF	Facilities and Services Division, Deputy Chief of Staff, Installations and Logistics
MC-LFS	Services Branch, Facilities and Services Division, Deputy Chief of Staff, Installations and Logistics
MC-LFT	Transportation Branch, Facilities and Services Division, Deputy Chief of Staff, Installations and Logistics
MC-LM	Materiel Division, Deputy Chief of Staff, Installations and Logistics
MC-LME	Engineers, Motor Transport and General Supply Branch, Materiel Division, Deputy Chief of Staff, Installations and Logistics
MC-LMG	Ammunition and Missiles Branch, Materiel Division, Deputy Chief of Staff, Installations and Logistics
MC-LMO	Logistics Management Branch, Materiel Division, Deputy Chief of Staff, Installations and Logistics
MC-LPF	Programs and Financial Management Branch, Supply and Maintenance Systems Section, Deputy Chief of Staff, Installations and Logistics
MCLSB	Marine Corps Logistics Support Base

MCLSBLANT	Marine Corps Logistics Support Base, Atlantic
MCLSBPAC	Marine Corps Logistics Support Base, Pacific
MC-MPC	Manpower Control Branch, Deputy Chief of Staff, Manpower
MC-MPP	Manpower Planning, Programming and Budgeting Branch, Deputy Chief of Staff, Manpower
MC-RES	Deputy Chief of Staff, Marine Corps Reserve Affairs
MC-RPP	Program Coordination Branch, Deputy Chief of Staff, Requirements and Programs
MILPERS	Military Personnel
MIMMS	Marine Corps Integrated Maintenance Management System
MMPM	Materiel Management Programming Model
MSC	Military Sealift Command
MTMC	Military Traffic Management Command
NARM/FLAIL	Navy Resource Model/Force Level Analyses Interactive Language System
NAVCOMPT	Navy Comptroller
NAVMAT	Naval Materiel Command
NCIS/FYDP	Navy Cost Information System/FYDP Subsystem
NON-IF	Non-Industrial Fund
NON-TEL	Non-Telecommunications
OASD/MRA&L	Offfice of the Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics
O&M	Operations and Maintenance
O&MMC	Operations and Maintenance, Marine Corps
O&MMCR	Operations and Maintenance, Marine Corps Reserve
O&MN	Operations and Maintenance, Navy
OSD	Office of the Secretary of Defense
PACOM	Pacific Command
PDO	Defense Property Disposal Offices
PE	Program Element
PMC	Procurement, Marine Corps
POM	Program Objective Memorandum
PPB	Planning, Programming and Budgeting

PPBS	Planning, Programming and Budgeting System
RCC	Resource Category Code
ROTC	Reserve Officers Training Corps
RPMA	Real Property Maintenance Activities
RPMC	Reserve Personnel, Marine Corps
SECDEF	Secretary of Defense
SLEP	Service Life Extension Program
SYSCOMS	Systems Commands
TACAIR	Tactical Air
TEL	Telecommunications
TM	Type, Model
TMR	Table of Manpower Requirements System
TO	Table of Organization
TOA	Total Obligational Authority
TRI-TAC	Joint Tactical Communications Program
WPC	Work Performance Category
ZBB	Zero Based Budgeting

SUMMARY

In this volume we present our analyses of how the Marine Corps could produce the data required for a Logistic Resource Annex (LRA) to the DoD Five-Year Defense Program (FYDP). These data show both Marine Corps resources programmed for Marine Corps logistic support and Marine Corps resources provided to the Navy and DoD for logistic support; these resources are not separately identified. Excluded from the Marine Corps LRA are the substantial Navy resources used to provide logistic support to the Marine Corps, primarily for the Marine Corps air programs. The Marine Corps LRA includes all logistic resources financed by Marine Corps appropriations, for both active and reserve forces. The Navy LRA (see Volume II) includes all logistic resources financed by Navy appropriations.

A. THE LOGISTIC RESOURCE ANNEX STRUCTURE

The LRA structure developed by OASD/MRA&L is suitable for categorizing Marine Corps logistic resources, although the structure will necessarily be abbreviated in some sections. Exhibit 3, p. 9, shows the recommended LRA structure, which incorporates changes proposed as a result of research on all of the Services. Marine Corps data management systems, if revised as recommended in this volume, can provide the required LRA information using existing Marine Corps data sources.

B. THE MARINE CORPS PLANNING, PROGRAMMING, AND BUDGETING SYSTEM

Since the Marine Corps is a major claimant of Department of Navy (DON) resources, the major tasks accomplished during

the PPBS process are identical to those discussed in Chapter II of Volume II. The Marine Corps, like the Navy, plans, programs, budgets, and manages its resources through program and appropriation sponsors with designated areas of responsibility.

The Marine Corps provides information for the Navy Cost Information System/FYDP Subsystem (NCIS/FYDP) and the Navy Resource Model/Force Level Analysis Interactive Language System (NARM/FLAIL), the primary data systems used by the Navy to support the PPBS, but the Marine Corps information is more highly aggregated than that submitted by other Department of Navy claimants. Marine Corps information submitted to these data systems for regular updates is limited to manpower end-strengths and appropriation totals by program element and Procurement Annex line item. Furthermore, the Marine Corps does not use Budget Classification Codes (BCCs), which are an excellent tool for producing data to support the LRA. However, other Marine Corps data systems can be used instead.

C. MARINE CORPS DATA MANAGEMENT SYSTEMS

The Marine Corps has no single data management system that includes information about total resource allocations for the entire FYDP period; however, the following special purpose systems can be used to fulfill LRA requirements.

1. The Class I System

The Marine Corps has developed an automated system that relates operating budget information to decision units by PE. Budget estimates can also be identified according to DoD elements of expense (DoDEE), DoD functional categories, and Marine Corps cost accounting codes. Although this ZBB system currently addresses only the 3-year period included in budget submissions and has been used only for field activity budgets, it could be expanded to cover the total O&M appropriation for the entire

FYDP planning period. Moreover, data elements could be added below the DoDEE and functional category levels. With these changes the Class I System could be used to produce the O&MMC data elements required to support the LRA using the ZBB data base.

2. The Materiel Management Programming Model

The Materiel Management Programming Model (MMPM) uses historical and program data to compute a line-item listing of principal end-items that constitutes a recommended make/buy program for a 5-year period. This listing is reviewed and adjusted by equipment sponsors to develop the make/buy program for the POM. The model's output is then used to help managers track program changes during the remainder of the PPB cycle. The MMPM could be used to derive many of the data elements required to support the LRA.

3. The Table of Manpower Requirements System

The computerized Table of Manpower Requirements system (TMR) relates validated military and civilian manpower requirements, by table of organization (TO) line item, to the FYDP program elements that include Marine Corps resources.[1] These TO lines not only identify manpower in terms of organization but also show numbers of people by administrative or operational entity within the organization and by job or billet code. It will be possible to extract some manpower information for the LRA directly from the FYDP for those PEs that equate to LRA functional or materiel categories. For PEs in which the manpower must be assigned to more than one LRA functional or materiel category, manpower ratios derived from data in the TMR can be used to allocate total PE manpower and related costs

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

as necessary. These ratios should be acceptable, since the TMR contains data from TOs that are the actual basis for manning organizations.

4. The Marine Corps FYDP Procurement Annex

Planning, programming, and budgeting procurement resources is a highly centralized process in all of the Services. The Marine Corps manages only one procurement appropriation, Procurement, Marine Corps (PMC), which provides weapons, ammunition, and support equipment, primarily for Marine Corps ground forces. Marine air procurement needs are satisfied through Navy procurement appropriations.

In many cases, PMC budget activity, budget subactivity, and procurement line item data in the FYDP Procurement Annex can be transferred directly into the procurement categories in the LRA structure. In other cases, the Marine Corps staff has information that facilitates assignment of these data to LRA categories. For example, the Marine Corps staff already identifies the aggregated ammunition data shown in the Procurement Annex according to the peacetime training and war reserve stock categories in the POM.

D. LRA DATA BY WEAPON SYSTEM

OSD will require that some logistic support data be shown for designated aircraft and tank weapon systems by type and model (e.g., F-14, M-60). The Navy provides the central logistic support for Marine aircraft, and the Marine Corps provides the field support. Our "appropriation integrity" approach means that the LRA for each Service includes the resources financed by that Service's appropriations, regardless of which Service may actually utilize the resources. Therefore, it will be necessary to use data from both the Navy and Marine Corps LRAs to show the total resources committed to the support of given

Marine Corps aircraft weapon systems. In Volume II we discuss the methods for showing resources by aircraft weapon systems, including Marine Corps aircraft weapon systems. In this volume we present methods by which the Marine Corps data systems can be used to produce the data elements on field operating support which, when combined with Navy data, will show complete resource requirements for Marine Corps aircraft systems.

All of the resources used to support Marine Corps tanks are provided through Marine Corps appropriations; therefore, the Marine Corps LRA will be the source for display of all of these resources. The Class I ZBB, MMPM, and the TMR systems include many of the data elements necessary to support the LRA requirement to identify resources by tank weapon system, but some revisions in Marine Corps data systems will be necessary.

E. THE DATA ELEMENT REFERENCE GUIDE

A data element reference guide (Table 3, pp. 39ff) has been prepared to identify the location of data, reporting channels, and requirements for methods of calculation or estimation for each logistic function and subfunction in the LRA. With this guide, the reader can quickly determine the major requirements that the Marine Corps must fulfill to produce LRA data for logistic functions and selected weapon systems.

There are three possible methods of obtaining the necessary data--one for procurement resources, one for central- and field-managed operating resources, and one for Family Housing, Defense data elements. These methods are summarized below. The procurement resource method relies heavily on extensive data in the Procurement Annex and in the files and management materials of the various resource sponsors on the HQ, Marine Corps staff. The central- and field-managed operating resource method relies on factors derived from the TMR, and detailed programming and management data maintained by resource sponsors

BASIC METHODS OF OBTAINING MARINE CORPS LRA DATA

Procurement Resource Data

To obtain these data:

-- Use Procurement Annex information supplemented by data from resource sponsors who maintain budget backup and program management detail information.

-- Allocate categories of resources by budget activities and, in some cases, subactivities to materiel categories and tank 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 resource sponsors analyses.

-- Use data in the Class I ZBB System. Consider extending these data to cover all FYDP years and augment the coverage with information below the DoDEE and functional category levels.

-- Obtain manpower information based on factors derived from the Table of Manpower Requirements System.

Construction and Housing

To obtain these data:

-- Use standard PPBS and budget documents.

as well as possible expansion of the Class I System for O&M data. Of course, a large volume of the logistic resources used to support the Marine Corps would have to be extracted from the Navy LRA to obtain a total view of Marine Corps resource requirements. The housing data are readily available from standard PPBS and budget documents.

Appendix A contains a detailed narrative analysis of how Marine Corps logistic resource data can be obtained 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 detailed summary display of these narrative analyses.

Chapter I

INTRODUCTION

In this volume we present the results of our research on the means by which the Marine Corps could produce a Logistic Resource Annex (LRA). This LRA includes Marine Corps dollar and manpower resources used to provide logistic support to the Marine Corps, the Navy, and DoD activities such as the Defense Logistics Agency, and DoD dollar resources used to support the Marine Corps family housing program. The Navy resources that support the Marine Corps are included in the Navy LRA discussed in Volume II.

We recommend that the total obligational authority (TOA) of a single Service be included in that Service's LRA[1] and that the TOA of any other Service be excluded. This is called the "Service appropriation integrity" approach. DoD Family Housing dollars are displayed separately in each Service LRA so that the Service dollars in the LRA can be summed to provide the quantitative value of that Service's logistic TOA.

Navy appropriations and Marine Corps appropriations are sometimes distinguished as blue (Navy) dollars versus green (Marine Corps) dollars. This distinction is highlighted in Figure 1. The Marine Corps LRA shows all green logistic dollars, regardless of whether the dollars go to the Marine Corps, the Navy, or DoD agencies, and it shows no blue logistic dollars. These green dollars are displayed in various functional, materiel,

[1]Including appropriations for that Service's reserve forces.

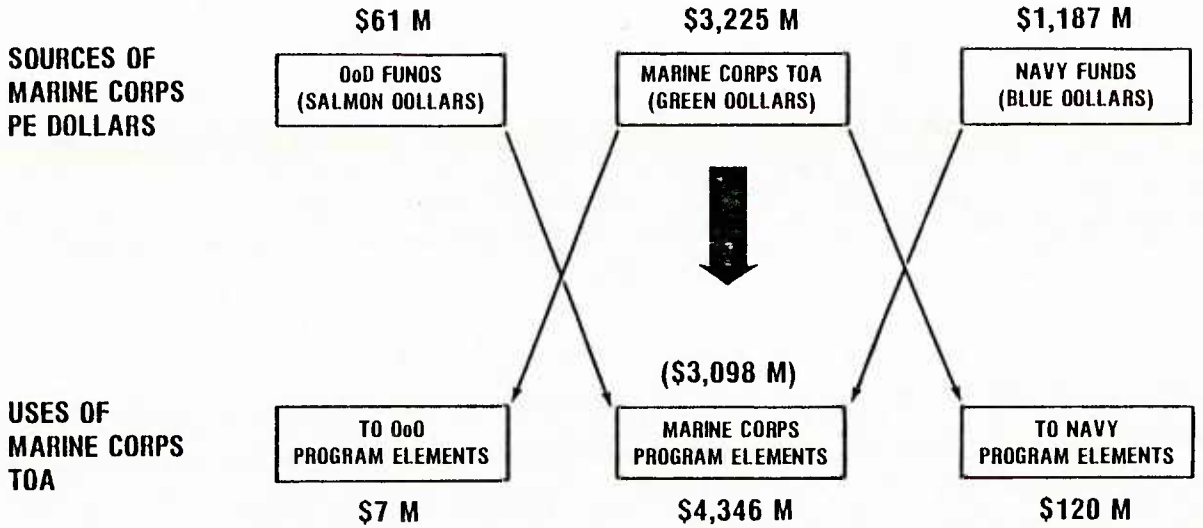


Figure 1. OVERVIEW OF FYDP PROGRAMS SUPPORTED BY MARINE CORPS TOA AND MARINE CORPS, NAVY, AND DOD APPROPRIATIONS-FY 78

and weapon system categories.[1] The LRA does not identify what portion of the green logistic dollars goes to Navy activities in Navy program elements (PEs) in the FYDP (listed in Exhibit 1) or what portion goes to DoD activities in DoD FYDP PEs. These green logistic dollars are of course included in the Marine Corps LRA, but the portion that supports Navy or DoD activities is not separately identified. Thus, the dollar entry in a functional category of the Marine Corps LRA shows how much of the Marine Corps TOA is programmed in that logistic function, but does not identify whether the money is used for Marine Corps, Navy, or DoD agency activities. This is one result of using the Service appropriation integrity approach.

Another result is that all dollars displayed in Marine Corps PEs in the FYDP are not included in the Marine Corps LRA. Exhibit 2 shows 46 Marine Corps PEs in which blue dollars are recorded in the FYDP--primarily Program 2 PEs providing support to the flying-hour programs for Marine aircraft and helicopters. In FY 78, this blue dollar support to Marine Corps PEs amounted to nearly $1.2 billion, 27 percent of all dollars in Marine Corps PEs. Even though blue dollar support to Marine Corps activities is substantial, it is not shown in the Marine Corps LRA.[2]

---

[1]Throughout this paper reference is made to the "materiel categories" shown in the LRA structure. For the purposes of this study materiel categories are aircraft, ships, missiles, combat vehicles, weapons and ordnance, electronics and telecommunications equipment, and other equipment. (See Paragraph D1 of 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.) References to operating- or investment-financed resources (dollars and manpower) will cover the corresponding relevant active and reserve forces appropriated resources. Since the LRA requires display of resources by appropriation, the Marine Corps will be required to show those resources financed by reserve appropriations separately throughout the LRA.

[2]On the basis of our research, we conclude that it is feasible to display in the Marine Corps LRA the Navy resources that support Marine Corps logistic functions. Currently all of these (Continued on page 6)

Exhibit 1. MARINE CORPS DOLLARS IN NAVY PES IN THE FYDP (FY 78)

FYDP Major Force Programs	Marine Corps (Green) (TOA) Dollars in Given PEs as Percent of Marine TOA in all Navy PEs (FY 78)
Force Program 2: General Purpose Forces PE 21118N, Airborne Command Post (CINCPAC) PE 21498N, Management Headquarters (PACOM) PE 24112N, Multi-Purpose Aircraft Carriers PE 24283N, Submarine Support PE 24291N, Cruisers PE 24411N, Amphibious Assault Ships PE 24455N, Naval Construction Forces PE 24615N, Fleet Support (Port) Base Operations PE 24655N, Operational Headquarters (Sea Control-Surface) PE 24698N, Management Headquarters (Fleet) PE 24798N, Management Headquarters (Sea Control-Projection) PE 24898N Management Headquarters (Surface) PE 28015N, Combat Developments	65%
Force Program 3: Intelligence and Communications PE 31011N, Cryptologic Activities PE 31013N, Human Intelligence PE 31020N, Electronic Intelligence Defense Analysis PE 31021N, Intelligence Production Activities PE 31025N, Intelligence Data Handling System PE 31055N, Cryptologic Communications PE 31056N, Intelligence Communications PE 33113N, Navy Communications PE 34128N, Counterintelligence/Investigative Activities PE 3xxxxN, Service Support to Defense Agencies	9%
Force Program 4: Airlift and Sealift PE 42198N, Management Headquarters Sealift (IF)	0%[a]
Force Program 7: Central Supply and Maintenance PE 71111N, Supply Depot Operations (Non-IF) PE 72898N, Management Headquarters (Logistics)	1%
Force Program 8: Training, Medical and Other Personnel Support PE 84721N, Service Academy PE 84723N, ROTC PE 84741N, Undergraduate Pilot Training PE 84742N, Undergraduate Navigator/NFO Training PE 85798N, Management Headquarters (Training) PE 88716N, Other Personnel Activities PE 89721N, Junior ROTC	22%
Force Program 9: Administration and Associated Activities PE 91212N, Service-Wide Support PE 92398N, Management Headquarters, Departmental PE 92498N, Management Headquarters, Administrative	3%

[a]Dollar amount less than 1%.

Exhibit 2. MARINE CORPS PES IN THE FYDP CONTAINING BLUE DOLLARS (FY 78)

FYDP Major Force Programs	Navy (Blue) TOA Dollars in Given PEs as Percent of Navy TOA in all Marine PEs (FY 78)
Force Program 2: General Purpose Forces	96%
PE 26110M AV-8 Squadrons PE 26111M A-4 Squadrons PE 26112M A-6 Squadrons PE 26114M F-4 Squadrons PE 26116M Marine Fighter/Photo Recon and Attack/EW Squadrons PE 26117M Light Anti-Aircraft/Missile BN (LAAM) PE 26120M UH-1E Squadrons PE 26121M CH-46 Squadrons PE 26122M CH-53 Squadrons PE 26124M VMO Squadrons PE 26125M Helicopter Combat Support PE 26126M Tactical Combat Support PE 26127M KC-130 Squadrons PE 26131M Marine Attack Helicopter Squadrons PE 26134M F-18 Squadrons PE 26138M Air Launched Ordnance/Missile (TACAIR) PE 26139M Aviation Support (TACAIR) PE 26140M Air Launched Ordnance/Missile (LANOFOR) PE 26141M Aviation Support (LANOFOR) PE 26142M Marine Tactical Recon Squadrons PE 26143M Marine Tactical Electronic Warfare Squadrons PE 26211M Divisions (Marine) PE 26311M Force Troops (Marine) PE 26313M Marine Corps Telecommunications PE 26496M Base Operations PE 26497M Training PE 26498M Management Headquarters (Fleet Marine Force) PE 26617M Marine Corps Operational Logistics Development PE 26619M Marine Corps Operational Electronics Development PE 26620M Marine Corps Weaponry PE 26622M Marine Corps Data Systems PE 28010M Joint Tactical Communications Program (TRI-TAC)	
Force Program 5: Guard and Reserve Forces	2%
PE 52512M Wings (MC Reserve) PE 52598M Management Headquarters (Surface)	
Force Program 6: Research and Development	1%
PE 63765M Other Marine Corps Development (Advanced) PE 63766M Marine Corps Data Systems PE 65153M Marine Corps Operations Analysis Group, CNA PE 65854M Development Center Support	
Force Program 7: Central Supply and Maintenance	
PE 72896M Base Operations	
Force Program 8: Training, Medical, and Other Personnel Activities	1%
PE 81711M Recruiting Activities PE 84711M Recruit Training Unit PE 84731M General Skill Training PE 84751M Professional Military PE 85796M Base Operations (Training)	
Force Program 9: Administration and Associated Activities	
PE 91212M Service-Wide Support PE 92398M Management Headquarters, Departmental	

Figure 2 summarizes the coverage of dollars in the Marine Corps LRA. All Marine Corps logistic TOA dollars identified in the Marine Corps TOA are included in the Marine LRA. This means that all Marine logistic dollars and DoD logistic dollars (family housing) in Marine PEs are included in the LRA, but no Navy dollars are included.

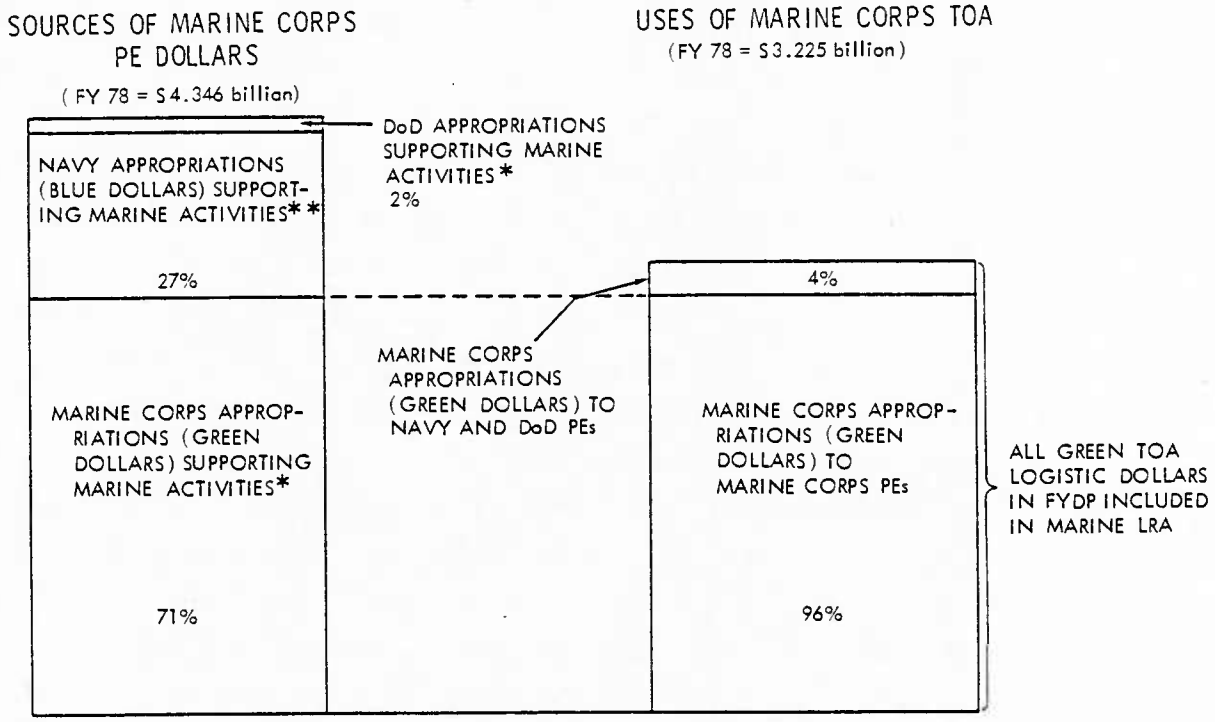
The research objectives of the study and the framework for our research on all of the Services are discussed in Volume I. In this volume we discuss the Marine Corps Planning, Programming, and Budgeting System (PPBS) and describe the data management systems that could be used to support the Marine Corps LRA. Although the Marine Corps provides information to the NCIS/FYDP and NARM/FLAIL that are used for FYDP updates, this information is limited to data about manpower end-strengths and appropriation totals by PE, and to Procurement Annex line items. No Marine Corps information below these levels of detail is included in the NCIS/FYDP or NARM/FLAIL. Marine Corps data systems for providing planning, programming, and budgeting data at levels below the printed FYDP level are special purpose systems used for computing resource requirements and for tracking resource allocations. The most useful of these special purpose systems are discussed in Chapter II.

Chapter III describes the coverage required for the Marine Corps LRA data base and contains our data element reference guide, which identifies the data systems or methods of estimation that provide the data required in the LRA.[1] Appendix A

(cont'd) resources are included in the Navy LRA, and those resources that support centrally managed aircraft logistic activities are separately identified to the Marine Corps there. It would also be feasible to display in the Marine Corps LRA the Marine resources that support logistic functions in the Navy and DoD. These resources are included in the Marine Corps currently, but they are not separately identified to the Service that receives them.

[1]Data systems and methods refer to formal mechanized, perhaps computerized, data reporting systems like the Service operating (Continued on page 8)

Figure 2. MARINE CORPS LRA COVERAGE OF SOURCES OF DOLLARS IN MARINE CORPS FYDP PES, AND USES OF MARINE CORPS TOA APPROPRIATIONS IN FYDP FY 78



*Green and DoD logistics dollars included in Marine LRA.

**Blue logistics dollars included in Navy LRA.

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contains detailed discussions of the various sections of the LRA so that the analyst can better understand these data elements and related information systems.

As OASD/MRA&L provided a proposed LRA structure and specified those resources required to be shown by weapon system, most of our research for this volume was devoted to examining those Marine Corps data systems that might be used to support that structure. If we found that these systems were not adequate, we developed proposals on how to provide the required data elements through modification or expansion of existing systems or through data allocation methods. Our research was based on the assumption that the LRA data requirements should be fulfilled to the maximum extent possible by using existing sources of data. We have explicitly avoided methods requiring the Marine Corps to develop new data sources, because our research convinces us that existing sources are sufficient. However, it is clear that some existing data management systems will have to be modified before the data required for the LRA can be provided in the necessary functional and weapon system categories. In addition, where only total quantities of dollars or manpower are available the data will have to be disaggregated either statistically or by analyst judgment. These kinds of allocations are lower-cost substitutes for new data systems.

Our task order asked us to validate the LRA structure proposed by OASD/MRA&L, and we have suggested some relatively small changes in that structure. Exhibit 3 shows the structure with our proposed changes incorporated; it provides a valid framework within which the totals of Marine Corps logistics dollars and manpower in the FYDP can be displayed for logistic functions and by selected weapon systems.

(cont'd) expense budgeting and accounting systems; formal computerized data management systems like the Navy NCIS/FYDP that accept data from reporting systems; and nonmechanized staff analyses conducted by resource and mission sponsors, claimants, and managers.

Exhibit 3. LOGISTIC RESOURCE ANNEX: OSD FUNCTIONAL CATEGORY STRUCTURE

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 Marine Corps Organic Depot Maintenance Activities
   - a. Repair Division, MCLSBLANT
   - b. Repair Division, MCLSBPAC

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/Canversian Hardware and Alteratian Materiel (Procurement)[a]
   - a. Aircraft
     - (1) Conversion in Lieu af Procurement (CILOP)
       - (a) Service Life Extension (SLEP)
       - (b) Other (CILOP)
     - (2) Operational/Military Capability Impravements
     - (3) Safety
     - (4) Reliability and Maintainability
     - (5) Other
   - b. Ships
     - (1) Canversions (SCN-funded)
       - (a) Service Life Extensian
       - (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) Operatianal/Military Capability Improvements
     - (2) Safety
     - (3) Reliability and Maintainability
     - (4) Other
   - d. Combat Vehicles
   - e. Weapons and Ordnance
   - f. Electronics and Telecommunicatians
   - g. Other Equipment

B. SUPPLY SYSTEM OPERATIONS

1. Depat-Level Storage and Distribution Activities
2. Central Inventory Management Activities
3. Procurement Operatians and Cantract Administratian Services
   - a. Central Pracurement Operatians
   - b. Central Contract Administratian
   - c. Other Pracurement Operatians (Nan-BOS)
4. Supply Operations
   - a. Intermediate Level
   - b. Organizatianal Level

C. TRANSPORTATION

1. Secand Destination Transportation
   - a. Transportatian
     - (1) MAC
     - (2) MSC
     - (3) Other
   - b. Terminal Services
2. Airlift Operations (MAC)
3. Sealift Operatians (MSC)
4. Traffic Management and Terminals (MTMC)
5. Transportatian 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. Clathing and Medical Supplies
3. Other Consumable Supplies and Materials
4. Munitions: Peacetime Operations and Training (Pracurement)
   - 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. Ammunitian
     - (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) Sanobouys
     - (2) Torpedoes and Mines
     - (3) All Other Munitions
2. Aviatian War Consumables (Procurement)
3. Spares and Repair Parts (Procurement)
4. Stack Fund Materiel
   - a. Repair Parts
   - b. Clathing
   - c. Other Supplies

B. INDUSTRIAL PREPAREDNESS

1. Ammunitian Praductian Base Investment (Procurement)
2. Other Industrial Facilities Investment (Pracurement)
3. Manufacturing Technalogy (Procurement)
4. Industrial Preparedness Operations
   - a. Layaway/Maintenance af Reserve Plants
   - b. Layaway/Maintenance af Reserve IPE
   - c. Industrial Preparedness Planning
   - d. IPE Management and Cantral
   - e. Manufacturing Technalogy (O&M-funded)

III. LOGISTICS MANAGEMENT AND SUPPORT ACTIVITIES

A. LOGISTICS MANAGEMENT HEADQUARTERS

B. LOGISTIC SUPPORT EQUIPMENT (Pracurement)

1. Aircraft Logistic Support
2. Ship Logistic Support
3. Missiles Logistic Support
4. Combat Vehicles Logistic Support
5. Weapons and Ordnance Logistic Support
6. Electranics and Telecommunicatians 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 Canstructian
   - 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. Telecommunicatians Facilities
   - g. NATO Infrastructure
   - h. Guard and Reserve Facilities
   - i. Utilities and Real Estate Acquisition
   - j. Air Pallutian Cantral
   - k. Water Pallutian Cantral
   - l. Nuclear Security
   - m. Energy Canservatian Investment
   - n. Minor Construction
   - a. 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 Constructian
   - b. Impravements
   - c. Leasing
   - d. Operatian
   - e. Maintenance
   - f. Debt Payment
2. Troop Housing Construction

C. REAL PROPERTY MAINTENANCE ACTIVITIES

1. Maintenance and Repair
2. Minor Constructian
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 Tronsportation Services
5. Installation Level Pracurement Services
6. All Other Base Services

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

Chapter II

MARINE CORPS SUPPORT OF THE LRA

The LRA will be produced as a regular element of the Marine Corps' Planning, Programming, and Budgeting System (PPBS). The Marine Corps LRA can be produced from information currently available in the Marine Corps, although in many cases additional staff work is required to provide all of the data elements. In this chapter we present a brief description of the Marine Corps PPBS and then discuss in some detail the elements of that system that are of greatest relevance in establishing a procedure to produce an LRA.

A. THE MARINE CORPS PPBS

1. Overview

The Marine Corps PPB effort is coordinated with that of the Navy to create a total DON input to the DoD PPBS.[1] The Deputy Chief of Staff (DC/S) for Requirements and Programs (MC-RP) is primarily responsible for coordination with the Navy on programming and updating the FYDP. Within the Marine Corps, program and appropriation sponsors prepare, review, coordinate, and monitor all actions that affect their assigned areas of responsibility. These individuals are important sources of information on all resources programmed to accomplish Marine Corps operations.

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[1]Because the Marine Corps is a part of the Department of the Navy (DON), many aspects of the PPBS are covered in our discussion in Volume II of DoD PPBS procedures.

Program sponsors are assigned areas of responsibility that reflect mission or support objectives. These areas of responsibility are reflected in the functions of the Headquarters, Marine Corps (HQMC) staff and can be easily identified by the title of the staff agency. Each program sponsor is responsible for assuring that the resources required to support operations in his area of interest are available when needed. Exhibit 4 lists the primary program sponsors represented on the Chief of Staff's Committee, which represents a key review level in the process of developing Marine Corps programs. In producing the LRA, the following sponsors are probably of greatest interest:

DC/S Aviation	Marine Corps Aviation Programs
DC/S Operations and Training	Marine Corps Ground Forces
DC/S Installations and Logistics	Logistic Support
DC/S Manpower	Manpower Requirements
Director, Fiscal Division	Budgeting, FYDP Updating

An appropriation sponsor is assigned for each of the five major appropriations used by the Marine Corps. These appropriations are Procurement, Marine Corps (PMC); Operations and Maintenance, Marine Corps (O&MMC); Military Personnel, Marine Corps (MILPERS, MC); Operations and Maintenance, Marine Corps Reserve (O&MMCR); and Reserve Personnel, Marine Corps (RPMC). These sponsors assist and guide field and HQMC personnel in developing estimates, administering the appropriations, and providing information to the Navy for FYDP updates. They play a key role in developing budget submissions and appropriate backup data.

During POM development, the Program Coordination Branch, DC/S Requirements and Programs (MC-RPP) is the staff agency

Exhibit 4. PRIMARY PROGRAM SPONSORS IN THE MARINE CORPS

DC/S for Manpower	(MC-M)
DC/S for Plans and Policy	(MC-P)
DC/S for Aviation	(MC-A)
DC/S for Research, Development and Studies	(MC-RD)
DC/S for Installations and Logistics	(MC-L)
DC/S for Requirements and Programs	(MC-RP)
DC/S for Operations and Training	(MC-OT)
Director of Marine Corps Reserve	(MC-RES)
Director, Fiscal Division	(MC-FD)
Director, Command, Control, Communications and Computer Systems Division	(MC-CC)
Director of Intelligence	(MC-INT)

primarily responsible for coordinating program estimates and publishing the POM. At the time of each update, program estimates are developed from information received from the field as well as from HQMC agencies that are responsible for centrally managed programs. These requirements are then balanced against fiscal constraints as decisions are made in the iterative processes that characterize the PPBS.

The Marine Corps PPBS makes extensive use of information from field organizations. All data in the O&M appropriations are identified by DoD Elements of Expense (DoDEE), by DoD functional categories, and by cost accounting codes.[1] Some of the categories currently used are listed on the following page.

Because the Marine Corps is a major claimant of DON resources, the major tasks accomplished during the PPB process are the same as those discussed in Chapter II of Volume II.

[1]These classification systems are used in the DoD primarily for administering operating budgets. See DODI 7220.20, *Expense Data Requirements*, April 11, 1968, as amended, for a complete list of all categories.

DEPARTMENT OF DEFENSE ELEMENTS OF EXPENSE PRESCRIBED BY DODI 7220.20

Military personnel
Military trainees
Military personnel, unassigned
Purchased equipment maintenance (intra-DoD)
Travel of personnel
Transportation of things, Military Airlift Command
Transportation of things, commercial air
Transportation of things, Military Sea Transportation Service
Transportation of things, inland
Transportation of things, QUICKTRANS
Transportation of things, other
Utilities and rents
Communications
Purchased equipment maintenance (commercial)
Purchased services
Supplies, consumable
Civilian personnel
Petroleum, oil, and lubricants
Equipment
Other expenses
Printing and reproduction
Service transfers, funded
Service transfers, unfunded

DEPARTMENT OF DEFENSE FUNCTIONAL CATEGORIES PRESCRIBED BY DODI 7220.20

Mission Operations
Supply Operations
Maintenance of Materiel
Medical Operations
Personnel Support
Base Services
Operation of Utilities
Maintenance of Real Property
Minor Construction
Other Engineering Support
Administration
Property Disposal

The Marine Corps also uses the Navy Cost Information System/FYDP Subsystem (NCIS/FYDP) and the Navy Resource Model/Force Level Analyses Interactive Language System (NARM/FLAIL). As discussed in Volume II, these are the primary data systems used by the DON to produce the DNFYP and to update the FYDP. As employed by the Navy, the data bases in these systems are set up to include not only the PE level data required to produce the DNFYP, but also to contain additional information, at a lower level of detail, which provides considerable visibility into the resources programmed by the Navy to support its 5-year program. For example, for the O&M appropriation, all Navy inputs to these systems are identified according to the using activity. Use of Budget Classification Codes means that some data are also shown by function.[1]

The Marine Corps information for each DNFYP and FYDP update, however, is limited to data on manpower end-strengths and appropriation totals[2] by PE, and to Procurement Annex line items.[3] No information below these levels is included for the Marine Corps in the NCIS/FYDP or the NARM/FLAIL. As a result, the capability of these systems to produce the data necessary to support a Marine Corps LRA is limited. The fact that the Marine Corps does not use the Navy's BCCs particularly limits the use of the current DNFYP data base as a source for Marine Corps LRA data, as these BCCs are a readily available tool for producing these data.

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[1]For example, for ship depot maintenance, BCCs are used to enter data about O&M funds required for regular ship overhaul, other overhaul and repair during restricted/technical availabilities, and installation of alterations. See Appendix A, Volume II.

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

[3]The Marine Corps has established a single unit identification code (UIC) for each PE used to program Marine Corps funded resources. This UIC is used to enter all data, so no information about the organizations that compose a given PE is included in the NCIS/FYDP and NARM/FLAIL data bases.

The Navy uses budget project codes (BPCs) to assist in the O&M budget formulation process, although these data are not entered into the NCIS/FYDP or the NARM/FLAIL. The codes, which are based generally on the DON budget classification codes authorized for use by the Marine Corps (see Volume II of the *NAVCOMPT Manual*), are used by the Marine Corps to facilitate the processes of budgeting, managing, and accounting for expenses and obligations contained in the operating budgets. They are used only incidentally in the programming process. However, should the DON elect to produce the Marine Corps LRA from the same data base that is used to update the FYDP, these codes could be employed to enter programming data. Although the current codes would have to be expanded considerably to incorporate all of the data elements required to support the Marine Corps LRA, such expansion is feasible. Examples of some of the current budget project codes that could be used to support the LRA are 2B, General Purpose Forces, Base Operations; 7A, Supply Depot Operations; 7B, Inventory Control Point; 7D1, Depot Maintenance Equipment; 7D2, Transportation of Things; and 7D3, Centrally Managed Programs. These BPCs could be revised, and used to enter data into the NCIS/FYDP and the NARM/FLAIL in the same way as the Navy currently uses BCCs. The Marine Corps LRA could then be produced from the DNFYP data bases by using procedures similar to those recommended for Navy use of BCCs (see Volume II).

2. Data Systems

No single Marine Corps data system includes information on total resource allocations for the entire period covered by each FYDP update. As previously mentioned, the Navy's NCIS/FYDP and NARM/FLAIL systems are used to summarize manpower end-strength and appropriation totals by PE and by total Marine Corps (i.e., at the Navy claimant level). Except for these systems, Marine Corps PPBS-related data systems are apparently limited to special purpose systems used by individual program or

appropriation sponsors and project managers to compute resource requirements or to track resource allocations. Several of these systems may prove useful as sources of data for the LRA, and are discussed below.

a. The Class I System for Support of Application of ZBB to the Operating Accounts of the Marine Corps

Under the Zero Based Budgeting (ZBB) concept, decision units are established that account for all resources consumed by a user activity. The budget is then developed in the form of the various funding levels established for these decision units. Combining these data into decision package sets produces the total budget for each user, and these data are further aggregated into the total budget request for major activities.

The Marine Corps implemented an automated system during development of the FY 80 budget for use by field activities in submitting budget data. This system is designed to relate the information in operating budget submissions to headquarters level decision units by PE. Holders of Marine Corps operating budgets are required to identify budget estimates according to decision units, DoDEEs, DoD functional categories, and Marine Corps cost accounting codes. Thus, budget submissions can be related to actual and anticipated expenses recorded in the accounting systems in the categories in which budget requests are forwarded for review and approval. The Class I system permits reviewers at each level in the PPBS process to aggregate these data to form the ZBB budget request for that level.

Even though the current Class I ZBB system addresses only the 3-year period covered in the FY 80 budget submission, it could be used to track resources for the entire FYDP planning period. In addition, data elements below the DoDEE and functional category level can be added to the system. For example, subcategories could be added to the DoDEE "Petroleum, Oil, and Lubricants" that would permit operating budget holders to submit

information about fuel estimates in the LRA fuel subcategories "Vehicles" and "Other." This would permit HQMC to extract the data elements required to support the LRA directly from the ZBB data base. Moreover, these data elements can also be related directly to those Marine Corps activities that consume the resources programmed in the DNFYP.

b. The Materiel Management Programming Model

The Materiel Management Programming Model (MMPM) is used by the Marine Corps to produce information to assist materiel managers and resource programmers in making decisions on the allocation of resources to support principal end-items. Specifically, this system uses data about replacement and repair costs, current inventory levels, projected requirements, and other relevant measures to compute a least-cost repair/replace program to support projected force requirements within funding constraints. During POM development, the model is used to determine logistic support requirements on a line-item basis to produce a 5-year workload and fund estimate. The output of the model is reviewed by program sponsors and adjusted as required on the basis of specific program considerations. For the remainder of the year, these data are an important factor in determining the component repair and spares requirements. The system is a readily available source of data elements to support the replenishment spares and component repair functional categories and subcategories in the LRA. These data elements can easily be provided by aggregating individual line-item data in the MMPM data base to the proper LRA category.

c. The Table of Manpower Requirements System

The Table of Manpower Requirements data system (TMR) is used by the Marine Corps to support its manpower programming process. It is discussed in depth below, but we mention it

here as one data source that might be used by the Marine Corps to derive the manpower-related data elements required to support the LRA. The system relates manpower requirements as shown in Marine Corps Tables of Organization (TOs) by TO line item to the PEs in which resources are programmed to accomplish specific missions or support tasks. Since the TOs include data about the functions for which manpower is required, they represent a readily available source of data to use in identifying Marine Corps manpower to LRA functional category.

B. MANPOWER DATA REQUIRED TO SUPPORT THE LRA

The LRA requires that all Marine Corps manpower (active and reserve forces) programmed to provide logistic support be identified according to the functional categories listed below. Manpower levels will be expressed in terms of both authorized end-strengths and related dollars (TOA), by appropriation, consistent with the DoD FYDP.[1] In addition, the LRA requires separate identification of civilian and military manpower assigned to IF and non-IF activities. There is currently no LRA requirement to relate Marine Corps end-strengths to weapon system supported. Manpower costs will be identified according to those aircraft and tank weapon systems designated by OSD. Since current DoD budgeting and programming procedures, including those that relate to updating the FYDP, require manpower data only at the PE level, the manpower data elements required to support the LRA cannot, in most cases, be extracted directly from the FYDP. Thus, the implementation of the LRA will require an increase in the quantity of data that must be developed and processed by the Marine Corps. As pointed out above, the primary data systems used by the DON for updating the DoD FYDP are the

[1]Costs for military manpower will be identifiable since these are funded in separate appropriations. Costs for civilian manpower, however, will not be identifiable since these are included in the aggregated O&M data for the appropriate LRA categories.

LRA FUNCTIONAL CATEGORIES FOR WHICH
MANPOWER END-STRENGTHS ARE REQUIRED

Manpower in Organic Depot Maintenance Facilities[1]
Sustaining Engineering and Technical Support[2, 3]
Intermediate-Level Maintenance[2]
Organizational/Unit-Level Maintenance[2]
Depot-Level Storage and Distribution Activities
Central Inventory Management Activities
Central Procurement Operations
Central Contract Administration
Other Procurement Operations (Non-BOS)
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

[1]Manpower will be identified by type of facility or organization (e.g., Repair Division, MCLSBPAC).

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

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

NCIS/FYDP and the NARM/FLAIL. The Marine Corps only provides manpower data for these systems at the PE level, rather than at the unit identification level as the Navy does. Thus, the data bases that support these two information systems contain the same information about Marine Corps manpower as is printed in the FYDP and do not represent a source of data to support the Marine Corps LRA.

1. Current Procedures for Manpower Programming

In the Marine Corps, the DC/S for Manpower (MC-M) is responsible for translating manpower levels requested by fleet

and support activities into the programmed manpower end-strengths reflected in the FYDP. The basic planning documents used in this process are TOs that show validated manpower requirements for each organization in the Marine Corps. HQMC has computerized the TO system to provide a basic manpower information system to support manpower programming. This information system is generally referred to as the TMR.

The basic function of the TMR is to relate validated manpower requirements, by TO line item, to the PEs designated to include total Marine Corps resources for a particular function, mission, or activity. For example, the Repair Division at the Marine Corps Logistics Support Base, Atlantic, is responsible for providing depot maintenance support and is identified by the appropriate line items in TO 7014 to PE 72207M, "Depot Maintenance Activities." For manpower in the support areas (non-Fleet Marine Forces), the TOs are adjusted to show approved levels, so that the TOs and the FYDP are kept in agreement (with allowance for administrative lag time in revising the TOs to reflect PPBS decisions) and efforts are made to man support units at TO strength. For manpower in the Fleet Marine Forces (FMF), force levels are balanced against TO requirements, imposed manpower and appropriation constraints, and manpower policies to produce the data displayed in force-related PEs.[1] In this case, some units in the TO may be designated unmanned or manned at a skeletal (cadre) level, while the remaining units may be manned at a prescribed level that is somewhat less than 100 percent.

Within MC-M, the Manpower Planning, Programming and Budgeting Branch (MC-MPP) receives manpower requirements from the HQMC offices that are responsible for the various TOs. These requirements are balanced against programming constraints, and manpower

[1]Although TOs for FMF units are not adjusted in each balancing exercise, troop lists maintained by HQMC document all changes so that TO line-item data can be tracked directly to PE information.

end-strengths and manyears are determined by PE. MC-MPP enters these end-strength data into the DON NCIS/FYDP or NARM/FLAIL, and at the same time sends the manpower information to the Fiscal Management Division (MC-FD) for costing.

In costing military manpower, MC-FD uses average rates to determine total cost by PE to support the manning levels and enters these data into the NCIS/FYDP or NARM/FLAIL. These rates, which are derived from various data (including historical costs and projected grade structure), reflect total MILPERS appropriation requirements for pay, subsistence, and other military manpower costs. Civilian manpower costs are determined by the various operating budget holders and are included in the total O&M costs submitted to update the FYDP. MC-FD provides average rates to be used in determining costs for civilian pay and allowances.

2. Support of the LRA

Because the LRA requires identification of manpower by function performed, it will require information about Marine Corps manpower below the PE level (except in those cases in which an entire PE can be associated with a unique LRA data element). Although such data do not currently exist in the Marine Corps PPBS, the TMR already includes data that could be used to facilitate development of the data elements required to support the LRA. Since the TMR is essentially an automated TO, use of this system represents an alternative to deriving LRA data elements on a manual basis, directly from the TO or by other means.

In the TMR, each line item in the TO is identified to a specific PE. Since individual TOs identify manpower requirements by military organization, administrative or operational entity within an organization, job or speciality code, and the number of people required to man each line item, these data are also

available in the TMR. Thus, the manpower data in each PE may be thought of as an aggregation of line items from specific TOs. As a result, if the manpower level data in a PE belong in more than one LRA functional category, they can be separated by using the data in the TMR. The Marine Corps will, however, have to develop specific methods to allocate manpower using TMR data to derive LRA data elements.

For example, the manpower assigned to PE 26315M consists solely of resources programmed to provide intermediate-level combat service support to FMF units. For FY 79 over 24,000 military personnel, assigned to three FSSGs, are included in this PE. Each of these FSSGs is a composite grouping of functional components including a maintenance battalion, which is structured to provide intermediate-level maintenance for designated systems utilized by FMF units. The LRA requires that manpower in these maintenance battalions be identified first to the intermediate maintenance LRA category and then to equipment supported at a gross level based on materiel category grouping. A complete analysis will require that each TO line item be related to PE manpower. For purposes of illustration, however, let us consider only the question of how many of these people are programmed to provide maintenance of electronic and communications equipment. One way to accomplish this is to determine first what percentage of the total manpower in the FSSGs is authorized for the three maintenance battalions, and then, within the three battalions, what percentage is authorized for the three electronics maintenance companies. Once these ratios have been computed, they can be applied to total PE manpower to provide the required LRA data elements.

This allocation method should be acceptable because differences between TO and PE data are generally small--especially for non-FMF areas--and can be easily reconciled, if desired, during the period between PPBS decision and administrative updating of

the TO. Also, manpower requirements as reflected in the TO are probably a good indicator of the workload for which these resources are programmed. This is especially true since all manpower requirements are validated by HQMC before TOs are revised.

Use of this approach to fulfilling the LRA requirements is by no means the only way to produce the LRA. However, assuming it is adopted, the following procedures would be required. First, PEs must be examined to determine whether they conform to LRA categories. For those PEs that can be associated to specific LRA data elements, no data manipulation is required. The information needed to support the LRA can be extracted directly from the FYDP. For PEs in which manpower must be allocated to more than one LRA functional category, manpower ratios derived from data in the TMR can be used. These ratios would be formed by relating the manpower in designated TO categories or line items to the total manpower in all TOs identified to each PE.

These procedures will ensure that all of the manpower data elements required to support the LRA will be available. While the Marine Corps must determine the specific method to be used to develop the manpower data for the LRA, this discussion has demonstrated that providing these data elements is feasible.

C. PROCUREMENT

The LRA requires information on the following categories of logistic support hardware provided to the Services through procurement appropriations: initial and replenishment spares and repair parts; modification hardware and support equipment; munitions and war consumables; industrial preparedness procurement; and logistic support equipment. For the first two categories, the LRA structure requires identification of resources according to materiel category-related subcategories and to selected weapon systems. The additional level of detail

required for the remaining categories varies depending on the nature of the items being procured.

The planning, programming, and budgeting of procurement resources is a highly centralized process in all of the Services and such resources are required to be highly visible at the Service headquarters and OSD levels. The fact that the Marine Corps manages only a single procurement appropriation--Procurement, Marine Corps (PMC)--makes it easier to obtain data on Marine Corps procurement requirements. The PMC appropriation provides the Marine Corps with weapons, ammunition, and support equipment, most of which are programmed for use by Marine Corps ground forces. All procurement to satisfy requirements for Marine Corps aviation support is managed and funded by the Navy in three Navy appropriations--Aircraft, Weapons, and Other Procurement, Navy.

The FYDP Procurement Annex, published with each updating of the FYDP, provides a recurring, up-to-date display of resources by budget activity (BA), budget subactivity (BSA), and Procurement Annex line item. In many cases, these data either already correspond directly or can be easily assigned to the procurement categories prescribed by the LRA structure. As a result, the major problem in producing the procurement data for the LRA is identifying which is the proper LRA category for Procurement Annex data. The LRA does not currently require that logistic resources be identified to any Marine Corps nonaircraft weapon systems except for designated tank weapon systems.

As shown in Exhibit 5, the PMC appropriation contains six BAs which generally reflect the functional organization of the DC/S I&L, HQMC (MC-L). Except for BA-1, "Ammunition," these BAs can generally be equated to the LRA materiel categories, as shown in Exhibit 6. The data in BA-2, "Weapons and Combat Vehicles," fit into more than one LRA category, and must be categorized at the line item level. The fact that BSA 0201,

Exhibit 5. BUDGET ACTIVITIES IN THE PROCUREMENT, MARINE CORPS APPROPRIATION

BA-1	Ammunition
BA-2	Weapons and Combat Vehicles
BA-3	Guided Missiles and Equipment
BA-4	Communications and Electronics Equipment
BA-5	Support Vehicles
BA-6	Engineer and Other Equipment

Exhibit 6. RELEVANT LRA MATERIEL CATEGORIES AS RELATED TO BUDGET ACTIVITIES IN THE PMC APPROPRIATION

LRA Materiel Category	PMC Budget Activity
Missiles	BA-3, "Guided Missiles and Equipment"
Combat Vehicles	Part of BA-2, "Weapons and Combat Vehicles"
Weapons and Ordnance	Part of BA-2, "Weapons and Combat Vehicles"
Electronic and Telecommunications Equipment	BA-4, "Communications and Electronics Equipment"
Other Equipment	BA-5, "Support Vehicles" BA-6, "Engineer and Other Equipment"

"Tracked Combat Vehicles," is separately identifiable within BA-2 greatly facilitates this process.

Resources procured in BA-1, which provides for Marine Corps annual peacetime training needs and the acquisition of war reserve stocks for use in the event of mobilization, must be allocated to the LRA subcategories designated "Munitions: Peacetime Operations and Training (Procurement)" and "War Reserve Stockage Munitions (Procurement)." The data on procurement of munitions are very visible and data are readily available in the categories required to support the LRA. As a result, the Marine Corps will have no difficulty providing the procurement data elements required for the munitions category of the LRA.

We recommend that procurement line items be assigned to LRA categories as follows. Line items in BA-3 through BA-6 can be assigned to LRA categories as shown in Exhibit 6. Line items in BA-2 must be distributed to two LRA categories ("Combat Vehicles" and "Weapons and Ordnance") as shown in Exhibit 6. Backup data, available within the Materiel Division, DC/S for Installations and Logistics (MC-LMG), must be used to assign data in BA-1 to the proper LRA category. The specific procedures necessary to provide all of the procurement data elements required to support the LRA are discussed in Appendix A.

D. WEAPON SYSTEM DATA

In addition to identifying those resources programmed to support the Maintenance, Modification, and Technical Support of Equipment functional category according to materiel category groupings, the Marine Corps LRA requires that some dollar resources programmed to support designated aircraft and combat vehicles be further identified according to weapon systems by type and model (e.g., F-14, M-60). For the initial LRA, OSD

proposes to limit this requirement to aircraft and tanks and will provide a list of the specific weapon systems to which resources are to be identified with the LRA implementation instructions. For example, within the combat vehicles materiel category, OSD might require that resources programmed to provide support for the M-60 tank be separately identified.

Since all procurement and O&M funded expenses to support the DON Flying-Hour Program (e.g., depot maintenance, fuel, repair parts) are funded by the Navy in Navy appropriations, these aircraft weapon system costs will be included in the Navy LRA (see Volume II). Resources programmed by the Navy to support Marine Corps aircraft, however, will be separately identified. The only resources programmed by the Marine Corps to support aircraft programs are manpower and MILPERS, Marine Corps dollars and O&M expenses to support Marine Corps operational squadrons (e.g., organizational maintenance) and intermediate level maintenance units. In keeping with the appropriation integrity approach used to develop the OSD LRA, these MILPERS and O&M dollar resources will be identified in the Marine Corps LRA. As a result, resources to support Marine Corps aircraft will appear in two separate LRAs, and it will be necessary, at least in the initial LRAs, to combine these separate data to determine the total resources programmed to support Marine Corps aircraft weapon systems.[1] OSD may decide to develop weapon system displays that would show these data on a single format for subsequent LRAs.

Resources programmed to support designated Marine Corps tank weapon systems will be separately identified in the Marine Corps LRA within the Combat Vehicles materiel category. The

[1]The appropriation integrity approach applies also to Navy and Marine Corps MILPERS appropriations programmed to support aviation programs. For example, Navy manpower and MILPERS dollars included in FYDP Major Program 2.6 to support Marine Corps aviation units will be included in the Navy LRA.

information required to do this is generally available, although in some cases allocation procedures will have to be used to identify the resources in some LRA functional categories according to weapon systems. Details of how the Marine Corps might provide the required weapon system data elements are discussed in Appendix A. The following LRA functional categories are affected by the weapon system requirement:

(1) Depot Maintenance and Modification Installation
(2) Sustaining Engineering and Technical Support
(3) Intermediate-Level Maintenance
(4) Organizational-Level Maintenance
(5) Initial Spares and Repair Parts (Procurement)
(6) Replenishment Spares and Repair Parts (Procurement)
(7) Modification Hardware (Procurement).

Only dollar resources will be identified as to specific weapon systems supported. Manpower data are identified as to materiel category only, except for depot level manpower end-strengths (see category IA2, Exhibit 3) which are identified only by facility (e.g., Repair Division, MCLSBLANT).

E. SUMMARY

The Marine Corps PPBS is structured to provide FYDP-level data to the DON NCIS/FYDP and NARM/FLAIL data management systems, including manpower end-strengths and appropriation totals by PE, and Procurement Annex line items. Data at lower levels of detail are only available in special purpose data systems that are not directly linked to the NCIS/FYDP and the NARM/FLAIL. However, with staff work by the appropriate Marine Corps program and appropriation sponsors, the LRA data requirements can be met using the data in the PPBS and special purpose systems, and if desired, the data from the special purpose systems can be integrated into the PPBS.

The primary special purpose systems that could be utilized, with some modifications, for the LRA data requirements include the Class I system for support of the application of Zero Based Budgeting to the operating accounts of the Marine Corps, the Material Management Programming Model, and the Table of Manpower Requirements. Modifications to the Class I ZBB system would include extending resource estimating to cover the entire FYDP planning period and adding operating expense subcategories below the levels of the DoDEE, the functional category, and the BPC. Although the TMR itself will not require modification, the Marine Corps will have to develop specific manpower allocation schemes to implement the LRA. However, once these allocation procedures are developed, the TMR can be the basis for providing all the manpower data required by the LRA.

For procurement data, the Marine Corps LRA can rely heavily on the Procurement Annex because in many cases these data correspond closely to the procurement data categories required by the LRA.

Once the Marine Corps operating dollars, manpower, and procurement data have been derived from the various Marine Corps data systems identified, the LRA can be supported at the required level of detail.

Chapter III

LRA DATA BASE COVERAGE AND REFERENCE GUIDE

Chapters I and II present the proposed Marine Corps LRA structure and discuss features of those Marine Corps financial and manpower data systems that would be employed to provide data 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. This information base will make possible the development of numerous displays consistent with the basic LRA structure. These would include a complete display of 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 that is provided at the end of this chapter.

A. THE LRA DATA BASE

Tables 1 and 2 identify the data elements in the LRA data base according to the logistic functions and subfunctions shown in Exhibit 3.[1] If the information in the table applies to all subcategories within the higher level category, the subcategories are not shown. 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 Marine Corps for logistic support. All data on programmed dollar

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

resources are identified by DoD appropriation and fiscal year. These dollars are Marine Corps resources that are programmed either to purchase services from commercial, interservice, or industrial-fund activities (i.e., customer dollars), or to provide services directly. Data on programmed manpower levels are projected authorized end-strengths, by fiscal year, as reflected in the DoD FYDP.

Individual functional categories may require additional data coverage. For example, special coverage is required for MCIF activities. The dollars shown in the depot maintenance materiel categories in the LRA structure are customer funds used to purchase services from the MCIF activities. The MCIF billing rates that are charged against these customer funds do not include the costs of military personnel and major investment items for MCIF facilities, so these costs are shown in appropriate categories elsewhere in the LRA. The costs for military personnel assigned to MCIF activities are shown in the "Manpower in Marine Corps Organic Depot Level Maintenance Activities" category, and the investment costs are shown in the applicable equipment procurement or facilities construction categories.

B. DATA ELEMENT REFERENCE GUIDE

There are basically three methods of obtaining the data necessary for the LRA which are summarized below: one for procurement resources, one for central- and field-managed operating resources, and one for construction and housing resources. The Procurement Annex and the files and management materials of various Marine Corps offices are primary data sources for procurement resources. Central- and field-managed operating resources can be assigned to LRA functional categories by use of the DoDEE structure and the detailed programming and management data utilized by the Marine Corps. Finally, data for

Table 1. OVERVIEW OF LRA DATA BASE COVERAGE: LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS

Logistic Function[a]	Appropriations	Marine Corps Funds Identified Separately by Type of Facility Projected to Perform Work				Costs to Selected Weapon System Supported[b]	Marine Corps Manpower Identified Separately By					
							Assigned to IF Activities			Assigned to Non-IF Activities		
		MC IF	MC Non-IF	Commercial	Inter Service		Military[c]	Civilian	Total	Military	Civilian	Total
MAINTENANCE, MOOIFICATION AND TECHNICAL SUPPORT OF EQUIPMENT[d]												
Depot-Level Maintenance and Modification/Alteration Installation[e]	X	X	X	X	X	X						
Manpower In Marine Corps Organic Depot-Level Maintenance Facilities[f]	X						X	X	X	X	X	X
Sustaining Engineering and Technical Support[g]	X	X	X	X	X	X	X	X	X	X	X	X
Intermediate-Level Maintenance	X		X		X	X				X	X	X
Organization/Unit-Level Maintenance	X		X		X	X				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									X	X	X
Central Inventory Management Activities	X									X	X	X
Procurement Operations and Contract Administration	X									X	X	X
Supply Operations	X									X	X	X
TRANSPORTATION												
Second Oestination Transportation	X											
Airlift Operations (MAC)[i]												
Sealift Operations (MSC)	X	X					X					
Traffic Management and Terminals (MTMC)[i]												
Transportation Services	X									X	X	X
LOGISTIC SUPPORT OF FORCE OPERATIONS AND TRAINING												
Fuel	X											
Personnel Support Materiel	X											
Other Consumable Supplies and Materials	X											
Munitions	X											

[a] See Exhibit 3 for complete list of all functions and subfunctions.

[b] OSO will designate the specific aircraft and tanks by type and model (TM) 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 homogeneous items of material. The LRA groups the categories prescribed by Enclosure 2 of DoDI 4151.15 into seven summary categories as shown in Exhibit 3.

[e] Includes detail by work performance category. A work performance category is a mutually exclusive classification of maintenance workload based on what is done. For the aircraft, missiles, and combat vehicle materiel categories, the LRA groups the categories prescribed by Enclosure 3 of DoOI 4151.15 into the summary groups shown in Exhibit 3. No work performance category is included for other materiel categories.

[f] Manpower will be listed by major type of facility (e.g., Repair Oivision MCLSBPAC).

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

[h] For the aircraft and missile materiel categories, resources will be identified by type of mod as shown in Exhibit 3. For all materiel categories, mod installation and spares will be shown on a non-add basis since these resources are included in aggregate totals presented elsewhere in the LRA.

[i] No Marine Corps resources are programmed to support these functions.

Table 2. OVERVIEW OF LRA DATA BASE COVERAGE: ALL OTHER LOGISTIC SUPPORT CATEGORIES

Logistic Function[a]	Marine Corps Funds Identified Separately By				Marine Corps Manpower Identified Separately By					
		Type of Facility Projected to Perform Work			Assigned to NIF Activities			Assigned to Non-NIF Activities		
	Appropriations	MC IF	MC Non-IF	Commercial	Military	Civilian	Total	Military	Civilian	Total
LOGISTIC SUPPORT OF POST O-DAY COMBAT SUSTAINABILITY										
War Reserve Stockage	X									
Industrial Preparedness[b]										
LOGISTICS MANAGEMENT AND SUPPORT ACTIVITIES										
Logistics Management Headquarters	X							X	X	X
Logistic Support Equipment (Procurement)	X									
Other Central Logistic Support										
Property Disposal										
Inactive Equipment Storage and Maintenance	X				X	X	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)	X									
Housing	X									
Real Property Maintenance Activities	X								X	X
Base Operations: Other Services and Support	X							X	X	X

[a]See Exhibit 3 for complete list of all functions and subfunctions. All data are to be shown separately for active and reserve forces.

[b]The Marine Corps programs no resources in this category.

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

SUMMARY OF BASIC METHODS OF OBTAINING MARINE CORPS LRA DATA

Procurement Resource Data

To obtain these data:

-- Use Procurement Annex information supplemented by data from resource sponsors who maintain budget backup and program management detail information.

-- 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 resource sponsor analyses.

-- Use data in the Class I ZBB System. Consider extending these data to cover all FYDP years and augment the coverage with information below the DoDEE and functional category levels.

-- Obtain manpower information based on factors derived from the Table of Manpower Requirements System.

Construction and Housing

To obtain these data:

-- Use Family Housing, Defense data elements available at the PE level.

-- Other Construction shown in Navy LRA.

construction and housing resources are readily available at the PE level, since only Marine Corps administered Family Housing, Defense resources will be included in the Marine Corps LRA.

The Marine Corps LRA Data Element Reference Guide, Table 3, identifies the locations of data, reporting channels, and methods of calculating or estimating data needed for each logistic function in the LRA. This information is presented in expanded narrative form in Appendix A.

As pointed out in Chapter II, the Marine Corps is required to provide information to the Navy's NCIS/FYDP and NARM/FLAIL for FYDP updates. Currently, the Marine Corps limits this information to the minimum required to update the FYDP (generally manpower end-strengths and appropriation totals by PE, and Procurement Annex line-item data) and does not utilize the capability of these systems to process information at a lower level of detail. In Volume II we point out that the NCIS/FYDP and the NARM/FLAIL systems could be used to produce a major portion of the LRA automatically. If the Marine Corps expanded the amount of data entered into these systems, the DON can produce a major portion of the Marine Corps LRA from the same data base used to update the FYDP. For this reason, Table 3 includes comments on how the Marine Corps could expand the information entered into these primary Navy data systems. If the Marine Corps elects to produce the LRA manually, these comments may not apply.

Table 3. MARINE CORPS LRA DATA ELEMENT REFERENCE GUIDE

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS[b]	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	MARINE CORPS STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[c]	REMARKS
1. LOGISTIC SUPPORT OF PEACETIME MATERIEL READINESS A. MAINTENANCE, MODIFICATION AND TECHNICAL SUPPORT OF EQUIPMENT 1. Depat-Level Maintenance ond MOD/ ALT Installation a. Aircraft	None	None	None	None	None	None	Not applicoble; managed ond funded by the Novy in Navy oppropria-tions so will appear in Novy LRA.
b. Ships	None	None	None	None	None	None	No Marine Corps resources progrommed in this cotegory.
c. Missiles d. Combat Vehicles e. Weopons ond Ordnonce	MMPM OP-5 OP-25	New BCCs must be created to enter data by LRA category into the NCIS/NARM data base.	None	None	MC-LM will hove to review MMPM dato for the Weopans Equipment category to make each line item congruent with either the LRA Mis-siles Combat Vehicles, or Weapans and Ordnonce category.	O&MMC	The MMPM system con be the basis for distribution of resources by LRA cate-gories, including selected weapan systems.
f. Electronics ond Telecommunico-tions Equipment	MMPM OP-5 OP-25	New BCCs must be created to enter data by LRA category into the NCIS/NARM dato base.	None	None	Line items in the MMPM Communico-tions-Electronics Equipment category can be reloted directly to this LRA category.	O&MMC	
g. Other Equipment	MMPM OP-5 OP-25	New BCCs must be created to enter data by LRA cotegory into the NCIS/NARM data base.	None	None	Line items in the MMPM Motor Trans-port ond Engineer Equipment cote-gories con be related directly to this LRA category.		
2. Manpawer in Marine Corps Organic Depat Level Maintenance Activities	FYDP TMR	None	None	Information in the TMR con be used to identify totol monpower end-strength in PE 72007 to the oppropriate Repair Decision. Manpower derived from the TMR can then be used to distribute total MILPERS dollors to these categories.	None	MILPERS	The manpawer in PE 72007 reflects the totol manpawer at the two Repair Divisions.
3. Sustoining Engineering and Tech-nical Support	FYDP TMR	BCCs will hove to be established to identify these resources.	None	Funds to reimburse the Repair Divisions can be estimated based either on job order dato, manpower ratios, or workload rotios developed from the IF Budget Exhibit.	MC-FP can identify funds to purchase these services from commercial activities.	O&MMC MILPERS	

[a] For complete list of functions in each category, see Exhibit 3.

[b] Entries in this column ossume that the DON elects to use the NCIS or NARM as the primary system to produce the LRA.

[c] All resources for the reserve forces appropriated in separate reserve oppropriations will be included in the proper category olong with the regulor service-funded resources.

Table 3. Continued

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS[b]	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	MARINE CORPS STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[c]	REMARKS
c. Missiles d. Combat Vehicles e. Weapons and Ordnance f. Electronics and Communications g. Other Equipment	Procurement Annex by BSA	None	None	None	MC-LP can identify mod funds to tank weapon systems; however, currently none are programmed.	PMC	PMC funds to be identified to materiel category only; identification of mod spares and type of mods not required. Only mods programmed to suppart tanks are required by weapon system.
B. SUPPLY SYSTEM OPERATIONS 1. Depot-Level Storage ond Distribution Activities	FYDP	None; BCC 7A must be used to enter data for all years.	None	None	Nane	O&MMC MILPERS	All manpower in PE 71111M assigned to this category, but PE includes dollars for nonsupply programs. Some manpower are assigned to PE 71111N.
2. Central Inventory Management Activities	FYDP	None; BCC 7B must be used to enter data for all years.	None	None	None	O&MMC MILPERS	Some Marine Corps personnel in PE 71112M perform procurement functions and might be considered for display in PE 71113M. Then these resources could be included in the LRA in the following section.
3. Procurement Operations and Contract Administration Services	None	None	Nane	None	None	None	No Marine Corps resources identified to this LRA category.

[a]For complete list of functions in each category, see Exhibit 3.

[b]Entries in this column assume that the DON elects to use the NCIS or NARM as the primary system to produce the LRA.

[c]All resources for the reserve forces appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 3. Continued

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS[b]	IMPLEMENTATION REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	MARINE CORPS STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[c]	REMARKS
4. Supply Operations	TMR	New BCCs will have to be established to enter data in these two categories.	None	Manpower ratios developed from data in the TMR system can be used to allocate costs to this LRA category.	Data in the TMR system can be used to identify all manpower performing these functions.	O&MMC MILPERS	None
C. TRANSPORTATION 1. Second Destination Transportation	FYDP	New BCCs will have to be established to enter data in these categories.	None	None	Data in OP-5 and OP-16 Budget Exhibits can be used to estimate outyear data in these categories.	O&MMC	None
2. Airlift Operations (MAC)	None	None	None	None	None	None	No Marine Corps resources identified to this functional category.
3. Sealift Operations (MSC)	FYDP	None	None	None	None	MILPERS	Manpower and MILPERS funds for Marines assigned to MSC can be extracted directly from the FYDP.
4. Traffic Management and Terminals (MTMC)	None	None	None	None	None	None	No Marine Corps resources identified to this functional category.
5. Transportation Services	TMR	New BCCs will have to be established to enter data in these categories.	None	TMR data can be used to determine manpower in required categories; these ratios can be used to identify manpower end-strengths and costs to the required LRA category.	None	O&MMC MILPERS	None
D. LOGISTIC SUPPORT OF FORCE OPERATIONS AND TRAINING 1. Fuel	Operating Budgets	None	None	None	MC-FD will have to identify resources in the same detail (i.e., vehicles and other) as is used in the operating budgets.	O&MMC	The Navy finances and manages the fuel program for Marine Corps Aircraft; these resources will be included in the Navy LRA. Operating budget data can be used by the Marine Corps to estimate totals on other fuel for all years.
2. Personnel Support Materiel	None	None	None	None	For MILPERS funded costs, MC-FDB can use average rates to determine required data.	MILPERS	Average manpower rates include portions of subsistence and clothing and medical supplies. These rates can be utilized to back-out the appropriate portions from MILPERS dollars. Data here are non-add entries, as are shown elsewhere in the LRA.
3. Other Consumable Supplies and Materials	Operating Budgets	None	None	None	MC-FD will have to identify resources in the same detail (i.e., vehicles and other) as is used in the operating budgets.	O&MMC	Nonmaintenance materials are budgeted in DaDEE Supplies, Consumable (Code T). Operating budget data can be used to estimate outyear totals.

[a]For complete list of functions in each category, see Exhibit 3.

[b]Entries in this column assume that the DON elects to use the NCIS or NARM as the primary system to produce the LRA.

[c]All resources for the reserve forces appropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 3. Continued

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS[b]	IMPLEMENTATIONS REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	MARINE CORPS STAFF ANALYSES REQUIRED	APPROPRIATIONS COVERED[c]	REMARKS
4. Munitions: Peacetime Operations and Training (Procurement)	Procurement Annex	None	None	None	See below.	PMC	See below.
II. LOGISTIC SUPPORT OF POST D-DAY COMBAT SUSTAINABILITY A. WAR RESERVE STOCKAGE	Procurement Annex	New RCCs will hove to be established to identify these resources to the proper LRA category.	None	None	Procurement of peacetime and war reserve stocks ore combined in the Procurement Annex line items. MC-LP has the data to separately identify these resources as is done, for exomple, in formats in the VI-D series in the POM.	PMC	All procurement for support of Marine aircraft is programmed by the Navy in Novy appropriations ond will be included in the Navy LRA.
B. INDUSTRIAL PREPAREDNESS	None	None	None	None	None	None	No Marine resources ore identified to this functional category.
III. LOGISTICS MANAGEMENT AND SUPPORT ACTIVITIES A. LOGISTICS MANAGEMENT HEADQUARTERS	FYDP	None	None	None	None	MILPERS	The Marine Corps identifies no resources to PE 72898M. Some Marine Corps manpower ond MILPERS costs are included in 72898N.
B. LOGISTIC SUPPORT EQUIPMENT (PROCUREMENT)	Procurement Annex by line item	New RCCs will have to be established.	None	None	MC-LPF will have ta identify each line item or BSA to the proper LRA cotegory.	PMC	
C. OTHER CENTRAL LOGISTIC SUPPORT 1. Property Disposal	None	None	None	None	None	None	This is a DLA responsibility ond no Marine Corps resources are progrommed in this category.
2. Inactive Equipment Storoge ond Maintenance	None	New BCCs will hove to be established.	None	None	None	O&MMC	
3. Other Logistics Activities	FYDP	None	None	None	None	O&MMC	All required data contained in PEs 72891 ond 78110.

[a]For complete list of functions in each category, see Exhibit 3.

[b]Entries in this column assume that the DON elects to use the NCIS or NARM as the primary system to produce the LRA.

[c]All resources for the reserve forces oppropriated in separate reserve appropriations will be included in the proper category along with the regular service-funded resources.

Table 3. Continued

LOGISTIC FUNCTION[a]	APPLICABLE DATA SYSTEMS	REQUIRED MODIFICATIONS TO EXISTING SYSTEMS[b]	IMPLEMENTATION REQUIRED OF PLANNED SYSTEMS	ALLOCATIONS REQUIRED	MARINE CORPS STAFF ANALYSIS REQUIRED	APPROPRIATIONS COVERED[c]	REMARKS
IV. INSTALLATIONS AND FACILITIES SUPPORT A. FACILITIES CONSTRUCTION (LESS HOUSING) 1. Logistic Focilities 2. Other Focilities	None	None	None	None	None	None	All Marine Corps requirements are financed by the Navy in Navy oppropriotions and will be included in the Navy LRA.
3. Personol Property Collateral Equipment	None	New BCCs will hove to be estoblished.	None	None	MC-LF will have to identify these resources separately in the BOS PEs.	O&MMC	
B. HOUSING 1. Fomily Housing	FYDP	None	None	None	None	Family Housing, Defense	All dato avoiloble is required in categories in PEs 88743, 88744, ond 88745. All resources in the first three cotegories are monoged by the Navy ond will be included in the Novy LRA.
2. Troop Housing	None	None	None	None	None	None	Included in the Navy LRA.
C. REAL PROPERTY MAINTENANCE ACTIVITIES	OP-5, OP-27, and PB-27 Budget Exhibits	New BCCs will have to be estoblished.	None	None	MC-LF will have to program resuorces in the outyears in these same four categories as are used for the budget exhibits	O&MMC	
D. BASE OPERATIONS: OTHER SERVICES AND SUPPORT	FYDP	New BCCs will have to be creoted to provide the necessary level of detail.	None	MC-LF will have to separate progrommed BOS resources to the proper LRA category.	None	O&MMC MILPERS	BOS resources in the aggregate are reodily identifioble in BOS PEs in major force progroms (i.e., 26495, 26496, 72895, etc.) but not in LRA categories.

[a]For complete list of functions in each category, see Exhibit 3.

[b]Entries in this column assume that the DON elects to use the NCIS or NARM as the primary system to produce the LRA.

[c]All resources for the reserve forces appropriated in separate reserve oppropriations will be included in the proper category along with the regular service-funded resources.

Appendix A

MARINE CORPS LRA FUNCTIONAL DETAIL

CONTENTS

EXHIBITS

MARINE CORPS LRA FUNCTIONAL DETAIL

This appendix presents the detailed supporting research materials upon which Table 3, the Data Element Reference Guide, is based. These presentations follow the sequence of functions in the LRA structure, but every line in the structure is not discussed. In many cases a discussion of data sources, data management systems, reporting channels, and other pertinent information applies to several detail lines listed under a single heading in the structure. For example, there is a single narrative presentation concerning facilities construction even though there are 27 lines of functional detail under this heading in the LRA structure.

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

A. DEPOT-LEVEL MAINTENANCE AND MODIFICATION INSTALLATION

The LRA for the Marine Corps requires information on dollar resources programmed for depot-level maintenance by materiel category and, for the combat vehicle materiel category, also by work performance-oriented subcategory (i.e., equipment overhaul and repair, component repair, modification installation, and other maintenance and support). In addition, within the combat vehicle category, dollar resources will be identified as to designated tank weapon system supported. Dollars programmed to purchase services (customer funds) from commercial, organic Marine Corps Industrial Fund (MCIF), and interservice facilities must be separately identified.

The Marine Corps programs resources to purchase depot maintenance for all equipment except aircraft. Depot-level support for Marine Corps aircraft is managed by the Navy and funded in Navy appropriations. These resources are therefore included in the Navy LRA (see Volume II).

The Marine Corps programs O&MMC and O&MMCR funds in PEs 72207M and 57113M to support its depot maintenance program. These funds are used to purchase depot maintenance support of Marine Corps ground equipment from the industrially funded Repair Divisions at MCLSBLANT and MCLSBPAC, from depot maintenance activities in other Services under Inter-Service Support Agreements (ISSAs), and from commercial facilities. The major portion of these funds, programmed at over 70 percent for FY 79, is expended at the MCLSBs. The remainder for FY 79 is expended almost equally among interservice and commercial facilities.

ISSAs are used when capacity and joint needs permit, while commercial contracts are used primarily for support of low volume complex electronics items for which it is deemed uneconomical to develop an in-house capability.

The Marine Corps depot maintenance program, which is primarily major repair and rebuild of equipment, is managed by equipment line item. Depot level requirements are determined for each line item in an iterative process that balances support of major systems and repair or replacement decisions for principal items against capacity and funding constraints. These line item data are available in the MMPM and in the OP-5 and OP-25 Budget Exhibits. For management and programming purposes, these equipment line items are aggregated either into five equipment categories (weapons, motor transport, engineer, communication-electronic, and other ordnance) or into two summary categories (major equipment and component repair).

In addition, depot maintenance requirements for each line item are identified within the Marine Corps according to the type of facility expected to accomplish projected workloads (Marine Corps organic, interservice, or commercial). Although the information in these categories is used to prepare various exhibits in support of the October and January budget submissions, the only data entered into the data base that supports the DNFYP are appropriation totals at the PE level. Thus, the data elements required to prepare the LRA for this functional category cannot be extracted directly from material supporting the FYDP. Moreover, because the budget exhibits include data only for the 3-year period covered by the budget submission, these documents will not provide the required outyear information. For these reasons, all of the data elements required by the LRA can be provided only if current procedures are changed.

1. The Materiel Management Programming Model

One basic depot-level resource planning tool used by HQMC to develop the 5-year depot maintenance repair/rebuild program is the Materiel Management Programming Model (MMPM). This model was used extensively during preparation of the POM 80 depot maintenance program. Review and adjustment of the model outputs by equipment sponsors provide the baseline for the rebuild program for the remainder of the PPB cycle. The model computes the least cost repair/buy decision based on a comparison of repair and procurement costs to achieve various inventory levels. These repair/buy costs are balanced against capacity and financial constraints to achieve a balanced inventory. The basic building blocks in the MMPM data base define repair/rebuild requirements and costs by line items for the entire 5-year program. This data base is used to prepare the various exhibits used to support the depot maintenance program at each FYDP update.

The OP-5 and OP-25 Budget Exhibits, prescribed by the DoD Budget Guidance Manual, are excellent examples of how the MMPM data base is used. In these exhibits, the Marine Corps summarizes its entire depot maintenance program into two broad categories: major equipment maintenance, and component repair, showing the information by DoD Elements of Expense (DoDEE) and by the type of activity projected to perform the work. These data are compiled by assigning each line item in the MMPM data base to the appropriate category. The DoDEEs are Purchased Equipment Maintenance (Marine Corps Industrial Fund); Purchased Equipment Maintenance (Other DoD); and Purchased Equipment Maintenance (Commercial).

2. Marine Corps Capability to Provide the Data Elements Required by the LRA

The data elements required by the LRA can be categorized as elements that relate depot resources to materiel category, to type of activity expected to accomplish projected workloads, and to work-performance-related categories for resources programmed to support the combat vehicles materiel category. In addition, for tanks, resources must be related to specific weapon systems supported. Since these data do not currently exist in Marine Corps data systems in a form that will permit the data elements required to support the LRA to be extracted directly, the Marine Corps will have to develop revised procedures to provide them for each FYDP update. For example, the line items in the MMPM data base could be assigned to the proper LRA categories and used to provide the materiel category and type of facility data elements. The MMPM data base, however, does not currently include information about the type of work performed on combat vehicles so these data elements represent new information that must be developed by the Marine Corps.

The materiel category data elements can be provided by relating the equipment categories currently used by the Marine Corps to the LRA categories. Exhibit A-1 provides an overview of how the two resource classifications can be related. For data in all categories except the depot maintenance weapons equipment category, this assignment can be made at the category-total level. Data in the weapons equipment category will have to be assigned by equipment line to one of three LRA categories, as shown in the exhibit.

The type-of-facility data elements can be derived from data in the MMPM data base by using the method used to produce the OP-25. Alternatively, since OP-25 data already exist through the budget year plus one, it is possible to develop

Exhibit A-1. LRA MATERIEL CATEGORIES AS RELATED TO MARINE CORPS DEPOT MAINTENANCE EQUIPMENT CATEGORIES

LRA Categories	Marine Corps Depot Maintenance Equipment Category
Missiles	Part of Weapons
Combat Vehicles	Part of Weapons
Weapons and Ordnance	Other Ordnance Part of Weapons
Electronic and Telecommunications Equipment	Communications and Electronics
Other Equipment	Motor Transport Engineer

ratios of each category to the total program for those years and then allocate resources within each equipment category among the three types of facilities available to perform the work in the outyears. The required LRA data elements can be developed by either method.

Identifying the depot maintenance resources programmed to accomplish support of combat vehicles according to type of work to be performed will require development of new data from existing data sources. One method of developing the required data elements would be to review each line item in the MMPM data base manually. An alternative would be to develop ratios based on data available from the industrial fund accounting system used at each MCLSB to allocate projected resources to the proper LRA category. Use of either method would develop the required LRA data elements.

3. Weapon System Data Elements

For the Marine Corps LRA, the only resources that are required to be identified according to specific weapon systems, by type and model, are those programmed to support

tanks.[1] Because the Marine Corps manages its depot maintenance by equipment line item, the information needed to provide the required LRA weapon system data elements already exists. For example, in the MMPM data system (and in the OP-25 Budget Exhibit, which is derived from the MMPM data base), the dollars and number of M60 tanks programmed for repair and overhaul are a single line item. Similarly, the line item data used to develop the work-performance-oriented data elements within the combat vehicles materiel category (equipment overhaul and repair, component repair, modification installation, and other maintenance and support[2]) can also be identified according to the specific tank weapon system supported. Items peculiar to a single tank can be easily identified. For items used by more than one weapon system, a common item factoring technique could be used to allocate line item costs among weapon systems. For example, component repair costs for items used by more than one tank could be allocated to specific tanks based on historical job order or failure rate information.

4. Summary

In the Marine Corps, all depot level support of Marine aircraft programs is programmed and managed by the Navy, and, therefore, will be included in the Navy LRA. The Marine Corps programs and manages resources in PEs 72207M and 57113M to provide depot level support of its ground systems. At the lowest level these resources are programmed and managed by line item. An extensive computer-based data system is used to support programming resources, by equipment line item, to accomplish depot maintenance requirements. Even though data do not exist

[1] All depot level resources to support Marine Corps aircraft are programmed and funded by the Navy and are included in the Navy LRA.

[2] In implementing the LRA OSD may consider waiving the requirement to show "Other Maintenance and Support" by weapon system.

currently in a form that will permit the data elements required to support the LRA to be extracted directly from current Marine Corps data systems, we believe these line item data can be used to permit the Marine Corps to develop all LRA data elements. In some cases, data elements can be extracted directly from existing systems while in others data allocation will be necessary. The Marine Corps must decide whether to incorporate all data elements into existing data systems or to produce the LRA manually; in either case, the Marine Corps can provide the data required to support the LRA.

B. MANPOWER IN MARINE CORPS 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 LRA category. Costs in the Military Personnel Appropriations for military personnel will be included in this category, since these costs are not included elsewhere in the LRA. We discuss here our recommendations for coverage in the initial LRA as well as ideas for expanded coverage in subsequent LRAs.

As mentioned above, depot maintenance in the Marine Corps is provided by the Repair Divisions at the Marine Corps Logistic Support Bases (MCLSBPAC and MCLSBLANT). These divisions operate under the Marine Corps Industrial Fund (MCIF); i.e., costs are incurred to provide depot level services to customers who have contracted for specific workloads, and the MCIF is subsequently reimbursed for these services from funds programmed by their customers for this purpose. Total authorized military and civilian end-strengths for the two Repair Divisions are programmed in PE 72007M, "Depot Maintenance (IF)." Since these data are not separately identified by organization, the data elements required to support the LRA cannot be extracted directly from the FYDP.

1. The Initial LRA

The coverage recommended by IDA in the initial LRA data base is as follows. For each Repair Division, end-strengths will be identified as military or civilian. The costs for military personnel assigned to these MCIF activities will also be shown here, since these costs are not included in the rates used to bill customers for work performed and, hence, are not in the customer funds displayed by materiel and work performance categories in section IA1 of the LRA.

As the general discussion of Marine Corps manpower programming systems and procedures pointed out, the Table of Manpower Requirements produced by the Manpower Control Branch, DC/S for Manpower (MC-MPC), already identifies authorized end-strengths within PEs according to organization. Thus, the end-strength data required to support this LRA category are readily available.

We recommend that the ratio of manpower at each Repair Division to the total manpower in PE 72007M be used to obtain the cost of military personnel. This method is feasible because the only manpower data in PE 72007M are for manpower programmed to support the Repair Divisions and because average officer and enlisted pay rates are used by HQMC to derive MILPERS costs by PE. Of course, a more precise procedure can be used to compute MILPERS costs for each activity. In either case, the dollar data elements required to support this LRA category are readily available.

2. Expanded Coverage in Subsequent LRAs

Information on the total manpower assigned to maintenance facilities provides only limited visibility of workloads accomplished. While the coverage recommended for the initial LRA is an important first step in improving the overall visibility of projected depot maintenance resources, added

visibility could be achieved in subsequent LRAs. This is especially true for MCIF-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 MCIF Budget Submission to allocate manpower to LRA work performance subcategories. Work performance categories (WPC) represent a functionally oriented breakdown of all depot activities. While a large number of WPC-oriented revenue categories are used in preparing the MCIF Budget, these can be grouped into three broad categories for use in supporting the LRA. While additional research would be required to determine the exact assignment of the WPCs to LRA categories, the feasibility of such an approach can be inferred from Exhibit A-2. The exhibit illustrates an initial attempt to group the depot-level WPCs into three major LRA categories with which depot-level manpower could be identified. A more refined breakout is probably feasible. For example, at a later time, it may be useful to separate the Overhaul, Repair, and Renovation category into its components.

Exhibit A-2. WORK PERFORMANCE CATEGORIES AS RELATED TO LRA CATEGORIES

LRA Category	Depot Level Work Performance Category from A-2 Budget Exhibit
Depot Maintenance	Overhaul, Repair, and Renovation Alteration and Modification
Sustaining Engineering	Engineering Services Quality Evaluation
Other Depot Level Activities	All Other Work Performance Categories

Once the WPCs have been equated with LRA categories, factors derived from revenue data in the A-2 statements can be used to allocate depot maintenance manpower data 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 breaking down the total manpower data given for Marine Corps depot-level maintenance facilities to provide improved visibility of the function for which manpower resources are programmed at depot-level activities. For example, the authorized military, civilian, and total end-strengths of maintenance, engineering, and all other manpower could be shown.

[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 SUPPORT

Sustaining Engineering Support is engineering effort designed to correct a proven 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, or perform any similar task. 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. In addition, dollars programmed to support designated aircraft and tank weapon systems must be identified separately.

In the Marine Corps, these services are provided at the depot level for support of ground equipment by Marine Corps manpower assigned to the Repair Divisions at the two MCLSBs and by commercial contractors. Depot-level resources required to provide these services to support Marine Corps aviation programs are funded and managed by the Navy in Navy appropriations, and will be included in the Navy LRA (see Volume II). At the intermediate level, teams from the Marine Corps Force Service Support Groups (FSSGs) are utilized to provide these services. Also, the Marine Corps provides some intermediate level support for its aviation programs. Since the Marine Corps does not identify these resources separately, the data elements required to support the LRA cannot be extracted directly from existing

sources. Although the Marine Corps will have to develop specific procedures to produce the data elements required to support the LRA, information does exist at HQMC which can be used for this effort.

Currently, resources to fund depot-level technical support for ground systems are included in the aggregated O&MMC funds programmed in Budget Program 7D3, "Centrally Managed Programs," and included in PE 71111M. The Marine Corps has, in the past, identified separately the funds programmed to purchase support from other than Marine Corps organic activities by aggregating the task orders used to define procurement packages. For example, in POM 80, the Materiel Division, DC/S for Installation and Logistics (MC-LMO), used this method to prepare data in this category for the abbreviated LRA submitted with the POM. Moreover, since the basic task orders identify the type of equipment to be supported, it was possible to identify these funds by materiel category as required by the LRA. (In the POM 80 LRA, for FY 79, a total of $6.6 million was distributed among four equipment groups--missiles, combat vehicles, electronics and communications equipment, and other equipment.) This is one method that can be used by the Marine Corps to provide the LRA data elements required for contractor support for this functional category.

Funds to reimburse the industrially funded Repair Divisions at the MCLSBs for technical assistance support at the depot and for support of the operating forces on complex weapon and support equipment systems can be estimated from data derived from the job order systems used under IF accounting procedures to manage DoD industrial facilities. For example, the ratio of manhours reported on job orders for technical support to total workloads at each of the Repair Divisions can be used to allocate both manpower and dollar resources to this LRA category. Alternatively, factors derived from the A-2 IF Budget Exhibit, "Statement of Revenue and Costs," can be used as the partial basis for

providing the required data elements. (This approach was discussed above.) In the case of this functional category, three of the industrial fund work-performance categories (quality evaluation, engineering services, and the catchall, logistic support) encompass activities that involve engineering and technical support.

At the intermediate level, the Marine Corps has no activities dedicated to providing these services on a full-time basis. Teams from the FSSG and from intermediate-level aircraft organizations are used to provide technical assistance for lower echelon units. Also, maintenance activities at all echelons routinely provide these services to lower level echelons as required to support daily operations. Resources to support these activities are not separately identified, however, since they are performed by military personnel as a part of routine operations. While it may be feasible to develop procedures to identify these resources separately, we do not believe it is reasonable to attempt to identify resources in this category in the initial LRA.[1] Thus, pending additional research, this LRA category will include only depot-level resources.

The responsibility for the resources required for this LRA category is widely distributed at HQMC. The focal point for information relating to this functional category is the O&MMC appropriation sponsor in the DC/S for Installations and Logistics (MC-LPF).

[1] The total cost of manpower at the intermediate level will, of course, be included in the LRA maintenance functional category.

D. ORGANIZATIONAL AND INTERMEDIATE MAINTENANCE

The LRA requires separate identification of all resources programmed by the Marine Corps to support organizational and intermediate level maintenance. Manpower end-strengths and associated costs (pay, allowances, and maintenance-related consumables) must be identified as to materiel category groupings. In addition, for some aircraft and tank weapon systems (to be designated by OSD in the instructions implementing the LRA), dollar resources must be identified as to specific weapon systems supported. Since these resources are not separately identified in the Marine Corps programming system in a way that will permit direct extraction of the data elements required to support the LRA, implementation of the LRA will represent an increase in the volume of data that must be developed by the Marine Corps for each FYDP update.

Organizational maintenance functions are those performed by the using organization. The Marine Corps subdivides this level of maintenance into first and second echelon maintenance to identify the work performed more accurately. First echelon maintenance, performed by the user or operator of the equipment, involves such tasks as cleaning, lubrication, minor repair and adjustment, and replacement of parts that are easily removed and installed. Second echelon maintenance is work performed by specially trained maintenance personnel assigned to the using unit that is more complicated than first echelon maintenance.

Intermediate maintenance functions are performed by units specifically established to provide logistic support to operational units. Such functions include calibration, repair or replacement of unserviceable parts, and technical assistance to using organizations. The Marine Corps subdivides this maintenance level into third and fourth echelon maintenance. Third echelon maintenance is performed by specially trained units in direct support of one or more using organizations. Fourth echelon maintenance is performed by units organized as semipermanent or permanent shops to serve lower maintenance echelons within a geographical area. The principal function of fourth echelon maintenance is to repair subassemblies, assemblies, and other major items for return to the lower echelon or the supply system.

The primary intermediate level maintenance units that furnish support for Marine Corps ground equipment are the Force Service Support Groups (FSSGs) organized to support the Fleet Marine Forces (FMF). The FSSG is a group of functional components (including a maintenance battalion) that provides combat service support to all elements of FMF, whether in garrison or deployed. Resources for the FSSGs are programmed in PEs 26315M and 52514M.

Intermediate level maintenance support for Marine Corps aviation organizations is provided by designated units assigned to the Marine Air Wings (e.g., the Headquarters and Maintenance Squadrons). Resources for these units are programmed in support PEs such as 26125M, "Helicopter Combat Support," 26126M, "Tactical Combat Support," and 52512M, "Wings Marine Reserve."

Marine Corps resources supporting first through fourth echelon maintenance activities are programmed in the O&M and MILPERS appropriations in the PEs to which the parent organizations are assigned. These resources include Marine Corps manpower and MILPERS funds programmed to support Marine Corps

aviation. At the PE level, these operating resources are included in the appropriation totals required to support all activities assigned to that PE, so it is not possible to identify separately those resources programmed for maintenance (e.g., pay and allowances for all personnel, maintenance and nonmaintenance, are included in a single MILPERS appropriation total). As mentioned in Chapter II, resources for these maintenance units are included in the operating budgets submitted by parent activities. The data in these submissions, which are used to develop outyear resource projections, can also be used to develop the dollar data elements required to support the LRA. The TMR (also described in Chapter II) is a feasible means of providing the manpower end-strength data elements required to support the LRA.

1. Manpower Data Elements

In the Marine Corps TMR system, TO line numbers are assigned to specific PEs. Since each TO line number identifies the shop or activity and billet code for which the position is required, it is possible to use these data to develop manpower ratios that can be used to allocate total PE end-strengths to maintenance echelon and then to materiel category.[1] This process is facilitated by the fact that for most TOs either the entire TO or discrete shops and functions within the TO can be associated to either organizational or intermediate level maintenance. While use of these ratios to derive the manpower data elements represents only one method of providing the data required to

[1]The Marine Corps is currently implementing a Marine Corps Integrated Maintenance Management System (MIMMS), which is designed to capture "hands-on" labor and materiel costs of each field maintenance activity. While this system should improve the capability of the Marine Corps to determine TO manpower requirements, it is probably of secondary interest to development of the LRA. In the LRA, 100 percent of each maintenance technician's time, rather than just "hands-on" time, is considered to be a maintenance resource.

support the LRA, it is probably good enough and would produce estimates well within the accuracy of PE-level manpower projections. The factor limiting the utility of this method is the accuracy with which TO line items reflect (and can be identified to) actual manpower end-strengths programmed in specific PEs.

2. Dollar Data Elements

Once PE manpower end-strengths are identified as to organizational or intermediate level maintenance, these data can be used to determine MILPERS appropriation costs either by application of average rates or by use of the manpower ratios described above. Data elements in the O&M appropriations can be estimated in the same way. It would also be possible to derive these elements from element of expense or functional category data in the operating budgets submitted for the budget-year and the budget-year-plus-one, since in the Marine Corps programming system all O&M funds must be identified on these bases. For example, either the Purchased Equipment Maintenance element of expense or the Maintenance of Materiel functional category might serve as a source for the required data elements.

3. Weapon System Data Elements

Once manpower and dollar data are developed, these data can generally be identified according to weapon system supported by examining the PE in which the resources are programmed. If the PE includes resources to support only a single weapon system the required identification will be routine. For example, PE 26111M, "A-4 Squadrons," includes organizational level maintenance resources only to support A-4 systems. If the PE contains resources to support more than one weapon system, those resources will have to be allocated by using factors based on flying hours, relative workload, or the relative number of people assigned to support each system. This information can be derived from data in the TMR system or from data

in individual TOs. Even though this method may prove somewhat difficult to use in assigning resources to support of tank weapon systems, it is feasible and in general sufficiently accurate to support the LRA. The Marine Corps will have to develop the specific procedures to be used to derive the weapon system data elements.

4. Summary

The data elements required to support the LRA in these categories can be developed by using the following methods.

Since manpower end-strengths can generally be identified to maintenance echelon either by military organization or by major activity within that organization, it is possible to use data in the appropriate TOs to allocate total PE manpower end-strengths to organizational and intermediate maintenance functions. For example, manpower in the maintenance battalion within an FSSG can be related to the type of equipment supported at the company level (e.g., the Ordnance Maintenance Company). Once end-strength information is available, MILPERS appropriation data can be derived by using average rates or by application of manpower ratios. O&M appropriations data can be derived by applying these same manpower ratios either to appropriation totals or to the appropriate element of expense or functional category included in the field operating budgets.

Weapon system data elements can generally be derived by examining the PEs in which the resources are programmed. If the PE supports a single weapon system this procedure will provide the requisite identification. Those resources in PEs that support more than one weapon system will have to be allocated to specific systems.

These procedures will enable the Marine Corps to provide all of the organizational and intermediate level data elements required to support the LRA. The Marine Corps must decide

whether current programming procedures should be revised to incorporate these data elements into existing data systems (e.g., the DON NCIS/FYDP system or the Class I ZBB system, both discussed in Chapter II), or whether to produce the LRA manually.

E. INITIAL AND REPLENISHMENT SPARES AND REPAIR PARTS

The LRA requires that total dollars programmed to procure initial and replenishment spares be identified by designated materiel category groupings, and by aircraft and tank weapon systems to be designated by OSD in the LRA implementation instructions. In general, initial spares are those spares procured when the major weapon or support system is acquired in order to establish initial stock levels to support these systems until regular supply support requirements can be determined. Replenishment spares can be thought of as the pool of investment spares used to meet worldwide requirements for follow-on recoverable spares.

Since all investment spares to support Navy and Marine Corps aviation programs are funded and procured by the Navy, all aircraft spares data elements, including identification of spares by weapon system, will be included in the Navy LRA (see Volume II). The Marine Corps does program resources to procure spares to support Marine ground systems. Since Marine Corps-funded spares are identifiable line items in the PMC appropriation, the Procurement Annex is a primary source for spares data by equipment-related category. In fact, providing the data elements required by the LRA will be primarily a matter of assigning data at the appropriation subactivity level to the proper LRA category.

Exhibit A-3 identifies the LRA categories to be used for display of Marine Corps funds programmed for spares procurement, and relates each category to the BSAs in the Procurement Annex

Exhibit A-3. ASSIGNMENT OF PROCUREMENT ANNEX SPARES DATA TO LRA SPARES CATEGORIES

LRA Spares Category	BSA
Missiles	BSA-0303, "Guided Missiles, Other Support"
Combat Vehicles	Part of BSA-0204, "Weapons and Combat Vehicles, Other Support"
Weapons and Ordnance	Part of BSA-0204, "Weapons and Combat Vehicles, Other Support"
Electronic and Telecommunications Equipment	BSA-0409, "Communications and Electronics, Other Support (TEL)"
	BSA-0419, "Communications and Electronics, Other Support (Non-TEL)"
Other Equipment	BSA-0503, "Support Vehicles, Other Support"
	BSA-0604, "Engineer and Other Equipment, Other Support"

that include the line items required to support the LRA. The BSAs listed include separate lines for initial and replenishment spares, so that the data required for all but one of the LRA categories can be extracted directly from the Procurement Annex. Data listed in the "Weapons and Combat Vehicles" budget activity will have to be separated into two LRA categories as shown. We understand that the HQ, Marine Corps staff has the capability to do this.

Once spares data have been identified to the combat vehicle category, data elements will have to be derived to identify separately those resources programmed to support specific tank weapon systems. The data on initial spares to support Marine Corps tank procurement can be extracted directly from weapon system data in the Procurement Annex, since initial spares are currently shown as a memo entry for major weapon system procurements. Similar memo entries are not made, however, with regard to replenishment spares. Resources used to procure

replenishment spares are managed on the more flexible aggregative basis necessitated by uncertain demand and failure rates for specific individual end items and components. As a result, projected requirements for replenishment spares are estimated on the basis of aggregated consumption data as adjusted for projected major force and equipment changes.

The budget estimates for "Weapons and Combat Vehicles" replenishment spares historically amount to only about 3 to 5 percent of total projected BA-02 funding. It is possible to allocate some of these resources to specific tank systems; however, considering that the accuracy of the basic projections of spares requirements is uncertain, and that the amount of resources involved is small, it is doubtful that this effort would be worthwhile. For this reason we recommend that in the initial LRA, replenishment spares programmed to support combat vehicles be identified only according to materiel category.

The point of contact for preparation of these LRA data is the PMC Appropriation Sponsor in the Program and Financial Management Branch, DC/S I&L (MC-LPF-3).

F. MODIFICATIONS

The LRA requires that information about total resources programmed to support the Marine Corps modification program be identified by materiel category and by specific aircraft and tank weapon systems to be named by OSD in the LRA implementation instructions. In addition, data on the direct procurement costs of modification equipment and support items, the costs of initial spares support, and installation costs are required. Data for the latter two categories will be on a non-add basis since, as discussed below, these data appear elsewhere in the LRA on an add basis. For the Marine Corps LRA, there is currently no requirement to identify modification resources by type (purpose) of modification.

Since all procurement to support Marine Corps aviation programs is funded by the Navy, all aircraft spares data, including identification of mods by weapon system, will be included in the Navy LRA (see Volume II). The Marine Corps does program resources to procure mods to support Marine ground systems. The majority of Marine Corps-funded dollars for procurement of modification equipment are identifiable line items in the PMC appropriation and are displayed in total by BA in the FYDP Procurement Annex. These entries combine the modification costs of most items in a specific BA into a single entry. There are, in addition, several line items that identify modification costs for specific types of equipment separately. The Procurement Annex is therefore a primary source of data about modification procurement costs, and providing the data elements

required by the LRA will be primarily a matter of assigning Procurement Annex line-item data to the proper LRA category.

Exhibit A-4 relates the categories prescribed by the LRA structure for display of Marine Corps modifications funds to those BSAs in the Procurement Annex that include the line items required to support the LRA. In each case, the BSAs listed include a single line item for modification costs, so that for all but one LRA category most of the required LRA data can be extracted directly from the Procurement Annex. The aggregated data in the modification line in the "Weapons and Combat Vehicles" budget activity will have to be separated into two LRA categories as shown. It will also be necessary for the Marine Corps to assign modification line items for specific programs to the proper LRA category on the basis of the equipment included in the program (e.g., data on the Improved Hawk Product Improvement Program in BSA 0303 and on the LVT-7 SLEP in BSA 0201 would be assigned to the missile and combat vehicle materiel categories, respectively). Once this work has been done, the Marine Corps can provide all of the data elements required to relate modification equipment costs to materiel category.

Although not displayed in the Procurement Annex, data are available within the Marine Corps that identify resources programmed to support equipment modifications by type of modification, should it be decided at a later time to include this information in the Marine Corps LRA. For example, in Format VI-C-2 in POM 79, funding for modification of major end items is shown, by appropriation, in three major categories--Capability Enhancement, Service Life Extension, and Reliability and Maintainability.

Initial spares to support modification programs are included in the initial spares aggregated line items within each of the spares categories described in section E, above. Even though the costs for modification initial spares are not identified

Exhibit A-4. ASSIGNMENT OF PROCUREMENT ANNEX BSAs THAT INCLUDE MODIFICATION RESOURCES TO LRA CATEGORIES

LRA Modification Category	BSA
Missiles	BSA-0303, "Guided Missiles, Other Support"
Combat Vehicles	Part of BSA-0204, "Weapons and Combat Vehicles, Other Support"
Weapons and Ordnance	Part of BSA-0204, "Weapons and Combat Vehicles, Other Support"
Electronic and Telecommunications Equipment	BSA-0409, "Communications and Electronics, Other Support (TEL)"
	BSA-0419, "Communications and Electronics, Other Support (Non-TEL)"
Other Equipment	BSA-0503, "Support Vehicles, Other Support"
	BSA-0604, "Engineer and Other Equipment, Other Support"

separately in the Procurement Annex, the Marine Corps could provide these data if required. However, the small magnitude of these resources may not justify a separate display. In the event these data are required in the LRA, it will be necessary for the Marine Corps to identify modification spares by LRA category. Within the LRA modification category, these spares data will be included on a non-add basis to avoid double-counting (i.e., modification spares would still be included on an add basis in the LRA initial spares category to provide information about the total cost of spares support).

In the Marine Corps modifications are almost always scheduled to be performed concurrent with repair. Complex modifications are performed at the Repair Division at the MCLSBs or at contractor or interservice support facilities. Where the modifications are less complex, they may be accomplished in the field, usually by personnel assigned to the

Force Service Support Group. Such modification costs are not separately identified because the work is performed by regularly assigned military personnel along with regular maintenance; the pure modification installation costs cannot be isolated.

It is probably possible to identify separately those costs associated with major modifications performed as part of depot maintenance activities, but it is unlikely that the Marine Corps modification programs are large enough to justify the additional administrative effort. Estimates of the cost to perform the modification are made at the time procurement of modification equipment is approved. In general, these are the estimates that appear in the POM exhibits mentioned above. If it is necessary to include information about installation costs in this LRA category, these estimates are probably adequate. If used, these data will be included on a non-add basis within the LRA modification functional category to avoid double-counting (funds for modification performance are included on an add-basis in the various LRA maintenance categories).

As pointed out above, the Procurement Annex identifies modification resources in individual weapon system line items and as an aggregated line item within each budget activity. None of the individual modification line items in the current Procurement Annex is for tank modifications.[1] It is possible that some tank modification resources are included in the aggregated modification entry in BSA 0204, "Other Support of Weapons and Combat Vehicles." If this is true, the Marine Corps must separate out the resources used for these modifications from the aggregated data in order to develop the weapon system data elements needed for the LRA. It is feasible to

[1]OSD requires that resources programmed to accomplish modifications of major weapon systems be identified. Thus, if major modifications for tank weapon systems are approved in subsequent programs, this data would appear as a Procurement Annex line item.

develop procedures to accomplish this but probably not worthwhile. For this reason, we recommend that in the initial LRA, resources programmed in the aggregated modification category (BSA 0204) to support weapons and combat vehicles not be identified according to specific tank weapon systems.

The point of contact for preparation of these LRA data is the PMC Appropriation Sponsor in the Program and Financial Management Branch, DC/S I&L (MC-LPF-3).

G. DEPOT-LEVEL STORAGE AND DISTRIBUTION

Centrally managed depot-level storage, warehousing, distribution, and traffic management activities in the Marine Corps are conducted primarily by the Materiel Divisions at the two Marine Corps Logistic Support Bases (MCLSBLANT and MCLSBPAC) and by small numbers of personnel assigned to perform liaison at various locations. Manpower and funds to support these activities are included in PE 71111M. The Materiel Division, DC/S I&L (MC-LM), in conjunction with the O&MMC appropriation sponsor, is the point of contact for coordinating and reviewing all central supply programs during POM and budget development.

The LRA requires data only on total authorized military and civilian end-strengths and operating funds by appropriation for a single line in the LRA structure. Since the only manpower assigned to PE 71111M is programmed to support depot-level supply activities, the manpower end-strength and MILPERS data elements required to support this category are readily available. However, as PE 71111M includes funds for activities other than central supply, the dollar data elements required to support the LRA cannot be extracted directly from the FYDP.[1]

In the Marine Corps, funds to support the depot-level storage and distribution function are programmed and budgeted in Budget Project 7A, "Supply Depot Operations." Since budget projects are basic building blocks in the Marine Corps financial

[1] Investment funds in PE 71111M will be included in the appropriate LRA procurement functional category.

management system, data at this level are readily available throughout the program-budget cycle. (Both the DON OP-5 Operations Budget Exhibit, September 30, 1977, and the Operating Appropriations Justification Books prepared to support the FY 79 Congressional budget submission display data for Budget Project 7A.) Similar data are available to support the POM. Therefore, even though funds programmed to provide depot-level supply support are aggregated with other data in PE 71111M, the dollar data elements required to support the LRA are readily available.

In our efforts to identify a source for information for this LRA category, we first considered using the appropriation totals in PE 71111M. This method proved not to be feasible, however, since the Marine Corps includes resources for Budget Project 7D3, "Centrally Managed Programs," in this PE. This budget project includes funds for programs such as official mail expenses and reimbursements to the Employment Compensation Fund, which do not appear to be properly assigned to a central storage and distribution program element. For this reason we recommend that the Marine Corps investigate the feasibility of reassigning resources in Budget Project 7D3 to PE 78012M, "Other Logistics Support." Once this is done, the operations data in PE 71111M will reflect the cost of Marine Corps central supply support.

H. CENTRAL INVENTORY MANAGEMENT ACTIVITIES

In the Marine Corps, depot-level inventory control functions are accomplished primarily at a single inventory control point (ICP) at MCLSBLANT. These functions include stock control, cataloging, and commodity management for items in the Marine Corps Supply System as well as technical direction over the operation of the Marine Corps distribution system. The Marine Corps ICP also performs the procurement operations and contract administration tasks required to support the inventory management functions. In addition to the resources programmed to support the ICP at MCLSBLANT, eight catalogers are assigned to HQMC (MC-L) in support of this function.

The Marine Corps programs all resources for this function in PE 71112M, "Inventory Control Points." Since these are the only resources included in this PE, and because the LRA requires data only about the total resources for this function, the data elements required to support the LRA can be extracted directly from the FYDP.

Display of total resources at the PE level is probably sufficient in the initial LRA for the central inventory management function. However, subsequent efforts could address the question of providing increased visibility for the activities supported by these resources. For example, OSD may wish to revise its current policy and require that Marine Corps resources currently utilized to perform central procurement functions be shown in PE 71113 rather than PE 71112. This change would make the Marine Corps coverage of these two PEs consistent with coverage in the other Services.

I. PROCUREMENT OPERATIONS AND CONTRACT ADMINISTRATION SERVICES

The LRA currently includes three subcategories under this functional category: central procurement operations, central contract administration, and other procurement operations (non-BOS). The latter category, which includes contract administration functions, will be shown here on a non-add basis since these resources are included on an add basis in the base operations portion of the LRA.

OSD has established PE 71113, "Procurement Operations," for use in programming resources to perform central procurement operations. With OSD approval, the Marine Corps does not use this PE and programs no resources to support a central procurement operations function because the Marine Corps administers a relatively small number of contracts. Even so-called Marine Corps peculiar items that are funded in the PMC appropriation are generally purchased through the procurement offices of the other Services (e.g., the LVTP-7 program). As a result, the activities normally considered to be a part of this function are performed as a routine part of daily supply operations. For example, the functions performed by the Procurement Division at the Marine Corps ICP at MCLSBLANT are considered to be in support of the ICP function rather than as a central procurement operations function.

Pending possible reconsideration of this OSD policy on permitting the Marine Corps to show central procurement resources in PE 71112, we recommend that no Marine Corps resources be shown in the Central Procurement Operations and Contract Administration subcategories in the LRA.

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. The LRA requires that operating appropriation dollars and manpower resources (end-strengths) be shown separately for intermediate and organizational supply services. Identification of the Marine Corps resources to be included in these two LRA categories is one of the more difficult tasks required for Marine Corps support of the LRA.

In the Marine Corps, field supply services are provided by a variety of organizations, and resources to support these organizations are programmed in the PEs to which they are assigned. For example, direct supply support for the FMF is provided at the user level by organizational supply units. The FMF units located at Marine Corps installations rely on base supply support to augment their organizational supply activities. At the intermediate level, the supply battalions assigned to each of the Force Service Support Groups provide centralized supply support to the FMF in all commodity areas except aviation-related supply. This latter support is provided by Navy-operated and managed supply activities through the supply departments at operational Marine Corps aviation installations. None of the resources required to support organizational and intermediate supply activities are separately identified in the FYDP, but they are included in the aggregated data shown at the PE level. For example, resources programmed

to operate base supply activities are included in the various base operations PEs for major force programs. For this reason, the Marine Corps will have to develop procedures to provide the data elements required for these functional categories.

The first step in this effort is to identify the specific units providing these services and determine into which of the two LRA below-depot-supply functional categories each unit fits best. Once this is done, data in the TMR system can be used to derive manpower ratios (see Chapter II) which, in turn, can be used to provide both the manpower and dollar data elements needed to support the LRA.

HQMC point of contact for information relating to these LRA categories is the Materiel Division, DC/S for Installations and Logistics (MC-LM).

K. SECOND DESTINATION TRANSPORTATION

In the Marine Corps, all funds for second destination transportation of cargo to the operating forces, both overseas and within the continental United States, are budgeted and managed by the Transportation Branch, DC/S I&L (MC-LFT). All transportation services included in this function are purchased either from commercial or industrially funded DoD transportation services organizations. The total O&MMC customer dollars to purchase these services are programmed in PE 78010M, "Second Destination Transportation," and provided through an open allotment to field activities (i.e., field units are authorized to incur obligations against a central fund).

Within the Marine Corps, resources for PE 78010M are programmed under Budget Project 7D2. In addition, backup data are available that identify these resources according to the following subcategories:

Transportation

- MAC
- MSC
- Other

Terminal Services

These categories are prescribed by OSD for use in preparing the OP-5 and OP-16 budget exhibits, so information in these categories is readily available for the 3-year period covered by the budget exhibits. Unfortunately, outyear projections are made only at the PE level.

The LRA currently requires display of total resources programmed for second destination transportation in the same categories as required in the OP-5 and OP-16 budget exhibits. Thus, the Marine Corps should be able to provide all of the necessary LRA data elements by using the budget exhibit data for the near-years and by developing outyear projections in the same categories.

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

The LRA structure requires inclusion of total resources programmed for each of these three transportation functions. In the DoD, these functions are performed by industrially funded activities. As a result, the resources programmed to operate each function are readily identifiable at the PE level.

The Marine Corps is not the DoD manager for any of these three transportation functions. Consequently, except for a single Marine Corps officer identified to MSC, no direct Marine Corps resources are programmed to provide these producer-oriented services. Funds in the MILPERS, Marine Corps, appropriation that pay for this one officer can be readily identified to the LRA MSC functional category.

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. The LRA requires that Marine Corps resources (dollars and manpower) be shown separately for intermediate and organizational transportation services. The problems encountered in providing this information are the same as are encountered in providing it for the supply functions.

In the Marine Corps, field transportation services are provided by several types of organizations, and resources to support these organizations are programmed in the PEs to which they are assigned. For example, the motor transportation battalions assigned to each of the Force Service Support Groups provide operation and maintenance services at the intermediate level. Various transportation units at the organization level within the Divisions also provide these services. Within the base operations PEs, resources are programmed to provide installation/base level transportation operation and maintenance services; however, these resources are included in aggregated data and are not separately identified. For this reason, the Marine Corps will have to develop procedures to provide the specific LRA data elements.

The first step in this effort is to identify the specific units providing these services and determine into which of the two LRA below-depot-transportation categories each unit fits best. Once this is done, data in the TMR system can be used

to derive manpower ratios (see Chapter II) which, in turn, can be used to provide both the manpower and dollar data elements needed to support the LRA.

HQMC point of contact for information relating to these LRA categories is the Materiel Division, DC/S for Installations and Logistics (MC-LME-3).

N. FUEL

The LRA requires identification of all resources programmed to purchase fuels in four subcategories: aircraft, ships, vehicles, and other. Since the Navy finances and manages the fuel program for Marine Corps aviation, data in only the last two subcategories are needed for the Marine Corps LRA.

In the Marine Corps, resources to purchase fuel are programmed primarily in base operations PEs and are included in the aggregated O&M appropriation totals in each PE. As a result, the information elements needed to support the LRA cannot be extracted directly from the DNFYP. For the years covered in the budget submissions, the holders of operating budgets are required to identify fuel requirements (in DoDEE V, POL) in three broad categories: motor gas, diesel, and heating fuel. Requirements within the first two categories are further separated into vehicle and all other requirements. In FY 79, total funds to finance fuel requirements were estimated at about $23 million.

Data available in the operating budgets can be used to provide data for the LRA. The vehicle lines in the motor gas and diesel categories can be put into the proper LRA vehicle category with the balance made part of the LRA "other" category. These data can then be used to allocate to the two LRA categories outyear projections of funds programmed to purchase fuel. Once these procedures are accomplished, the Marine Corps can provide the data elements needed to support the LRA.

0. PERSONNEL SUPPORT MATERIEL

The LRA requires display of resources in this functional category in two subcategories: subsistence, and clothing and medical supplies. In the DON, MILPERS appropriation funds are programmed to cover these requirements and estimates of these funds are included in the average rates used to estimate total military personnel expenses. The Marine Corps can provide the data elements necessary for the LRA by applying the rates for personnel support to manpower end-strengths. Because these costs are included elsewhere in the LRA in the total MILPERS data elements, the data in this functional category will have to be entered here in section ID2 as non-add entries. HQMC point of contact for information about this LRA category is the Budget Branch in the Fiscal Division (MC-FDB).

P. OTHER CONSUMABLE SUPPLIES AND MATERIALS

Other consumable supplies and materials refers to the nonmaintenance expendables used by the Marine Corps. The LRA requires that total resources programmed for this purpose be put into a single category. Maintenance expendables are identified as part of the various other maintenance categories in the LRA.

In the Marine Corps, resources programmed for Other Consumable Supplies and Materiels are not separately identified at the PE level. For the years covered in the budget submissions, however, data submitted in operating budgets can be used to provide the information required by the LRA. In these submissions, all funds for nonmaintenance consumables are identified to DoDEE T, "Supplies, Consumable." The total of this DoDEE represents the requirements for this LRA category for the budget year and the budget year plus one. Projections of outyear requirements are also made by HQMC on the basis of these data. Thus, the data elements to support the LRA for all years can be provided by the Marine Corps.

Q. MUNITIONS FOR PEACETIME OPERATIONS AND TRAINING

Section ID4 of the LRA requires display of resources programmed to procure munitions for peacetime operations and training. Three subcategories are prescribed: ammunition, tactical missiles, and other munitions. The Navy finances and manages the munitions for Marine Corps aviation programs as it does with other Marine Corps aviation resources. The Marine Corps programs funds in the PMC appropriation to satisfy all other Marine Corps requirements.

Annual peacetime ammunition training needs are funded in BSA 0101 and are displayed by line item in the Procurement Annex. Unfortunately, the data in the Procurement Annex combine procurement of peacetime training and war reserve stocks into a single line item, so that the LRA data elements for this category cannot be extracted directly from that source. Similarly, training requirements for tactical missiles are funded in BSA 0301 but are not separately identified in the Procurement Annex.

Marine Corps munitions requirements for training are developed by projecting annual consumption based on historical consumption, programmed changes in force structure, weapon mix, and training objectives and policies. The Marine Corps can separate each line item in BSAs 0101 and 0301 into peacetime and war reserve requirements. Then the data elements required to support this LRA category can be provided. The point of contact for preparation of these LRA data is the Program and Financial Management Branch, DC/S I&L (MC-LPF-3).

R. WAR RESERVE STOCKAGE

The LRA requires that resources programmed to procure war reserve stocks be identified in total and in several subcategories (see Exhibit 3, section IIA). Since these data do not currently exist in the specific form required to support the LRA, the Marine Corps will have to develop procedures to provide the necessary data. Because the annual SECDEF Consolidated Guidance requires extensive information on funding requirements to meet materiel support goals, information that can be used to derive all of these LRA data elements exists in the Marine Corps.

Since all procurement associated with support of Marine Corps aircraft flight operations is programmed by the Navy, the Marine Corps programs resources only for war reserve items to support ground forces. The detailed information developed for the POM and each FYDP update permits the Marine Corps to satisfy all of the LRA requirements in this logistic support category. For example, as pointed out above, the Marine Corps programs funds for both peacetime training and war reserve ammunition requirements in BA-1 of the PMC appropriation. These funds provide tank and artillery munitions, mortar and small arms ammunition, mines, fuzes, demolition devices, and similar items, all of which can be separated into peacetime and war reserve requirements to provide the data elements specified by the LRA. Similarly, Format V1-D-1 in POM 79 identifies total PMC funds programmed for pre-positioned secondary item war reserves (spares), which is one of the LRA required data elements. Thus, even though funds programmed for spares appear as aggregated

entries in the Procurement Annex, the Marine Corps can separate these entries into the data elements required for the LRA. Finally, Format V1-D-2 in POM 79 identifies the total resources programmed for procurement of stock-funded war reserve secondary items in several subcategories that can be equated with one of the three LRA subcategories--repair parts, clothing, and other supplies.

The HQMC point of contact for war reserve stockage information is the DC/S for Installation and Logistics (MC-LPF and MC-LMO).

S. INDUSTRIAL PREPAREDNESS

In accordance with DoDD 4005.1, *DoD Industrial Preparedness Production Planning,* July 28, 1972, the DoD is responsible for ensuring that commercial production and maintenance/repair capability are adequate to meet readiness requirements for those items of materiel included in the approved forces but not supported by organic depot-level capability. Industrial preparedness activities include actions 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[1] prescribes a minimum cost accounting structure for use by the Services. PE 78011, "Industrial Preparedness," has been established to provide a standard PE for all Services to display these resources.

Most of these industrial preparedness activities are provided to the Marine Corps by the Navy and the other Services. Every year the Marine Corps submits a list of post M-Day requirements to the appropriate Service for inclusion in that Service's Industrial Preparedness Program (IPP). The Marine Corps programs no resources for this function but maintains a point of contact for IPP matters. Accomplishment of this

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

function represents less than one man-month per year. As a result, no Industrial Preparedness Program is identified or funded, and PE 78011M is not used.

Consistent with Marine Corps and OSD handling of the Marine Corps Industrial Preparedness function, we recommend no Marine Corps resources be included in this LRA category. HQMC point of contact for Industrial Preparedness is the Plans and Policy Branch, DC/S I&L (MC-LPP).

T. LOGISTICS MANAGEMENT HEADQUARTERS

The LRA structure requires that total manpower and dollar resources programmed for major logistics management headquarters be included in a separate LRA category (section IIIA). In the Navy this category includes Headquarters, NAVMAT, and the five SYSCOMS; for the Air Force, it includes Headquarters, Air Force Logistics Command, and the headquarters at the five Air Logistics Centers. In both Services these resources are shown in Program 7 PEs (72898N, 72898F, and 72829F, respectively).

The Marine Corps does not have organizations that correspond to the Navy and Air Force organizations listed above. A major part of the logistics management function is accomplished at HQMC, primarily in DC/S I&L (MC-L). Consistent with the treatment of the Headquarters Staff personnel in the other Services, these HQMC personnel are included primarily in FYDP Program 9 (PEs 92398 and 92498) and no effort is made to include in Program 7 those personnel that perform logistic management functions. Other logistic management functions are accomplished at the headquarters of the two MCLSBs, but it would be extremely difficult to separate logistic management functions from the other administrative functions performed. For this reason, and because of the limited amount of resources committed to logistic management functions at HQMC and the MCLSBs, we recommend that none of these resources be shown in this LRA category for the Marine Corps.

The Marine Corps programs manpower resources in PE 72898N to cover Marine Corps personnel at Navy logistics management

headquarters. In keeping with our appropriation integrity approach,[1] these manpower resources should be included in the Marine Corps LRA in the Logistics Management Headquarters functional category. Since these resources are readily available at the PE level, the Marine Corps will be able to provide the data elements to support the LRA.

[1]This approach requires that resources be displayed in either the Navy or Marine Corps LRA based on the Service to which appropriations are made. See Chapter I.

U. LOGISTIC SUPPORT EQUIPMENT

This category is generally intended to include all logistic support equipment purchased with procurement funds not included in the other LRA equipment procurement categories (for example, common ground support items such as test equipment and maintenance power units). The Procurement Annex is the primary source of information on the equipment to be included in this category. Since procurement programs are managed by equipment line item, budget activity, and budget subactivity, providing the data elements for the LRA will primarily require assigning data in the Procurement Annex to the proper LRA category.

Exhibit A-5 identifies the applicable LRA categories for display of Marine Corps logistic support equipment, and shows which BAs and BSAs in the Procurement Annex are likely to include the specific items of equipment to be included in that LRA category. We recognize that it is impossible to provide all of the data for the LRA merely by assigning BAs and BSAs in the Procurement Annex to individual LRA categories. It is also possible that some items of equipment located in other BAs should be included in the LRA. It will be necessary for the Marine Corps to review each line item in the Procurement Annex to determine its relevance to the LRA. Exhibit A-5 merely indicates an initial approach to using data in the Procurement Annex to provide the required LRA data elements.

The point of contact for preparation of these LRA data is the Program and Financial Management Branch, DC/S I&L (MC-LPF-3).

Exhibit A-5. MARINE CORPS LOGISTIC SUPPORT EQUIPMENT

LRA Subcategory	Candidate BSAs
Missiles	BSA 0302, "Special Devices" BSA 0303, "Other Support"
Combat Vehicles	BSA 0204, "Other Support"
Weapons and Ordnance	BSA 0102, "Other Support" BSA 0204, "Other Support"
Electronics and Telecommunications	BSA 0407, "Repair and Test Equipment" BSA 0409, "Other Support" BSA 0417, "Repair and Test Equipment" BSA 0419, "Other Support"
Civil Engineering	BSA 0601, "Engineer and Equipment" BSA 0604, "Other Support" BSA 0503, "Other Support"
Maintenance	BSA 0604, "Other Support"
Supply	BSA 0602, "Materials Handling Equipment" BSA 0604, "Other Support"
Logistic ADP	BSA 0603, "General Property"

V. PROPERTY DISPOSAL

The LRA requires that resources programmed for the 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. A total of over 5,000 people, assigned to a network of worldwide Defense Property Disposal Offices (PDOs), 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 the Materiel Division, DC/S I&L (MC-LMP), revealed that this property disposal function does not represent a significant workload in the Marine Corps. Transactions for items to be routed to PDOs are processed routinely and are considered to be an insignificant part of daily supply operations. Items such as ammunition, explosives, and other dangerous articles that are not assigned to PDOs for disposal are routed to either Army or Navy installations for disposal under special DoD nonreimbursable accounts established for that purpose. Consequently, no Marine Corps resources are identifiable to the property disposal function.

We recommend that no effort be made to identify the limited resources that might be consumed in processing items for disposal as part of a separate LRA property disposal function. In terms of the overall LRA structure, however, this function should be

retained for associated DLA resources, should OSD decide to display the resources programmed by the Defense Agencies in the LRA. It may be more appropriate to include this function under Central Supply Operations.

W. INACTIVE EQUIPMENT STORAGE AND MAINTENANCE

The LRA requires that total funds programmed to support storage and maintenance of inactive equipment be included in a single LRA category. Even though the Marine Corps operates no facilities dedicated to performing this function, some O&MMC funds are included in PE 71111M to support these activities for war reserve stock items at each of the MCLSBs. These funds are readily identifiable in the backup material for this PE, so the Marine Corps can provide the data elements for this LRA category. Point of contact for matters concerning these resources is the Program and Financial Management Branch, DC/S I&L (MC-LPF-3).

X. OTHER LOGISTICS ACTIVITIES

OSD 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 Logistics Activities" is to include all Program 7 manpower and dollars in the operating appropriations that are not displayed 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.

The data elements in this LRA functional category are defined at the PE level to include PE 72891M, "Commissary Retail Sales," and PE 78110M, "Service Support to DLA." This covers all of the Marine Corps Program 7 PEs not included elsewhere in the LRA. Since the LRA requires only appropriation and manpower end-strength data at the PE level, the Marine Corps can provide the required LRA data elements directly from the FYDP.

The Marine Corps finances resources to operate 1 overseas and 11 domestic commissary stores that provide active duty and retired military with a convenient place to buy food, household items, and related products. These resources, managed under Budget Project 7E, are the only resources included in PE 72891M.

PE 78110M includes manpower and MILPERS dollars programmed by the Marine Corps to support the Defense Logistics Agency. In the FYDP, DLA distributes these Marine Corps manpower resources to the DLA PEs (e.g., 71111S) to which resources for specific functions are assigned, but prices these resources at a different

payrate than that used by the Marine Corps. Because these MILPERS dollars are offset by an entry in PE 7xxxxM, "Service Support to the Defense Agencies," the Military Personnel, Marine Corps, appropriation total reflects only HQMC pay rates.

The Marine Corps does not use PE 78012, "Other Logistics Support," to include resources that are centrally managed in Program 7 but may actually finance programs that are broader in scope than logistics (e.g., reimbursements to the Employment Compensation Fund that are currently programmed by the Marine Corps under Budget Program 7D3, "Centrally Managed Programs," in PE 71111M). OSD may wish to issue guidelines for implementing the LRAs that ensure that these resources are included in the same PEs by all Services.

Y. FACILITIES CONSTRUCTION (LESS HOUSING)

All Marine Corps requirements for facilities construction are financed by the Navy in the Military Construction, Navy, appropriation. For example, according to data in POM 79, the Marine Corps portion of the DON Appropriation for Military Construction amounted to over $92 million for FY 79, about 10 percent of the total estimated program. Since coverage in the Marine Corps LRA currently is limited to Marine Corps appropriations (with the exception of a small amount of funds in the Family Housing, Defense, appropriation that is administered by the Marine Corps), this facilities construction category will not be used in the Marine Corps LRA.

As described in Volume II, the Navy LRA will include information about the total DON Military Construction Program in the categories prescribed by the LRA structure. Moreover, since the Navy manages the construction program by project and unit identification code, all projects programmed in support of the Marine Corps can be identified. If OSD elects to include these resources in the Marine Corps LRA on a non-add basis, the required data elements can be provided readily.

The point of contact in the Marine Corps for matters concerning construction requirements is the Director of Facilities and Services Division, DC/S I&L (MC-LFF-1).

Z. COLLATERAL EQUIPMENT

Collateral equipment is equipment that is purchased to go into military construction facilities. There are two kinds of collateral equipment: installed and personal property. Installed collateral equipment is built into the facility and is considered to be permanently affixed. Both the procurement and the installation costs are funded in the Military Construction appropriations. In the LRA, these costs are included in the construction functional categories and are not displayed separately.

Personal property collateral equipment is equipment that is not built into a facility but is "severable." The costs of this equipment are funded in the O&M appropriation and are required to be displayed in this LRA category.

The Marine Corps programs funds for collateral equipment to support new construction projects in the PEs in which the military construction funds are programmed. In FY 79, approximately $4 million are programmed for this purpose, primarily in base operations PEs. Although these funds are not separately identified at the PE level, backup information is available at HQMC that can be used to provide the data elements to support the LRA. The point of contact for information about this functional category is the Facilities and Services Division, DC/S I&L (MC-LFS).

AA. HOUSING

The LRA structure requires that resources programmed to support the housing category be displayed in two major subcategories--"Family Housing" and "Troop Housing Construction." Since all DON requirements for construction of troop housing are funded in the Military Construction, Navy, appropriation, resources programmed to support Marine Corps requirements are included in the Navy LRA.[1] Thus, only the "Family Housing" subcategory is used in the Marine Corps LRA.

Within the "Family Housing" subcategory, the LRA currently requires display of data in six subcategories that correspond to discrete DoD PEs. Of these six, resources in three ("Family Housing New Construction," "Improvements," and "Leasing") are programmed and managed by the Navy and are, therefore, already included in the Navy LRA. The remaining three ("Family Housing Operations," "Maintenance," and "Debt Payment") are managed by the Marine Corps but are funded by OSD in the Family Housing, Defense, appropriation.

Exhibit A-6 lists the LRA Family Housing functional categories in which resources managed by the Marine Corps fit together with the PEs in which these resources are programmed. Since the LRA requires data only at the PE level, the Marine

[1]See Volume II. Troop housing construction is one of the 19 Navy "investment categories" that is identified in Navy program-budget systems. The Navy is able to identify separately resources programmed to support Marine Corps requirements. These resources could be included in the Marine Corps LRA, on a non-add basis to avoid double-counting, if desired.

Corps Family Housing data elements required to support the LRA are readily available.

Exhibit A-6. LRA FAMILY HOUSING SUBCATEGORIES AND APPLICABLE DOD PROGRAM ELEMENTS

LRA Functional Category	DoD PE
Operations	88745M, "Family Housing (Operations)"
Maintenance	88746M, "Family Housing (Maintenance)"
Debt Payment	88743M, "Family Housing (Debt Payment)"

BB. REAL PROPERTY MAINTENANCE ACTIVITIES (RPMA)

The LRA requires display of dollar resources programmed to support this functional category in four subcategories: maintenance and repair, utilities operations, other engineering support, and minor construction. These subcategories correspond to the functional category codes M, N, P, and R, respectively, prescribed by DoDI 7220.20 for use in operating budgets. These categories are also used in various budget exhibits prescribed by DoD to support annual budget submissions (e.g., OP-5, OP-27, PB-27). Manpower resources will be identified in total, rather than at the subcategory level.

In the Marine Corps, all resources for RPMA are programmed in readily identifiable activity groups within the base operations activity group aggregation that correspond to the four subcategories described above. Thus, the data required to support the LRA are readily available. The HQMC point of contact for RPMA information is the Director of Facilities and Services, DC/S Installations and Logistics (MC-LFF-2).

CC. BASE OPERATIONS: OTHER SERVICES AND SUPPORT

The conventional base operations category includes the resources used at DoD installations to provide services so operational units can perform their mission free of "housekeeping" responsibilities. In the DoD PPBS, this category has conventionally included three major elements: real property maintenance activities (RPMA), base communications, and base operations support. The LRA functional category "Base Operations: Other Services and Support" is less comprehensive than the conventional category in that RPMA is a separate category (see section BB, above), but all other "housekeeping" resources are included.

The LRA requires identification of base operations support resources (manpower end-strengths and dollars in the O&M and MILPERS appropriation[1]) in six subcategories. Since the Marine Corps does not currently identify resources according to these subcategories, the data elements required to support the LRA cannot be extracted directly from existing sources. However, information is readily available that can be used to develop the data required to support the LRA.

In general, all resources to provide base support operations are included in the total operating funds programmed in discrete base operations and base communications PEs in major force

[1] Resources funded in the investment appropriations will appear in the appropriate procurement or construction category elsewhere in the LRA.

programs (e.g., 26495M, 26496M, 72895M, 72896M, etc.).[1] Budget exhibits prepared by the Marine Corps to support the budget submissions, however, separate these resources into subcategories that provide additional information about the purpose for which these resources are programmed. For example, the OP-5 Budget Exhibit prepared to support the October 1977 OSD budget submission addressed base operations as a separate Activity Group Aggregation in which all dollar resources were identified by DoD functional category (administration, supply operations, base services). Also, the DON Justification Book for the Operating Appropriations prepared to support the January 1978 Congressional budget submission included separate base operations program packages within each FYDP major force program. Within each of these program packages, dollar resources were identified according to the following categories:

(1) Administrative services, including such functions as installation financial and military/civilian manpower management, automatic data processing, printing and reproductive services, safety, and legal services.

(2) Specific services, including installation supply operations, transportation operating and maintenance, fire protection services, communications, and laundry and dry cleaning services.

(3) Community support services, including support of living facilities, food services, recreation areas, special services programs, and common use facilities.

(4) Facilities services, including the RPMA functions included as a separate LRA category.

Data in these Marine Corps categories can be assigned easily to the functional subcategories prescribed by the initial LRA (i.e., the Administrative Services category corresponds directly to the Administrative Services LRA category. The three remaining

[1]Base Communications was not included as part of BOS in the LRA structure provided to IDA by OASD (MRA&L). As of September 1978 an OSD study group is developing standard definitions for BOS to apply to all Services. If this group includes Base Communications in BOS, the LRA will also include Base Communications in section IVD.

Marine Corps categories correspond to the remaining LRA categories). Pending completion of the current DoD effort to restructure BOS resources, this procedure is sufficient to provide the data elements required for the LRA. If DoD restructures the BOS program, both the LRA and the Marine Corps categories will probably be redefined to correspond to the new DoD structure.

As outlined in Chapter II, data in the TMR system can be used to identify the manpower end-strength data in the base operation PEs according to the subcategories required for the LRA.

The HQMC point of contact for information relating to this LRA category is the Facilities and Services Division, DC/S I&L (MC-LFS).