



RTE-6/VM Online Generator

Reference Manual

**Software Technology Division
11000 Wolfe Road
Cupertino, CA 95014-9804**

NOTICE

The information contained in this document is subject to change without notice.

HEWLETT-PACKARD MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THE MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Hewlett-Packard assumes no responsibility for the use or reliability of its software on equipment that is not furnished by Hewlett-Packard.

This document contains proprietary information which is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of Hewlett-Packard Company.

RESTRICTED RIGHTS LEGEND

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARs 252.227.7013.

Copyright © 1981 - 1983, 1985 - 1987, 1993 by Hewlett-Packard Company

Printing History

The Printing History below identifies the edition of this manual and any updates that are included. Periodically, update packages are distributed that contain replacement pages to be merged into the manual, including an updated copy of this printing history page. Also, the update may contain write-in instructions.

Each reprinting of this manual will incorporate all past updates; however, no new information will be added. Thus, the reprinted copy will be identical in content to prior printings of the same edition with its user-inserted update information. New editions of this manual will contain new information, as well as all updates.

To determine which manual edition and update is compatible with your current software revision code, refer to the Manual Numbering File or the Computer User's Documentation Index. (The Manual Numbering File is included with your software. It consists of an "M" followed by a five digit product number.)

First Edition	.....	Dec 1981	.....
Update 1	.....	Jul 1982	.....
Update 2	.....	Jan 1983	..... Add CS/80, HP 7914, 7933 Disks
Reprint	.....	Jan 1983	..... Updates 1 and 2 incorporated
Update 3	.....	Dec 1983	.....
Second Edition	.....	Jan 1985	.....
Update 1	.....	Jan 1986	.....
Reprint	.....	Jan 1986	..... Update 1 incorporated
Third Edition	.....	Aug 1987	..... Rev. 5000 (Software Update 5.0)
Fourth Edition	.....	Jun 1993	..... Rev. 6000 (Software Update 6.0)

Preface

This manual describes RT6GN, the RTE-6/VM Online Generator program. The Online Generator allows you to generate a new RTE operating system online, without shutting down your current RTE operating system. The program executes as a background or extended background program. The manual is intended for a system programmer or system manager who has experience using the RTE-6/VM Operating System.

The sections within this manual describe the operating specifications for the Online Generator, as follows:

- Chapter 1 An introduction to the Online Generator, including a description of the features and the operating environment. Also included are general descriptions of the RTE-6/VM Operating System and typical system configurations that are used within this manual as a basis for examples and a sample generation.
- Chapter 2 Describes how to prepare your responses to the generator questions. Worksheets are included on which you may record the responses that are required to generate your operating system. Sample worksheets are provided.
- Chapter 3 Describes system generation using the Online Generator. Included are instructions on how to schedule the generator for execution and how to enter your responses. Multiple terminal operation, error handling, number systems, and the generator scratch file are discussed. A sample generation based on a typical RTE-6/VM system definition is also presented.
- Appendix Six appendices are included in this manual:
 - A. Error Summary
 - B. RTE-6/VM Memory Organization
 - C. RTE-6/VM System Disk Layout
 - D. Generation Worksheet Forms
 - E. Sample Answer File
 - F. Sample Generation Listing

Other manuals that offer information relevant to generating and using an RTE-6/VM Operating System are briefly summarized below:

- *RTE-6/VM Programmer's Reference Manual*, part number 92084-90005

This manual is required for those involved with RTE-6/VM system generations. It describes the functions of RTE-6/VM and the procedures for utilizing system services by both executing programs and programs being developed. Typical examples of program use of system services are also provided.

- *RTE-6/VM System Manager's Manual*, part number 92084-90009

This manual guides the RTE System Manager through the overall process of planning, generating, initializing, and maintaining an RTE system. It provides procedures for planning your I/O structure, disk structure, and generating specific software components.

- *EDIT/1000 User's Guide*, part number 92074-90001

This manual describes the EDIT/1000 text editor which is used to modify the system answer file.

- *RTE Operating System Driver Writing Manual*, part number 92200-93005

This manual provides an overview of the RTE I/O Structure and describes real-time input/output considerations common to site-specific I/O drivers.

- *RTE-6/VM Terminal User's Reference Manual*, part number 92084-90004

This manual describes both the Operating System and File Management System commands.

- *RTE-6/VM CI User's Manual*, part number 92084-90036

This manual describes the commands and hierarchical file structure used in the RTE-6/VM Command Interpreter environment.

- Appropriate Driver Manuals

These individual manuals will aid in determining the particular drivers necessary for site-specific combinations of devices. The manuals describe the buffering, DCPC, timeouts, and EQT extensions necessary for configuring the various drivers.

- Appropriate Subsystem Manuals and Configuration Guides

These manuals provide the information necessary for configuring optional subsystems you may choose to include in your system.

Table of Contents

Chapter 1

RTE-6/VM Online System Generation

Using This Manual	1-1
The RTE Online Generator	1-2
Online Generator Features	1-2
FMGR vs CI User Interface	1-3
RTE-6/VM Generation Requirements	1-3
Operating System Description	1-4
The RTE-6/VM System To Be Generated	1-5

Chapter 2

Online Generator Response Preparation

Planning Introduction	2-1
Online Generator Dialogue	2-2
Error Reporting	2-3
Operator Commands	2-3
TR Command	2-3
* Command (Comments)	2-6
? Command (Help)	2-7
!! (ABORT) and BR (BREAK) Commands	2-8
Response Preparation	2-8
Initialization Phase	2-9
Program Input Phase	2-26
Parameter Input Phase	2-37
Table Generation Phase	2-46
System Boundaries Phase	2-60
System and Program Loading Phase	2-63
Table Area II Modules	2-69
Partition Definition Phase	2-70

Chapter 3

System Generation

Introduction	3-1
Executing the Online Generator	3-1
Responses and Comments	3-3
Error Handling	3-4
Number Systems	3-5
Sample Generation	3-5
RTE-6/VM System Generation Example	3-6
Initialization Phase	3-6
Program Input Phase	3-9
Parameter Input Phase	3-10
Change Name Phase	3-10
Table Generation Phase	3-11
System Boundaries Phase	3-13
System and Program Loading Phase	3-13
Partition Definition Phase	3-15

Appendix A Error Summary

FIXUPS NOT RESOLVED Error	A-1
Online Generator Error Codes	A-1

Appendix B RTE-6/VM Memory Organization

Physical Memory Organization	B-1
Logical Memory Organization	B-5
Base Page Mapping and Organization	B-13
Memory Protection	B-13
Generator Relocation Guidelines	B-17

Appendix C RTE-6/VM System Disk Layout

Appendix D Generation Worksheet Forms

Appendix E Sample Answer File

Appendix F Sample Generation Listing

List of Illustrations

Figure 2-1	Initialization Phase Worksheet Example	2-10
Figure 2-2	Memory-Resident Maps	2-23
Figure 2-3	Sample Program Input Phase Worksheet	2-27
Figure 2-4	Base Page Linking	2-33
Figure 2-5	Current Page Linking	2-34
Figure 2-6	Sample Parameter Input Phase Worksheet	2-41
Figure 2-6	Sample Parameter Input Phase Worksheet (continued)	2-42
Figure 2-7	Sample Table Generation Phase Worksheet	2-49
Figure 2-8	EQT Table Example	2-55
Figure 2-9	Interrupt Table Example	2-59
Figure 2-10	Sample Boundaries Phase Worksheet	2-61
Figure 2-11	BG Common Configuration	2-62
Figure 2-12	Sample System and Program Loading Phase Worksheet	2-64
Figure 2-13	Sample Partition Definition Phase Worksheet	2-71
Figure B-1	Physical Memory Map	B-6
Figure B-2	RTE-6/VM 32K Logical Memory Configurations	B-8
Figure B-3	Sample System Map	B-9
Figure B-4	Sample User Map (Memory-Resident Program With Common)	B-10
Figure B-5	Sample User Map (Disk-Resident Program)	B-11
Figure B-6	Sample User Map (BG Disk-Resident Program With Common)	B-12
Figure B-7	Base Page Formats	B-14
Figure B-8	User Logical Base Page	B-15
Figure B-9	Memory Protect Fence Locations For Programs	B-16

Tables

Table 2-1	Summary of RTE-6/VM Program Types	2-43
-----------	---	------

RTE-6/VM Online System Generation

Using This Manual

The *RTE-6/VM Online Generator Reference Manual* provides a set of basic procedures for generating an RTE-6/VM system to your specifications. All new users should read through and become familiar with the information that is contained in the various sections and appendices before attempting to generate a system. Note that sample worksheets are provided throughout the manual. Blank generation worksheets are provided in Appendix D.

The *RTE-6/VM System Manager's Manual* should be used in conjunction with this manual as it will lead through the processes required to plan, generate, and initialize your system.

The *RTE-6/VM Online Generator Reference Manual* discusses generator inputs in general terms only. For specific generator inputs several other RTE-6/VM manuals should be readily at hand when filling out the worksheets for your generation: the *RTE-6/VM System Manager's Manual*, the various driver manuals, and the appropriate subsystem manuals and configuration guides (see the Preface in this manual for summary descriptions).

Examples are used and referenced throughout the manual to illustrate or clarify information. These examples should be regarded as general information only because in some cases they may not necessarily reflect the most recent software revisions.

Unless otherwise noted in this manual, all references to logical and/or physical memory size are in decimal number of words. Logical memory addresses are in octal.

The RTE Online Generator

The RTE-6/VM Online Generator (RT6GN) is included in the software modules distributed with the HP RTE-6/VM Real-Time Executive Operating System.

The Online Generator program gives you the capability of using your current RTE system to create a different RTE-6/VM Operating System online. The Online Generator configures an RTE-6/VM system based on the information that you enter in response to queries and prompts displayed by the Online Generator.

To build the operating system, the Online Generator accepts the relocatable programs from disk files. These relocatable programs must exist as File Management Package (FMP) disk files (but cannot be Type 0 files). The Online Generator uses these files to build the new system. RT6GN relocates both the required modules and the selected optional software modules and configures the system according to your responses to its queries. The resultant user-defined absolute RTE-6/VM system is stored in a Type 1 FMP file created by the generator.

SWTCH, the RTE-6/VM system transfer program, is also included in the software modules distributed with RTE-6/VM. This utility program transfers the new operating system from the file created by the Online Generator to a disk subchannel. You can replace (using SWTCH) the current (or another) operating system with the new operating system by following the detailed procedures described in the *RTE-6/VM System Manager's Manual*.

Online Generator Features

The Online Generator has the following features:

- The generation process can be directed from an answer file, logical unit, or user console.
- The TR command can be used at any time to change modes between interactive (operator) and direct (answer file or logical input unit).
- An HP 79xx disk-based system can be generated.
- Mapping and linkage options may be set for the individual relocation of modules.
- The generation listed output can be echoed to both the user console and the specified list file.
- During relocation, the RTE-6/VM generator automatically searches all libraries specified during the Program Input Phase. It is not necessary for the user to request library searches for external references.
- The generator can be aborted by entering the proper request (two exclamation points, “!!”) when in either the interactive mode (by you, the operator) or the direct mode (from an answer file) or by means of the system break (BR) command.
- At any time the generator is in interactive mode it may be queried about the last error (?) or any error (??,nn) that has occurred in the current phase.

FMGR vs CI User Interface

In RTE-A and RTE-6/VM, a Command Interpreter (CI) is provided and displays a “CI>” prompt, as opposed to a FMGR “:” prompt. CI provides hierarchical directories, time stamping of the times of creation, last update and last access, unpurge, and file names up to 16 characters long (versus 6 characters under FMGR).

To take advantage of most of the improvements of the hierarchical file system, your directories must be reformatted and programs must be modified. Directory reformatting can be done with the FSCON utility included with RTE or as part of a save/restore activity.

If you do not wish to reformat your old file directories, the command interpreter also supports FMGR files (but without many features of the enhanced file system) for concurrent use with files accessed via the hierarchical directories. Refer to the *RTE-6/VM System Manager's Manual* for additional considerations regarding the hierarchical file system.

RTE-6/VM Generation Requirements

The following minimum requirements are necessary for generating an RTE-6/VM system:

- RTE-6/VM Operating System (running on an HP 1000 M, E, or F-Series Computer).
- Minimum 40-page (1 page = 1K word) partition (includes a 1K base page area); however, the larger the partition the faster the generator will proceed. This implies VMA loading. To use EMA you will need at least a 120-page partition.
- Sufficient FMGR disk tracks to contain the generated system and (optionally) the list file and boot file.
- Scratch area of about 800 blocks if VMA is used.

Note The generator must be run as an extended background (type 6) program that uses a 9-page MSEG.

Operating System Description

Your RTE-6/VM system is structured from a set of software and hardware modules. Beyond minimum requirements (that is, RTE system modules and drivers), the combination of software and hardware modules is flexible to allow the creation of a system designed specifically to handle your requirements.

RTE-6/VM is a multiprogramming system that divides user memory into contiguous blocks of memory called partitions. The maximum physical memory size is 2048K bytes. The physical memory area not occupied or reserved by system requirements and memory-resident programs is divided into user partitions. The size and number of these partitions are defined by the user during system generation (the size of the partitions may be modified at system boot-up during reconfiguration).

RTE-6/VM has a virtual-memory scheme for large data areas. This scheme places the large data area on disk and swaps parts of it in and out of memory as they are needed. At a program level the whole data area appears to be in memory. The maximum size of a program virtual data area (VMA) is 128 million bytes (128 MB).

Up to 64 user partitions can be declared permitting up to 64 disk-resident programs to reside in memory at one time. RTE-6/VM allows several programs to be active concurrently, each program executing during the unused central processor time of the others.

All input/output and interrupt processing is controlled by RTE-6/VM, except for special privileged interrupts that circumvent RTE-6/VM for quicker response. When a program requests a non-buffered I/O transfer, RTE-6/VM places the program in an I/O suspend state, initiates the I/O operation, and starts executing the next highest priority scheduled program. When the I/O transfer is completed, RTE-6/VM reschedules the suspended program for execution. (Buffering allows program swapping while program I/O is being performed.)

User programs can be written in HP ASMB assembler language, Macro/1000 Assembly language, or a variety of high level languages. Programs are scheduled by time intervals, an external event, an operator request, or by another program. (A program may also be scheduled for execution at system bootup.) The RTE-6/VM Operating System includes software that resolves program competition for CPU time at the same priority.

Physical memory in the RTE-6/VM system is divided into areas for the system, memory-resident programs, driver partitions, and a series of partitions used for execution of disk-resident programs. The purpose of the generation is to build various system tables, relocate binary programs specified at generation time, and construct a structured system according to a specific memory configuration. The following occurs during Generation:

- Various program modules are loaded.
- Generator requests are answered by the user.
- Memory-resident parts of the system and system tables are constructed and stored on the disk to be brought into memory during bootup.
- Drivers are relocated to reside in driver partitions.
- Remainder of memory is divided into partitions for disk-resident programs relocated, saved on the disk and transferred into memory when needed.

- Relocatable subroutine library is saved on the disk for use by programs relocated by the RTE-6/VM Online Loader (LOADR) or the Multilevel Segmentation Load on Call (MLLDR) loader during normal system operation.

Note Be aware that certain software subsystems may have specific requirements when included in the system generation. Options in areas such as spooling, measurements, communications, and multiple terminal operation may place specific requirements on I/O configuration, buffer space, and so forth. Refer to the *RTE-6/VM System Manager's Manual* and the appropriate subsystem and configuration manuals.

The RTE-6/VM System To Be Generated

A sample system for RTE-6/VM will be defined for discussion within subsequent portions of this manual, and the sample system will be used for examples and descriptive material. Your system may differ from the one defined here, but you only need to add or delete the appropriate modules in your generation process.

A sample RTE-6/VM system (and the one that is used as an example in this manual) could be comprised of the following modules:

Hardware Modules

HP 2117 Computer
512K Word Main Memory
Memory Protect
TBG (Time Base Generator)
DCPC (Dual Channel Port Controller)
DMS (Dynamic Mapping System)
HP 7925 Disk Subsystem
HP 7912 System Disk
HP 2645 System Console
Line Printer
RTE-6/VM Operating System Firmware
RTE-6/VM VMA/EMA Firmware
Magnetic Tape Device
HPIB (Hewlett-Packard IF Bus)
HP 264X Terminals (7 each)

Software Modules

RTE-6/VM Memory-Resident System
RTE-6/VM System Library
Powerfail Driver, DVP43
RTE-6/VM LOADR (Relocating Loader)
RTE Accounts Program
AUTOR (Powerfail/Auto-restart)
RTE-6/VM SWTCH Transfer Program
HP 7908/7911/7912/7914/7933 Disk
Driver DVM33
RTE-6/VM WHZAT Inquiry Program
HP LGTAT Utility Program
FORTRAN 77 Library
RTE Relocatable Library
263X/264X Terminal Driver, DVR05
Line Printer Driver, DVA12
Magnetic Tape Driver, DVR23
HPIB Driver, DVR37
RTE-6/VM Spool Program
File Manager Program
File Manager Library
Memory-Resident Programs
Disk-Resident Programs
Command Interpreter (CI)
Command Interpreter Auxiliary (CIX)

Online Generator Response Preparation

Planning Introduction

Generation planning involves determining what software resources and services are to be incorporated into your resident operating system and how those resources are to be allocated to maximize their usage. The resources and services desired are specified at generation time in a dialogue with the Online Generator. You prepare your responses to the generator queries by first filling out the generation worksheets that are provided in this manual.

Some of the data that will be entered in the worksheets is transferred from other documentation (that is, *RTE-6/VM System Manager's Manual* and other relevant subsystem manuals and configuration guides). Other worksheet entries are based on decisions you make after considering your requirements in the context of the optional resources and the memory allocation considerations described in this chapter.

The generation worksheets that are provided in Appendix D follow the progression of the generation (as described in Chapter 3). When RT6GN is executed, the information that you entered on the worksheets can be easily transferred to the system console (or answer file) in response to the generator's queries.

On the worksheets, user responses and commands are written in capital letters, and generator outputs and queries are printed in boldface type (blanks indicate where user input is expected). Comments to aid in filling out the worksheets are included in parentheses.

As you become more familiar with the RTE-6/VM system and the online generation procedure, you can create an answer file that contains all the parameter input responses derived from the worksheets. A sample answer file for an RTE-6/VM generation is included in Appendix E. The generator will read such a file automatically and operate at a much higher speed than if the responses are entered interactively through a user console.

In fact, console input should be the exception in every generation, used only to correct errors and to provide input where too little information was known beforehand.

Online Generator Dialogue

The Online Generator dialogue is described in this section. The section is organized in parallel with the “phases” executed by the generator during its operation. Some phases do not require user responses, but have been listed for completeness. The phases include:

- Initialization – The list and output files are established. The destination system disk type and its subchannels are defined. The bootstrap loader is produced (optional). Various system parameters are entered.
- Program Input – All relocatable file names are entered, together with information that directs their relocation. The generator uses these entries for later relocation of the file contents.
- Parameter Input – The default characteristics of programs that were just entered can be overridden. Entry point values can be modified and program names can be changed. Additional system parameters are entered.
- Table Generation – Tables describing the I/O configuration are constructed. Table Area I modules are relocated.
- System Boundaries – The driver partition size is reported, and you may increment the driver partition page size; driver partition #1 is relocated. The Subsystem Global Area (SSGA) is relocated as the first part of COMMON. COMMON sizes and boundaries are reported, and you may increase the size of these areas.
- System Loading – The System Driver Area drivers, Table Area II modules, system executive routines, and user-written system routines are relocated to absolute memory addresses. Then the remaining partition resident drivers are relocated.
- Program Loading – The Memory-Resident Library (MRL) and all memory-resident programs are sequentially loaded into the memory-resident area. Program relocation continues with real-time disk-resident and background disk-resident programs.
- Partition Definition – This phase begins with a listing of real-time and background program partition size requirements (in pages). This is followed by a report giving the maximum program address spaces for disk-resident programs. At this point you may increase the size of System Available Memory. The generator reports the number of pages remaining for partitioning. After this report you define regular and shareable EMA partitions, and you may modify a program’s page requirements. Finally, you may assign specific programs to execute only in specified partitions.

At the end of the generation the Online Generator reports that the new system is stored in the type 1 file. The size of the system is reported in decimal number of tracks and sectors and in decimal number of blocks.

Error Reporting

Error conditions encountered during Online Generator execution result in the display of numbered error codes. A description of all error codes and appropriate corrective actions are given in Appendix A. These descriptions may also be obtained from the Online Generator by using one of the HELP options.

Operator Commands

The following four sections describe the TR, *, ?, !!, and BR commands. The TR, *, ?, and !! commands can be entered during the generation process at any point that the generator is waiting for input. The comment command (*) can be used to include comments (partial or complete lines) in the listing and answer file.

TR Command

You may provide responses to the Online Generator using two modes of operation – interactive or direct. The interactive mode is a two-way dialogue between you and the generator. The generator displays messages at your console to prompt you for the information it needs to generate an RTE system. You answer the prompts by supplying the required information via your keyboard.

When answers are supplied to the generator from a disk file or a logical input unit, the mode of operation is direct (that is, from an answer file).

You can alternate between these operating modes at any point that the generator is waiting for input. That is, you may enter the TR command from the user console to transfer to an answer file or logical input unit. Conversely, you may include a TR command within your answer file to transfer to another file or device for input. Transfers can be nested to a level of 70. Any transfer request beyond this limit results in a GEN ERR 19. The command format is:

```
TR      ,lu  
        ,filename [ , :security code [ :cartridge label] ]
```

where:

lu is the logical unit number of an interactive device or of a non-disk device that contains an answer file.

filename is the name of a disk file that contains answers to the generator prompts.

Transferring to an illegal logical unit for command input results in a GEN ERR 20. The error will be listed on the user console, and a valid LU number can then be entered.

Once you transfer to a device or file, you may transfer back to the previous device or file by entering a TR with no parameter.

When an end-of-file is encountered in the answer file, an automatic TR to the previous device or file is generated. Similarly, a transfer to the user console occurs when a non-fatal error is detected. You can then enter a correct response and the TR command to transfer back to a device or file.

You may include a TR command within your answer file (for example, in the form TR,1), which results in a transfer of control to the user console (LU 1). When the TR,LU command is encountered in the answer file, the generator redisplay the current prompt (for the answer it is expecting) on the user console and waits for input from the console. You may enter the appropriate responses, followed by a TR command. This TR command then causes a transfer of control back to the answer file record that follows the original TR,LU command in the answer file. The transfer feature is useful if an answer is not known until a certain point in the generation process is reached. It is also possible to do a conditional TR,1 command with the DISPLAY command during program input.

Alternate versions of the TR command can also be used. For example, each of the following produces an identical result:

```
TR, 1
: 1
, 1
```

Below are several examples that illustrate the usage of the TR command:

1. In the following example, generation is partly interactive and partly run from an answer file.

User Input	Generator Query	Answer File (ANSFL) input
:RU,RT6GN,1	LIST FILE NAMR?	
LIST4::3::100	RTE-6 RT6GN Rev. 2540 <<851006.1907>> 3:30 PM TUE., 10 DEC RU,RT6GN,1 ECHO?	
YES	OUTPUT FILE NAMR?	
TR,ANSFL		RTE6SY::3::5000
	SYSTEM DISK MODEL?	7912
	CONTROLLER SELECT CODE?	11
	DEVICE (MODEL, HP-IB ADDR, UNIT, VOLUME)?	TR
CTD,0,1,0		
	.	
	.	

2. In the following example, part of the initialization phase is run from the answer file.

User Input	Generator Query	Answer File (ANSFL) Input
:RU,RT6GN,TEST/AN602S.MOD,15	LIST FILE NAMR?	LISTFL:AB:17::300
	RTE-6 RT6GN	
	Rev. 2540 <<851006.1907>> 3:30 PM TUE., 10 DEC 1985	
	RU,RT6GN,TEST/AN602S.MOD,15	
	ECHO?	YES
	OUTPUT FILE NAME?	OUTFL:AB:17::2500
	SYSTEM DISK MODEL?	TR,1
7925	SYSTEM DISK MODEL?	
11	CONTROLLER SELECT CODE?	
	MODEL,#TRKS,FIRST CYL,HEAD, #SURFACES,UNIT,#SPARES FOR SUBCHNL:	
	00?	
7925,256,0,0,9,0,5	01?	
7925,1730,29,0,9,0,52	02?	
7925,2016,227,0,9,0,63	03?	
7925,256,458,0,9,0,8	04?	
7925,2942,485,0,9,0,82	05?	
/E	SYSTEM SUBCHNL?	0
TR	AUX DISK?	
	.	
	.	

* Command (Comments)

The * command is used to include documentation comments for both answer file preparation and list file reading.

Comment lines must begin with the comment declaration, asterisk (*). When the generator is waiting for input, it skips over any comment line and gets the next response line after reissuing the prompt. Note that when the generator encounters an asterisk, the remainder of the line is considered to be a non-executable statement.

Note Comments entered through the user console or answer file, prior to your response to the LIST FILE NAMR? query, will not appear in the list file.

Comments may be included on the same line as a user response by entering an asterisk after the response (the response and the asterisk should be separated by several blanks for clarity in reading).

Certain restrictions exist when the response refers to a file descriptor. In this case, asterisks are not allowed within file names, security codes, or cartridge labels. The following file descriptors would be incomplete because the generator considers the "*" a comment declaration:

```
OUT*FL::2::2000            (in this case, OUT would be the file name, *FL::2::2000
                              would be considered a comment)
TR,ANSF:*:10
REL,NCRSYS::*
```

The commands affected by these restrictions are:

```
TR
RELOCATE
```

Responses affected by these restrictions are:

```
LIST FILE NAMR?    response
OUTPUT FILE NAMR? response
BOOT FILE NAMR?    response
```

? Command (Help)

Any time the generator is waiting for command input, you may enter the help command. The syntax is:

? (Help on last reported error)
or
?, *nn* (*nn* is a GEN ERROR number)

Either the last reported error or error *nn* is expanded and explained. The generator can only give help on errors in the current phase because memory contains only the text corresponding to errors in the current phase, and then only if there is a possibility of user input after the error occurs. (For example, aborting errors cannot be expanded in this way.) At the end of generation all encountered errors are expanded.

It is also possible to put the generator in help mode in which all error expansions are available. This mode is entered by:

RU, RT6GN, ? [, *error1*, . . . *errorn*]
OR
RU, RT6GN, ? , AL [, *filename* [, R]]

where:

error1, . . . *errorn* is an optional list of error numbers to be expanded.

AL lists all errors.

filename the file to which all errors will be listed. If *filename* is not specified, you are prompted for the file name.

R indicates that *filename* may be replaced if it already exists.

If nothing is entered after the ?, the generator will prompt for error numbers and continue to report errors and prompt until an '/E' is encountered.

If data appears in the runstring, the generator will quit after exhausting the string.

The runstring "RU,RT6GN" with no parameters reports help information on running the generator.

!! (ABORT) and BR (BREAK) Commands

The abort command is entered to direct the generator to close all files (see below) and terminate itself. The command format is:

!! (entered in columns 1 and 2)

This command may be entered at any time the generator is waiting for input.

Note If a name has two exclamation points as its first and second characters (for example, a file named !!ABC) the generator will abort!

The generator can also be aborted with the RTE system break (BR) command. When the BR command is entered in response to a system prompt, the generator issues the following statement:

```
S-75 COMMAND ?BR
      /RT675 : break detected ;
      <CR> to proceed, <SS> to suspend, <AB> to abort, <EC> to toggle echo
```

For example:

- <CR> A carriage return will allow the generator to continue.
- SS Causes the generator to operator suspend. Type 'GO' in response to a 'command' prompt to continue.
- AB <or !!> Aborts the generator.
- EC Toggles the 'ECHO' condition (that is, if ECHO is on it is turned off, and if it is off then it is turned on).

The abort command purges the absolute output file and the boot file, but the list file will remain for your examination. This works in break mode as well.

Response Preparation

As you read these sections, you should fill in generation worksheets with your generator inputs. You will need to refer to the *RTE-6/VM System Manager's Manual* and appropriate subsystem manuals and configuration guides for specific responses.

These worksheets are keyed to generation step numbers in the text. Blank generation worksheets are located in Appendix D. Sample filled-in worksheets are located at the end of each section.

Note In the following sections, information not directly used by the generator will be offset from the main text.

This information includes optional resource usage considerations, general system background information, and examples. It is recommended that you familiarize yourself with this information.

Initialization Phase

During the Initialization Phase, the Online Generator requests information to complete the following:

1. Create the list and output files and determine the destination system disk type. (The system disk type is the disk model containing LU 2 in the generated system.)
2. Set up the track map table that defines disk subchannels.

Once the track map table is established, the generator requests additional information that is necessary to begin generation of the system. Refer to the example given in Figure 2-1 as you follow the steps in the Initialization Phase.

STEP 1 - LIST FILE NAMR?

Enter either a file descriptor or the LU number of a device that will receive the generator listed output. The file descriptor format is:

```
filedescriptor[:security code[:cartridge label[:filesize]]]
```

If the file size is not specified, a default value of 64 blocks is assumed. (1 block = 128 words.) A ‘R’ included at the end of the file descriptor tells the generator it is all right to reuse an existing file of the same name. This is useful if you are doing multiple generations but do not want to purge the file each time.

STEP 2 - ECHO?

Enter YES to enable a display of all listed output to the user console as well as to the file or device specified in Step 1. If commands are submitted in an answer file, it is especially useful to specify the ECHO option so that the generator’s progress can be monitored.

Enter NO to prevent echoing of the listed output.

STEP 3 - OUTPUT FILE NAMR?

Enter the name of the file to be created for generator output. The system to be generated will reside in this file. The entry format for File Manager is:

```
filedescriptor[:security code[:cartridge label[:filesize]]]
```

The Command Interpreter file descriptor formats are as follows:

```
filename::directory:type:size:<record length>  
or  
/directory/subdirectory/filename:::type:size:<record length>
```

Intialization Phase

①	LIST FILE NAMR? <u>LIFEXP:DS:GN:4:128</u>	(generator listed ouput)
②	ECHO? <u>YES</u>	(YES or NO; YES echoes all listed output to user console)
③	OUTPUT FILE NAMR? <u>SYFEXP:DS:GN::4500</u>	(contains generated system, must specify file size in blocks)
④	SYSTEM DISK MODEL? <u>7912</u>	(disk model # in destination system)
⑤a	HP 7900 Disc Only CONTROLLER SELECT CODE? <u> </u>	(lower # oct. select code for sys. disc controller)
	# TRKS, FIRST TRK ON SUBCHNL? 0? <u> </u> , <u> </u>	(even subchannels - fixed platter; odd subchannels - removable platter; enter dec. values)
	1? <u> </u> , <u> </u>	(terminate your final entry with a /E)
	2? <u> </u> , <u> </u>	
	3? <u> </u> , <u> </u>	
	4? <u> </u> , <u> </u>	
	5? <u> </u> , <u> </u>	
	6? <u> </u> , <u> </u>	
	7? <u> </u> , <u> </u>	

Figure 2-1. Initialization Phase Worksheet Example

5b

HP 7905/7906/7920/7925 Discs
CONTROLLER SELECT CODE?

(oct. select code for system disk controller)

MODEL, #TRKS, FIRST CYL#, HEAD, #SURFACES, UNIT, #SPARES FOR SUBCHNL:

00? _____ , _____ , _____ , _____ , _____ , _____ , _____ (enter dec. values)

01? _____ , _____ , _____ , _____ , _____ , _____ , _____ (terminate your
final entry with a
/E if <32 sub-
channels defined)

02? _____ , _____ , _____ , _____ , _____ , _____ , _____

03? _____ , _____ , _____ , _____ , _____ , _____ , _____

04? _____ , _____ , _____ , _____ , _____ , _____ , _____

05? _____ , _____ , _____ , _____ , _____ , _____ , _____

06? _____ , _____ , _____ , _____ , _____ , _____ , _____

07? _____ , _____ , _____ , _____ , _____ , _____ , _____

08? _____ , _____ , _____ , _____ , _____ , _____ , _____

09? _____ , _____ , _____ , _____ , _____ , _____ , _____

10? _____ , _____ , _____ , _____ , _____ , _____ , _____

11? _____ , _____ , _____ , _____ , _____ , _____ , _____

12? _____ , _____ , _____ , _____ , _____ , _____ , _____

13? _____ , _____ , _____ , _____ , _____ , _____ , _____

14? _____ , _____ , _____ , _____ , _____ , _____ , _____

15? _____ , _____ , _____ , _____ , _____ , _____ , _____

16? _____ , _____ , _____ , _____ , _____ , _____ , _____

Figure 2-1. Initialization Phase Worksheet Example (continued)

5c

HP 7906H/7920H/7925H/9895 Disks

CONTROLLER SELECT CODE?

(oct. select code for system disk controller)

**MODEL, #TRKS, FIRST CYL#, HEAD, #SURFACES, ADDRESS,
#SPARES (, UNIT) FOR SUBCHNL:**

00? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____
(enter dec. values)

01? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

02? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

03? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____
(terminate your final entry with a /E if < 32 subchannels defined)

04? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

05? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

06? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

07? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

08? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

09? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

10? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

11? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

12? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

13? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

14? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

15? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

16? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

Figure 2-1. Initialization Phase Worksheet Example (continued)

5d) CONTROLLER SELECT CODE?

12

DEVICE (MODEL, HP-IB ADDRESS, UNIT, VOLUME)?

CTD , 0 , 1 , 0

(if unknown disk)

(if CTD)

NUMBER BLOCKS ON DEVICE?

SUBCHANNEL 0 ASSIGNED

(GO TO NEXT SHEET)

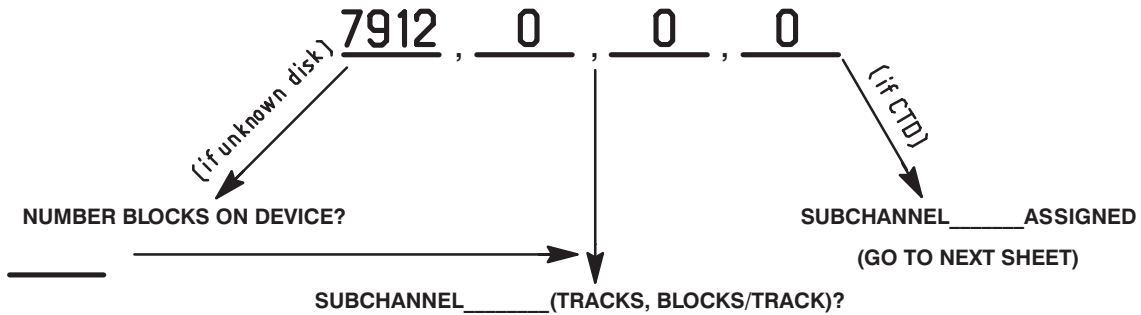
SUBCHANNEL _____ (TRACKS, BLOCKS/TRACK)?

_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____

Terminate subchannel with /E (unless entire disk used).
Terminate device prompting with /E.

Figure 2-1. Initialization Phase Worksheet Example (continued)

5d) DEVICE (MODEL, HP-IB ADDRESS, UNIT, VOLUME)?



<u>400</u> , <u>64</u>	<u>50</u> , <u>64</u>	____, ____	____, ____
<u>300</u> , <u>64</u>	<u>50</u> , <u>64</u>	____, ____	____, ____
<u>400</u> , <u>64</u>	<u>50</u> , <u>64</u>	____, ____	____, ____
<u>350</u> , <u>64</u>	<u>25</u> , <u>64</u>	____, ____	____, ____
<u>350</u> , <u>64</u>	<u>25</u> , <u>64</u>	____, ____	____, ____
<u>300</u> , <u>64</u>	<u>25</u> , <u>64</u>	____, ____	____, ____
<u>300</u> , <u>64</u>	<u>25</u> , <u>64</u>	____, ____	____, ____
<u>CTD</u> , <u>0</u>	<u>/E</u> , ____	____, ____	____, ____
<u>300</u> , <u>64</u>	____, ____	____, ____	____, ____
<u>250</u> , <u>64</u>	____, ____	____, ____	____, ____
<u>200</u> , <u>64</u>	____, ____	____, ____	____, ____
<u>200</u> , <u>64</u>	____, ____	____, ____	____, ____
<u>100</u> , <u>64</u>	____, ____	____, ____	____, ____
<u>100</u> , <u>64</u>	____, ____	____, ____	____, ____
<u>100</u> , <u>64</u>	____, ____	____, ____	____, ____
<u>100</u> , <u>64</u>	____, ____	____, ____	____, ____

Terminate subchannel with /E (unless entire disk used).

Terminate device prompting with /E.

Figure 2-1. Initialization Phase Worksheet Example (continued)

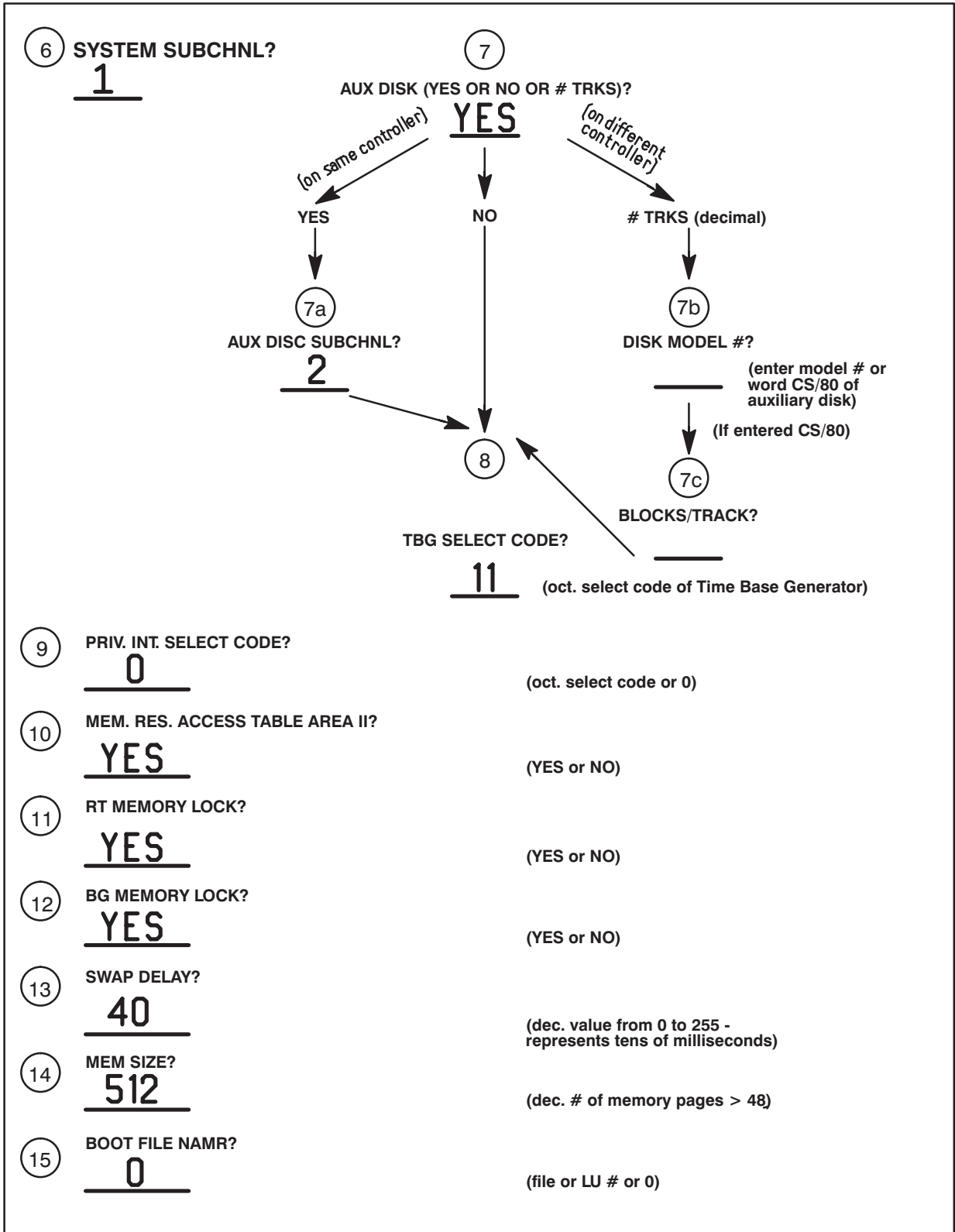


Figure 2-1. Initialization Phase Worksheet Example (continued)

The generator must create the output file as a type 1 file, so a file type specified in the filedescriptor parameter will be ignored.

The generator does a range check to make sure the file size is at least 1000 blocks; if not, a GEN ERR 17 results. If the file is not extended, unused file space is returned to the system when the generation is completed, so estimate a high value. If the file is extended, a warning is issued at the end of generation. Switch cannot handle extended files. The easiest fix for an extended file is to regenerate with a larger file. (Be sure to purge the old one.)

A recommended entry for a small system would be 3500. The actual number of blocks used will be reported at the completion of the online generation.

R has the same meaning as in the List File response above.

STEP 4 - SYSTEM DISK MODEL?

Enter one of the following as the disk model of the destination system (where the new RTE-6/VM system will reside):

7900

7905
7906
7920
7925

}

Multiple Access Controller (MAC) disks.

7906H
7920H
7925H

}

Integrated Controller Disk (ICD).

7907 7937
7908 7941
7911 7942
7912 7945
7914 7946
7933 7957
7935 7958
7936

}

Command Set 80 (CS/80) Disks.

Or enter "CS80" for CS/80 disks that RT6GN does not recognize.

STEP 5a - If the response to SYSTEM DISK was 7900, the following dialogue occurs:

CONTROLLER SELECT CODE?

The 7900 controller occupies two select codes; enter the lower number (highest priority) octal select code for the system disk controller.

TRKS, FIRST TRK ON SUBCHNL
0?

Enter the decimal number of tracks and the beginning track number (separated by a comma) for subchannel 0. The values are obtained from the HP 7900 Disk Worksheet that was filled out during the planning stage. (Refer to the *RTE-6/VM System Manager's Manual*.)

The generator will continue to display a subchannel number following each entry up to subchannel 7 or until terminated by the entry of the input data terminator, /E.

The even numbered subchannels are the fixed platters, and the odd numbered subchannels are the removable platters (that is, subchannel 0 is the fixed platter, and subchannel 1 is the removable platter of the first disk drive).

These subchannel inputs enable the generator to build the 7900 track map table, \$TB31. This table is located in System Table Area I and is $2^{*}(\#\text{subchannels})$ words in length.

STEP 5b - If the response to SYSTEM DISK was MAC disk 7905, 7906, 7920, or 7925, the following dialogue occurs:

```
CONTROLLER SELECT CODE?
```

Enter the octal select code for the 13037B/C system disk controller.

```
MODEL, #TRKS, FIRST CYL, HEAD, #SURFACES, UNIT, #SPARES FOR SUBCHNL:  
00?
```

Enter the disk model number, the decimal number of tracks, starting cylinder number, starting head number, number of surfaces, unit number, and number of spare tracks for subchannel 0 (each value separated by a comma). The values are obtained from the HP 7905, 7906, 7920, or 7925 Disk Worksheet that was filled out during the planning stage.

The generator will continue to display a subchannel number following each entry up to subchannel 63 or until terminated by the entry of the input data terminator, /E.

These subchannel inputs allow the generator to build the 7905/7906/7920/7925 track map table, \$TB32. This table is located in System Table Area I and is $1+5^{*}(\#\text{subchannels})$ words in length.

STEP 5c- If the response to SYSTEM DISK was 7906H, 7920H, or 7925H, the following dialogue occurs:

```
CONTROLLER SELECT CODE?
```

Enter the octal select code for the 12821A system disk interface.

```
MODEL, #TRKS, FIRST CYL, HEAD, #SURFACES, ADDRESS, #SPARES (, UNIT)  
FOR SUBCHNL:  
00?
```

Enter the disk model number, the decimal number of tracks, starting cylinder number, starting head number, number of surfaces, select address number, number of spare tracks for subchannel 0 (each value separated by a comma), and for 9895 disks only, the unit number. The values are obtained from the HP 7906H, 7920H, 7925H or 9895 Disk Worksheet that was filled out during the planning stage. The 9895 can only be a peripheral disk.

The generator will continue to display a subchannel number following each entry up to subchannel 63 or until terminated by the entry of the input data terminator, /E.

These subchannel inputs allow the generator to build the 7906H/7920H/7925H/9895 track map table, \$TA32. This table is located in System Table Area I and is $1+5^{*}(\#\text{subchannels})$ words in length.

Note

It is possible to have a system with more than one disk controller or interface card. A renamed version of the disk driver must be generated into the system along with its corresponding track map table supplied by the user. Refer to Appendix B of the *RTE-6/VM System Manager's Manual* and the *RTE Drivers DVR32/DVA32 Reference Manual* for more information.

STEP 5d - If the response to SYSTEM DISK was CS80 or the model number of a CS/80 device, the following dialogue occurs:

```
CONTROLLER SELECT CODE?
```

Enter the octal select code for the 12821A system disk interface.

The generator will then ask for a device definition:

```
DEVICE (MODEL , HP-IB ADDRESS , UNIT , VOLUME) ?
```

A response of /E will terminate the disk subchannel definitions.

For the model, enter the model number of the disk (for example, 7908, 7911, 7912, 7914, 7933, 7937, or 7958), CS80, CTD (Cartridge Tape Drive), or /E.

If you entered CS80 or if the generator does not recognize the disk model number, it assumes it is an unknown CS/80 disk and asks for the size of the disk in blocks.

```
NUMBER OF BLOCKS ON DEVICE?
```

Enter the number of blocks on the disk. The generator will accept unknown disk models and create Track Map Table entries for them, but RTE-6/VM may not properly access or function on an unknown disk model.

For the HP-IB address, enter a number in the range 0 through 7.

For the unit, enter a number in the range 0 through 14. Unit number 15 is the controller and should not be entered. The unit number is always 0 except unit 2 for the HP 7907 removable platter and unit 1 for integrated CTDs.

For the volume, always enter 0.

Caution

No error checking is performed on the range of the unit and volume numbers that are entered. The range does not necessarily correspond to the actual devices available on the system. The operator should consult the device specifications for the correct unit and volume numbers to be used.

No error checking is performed for the redefinition of same addressing. The operator can redefine the same HP-IB address, unit number, and volume number sequence and thus address the same location as a previous device.

If the model entered is a CTD, an optional parameter (“I”) can follow the volume number to specify immediate reporting. This can only be used with CS/80 CTDs that are not integrated into a disk drive. Immediate reporting causes the drive to return status before completion of the write command, thus allowing the device to approach a streaming mode of operation.

If the model entered is a CTD, the generator will assign the next subchannel and a Track Map Table entry to the Cartridge Tape Drive. The generator will report this with the message:

```
SUBCHANNEL xx ASSIGNED
```

where *xx* is the subchannel assigned.

If the model entered is a number that is recognized as a CS/80 disk, the generator prompts for subchannel definitions on the volume with the message:

```
xxx BLOCKS REMAINING (STARTING AT yyy)
SUBCHANNEL zz (TRACKS, BLOCKS/TRACK) ?
```

where:

xxx is the decimal number of blocks on the disk that have not yet been allocated.

yyy is the next available block on the disk.

zz is the next subchannel to be defined (in the range 0 through 63).

For the tracks, enter the decimal number of tracks which is between 1 and 32767. Note that the total number of tracks assigned to LUs 2 and 3 must not exceed 1600.

For the block/track, enter a decimal number of blocks in the range 1 through 64. The number entered should not be a multiple of 7, for example 35. If this parameter is not entered, the generator will default to 48 blocks/track (96 sectors/track).

Note

If a multiple of 7 is used, File Manager will not properly access the disk cartridge. If a multiple of 7 is entered, the generator will accept and use the entered value; however, a warning message will be issued.

If the number of tracks entered is a negative number, the disk space will not be assigned to the subchannel. Instead, a “hole” of the specified size will be created on the disk that cannot be accessed by the generator system.

Whenever possible, integrated Cartridge Tape Drives (CTD) should be used with a disk cache to increase performance (by increasing the size of the number of start/stop cycles on the CTD). The CTD must always be defined before the disk with which it is integrated. The generator will support the specification of disk caches in the manner illustrated by the following example:

The user defines a CTD:

```
DEVICE (MODEL, HP-IB ADDRESS, UNIT, VOLUME) ?
CTD, 0, 1, 0
```


The generator assigns a subchannel to the CTD and prompts for the next device. The user specifies a disk with the same HP-IB address as the previously defined CTD:

```
SUBCHANNEL 00 ASSIGNED

DEVICE (MODEL, HP-IB ADDRESS, UNIT, VOLUME) ?
7908, 0, 0, 0
```

The generator will then prompt for subchannel definitions:

```
64750 BLOCKS REMAINING (STARTING AT 0)
SUBCHANNEL 01 (TRACKS, BLOCKS/TRACK) ?
202, 48

55054 BLOCKS REMAINING (STARTING AT 9696)
SUBCHANNEL 02 (TRACKS, BLOCKS/TRACK) ?
202, 48

45358 BLOCKS REMAINING (STARTING AT 19392)
```

At any point, the user may define a disk cache for a previously defined Cartridge Tape Drive (CTD) by entering the special word “CTD” and the number of the subchannel assigned to the tape. The generator will reserve the next 256 blocks on the disk for the cache and prompt again for the next subchannel definition.

```
SUBCHANNEL 03 (TRACKS, BLOCKS/TRACK) ?
CTD, 0

45102 BLOCKS REMAINING (STARTING AT 19648)
SUBCHANNEL 03 (TRACKS, BLOCKS/TRACK) ?
```

Please note that in the above example, subchannel 3 was not used, reserved, or otherwise expended for the disk cache. The only cost in using a disk cache is the actual disk space used. The following example defines immediate reporting for a CS/80 CTD not integrated into a disk drive:

```
DEVICE (MODEL, HP-IB ADDRESS, UNIT, VOLUME) ?
CTD, 1, 0, 0, I
```

The subchannel definitions for the current disk may be terminated before all disk blocks are used by entering /E. After you enter /E or after all blocks are used, the generator prompts as follows:

```
DEVICE (MODEL, HP-IB, ADDRESS, UNIT, VOLUME) ?
```

At this time, a new disk that is on the same HP-IB as the system disk may be defined. When there are no more disks to define, enter /E to the above prompt to end the subchannel definition phase. Note that all subchannels defined at this time are subchannels of the system disk EQT (usually EQT 1).

STEP 6 - SYSTEM SUBCHNL?

Enter the system disk subchannel number. (Be sure to specify this same subchannel when defining the LU 2 entry in the Device Reference Table.) This is the subchannel on which the absolute code will reside for execution. The entry can be any one of the disk subchannels (with ≤ 1600 tracks) that was defined above, except an HP 9895 subchannel or a subchannel greater than 32. The total number of tracks on the system subchannel plus the number of tracks on the auxiliary subchannel must be ≤ 1600 tracks.

STEP 7 - AUX DISK (YES OR NO OR # OF TRKS)?

Enter YES to indicate that an auxiliary disk is to exist on the same controller select code as the system disk. A YES response causes the generator to request the subchannel number for the auxiliary disk:

AUX DISK SUBCHNL?

Enter the number of the auxiliary disk subchannel (with ≤ 1600 tracks). The total number of tracks on the system subchannel and the auxiliary disk must be less than or equal to 1600 tracks.

Or enter NO to indicate that there is no auxiliary disk.

Or enter a numeric value (decimal) to indicate that an auxiliary disk with a track count of the specified value is to exist on a controller select code other than the system disk controller select code. In this case, the generator will request the model number of the auxiliary disk:

DISK MODEL #?

Enter any valid number for the auxiliary disk subchannel or enter CS80. If CS80 is entered, the generator will request the number of blocks per track. Enter the number of blocks/track of the CS/80 disk being used.

An auxiliary disk is not required, but is sometimes useful for:

- Large file edits
- More type 6 (SAVE PROGRAM) files; see the *RTE-6/VM Terminal User's Reference Manual*
- More general file space
- Decreasing swapping time, because system tracks are allocated from the top of the available track list downward (that is, from the last available track towards the first available track in contiguous chunks). This feature permits the auxiliary disk to be used as a "swapping disk". Because LU 3 can be on another disk or a controller of a different type, head movement is reduced, thus optimizing a system for speed.

STEP 8 - TBG SELECT CODE?

Enter the octal select code of the Time Base Generator card. Note that there will be no driver, LU number, or EQT number associated with the TBG card.

STEP 9 - PRIV. INT. SELECT CODE?

Enter the octal select code of the Privileged Interrupt Fence card. This card follows the last privileged interrupt card in the card cage. Enter a zero if there is no such card on the system. Note that there will be no driver, LU number, or EQT number associated with the Privileged Interrupt card. For more information regarding privileged interrupts, see the section on privileged interrupt processing in the *RTE Operating System Driver Writing Manual*.

STEP 10 - MEM. RES. ACCESS TABLE AREA II?

Enter YES if Table Area II and the System Driver Area are to be included in the user map for access by memory-resident programs.

Enter NO to deny memory-resident programs access to Table Area II in the memory-resident program map.

The answer to this question will affect the way the System builds the logical map of the memory-resident area. Figure 2-2 shows the memory-resident maps in either case. Note that a NO response to this question will leave more space in the memory-resident map. This additional space can be used to make programs memory-resident that will not fit otherwise. However, a YES response is required if memory-resident programs:

- Perform EXEC I/O calls to drivers located in the System Driver Area that do not do their own mapping. (These drivers will have the S parameter specified in the equipment table definition of their devices.) Refer to Appendix B for a discussion of the System Driver Area.
- Access modules in System Table Area II. Table Area II contains the system tables, ID segments, some system entry points, and all type 13 modules. Refer to Appendix B for a description of this area.
- Normally default to type 2 or 3 (Real-Time or Background disk-resident) programs. Because programs that must run as type 2 or 3 access Table Area II or SDA, they must have access to these areas if generated as a memory-resident (type 1). Many HP support modules that are defaulted to type 2 or 3 programs (for example, SPOUT) have this requirement.

If you are unsure as to the requirements of your memory-resident modules, it is suggested that you respond YES to the above question. Refer to Appendix B for a more detailed discussion of the Memory-Resident map.

STEP 11 - RT MEMORY LOCK?

Enter YES to permit any real-time program to lock itself into its partition (disallows swapping of that program if it requests a memory lock).

Enter NO to deny real-time memory locking.

STEP 12 - BG MEMORY LOCK?

Enter YES to permit any background program to lock itself into its partition (disallows swapping of that program).

Note The SWTCH program requires the BG memory lock capability.

Enter NO to deny background memory locking.

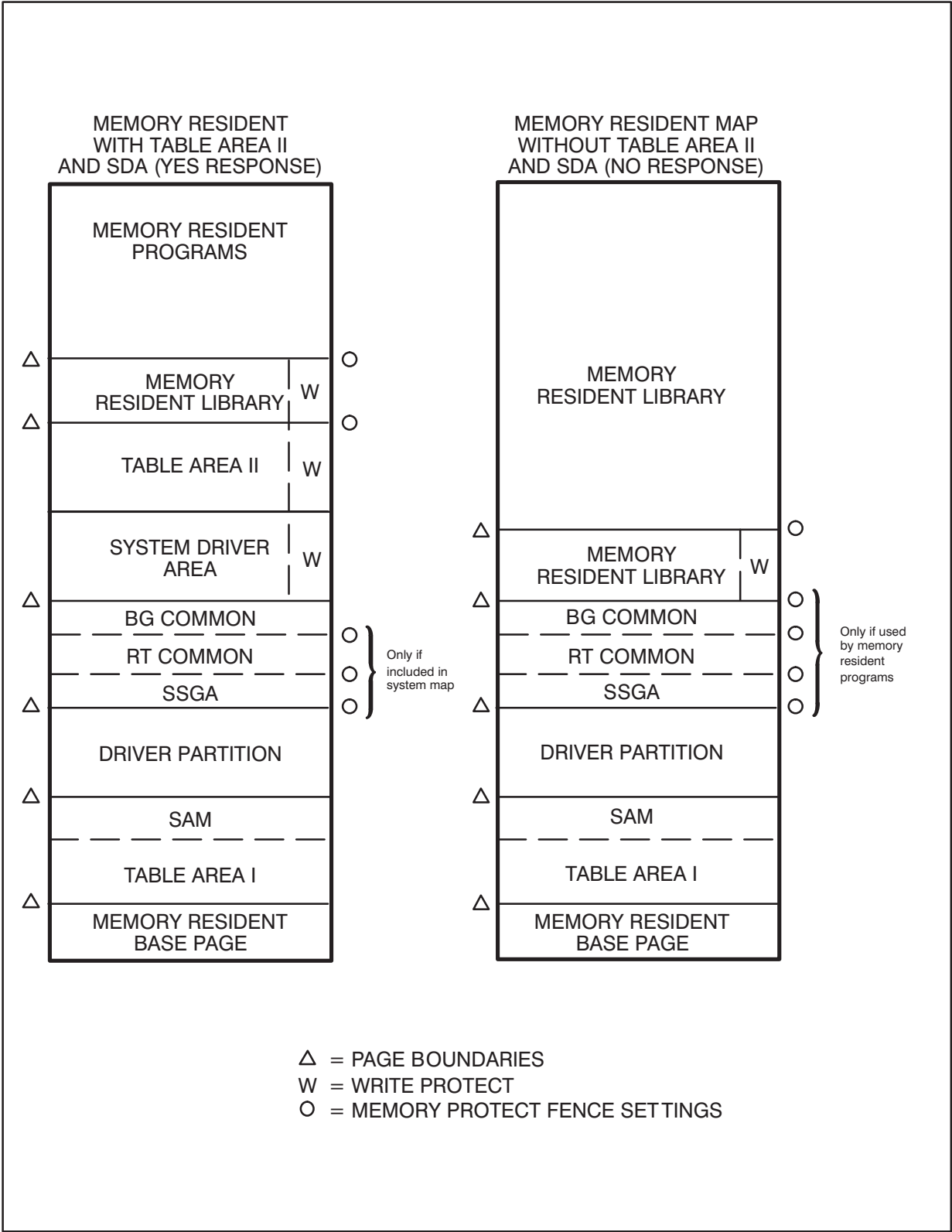


Figure 2-2. Memory-Resident Maps

STEP 13 - SWAP DELAY?

Enter a decimal value in the range of 0 through 255. This value represents tens of milliseconds. The swap delay value specified is applicable to all swappable programs.

Swapping is necessary in a multiprogrammed environment where programs must compete with each other for system resources (CPU time, partition space, buffer memory, disk space, and so forth). If a program cannot have a resource (for whatever reason), it is suspended until that resource is available; if that program is disk-resident, then its partition may be used by another program. If so, then the first program's memory partition is copied to a disk track ("rolled out") where it is saved in its uncompleted and modified state, and the other program is brought in from the disk. During a swap, a check is made to see if work can be done by another program already residing in main memory. I/O operations continue concurrently.

Because a "swap" can take as much as half a second, during which time that partition is idle, and because the DCPC cycles slow down the CPU (because swaps use direct memory access), it is important to minimize needless swapping.

The "swap delay" parameter is one way to control swapping. It is only useful when you have programs that run on a time-scheduled basis or that schedule themselves with offset, waiting for something. If the current partition resident program is waiting for a particular time of day, if it has a higher priority than other programs that are waiting to execute in that partition, and if the time remaining is less than or equal to the current swap delay, then the current resident remains in the partition (it is not swapped out), and that partition stays unchanged until the time arrives for its resident program to run.

The amount of time required for a program to swap depends on several factors: type of disk drive, program length, whether or not the program is segmented, and whether or not the program uses EMA. A value of 50 is recommended for the swap delay for all RTE-6/VM supported disks.

Note, however, if the value 50 is entered, a program will not be swapped if the program:

1. resides in a disk-resident area,
2. is in the time list,
3. has priority over its competitor for that memory area,
4. is to run within 500 milliseconds (0.5 seconds) of the current time.

STEP 14 - MEM SIZE?

Enter a decimal value (minimum 64) indicating the total number of memory pages (1 page = 1K words = 2K bytes) in your system. For example, 64 for 64K, 128 for 128K, and so forth (maximum 1024K).

STEP 15 - BOOT FILE NAMR?

Enter the description of a file to be created by the generator or the LU number of a device that will output the bootstrap loader that is produced by the generator. The format is:

```
filename[:security code[:cartridge label]] [,R]
```

Enter a zero if no bootstrap loader is to be produced.

'R' has same meaning as in List File response.

RTE is bootstrapped into memory by a program located on the first two sectors (for HP 7900/7905/7920/7925 disks) or the first four sectors (for HP 7906H/7920H/7925H and CS/80 disks) of the System Subchannel (LU 2) called the boot extension. The boot extension is responsible for reading a portion of the operating system into memory and starting up the system.

For non-CS/80 systems, there are two ways of loading the boot extension into memory. First, the boot file produced by the generator can be used to activate it. This requires that the boot file be read into memory (via minicartridge, magnetic tape, or paper tape) every time the system is bootstrapped.

The second method of bootstrapping the system uses the disk loader ROM. The ROM is activated via the front panel switches (or the optional RPL feature at power up). If the ROM is used, the generator boot file is not required. The ROM requires the boot extension to be located in specific regions of the disk (disk unit 0, head 0, 1, 2, or 3, cylinder 0; for RPL-head 0 or 2 only). This should be taken into account during the disk planning process. Refer to the *RTE-6/VM System Manager's Manual* for details on disk planning and ROM usage.

CS/80 systems may also be bootstrapped via the boot file or the ROM Disk Loader. The details of this process differ from non-CS/80 systems.

The CS/80 boot file produced by the generator may be read into memory as in non-CS/80 systems. However, when the CS/80 boot file is run, it reads the system into memory directly, bypassing the boot extension.

The boot extension may be loaded by the ROM Disk Loader. The loader ROM requires that two block (256-word) boot extensions be located in specific regions of the disk. These regions are:

```
HP-IB address = 0
unit = 0-7
volume = 0
starting block = 0
```

In the generator, define the system subchannel such that it starts at one of these regions. In this case, the program SWTCH will place the new operating system at the start of this subchannel. The first two blocks of the system is the boot extension.

When the ROM has loaded the boot extension from one of these regions, control is passed to the boot extension which reads the system from the system subchannel.

Program Input Phase

STEP 16 - PROG INPUT PHASE:

The generator displays this message to announce the beginning of the Program Input Phase. During this phase, commands are entered that direct the entry of modules into the system. Refer to the example given in Figure 2-3 as you follow the steps in this phase.

The commands entered in this phase control mapping reports, linkage, symbol Table listings, and inform the generator which program files to relocate. Note, however, that the actual relocation is not done during this phase.

Terminate the Program Input Phase by entering the input data terminator, /E.

```
PROGRAM INPUT PHASE COMMANDS
```

STEP 16a - MAP Command

Use the MAP command to obtain memory mapping information during the relocation process. Maps describing module names and/or entry points and their boundary addresses may be displayed. Base page linkage information can also be included in the displayed map. The command format is (note that multiple options must be separated by commas):

```
MAP      MODULES  
        GLOBALS  
        LINKS  
        OFF  
        ALL
```

where:

- MODULES requests a map of the relocated modules by name.
- GLOBALS requests a map of each relocated module's entry points.
- LINKS requests a map that reports base page linkage addresses.
- OFF disables mapping (turns all mapping display options off).
- ALL requests a report of modules, globals, and links.

PROG INPUT PHASE:

(output by generator at start of Program Input Phase)

—

(generator prompt issued throughout Program and Parameter Input Phases)

- 16a Enter mapping options using the MAP command. This command may be reentered at any time during this phase to change mapping options.

(MAP { MODULES
 GLOBALs
 LINKS
 OFF
 ALL ; may have combinations,
 separated by commas })

MAP ALL [,.....optional.....]

—

- 16b Enter linkage control options using the LINKS IN command. The LINKS IN command may be reentered at any time during this phase to change linkage options.

(LINKS IN { BASE
 CURRENT })

LINKS IN CURRENT

(specify BASE or CURRENT)

—

- 16c Enter the LIB command, which includes or excludes modules from the system library generated at the end of generation. The command may be entered as often as you wish.

({ LIB
 or
 NOLIB })

Figure 2-3. Sample Program Input Phase Worksheet

16d) Enter the RELOCATE commands (with optional MAP, LINKS IN, and DISPLAY commands)

REL	,%CR6S1::GN	_____	(REL [(name)] ,filename [: sc [: cartridge label]])
REL	,%CR6S2::GN	_____	(RT6GN responds with a— after each user input)
REL	,%CR6S3::GN	_____	
REL	,%\$CNFG::GN	_____	
REL	*DRIVERS	_____	
REL	,%DVM33::GN	_____	
REL	,%DVA05::GN	_____	
REL	,%6DV37::GN	_____	
REL	,%DVB12::GN	_____	
REL	,%DVR23::GN	_____	
REL	,%6DP43::GN	_____	
	MAP OFF, MODULES	_____	
REL	, \$FNDLB::GN	_____	
REL	, \$MATH::GN	_____	
REL	, \$FLIB::GN	_____	
REL	, \$FOLDF::GN	_____	
REL	,%BMPG3::GN	_____	
REL	, \$SYLB6::GN	_____	
REL	,%DECAR::GN	_____	

Figure 2-3. Sample Program Input Phase Worksheet (continued)

16d

REL	,	\$	LDRLN	::	GN	_____	(REL [(name)] ,filename [: sc [: cartridge label]])
REL	,	\$	MLSLB	::	GN	_____	(RT6GN responds with a— after each user input)
REL	,	\$	IB6A	::	GN	_____	
REL						_____	
REL						_____	
REL	,	\$	VLB6A	::	GN	_____	
REL	,	%	DBUGR	::	GN	_____	
REL	,	%	BMPG1	::	GN	_____	
REL	,	%	BMPG2	::	GN	_____	
REL	,	%	SMON1	::	GN	_____	
REL	,	%	SMON2	::	GN	_____	
REL	,	%	SPOL1	::	GN	_____	
REL	,	%	SPOL2	::	GN	_____	
REL	,	%	ACCTS	::	GN	_____	
REL			LINKS IN CURRENT			_____	
REL	,	%	\$LDR	::	GN	_____	
REL	,	%	WHZAT	::	GN	_____	
REL	,	%	LGTAT	::	GN	_____	
REL	,	%	T5IDM	::	GN	_____	
REL						_____	

Figure 2-3. Sample Program Input Phase Worksheet (continued)

REL ,% CSERR : : GN _____
REL ,% 4AUTR : : GN _____
REL ,% SSTCH : : GN _____
REL , \$ ACCLB : : GN _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____
REL _____

(REL [(name)] ,filename [: sc [: cartridge label]])
(RT6GN responds with a— after each user input)

Figure 2-3. Sample Program Input Phase Worksheet (continued)

16e Enter DISPLAY command options to obtain symbol table information, if necessary .

$$\left(\text{DISPLAY} \left\{ \begin{array}{l} \text{TABLE} \\ \text{UNDEFS} [\text{,TR}] \\ \text{symbol name} \end{array} \right. \right)$$

DISPLAY UNDEFS [optional] (enter either TABLE, UNDEFS, or symbol name; UNDEFS optionally followed by a TR)

16f Enter /E to terminate this phase.

Figure 2-3. Sample Program Input Phase Worksheet (continued)

If the MAP command is omitted, MAP OFF is assumed by the Online Generator.

If you enter the MAP command, you must specify at least one of the mapping options. You may specify any combination of options, in any order, separated by commas. The options specified will be processed from left to right. For example:

```
MAP MODULES, LINKS
MAP OFF
MAP LINKS, GLOBALS
MAP OFF, MODULES    (disables all options, re-enables modules option)
MAP ALL
```

Once invoked, the MAP option remains in effect for all relocatable modules declared in subsequent RELOCATE commands or until it is disabled (MAP OFF). This command may be re-entered at any time during the Program Input Phase to change options as desired.

Because the MAP command may be entered at any time during the Program Input Phase to change mapping options, a module appended to another module during relocation may have different mapping options. Generally, it is wise to use the MAP ALL option so that this information (which later could be helpful in solving generation problems) will appear in the generation listing.

During program relocation all modules will be mapped as indicated for the programs main (that is, subroutines will be mapped as per the map options in effect when the main was RELOCated). System modules, however, will be mapped as per the options in effect when they were RELOCated.

STEP 16b - LINKS IN Command

Use this command to inform the generator whether linkages are to be via the base page only or via current page and base page. If the LINKS IN CURRENT command is not entered, the generator assumes only base page linkage is to be used. The command format is:

```
LINKS IN    BASE
           CURRENT
```

Once invoked, the LINKS IN command remains in effect for modules specified through subsequent RELOCATE commands. The LINKS IN command may be re-entered at any time during the Program Input Phase to change the linkage mode.

Due to the addressing architecture of the HP 1000 Computers, instructions may only directly access data located in the current instruction page or in the program's base page (page 0). To access areas outside these two regions, programs must make use of locations in the current page or base page containing the address of the desired data. These locations are called links. Programs make indirect references through links to access data or instructions outside their directly addressable area. The generator will automatically create links in two circumstances:

- References to external entry points. The generator will automatically create a link for each external entry point referenced in a program (unless it is a DEF to an external with an initial offset, in which case it is direct). These links are always located in the base page.
- References to data/instructions located outside the current page. Because the relocation of programs in memory depends on many factors (for example, program type, size, common, and so forth), it would be very difficult for a program to make provisions for linking and still make efficient use of memory. Therefore, the generator does this automatically by allocating a link whenever an instruction makes a direct reference outside the current page.

In all cases where links are generated, the referencing instruction is modified to make an indirect reference through the link. Because references to external entry points always use base page links, the LINKS IN command affects the second type of reference described above. An example of base page linking (LINKS IN BASE) is shown in Figure 2-4. In this example, two instructions reference areas outside their pages. When the generator detects this condition, it will allocate base page links and modify the instructions to use the links.

An example of current page linking (LINKS IN CURRENT) is shown in Figure 2-5. Here links are allocated in the same page as the reference instruction. Current page links are allocated in two areas: immediately preceding the program and immediately following the program.

The LINKS IN CURRENT command is used to reduce the number of base page links and consequently to conserve available words on the base page. Links are put in current page only on the first and last pages of a module. Program page crossings may cause indirect links to be generated on the base page if there are no current page link areas in the same page as the reference instruction.

The LINKS IN CURRENT command will probably be the option used most frequently. The LINKS IN BASE command is generally used only when memory space is critical or when you need to reduce program size by a minimal number of words; (for example, if a program is slightly too large for the partition in which you want it to run).

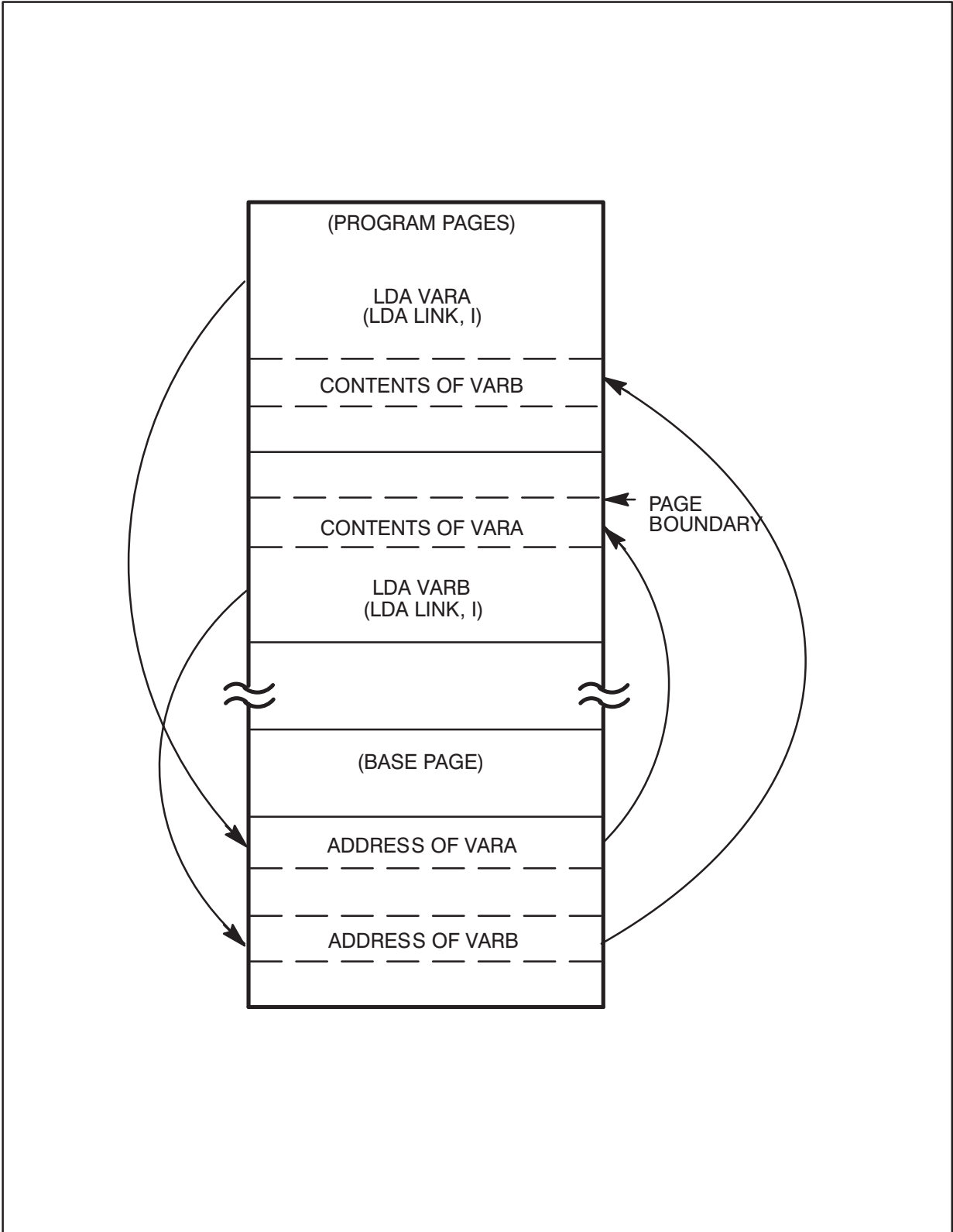


Figure 2-4. Base Page Linking

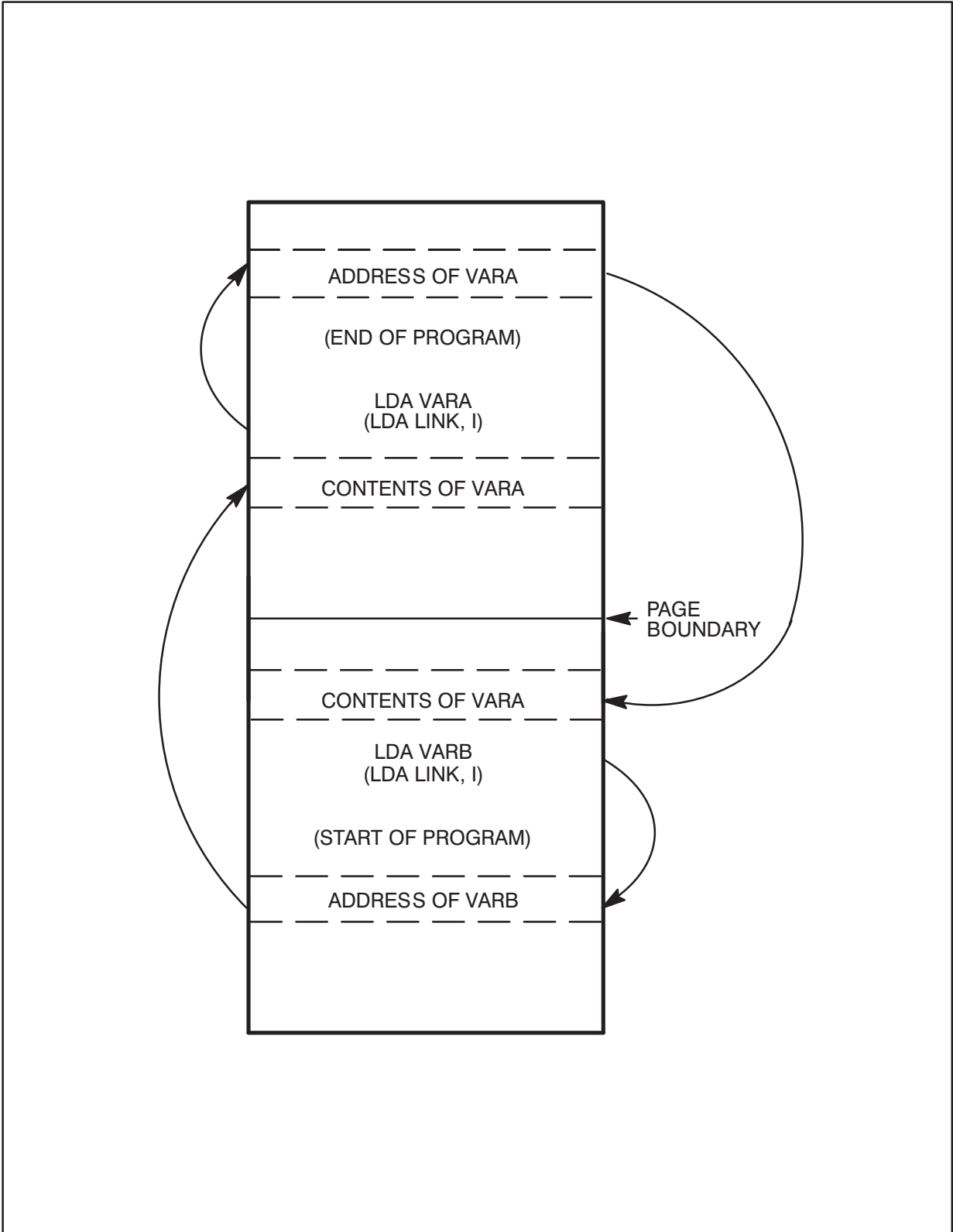


Figure 2-5. Current Page Linking

STEP 16c - LIB/NOLIB Command

This command includes or excludes from the system library generated at the end of generation. Default is LIB (include). The generator, however, will not put routines in the library that have entry point names greater than five characters long (the index for the library only handles five character names). If you have a library file that has a mixture of long and short entry point names, you may want to exclude all of its routines from the library so that you can replace the library file as one unit. Command format is:

```
LIB          * include in Library
or
NOLIB       * exclude from Library
```

This command is in effect as a default until it is re-entered. The LIB/NOLIB command may be entered as often as you like.

STEP 16d - RELOCATE Command

Enter the RELOCATE command to specify which modules are to be included in the generation. In the following command format, the commands in {} brackets at the beginning indicate that either of the commands must be picked but that entering one of the commands at the end in [] brackets is optional. The command format is (note that a comma must not precede the file descriptor):

$$\left\{ \begin{array}{l} \text{RELOCATE} \\ \text{RELOCATEC} \\ \text{REL} \\ \text{RELC} \end{array} \right\} [(name)] , filedescriptor \left[\begin{array}{l} , \text{LIB} \\ , \text{NOLIB} \end{array} \right]$$

where:

name is the program name of a specific module to be relocated. The name must be enclosed in parentheses. No comma can be placed between the command and the module name. This is an optional parameter; if it is omitted, the entire contents of the file is relocated.

filedescriptor is the name of the file that contains the module or modules to be relocated.

The RELOCATE command directs the generator to read and unconditionally relocate program modules (during the Program Loading Phase).

RELOCATEC and RELC

Normally the generator keeps the relocatable files open for the duration of the generation, causing quicker execution. Heavy usage of D.RTR to repeatedly open and close files is also eliminated. If a problem develops for any files, use the RELC or RELOCATEC command. Files named in this way will be opened only when accessed.

If *name* is omitted, all modules in the file specified by *filedescriptor* are relocated.

If *name* is specified, all other modules in the named file are ignored; that is, preceding modules in the file are skipped, and the file scan terminates following relocation of the named module.

LIB and NOLIB

The LIB and NOLIB command specify the condition for files being considered for Library inclusion. The LIB and NOLIB options on the RELOCATE command override the default for this file only. See the discussion of LIB/NOLIB commands for more information.

Load order has little importance, except that mains must precede their segments and the OS partition resident modules must be in numerical order (usually this is one file, so it is hard to violate). Modules are loaded first by type, then by a best fit algorithm. This optimizes the use of driver partitions and system space with minimum base page required. The only other place load order appears is in the disk-resident programs within a type. When you use the RELOCATE command, the specification of a main program module must precede that of the program's segments.

STEP 16e - DISPLAY Command

You can invoke the DISPLAY command to list, on the user's console and in the list file, the contents of the symbol table, the names of undefined external symbols, or the presence of a specific symbol. The DISPLAY command format is:

```
TABLE
DISPLAY UNDEFS [ , TR]
        symbol_name
```

where:

TABLE	requests a list of the entry points contained in the symbol table.
UNDEFS [, TR]	requests a list of any undefined symbols (unresolved external references). TR is an optional parameter (only used with the UNDEFS option) that allows a transfer to the user console if any undefined symbols exist; otherwise, the generator proceeds.
<i>symbol_name</i>	requests the generator to search the symbol table for a specific symbol. "UNKNOWN" is printed if the symbol is not found.

If you enter a DISPLAY UNDEFS,TR command before exiting from the Program Input Phase, you will have the opportunity to satisfy, through modules specified in additional RELOCATE commands, any undefined externals that may exist.

Note The generator automatically lists all undefined symbols (in the list file only) after exiting from the Program Input Phase. These symbols remain undefined unless changed during the CHANGE ENT's phase. During program relocation, all instructions referencing undefined symbols will be replaced with a NOP (no operation).

Parameter Input Phase

STEP 17 - PARAMETERS

This message announces the beginning of the Parameter Input Phase.

During this phase you can modify the type, priority, and execution interval, (all specified at the beginning of its source code) of any of the programs specified during the Program Input Phase. You can also define or change entry point symbols to have absolute or RP values. Refer to the example given in Figure 2-6 as you follow the steps in this phase. Refer to Appendix B for a discussion of the RTE-6/VM memory configuration and the various components that comprise the system.

Enter the parameter string in the following general form:

name , *type* [, *priority* [, *execution_interval*]]
OR
name , SAVE=*nnn*

where:

- name* is the name of the program.
- type*
 - 0 – system program or driver.
 - 1 – memory-resident.
 - 2 – real-time disk-resident.
 - 3 – background disk-resident.
 - 4 – background disk-resident without Table Area II access.
 - 5 – program segment (RT or EB).
 - 6 – library, reentrant or privileged subroutines (note that if called by a memory-resident program, these routines are relocated into the Memory-Resident Library. Aside from memory-resident loading they are treated as type 7.)or,
 - extended background programs (EB). Extended background programs are type 6 modules that have transfer addresses (that is, they are mains).
- 7 – library, utility subroutines (appended to calling program and stored in the relocatable library of the disk).
- 8 – if program is a main, it is deleted from the system, or, if program is a subroutine, it is used to satisfy any external references during generation; however, it is not stored in the relocatable library area of the disk.
- 13 – Table Area II system entry points that contain pointers and system values that are defined at generation. Table Area II is a combination of these relocated type 13 modules and system tables that are built by the generator.

- 14 – Same as type 6, but automatically included in the Memory-Resident Library. Aside from memory-resident loading, they are treated as type 7. This type is not recommended as there is no way to call such routines.
- 15 – Table Area I system entry points that must be included in the system and user maps. Table Area I is a combination of these relocated type 15 modules and I/O tables that are built by the generator.
- 30 – Subsystem Global Area (SSGA).

Note

In some cases the primary type code (that is, 1, 2, 3, 4 and 6) may be expanded by adding 8, 16, 24, or 128 to the number. These expanded types allow such features as: access to real-time COMMON by background programs, access to SSGA, and a do not duplicate indicator. See Table 2-1 for a summary of program types.

The primary type code of a main program and its segments must not be changed because the relationship between the program and its segments would be lost.

priority is the program priority in the range of 1 through 32767 (1 is the highest priority).

execution_interval is a list of six parameters specifying the times the program should be scheduled for execution once it is turned on. The first two values (decimal) specify the execution interval, and the last four (decimal) specify an initial absolute starting time. The parameters are:

```
[res [ , mult [ , hour , min , sec , 10msec ] ] ]
```

where:

res resolution code (0 to 4):

- 0 – no execution interval
- 1 – tens of milliseconds
- 2 – seconds
- 3 – minutes
- 4 – hours

mult execution interval multiple (0 to 4095); an integer that specifies the time interval between program runs. 0 indicates that the program is to run once.

Initial Absolute Starting Time (four values):

- hour*, hours (0 to 23)
- min*, minutes (0 to 59)
- sec*, seconds (0 to 59)
- 10msec* tens of milliseconds (0 to 99).

If you follow the rules given below, the generator will find and correctly reserve space for all save areas referenced by the main, renamed when executed. (No duplication.) Thus, PROG will never be renamed to PROxx (where xx is the terminal's system LU) when run.

Terminate the parameter entry list using the input data terminator, /E.

At parameter time the syntax *name,SAVE=nnn*[B] is recognized. The new relocatable can specify 'SAVE' areas. There are data areas that the program wants to keep around during the program run, although they are referred to by only one or more segments that get overlayed (that is, we want an area in the main set aside for segment temps and data). The user specifies save area (primarily in his FTN77 program and subs) in one of two ways:

1. By declaring a common block to be a save area (that may be shared by other subroutines, the main, and segments).

or

2. By declaring variables to be in the save area (that is private to the declaring module or subroutine).

If you follow the rules given below, the generator will find and correctly reserve space for all save area referenced by the main, its subroutines, and the segment mains (that is, those modules of type 5 that carry the segment names). It will not, however, find any save area that is referenced only by subroutines called only from segments. Two solutions are available:

1. GEN or LOD records of the form: 'If,GEN6,SAVE=nnn' may appear in either the main or the segment main. In the main, the GEN/LOD record overrides the generator calculation for all segment save area. (The generator will add save area for the main and its subs to this number.) In a segment, the GEN/LOD record overrides the generator save area calculation for that segment only.
2. The 'Parameter Time' statement: '*name,SAVE=nnn*' overrides the generator save area calculation. Again the save area referenced by the main or its subs will be added to this number. (Declaring save area in the main or its subs is not needed in the RTE-6/VM system and is included only for compatibility with FTN77.) If the new save area is smaller than calculated (or previously entered), a generator warning is given, along with the old value (the new one is set).

In order to allow the generator to calculate the save area as stated above, the following rules must be followed. Failure to follow these rules may result in too much area being set aside.

RULE* No subroutine of type 2, 3, 4, or 6 that references a named save area may be loaded between the main and its segments. (This should be easy to follow as most subroutines are type 7 and most type 6 files do not refer to labeled commons. If you have one that does, just load it before the main or after the last segment.)

The generator has an additional feature that applies to memory and disk-resident programs. During the Parameter Input Phase, one program can be scheduled to execute automatically whenever the RTE system is booted from the system disk. This is accomplished by adding the value 80 to the program's type code. For example, if PROG is originally a type 2 program (real-time disk-resident), it can be changed to:

PROG, 82

This entry causes PROG to be automatically scheduled each time the system is booted from the disk and after the File Manager is scheduled. If more than one program is assigned for automatic scheduling, only the last one entered is recognized.

It is also possible to disable the File Manager's automatic program renaming feature. Refer to the *RTE-6/VM Programmer's Reference Manual* for a discussion of program renaming under the File Manager. If the value 128 is added to PROG's type code, PROG will never be renamed when executed. (No duplication.) Thus PROG will never be renamed to PROxx (where xx is the terminal's system LU) when run.

Terminate the parameter entry list using the input data terminator, /E.

Parameter Input Phase

(modify type, priority, and execution interval, or the ENT (entry) record of any of the programs specified during the Program Input Phase)

17 **PARAMETERS**

(output by generator at start of Parameter Input Phase)

(generator prompt)

WHZAT, 1, 41 , _____ , _____
LGAT, 2, 80 , _____ , _____
PRMPT, 1, 10 , _____ , _____
R\$PN\$, 1, 10 , _____ , _____
LOGON, 3, 45 , _____ , _____
LGOFF, 3, 91 , _____ , _____
SWTCH , 132 , _____ , _____
/E , _____ , _____ , _____

(name, Type [,priority [,execution interval]])

(terminate your final entry with a /E)

Figure 2-6. Sample Parameter Input Phase Worksheet

18 CHANGE ENTS?

(change/create entry points?)

(generator prompt)

(entry, type - AB or RP, value)

(terminate your final entry with a /E)

<u>CLRIO</u> , <u>RP</u> , <u>2001</u>	_____	_____	_____	_____
<u>TR</u> , <u>1</u> <u>F</u> ^ <u>FFP</u>	_____	_____	_____	_____
⋮				
<u>TR</u> , <u>1</u> <u>F</u> ^ <u>FPB</u>	_____	_____	_____	_____
⋮				
<u>TR</u> , <u>1</u> <u>F</u> ^ <u>SIS</u>	_____	_____	_____	_____
⋮				
<u>TR</u> , <u>1</u> <u>F</u> ^ <u>VIS</u>	_____	_____	_____	_____
⋮				
<u>TR</u> , <u>1</u> <u>RT6VM</u>	_____	_____	_____	_____
⋮				
<u>TR</u> , <u>1</u> <u>RT60S</u>	_____	_____	_____	_____
<u>/E</u>	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Figure 2-6. Sample Parameter Input Phase Worksheet (continued)

Table 2-1. Summary of RTE-6/VM Program Types

PROGRAM CATEGORY	EXECUTABLE PROGRAMS	PROGRAM TYPE	SYSTEM COMMON ACCESS					EMA ALLOWED	LOAD POINT		MEMORY PROTECT FENCE	
			REAL-TIME COMMON	BACKGROUND COMMON	SSGA	RT COMMON & SSGA	BG COMMON & SSGA		NO COMMON DECLARED	SOME COMMON DECLARED	NO COMMON DECLARED	SOME COMMON DECLARED
MEMORY RESIDENT*	1	✓						L ₁	L ₁	F ₅	F ₃	
	9		✓					L ₁	L ₁	F ₅	F ₄	
	17			✓				L ₁	L ₁	F ₁	F ₁	
	17				✓			L ₁	L ₁	F ₁	F ₁	
	25					✓		L ₁	L ₁	F ₁	F ₁	
REAL TIME DISK RESIDENT*	2	✓					✓	L ₄	L ₄	F ₆	F ₃	
	10		✓				✓	L ₄	L ₄	F ₆	F ₄	
	18			✓			✓	L ₄	L ₄	F ₁	F ₁	
	18				✓		✓	L ₄	L ₄	F ₁	F ₁	
	26					✓	✓	L ₄	L ₄	F ₁	F ₁	
BACKGROUND DISK RESIDENT*††	3		✓				✓	L ₄	L ₄	F ₆	F ₄	
	11	✓					✓	L ₄	L ₄	F ₆	F ₃	
	19			✓			✓	L ₄	L ₄	F ₁	F ₁	
	19				✓		✓	L ₄	L ₄	F ₁	F ₁	
	27				✓		✓	L ₄	L ₄	F ₁	F ₁	
LARGE BACKGROUND DISK RESIDENT WITHOUT TABLE AREA II ACCESS*††	4		✓				✓	L ₃	L ₂	F ₂	F ₄	
	12	✓					✓	L ₃	L ₂	F ₂	F ₃	
	20			✓			✓	L ₂	L ₂	F ₁	F ₁	
	20				✓		✓	L ₂	L ₂	F ₁	F ₁	
	28				✓		✓	L ₂	L ₂	F ₁	F ₁	
EXTENDED BACKGROUND DISK RESIDENT WITHOUT TABLE I, II, COMMON, OR DRIVER ACCESS	6						✓	L ₅	N/A	F ₇	N/A	

*ADD 80 TO ANY OF THESE TYPES TO SPECIFY AUTOMATIC SCHEDULING AT SYSTEM STARTUP.

††ADD 128 TO ANY OF THESE TYPES TO SPECIFY THAT THE PROGRAM CANNOT BE DUPLICATED.

Table 2-1. Summary of RTE-6/VM Program Types (continued)

SPECIAL PROGRAMS	TYPE	DESCRIPTION
SYSTEM MODULE	0	MODULE TO BE LOADED WITH RESIDENT SYSTEM. PART OF HP-SUPPLIED SYSTEM, USER-WRITTEN DRIVER, ETC.
PROGRAM SEGMENT	5	OVERLAYABLE MODULE USED WITH DISK RESIDENT MAIN. COMMON TYPE, MEMORY-PROTECT FENCE ADDR. AND LOAD PT. DETERMINED BY MAIN.
PROGRAM	6	TYPE 6 PROGRAMS CANNOT ACCESS SYSTEM COMMON.
SUBROUTINE	6	RELOCATED INTO RESIDENT LIBRARY IF CALLED BY ANY MEMORY RESIDENT PROGRAM (ALWAYS BECOME 7'S) AT GEN TIME.
SUBROUTINE	7	STORED ON DISK IN RELOCATABLE FORM. ANY PROGRAM CALLING A TYPE 7 HAS A COPY APPENDED TO IT.
SUBROUTINE	8	APPENDED TO CALLING PROGRAM. ALL TYPE 8 RELOCATABLES ARE DISCARDED AFTER GENERATION.
TABLE AREA II	13	MODULE TO BE LOADED WITH RESIDENT SYSTEM IN TABLE AREA II. PART OF HP-SUPPLIED SYSTEM, USER-WRITTEN TABLES, ETC.
SUBROUTINE	14	RELOCATED INTO RESIDENT LIBRARY, WHETHER CALLED OR NOT (ALWAYS BECOME TYPE 7).
TABLE AREA I	15	MODULE TO BE LOADED WITH RESIDENT SYSTEM IN TABLE AREA I. PART OF HP-SUPPLIED SYSTEM, USER-WRITTEN TABLES, ETC.
SSGA MODULE	30	RELOCATED INTO SUBSYSTEM GLOBAL AREA OF SYSTEM. ACCESSIBLE ONLY TO PROGRAMS OF PROPER TYPE (ABOVE)

LOAD POINT & FENCE DEFINITIONS

L₁ — NEXT AVAILABLE LOCATION DURING LOAD OF RESIDENTS PLUS 2

L₂ — 11TH WORD OF NEXT PAGE AFTER COMMON AREAS

L₃ — 11TH WORD OF NEXT PAGE AFTER DRIVER PARTITION

L₄ — 11TH WORD OF NEXT PAGE AFTER TABLE AREA II

L₅ — 11TH WORD OF NEXT PAGE AFTER BASE PAGE.

F₁ — FIRST WORD OF SSGA

F₂ — FIRST WORD OF PAGE FOLLOWING DRIVER PARTITION

F₃ — FIRST WORD OF RT COMMON

F₄ — FIRST WORD OF BG COMMON

F₅ — FIRST WORD OF RESIDENT PROGRAM AREA

F₆ — FIRST WORD OF PAGE FOLLOWING TABLE AREA II

F₇ — FIRST WORD OF PAGE FOLLOWING BASE PAGE.

STEP 18 - CHANGE ENTS?

When the generator outputs this query, you can enter your changes to the ENT records. Type 3 (absolute) and type 4 (replace) ENT records can be created and/or modified. Enter your changes in the following form:

```
entry , type , value [ , value2 [ , value3 [ , value4 ] ] ]
```

where:

entry is the entry point name.

type is the entry point type; AB = absolute, RP = replace.

value is the entry point instruction value. Octal numbers are assumed unless the letter "D" (denotes decimal) follows the number.

value2,3,4 are additional values to be used only if it is to be a multi-word RP.

When an entry point is redefined to the absolute (AB) type, the address of that entry point will be replaced by the absolute value declared. All instructions that reference this entry point will use the new absolute address specified.

For example:

```
UDEV1 , AB , 30
```

will declare entry point UDEV1 absolute with a value of 30 octal. This implies that the instruction OTA UDEV1 will be replaced with OTA 30.

When an entry point is redefined to the replace type = RP, the loader will replace each reference to it with the number declared in the value parameter. You can then create type 4 entry records that are microcode replacement values. Then, a JSB instruction referencing an external entry point is intercepted by an RTE Loader and RT6GN and changed to a value that has been defined by the RP command. This allows the elimination of software subroutines by replacing subroutine entry points with microcode instructions.

For example:

```
.FMP , RP , 105040
```

causes each JSB .FMP instruction (floating point multiply) to be changed to the microcode floating point multiply instruction (105040).

The value of EMA symbols (entry points) cannot be modified.

The microcode replacement values to be generated into the system will depend on your hardware configuration. Refer to the *RTE-6/VM System Manager's Manual* and other appropriate manuals for information regarding optional HP microcode routines and RP values.

Up to 4-word RP symbols can be defined. Multi-word RPs are not passed to the System entry points file for online loading.

STEP 19 - ALIAS NAMES

The system requires that all programs be referenced by a five or less character name. Any program NAM records that are longer than five characters are displayed, and the generator asks for alternate names. Entry format is:

old name , new name ,

where:

old name is a program main (or segment) name.

Any program name may be changed at this time. Some programs, however, are known to others in the system and to the system itself by name. The system will have problems if these names are changed. Among these names are: D.RTR, FMGR, ACCTS, SMP, EXTND, SPOUT, GASP, WHZAT, LOGON, LGOFF, R\$PN\$, \$CNEX, CI, and most DS monitors.

The load map will show both the alias and the original name.

Table Generation Phase

Required system tables, including the Equipment Table (EQT), the Device Reference Table (DRT), and the Interrupt Table (INT) are built during the Table Generation Phase. Relocation begins with the Table Area I modules. Refer to the example given in Figure 2-7 as you follow the steps in this phase.

STEP 20 - TABLE AREA I <<PAGE XXXXX>>:
EQUIPMENT TABLE ENTRY

These messages, along with a report of the starting physical page number, begin the Table Generation Phase. They are followed by a prompt that requests input for the first EQT entry:

EQT 01?

Respond with EQT entry number one in the form:

select_code , driver [, B] [, D] [, S] [, M] [, T= tttt] [, X=xxx] [, F] [, n] [, GR=string]

where:

select_code is the octal select code number (I/O slot).

driver is the driver name and number in the form DV*yyn*; for example, DVR32.

B may be specified to enable automatic output buffering for output requests.

D may be specified to request direct memory access (DCPC channel required by *driver*).

S	may be specified to force <i>driver</i> into the System Driver Area.
M	may be specified to force <i>driver</i> into the System Driver Area and declare that it is to do its own mapping.
T= <i>tttt</i>	may be specified to declare a timeout interval for device interrupt (<i>tttt</i> represents tens of milliseconds in the range of 1–32767).
X= <i>xxx</i>	may be specified to declare an extended EQT entry (<i>xxx</i> represents the number of words to extend the entry in the range of 1–999).
F	One (and only one) driver may be Forced to co-reside with the system disk driver in driver partition one. The “F” requests that it be this driver. This is used in mirrored disk systems where the system disk (LU 2) is to be mirrored. In this case the mirror driver must also be in driver partition one.
<i>n</i>	A decimal or octal (<i>nnnB</i>) number to be used to initialize the extension area defined by X= <i>xxx</i> . Given an extension of size <i>xxx</i> , 0 through <i>xxx</i> initialize numbers may be entered. Each number initializes the next extension word.

(Refer to the individual driver manuals for more information regarding buffering, timeout, and so forth.)

GR=*string* This must be the last parameter on the line. It causes the generator to scan the driver’s relocatable, looking for a GEN record of the form:

```
IF, GEN6 . . . GR=string, - - - -
```

where *string* in the GEN record is the same as *string* in the EQT entry. The generator then extends the EQT entry with “- - - -” from the GEN record. If “- - - -” ends with “GR=*string2*”, the process is repeated. (An infinite loop will be detected after 64 “GR=*string*” parameters are processed.) The “. . .” in the GEN record may be 0 or more of the EQT optional entries except [*n*] and [,GR=*string*]. These entries are, however, unconditional and apply to all EQT entries for the driver, whereas the “- - - -” data is conditioned on the matching “GR=*string*” appearing in the EQT entry.

For example, given the driver:

```
MACRO, Q
    NAM DVZOO, O MYDRIVER
    ENT IZOO, CZOO
```

- Always use DMA, Buffering, TO=40 sec.

```
GEN 9, IF, GEN6, B, D, T=4000
```

- Record for HYFLYER system

```
GEN 16, IF, GEN6, GR=HYFLYER, X=10, 1, 40B, 6
```

- LOWFLYER uses small extension

```
GEN 16, IF, GEN6, GR=LOWFLYER, X=5, 2, 60B, 3
```

- EASYFLYER is in the middle
GEN 16, IF, GEN6, GR=EASYFLYER, x=7, 3, 25, 2

- PIGBACK is same as HYFLYER
GEN 15, IF, <GEN6, GR=PIGBACK, GR=HYFLYER
.
.
<driver code>
.
.
END

then

EQT 10?

20, DVZOO, GR=HYFLYER
B, D, T=4000
X=10, 1, 40B, 6

EQT 11?

21, DVZOO, GR=PIGBACK
B, D, T=4000
GR=HYFLYER
X=10, 1 40B, 6

EQT 12?

22, DVZOO, GR=EASYFLYER
B, D, T=4000
X=7, 3, 25, 2
.
.

EQT 10 and 11 extensions will be 10 words long and initialized to:

10
1
32 (=40B)
6
0
0
0
0
0
0
0

The EQT 12 extension will be 7 words long and initialized to:

7
3
25
2
0
0
0

TABLE AREA I <<PAGE XXXXX>>:

20 EQUIPMENT TABLE ENTRY

(output by generator at start of Table Generation Phase)

EQT 01?	<u>12</u>	<u>DVM33</u>	<u>D</u>						
EQT 02?	<u>13</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 32767</u>				
EQT 03?	<u>17</u>	<u>DVB12</u>	<u>B</u>	<u>X=5</u>	<u>T = 32767</u>				
EQT 04?	<u>15</u>	<u>DVR23</u>							
EQT 05?	<u>14</u>	<u>DVA37</u>	<u>B</u>	<u>X=52</u>	<u>T = 32767</u>				
EQT 06?	<u>20</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 12000</u>				
EQT 07?	<u>21</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 12000</u>				
EQT 08?	<u>22</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 12000</u>				
EQT 09?	<u>23</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 12000</u>				
EQT 10?	<u>24</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 12000</u>				
EQT 11?	<u>25</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 12000</u>				
EQT 12?	<u>26</u>	<u>DVA05</u>	<u>B</u>	<u>X=13</u>	<u>T = 12000</u>				
EQT 13?	<u>70</u>	<u>DVS43</u>	<u>M</u>	<u>X=18</u>					
EQT 14?	<u>71</u>	<u>DVS43</u>	<u>M</u>	<u>X=18</u>					
EQT 15?	<u>72</u>	<u>DVS43</u>	<u>M</u>	<u>X=18</u>					
EQT 16?	<u>73</u>	<u>DVS43</u>	<u>M</u>	<u>X=18</u>					
EQT 17?	<u>74</u>	<u>DVS43</u>	<u>M</u>	<u>X=18</u>					
EQT 18?	<u>75</u>	<u>DVS43</u>	<u>M</u>	<u>X=18</u>					
EQT 19?	<u>4</u>	<u>DVP43</u>	<u>M</u>						

(oct. select code, driver [B] [,D] [,S] [,M] [,T = tttt] [,X = xxx])

(do not specify SDA for system disk driver)

(terminate your final entry with a /E)

Figure 2-7. Sample Table Generation Phase Worksheet

20 EQUIPMENT TABLE ENTRY (Continued)

EQT 20?							
<u> </u> /E							
EQT 21?							
<u> </u>							
EQT 22?							
<u> </u>							
EQT 23?							
<u> </u>							
EQT 24?							
<u> </u>							
EQT 25?							
<u> </u>							
EQT 26?							
<u> </u>							
EQT 27?							
<u> </u>							
EQT 28?							
<u> </u>							
EQT 29?							
<u> </u>							
EQT 30?							
<u> </u>							
EQT 31?							
<u> </u>							
EQT 32?							
<u> </u>							
EQT 33?							
<u> </u>							
EQT 34?							
<u> </u>							
EQT 35?							
<u> </u>							
EQT 36?							
<u> </u>							
EQT 37?							
<u> </u>							
EQT 38?							
<u> </u>							

Figure 2-7. Sample Table Generation Phase Worksheet (continued)

21 **DEVICE REFERENCE TABLE**

(system console)	001 = EQT #? <u>2</u> , <u>0</u>
(system disk)	002 = EQT #? <u>1</u> , <u>1</u>
(auxiliary disk)	003 = EQT #? <u>1</u> , <u>2</u>
(standard output)	004 = EQT #? <u>2</u> , <u>1</u>
(standard input)	005 = EQT #? <u>2</u> , <u>2</u>
(standard list)	006 = EQT #? <u>3</u> , <u>0</u>
	007 = EQT #? <u>0</u> , <u>0</u>
(mag. tape)	008 = EQT #? <u>4</u> , <u>0</u>
	009 = EQT #? <u>1</u> , <u>0</u>
	010 = EQT #? <u>1</u> , <u>3</u>
	011 = EQT #? <u>1</u> , <u>4</u>
	012 = EQT #? <u>1</u> , <u>5</u>
	013 = EQT #? <u>1</u> , <u>6</u>
	014 = EQT #? <u>1</u> , <u>7</u>
	015 = EQT #? <u>1</u> , <u>8</u>
	016 = EQT #? <u>1</u> , <u>9</u>
	017 = EQT #? <u>1</u> , <u>10</u>
	018 = EQT #? <u>1</u> , <u>11</u>
	019 = EQT #? <u>1</u> , <u>12</u>
	020 = EQT #? <u>1</u> , <u>13</u>

(LU1 = EQT #?)

(eqt entry, optional subchannel;
the subchannel # should match
the response in Step (6))

(terminate your final entry with a /E)

(number should match response to
Step (7a) , if entered)

Figure 2-7. Sample Table Generation Phase Worksheet (continued)

21

DEVICE REFERENCE TABLE (Continued)

021 = EQT #?	<u>1</u> , <u>14</u>
022 = EQT #?	<u>1</u> , <u>15</u>
023 = EQT #?	<u>1</u> , <u>16</u>
024 = EQT #?	<u>1</u> , <u>17</u>
025 = EQT #?	<u>1</u> , <u>18</u>
026 = EQT #?	<u>1</u> , <u>19</u>
027 = EQT #?	<u>1</u> , <u>20</u>
028 = EQT #?	<u>1</u> , <u>21</u>
029 = EQT #?	<u>1</u> , <u>22</u>
030 = EQT #?	<u>6</u> , <u>0</u>
031 = EQT #?	<u>7</u> , <u>0</u>
032 = EQT #?	<u>8</u> , <u>0</u>
033 = EQT #?	<u>9</u> , <u>0</u>
034 = EQT #?	<u>10</u> , <u>0</u>
035 = EQT #?	<u>11</u> , <u>0</u>
036 = EQT #?	<u>12</u> , <u>0</u>
037 = EQT #?	<u>5</u> , <u>0</u>
038 = EQT #?	<u>5</u> , <u>1</u>
039 = EQT #?	<u>5</u> , <u>2</u>
040 = EQT #?	<u>5</u> , <u>3</u>

041 = EQT #?	<u>5</u> , <u>4</u>
042 = EQT #?	<u>5</u> , <u>5</u>
043 = EQT #?	<u>5</u> , <u>6</u>
044 = EQT #?	<u>5</u> , <u>7</u>
045 = EQT #?	<u>5</u> , <u>8</u>
046 = EQT #?	<u>13</u> , <u>0</u>
047 = EQT #?	<u>14</u> , <u>0</u>
048 = EQT #?	<u>15</u> , <u>0</u>
049 = EQT #?	<u>16</u> , <u>0</u>
050 = EQT #?	<u>17</u> , <u>0</u>
051 = EQT #?	<u>18</u> , <u>0</u>
052 = EQT #?	<u>0</u> , <u>0</u>
053 = EQT #?	<u>0</u> , <u>0</u>
054 = EQT #?	<u>6</u> , <u>1</u>
055 = EQT #?	<u>7</u> , <u>1</u>
056 = EQT #?	<u>8</u> , <u>1</u>
057 = EQT #?	<u>9</u> , <u>1</u>
058 = EQT #?	<u>10</u> , <u>1</u>
059 = EQT #?	<u>11</u> , <u>1</u>
060 = EQT #?	<u>12</u> , <u>1</u>

061 = EQT #?	<u>6</u> , <u>2</u>
062 = EQT #?	<u>7</u> , <u>2</u>
063 = EQT #?	<u>8</u> , <u>2</u>
064 = EQT #?	<u>9</u> , <u>2</u>
065 = EQT #?	<u>10</u> , <u>2</u>
066 = EQT #?	<u>11</u> , <u>2</u>
067 = EQT #?	<u>12</u> , <u>2</u>
068 = EQT #?	<u> </u> , <u>/E</u>
069 = EQT #?	<u> </u> , <u> </u>
070 = EQT #?	<u> </u> , <u> </u>
071 = EQT #?	<u> </u> , <u> </u>
072 = EQT #?	<u> </u> , <u> </u>
073 = EQT #?	<u> </u> , <u> </u>
074 = EQT #?	<u> </u> , <u> </u>
075 = EQT #?	<u> </u> , <u> </u>
076 = EQT #?	<u> </u> , <u> </u>
077 = EQT #?	<u> </u> , <u> </u>
078 = EQT #?	<u> </u> , <u> </u>
079 = EQT #?	<u> </u> , <u> </u>
080 = EQT #?	<u> </u> , <u> </u>

Figure 2-7. Sample Table Generation Phase Worksheet (continued)

22

INTERRUPT TABLE

(enter octal select codes in ascending order)

4 , ENT , \$POWR

(generator prompt)

(select code, option, destination)

12 , EQT , 1

(terminate your final entry with a /E)

13 , PRG , PRMPT

14 , EQT , 5

15 , EQT , 4

16 , EQT , 4

17 , EQT , 3

20 , PRG , PRMPT

21 , PRG , PRMPT

22 , PRG , PRMPT

23 , PRG , PRMPT

24 , PRG , PRMPT

25 , PRG , PRMPT

26 , PRG , PRMPT

70 , EQT , 13

71 , EQT , 14

72 , EQT , 15

73 , EQT , 16

74 , EQT , 17

Figure 2-7. Sample Table Generation Phase Worksheet (continued)

22

INTERRUPT TABLE

(enter octal select codes in ascending order)

75 , EQT , 18

(generator prompt)

(select code, option, destination)

____ , /E , ____

(terminate your final entry with a /E)

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

____ , ____ , ____

Figure 2-7. Sample Table Generation Phase Worksheet (continued)

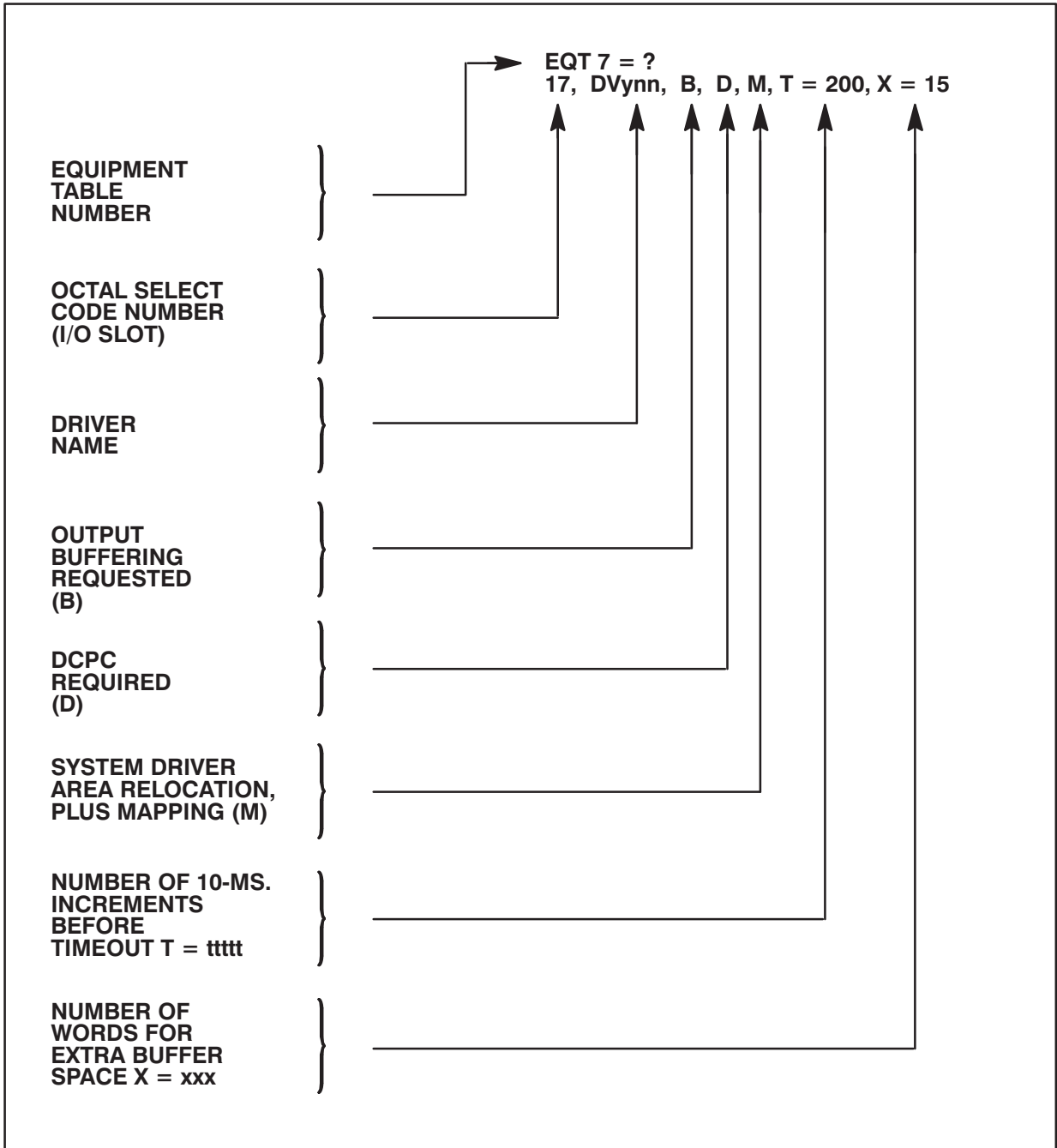


Figure 2-8. EQT Table Example

If S is specified, then the associated driver will be relocated into the System Driver Area. If M is specified, then the associated driver will be relocated into the System Driver Area, and the driver will do its own mapping. For drivers declared in more than one EQT, the S and/or M options must be identical. All drivers with neither S nor M specified will be relocated into the Driver Partition Area. Drivers without EQTs will not be relocated. Do not specify M or S for the disk driver.

EQT entry 01 should be for the system disk. A typical EQT entry for the HP 7925 disk is:

```
11, DVR32, D
```

Once you respond to the request for EQT entry 01, the prompt is incremented by one and repeated:

```
EQT 02?
```

Each time you respond, the prompt is incremented by one and redisplayed. A maximum of 255 EQT entries may be defined.

Terminate the EQT table entry using the input data terminator, /E.

Each EQT entry on the worksheet contains a blank for the driver name which contains five characters, starts with the characters “DV” and ends with a two-digit octal number (that is, DV nn).

The remaining blanks on the EQT entry line are for D (DCPC required), B (buffered output), S (System Driver Area), M (System Driver Area with mapping), T (timeout), and X (extended EQT). The blanks are filled in as shown in the example in Figure 2-8. EQT parameter specifications are dependent upon driver and device requirements. With the possible exception of the B and T parameters, EQT specifications should be taken directly from the appropriate driver manuals, subsystem configuration guides, and the *RTE-6/VM System Manager's Manual*.

If B is specified, automatic output buffering will be enabled for the device. The operating system will copy into a system buffer data that is to be output to a device. This will allow program processing to proceed currently with output requests (rather than suspending the program while it waits for a buffer in the program to be emptied).

If D is specified for a device, then the system will allocate a DCPC channel for the device whenever an I/O request is made to the device.

Note Unbuffered drivers that do not do their own mapping should not be forced into the System Driver Area if they are to be used by type 4 background or type 6 extended background programs.

If T is specified for a device, a value for T must be entered in the appropriate (T=) blank. The value must be a positive decimal number (representing tens of milliseconds) within the range of 1 through 32767. The value entered denotes the maximum amount of time that will elapse before a timeout will be issued for that device. If a device has not interrupted the system within the amount of time specified, it is considered to have timed out and may be set down. Note that timeouts can occur for the system console, but it will not be set down. Devices that are controlled by drivers that handle their own timeouts may or may not be set down. For interactive devices, (for example, terminals) T should not be less than 500.

If X is specified, a positive decimal value (maximum of three digits) for X must be entered in the appropriate (X=) blank. This value is the number of words that are declared for buffer space (temporary storage) and consequently are allocated to the EQT entry (EQT extension) for the driver's use.

STEP 21 - DEVICE REFERENCE TABLE

This message is issued prior to requests for logical unit assignments. The Device Reference Table, which specifies the logical unit (LU) numbers, is cross-referenced to the EQT entry numbers. The logical unit request then follows:

1 = EQT #?

Enter the Equipment Table entry number and the subchannel number (if appropriate) associated with logical unit number 1.

Following this entry, the LU number is incremented by one, and the prompt is redisplayed:

2 = EQT #? (This sequence is repeated up to LU 254.)

Entries to the Device Reference Table are in the form:

eqt_entry, subchannel

where:

eqt_entry is the EQT entry number to be associated with the displayed LU number.

subchannel is the subchannel number (less than or equal to 63) of the device referenced by this entry (if not included, defaults to 0).

The first six LU numbers are reserved for system devices, as follows:

- LU 1 – system console
- LU 2 – system disk subchannel
- LU 3 – auxiliary disk subchannel (optional)
- LU 4 – standard output unit
- LU 5 – standard input unit
- LU 6 – standard list unit.

Note that LU 8 is recommended for magnetic tape.

Any LU assigned to EQT entry number zero indicates the bit bucket. This is a system mechanism that allows immediate I/O completion; that is, the data buffer is immediately read from or written to a nonexistent device.

Extra LU numbers can be assigned EQT entry number zero during generation. These assignments may then be changed online, as desired, to reference other EQT entry numbers.

Terminate the Device Reference Table entries using the input data terminator, /E.

STEP 22 - INTERRUPT TABLE

Following display of this message you enter (in ascending order) interrupt data that link octal select codes to EQT entry numbers or the names of programs that are to be scheduled upon interrupt. Each select code, in ascending order, is referenced back to its EQT entry number in the Equipment Table.

The Interrupt Table (INT) entries have the following form:

select_code , option , destination

where:

select_code , EQT , n
relates select code to EQT entry number *n*.

select_code , PRG , pppp
causes program *pppp* to be scheduled upon interrupt.

select_code , ENT , entry
causes control (upon interrupt) to transfer to the specified entry point of a type 0 system program. If the entry refers to a driver entry point, the driver to be entered must reside in the System Driver Area (SDA).

select_code , ABS , xxxxx
places the absolute octal value *xxxxx* (instruction code) in the interrupt location. Do not place anything other than a JMP or JSB or a macro to a microcoded subroutine in this trap cell because an interrupt does not preserve the current status of the memory protect system or the status of the Dynamic Mapping System.

Terminate the Interrupt Table entries using the input data terminator, /E.

For example, assume that EQT entry number 1 (the first EQT entry) for a 7905/7906/7920/7925 disk was assigned select code 11,DVR32,D. Then, in the Interrupt Table, select code 11 must be referenced to EQT entry number 1, which contains the relocated address of DVR32. DVR32 then will be entered upon interrupt. The format for this Interrupt Table entry is shown in Figure 2-9.

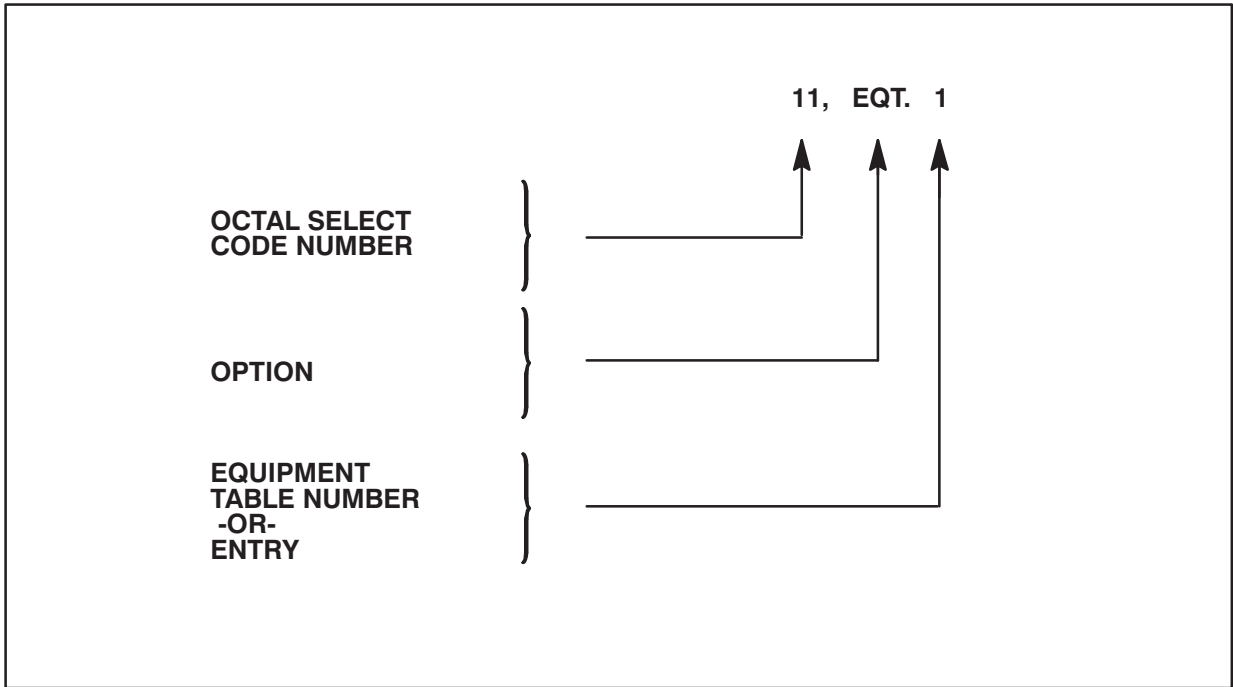


Figure 2-9. Interrupt Table Example

For devices or subsystems that have more than one I/O card, refer to the I/O card or subsystem documentation covering that device or driver for more information regarding Interrupt Table entries. In any case, each I/O card must have an Interrupt Table entry. Note that interrupt location 4 (powerfail) may be changed from a HLT 4 (102004) to an ENT entry if a powerfail routine is included in your system. For example:

4 , ENT , \$POWR

(\$POWR is the entry point in the powerfail routine.)

The last part of the Table Generation Phase requires no operator input. At this point in the generation, Table Area I modules are relocated and mapped according to the options that were specified during the Program Input Phase.

System Boundaries Phase

The planning of generation responses may be difficult beyond this point because some of the responses are based on generation-specific information not yet known to the user. Refer to the *RTE-6/VM System Manager's Manual* for more information concerning this phase of system generation. (Refer to the example given in Figure 2-10 as you follow the steps in this phase.)

After Table Area I modules are relocated, the generator prints:

```
STEP 23 - DRIVR PART 00002
CHANGE DRIVR PART?
```

The generator reports the two-page default size of the driver partitions and asks for any change.

To change the size of the driver partitions, enter a decimal number of pages greater than the reported value and less than 17. The number entered here will be the total number of logical pages to be allocated to each driver partition (for example, if a 5 is entered, all driver partitions will be five logical pages long). Otherwise, enter a 0. The driver partition size should be increased if user-written drivers are larger than the driver partition default size; otherwise the generator will be aborted when an attempt is made to relocate such a driver.

At this point, driver partition #1 is relocated and the generator prints the driver partition number along with its starting physical page number:

```
DP 01 <<PAGE XXXXX>>:
DVy3n map here
```

The system disk driver will be relocated first into driver partition #1. If space remains between the end of the disk driver and the end of the driver partition, the generator will relocate any other drivers that will fit into the partition. The remaining drivers will be relocated into the System Driver Area (if so specified) or into additional driver partitions.

Once driver partition #1 has been relocated, the generator prints:

```
SUBSYSTEM GLOBAL AREA <<PAGE XXXXX>>:
```

and the SSGA modules (type 30) are relocated.

23	DRIVR PART 00002 CHANGE DRIVR PART? <hr/> DP 01 <<PAGE XXXXX>>: DVY3 x map here	(dec. # of pages) (increase driver partition size?) (enter dec. # of pages > reported value and < 17, otherwise 0) (load map for system disk driver plus any other drivers that will fit in this driver partition)
24	RT COMMON xxxxx CHANGE RT COMMON? <hr/> RT COMMON ADD xxxxx	(dec. # of words) (change real-time COMMON?) (enter dec. # of WORDS > reported value, otherwise 0) (octal address)
25	BG COMMON xxxxx CHANGE BG COMMON? <hr/> BG COMMON ADD xxxxx BG COMMON xxxxx	(reported in dec. words) (change background COMMON?) (enter dec. # of PAGE increments - 1024 words each, otherwise 0) (octal address)

Figure 2-10. Sample Boundaries Phase Worksheet

STEP 24 - RT COMMON xxxxx
 CHANGE RT COMMON?

The generator reports the default size of Real-Time COMMON in decimal number of words and asks for any change. The default size will reflect the largest amount of blank Real-Time COMMON declared by any programs specified during the program input phase. Real-Time COMMON should be increased if any programs to be loaded online will declare more Real-Time COMMON than the default size reported by the generator.

To change the size of Real-Time COMMON, enter a decimal number of WORDS greater than the reported value. Otherwise, enter a 0.

Then, the generator reports the first word address of the Real-Time COMMON area:

RT COM ADD xxxxx

STEP 25 - BG COMMON xxxxx
CHANGE BG COMMON?

After allocating the defaulted size of Background COMMON, the generator automatically aligns the end of this area to the next page boundary, making use of otherwise wasted space (that is, assigns the space to Background COMMON). See Figure 2-11.

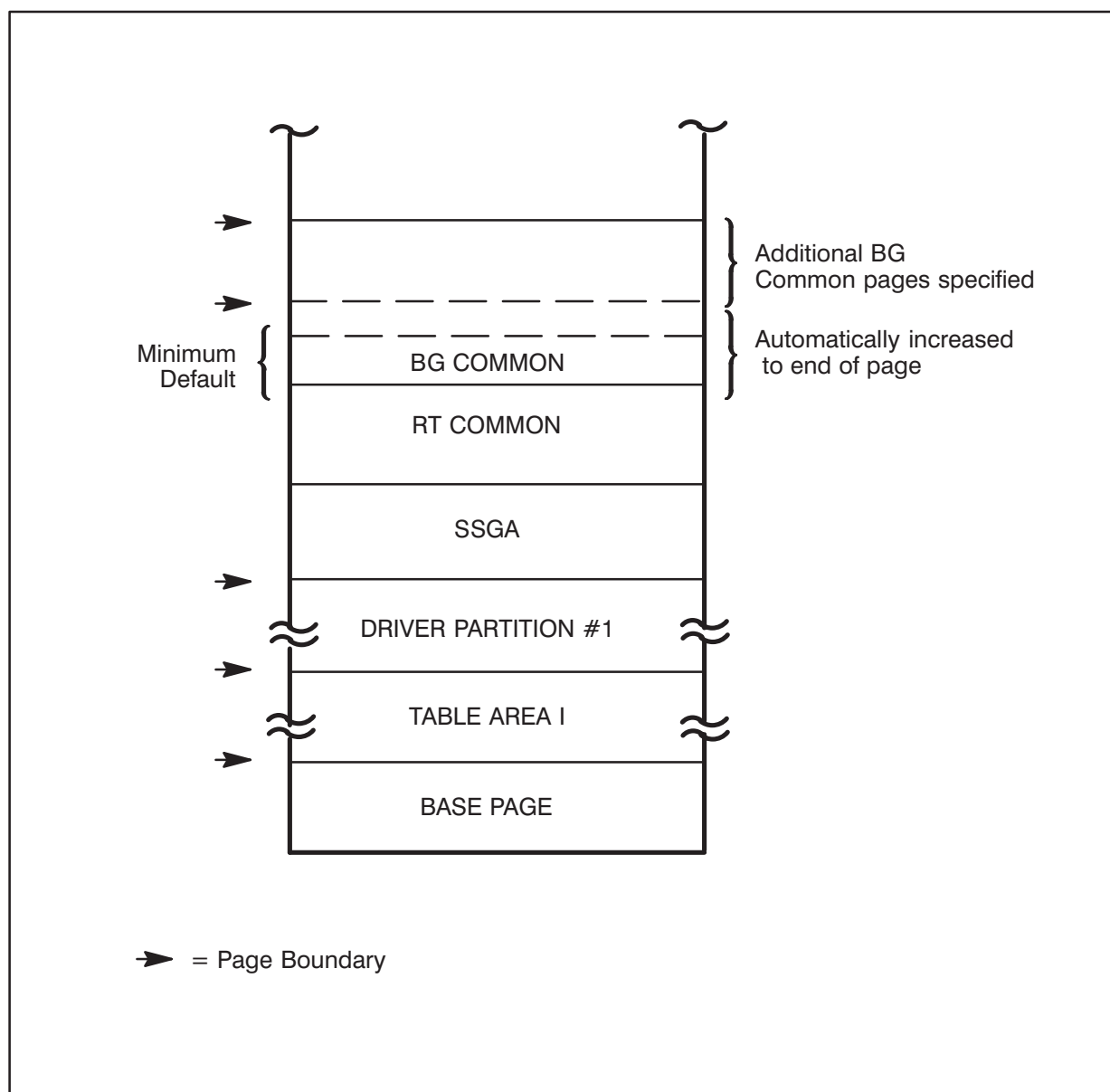


Figure 2-11. BG Common Configuration

After reporting the resulting size of Background COMMON, the generator asks for any requested change to this size. To change the size of Background COMMON, enter the decimal number of PAGE increments (1024 words each). Otherwise, enter a 0. Background COMMON should be increased if any programs to be loaded online will require more background COMMON than the default size reported by the generator.

At this point, the generator reports the first word address of the Background COMMON area:

```
BG COMMON ADD xxxxxx
```

Then the generator reports the total Background COMMON size (in decimal words):

```
BG COMMON xxxxxx
```

System and Program Loading Phase

Following the BG COMMON xxxxx report, the generator relocates the System Driver Area and prints "SYSTEM DRIVER AREA <<PAGE xxxxx>>:" followed by the appropriate mapping of the drivers. The mapping options specify the reporting of names, entry points, and link address of a relocated program. (Refer to the example given in Figure 2-12 as you follow the steps in this phase.) The heading "TABLE AREA II <<PAGE xxxxx>>:" is printed where xxxxx is the starting physical page.

TABLE AREA II

<<PAGE XXXXX>>:

- 26 # OF I/O CLASSES?
64 (dec. # from 1 to 255; typical entry would be 10)
- 27 # OF LU MAPPINGS?
10 (dec. # from 1 to 255; typical entry would be 10)
- 28 # OF RESOURCE NUMBERS?
64 (dec. # from 1 to 255)
- 29 BUFFER LIMITS (LOW, HIGH)?
100 , 400 (in words, suggested entry would be 100, 400)
- 30 XXXX LONG ID SEGMENTS USED (# USED)
 # OF BLANK LONG ID SEGMENTS? (" long" ID segments)
36 (total # should be from 1 to 254)
- 31 XXXX SHORT ID SEGMENTS USED (# USED)
 # OF BLANK SHORT ID SEGMENTS?
24 (total # should be from 1 to 256)
- 32 XXXX ID EXTENSIONS USED (# USED)
 # OF BLANK ID EXTENSIONS?
10 (total # should be from 1 to 64)
- 33 MAXIMUM # OF PARTITIONS?
40 (dec. # ≤ 64)

Figure 2-12. Sample System and Program Loading Phase Worksheet

STEP 26 - # OF I/O CLASSES?

Enter the number of classes required for Class I/O. Enter a number in the range of 0 through 255 (note that a “0” is changed to a “1”).

Class numbers are used in the following operations:

- I/O operations without wait. Programs using class I/O can proceed with execution even though their I/O requests have not completed.
- Program to program communication. Class I/O requests can be used to transmit data and synchronize communication between programs.

The number of class numbers allocated in your system will depend on user application program requirements and the HP-supported subsystems used. There must be one class number allocated for each Class Get call simultaneously outstanding. For the Class I/O requirements of HP-supported software, refer to the *RTE-6/VM System Manager's Manual* and appropriate subsystem manuals and configuration guides. A minimum entry of 10 is suggested.

The allocated number of classes will determine the size of the system class table, \$CLAS, located in Table Area II. There are two table words allocated per class number.

STEP 27 - # OF LU MAPPINGS[, # OF SCHEDULE PROGRAMS]?

The first entry specifies the size of the Batch Switch Table that cross-references real or spool logical unit numbers to user-specified logical unit numbers within batch jobs. Enter a number in the range of 0 through 255 (note that a “0” is changed to a “1”).

The number entered here determines the maximum number of SL commands allowed in a batch job initiated outside the session monitor environment. The Batch Switch Table, \$LUSW, located in Table Area II, contains one word per LU switch entry. Refer to the *RTE-6/VM System Manager's Manual* (Spool System Generation Chapter) for specific LU mapping requirements. A typical entry here would be 10. If batch jobs will not be initiated outside the session environment (that is, from the system console), enter 0.

The second entry defines the size of the schedule programs table. This table uses 5 bytes per entry. Enter a number in the range of 0 through 255 (note that “0” is changed to a “1”). This table is used by serial (terminal) drivers to find the name of the program to schedule on an asynchronous interrupt. The size defaults to 2 if not given. The Generator initializes the first entry to “PRMPT”. The table requires five bytes per entry.

STEP 28 - # OF RESOURCE NUMBERS[,DEBUG TABLE SIZE]?

Enter the required amount of Resource Numbers (RNs). There must be one RN for each resource to be controlled simultaneously by cooperating programs. Enter a number in the range of 1 through 255 (note that a “0” is changed to a “1”).

Resource numbers provide the capability of synchronizing programs that access the same resource. The resource might be a device, a table in memory, a file, another program, or subroutine. The number of RNs allocated in the system should reflect:

- User application program RN usage. Enough RNs should be allocated to accommodate the maximum number of application programs using RNs or LU locks at one time.
- Subsystem RN usage. Many HP-supported programs make use of RNs (for example, DEBUG, LOADR, FMGR, XREF, RT6GN, and so forth) Most of these programs deallocate resource numbers when finished. There should be one resource number allocated for each program (or copy of the program) running concurrently. For specific utility and subsystem RN requirements, refer to the *RTE-6/VM System Manager's Manual* and appropriate subsystem and configuration manuals.

A minimum entry of 10 is suggested. The allocated number of resource numbers will determine the size of the system resource number table, \$RNTB, located in Table Area II. There is one table word allocated per RN.

The debug table is defaulted to the same size as the RN table. You may enter a number from 0 through 255 (a “0” is changed to “1”).

The debug process (as used by DEBUG) requires one RN number and one debug table entry per program begin debugged. Programs being monitored (see LINK and DEBUG documentation) do not require either an RN or a debug table entry. The debug table requires one word per entry.

STEP 29 - BUFFER LIMITS (LOW,HIGH)?

Enter the lower and upper buffer limits (decimal words) for your system.

Setting these limits here can prevent an inoperative or slow I/O device from monopolizing System Available Memory. Each time a buffered I/O request is made (Class I/O requests are buffered), the system totals the lengths of all buffers for I/O requests queued to that EQT entry and compares the number to the upper limits set here (or by the online system command, BL). If the sum is less than the upper limit, the new buffered request is added to the queue. If the sum is larger than the upper limit, the requesting program is suspended in the general wait (Status=3) list.

When a buffered I/O request completes, the system adds up the remaining words in I/O requests queued to that EQT entry and compares the number to the lower limit set here (or by the BL command). When the sum is less than the lower limit, any programs suspended for exceeding the buffer limits on this EQT are rescheduled and may attempt their request again.

A suggested entry of 100 and 400 can be entered and may later be changed online with the BL command.

STEP 30 - XXXX LONG ID SEGMENTS USED
OF BLANK LONG ID SEGMENTS

Enter the number of ID segments required in addition to the XXXX long ID segments allocated to programs relocated during generation. Note that a 0 is automatically changed to a "1" to allow online loading of at least one program. The total number of long program ID segments, including memory-resident and disk-resident programs, must be equal to or less than 254.

An ID segment is a table, associated with each program known to the operating system, used to keep track of the program's name, priority, status, and other characteristics. Blank ID segments are allocated to identify programs added to the system after it is operational. The following considerations should be taken into account when allocating the number of blank ID segments for the system:

- **Permanent Program Usage.** One blank ID segment is required for each program that will be permanently added online by the relocating loader (LOADR) or by the MLS-LOC Loader (MLLDR). Therefore, enough blank ID segments should be allocated to accommodate all user application programs and HP supported programs to be permanently added to the system online. Once an ID segment is allocated to a permanent program, its space cannot be recovered unless the program is permanently purged with LOADR (PU option).
- **Temporary Program Usage.** One blank ID segment is required for each program loaded online as a "temporary" program by LOADR. Programs are loaded as "temporary" during program development, to create FMP type 6 files, or if they are used infrequently. No permanent record is made of them on disk. Temporary programs are removed from the system by the OF,name,8 operator command. This will free the ID segment for future system use.
- **Type 6 File Usage.** Blank ID segments are required for each program residing on a type 6 file made available for execution by file manager RP and RU commands. These programs are removed from the system by the OF (described above) or RP command. This will free the ID segment for future system use.
- **Multi-Terminal Environment.** In systems using the Multi-Terminal Monitor (MTM) or Session Monitor (SM) software packages, blank ID segments must be allocated for each MTM or SM terminal on the system. The number of ID segments allocated per terminal will depend on the number of blank ID segments you want to allocate for program copies. Normally a blank ID segment must be allocated for each copy of FMGR. At least one additional ID segment should be allocated per terminal for programs restored (RP) or run (RU) by the terminal's copy of FMGR. Note that in SM, blank ID segments occupied by temporary and RP'ed programs at logoff are returned to the system for future use.

In summary, the number of blank ID segments required in your system can be estimated as follows:

- (# permanently added programs.)
- + (max # of temporary and RP'ed programs in system at one time)
- + (# terminals * # ID segments required per terminal).

For example, a typical system might require:

- (10 permanently added progs)+(10 temporary and RP'ed progs)
- + (5 terminals*3 ID segments per terminal)=35 blank ID segments.

Each blank ID segment requires 37 words in Table Area II (36-word ID plus one keyword).

STEP 31 - XXXX SHORT ID SEGMENTS USED
OF BLANK SHORT ID SEGMENTS?

Enter the number of blank “short” ID segments required in addition to the XXXX short ID segments allocated to programs relocated during generation. These ID segments have ten words (nine-word ID plus one keyword) and are used for real-time and background program segments. One short ID segment is required for each program segment. If a segmented program online load is performed, and there are no blank short ID segments available, 37-word long ID segments will be used (if they are available) for the segments.

Note Short ID segments are not used by programs loaded with MLLDR or LINK.

For a “worst case” estimate of your blank short ID segment requirements, determine the total number of segments to be used by user application programs and HP software at any given time. Short ID segments are used by programs added online via permanent loads, temporary loads, and RP commands (see step 30). Note that copies of segmented programs share the same short ID segments.

This estimate will allow all segmented programs in the system to be active concurrently. If this is not a requirement, fewer blank short ID segments can be allocated. For the short ID segment requirements of HP utilities and subsystems, refer to the *RTE-6/VM System Manager’s Manual*, the appropriate subsystem manuals, and configuration guides. Short ID segments are located in Table Area II.

STEP 32 - XXXX ID EXTENSIONS USED
OF BLANK ID EXTENSIONS?

Enter the number of blank ID segment extensions required in addition to the XXXX ID extensions allocated to EMA programs relocated during generation. One blank ID extension is required for the online load of each VMA/EMA program. (Note that a 0 entered here will automatically be changed to a “1”.)

An VMA/EMA program cannot be loaded online if there are no blank ID extensions available. The number allocated should reflect the estimated maximum number of EMA programs to be loaded online in the system at any one time. Each ID extension is six words (five words plus one keyword) in length and is located in Table Area II. A suggested entry here is ten ID extensions.

STEP 33 - MAXIMUM # OF PARTITIONS?

Enter the maximum number of program partitions to be allowed in the system. Enter a number in the range of 0 through 64.

The actual number of defined partitions is determined in Step 35 when the remainder of physical memory is divided into partitions. It is possible to define (in Step 35) fewer partitions in the system than you specify here (for example, you could enter a 64 here, but only define five partitions in Step 35). Partitions can be redefined by the reconfigurator at system startup, but the total number of partitions cannot be changed. If you are unsure of your requirements, a guideline for determining the maximum number of partitions is:

$$(\# \text{ pages physical memory ever to be included in system})/12$$

The number entered in this step will determine the number of entries in the partition definition table, \$MATA, located in Table Area II. Seven words are allocated per entry.

After the above question is answered, the generator prints the following headings and relocates the corresponding modules. Note that the load maps generated will be dependent on the MAP command in effect during the relocation phase, see Step 16a.

Table Area II Modules

Table Area II (type 13) modules are relocated after memory area is reserved for the tables described above.

```
SYSTEM <<PAGE XXXX>>
```

The RTE operating system modules are relocated. The generator will relocate here all type 0 modules except drivers (because drivers are associated with an EQT entry). After the operating system, the reconfigurator (type 16) module is relocated.

```
PARTITION DRIVERS
```

```
DP 02 <<PAGE XXXXX>>
```

```
DP 03 <<PAGE XXXXX>>
```

```
.  
. .  
. .
```

Partition resident drivers are relocated next. These will be type 0 modules with an EQT associated with them (without the M or S EQT parameters). As many drivers as will fit are relocated into a driver partition using a best fit algorithm. If the generator discovers a driver that is larger than the specified driver partition size (see Step 24), the generation will be aborted with a GEN ERR 59.

Should an additional driver overflow the logical address space reserved for a driver partition (because of subroutines appended during relocation), RT6GN will issue the message:

```
DRIVER PARTITION OVERFLOW
```

The relocation of the driver causing the overflow will be ignored, and the driver will be re-relocated into a subsequent driver partition. Note that no operator intervention is required. After the above message is issued and backup is done, the generator scans for other driver(s) that may be relocated into this driver partition.

```
MEMORY-RESIDENT LIBRARY <<PAGE XXXX>>
```

The memory-resident library contains all type 14 force-loaded modules and all type 6 modules referenced by type 14 modules or memory-resident (type 1) programs.

Note that a pseudo-load of all memory-resident programs is done at this time in order to send all referenced type 6 subroutines into the memory-resident library. If a relocation error occurs for a memory-resident program, it will be duplicated here.

```
MEMORY RESIDENTS <<PAGE XXXX>>
```

The generator relocates the memory-resident programs.

RT DISK RESIDENTS

Then the generator relocates the real-time disk-resident (type 2) programs.

BG DISK RESIDENTS

Finally, the generator relocates the background disk-resident programs. Type 3 background programs are relocated first, followed by type 4 background programs.

Partition Definition Phase

When relocation is complete, the generator prints a report of program partition requirements for the real-time and background disk-resident programs. (Refer to the example given in Figure 2-13 as you follow the steps in this phase.) Type 4 background disk-resident programs will have an asterisk (*) appended to the display line. Programs declaring EMA will have an "E" appended to the display line. The page requirements displayed for EMA programs include the declared EMA page size or a 1 for defaulted EMA size (meaning that the program declared EMA, but no size was specified). These reports are in the form:

RT PARTITION REQMTS:

```
program name xx PAGES
program name xx PAGES
.
.
program name xx PAGES E
```

BG PARTITION REQMTS:

```
program name xx PAGES *
.
.
program name xx PAGES E
```

The page count reported for each program is the number of pages they occupy in memory (including base page). The user must create partitions large enough for programs loaded by the generator in order for those programs to run.

Next, the generator reports the largest addressable program size (excluding EMA) for type 4 BG programs both with and without COMMON and for RT and type 3 BG programs having Table Area II in their address space. The size includes one page for base page. This report is in the form:

```
MAXIMUM PROGRAM SIZE:
W/O COM xx PAGES
W/  COM xx PAGES
W/TA2  xx PAGES
```

Extended background programs can always have access to 32 pages if a 32 page non-mother partition is available.

Partition Definition Phase

RT PARTITION REQMTS: (generator lists page requirements)

⋮

BG PARTITION REQMTS:

⋮

MAXIMUM PROGRAM SIZE:

W/O COM xx PAGES
W/ COM xx PAGES
W/ TA2 xx PAGES

SYS AV MEM: xxxxx WORDS (reported in decimal words)

34 **ENTER 1ST PART PAGE: XXXXX (DEFAULT) TO YYYYY:**

60

(enter dec. pages # value between XXXXX and YYYYY, otherwise 0 - for default value XXXXX)

SYS AV MEM: xxxxx WORDS

(new size of SAM reported, decimal words)

PAGES REMAINING: xxxxx

(pages remaining for partitioning)

35 **DEFINE PARTITIONS:** (see manual about subpartitions)

PART 01, XXXX PAGES?

37 , BG , R

(prompts to maximum of 64, displaying # pages remaining, may ask for SUBPARTITIONS) (decimal page size, type, [R])

SUBPARTITIONS?

NO , _____ , _____

PART 02, XXXX PAGES?

5 , BG , _____

(subpartition mode - the number in parenthesis indicates the number of pages remaining in the mother partition)

PART 03, XXXX,(YYYY) PAGES

6 , BG , _____

PART 04, XXXX PAGES?

8 , BG , _____

PART 05, XXXX PAGES?

10 , BG , _____

PART 06, XXXX PAGES?

10 , BG , _____

PART 07, XXXX PAGES?

15 , BG , _____

(terminate your final entry with a /E)

Figure 2-13. Sample Partition Definition Phase Worksheet

35

20 , BG , _____

20 , BG , _____

25 , BG , _____

28 , BG , _____

28 , BG , _____

28 , BG , _____

56 , BG , _____

YES , _____ , _____

16 , S , _____

20 , S , _____

20 , S , _____

100 , BG , _____

YES , _____ , _____

10 , S , _____

15 , S , _____

22 , S , _____

25 , S , _____

28 , S , _____

80 , BG , _____

YES , _____ , _____

Figure 2-13. Sample Partition Definition Phase Worksheet (continued)

35

24 , S , _____

28 , S , _____

28 , S , _____

/E , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

(Terminate your final entry with a /E or a /D. The use of /D forces any remaining pages into one background partition.)

Figure 2-13. Sample Partition Definition Phase Worksheet (continued)

36 MODIFY PROGRAM PAGE REQUIREMENTS?

LOADR , 28 ,

(generator prompt)
(program name, decimal # of pages)

D. RTR , 28 , 8

(terminate your final entry with a /E)

CI , 32 ,

CIX , 32 ,

/E , ,

 , ,

 , ,

37 SHAREABLE EMA PARTITIONS?

5 , DATA1 ,

(generator prompt)
(partition #, PARTITION LABEL)

13 , DATA2 ,

(terminate your final entry with a /E)

14 , DATA3 ,

15 , FST1 ,

/E , ,

 , ,

 , ,

Figure 2-13. Sample Partition Definition Phase Worksheet (continued)

38

SHAREABLE EMA PROGRAMS?

 / ,

 ,

 ,

 ,

 ,

 ,

 ,

(generator prompt)
(PROGRAM NAME, EMA PARTITION LABEL)

(terminate your final entry with a /E)

39

ASSIGN PROGRAM PARTITIONS?

 / ,

 ,

 ,

 ,

 ,

 ,

(generator prompt)
(program name, partition #)

(terminate your final entry with a /E)

SYSTEM STORED IN FILE
 SYS SIZE: ttt TRKS, sss SECS (XX SECTORS/TRACK)
 = XXXXXX BLOCKS (128 WORDS/BLOCK)
 RT6GN FINISHED
 xxxx ERRORS

Figure 2-13. Sample Partition Definition Phase Worksheet (continued)

STEP 34 - SYS AV MEM: xxxxx WORDS
ENTER 1ST PARTITION PAGE: XXXXX(DEFAULT)TO YYYYY:

The generator reports the default size (in decimal words) of System Available Memory (SAM) (from the end of Table Area I and from the overlay of the system reconfiguration program). Refer to Figures B-1 and B-2 in Appendix B to locate these areas.

The generator reports the page number of the first physical memory page available for user partitions as XXXXX and allows you to increment this if you wish.

To change the first page available for partitions, enter a decimal page number value (between XXXXX and YYYYY inclusive), specifying the starting page for partitioning. Otherwise, enter a 0 and the default value XXXXX will be assumed.

Any pages of memory skipped over are allocated to SAM (1024 decimal words per page).

The new size of SAM (in decimal words) is reported:

```
SYS AV MEM:xxxxxx WORDS
```

Next, the decimal number of pages of physical memory remaining for partitioning is reported:

```
PAGES REMAINING:xxxxxx
```

The user may or may not wish to allocate additional space for System Available Memory (SAM) depending on the use and type of system being generated. The size of SAM should be determined by site-specific needs; however, the user should bear in mind that SAM will be used for the following items:

- **Buffered Output.** SAM will be used as an output buffer area for buffered devices, that is, devices that have automatic output buffering enabled (that is, B option set in their EQT entry). The System Manager should generate enough SAM in the system for each buffered device. On output operations, the system will use SAM as a temporary buffer area before writing information to the device. The maximum amount of SAM used for each device will be specified by the high buffer limit (generator Step 29). To compute your worst case SAM buffer usage, multiply the number of buffered devices in your system by the high buffer limit. This amount of SAM may or may not be required depending on the degree of I/O activity in your system.

A more realistic estimate of SAM requirements can be obtained by the formula:

$$B*(A/B)*L.$$

where:

B is the number of buffered devices in your system.

A is the estimated maximum number of buffered devices being written to at any one time.

L is the amount of buffer storage used per device. If the rate of program output is significantly faster than the device can accept (as is normally the case), L will be the system high buffer limit.

For example, if a system has 10 buffered terminals, 5 of which will be output to at any one time, and a high buffer limit of 400, the amount of additional SAM required for buffering is $10*(5/10)*400=2K$ words.

- Class I/O. All Class I/O read, write, and control requests are buffered in SAM. User application programs may use Class I/O for device I/O (that is, I/O without wait) or interprogram communication (that is, “mailbox” I/O). The amount of SAM used for this purpose will depend on the number and length of class buffers residing in SAM at any one time. A class buffer will reside in SAM from the time it is sent to SAM with a Class I/O call until it is returned with a Class GET call. Specifically, you may want to determine:
 - What mix of user application programs using Class I/O will be active simultaneously
 - What size class buffers will be used in these programs
 - How many class buffers will be outstanding at any one time

Note that each class buffer in SAM requires space for an eight-word header in addition to the buffer specified in the EXEC call.

- Scheduling String Passage. When programs are scheduled via the File Manager RUN or operating system RUN or ON commands, the entire Command String is stored in SAM so that it may be retrieved later by the scheduled program. Once retrieved, the space is freed for other uses. Buffers may also be passed to scheduled programs in the schedule EXEC calls.

The amount of SAM required for each string buffer is usually not large (10–40 words). Furthermore, for programs that retrieve their scheduling string (most HP utilities), the buffer will be in SAM for only short periods.

- Reentrant I/O and Reentrant Subroutine Processing. When I/O is performed from a Temporary Data Block (TDB) inside a reentrant subroutine, the TDB is moved into SAM. This allows the calling program to be swappable. Most HP subsystems (for example, FMGR and EDITR) use this technique when performing I/O to the terminal. In addition, programs using the FORTRAN formatter use reentrant I/O. A guideline for estimating your SAM requirements is:

$$(\text{Number of terminals in system}) * (\text{Buffer Length})$$

The buffer length will vary between 45 words and 135 words (for CI). For example, if program development will be done on ten terminals concurrently, the worst case would be 10 copies of CI waiting on inspect requiring $135 \times 10 = 1350$ additional words of SAM to be allocated for reentrant I/O.

Besides reentrant I/O, reentrant subroutines are used when subroutines are shared by more than one program. These subroutines will be located in either the Memory-Resident library or SSGA. Reentrant subroutines used in this manner require SAM for their reentrant tables and Temporary Data Blocks (TDB). The amount of SAM used by a reentrant subroutine is dependent on the number of programs calling the subroutine at any one time. If you will be generating reentrant subroutines in your system, you may wish to allocate additional SAM for reentrant processing. An estimate, of your SAM requirements can be obtained by: $N * (\text{average TDB size})$, where N is the estimated number of programs using reentrant subroutines.

- **HP Subsystem Usage.** In addition to using SAM in the ways described above, several HP subsystems (for example, Session Monitor, DS/1000) allocate blocks of SAM directly from the operating system. These blocks are allocated at subsystem initialization and are used for table storage, pointers, and so forth. Refer to the *RTE-6/VM System Manager's Manual*, appropriate subsystem manuals, and configuration guides for subsystem SAM requirements.

The above guidelines are designed to give you a rough estimate of your SAM requirements. If more SAM is required at any one point than you have generated into your system, you will cause those programs requesting SAM to go into memory suspend (state 4), thus degrading system performance. If this occurs frequently, it is suggested that additional SAM be allocated to the system by running the RTE reconfigurator program at system startup. Refer to the *RTE-6/VM System Manager's Manual* for details.

STEP 35 - DEFINE PARTITIONS:

The number of remaining memory pages reported in Step 34 must now be divided into real-time and/or background partitions. You should read Step 38, shareable EMA, before defining the partition because it has partition size considerations.

Following the printing of this heading, the generator prompts you for the definition of your first partition, along with the number of remaining pages.

```
PART 01, XXXX PAGES?
```

Enter the partition definitions in the following form:

```
size, type [, R]
```

where:

- | | |
|-------------|--|
| <i>size</i> | is the partition size in number of pages (decimal). A partition must include enough pages for the program, plus one page for the program's base page. |
| <i>type</i> | is RT for a real-time partition, RTM for a real-time mother partition, BG for a background partition, BGM for a background mother partition, and S for a subpartition. |
| R | is the "reserve" flag. If specified, the partition may be used only by programs specifically assigned to it (see Step 39). |

Following each entry (including subpartition definitions), the partition number is incremented by one, and the prompt is redisplayed:

```
PART 02, XXXX PAGES?
```

Terminate the partition definition list using a /E; use /D if you want the remaining pages to be forced into one background partition.

If you define a BG or RT partition to be larger than the 32 pages, the generator will prompt:

```
SUBPARTITIONS?
```

If you respond with a NO to the subpartition query, the generator will define a regular partition of the requested size and type.

If you respond YES to the subpartition query or have specifically requested a mother partition by specifying BGM or RTM, the generator will define a mother partition of the requested size and enter subpartition mode. It will now expect you to divide the mother partition into subpartitions (S type). Note that the sum of the subpartition sizes cannot exceed that of their mother partition. A subpartition will be the same type (that is, RT or BG) as its mother partition. The generator will exit subpartition mode when you define the next RT or BG partition. The following is displayed when in the subpartition mode:

```
PART YY, XXXX, (ZZZZ) PAGES?
```

The number in parentheses indicates the number of pages remaining in the mother partition.

If /D was entered to terminate the partition definition, the pages remaining in the mother partition will be put into one subpartition and the generator will exit subpartition mode.

The sum of all regular or mother partition sizes (that is, all partitions defined with either RT or BG) must equal the number of pages allocated for partitioning reported in Step 34 (that is, PAGES REMAINING XXXXX).

It may not be possible to completely plan partition sizes until the program requirements and the number of remaining pages are actually reported by the generator. In this case, you may specify /D to terminate partition definition mode, and the remaining pages will be put into one background partition. This may be altered with a slow boot and changed by the configurator after the switch.

A program cannot be dispatched for execution unless a partition of sufficient size is defined and available (not reserved for the exclusive use of other programs).

The user must determine the mix of real-time and background partitions of appropriate sizes subject to available main memory and the need of their particular applications. The purpose of having two classes of partitions is to prevent competition for main memory between background programs (typically involved in program development and other non-time critical applications) and real-time programs. Note that the class of a partition does not imply special capability.

In some situations, placing all partitions in a single class may be best. This allows free competition for main memory between all disk programs, subject to program priority and size requirements.

Undesired competition for partitions can be prevented by assigning programs to specific partitions. This could, for example, keep a very small program out of a large partition. Assignments can cross class boundaries; for example, a real-time program can be assigned to run in a background partition, but such a program would still have all the attributes of a Real-Time program.

Subpartitions provide optimized use of memory, because programs can execute in the subpartitions while large programs that require mother partitions are not running (or are suspended) in the mother partition. If a program with EMA should request use of the mother partition while other programs are executing in the subpartitions, more swapping time (to swap out the programs in the subpartitions) is obviously required, so you must decide which alternative is best for your program applications. If the BGM and RTM commands are used to break up large partitions into subpartitions, it should be noted that a background or real-time program will not execute in the mother partition unless it is assigned to it.

STEP 36 - MODIFY PROGRAM PAGE REQUIREMENTS?

At this point you can modify disk-resident program page requirements. The default size of each program is reported at the beginning of the Partition Definition Phase.

The size override must not exceed the maximum program address space listed for that type of program. Enter each disk-resident program override using the following form:

```
program_name , pages [ , EMA_size ]
```

where:

program_name is the name of the program requiring a size override.

pages is the decimal number of pages required to run this program (include one page for the base page).

EMA_size is the decimal number of pages of EMA desired. If specified, this must be greater than or equal to the EMA size the program requested. EMA programs require a partition size equal to $pages + EMA_size + 1$. The extra 1 is required for the page translation table.

Terminate the page requirements list using a /E.

Some programs require additional space to dynamically construct buffer areas or symbol tables. Standard RTE programs needing this space are discussed in the *RTE-6/VM System Manager's Manual*. During generation the user must modify the page requirements of these programs before they can be used. Size requirements for non-EMA user-supplied programs may also be overridden if necessary. Note that all compilers, generators, loaders, and cross reference (XREF) programs will use as much memory as they are assigned. It is possible to temporarily modify page requirements after generation by using the "SZ" command. Refer to the *RTE-6/VM Programmer's Reference Manual* for more information regarding this command.

Note that overriding a program's page requirements will increase the minimum partition size required to execute the program. The system may actually execute the program in a partition larger than this minimum. To the program, however, the "apparent" size of the partition (determined from the System Communication Area during execution) is still the minimum.

The page requirements of a program using EMA cannot be overridden during generation. This may be done only by LOADR during an online load.

An example of entering the program size override follows:

```
RT6GN, 24      The Online Generator is assigned 24 pages and will not run in a  
                partition smaller than that size (but can run in a larger partition).
```

STEP 37 - SHAREABLE EMA PARTITIONS

At this point partitions that will be used for shareable EMA must be defined. The maximum number of partitions that can be defined during this step is given by the message:

```
MAXIMUM NUMBER OF SHAREABLE EMA PARTITIONS IS xxxx
```

In response to the prompt, a partition number (from Step 35) is entered along with the label of the shareable EMA. For example:

```
2 , DATA
```

Note that any type of partition can be defined as a shareable EMA partition. When all shareable EMA have been defined, a “/E” is entered to terminate this phase.

The number of shareable EMA partitions allowed is defined by the Shareable EMA Table (\$EMTB). The default number of shareable EMA partitions is 8. Refer to the *RTE-6/VM System Manager's Manual* for modifying this table.

STEP 38 - SHAREABLE EMA PROGRAMS ?

In addition to defining shareable EMA partitions, the programs generated into the system that will use these areas must also be defined. In this section, the names of programs that use shareable EMA are entered along with their associated EMA labels. In the example below, the program “XYZ12” uses shareable EMA labeled “DATA” (note that “DATA” resides in partition two as defined above):

```
XYZ12 , DATA
```

Terminate input with a “/E” after all shareable EMA program names have been entered.

STEP 39 - ASSIGN PROGRAM PARTITIONS?

The last step in the generation procedure is that of assigning programs to run in a specific partition. Enter only those programs you wish to assign to a partition, using the following form:

program_name , *partition #*

where:

program_name is the name of the program to be assigned to a partition.

partition # is the number of a partition as defined in Step 35. You cannot assign a program to a shareable EMA partition (as defined in Step 37) or a GEN ERR 69 will occur. A GEN ERR 49 will occur if a program is assigned to a partition that was not defined.

The partition must be large enough to hold the program. EMA program page requirements are one greater than the sum of program pages and EMA size to account for the required page translation table.

Terminate the program assignment list with /E.

An example of program assignment to a partition follows:

```
D.RTR, 1      Program D.RTR will execute only in partition #1. Note that other programs
              can also use this partition unless it was specifically reserved (in Step 35) for
              D.RTR and assigned only to D.RTR.
```

Note that the system AS command allows the changing of program assignment after generation.

Mother partitions are used only for those programs using EMA (Extended Memory Area), for programs specifically assigned to them, and for MLS programs that will not fit into any other partition. Regular partitions are used to execute non-EMA programs, EMA programs that will fit into a regular partition, shareable EMA programs, or to hold shareable EMA data.

When the generation is complete, the generator reports that the system is stored in a file, followed by a report of the system size in decimal number of tracks and sectors (128-word sectors) and the equivalent total in blocks. Also reported is the number of blocks actually used which is useful where the file is extended. In this case the user must make sure that the number of used blocks is in the first extent of the file. This may require a COpy or STore operation. Alternately, the generator can be rerun with the proper size specification for the output file. The number of errors (FMP and GEN ERRs, excluding UNDEFS) encountered during generation are also reported, and each GEN ERR is expanded.

```
SYSTEM STORED IN FILE
SYS SIZE:ttt TRKS, sss SECS      (XX SECTORS/TRACK)
      =   XXXXX BLOCKS          (XXX WORDS/BLOCK)
RT6GN FINISHED
xxx ERRORS
```

Next the generator reports how much EMA space it used. This may be used to resize the generator for subsequent runs (leave a little extra). The final report is the total elapsed generation time. If the generation was run with parameter 2 bit 0 set, other timing information will also be printed at this time.

System Generation

Introduction

The Online Generator executes in the minimum software environment that was defined in Chapter 1.

This chapter provides directions for running the RTE-6/VM Online Generator program (RT6GN) to configure your RTE-6/VM system.

It is assumed at this point that you have already planned (with the aid of the instructions and worksheets included in the appropriate documentation) your configuration and actual responses to the generator's queries. Most of the responses required during generation will be taken directly from the worksheets.

Executing the Online Generator

The Online Generator program (RT6GN) is executed using either the system FMGR or CI command, RU. You can either create an answer file (disk transfer file or logical unit) that contains the information required by the generator, or you can provide this information interactively via the user console.

The syntax of the RU command used to execute the Online Generator is as follows (if only "RT6GN" is entered, help information is displayed):

```
RU, RT6GN, command_file [ , switches [ , order1 [ , order2 ] ] ]
or
RU, RT6GN, ? [ , error1 , . . . errorn ]
```

where:

command_file is the answer file (disk transfer file or LU) that contains the information required by the generator or the user console LU number if you want to provide this information interactively.

switches (add numbers from below)

- 1 – HASH stats and timing information printed
- 2 – Output file record numbers printed
- 4 – Clear unused output file sectors
- 8 – No SYSTEM links used in programs
- 16 – Use dumb driver allocation algorithm

Most of the switches are self-explanatory. Switch 1 and switch 2 add additional data to the listing file and, otherwise, do not affect the resultant generation. Switch 4 causes the generator to clear any unused portions of the output file. This is only needed if it is desired to compare two generator output files. If the files are generated with this switch on, they are completely defined; otherwise, the unused areas are not deterministic, and the compare will fail.

Switch 8 tells the generator not to scan that portion of the system link area, which is in the program's map to satisfy required links. If the program is otherwise transportable, this will allow it to be transported. However, the generator does not set the transportable bit.

Switch 16 dictates which of two driver selection algorithms to use. The dumb routine chooses the largest driver that will fit in the remaining space. The default routine (switch 16 off) chooses the largest driver that will fit only if "near" a page boundary (see *order1* and *order2* below). Otherwise, it will choose the largest driver that crosses, at most, one page boundary.

Note that for 2-page, and most of the time 3-page, driver partitions, the two algorithms give the same result. For larger partitions, the default algorithm should save a few base page links.

order1
order2

Modify the default module selection parameters. Default for *order2* is 1/2 *order1*. Default for *order1* is 200. Module selection parameters handle the base page link overflow problem (see Chapter 2 of this manual for further information on the LINKS IN command). Program modules are loaded according to a best fit algorithm. Ideally, enough modules of complementary sizes exist so they will fit together like pieces of a puzzle. Since the modules rarely cooperate perfectly, the algorithm loads as follows:

The first module selection parameter is the number of words above a page boundary that the generator will still consider almost the same as a page boundary. This number of words above is termed 'near above'. Below this limit the generator selects the largest module available to start in this area. The big modules are thus loaded at or near a page boundary. 'Near' is defined by this word, and the default is 200.

The second module selection parameter is used if the alternate currently selected module starts 'near' or below a page boundary and extends beyond about 80% of the first parameter into the page. The generator now tries to find a module that most nearly fills the new page + 3/4 of the area below the page boundary (1/4 is saved for CP links). Thus the term 'near below'. Again 'near' is defined by the second module selection parameter. It is defaulted to 50% of the first parameter (which seems to work very well in nearly all cases). To summarize, if we are near a page boundary, we want to load either a big module (if above the boundary) or, at least, a page size module if 'just' below a page boundary.

? indicates help file mode.

where [, *error1* , . . . *errorn*] is an optional list of error numbers or the following:

AL lists all errors; RT6GN prompts for the name of the list file.
AL , *listfile* [, R] lists all errors, specifying the list file. The R option indicates that *listfile* can be replaced if it exists.

If nothing is specified after ?, RT6GN goes interactive.

Example:

```
:RU,RT6GN,5
```

When you enter this form of the RU command, RT6GN is scheduled and generator responses are supplied from LU 5.

If the parameter specified in the RUN command is an interactive device (for example, a terminal), the ECHO option will cause commands and responses to be echoed to that device. (Note that echo is suppressed when the current device is the same as the default device.) Similarly, error messages will be sent, and, on error, control may be transferred to this device. If the parameter specifies a non-interactive input (for example, file manager file), the ECHO option will cause messages and errors to be routed to LU 1. (In session environment this is your session terminal.)

If you wish to generate from an answer file but want the generator's echo and/or error messages to be sent to your terminal, which is outside of the session environment, use the terminal as the default input device and then transfer to the answer file.

Example:

```
RU,RT6GN,lu (where lu is your terminal LU)
```

Then the generator will request (at your console):

```
LIST FILE NAMR?
```

You can respond with the following:

```
TR,ANSFIL: :2
```

RT6GN will then proceed under the direction of your answer file, ANSFIL.

Responses and Comments

Standard user responses are entered as a line, followed by a carriage return. Whenever a response is expected, one or more comments may also be entered. A comment begins with an asterisk (*) and terminates with a carriage return. When the generator encounters an asterisk in a line, it considers the remainder of that line to be a non-executable statement. A comment may either be entered on the same line as a response or as a separate line. If the comment is entered as a separate line (or lines), a response line is entered on the following line. Restrictions on the use of comments are given in Chapter 2. Comments are useful when transferring response input from the console to an answer file and also for documentation purposes.

Error Handling

Error conditions encountered during online system generation result in the following two types of numbered error messages:

1. File reference errors that result in an FMP error code, in the form:

FMP ERR-*nn* *filename*

where:

nn is a decimal number equivalent to the FMP error codes that are defined in the *RTE-6/VM CI User's Manual*.

filename is the file name or LU on which the error occurred.

An FMP error may result from incorrect references to the list file, absolute output file, answer file, bootstrap file, scratch file, or a file specified in a RELOCATE command.

2. An error condition encountered by the Online Generator that results in a generator error code, in the form:

GEN ERR *nn*
(*more*)

where:

nn is a positive decimal number representing the generator error codes listed in Appendix A.

(*more*) specifies, in some error messages, one or more lines of additional information (for example, the program or entry point name) further identifying the cause of the error.

Common forms are:

y...y IN x...x OF z...z
and
x...x OF z...z

where:

y...y is an ENT/EXT name

x...x is a module name

z...z is a file descriptor

All of the numbered error messages are summarized in Appendix A.

Note that after certain errors, control is transferred to the appropriate console for user action (refer to the Executing the Online Generator section for details).

On abortive errors (that is, “irrecoverable” errors; for example, 00, 17, and so forth), RT6GN will purge the absolute output file, scratch file, and boot file (if any) before terminating. The list file and answer file will remain. At this time all relocatable files will also be closed (this may take awhile).

When an error occurs on the list file during generation (for example, the inability to create an extent due to lack of FMGR disk space), the appropriate FMP ERR is reported, in addition to a GEN ERR 22. In such cases, the generator proceeds with the listed output being sent to the user console only. The listed output will go to the console even if NO was entered in response to the ECHO? query.

You may turn ECHO off again with the BREAK command if you like. The generator will again turn ECHO on at the end of generation so that the error summary will show on the console.

An FMP-005 error may result on the last record if you attempt to list the file via the File Manager.

The generation may be aborted with the BREAK command. The following message is printed by the generator to inform you that a driver partition overflow has occurred on the most recently relocated driver:

```
DRIVER PARTITION OVERFLOW
```

This message is for documentation purposes only and tells you to ignore the load map printed (if any) for the last driver relocated. RT6GN will re-relocate this driver into a subsequent driver partition. No operator intervention is required for recovery and no transfer is made to the user console.

Number Systems

The Online Generator uses octal numbers when listing word addresses (including interrupt trap cell locations and device select codes and module load addresses). Your responses that specify word addresses must be entered in octal notation. All other quantities, including page references and reports of number of words, are expressed in decimal notation.

Sample Generation

The following pages discuss an actual RTE-6/VM system generation in a step-by-step procedure. Sample worksheets prepared for this RTE system generation are included in Chapter 2. A sample answer file format for the generation is given in Appendix E, and the listed output (or print-out) produced during the generation process is included in Appendix F.

RTE-6/VM System Generation Example

RT6GN execution begins following entry of the RU command. Assume the interactive mode in the following example. The generator's queries are shown, followed by the user's responses.

Initialization Phase

When execution begins, the generator requests the namr of the list file or the logical unit number of the device that will receive the listed output from the generator.

```
RU,RT6GN,1  
  
LIST FILE NAMR?  
1
```

Having received the list file, the generator displays the header and the dialog thus far and asks if the listed output is to be echoed to the user console:

```
RU,RT6GN,1  
LIST FILE NAMR?  
1  
  
RTE6GN Rev.6000 <920911.1202>          5:41 PM TUE., 18 MAY., 1993  
ECHO?  
YES
```

Next, the generator requests a namr (file size parameter must be specified) for the output file:

```
OUTPUT FILE NAMR?  
!PR602T::SCRATCH::5000,R
```

The generator requests the type of disk on the system for which this generation is produced (destination system).

```
SYSTEM DISK MODEL?  
7906H          * 7906H TARGET DISK
```

The generator requests the octal select code of the system disk controller:

```
CONTROLLER SELECT CODE?  
14          * DISK CHANNEL
```

The generator requests the number of tracks, starting cylinder number, starting head number, number of surfaces, unit number, and number of spare tracks (all decimal) for subchannel 0. Enter these decimal values separated by commas. Blanks may be freely used to make user responses more readable.

The generator will continue to display a subchannel number following each entry up to subchannel 63 or until terminated by the entry of the input data terminator, /E. For this example:

MODEL. # TRKS, FIRST CYL #, HEAD, # SURFACES, UNIT, # SPARES FOR SUBCHNL:

* DISK	#TRKS	1ST-CYL	HEAD	#SURFACES	UNIT	#SPARES	
7925,	256,	0,	0,	9,	0,	5	*SUBCHANNEL 0
7925,	1500,	29,	0,	9,	0,	66	*SUBCHANNEL 1
7925,	193,	203,	0,	9,	0,	5	*SUBCHANNEL 2
7925,	193,	225,	0,	9,	0,	5	*SUBCHANNEL 3
7925,	193,	247,	0,	9,	0,	5	*SUBCHANNEL 4
7925,	193,	269,	0,	9,	0,	5	*SUBCHANNEL 5
7925,	193,	291,	0,	9,	0,	5	*SUBCHANNEL 6
7925,	193,	313,	0,	9,	0,	5	*SUBCHANNEL 7
7925,	193,	335,	0,	9,	0,	5	*SUBCHANNEL 8
7925,	193,	357,	0,	9,	0,	5	*SUBCHANNEL 9
7925,	193,	379,	0,	9,	0,	5	*SUBCHANNEL 10
7925,	193,	401,	0,	9,	0,	5	*SUBCHANNEL 11
7925,	256,	423,	0,	9,	0,	5	*SUBCHANNEL 12
7925,	193,	452,	0,	9,	0,	5	*SUBCHANNEL 13
7925,	193,	474,	0,	9,	0,	5	*SUBCHANNEL 14
7925,	193,	496,	0,	9,	0,	5	*SUBCHANNEL 15
7925,	193,	518,	0,	9,	0,	5	*SUBCHANNEL 16
7925,	193,	540,	0,	9,	0,	5	*SUBCHANNEL 17
7925,	193,	562,	0,	9,	0,	5	*SUBCHANNEL 18
7925,	193,	584,	0,	9,	0,	5	*SUBCHANNEL 19
7925,	193,	606,	0,	9,	0,	5	*SUBCHANNEL 20
7925,	193,	628,	0,	9,	0,	5	*SUBCHANNEL 21
7925,	193,	650,	0,	9,	0,	5	*SUBCHANNEL 22
7925,	193,	672,	0,	9,	0,	5	*SUBCHANNEL 23
7925,	96,	694,	0,	9,	0,	3	*SUBCHANNEL 24
7925,	150,	705,	0,	9,	0,	3	*SUBCHANNEL 25
7925,	96,	722,	0,	9,	0,	3	*SUBCHANNEL 26
7925,	96,	733,	0,	9,	0,	3	*SUBCHANNEL 27
7925,	194,	744,	0,	9,	0,	4	*SUBCHANNEL 28
7925,	194,	766,	0,	9,	0,	4	*SUBCHANNEL 29
7925,	194,	788,	0,	9,	0,	4	*SUBCHANNEL 30
7925,	114,	810,	0,	9,	0,	3	*SUBCHANNEL 31

The next request is for the subchannel number of the system disk (LU 2). This is the disk on which the absolute code will be stored for execution. The response can be any one of the subchannel numbers assigned to the system. In this case, it is subchannel number 0, as follows:

```
SYSTEM SUBCHNL?
0                * SYSTEM SUBCHANNEL
```

The generator asks if there is to be an auxiliary disk subchannel (LU 3). You may respond with YES, NO, or a decimal value indicating the number of tracks to be allocated to the auxiliary disk. A YES response specifies that the auxiliary disk is on the same disk controller as the system disk,

and a request will be made for subchannel number information. A NO response specifies that there is no auxiliary disk. A track count response indicates that the auxiliary disk is to consist of that number of tracks on a disk controller other than the one that supports the system disk, and a request will then be made for the model number of that disk. For this generation:

```
AUX DISK (YES OR NO # OF TRKS)?  
YES * AUXILIARY DISK
```

The generator asks for the auxiliary subchannel number:

```
AUX DISK SUBCHNL?  
12 * AUXILIARY DISK SUBCHANNEL
```

Next, the generator requests the octal select code of the Time Base Generator:

```
TBG SELECT CODE?  
10 * TBG SELECT CODE
```

The next prompt asks for the octal select code of the Privileged Interrupt I/O card. In this example there is no card:

```
PRIV. INT. SELECT CODE?  
0 * PRIV. INT. SELECT CODE
```

The generator asks if TABLE AREA II and SDA should be included in the User Map for access by memory-resident programs:

```
MEM. RES. ACCESS TABLE AREA II?  
YES * MEM. RES. ACCESS TABLE AREA II
```

Next, the generator asks if any program is to be allowed to lock itself into the real-time area and/or into the background area:

```
RT MEMORY LOCK?  
YES * RT MEMORY LOCK
```

```
BG MEMORY LOCK?  
YES * BG MEMORY LOCK
```

Next, the amount of swap delay time is requested. This requires the entry of a decimal value representing tens of milliseconds in the range of 0 through 255. In this example:

```
SWAP DELAY?  
50 * SWAP DELAY
```

The generator asks for the physical memory size in decimal pages:

```
MEM SIZE?  
512 * MEMORY SIZE
```

The last prompt in this phase requests the name of the file or the LU number of the device that will receive the bootstrap loader. In this example no bootstrap loader is to be produced:

```
BOOT FILE NAMR?  
0 * BOOT FILE NAMR
```

Program Input Phase

During this phase the generator accepts commands that direct it to the files containing the relocatable modules to be included in the new system. The generator displays a heading that indicates the beginning of this phase. The heading is followed by a hyphen character (-) to prompt the entry of an operator command. The hyphen prompt is repeated after each command is accepted until you enter a /E to terminate the Program Input Phase. For this example the entries appear as follows:

PROG INPUT PHASE :	Introductory heading
-	Command prompt
MAP ALL	
-	
LINKS IN CURRENT	See the RT6GN listed output in Appendix F for a complete list of command entries
-	
REL, %CR6S1	* RTE-6/VM OP SYS
-	
REL, %CNFG	* RTE-6/VM OP SYS
:	
REL, %HELP : : SM	* HELP PROGRAM
-	
DISPLAY UNDEFS, TR	If answers will be supplied from an answer file, it would be useful to do a DISPLAY UNDEFS,TR
-	
/E	Terminate this phase
NO UNDEFS	Generator message; no undefined references exist

Caution The value of all undefined externals are set to zero upon exit from the Program Input Phase. Results are unpredictable if programs that were loaded during generation reference these externals.

Parameter Input Phase

During this phase you can modify the program type, priority, or execution interval, or you can modify the ENT record for any of the programs entered during the previous phase (undefined externals may be given a non-zero value). The generator displays the appropriate heading, after which you enter your changes. The heading is followed by a hyphen character (-) to prompt the entry of the parameter changes. The hyphen prompt is repeated after acceptance of each command until you enter a /E to terminate the parameter entry list.

First, the generator requests any parameter changes:

PARAMETERS	Introductory heading
-	Command prompt
D.RTR, 6, 1	
-	
WHZAT, 1, 41	
-	
/E	See the RT6GN listed output in Appendix F for a complete list of entries; terminate this list.

Next, the generator asks if there are entry (ENT) records that you wish to change:

CHANGE ENTS?	Introductory heading
-	Command prompt
TAN, RP, 105320	
-	
SQRT, RP, 105321	
-	
ALOG, RP, 105322	
-	
ATAN, RP, 105323	
-	
COS, RP, 105324	
-	
SIN, RP, 105325	
-	
EXP, RP, 105326	
-	
ALOGT, RP, 105327	
-	
:	
-	
DVSWP, RP, 105473	
-	
/E	

Change Name Phase

Now the generator requests if there are any names to be changed:

Names greater than five characters long should be made smaller; otherwise, the generator will stop and list all modules greater than five characters long.

Table Generation Phase

The generator displays a heading to begin the Equipment Table entry portion of this phase. The heading is followed by a prompt asking for the first entry. This prompt is reissued following each of your entries until you terminate the entry list with a /E:

```
Table  AREA I

EQUIPMENT TABLE ENTRY

EQT 01?
*
*****
*****TABLE GENERATION PHASE*****
*****
*
*****EQUIPMENT TABLE*****
*
11,DVR32,D                               * EQT 01 7925 DISK

EQT 02?
12,DVA05,B,X=13,T=12000                 * EQT 02 SYSTEM CONSOLE (2645)

EQT 03?
13,DVA12,B,X=13,T=12000                 * EQT 03 2631 LINE PRINTER

EQT 04?
14,DVR37,B,X=50,T=20000                 * EQT 04 HPIB

EQT 05?
15,DVR23,B,D,T=9999                     * EQT 05 7970 MAG TAPE

EQT 06?
17,DVA05,B,X=13,T=12000                 * EQT 06 2645 TERMINAL

EQT 07?
20,DVA05,B,X=13,T=12000                 * EQT 07 2645 TERMINAL

EQT 08?
21,DVA05,B,X=13,T=12000                 * EQT 08 2645 TERMINAL
.
.
.
EQT 22?
/E
```

The next table is the Device Reference Table, which determines LU number assignments. The generator displays an introductory heading, followed by a prompt for the Equipment Table entry number (and optional subchannel specifications) to be associated with LU 1. This prompt is reissued for each LU number until you terminate the entry list with a /E:

```

DEVICE REFERENCE TABLE

001 = EQT #?
*
*****DEVICE REFERENCE TABLE*****
*
2                * LU 01 SYSTEM CONSOLE

002 = EQT #?
1                * LU 02 SYSTEM DISK (SUBCHANNEL 0)

003 = EQT #?
1,14            * LU 03 AUX. DISK (SUBCHANNEL 14)

004 = EQT #?
2,1             * LU 04 LEFT CTU

005 = EQT #?
2,2             * LU 05 RIGHT CTU

006 = EQT #?
3                * LU 06 2631 LINE PRINTER
.
.                See the RT6GN listed output in Appendix F
.                for a complete list of entries.
079 = EQT #?
/E              Terminate this list.

```

The next portion of this phase asks you for the Interrupt Table entries for each I/O card select code. The generator displays an introductory heading, after which you may enter the Interrupt Table information. The heading is followed by a hyphen character (-) to prompt the Interrupt Table entries. Except for I/O location 4 (the Powerfail card), the table entries must be in ascending order. The Interrupt Table entry list is terminated with a /E:

```

INTERRUPT TABLE      Introductory heading
-                     Command prompt
*                     Octal select code, options, destination
*****INTERRUPT TABLE*****
*
4, ENT, $POWR        * POWERFAIL
-
11, EQT, 1           * 7925 DISK
-
12, PRG, PRMPT       * SYSTEM CONSOLE
-
13, EQT, 3           * 2631 LINE PRINTER
.
.
/E

```

System Boundaries Phase

After relocating the Table Area I modules, the generator reports (in decimal number of pages) the default size of the driver partitions and asks for any change:

```
DRIVR PART 00002
CHANGE DRIVR PART?
*
*****SYSTEM BOUNDARIES*****
*
0                                * CHANGE DRIVER PART
                                (0 means there is no change in
                                the driver partition size)
```

Driver partition #1 and the Subsystem Global Area (SSGA) are loaded next. Then the generator reports the size (in decimal words) of the Real-time COMMON area and asks if you want to change the size:

```
RT COMMON 00000
CHANGE RT COMMON?
100                                * CHANGE RT COMMON
```

Next, the generator reports the starting address of the Real-time COMMON area:

After aligning the end of Background COMMON at the next page boundary, the generator reports the defaulted size of Background COMMON:

The generator then asks if you want to change (in page increments) the size of the Background COMMON area:

```
CHANGE BG COMMON?
1                                * CHANGE BG COMMON
```

At this point, the generator reports the first word address of the Background COMMON area:

Next the generator reports the total size (decimal) of Background COMMON:

System and Program Loading Phase

After loading the System Driver Area modules, the generator asks you to enter the number of Class I/O numbers to be allocated:

```
# OF I/O CLASSES?
*
*****RESOURCES TABLES
*
64                                * # I/O CLASSES
```

The generator then asks you for the maximum number of LU commands you will allow to be referenced in a single job within the Batch-Spool Monitor (response to this question is derived from requirements described in the *RTE-6/VM Batch and Spool Monitor Reference Manual*). The maximum number of schedule programs is also requested.

```
# OF LU MAPPINGS[, # OF SCHEDULE PROGRAMS]?
10 * LU MAPPINGS (default is 2)
```

Next, the generator requests the number of resource numbers you will allow to be allocated and the debug table size.

```
# OF RESOURCE NUMBERS[, DEBUG TABLE SIZE]?
32,10 * # R.N.'S, DEBUG TABLE
```

Your response to the next question determines the lower and upper limits (in decimal words) for I/O buffering:

```
BUFFER LIMITS (LOW,HIGH)?
100,400 * BUFFER LIMITS
```

Now, the generator gives the number of long ID segments used and asks that you enter the number of additional blank long (33-word) ID segments to be allocated in Table Area II for online program loading.

```
0030 LONG ID SEGMENTS USED
# OF BLANK ID SEGMENTS?
32 * BLANK ID SEGS
```

Then, the generator gives the number of short ID segments used and asks you to enter the number of additional blank short (9-word) ID segments to be allocated in Table Area II for online background segment loading:

```
0018 SHORT ID SEGMENTS USED
# OF BLANK SHORT ID SEGMENTS?
50 * SHORT ID SEGS
```

The generator gives the number of ID extensions used and asks you to enter the number of additional ID segment extensions to be allocated in Table Area II for online EMA program loading:

```
0000 ID EXTENSIONS USED
# OF BLANK ID EXTENSIONS?
4 * ID EXTENSIONS
```

The generator requests that you specify the maximum number of partitions to be defined for this generation:

```
MAXIMUM # OF PARTITIONS?
32 * PARTITIONS
```

Program loading continues with the appropriate linking and mapping (modules, globals, links) options in effect. Table Area II modules, system modules, the configuration program, and the remaining partition-resident drivers are relocated to complete the system portion of program loading.

Next, the generator relocates the memory-resident library followed by all memory-resident programs. All real-time and background disk-resident programs are then relocated.

Note that if there are no modules loaded in the memory-resident library or memory-resident partition, one page will be allocated for the memory-resident base page anyway.

Partition Definition Phase

This phase starts with a list of real-time program partition size requirements:

```
RT PARTITION REQMTS :  
AUTOR 02 PAGES
```

The generator then lists the background program partition size requirements; Type 4 BG programs are annotated with an asterisk (*):

```
BG PARTITION REQMTS :  
. . .  
$CNFX 04 PAGES      BG  
SYMBR 11 PAGES      BG  
FMGR  12 PAGES      BG  
LOGON 11 PAGES      BG  
LGOFF 09 PAGES      BG  
R$PN$ 04 PAGES      BG  
T5IDM 06 PAGES      BG  
DSMOD 09 PAGES      BG  
DINIT 11 PAGES      BG  
GASP  11 PAGES      BG  
SMP   06 PAGES      BG  
JOB   06 PAGES      BG  
AUTOR 02 PAGES      BG  
CMM6  13 PAGES      BG  
TRFAS 06 PAGES      BG  
WHZAT 10 PAGES      BG  
LOADR 20 PAGES      L  BG  
D.RTR 29 PAGES      X  BG  
D.ERR 04 PAGES      X  BG  
CI    30 PAGES      X  BG  
CIX   28 PAGES      X  BG
```

The next report defines the largest addressable program sizes available (including base page):

```
MAXIMUM PROGRAM SIZE :  
W/O COM 28 PAGES  
W/  COM 26 PAGES  
W/TA2   20 PAGES
```

Next, the generator reports the decimal size of System Available Memory (the generator automatically allocates to SAM that memory remaining at the end of Table Area I and that memory that was occupied by the reconfigurator program):

```
SYS AV MEM: 04019 WORDS
```

The generator then reports the number of the first physical memory page available for partitioning, and you are asked if you want to change this beginning page number in order to increase the size of SAM (in this example the page number is not changed, which results in no increase in the size of SAM):

```
ENTER 1ST PARTITION PAGE: 00047 (DEFAULT) TO 00052:
TR, 1
0
SYS AV MEM 04019 WORDS
```

The generator reports the decimal number of pages remaining for partitioning. This report is followed by a message telling you to define your partitions, and then a prompt is issued that asks for the first partition definition. This prompt is reissued after acceptance of each entry until you enter a /E or /D to terminate the list.

If you define a partition whose size is larger than 32 pages user logical address space, the generator will prompt you for subpartitions and you respond with a YES or NO.

```
PAGES REMAINING: 00081
```

```
DEFINE PARTITIONS
```

Introductory heading

```
PART 01, 0468 PAGES?
3, RT
```

Command prompt

```
PART 02, 0465 PAGES?
5, BG
```

```
PART 03, 0460 PAGES?
6, BG
```

```
PART 04, 0454 PAGES?
9, BG
```

```
.
.
```

See the RT6GN listed output in Appendix F for a complete list of entries.

```
PART 30, 0000, (0050) PAGES?
25, S
```

```
PART 31, 0000, (0025) PAGES?
25, S
```

```
PART 32, 0000, (0000) PAGES?
/E
```

Terminate this list

Next you are asked if you want to modify page requirements. This query is followed by a hyphen character (-) to prompt the entry of page requirement modifications. The hyphen prompt is repeated after each entry is accepted until you enter a /E to terminate the list.

```
MODIFY PROGRAM PAGE REQUIREMENTS?      Introductory heading
-                                         Command prompt
FMGR,15
-
LOADR,26
-
EDITR,32
-
CI,32
-
CIX,32
-
/E
```

```
MAX # SHAREABLE EMA PARTITIONS IS 00008
SHAREABLE EMA PARTITIONS?
```

```
n,partition label                        The label can be no more than
                                         five characters.
```

```
/E
SHAREABLE EMA PARTITIONS?
```

```
name of program,partition label
/E
```

The next prompt asks if you want to assign any programs to a partition. The query is followed by a hyphen character (-) to prompt the entry of partition assignments. The hyphen prompt is repeated after each entry is accepted until you enter a /E to terminate the list.

```
ASSIGN PROGRAM PARTITIONS?              Introductory heading
-                                         Command prompt
/E                                         Terminate this list
```

Finally the generator reports that your system is stored in the output file. This report is followed by a report of the system size in tracks and sectors (decimal) and the equivalent number of blocks. The number of errors encountered during the generation is also reported:

```
SYSTEM STORED IN FILE
SYS SIZE:102 TRKS, 37 SECS (48 SECTORS/TRACK)
          = 04933 BLOCKS   (128 WORDS/BLOCK)
```

```
04942 BLOCKS OF OUTPUT FILE USED
RT6GN FINISHED
0000 ERRORS
```


Error Summary

FIXUPS NOT RESOLVED Error

This error occurs when all modules for a section are loaded, and unexpected, unresolved fixups are logged in the Fixup Table. This occurs on memory overflow or in cases where an entry point is resolved in a module that the generator will not load with the referencing code; for example, a reference from one program to the main of another program or from the system area to a program main.

Online Generator Error Codes

The Online Generator issues two types of error codes:

1. File reference errors that result in an FMP error code, in the form:

```
FMP ERR-nn filename
```

where:

nn is a decimal number equivalent to the FMP error codes that are defined in the *RTE-6/VM CI User's Manual*.

filename is the file name or LU on which the error occurred.

An FMP error may result from incorrect references to the list file, absolute output file, answer file, bootstrap file, scratch file, or a file specified in a RELOCATE command.

2. An error resulting from online generation processing causes a generator error to be issued in the form:

```
GEN ERR nn  
(more)
```

where:

nn is a positive decimal number representing the generator error codes listed in Appendix A.

(*more*) specifies, in some error messages, one or more lines of additional information, for example, the program or entry point name, further identifying the cause of the error.

Common forms are:

```
    y...y IN x...x OF z...z  
and  
    x...x OF z...z
```

where:

y...y is an ENT/EXT name

x...x is a module name

z...z is a file descriptor

GEN ERR 00

Meaning: Irrecoverable error.

Action: If the error is accompanied by an FMP ERR, check the cause of the problem.

The problem may be hardware-oriented, symptomatic of disk transfer/DCPC problems, in which case the appropriate diagnostics should be run. Ensure that the memory configuration in which RT6GN is executing has the correct amount of physical memory.

If the error is not accompanied by an FMP ERR, an actual generator problem (relating to its internal table structures) may exist; send your generation listing and answer file to your local HP Field Service Office for analysis.

GEN ERR 01

Meaning: Invalid response to generator request.

This is a general error message for invalid responses such as: incorrect type, number out of bounds, negative numbers, and so forth.

Action: Request is redisplayed. Enter valid response.

GEN ERR 02

Meaning: Insufficient amount of EMA memory for internal generator tables.

Action: Irrecoverable error. Increase the EMA size and rerun the Online Generator.

GEN ERR 03

Meaning: Relocatable record out of sequence.

Action: Module is skipped; replace module. Message printed on list device only; control is not transferred to the user console.

GEN ERR 04

Meaning: Illegal record type.

Action: Module is skipped. Message printed on list device only; control is not transferred to the user console.

GEN ERR 05

Meaning: Duplicate entry point (the current entry point replaces the previous entry point).

Action: Revise program by relabeling the entry points. First defining and current defining module names are printed. Message printed on list device only; control is not transferred to the user console.

GEN ERR 06

Meaning: Command error during Program Input Phase; often accompanied by an FMP error (see FMP error code definitions).

Action: Request is redisplayed. Enter valid response.

GEN ERR 07

Meaning: Generator symbol table overflow. Insufficient amount of EMA memory for internal generator tables.

Action: Irrecoverable error. Increase the EMA size and rerun the Online Generator.

GEN ERR 08

Meaning: Duplicate program name.

Action: The current program replaces the previous program. Message printed on list device only; control is not transferred to the user console.

GEN ERR 09

Meaning: Named program not found.

Action: Request is redisplayed. Enter valid response.

GEN ERR 10

Meaning: Parameter type error (for example, number out of range or decimal number where octal expected), or EMA symbols (entry points) cannot be changed.

Action: Request is redisplayed. Enter valid response.

GEN ERR 11

Meaning: Parameter priority error.

Action: Request is redisplayed. Enter valid response.

GEN ERR 12

Meaning: Parameter execution interval error.

Action: Request is redisplayed. Enter valid response.

GEN ERR 13

Meaning: Program segment precedes main disk resident program.

Action: Module is skipped. Either revise module or reorder RELOCATE command entries. Message printed on list device only; control is not transferred to the user console.

GEN ERR 14

Meaning: Checksum error on relocatable record.

Action: Module is skipped. Message printed on list device only; control is not transferred to the user console.

GEN ERR 15

Meaning: Illegal reference to a Type 7 module by a Type 6 or 15 module (name is the illegally referenced symbol).

Action: Revise the calling module. Message printed on list device only; control is not transferred to the user console.

GEN ERR 16

Meaning: Base page linkage overflow into driver link area. Link value is zero.

Action: Try different 'order' to turn on parameters or revise programs or specify LINKS IN CURRENT to reduce linkage requirements. Message printed on list device only; control is not transferred to the user console.

GEN ERR 17

Meaning: Type 1 output file overflow.

Action: Irrecoverable error. Increase the file size and rerun the Online Generator.

GEN ERR 18

Meaning: Memory overflow (absolute code exceeds Last Word Available memory). If the configuration module exceeds 77577B (7918 and MAC based system) or 77377B (ICD or CS/80 based system), or if the generation is in memory-resident load phase, the generator is aborted.

Action: Try different 'order' to turn on parameters, revise programs, or specify LINKS IN CURRENT to reduce linkage requirements.

Otherwise (for user programs) try typing as type 4 or 6. Message printed on list device only; control is not transferred to the user console.

GEN ERR 19

Meaning: Transfer (TR) request nesting level greater than seventy; or empty stack.

Action: Request is redisplayed. Enter valid response.

GEN ERR 20

Meaning: Transfer (TR) request was to an illegal logical unit for command input.

Action: Request is redisplayed. Enter valid response.

GEN ERR 21

Meaning: System module containing entry point \$CIC not loaded.

Action: Irrecoverable error. Ensure that all of the necessary system modules have been specified in RELOCATE commands and rerun the Online Generator.

GEN ERR 22

Meaning: List file error. Usually an FMP ERR-6 occurring when a list file extent cannot be created due to lack of disk space on the same subchannel.

Action: Generation continues with list output to the user console only. (Note that the list file will be truncated at this point.)

GEN ERR 23

Meaning: Invalid F, S, or M operands (must conform to previous EQT definitions using same driver) or both F and S, or system disk driver (whose EQT select code matches CONTROLLER SELECT CODE? response) cannot specify SDA or F.

Action: Request is redisplayed. Enter valid response.

GEN ERR 24

Meaning: Invalid select code number (EQT statement).

Action: Request is redisplayed. Enter valid response.

GEN ERR 25

Meaning: EQT entry specified non-existent driver. Invalid driver name or no driver entry points.

Action: Request is redisplayed. Enter valid response.

GEN ERR 26

Meaning: Invalid or duplicate D, B, T, S, M, F, or X operands (EQT statement).

Action: Request is redisplayed. Enter valid response.

GEN ERR 27

Meaning: Invalid equipment table number (DRT statement).

Action: Request is redisplayed. Enter valid response.

GEN ERR 28

Meaning: Invalid select code number (INT statement).

Action: Request is redisplayed. Enter valid response.

GEN ERR 29

Meaning: Select code number decreasing (INT statement).

Action: Request is redisplayed. Enter valid response. (Select codes must be entered in the Interrupt Table in ascending order.)

GEN ERR 30

Meaning: Invalid mnemonic (meaning EQT, PRG, and so forth) in INT statement.

Action: Request is redisplayed. Enter valid response.

GEN ERR 31

Meaning: Invalid EQT number in an INT statement.

Action: Request is redisplayed. Enter valid response.

GEN ERR 32

Meaning: Invalid program name in an INT statement.

Action: Request is redisplayed. Enter valid response.

GEN ERR 33

Meaning: Invalid entry point in an INT statement. If the entry refers to a driver entry point, the driver to be entered cannot reside in a driver partition.

Action: Request is redisplayed. Enter valid response.

GEN ERR 34

Meaning: Invalid absolute value in an INT statement.

Action: Request is redisplayed. Enter valid response.

GEN ERR 35

Meaning: More than 63 EQT or 254 DRT entries defined. Message printed until a /E encountered.

Action: Revise answer file.

GEN ERR 36

Meaning: Invalid number of characters in final operand (destination parameter) in INT statement.

Action: Request is redisplayed. Enter valid response.

GEN ERR 37

Meaning: Invalid declaration of COMMON in system or library program (name is the program's name).

Action: Revise the program. Message printed on list device only; control is not transferred to the user console.

GEN ERR 38

Meaning: Multi-word RPL extends beyond modules bounds.

Action: Revise the program. Extending words are lost. Message printed on list device only; control is not transferred to the user console.

GEN ERR 39

Meaning: Missing system entry point (\$TIME, possibly others).

Action: Irrecoverable error. Ensure that all of the necessary system modules have been specified in RELOCATE commands and rerun the Online Generator.

GEN ERR 40

Meaning: Invalid EMA program type; must be real-time or background disk resident (name is the program's name).

Action: Revise program type. Program will not be loaded into the system this generation unless it has a valid type.

GEN ERR 41

Meaning: Multiple EMA declarations in one program.

Action: Module is skipped. Revise the program.

GEN ERR 42

Meaning: Either invalid reference to an EMA symbol (entry point) by a non-EMA program or to an EMA symbol belonging to another program (name is the EMA symbol).

Action: The referencing instruction is replaced with a NOP. Revise the program.

GEN ERR 43

Meaning: Invalid mapping segment (MSEG) size for an EMA program. Either the generation-determined default size results in a value ≤ 0 , or the specified size was too large to fit in the user logical address space.

Action: The program relocation is aborted, and no ID segment is built for that program. Revise the program.

GEN ERR 44

Meaning: Invalid response. Number must be in specified range or 0.

Action: Request is redisplayed. Enter valid response.

GEN ERR 45

Meaning: Invalid response. Partition size must be positive and less than 1025.

Action: Request is redisplayed. Enter valid response.

GEN ERR 46

Meaning: Invalid partition type (BG, RT, or S).

Action: Request is redisplayed. Enter valid response.

GEN ERR 47

Meaning: Invalid reservation parameter (third parameter must be "R").

Action: Request is redisplayed. Enter valid response.

GEN ERR 48

Meaning: Illegal program name. Name must be 5 or less characters long and a legal file name.

Action: Request is redisplayed. Enter valid response or enter a /E to end this sequence.

GEN ERR 49

Meaning: Invalid partition number.

Action: Either reenter program partition assignment response with corrected number or, if defining partitions, enter a /E to end this sequence because the maximum number of partitions has been exceeded.

GEN ERR 50

Meaning: Program specified is too large for partition assigned.

Action: Either assign program to a larger partition or continue without changing.

GEN ERR 51

Meaning: Invalid page size either smaller than the program size or larger than the maximum program size.

Action: Either reenter response with valid size or continue without changing.

GEN ERR 52

Meaning: Module being relocated references an SSGA entry point, but does not have the proper program type to allow SSGA access (name is the SSGA entry point).

Action: Revise the calling module or, during Parameter Input Phase, change the main program involved to a type that allows SSGA access or to a Type 8 to delete it from the generation. Message printed on list device only; control is not transferred to the user console.

GEN ERR 53

Meaning: The sum of all partition sizes does not equal the number of pages remaining after System Available Memory.

Action: Redefine all partitions until 0 pages remain or use /D to fill out the last partition.

GEN ERR 54

Meaning: A subroutine or segment has declared more COMMON than the associated main program.

Action: Recompile the main program, declaring the maximum COMMON needed by any segment or subroutine to be used. Message printed on list device only; control is not transferred to the user console.

GEN ERR 55

Error code not used.

GEN ERR 56

Meaning: Subpartition size is greater than the number of pages left in mother partition.

Action: Either revise and reenter response for last subpartition defined or return to RT/BG partition definition.

GEN ERR 57

Meaning: A system module or entry point is missing (name is the entry point name).

Action: Irrecoverable error. Ensure that all of the necessary system modules have been specified in RELOCATE commands and rerun the Online Generator.

GEN ERR 58

Meaning: Illegal reference to a system (Type 0) module by a non-HP subsystem module (name is the entry point name).

Action: Revise the program. Message printed on list device only; control is not transferred to the user console.

GEN ERR 59

Meaning: Driver partition overflow. Irrecoverable error.

Action: Increase the driver partition size to accommodate larger driver, or force driver into SDA (via its EQT definition) and rerun the Online Generator.

GEN ERR 60

Meaning: Long ID Segment limit of 254 exceeded. If more than 254 ID segments will be used for generator-relocated programs, the generator aborts and the request for # OF BLANK ID SEGMENTS? is not displayed.

Otherwise the request is redisplayed if the limit is exceeded after the user specifies the number of blank ID segments. This means that the total of the number of ID segments to be used at generation time plus the number of blank ID segments specified by the user is greater than 254.

Action: Either enter valid response or reduce the number of programs.

GEN ERR 61

Meaning: Physical memory overflow (number of pages declared exceeded).

Action: Irrecoverable error. Revise answer file and rerun the Online Generator.

GEN ERR 62

Meaning: Invalid instruction reference to an EMA symbol; an instruction either references the symbol with offset or with indirect.

Action: Violating instruction will be NOP'ed for this relocation. Revise program before next relocation. Message printed on list device only; control is not transferred to the user console.

GEN ERR 63

Meaning: The operating system modules that reside in OS partitions were found to be out of sequence. Modules must be entered in the correct (ascending) order during the program input phase of generation. For example, the module "OS1XX" must precede "OS2XX" since 1 is less than 2.

Action: Irrecoverable error. Check to make sure that the modules are entered in the correct order during the program input phase and rerun the Online Generator.

GEN ERR 64

Meaning: Tried to assign more than one shareable EMA label to the same partition. Note that if a mother partition is declared to be a shareable EMA partition, then the subpartitions of that mother partition may not also be declared shareable EMA, or vice-versa. Only one shareable EMA may reside in a partition or subpartition.

Action: Request is redisplayed. Enter valid response.

GEN ERR 65

Meaning: An illegal label was entered. Labels must begin with an alphabetic character and be five characters or less in length.

Action: Request is redisplayed. Enter valid response or enter a /E to end this sequence.

GEN ERR 66

Meaning: More than the maximum number of shareable EMA partitions entered. Only the number of EMA partitions given at the beginning of the SHAREABLE EMA PARTITION phase can be entered.

Action: Enter a "/E" to terminate input for this phase.

GEN ERR 67

Meaning: A duplicate shareable EMA label was entered.

Action: Request is redisplayed. Enter valid response.

GEN ERR 68

Meaning: During the SHAREABLE EMA PROGRAM phase the name of a non-EMA program was entered.

Action: Request is redisplayed. Enter valid response or enter a /E to end this sequence.

GEN ERR 69

Meaning: Tried to assign a program to a shareable EMA partition.

Action: Request is redisplayed. Enter valid response.

GEN ERR 70

Meaning: The shareable EMA used by the program was too large for the partition referenced by the given label.

Action: Request is redisplayed. Enter valid response.

GEN ERR 71

Meaning: An undefined shareable EMA label was entered.

Action: Request is redisplayed. Enter valid response.

GEN ERR 72

Meaning: The system and programs loaded online use more than 255 tracks on the system disk. The generation is aborted.

Action: Revise generation to load fewer programs and rerun the Online Generator.

GEN ERR 73

Meaning: The total number of tracks on LU 2 and LU 3 is greater than 1500.

Action: The generator will reprompt for the system and auxiliary subchannels. Specify an LU 2 or LU 3 whose total number of tracks will be less than 1500.

GEN ERR 74

Meaning: The EMA module "\$EMA\$" is missing. The module is not loaded by the generator.

Action: Revise RELOCATE commands to load missing module and rerun the Online Generator.

GEN ERR 75

Meaning: A symbol name was truncated to sixteen characters.

Action: The generator truncates the name and continues. This may cause duplicate ENT errors. To correct this problem, modify the module so that all names declared in NAM, ENT, and EXT records are sixteen characters or less in length.

GEN ERR 76

Meaning: Local EMA, save, or pure code are not legal in generations.

Action: The remainder of this module is skipped and not loaded. To correct this problem remove the above features.

GEN ERR 77

Meaning: GEN or LOD record or SAVE error:

- 1.) Record specifies EQT parameters for a non-driver or
- 2.) SAVE area for a system module, or
- 3.) GEN or LOD record in a subroutine (record is ignored), or
- 4.) SAVE area specified for a non-disk resident or non-main module, or a bad number entered, or
- 5.) (During EQT entry) EQT statement incompatible with GEN record.

Action: The GEN or LOD record is ignored except in case 5. In this case T= may be made larger or 0, X= may not be made smaller and S/M may not go to non-S/M. Request is redisplayed. Enter valid response.

GEN ERR 78

Meaning: Five or more word RPLs

Action: The remainder of the module is skipped and not loaded.

GEN ERR 79

Meaning: Inconsistent allocate records found. The same allocate symbol was used for both EMA and SAVE or COMMON.

Action: The last definition overrides the earlier ones. Message printed on list device only; control is not transferred to the user console.

GEN ERR 80

Meaning: Old and new EMA declarations in the same program.

Action: The module is flushed from the generation. Revise the program to use only one EMA access method.

GEN ERR 81

Meaning: Module checksum (checksum of checksums) failed. Warning only.

Action: The scan/load of this module continues.

GEN ERR 82

Meaning: Start time cannot be specified because this program uses SAVE area (a generator limitation, not a system limitation).

Action: Set time parameters with TI command after system boot.

GEN ERR 83

Meaning: Irrecoverable error. OS module too big for the OS code partition.

Action: Factory code fits, so you must reduce your OS module size.

GEN ERR 84

Meaning: Blocks per track is a multiple of seven (warning). File system may have a problem but the generation continues.

Action: None required.

GEN ERR 85

Meaning: Insufficient disk space remaining (warning).

Action: If disk subchannel:
– continue, but it may cause problems later, or
– correct answer file and rerun.

If hole:
– continue, or
– define smaller and continue, or
– correct answer file and rerun.

If disk cache for CTD:
– correct answer file and rerun.
– do not define a CTD without a disk cache.

GEN ERR 86

Meaning: Subchannel specified not previously defined.

Action: Request is redisplayed. Enter valid response.

GEN ERR 87

Meaning: Subchannel specified not a CTD.

Action: Request is redisplayed. Enter valid response.

GEN ERR 88

Meaning: Disk cache already defined.

Action: Continue, or specify correct CTD and continue.

GEN ERR 89

Meaning: Cannot cache on this disk (address incompatible).

Action: Specify correct CTD and continue, or correct answer file and rerun.

GEN ERR 90

Meaning: Save area overflow.

Action: Enter a SAVE statement at parameter time to specify total segment required SAVE area.

GEN ERR 91

Meaning: FORTRAN special symbol specifying “do not load” found after the module was already loaded.

Action: These flags should be in the main. Recompile the main and rerun the Online Generator.

GEN ERR 92

Error code not used.

GEN ERR 93

Meaning: A relocatable record calls for an undefined double DEF.

Action: Recompile the module or load the program online.

GEN ERR 94

Meaning: The size parameter in the output file name was not specified or was specified as less than the minimum size required (1000 blocks).

Action: Request is redisplayed. Enter valid response.

GEN ERR 95

Meaning: Undefined external(s) were encountered.

Action: Make sure the reported symbols are not needed. If they are needed, add the necessary RELOCate commands and rerun the Online Generator.

GEN ERR 96

Meaning: Warning: More than one driver forced to partition 1.

Action: Last entry is used.

GEN ERR 97

Meaning: Entry point is same as Labeled Common name.

Action: Generation will use the Entry point instead of the Labeled Common. Resolve by changing one of the names or by using NOALLOC option on the Labeled Common reference.

WARNING: If the defining entry point uses less memory than the common requires, CODE WILL BE OVERLAID!

GEN ERR 98

Meaning: **WARNING:** The OUTPUT file did not truncate properly! It is most likely extended. SWITCH cannot switch an extended file.

Action: Purge the OUTPUT file, check its required size, and rerun the Online Generator.

GEN ERR 99

Error code not used.

RTE-6/VM Memory Organization

Physical Memory Organization

Physical memory in the RTE-6/VM system is divided into areas for the system, memory-resident programs, driver partitions, and a series of partitions used for execution of disk-resident programs.

Physical memory is organized as shown in Figure B-1. The organization is fixed, although relative sizes of the areas depend on installation needs. Some areas (for example, COMMON) will not exist in all systems. The user determines the driver partition size, the size of System Available Memory (SAM), the size of each disk-resident partition, the size of COMMON, and the size and composition of the resident library and memory-resident program area. The size of physical memory depends on the hardware supplied. RT6GN can configure a system from 48 to 1024 (decimal) pages long.

The various components in physical memory are described below.

SYSTEM BASE PAGE – The system base page contains the system communication area that is used by the system to define request parameters, I/O Tables, scheduling lists, operating parameters, memory bounds, and so forth. System links, upper base page links (which include table area links, SSGA links, and driver links), and trap cells are also located on the system base page. For a description of links and how they are used, refer to Step 16b in Chapter 2.

TABLE AREA I – This area of memory includes the system, EQTs, Driver Map Table, Device Reference Table (DRT), Interrupt Table, some system entry points (refer to the *RTE-6/VM Programmer's Reference Manual*), and all type 15 modules. The unused space between the Table Area I modules and the start of the driver partition is allocated to SAM.

SYSTEM AVAILABLE MEMORY (SAM) – SAM is a designated area of memory set aside to satisfy temporary memory requirements. Re-entrant subroutine ID tags, re-entrant I/O, automatic buffering to I/O devices, and many other system features require blocks of memory to be made available. Blocks of SAM are allocated as required by the system to satisfy these temporary needs. The amount of SAM required depends on specific applications. Subsystems (for example, communications and spooling) may place additional requirements on this areas. For more information regarding SAM, refer to Chapter 2, Step 34. In physical memory, SAM exists in three blocks. The first block occupies the area from the end of Table Area I to the start of the next physical page. The other two blocks are described below.

DRIVER PARTITION #1 – Driver partition #1 will always contain the driver for the system disk. It may also contain as many other drivers as will fit into the remaining space. The default driver partition size is two pages, which is large enough for all HP drivers. The default value may be changed during generation (refer to Chapter 2, Step 24).

SSGA – The Subsystem Global Area is used by HP subsystems to share common tables and programs. It contains modules accessed by their entry point rather than through common declarations. SSGA will contain all type 30 modules loaded at generation time. Only those modules declaring SSGA (types 17-20, 25-28) can access it.

REAL-TIME COMMON – The Real-Time COMMON area is used to share data between real-time, memory-resident, and (optionally) background programs. The Real-Time COMMON area defaults to the maximum COMMON size declared by any main program (generated into the system) that uses it. The user has the option of increasing this amount during generation to accommodate future programs loaded online (see Step 24 in Chapter 2).

BACKGROUND COMMON – The background COMMON area is used to share data between background and (optionally) real-time and memory-resident programs. The background COMMON area defaults to the maximum COMMON size declared by any main program that uses it. The end of the background COMMON area is automatically extended to the next page boundary, making use of otherwise wasted space. The user has the option of adding additional memory (in page increments) to this area. Refer to Step 25, in Chapter 2.

Caution Do not confuse the system COMMON areas described above with the local COMMON area that may be specified for a program. Any programs that you want to use local COMMON cannot be relocated by the generator.

SYSTEM DRIVER AREA – The System Driver Area (SDA) contains all non-partition resident drivers. This category typically includes privileged drivers, very large drivers, or drivers that do their own mapping.

TABLE AREA II – Table Area II contains system tables, some system entry points and all type 13 modules. The following system tables are included in Table Area II: class table, batch LU switch table, resource number table, long ID segments, short ID segments, ID extensions, shareable EMA partition table, and partition definition table. The sizes of these tables are primarily determined from the responses given during the relocation and system loading phases (refer to Steps 16 and 17 in Chapter 2).

OPERATING SYSTEM – This area contains all the type 0 operating system modules. The operating system is composed of the following components:

DISP6 This component dispatches programs for execution. Program execution is DISPX controlled according to the scheduled list (maintained by SCHED). DISP6 determines the partition in which the program will execute and, if necessary, initiates disk swapping. Other functions performed by DISP6 and DISPX are to set up the user map and memory protect fence before program execution, set up the partition list (\$MATA) at initialization, and to coordinate the clean up of system resources when programs are aborted.

- RTIME** RTIME is a real-time clock processor that handles all time-dependent functions. The major functions performed by RTIME are:
- Increment real-time clock values every 10 milliseconds.
 - Schedule programs on the time list.
 - Add programs to the time list.
 - Retrieve current system time for EXEC 11 requests.
 - Start TBG at initialization or after a powerfail.
 - Process device timeouts.
 - Process batch timeouts.
- \$ASC6** The \$ASC6 module contains system ASCII message strings.
- RTIOQ** The RTIOQ module sets up all system peripheral input and output. It routes I/O interrupts to driver and system processors. RTIOQ calls RTERR, RTEMA, and RTCOM to handle specific parts of the I/O processing job.
- RTERR** RTERR is the I/O error handling module. It handles error returns from drivers and generates the appropriate error messages.
- RTEMA** RTEMA controls I/O processes to EMA areas. It sets up large I/O transfers in EMA areas.
- RTCOM** RTCOM completes I/O request and cleans up after them. This includes cleaning up after normal I/O as well as I/O from aborted programs.
- EXEC6** EXEC6 is the system module that interfaces user program requests to the operating system. Specific functions performed by EXEC are:
- Provides for general checking and examination of EXEC call requests and calls the appropriate processing routine. Provides memory protect violation control.
 - Processes privileged and re-entrant subroutines.
 - Manages disk track allocation and release.
 - Handles general error messages and program abort.
- \$TRN6** \$TRN6 is the system resource number (RN) deallocation routine. It is called by the dispatcher (DISP6) whenever a program completes. Its function is to release local locks and local RN allocations the program has. It also releases LU locks the program has.
- SCHD6** SCHD6 handles program state transitions, responds to operator input commands, initiates system start-up at bootup, and satisfies or passes to other processors eleven EXEC calls (6 through 12, 14, and 22 through 24).
- \$ALC** The \$ALC module allocates blocks of SAM to the processors requesting temporary memory. The \$RTN routine (within \$ALC) returns memory no longer needed to SAM.
- PERR6** This is a parity error module that reports parity errors detected by the hardware and continues operation of the system if possible. PERR6 tries to reproduce parity errors to detect hardware errors. If hardware errors are detected, PERR6 brings down the partition in which the error was generated.

SYSTEM AVAILABLE MEMORY (\$CNFG) – This is the second block of SAM that starts immediately after the system and is approximately 2.5 pages in size. During boot and reconfiguration, this area is occupied by the RTE reconfiguration module \$CNFG.

DRIVER PARTITIONS #2 THROUGH #N – The number of driver partitions depends on the size and number of drivers relocated as partition resident. The default driver partition size is two pages, which is large enough for all HP drivers. The generator attempts to fit as many drivers as will fit into a driver partition before allocating space for additional partitions.

MEMORY-RESIDENT BASE PAGE – The memory-resident base page contains all memory-resident program links, all memory-resident library links, upper base page links, and the system communications area. A page is reserved for MR base page even if no modules are loaded in the MR library or program area. It is located immediately following the last driver partition and preceding the memory resident programs.

MEMORY-RESIDENT LIBRARY – The memory-resident library contains common subroutines that may be accessed by more than one memory-resident program. Placing a subprogram (or subroutine) in this area means that it will not be appended to memory-resident programs that call it. However, it is subject to special design constraints so that two programs will not inadvertently gain concurrent access. Only memory-resident programs can access routines in the memory-resident library.

MEMORY-RESIDENT PROGRAM AREA – This is the area in memory where programs are always resident (that is, they are not swapped out to the disk). It is intended for high priority tasks that require quick response time to real-time conditions and that cannot afford disk load time and for small programs that are used frequently.

SYSTEM AVAILABLE MEMORY EXTENSION – This is the third block of SAM in physical memory. The SAM extension is optional, with its size specified by increasing, in page increments, the page number where the disk-resident partitions start.

PROGRAM PARTITIONS – The number of pages remaining after the SAM extension must be divided into program partitions (maximum of 64). Each partition must be at least two pages long -- one page to be used as a base page and the remainder for the program. The number and size of partitions are specified during generation. The partition definitions may be later changed by the use of the reconfigurator. Each disk-resident base page contains the system communication area, upper base page links, and that disk-resident program's links (see Step 16a in Chapter 2).

Logical Memory Organization

In order to better understand the concept of logical memory, you should be familiar with the description of the dynamic mapping system given in the applicable computer reference manual.

Logical memory is the 32K word (maximum) address space described by the currently enabled memory map. A memory map can be defined as 32 hardware registers that provide the interface between physical memory and the 32K word logical memory. The four memory maps (System, User, Port A, and Port B) provide the capability of addressing memory configurations of more than 32K words. Note that all memory map addressing is done internally by the system and is transparent to the user. The five possible logical map configurations are shown in Figure B-2. A discussion of these configurations follows.

SYSTEM MAP – Figure B-3 shows a sample system logical map configuration. Note that while SAM exists in three areas in physical memory, in logical memory SAM exists in two blocks. The first block follows the list Table Area I modules, and the second block starts immediately after the system. The second block will include the area occupied by the reconfiguration module at bootup and the SAM extension.

Note

The driver partition included in the system and user logical maps will vary. The system will map a driver partition into the system map whenever a driver needs access to a buffer in the system area (that is, SAM). Driver partitions are mapped into the user address space whenever a driver needs access to a buffer inside a program's partition.

MEMORY-RESIDENT MAP – Figure B-4 shows the logical map configuration for the memory-resident program area. The System Driver Area and Table Area II will be included in this map if so specified at generation (see Step 10 in Chapter 2).

REAL-TIME AND BACKGROUND MAP – A sample map for a RT or BG program (type 2 and 3) is illustrated in Figure B-5. The System Driver Area, Table Area II, and System COMMON Area are always included in this map.

LARGE BACKGROUND PROGRAM MAP – Figure B-6 illustrates a sample large background (type 4) program map. Note that the System Driver Area and Table Area II are not included in this map, thus potentially allowing for more program space. The system COMMON area will be included only in the maps of those large background programs that access it.

EXTENDED BACKGROUND MAP – An extended background program (type 6) allows a program to have the maximum address space. The logical memory map consists of the base page and 31 pages allocated to program code.

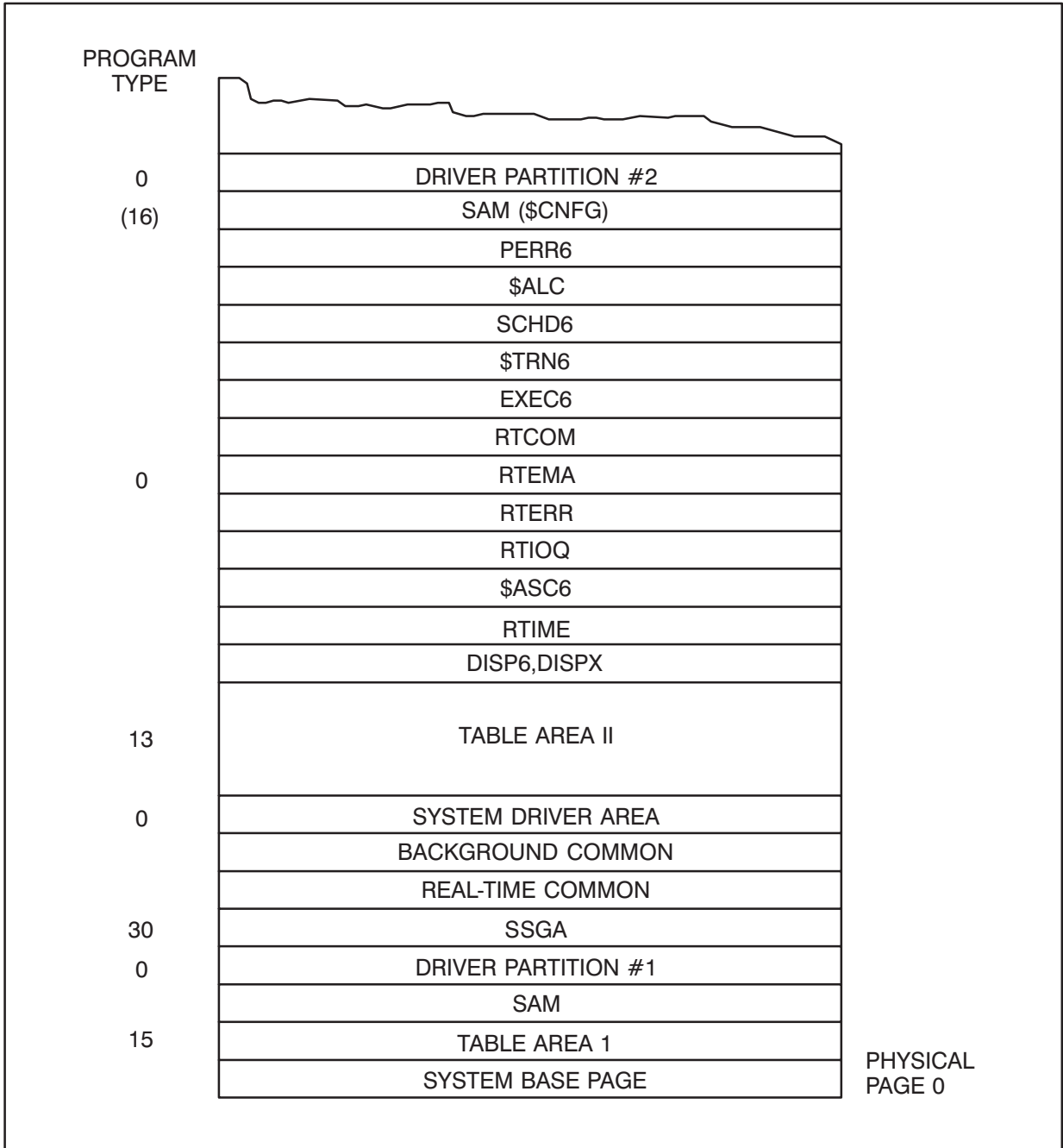


Figure B-1. Physical Memory Map

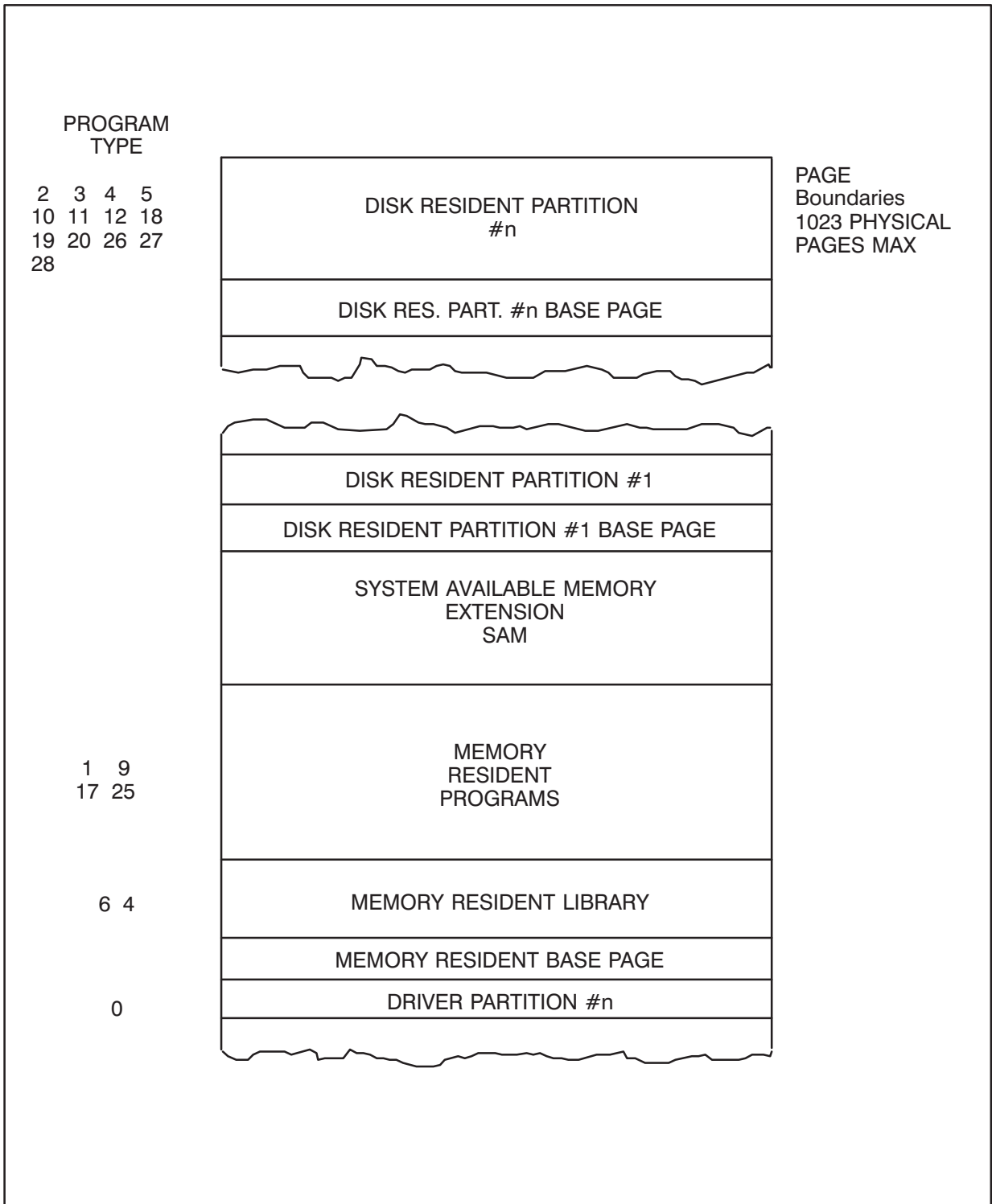


Figure B-1. Physical Memory Map (continued)

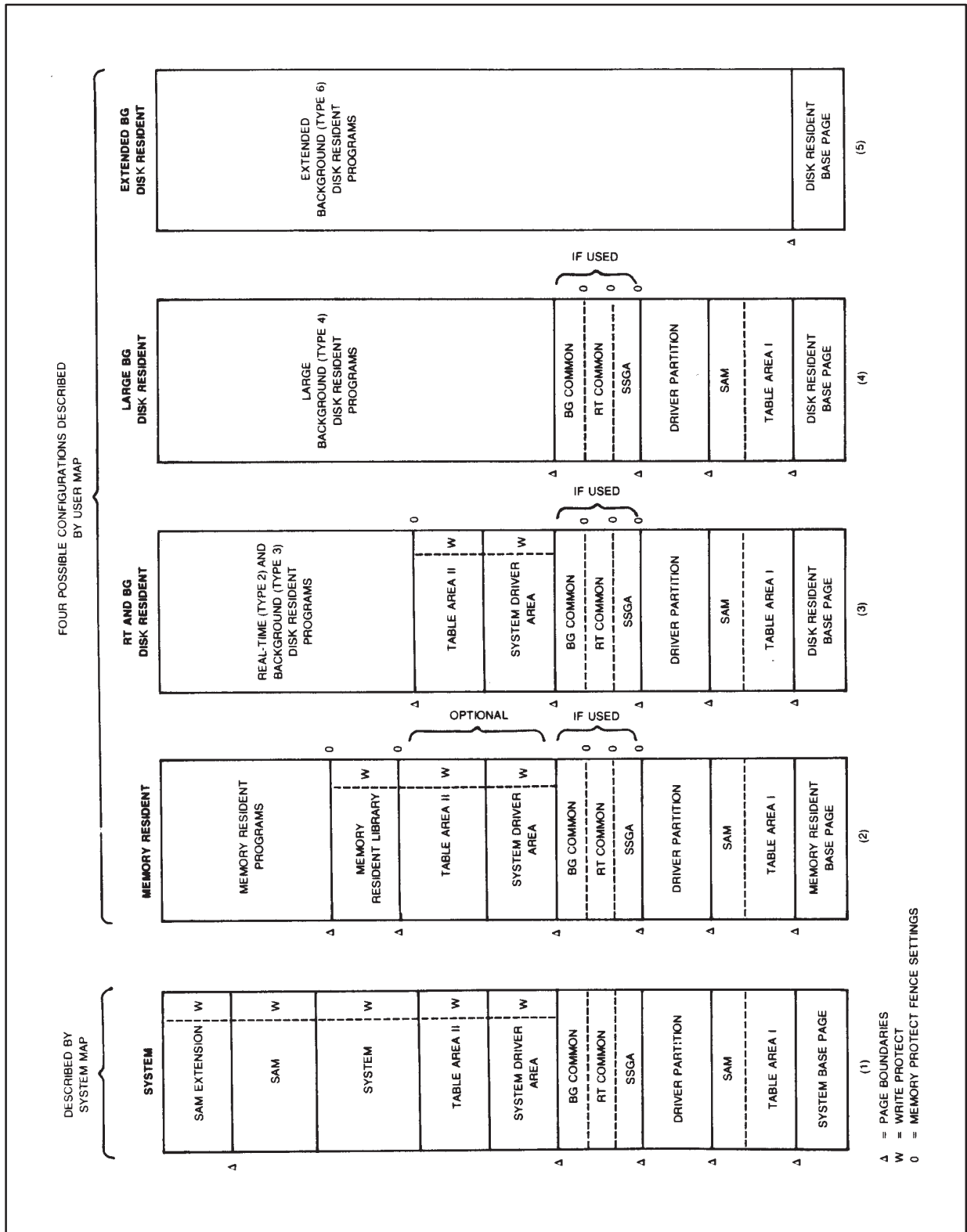


Figure B-2. RTE-6/VM 32K Logical Memory Configurations

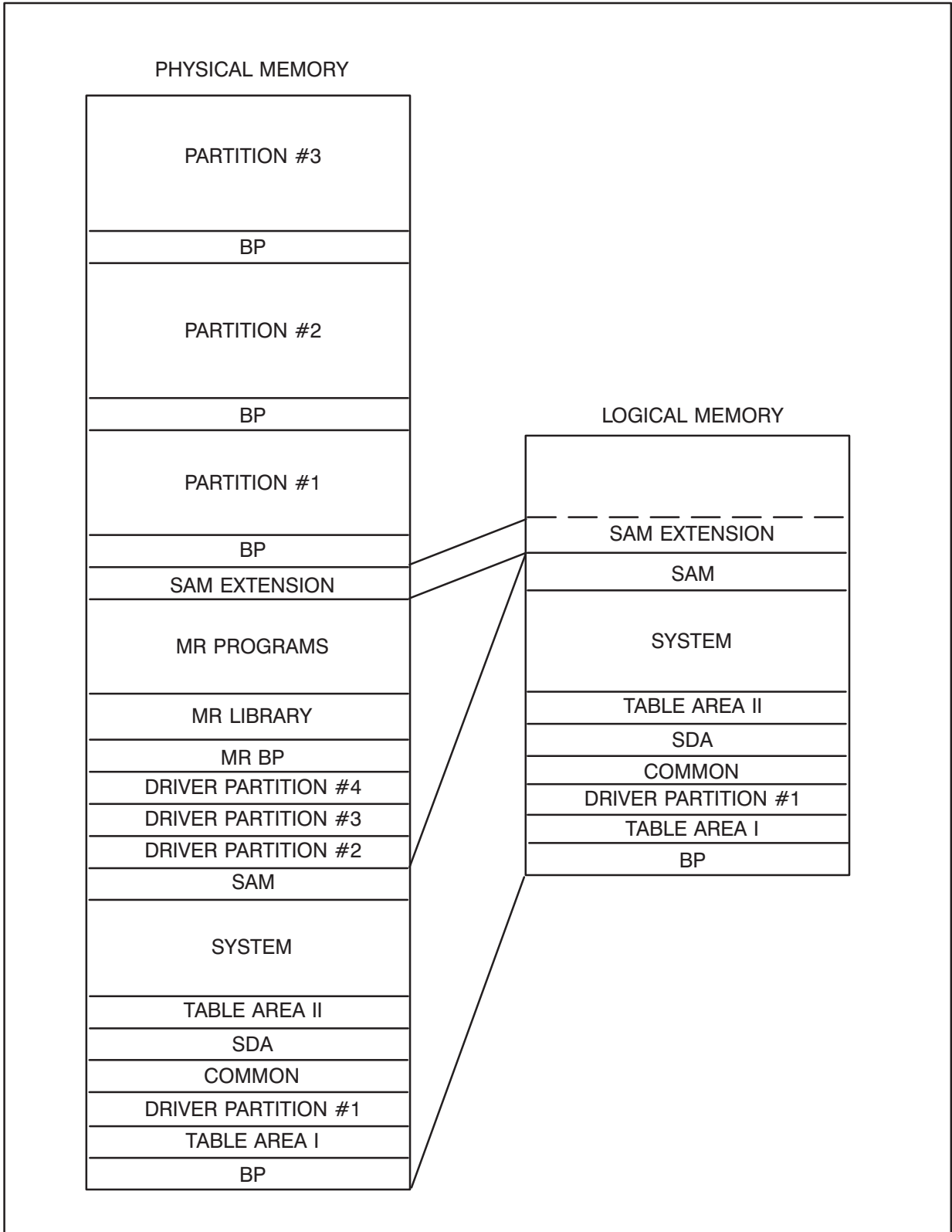


Figure B-3. Sample System Map

MEMORY RESIDENT PROGRAM WITH COMMON AND TABLE AREA II

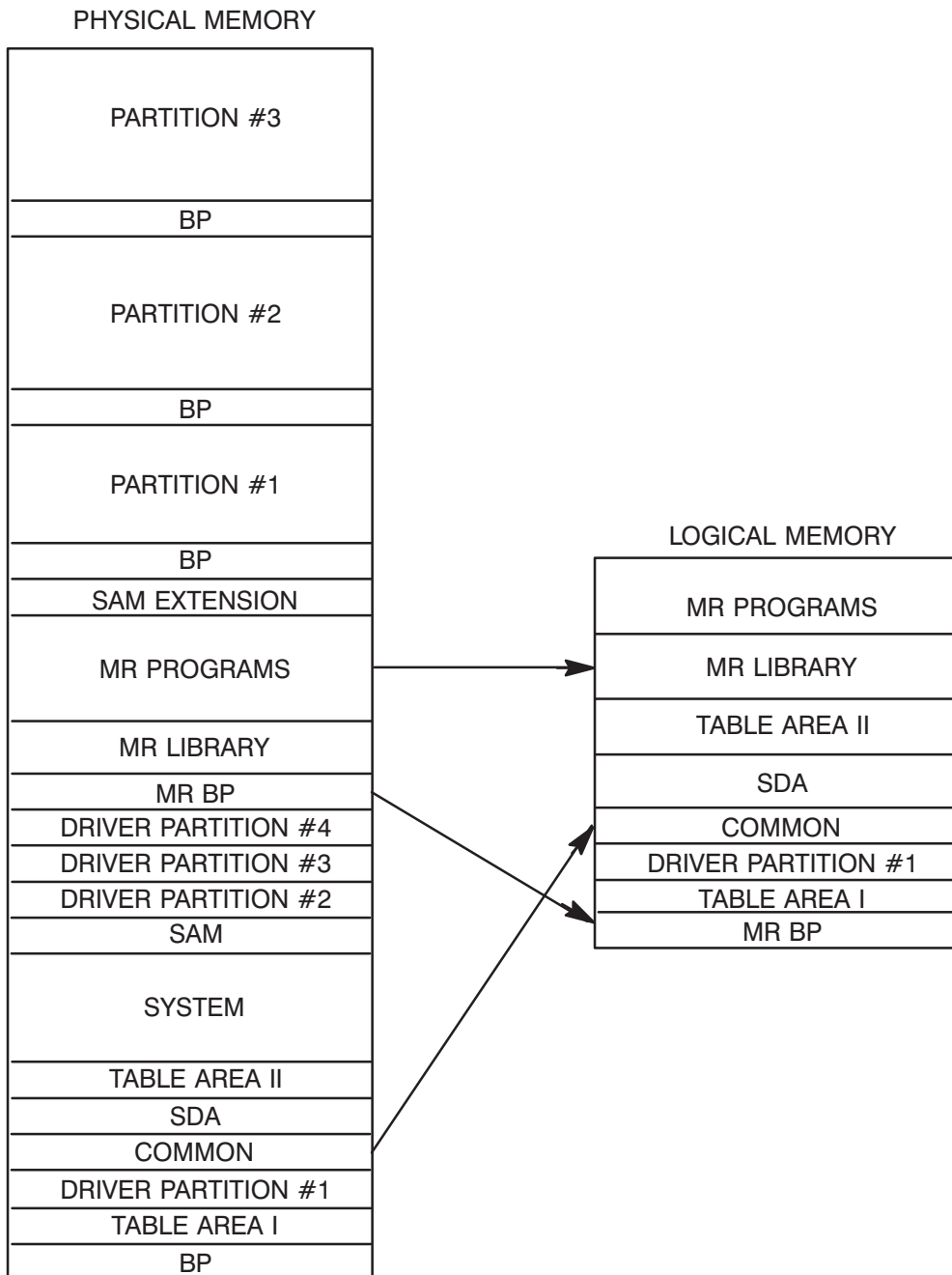


Figure B-4. Sample User Map (Memory-Resident Program With Common)

DISK RESIDENT PROGRAM WITH OR WITHOUT COMMON (TYPE 2 OR 3)

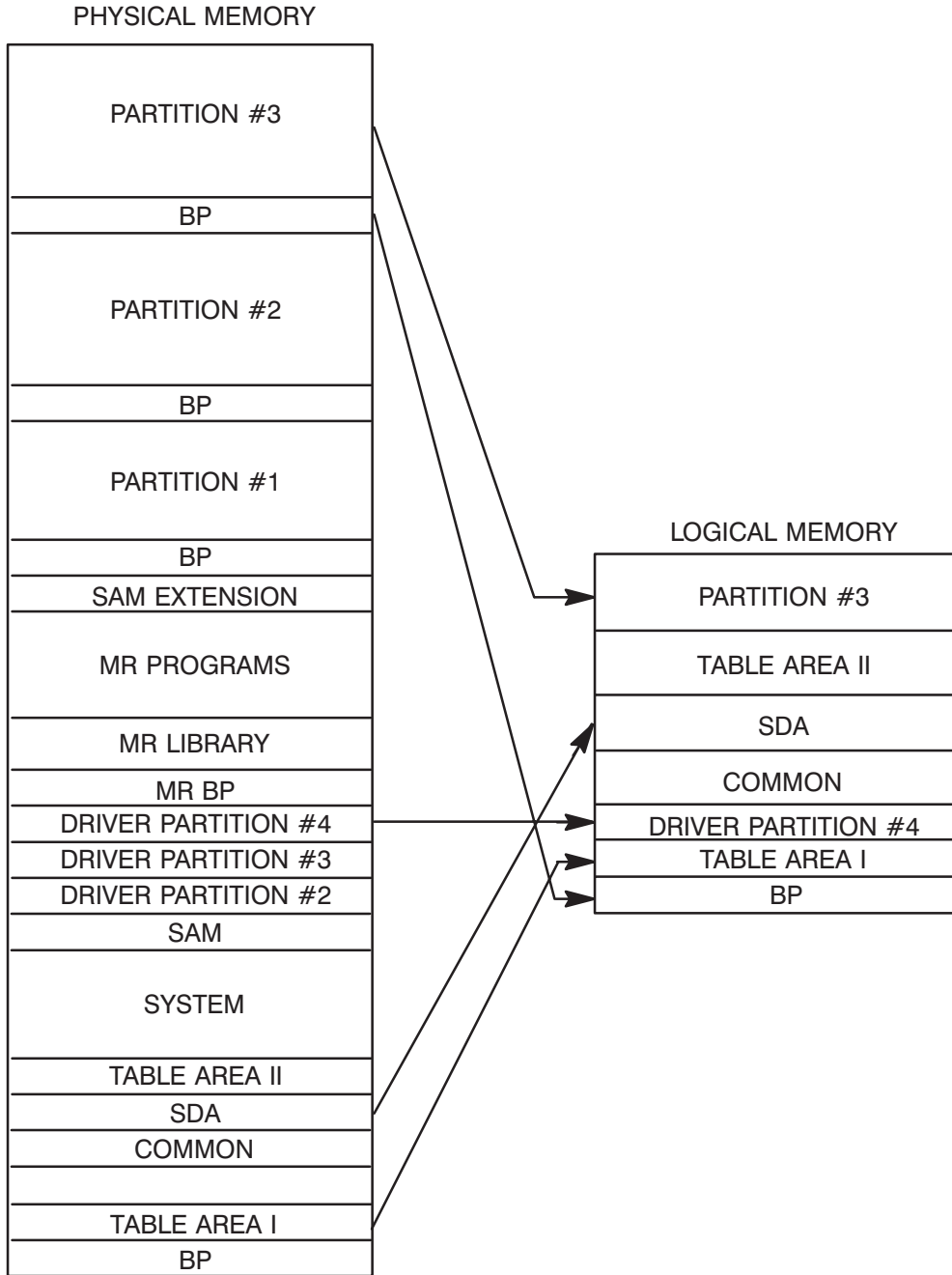


Figure B-5. Sample User Map (Disk-Resident Program)

LARGE BG DISK RESIDENT PROGRAM WITH COMMON (TYPE 4)

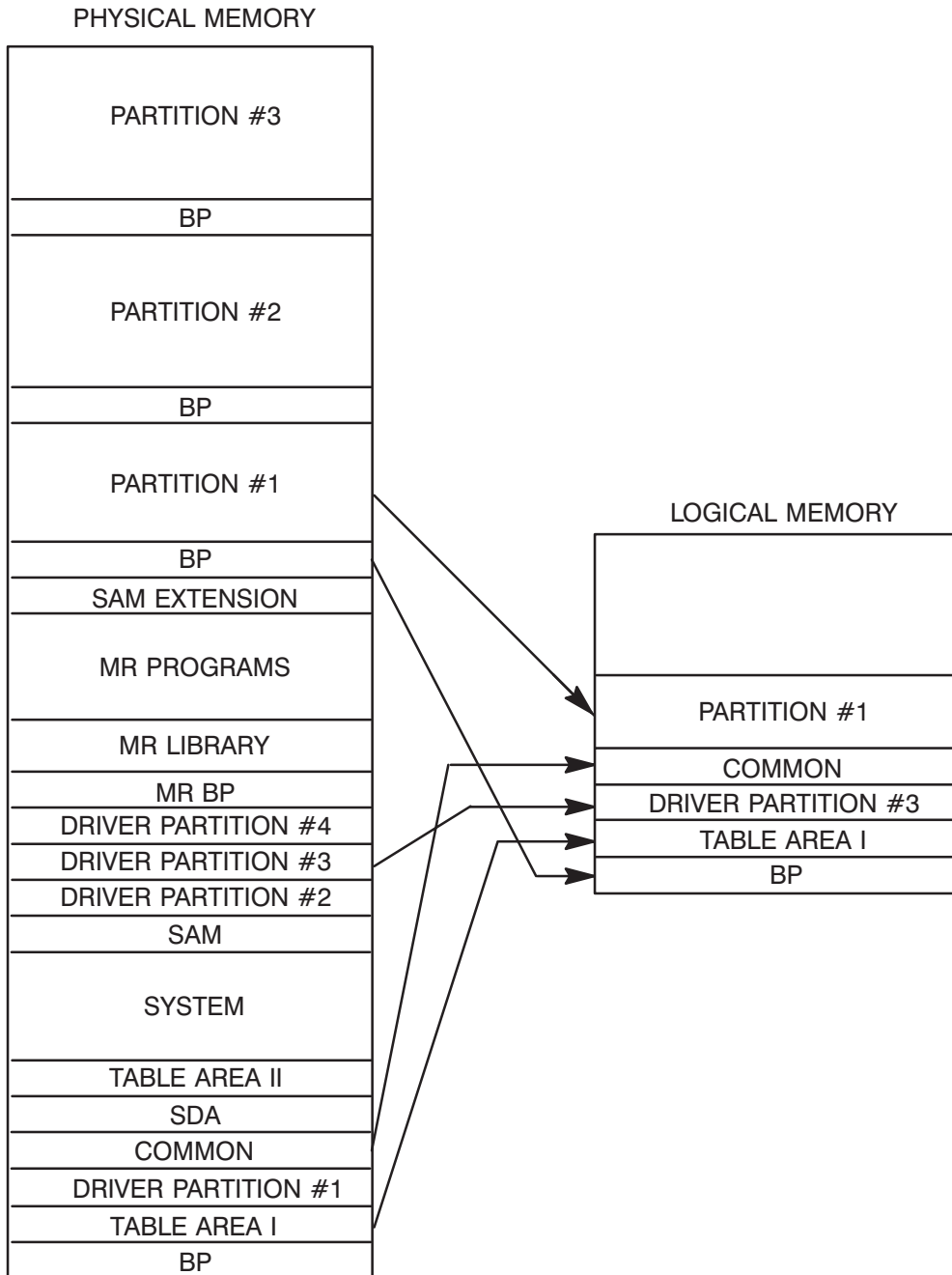


Figure B-6. Sample User Map (BG Disk-Resident Program With Common)

Base Page Mapping and Organization

The base page fence, defined in the applicable computer reference manual, is automatically set by RTE-6/VM for all user base pages so that the top portion of the base page will contain the system communication area and upper base page links, and the bottom portion will contain the user program's links. The DMS hardware will map base page references above the fence to the system base page and map reference below the fence to the particular user base page operating at the time. (This mapping has no effect when the System Map is enabled.)

Figure B-7 illustrates the logical base page configuration of the system, memory-resident programs, and disk-resident programs.

Figure B-8 illustrates the base page mapping scheme for a partition resident program.

The upper base page linkage area and system communication areas are available to all programs for read only access. The size of the system communication area is fixed. The size of upper and lower base page linkage areas will vary with the number of program page crossings, which may cause indirect links to be generated on the base page. The LINKS IN CURRENT command (see Step 16b in Chapter 2) can be specified to reduce the number of base page links used during program relocation. The user has no direct control over the allocation of the base page area. Linkages are allocated as needed during generation. As an aid in generation, RT6GN will optionally trace the allocation of links, program by program, via the MAP LINKS command.

Memory Protection

Memory protection between disk-resident program partitions and between disk and memory-resident programs is provided by the dynamic mapping system. A program cannot access a user page that is not included (either directly or through a DCPC transfer) in its logical memory. Since many programs will not use all of the possible 32K logical area, unused logical pages above the program are read/write protected. It is possible for a user to read from system logical memory via cross-map loads, but the system is write protected.

A different form of protection is required for the driver partition and for Table Area I since these areas exist in the user's addressing space. The memory protect fence provides this protection by preventing stores and jumps to locations below a specified address. All possible fence positions are shown in Figure B-9.

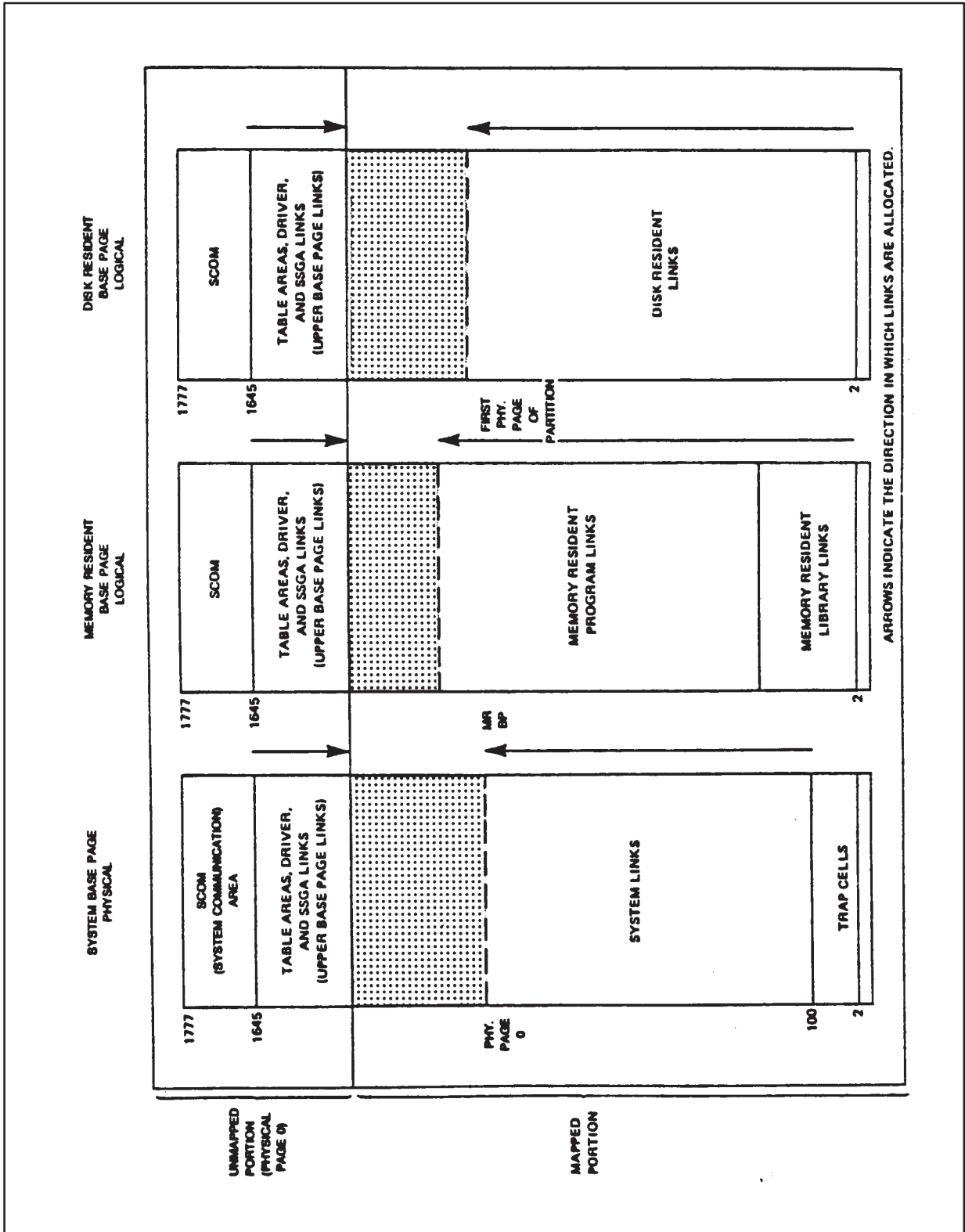


Figure B-7. Base Page Formats

USER LOGICAL BASE PAGE

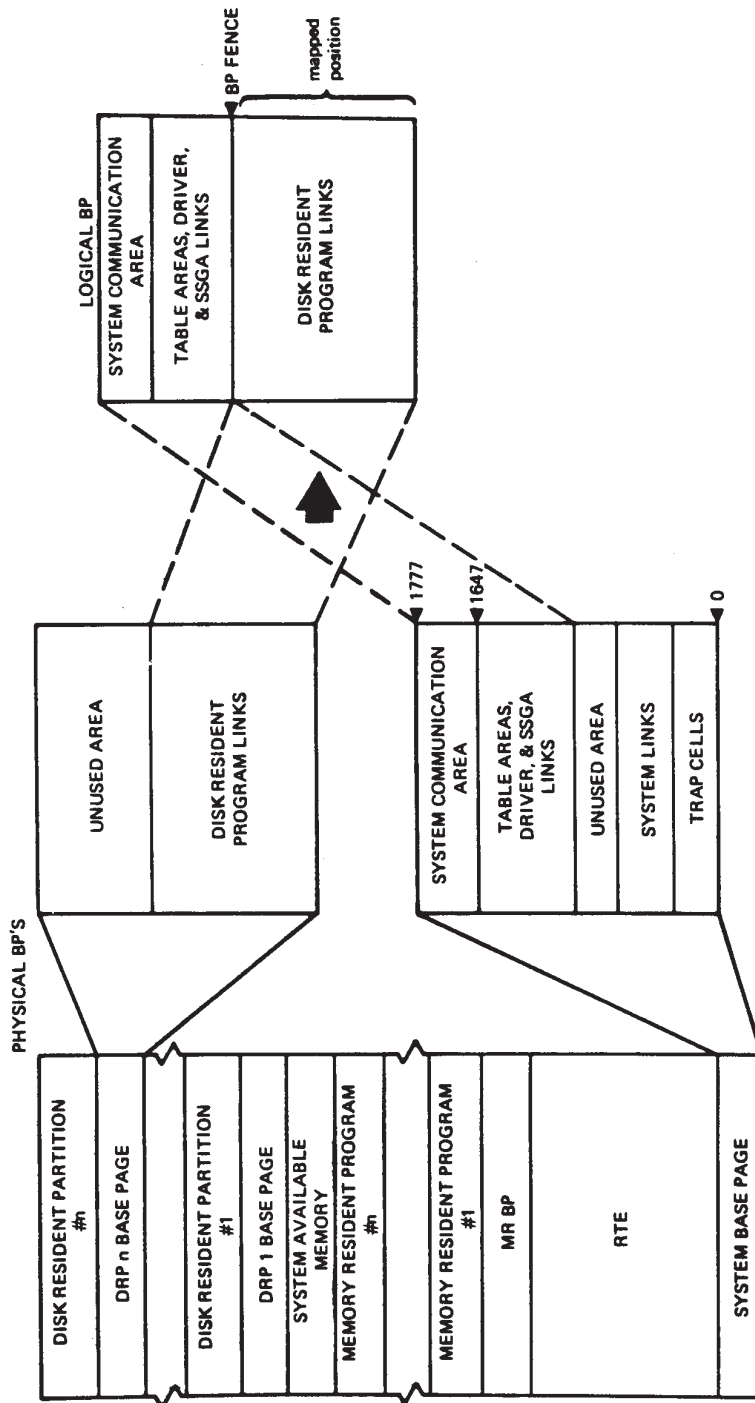


Figure B-8. User Logical Base Page

The memory protect fence applies to the logical address space, and addresses are compared to the fence before translation. If a disk-resident program does not use any of the COMMON areas, the memory protect fence is set at the bottom of the program area. For a memory-resident program not using COMMON, the memory protect fence is set above the memory-resident library area until a memory-resident library routine is executed, in which case the memory protect fence setting is placed below the memory-resident library area.

For programs using COMMON, all of COMMON is mapped and the fence is set at one of three possible locations, depending on the portion of COMMON being used. Figure B-9 expands the COMMON area and shows the three fence settings: A, B, and C.

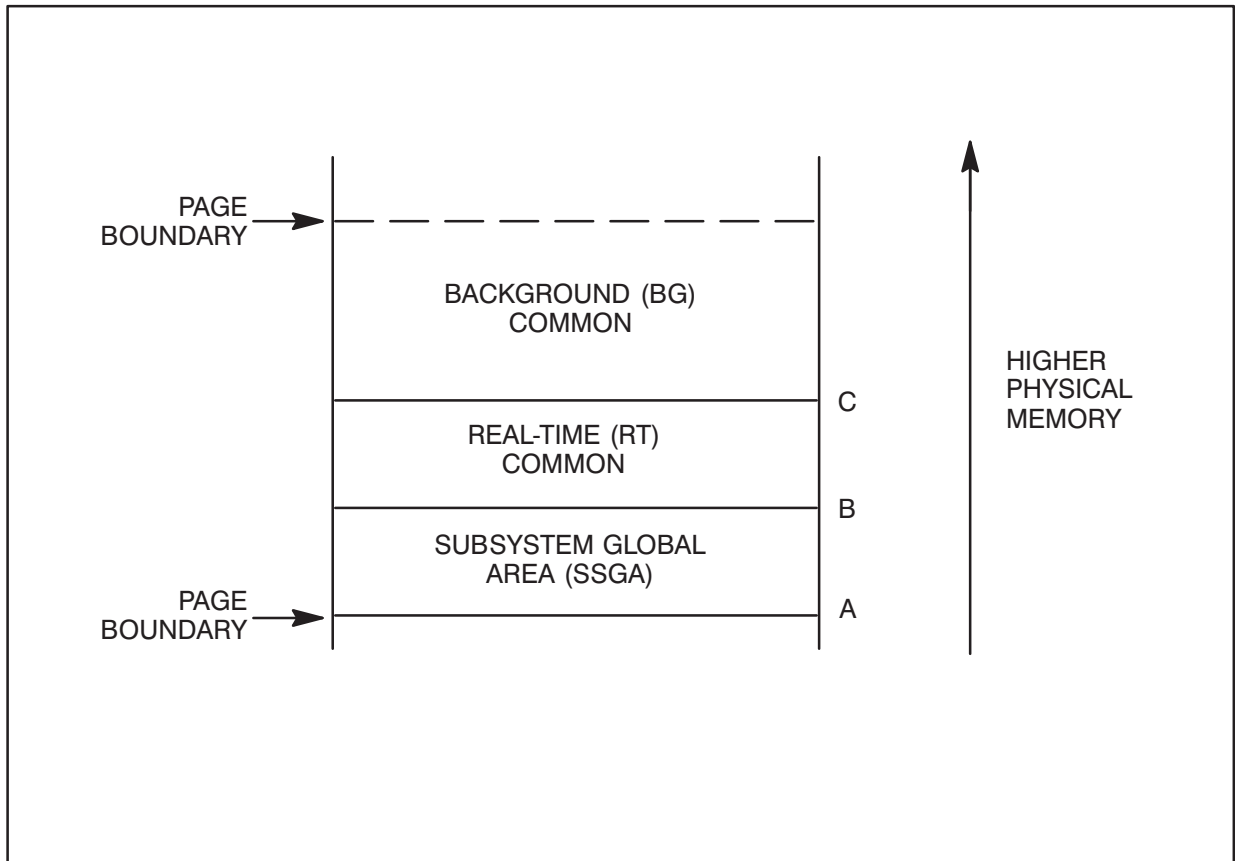


Figure B-9. Memory Protect Fence Locations For Programs

Generator Relocation Guidelines

The following paragraphs describe the generator procedures when relocating various system components.

TABLE AREA I MODULES – These are type 15 modules loaded into Table Area I, in addition to some entry points and the system I/O tables stored there by the generator. Table Area I is loaded sequentially above the system base page. Base page links are allocated downward below the system communication area and are included in the system and all user base pages.

PARTITION RESIDENT DRIVERS – These are type 0 modules whose EQT entries did not include the “S” or “M” options specifying System Driver Area. The starting relocation address of the first driver in each partition is word 0 of the logical page following Table Area I. Driver partition #1 is required to have the system disk driver in it for reconfiguration purposes. Base page links are allocated downward below the Table Area links and are included in all system and user base pages.

The generator attempts to optimize the relocation of drivers into driver partitions. With the exception of the system disk driver in partition 1, all drivers are loaded on a best-fit-on-the-page basis. This algorithm, used here and for most of the generation, is as follows:

If the current relocation address is between 0 and 100 page relative, load the largest module available. Otherwise load the largest module that will fit on the current page. If neither qualifies, load the shortest module available. During driver loading, all drivers are available modules. During Resident Lib phase all type 14 modules are available modules. During the scan of type 1 programs, all modules referenced so far are available modules.

During memory-resident loading the next main is chosen from the pool of all memory-resident mains using the algorithm. The mains subroutines are chosen from the pool of referenced subroutines again using the algorithm.

During disk-resident loading the subroutines are loaded using the best fit over the pool of subroutines referenced so far.

Should a driver overflow the partition (because of subroutines appended during relocation), backup will be done over that driver. The generator scans to see if there are any other drivers left that will fit, and the above process is repeated. The driver causing the overflow will be re-relocated into a subsequent driver partition.

SUBSYSTEM GLOBAL AREA (SSGA) – These are type 30 modules loaded sequentially into COMMON. The starting address of COMMON (and SSGA) is word 0 of the logical page following the driver partition. Base page links are allocated downward below the driver partition #1 links and are included in all system and user base pages.

SYSTEM DRIVER AREA (SDA) – These are type 0 modules whose EQT entries specified the “S” or “M” option. The starting address of SDA is word 0 of the logical page following COMMON (if any). Base page links are allocated downward below the SSGA links and are included in the system and all user base pages.

TABLE AREA II MODULES – These are type 13 modules loaded into Table Area II, in addition to some entry points and the system tables built by the generator.

Table Area II is loaded sequentially above the System Driver Area. Base page links are allocated downward below the SDA links and are included in the system and all user base pages.

SYSTEM MODULES – These are all remaining type 0 modules (EXEC, RTIOC, SCHED, and so on) and are loaded sequentially above Table Area II. Base page links for these modules are allocated upward from location 100 in the system base page toward the Table Area, SSGA, and driver links.

The reconfiguration module is loaded sequentially after the type 0 system modules. The memory area occupied by this module will become part of System Available Memory after the reconfiguration has been completed. Base page links for this module follow the system links in the system base page.

MEMORY-RESIDENT LIBRARY MODULES – These are type 6 and 14 modules (re-entrant, privileged, and force-loaded) for use by memory-resident programs only. If memory-resident programs requested Table Area II access, then the library area is loaded sequentially starting at word 0 of the logical page following Table Area II. Otherwise the library is loaded sequentially at word 0 of the logical page at or following COMMON. Base page links for library modules are allocated upward in the memory-resident base page, starting at location 2.

MEMORY-RESIDENT PROGRAMS – These programs are loaded sequentially starting at the first logical page following the resident library. The first two words of each memory-resident program area are reserved to save index registers in the event that the program is interrupted. Base page links for these programs are allocated upward in the memory-resident base page above the library links. The highest available link address is the word before the lowest driver link in the upper BP links area.

DISK-RESIDENT PROGRAMS – These RT and BG programs are relocated into logical memory and stored on the disk. Each program starts at word 10 of the logical page following Table Area II. The first two words of the page are reserved to save index registers in the event that the program is interrupted; the next 18 words are used by the system. Both RT and BG programs can be segmented. Base page links are allocated upward from location 2 of the user base page. The highest available link address is the word before the lowest driver link. These links are written on the disk and are referred to as the user base page. This user base page is swapped with the program into memory and placed into the first page of the selected partition.

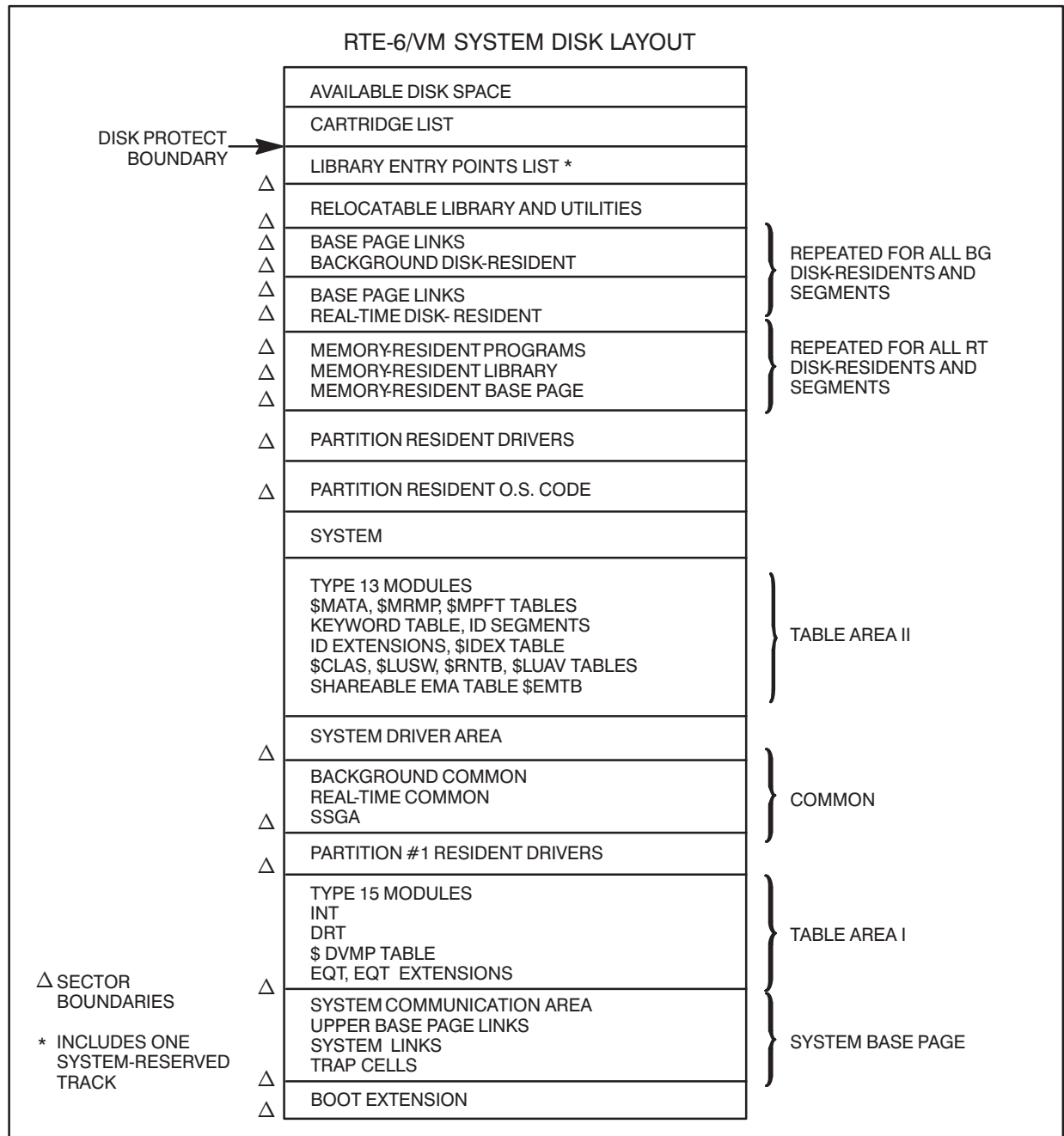
All real-time and type 3 background programs have the memory area occupied by Table Area I through Table Area II included in their logical address space.

TYPE 4 BACKGROUND DISK-RESIDENT PROGRAMS WITHOUT COMMON – These background programs have Table Area I and the driver partition included in their logical address space. Each program starts at word 10 of the logical page following the driver partition. Otherwise these programs are treated the same as other disk-resident programs.

TYPE 4 BACKGROUND DISK-RESIDENT PROGRAMS WITH COMMON – These programs are treated the same as the disk-resident programs without COMMON. The only difference is that the program starts at word 10 of the logical page following the COMMON area.

TYPE 6 EXTENDED BACKGROUND PROGRAMS WITH COMMON – These programs are the same as Type 4 except that their load begins at 2012B.

RTE-6/VM System Disk Layout



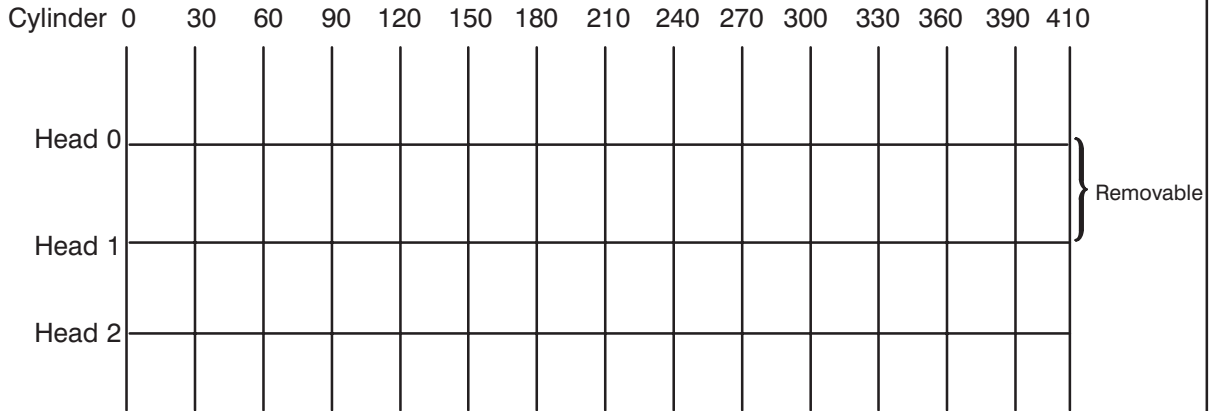
Generation Worksheet Forms

The following pages contain the blank generation worksheet forms. It is recommended that all of the worksheets that are included (in their appropriate order) in this appendix be duplicated. The copies then can be used for planning the system, and the blank original worksheets can be left in the manual for future use.

HP 7905 Disk Worksheet

STEP 1 Fill in Unit/Address Number: _____

STEP 2 Tracks are shown end-to-end on three surfaces. Use pencil to circle your subchannels. Within each circle, write the following information: the subchannel number; the numbers of the starting and ending cylinders; the total number of tracks, excluding spares; the number of spare tracks; and the LU number for each subchannel.



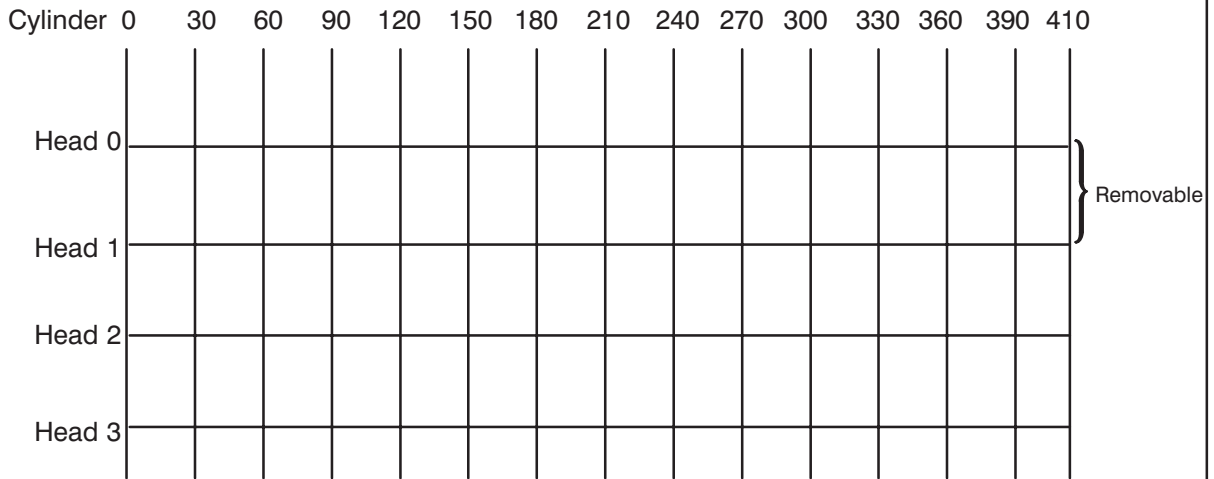
STEP 3 Translate **STEP 2** to numbers:

Subchannel	# of Tracks (Excluding Spares)	Starting Cylinder	Starting Head	Total # of Surfaces Included in Subchannel	Number of Spares	System? (✓)	Auxiliary? (✓)

HP 7906(H) Disk Worksheet

STEP 1 Fill in Unit/Address Number: _____

STEP 2 Tracks are shown end-to-end on four surfaces. Use pencil to circle your subchannels. Within each circle, write the following information: the subchannel number; the numbers of the starting and ending cylinders; the total number of tracks, excluding spares; the number of spare tracks; and the LU number for each subchannel.



STEP 3 Translate **STEP 2** to numbers:

Subchannel	# of Tracks (Excluding Spare)	Starting Cylinder	Starting Head	Total # of Surfaces Included in Subchannel	Number of Spares	System? (✓)	Auxiliary? (✓)

HP 7920(H) Disk Worksheet

STEP 1

Fill in Unit/Address Number: _____

STEP 2

Tracks are shown end-to-end on five surfaces. Use pencil to circle your subchannels. Within each circle, write the following information: the subchannel number; the numbers of the starting and ending cylinders; the total number of tracks, excluding spares; the number of spare tracks; the LU number for each subchannel.

Cylinder 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 822

	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	822
Head 0																		
Head 1																		
Head 2																		
Head 3																		
Head 4																		

↑
All are
removable

HP 7920 Disk Worksheet (continued)

STEP 3

Translate

STEP 2

to numbers:

Subchannel	# of Tracks (Excluding Spares)	Starting Cylinder	Starting Head	Total # of Surfaces Included in Subchannel	Number of Spares	System? (✓)	Auxiliary? (✓)

HP 7925(H) Disk Worksheet

STEP 1

Fill in Unit/Address Number: _____

STEP 2

Tracks are shown end-to-end on nine surfaces. Use pencil to circle your subchannels. Within each circle write the following information: the subchannel number; the numbers of the starting and ending cylinders; the total number of tracks, excluding spares; the number of spare tracks; the LU number for each subchannel.

Cylinder	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	822
Head 0																		
Head 1																		
Head 2																		
Head 3																		
Head 4																		
Head 5																		
Head 6																		
Head 7																		
Head 8																		

HP 7925 Disk Worksheet (continued)

STEP 3

Translate

STEP 2

to numbers:

Subchannel	# of Tracks (Excluding Spares)	Starting Cylinder	Starting Head	Total # of Surfaces Included in Subchannel	Number of Spares	System? (✓)	Auxiliary? (✓)
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

HP 7925 Disk Worksheet (continued)

STEP 3

Translate

STEP 2

to numbers:

Subchannel	# of Tracks (Excluding Spares)	Starting Cylinder	Starting Head	Total # of Surfaces Included in Subchannel	Number of Spares	System? (✓)	Auxiliary? (✓)
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

HP 7925 Disk Worksheet (continued)

STEP 1 Fill in ICD Address Number: _____

STEP 2 Only one subchannel per drive will be defined. The following definition is the HP standard definition for the HP 9895 flexible disk.

Subchannel	# of Tracks (Excluding Spares)	Starting Cylinder	Starting Head	Total # of Surfaces Included in Subchannel	Number of Spares	Unit #
Double-sided Operation						
Single-sided Operation						

CS/80 Worksheet

Model _____
 HP-IB Address _____
 Unit _____
 Initial Number of Blocks _____

Subchannel # Hole or Disk Cache	# of Tracks (1)	Blocks/Track (2,3)	Blocks Expended	Blocks Remaining

(1) Enter CTD for Cartridge Tape Drive.
 (2) If CTD entered in previous column, enter subchannel of CTD.
 (3) If not specified, this parameter will default to 48.

Initialization Phase Worksheet

1

LIST FILE NAMR?

(generator listed output)

2

ECHO?

(YES or NO; YES echoes all listed output to user console)

3

OUTPUT FILE NAMR?

(contains generated system, must specify file size in blocks)

4

SYSTEM DISK MODEL?

(disk model # in destination system)

5a

HP 7900 Disk Only
CONTROLLER SELECT CODE?

(lower # oct. select code for sys. disk controller)

TRKS, FIRST TRK ON SUBCHNL?

(even subchannels - fixed platter; odd subchannels - removable platter; enter dec. values)

0?

_____ , _____

1?

_____ , _____

2?

_____ , _____

3?

_____ , _____

4?

_____ , _____

5?

_____ , _____

6?

_____ , _____

7?

_____ , _____

(terminate your final entry with a /E)

Initialization Phase Worksheet (continued)

5b

HP 7905/7906/7920/7925 Disks

CONTROLLER SELECT CODE?

(oct. select code for sys. disk controller)

MODEL, #TRKS, FIRST CYL#, HEAD, #SURFACES, UNIT, #SPARES FOR SUBCHNL:

00? _____ , _____ , _____ , _____ , _____ , _____ , _____ (enter dec. values)

01? _____ , _____ , _____ , _____ , _____ , _____ , _____ (terminate your final entry with a /E if <32 sub-channels defined)

02? _____ , _____ , _____ , _____ , _____ , _____ , _____

03? _____ , _____ , _____ , _____ , _____ , _____ , _____

04? _____ , _____ , _____ , _____ , _____ , _____ , _____

05? _____ , _____ , _____ , _____ , _____ , _____ , _____

06? _____ , _____ , _____ , _____ , _____ , _____ , _____

07? _____ , _____ , _____ , _____ , _____ , _____ , _____

08? _____ , _____ , _____ , _____ , _____ , _____ , _____

09? _____ , _____ , _____ , _____ , _____ , _____ , _____

10? _____ , _____ , _____ , _____ , _____ , _____ , _____

11? _____ , _____ , _____ , _____ , _____ , _____ , _____

12? _____ , _____ , _____ , _____ , _____ , _____ , _____

13? _____ , _____ , _____ , _____ , _____ , _____ , _____

14? _____ , _____ , _____ , _____ , _____ , _____ , _____

15? _____ , _____ , _____ , _____ , _____ , _____ , _____

16? _____ , _____ , _____ , _____ , _____ , _____ , _____

Initialization Phase Worksheet (continued)

5b

HP 7905/7906/7920/7925 Disks (continued)

17?

____ , ____ , ____ , ____ , ____ , ____ , ____

18?

____ , ____ , ____ , ____ , ____ , ____ , ____

19?

____ , ____ , ____ , ____ , ____ , ____ , ____

20?

____ , ____ , ____ , ____ , ____ , ____ , ____

21?

____ , ____ , ____ , ____ , ____ , ____ , ____

22?

____ , ____ , ____ , ____ , ____ , ____ , ____

23?

____ , ____ , ____ , ____ , ____ , ____ , ____

24?

____ , ____ , ____ , ____ , ____ , ____ , ____

25?

____ , ____ , ____ , ____ , ____ , ____ , ____

26?

____ , ____ , ____ , ____ , ____ , ____ , ____

27?

____ , ____ , ____ , ____ , ____ , ____ , ____

28?

____ , ____ , ____ , ____ , ____ , ____ , ____

29?

____ , ____ , ____ , ____ , ____ , ____ , ____

30?

____ , ____ , ____ , ____ , ____ , ____ , ____

31?

____ , ____ , ____ , ____ , ____ , ____ , ____

Initialization Phase Worksheet (continued)

5c

HP 7906H/7920H/7925H/9895 Disks

CONTROLLER SELECT CODE?

(oct. select code for sys. disk controller)

MODEL, #TRKS, FIRST CYL #, HEAD, #SURFACES, ADDRESS, #SPARES (, UNIT) FOR SUBCHNL:

00? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

(enter dec. values)

01? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

(terminate your final

02? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

entry with a /E if
<32 subchannels defined)

03? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

04? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

05? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

06? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

07? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

08? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

09? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

10? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

11? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

12? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

13? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

14? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

15? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

16? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

Initialization Phase Worksheet (continued)

5c HP 7906H/7920H/7925H/9895 Disks (continued)

17?

____ , ____ , ____ , ____ , ____ , ____ , ____
18?

____ , ____ , ____ , ____ , ____ , ____ , ____
19?

____ , ____ , ____ , ____ , ____ , ____ , ____
20?

____ , ____ , ____ , ____ , ____ , ____ , ____
21?

____ , ____ , ____ , ____ , ____ , ____ , ____
22?

____ , ____ , ____ , ____ , ____ , ____ , ____
23?

____ , ____ , ____ , ____ , ____ , ____ , ____
24?

____ , ____ , ____ , ____ , ____ , ____ , ____
25?

____ , ____ , ____ , ____ , ____ , ____ , ____
26?

____ , ____ , ____ , ____ , ____ , ____ , ____
27?

____ , ____ , ____ , ____ , ____ , ____ , ____
28?

____ , ____ , ____ , ____ , ____ , ____ , ____
29?

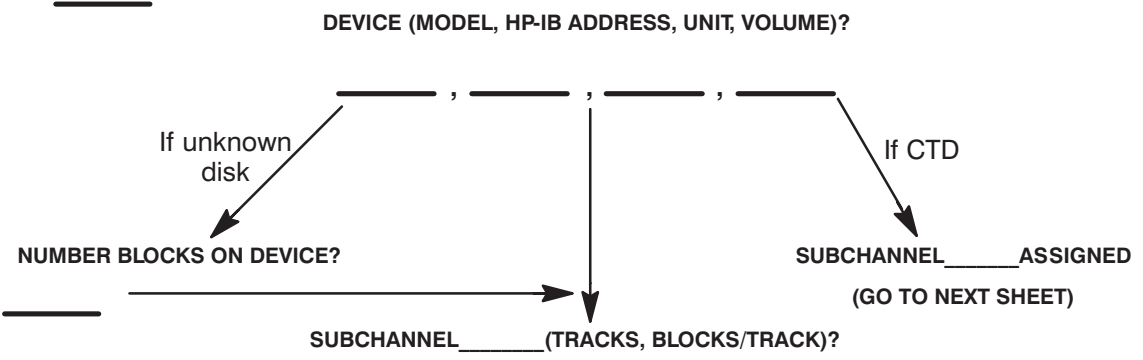
____ , ____ , ____ , ____ , ____ , ____ , ____
30?

____ , ____ , ____ , ____ , ____ , ____ , ____
31?

____ , ____ , ____ , ____ , ____ , ____ , ____

CS/80 Disk – 7908, 7911, 7912, 7935

5d CONTROLLER SELECT CODE?

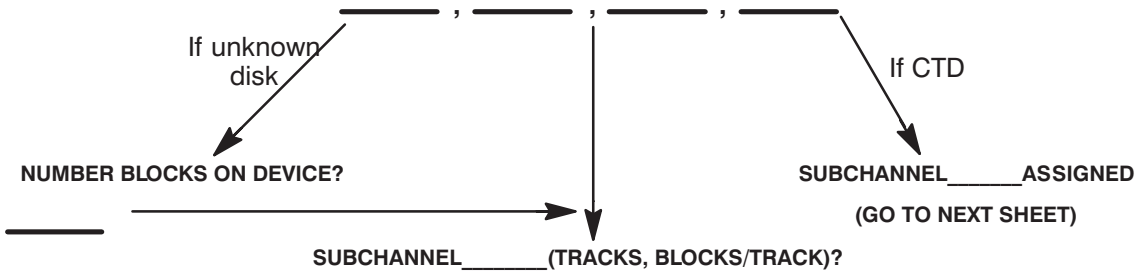


_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____

Terminate subchannel with /E (unless entire disk used).
Terminate device prompting with /E.

CS/80 Disk – 7908, 7911, 7912, 7935 (continued)

5d) DEVICE (MODEL, HP-IB ADDRESS, UNIT, VOLUME)?

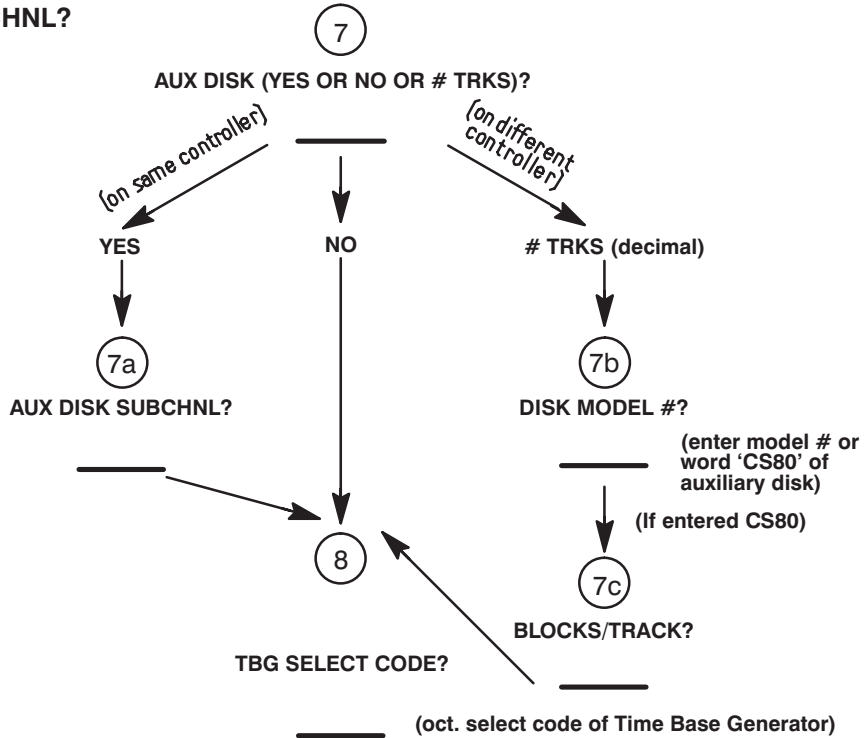


_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____
_____ , _____	_____ , _____	_____ , _____	_____ , _____

Terminate subchannel with /E (unless entire disk used).
Terminate device prompting with /E.

Initialization Phase Worksheet (continued)

⑥ SYSTEM SUBCHNL?



⑨ PRIV. INT. SELECT CODE?

(oct. select code or 0)

⑩ MEM. RES. ACCESS TABLE AREA II?

(YES or NO)

⑪ RT MEMORY LOCK?

(YES or NO)

⑫ BG MEMORY LOCK?

(YES or NO)

⑬ SWAP DELAY?

(dec. value from 0 to 255 - represents tens of milliseconds)

⑭ MEM SIZE?

(dec. # of memory pages > 48)

⑮ BOOT FILE NAMR?

(file or LU # or 0)

Program Input Phase Worksheet

PROG INPUT PHASE: (output by generator at start of Program Input Phase)

— (generator prompt issued throughout Program and Parameter Input Phases)

- 16a Enter mapping options using the MAP command. This command may be reentered at any time during this phase to change mapping options.

$$\left(\text{MAP} \left\{ \begin{array}{l} \text{MODULES} \\ \text{GLOBALS} \\ \text{LINKS} \\ \text{OFF} \\ \text{ALL} \end{array} \right. ; \text{ may have combinations, separated by commas} \right)$$

MAP ————— [,.....optional] —

- 16b Enter linkage control options using the LINKS IN command. The LINKS IN command may be reentered at any time during this phase to change linkage options.

$$\left(\text{LINKS IN} \left\{ \begin{array}{l} \text{BASE} \\ \text{CURRENT} \end{array} \right. \right)$$

LINKS IN ————— (specify BASE or CURRENT)

—

- 16c Enter the LIB command, which includes or excludes modules from the system library generated at the end of generation. The command may be entered as often as you wish.

$$\left(\left\{ \begin{array}{l} \text{LIB} \\ \text{or} \\ \text{NOLIB} \end{array} \right. \right)$$

Program Input Phase Worksheet (continued)

16d

Enter the RELOCATE commands (with optional MAP, LINKS IN, and DISPLAY commands)

REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____

(REL [(name)] ,filename
[:sc [: cartridge label]])

(RT6GN responds with a –
after each user input)

Program Input Phase Worksheet (continued)

16d

REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____
REL — —	_____	_____	_____	_____

(REL [(name)] ,filename
[:sc [: cartridge label]])

(RT6GN responds with a –
after each user input)

Program Input Phase Worksheet (continued)

16e Enter DISPLAY command options to obtain symbol table information, if necessary .

(DISPLAY { TABLE
UNDEFS [,TR]
symbol name })

DISPLAY _____ [, optional] (enter either TABLE, UNDEFS, or symbol name;
UNDEFS optionally followed by a TR)

16f Enter /E to terminate this phase.

Table Generation Phase Worksheet

TABLE AREA I <<PAGE XXXXX>>:

(output by generator
at start of Table
Generation Phase)

20

EQUIPMENT TABLE ENTRY

EQT 01?

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

(oct. select code,
driver [,B] [,D] [,S] [,M] [,T=ttttt]
[,X=xxx])

EQT 02? , _____ , _____ , _____ , _____ , _____ , _____ , _____

(do not specify SDA
for system disk driver

EQT 03? , _____ , _____ , _____ , _____ , _____ , _____ , _____

(terminate your
final entry with a /E)

EQT 04? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 05? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 06? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 07? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 08? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 09? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 10? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 11? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 12? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 13? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 14? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 15? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 16? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 17? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 18? , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 19? , _____ , _____ , _____ , _____ , _____ , _____ , _____

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

20 EQUIPMENT TABLE ENTRY (continued)

EQT 20?

_____, _____, _____, _____, _____, _____, _____, _____

EQT 21? _____, _____, _____, _____, _____, _____, _____, _____

EQT 22? _____, _____, _____, _____, _____, _____, _____, _____

EQT 23? _____, _____, _____, _____, _____, _____, _____, _____

EQT 24? _____, _____, _____, _____, _____, _____, _____, _____

EQT 25? _____, _____, _____, _____, _____, _____, _____, _____

EQT 26? _____, _____, _____, _____, _____, _____, _____, _____

EQT 27? _____, _____, _____, _____, _____, _____, _____, _____

EQT 28? _____, _____, _____, _____, _____, _____, _____, _____

EQT 29? _____, _____, _____, _____, _____, _____, _____, _____

EQT 30? _____, _____, _____, _____, _____, _____, _____, _____

EQT 31? _____, _____, _____, _____, _____, _____, _____, _____

EQT 32? _____, _____, _____, _____, _____, _____, _____, _____

EQT 33? _____, _____, _____, _____, _____, _____, _____, _____

EQT 34? _____, _____, _____, _____, _____, _____, _____, _____

EQT 35? _____, _____, _____, _____, _____, _____, _____, _____

EQT 36? _____, _____, _____, _____, _____, _____, _____, _____

EQT 37? _____, _____, _____, _____, _____, _____, _____, _____

EQT 38? _____, _____, _____, _____, _____, _____, _____, _____

EQT 39? _____, _____, _____, _____, _____, _____, _____, _____

20 EQUIPMENT TABLE ENTRY (continued)

EQT 40?

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 41? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 42? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 43? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 44? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 45? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 46? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 47? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 48? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 49? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 50? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 51? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 52? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 53? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 54? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 55? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 56? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 57? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 58? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

EQT 59? _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

20 EQUIPMENT TABLE ENTRY (continued)

EQT 60?

_____, _____, _____, _____, _____, _____, _____, _____

EQT 61? _____, _____, _____, _____, _____, _____, _____, _____

EQT 62? _____, _____, _____, _____, _____, _____, _____, _____

EQT 63? _____, _____, _____, _____, _____, _____, _____, _____

Table Generation Phase Worksheet (continued)

21

DEVICE REFERENCE TABLE

(system console)	001 = EQT #?	(LU1 = EQT #?)
	_____ , _____	
(system disk)	002 = EQT #?	(eqt entry, optional subchannel; the subchannel # should match the response in Step 6)
	_____ , _____	
(auxiliary disk)	003 = EQT #?	(terminate your final entry with a /E)
	_____ , _____	(number should match response to Step 7a, if entered)
(standard output)	004 = EQT #?	
	_____ , _____	
(standard input)	005 = EQT #?	
	_____ , _____	
(standard list)	006 = EQT #?	
	_____ , _____	
	007 = EQT #?	
	_____ , _____	
(mag. tape)	008 = EQT #?	
	_____ , _____	
	009 = EQT #?	
	_____ , _____	
	010 = EQT #?	
	_____ , _____	
	011 = EQT #?	
	_____ , _____	
	012 = EQT #?	
	_____ , _____	
	013 = EQT #?	
	_____ , _____	
	014 = EQT #?	
	_____ , _____	
	015 = EQT #?	
	_____ , _____	
	016 = EQT #?	
	_____ , _____	
	017 = EQT #?	
	_____ , _____	
	018 = EQT #?	
	_____ , _____	
	019 = EQT #?	
	_____ , _____	
	020 = EQT #?	
	_____ , _____	

21

DEVICE REFERENCE TABLE (continued)

021 = EQT #? _____, _____	041 = EQT #? _____, _____	061 = EQT #? _____, _____
022 = EQT #? _____, _____	042 = EQT #? _____, _____	062 = EQT #? _____, _____
023 = EQT #? _____, _____	043 = EQT #? _____, _____	063 = EQT #? _____, _____
024 = EQT #? _____, _____	044 = EQT #? _____, _____	064 = EQT #? _____, _____
025 = EQT #? _____, _____	045 = EQT #? _____, _____	065 = EQT #? _____, _____
026 = EQT #? _____, _____	046 = EQT #? _____, _____	066 = EQT #? _____, _____
027 = EQT #? _____, _____	047 = EQT #? _____, _____	067 = EQT #? _____, _____
028 = EQT #? _____, _____	048 = EQT #? _____, _____	068 = EQT #? _____, _____
029 = EQT #? _____, _____	049 = EQT #? _____, _____	069 = EQT #? _____, _____
030 = EQT #? _____, _____	050 = EQT #? _____, _____	070 = EQT #? _____, _____
031 = EQT #? _____, _____	051 = EQT #? _____, _____	071 = EQT #? _____, _____
032 = EQT #? _____, _____	052 = EQT #? _____, _____	072 = EQT #? _____, _____
033 = EQT #? _____, _____	053 = EQT #? _____, _____	073 = EQT #? _____, _____
034 = EQT #? _____, _____	054 = EQT #? _____, _____	074 = EQT #? _____, _____
035 = EQT #? _____, _____	055 = EQT #? _____, _____	075 = EQT #? _____, _____
036 = EQT #? _____, _____	056 = EQT #? _____, _____	076 = EQT #? _____, _____
037 = EQT #? _____, _____	057 = EQT #? _____, _____	077 = EQT #? _____, _____
038 = EQT #? _____, _____	058 = EQT #? _____, _____	078 = EQT #? _____, _____
039 = EQT #? _____, _____	059 = EQT #? _____, _____	079 = EQT #? _____, _____
040 = EQT #? _____, _____	060 = EQT #? _____, _____	080 = EQT #? _____, _____
_____, _____	_____, _____	_____, _____

21

DEVICE REFERENCE TABLE (continued)

081 = EQT #? _____, _____	101 = EQT #? _____, _____	121 = EQT #? _____, _____
082 = EQT #? _____, _____	102 = EQT #? _____, _____	122 = EQT #? _____, _____
083 = EQT #? _____, _____	103 = EQT #? _____, _____	123 = EQT #? _____, _____
084 = EQT #? _____, _____	104 = EQT #? _____, _____	124 = EQT #? _____, _____
085 = EQT #? _____, _____	105 = EQT #? _____, _____	125 = EQT #? _____, _____
086 = EQT #? _____, _____	106 = EQT #? _____, _____	126 = EQT #? _____, _____
087 = EQT #? _____, _____	107 = EQT #? _____, _____	127 = EQT #? _____, _____
088 = EQT #? _____, _____	108 = EQT #? _____, _____	128 = EQT #? _____, _____
089 = EQT #? _____, _____	109 = EQT #? _____, _____	129 = EQT #? _____, _____
090 = EQT #? _____, _____	110 = EQT #? _____, _____	130 = EQT #? _____, _____
091 = EQT #? _____, _____	111 = EQT #? _____, _____	131 = EQT #? _____, _____
092 = EQT #? _____, _____	112 = EQT #? _____, _____	132 = EQT #? _____, _____
093 = EQT #? _____, _____	113 = EQT #? _____, _____	133 = EQT #? _____, _____
094 = EQT #? _____, _____	114 = EQT #? _____, _____	134 = EQT #? _____, _____
095 = EQT #? _____, _____	115 = EQT #? _____, _____	135 = EQT #? _____, _____
096 = EQT #? _____, _____	116 = EQT #? _____, _____	136 = EQT #? _____, _____
097 = EQT #? _____, _____	117 = EQT #? _____, _____	137 = EQT #? _____, _____
098 = EQT #? _____, _____	118 = EQT #? _____, _____	138 = EQT #? _____, _____
099 = EQT #? _____, _____	119 = EQT #? _____, _____	139 = EQT #? _____, _____
100 = EQT #? _____, _____	120 = EQT #? _____, _____	140 = EQT #? _____, _____

21

DEVICE REFERENCE TABLE (continued)

201 = EQT #? _____, _____	221 = EQT #? _____, _____	241 = EQT #? _____, _____
202 = EQT #? _____, _____	222 = EQT #? _____, _____	242 = EQT #? _____, _____
203 = EQT #? _____, _____	223 = EQT #? _____, _____	243 = EQT #? _____, _____
204 = EQT #? _____, _____	224 = EQT #? _____, _____	244 = EQT #? _____, _____
205 = EQT #? _____, _____	225 = EQT #? _____, _____	245 = EQT #? _____, _____
206 = EQT #? _____, _____	226 = EQT #? _____, _____	246 = EQT #? _____, _____
207 = EQT #? _____, _____	227 = EQT #? _____, _____	247 = EQT #? _____, _____
208 = EQT #? _____, _____	228 = EQT #? _____, _____	248 = EQT #? _____, _____
209 = EQT #? _____, _____	229 = EQT #? _____, _____	249 = EQT #? _____, _____
210 = EQT #? _____, _____	230 = EQT #? _____, _____	250 = EQT #? _____, _____
211 = EQT #? _____, _____	231 = EQT #? _____, _____	251 = EQT #? _____, _____
212 = EQT #? _____, _____	232 = EQT #? _____, _____	252 = EQT #? _____, _____
213 = EQT #? _____, _____	233 = EQT #? _____, _____	253 = EQT #? _____, _____
214 = EQT #? _____, _____	234 = EQT #? _____, _____	254 = EQT #? _____, _____
215 = EQT #? _____, _____	235 = EQT #? _____, _____	_____, _____
216 = EQT #? _____, _____	236 = EQT #? _____, _____	
217 = EQT #? _____, _____	237 = EQT #? _____, _____	
218 = EQT #? _____, _____	238 = EQT #? _____, _____	
219 = EQT #? _____, _____	239 = EQT #? _____, _____	
220 = EQT #? _____, _____	240 = EQT #? _____, _____	
_____, _____	_____, _____	

Table Generation Phase Worksheet (continued)

22

INTERRUPT TABLE

(enter octal select codes in ascending order)

(generator prompt)

(select code, option, destination)

(terminate your final entry with a /E)

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

_____ , _____ , _____

—

System Boundaries Phase Worksheet

23

DRIVR PART 00002

(dec. # of pages)

CHANGE DRIVR PART?

(increase driver partition size?)

(enter dec. # of pages > reported value and
< 17, otherwise 0)

**DP 01 <<PAGE XXXXX>>:
DVY3 x map here**

(load map for system disk driver plus any other
drivers that will fit in this driver partition)

24

RT COMMON xxxxx

(dec. # of words)

CHANGE RT COMMON?

(change real-time COMMON?)

(enter dec. # of WORDS > reported value,
otherwise 0)

RT COMMON ADD xxxxx

(octal address)

25

BG COMMON xxxxx

(reported in dec. words)

CHANGE BG COMMON?

(change background COMMON?)

(enter dec. # of PAGE increments - 1024
words each, otherwise 0)

BG COMMON ADD xxxxx

(octal address)

BG COMMON xxxxx

System And Program Loading Phase Worksheet

TABLE AREA II <<PAGE XXXXX>>:

26 # OF I/O CLASSES?
_____ (dec. # from 1 to 255; typical entry would be 10)

27 # OF LU MAPPINGS[, # OF SCHEDULE PROGRAMS]?
_____ (dec. # from 1 to 255; typical entry would be 102)

28 # OF RESOURCE NUMBERS[, DEBUG TABLE SIZE]?
_____ (dec. # from 1 to 255)

29 BUFFER LIMITS (LOW, HIGH)?
_____, _____ (in words, suggested entry would be 100, 400)

30 XXXX LONG ID SEGMENTS USED (# USED)
OF BLANK LONG ID SEGMENTS? (" long" ID segments)
_____ (total # should be from 1 to 254)

31 XXXX SHORT ID SEGMENTS USED (# USED)
OF BLANK SHORT ID SEGMENTS?
_____ (total # should be from 1 to 256)

32 XXXX ID EXTENSIONS USED (# USED)
OF BLANK ID EXTENSIONS?
_____ (total # should be from 1 to 254)

33 MAXIMUM # OF PARTITIONS?
_____ (dec. # < 64)

Partition Definition Phase Worksheet

Partition Definition Phase

RT PARTITION REQMTS: (generator lists page requirements)

:
:
:
:
:

BG PARTITION REQMTS:

MAXIMUM PROGRAM SIZE:

W/O COM xx PAGES
W/ COM xx PAGES
W/ TA2 xx PAGES

SYS AV MEM: xxxxx WORDS (reported in decimal words)

34 ENTER 1ST PART PAGE: XXXXX (DEFAULT) TO YYYYY:

(enter dec. pages # value between XXXXX and YYYYY, otherwise 0 - for default value XXXXX)

SYS AV MEM: xxxxx WORDS

(new size of SAM reported, decimal words)

PAGES REMAINING: xxxxx

(pages remaining for partitioning)

35 DEFINE PARTITIONS:
PART 01, XXXX PAGES?

(see manual about subpartitions)

_____, _____, _____

(prompts to maximum of 64, displaying # pages remaining, may ask for SUBPARTITIONS)
(decimal page size, type, [R])

SUBPARTITIONS?

_____, _____, _____

PART 02, XXXX PAGES?

_____, _____, _____

PART 03, XXXX,(YYYY) PAGES

(subpartition mode - the number in parenthesis indicates the number of pages remaining in the mother partition)

_____, _____, _____

PART 04, XXXX PAGES?

_____, _____, _____

PART 05, XXXX PAGES?

_____, _____, _____

PART 06, XXXX PAGES?

_____, _____, _____

PART 07, XXXX PAGES?

_____, _____, _____

(terminate your final entry with a /E)

Partition Definition Phase Worksheet (continued)

35

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

Partition Definition Phase Worksheet (continued)

35

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

Partition Definition Phase Worksheet (continued)

35

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

_____ , _____ , _____

Partition Definition Phase Worksheet (continued)

36 MODIFY PROGRAM PAGE REQUIREMENTS?

—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____

(generator prompt)
(program name, decimal # of pages)

(terminate your final entry with a /E)

37 SHAREABLE EMA PARTITIONS?

—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____
—
_____, _____, _____

(generator prompt)
(partition #, PARTITION LABEL)

(terminate your final entry with a /E)

SYSTEM STORED IN FILE
SYS SIZE: ttt TRKS, sss SECS (XX SECTORS/TRACKS)
= XXXXXX BLOCKS (128 WORDS/BLOCK)

RT6GN FINISHED

xxxx ERRORS

Partition Definition Phase Worksheet (continued)

38 SHAREABLE EMA PROGRAMS?

_____, _____

_____, _____

_____, _____

_____, _____

_____, _____

_____, _____

(generator prompt)
(PROGRAM NAME, EMA PARTITION LABEL)

(terminate your final entry with a /E)

39 ASSIGN PROGRAM PARTITIONS?

_____, _____

_____, _____

_____, _____

_____, _____

_____, _____

_____, _____

(generator prompt)
(program name, partition #)

(terminate your final entry with a /E)

SYSTEM STORED IN FILE
SYS SIZE: ttt TRKS, sss SECS (XX SECTORS/TRACK)
 = XXXXXX BLOCKS (128 WORDS/BLOCK)
RT6GN FINISHED
xxxx ERRORS

Sample Answer File

```

* Prim6_cs80.ans 92084-17xxx REV.6001 <930528.0808>
/gens/primary6/Prim6_cs80.lst:::96,R          * LIST FILE
*****
*
* PRIMARY SYSTEM #604      (7908/11/12/14/33 CS80)      *
*
*****
No                      * Echo on
/gens/primary6/Prim6_cs80.sys:::6100,R          * Absolute System File
CS80                    * Target Disk
12                      * Disk Channel
CTD,0,1,0
7937,0,0,0              * SUBCHANNEL                      LU #
300,48                  * 01 (Starts at block 0)                2
900,48                  * 02 (Starts at block 14400)           10
143,48                  * 03 (Starts at block 57600)           11
CTD,0                   * (Starts at 64464)                   12 (CTD)
-30,1                   * (Starts at 64720)
*
* END OF 7908 (64750 Blks)
320,48                  * 04 (Starts at block 64750)           13
-18,1                   * (Starts at 80110)
*
* End of 7907 (80128 Blks)
304,48                  * 05 (Starts at block 80128)           14
-32,1                   * (Starts at 94720)
*
* End of 7941 (94752 Blks)
314,48                  * 06 (Starts at 94752)                 15
*
* End of 7911 (109824 Blks)
2229,48                 * 07 (Starts at 109824 blocks)         16
-15,1
*
* End of 7945 (216831 Blks)
821,48                  * 08                                    17
-17,1
*
* End of 7912 (256256 Blks)
981,64                  * 09 (Starts at block 256256)         18
-55,1
*
* End of 7957 (319095 Blks)
3078,64                 * 10 (Starts at block 319095)         19
-9,1
*
* End of 7914 (516096 Blks)
3572,64                 * 11 (Starts at block 516096)         20
3572,64                 * 12 (Starts at block 744704)         21
3572,64                 * 13 (Starts at block 973312)         22
-36,1
*
* End of 7936 (1201956 Blks)
5905,64                 * 14 (Starts at block 1201956)         23
-40,1
*
* End of 7933/35 (1579916 Blks)

```

```

10192,64          * 15 (Starts at block 1579916)          24
*               End of 7937 (2232204 Blks)
/E
1                * SYSTEM SUBCHANNEL
NO               *   AUX DISK
11              *   TBG
0                * NO PRIV. INT.
YES             * MR ACCESS TA II
YES            * RT MEMORY LOCK
YES            * BG MEMORY LOCK
50              * SWAP DELAY
256             * MEM SIZE
0                * NO BOOT FILE
MAP Modules, links
LINKS IN CURRENT
*
*               RTE-VI OPERATING SYSTEM
*
REL,%CR6S1      * MEM RES OP SYS 1
REL,%CR6S2      * MEM RES OP SYS 2
REL,%CR6S3      * MEM RES OP SYS 3
REL,%$CNFG      * CONFIGURATOR
*
*
*               I/O DRIVERS
*
REL,%DVR00      * RS-232 TERMINALS
REL,DVC00.REL   * Serial Driver (point to point)
REL,%DVA05      * 2645/2648 SYSTEM CONSOLE
REL,%DVM00      * 12792A MUX
REL,%PVM00      * "
REL,%DDV05      * "
REL,%DDV12      * "
REL,%$DVTB      * "
REL,%DVR07::MULTIPOINT * MULTIPOINT
REL,%DVA12      * 2613,2617,2818,2631 LINE PRINTERS
REL,%DVB12      * 2608 LINE PRINTER
REL,%DVC12      * 2608S GRAPHICS PRINTER
REL,%DVD12      * 2608S GRAPHICS PRINTER
REL,%DVR23      * 7970 MAGNETIC TAPE UNIT
REL,%DVS23      * 7974A MAGNETIC TAPE UNIT
REL,%$TB32      * TRACK MAP
REL,%DVR32      * 7906/7920/7925 (PERIPHERAL DISK)
REL,%DVA32      * HP-IB DISK (PERIPHERAL)
REL,%$TA32      * TRACK MAP
REL,%DVM33      * CS80 DISK (SYSTEM DISK)
REL,%6DV37      * HP-IB
REL,%6DP43      * POWERFAIL
REL,%DVA65::DS1000 * (DS) 1000-3000 12771/73 LINK
REL,%DVA66::DS1000 * (DS) 1000-1000 HDLC & 1000-3000 BISYNC
REL,%DVG67::DS1000 * (DS) 1000-3000 12889 HSI LINK
REL,%MDV00::DS1000 * (DS) REMOTE I/O MAP DVR--RTEIVB&RTE-MIII
LINKS IN BASE
REL,DV800_1.REL * D-MUX
LINKS IN CURRENT
*
*               MODULES
*
MAP OFF, MODULES

```

```

REL,%BMPG1          * FMGR
REL,%BMPG2          * D.RTR
REL,%BMPG3          * FMP
REL,%QUEUE::DS1000 * (DS) INTERRUPT REQUEST HANDLER
REL,%DSRTR          * (DS) TRANSPARENCY SOFTWARE
*
MAP OFF, modules, links
REL,%RESSM::DS1000 * (DS) ENTRY POINTS IN SSGA FOR RTE-IVB
REL,%#SPLU::DS1000 * (DS) ENTRY POINT FOR REMOTE I/O MAPPING
*
REL,%SMON2          * SESSION MONITOR #2
MAP OFF, MODULES
REL,%SMON1          * SESSION MONITOR #1
REL,%T5IDM          * SHORT ID SEGMENT HANDLER
REL,%IOMAP::DS1000 * (DS) INTERFACE FOR MAPPED LUS
REL,%DSMOD::DS1000 * (DS) ALTERS DS PARAM SET AT INITIALIZATION
REL,%DINIS::DS1000 * (DS) NETWORK INITIALIZATION WITH SHUTDOWN
REL,%GRPM ::DS1000 * (DS) REQUEST/REPLY PRE-PROCESSOR
REL,%D3N25::DS1000 * (DS) SATISFIES D$X25 ENTRY PT.
*
NOLIB
REL,%CI              * CI UTILITY
REL,%CIX             * CIX UTILITY
REL,%CISU6           * RTE-6 LIBRARY
REL,%CI000           * CI MESSAGES
REL,%CR000           * CI LIBRARY MESSAGES
REL,%CX000           * CIX MESSAGES
REL,$CRLIB           * CI LIBRARY
LIB
*
* LIBRARIES
*
REL,$DSMX6::DS1000  * (DS) LIB FOR RTE-6/VM
REL,$SYLB6           * SYSTEM LIBRARY
REL,$MATH            * SYSTEM IND. MATH LIBRARY
REL,$FLIB            * FORTRAN SYSTEM IND. LIBRARY
REL,$FMP6,NOLIB     * FMP LIBRARY
REL,$FOLDF           * FORTRAN FILE I/O (FMGR)
REL,$D3KLB::DS1000  * (DS) HP 1000-3000 BASE LIB
REL,$D3KBB::DS1000  * (DS) 1072 WORD COMMUNICATION BUFFER
REL,$DSL1B1::DS1000 * (DS) REQUIRED IN ALL DS/1000-IV NODES
REL,$DSL1B2::DS1000 * (DS) REQUIRED IN ALL NODES W/ OTHER RTE LINKS
REL,$DSRR ::DS1000  * (DS) RE-ROUTING LIBRARY
REL,$DSSM ::DS1000  * (DS) SESSION MONITOR
* NOTE: IF GEN NON-DS SYSTEM, EITHER SESSION OR
* NON-SESSION, AN UNDEF .CLGF WILL BE OK
*
REL,$FDSL1B         * FTN WITH DS LIB
REL,%MPLIB::MULTIPOINT * MULTIPOINT LIB
REL,$LDRLN          * LOADER LIB
REL,$UTLIB,NOLIB    * UTILITY LIB
REL,%CSERR           * CS80 DISK ERROR PROGRAM
REL,%DBUGR           * DEBUG ROUTINE
REL,%DECAR           * RTE DEC STRING ARITH
REL,$DSMA ::DS1000  * (DS) MESSAGE ACCOUNTING LIB
REL,$MLSLB          * MLS PROG LIB
*
* ADDITIONAL MODULES
*

```



```

REL,%SPOL1          * SPOOLING
REL,%SPOL2          * MORE SPOOLING
REL,%WHZAT          * SYSTEM STATUS PROGRAM
REL,%LGTAT          * SYSTEM DISK LOG TABLE
REL,%$LDR           * RELOCATING LOADER
REL,%AUTO7::MULTIPOINT * AUTO RESTART (MULTIPOINT)
REL,%ACCTS          * ACCOUNT MAINTENANCE
REL,$ACCLB,NOLIB   * ACCOUNTS LIBRARY
*
*
/E                  * TERMINATE RELOCATABLE SPECIFICATIONS
*
*
*****
*                      PROGRAM PARAMETERS                      *
*****
* PROGRAM,TYPE,PRIORITY,EXECUTION INTERVAL
*
CI,6                * Command Interpreter
CIX,6               * CI Auxiliary Program
WHZAT,1,2           * MEMORY RESIDENT-PRIORITY OF 2
SMP,19              * CHANGE FROM RT DISK RES TO BG DISK RES
JOB,19              * CHANGE FROM RT DISK RES TO BG DISK RES
FMGR,3,50           * BG PRI 50
AUTOR,4,10          * BG NO TA2, PRI=10
PVM00,13
/E
*
*
TR,]RT6OS           * E/F OS FIRMWARE ENTRY POINT
TR,]RT6VM           * E/F EMA/VMA FIRMWARE ENTRY POINT
*                   A MICRO INSTRUCTION IS STORED IN A TRAP CELL
Z$CDS,RP,0          * NON-CDS FOR FORTRAN
Z$INT,RP,1          * 1 WORD INTEGER
Z$DBL,RP,4          * 4 WORD FLOATING POINT
Z$LPP,RP,73         * 59 LINES/PG
Z$F67,RP,7         * FORTRAN 77 DEFAULT
/E
*
*
/E                  * NO PROGRAM ALIAS
*
*
*                      EQUIPMENT TABLE ENTRIES
*
12,DVM33,D,T=5000  * EQT 01  7908/12/14/33/35 SYSTEM DISK
15,DVA05,B,X=13,T=30000 * EQT 02  SYSTEM CONSOLE
72,DVB12,B,X=5     * EQT 03  LINE PRINTER (2608B)
64,DVR00,B,T=30000 * EQT 04  TERMINAL
21,DVA37,X=123,T=6000 * EQT 05  HP-IB (14 AUTO ADDRESS DEVICES)
16,DVC12,B,X=10    * EQT 06  LINE PRINTER (2608S)
24,DVS23,D,X=26    * EQT 07  7974A MAG TAPE UNIT
17,DVR23,B,T=500   * EQT 08  7970B/E MAG TAPE
23,DVR07,X=8       * EQT 09  MULTIPOINT INTERFACE
71,DVR07,X=8       * EQT 10  "          TERMINAL #1
71,DVR07,X=8       * EQT 11  "          "          #2
71,DVR07,X=8       * EQT 12  "          "          #3
71,DVR07,X=8       * EQT 13  "          "          #4
22,DVM00,B,X=31    * EQT 14  MULTIPLEXER PORT #1

```

```

22,DVM00,B,X=31      * EQT 15      "          " #2
22,DVM00,B,X=31      * EQT 16      "          " #3
22,DVM00,B,X=31      * EQT 17      "          " #4
22,DVM00,B,X=31      * EQT 18      "          " #5
22,DVM00,B,X=31      * EQT 19      "          " #6
22,DVM00,B,X=31      * EQT 20      "          " #7
22,DVM00,B,X=31      * EQT 21      "          " #8
60,DVA12,B,T=6000    * EQT 22      LINE PRINTER 2613/17/19/31
61,DVA05,B,X=13,T=30000 * EQT 23      TERMINAL
62,DVA05,B,X=13,T=30000 * EQT 24      "
63,DVA05,B,X=13,T=30000 * EQT 25      "
4,DVP43,M            * EQT 26      POWERFAIL
52,DVS43,M,X=18      * EQT 27      SPOOLING
53,DVS43,M,X=18      * EQT 28      "
54,DVS43,M,X=18      * EQT 29      "
55,DVS43,M,X=18      * EQT 30      "
56,DVS43,M,X=18      * EQT 31      "
57,DVS43,M,X=18      * EQT 32      "
73,DVV00             * EQT 33      REMOTE I/O MAPPING RESERVED EQT
73,DVV00,X=11        * EQT 34      " " " SUBCH. 0,1,2
14,DVA66,X=12        * EQT 35      DS   TRANSMIT  \
14,DVA66             * EQT 36      DS   RECEIVE   /
66,DVA65,X=7,T=3     * EQT 37      DS   12771A
67,DVA65,X=7,T=30    * EQT 38      DS   12773A 12620A
70,DVA65,X=7,T=3     * EQT 39      DS   12771A
65,DVG67,D           * EQT 40      DS   12889A
13,DVA66,X=12        * EQT 41      DS   TRANSMIT  \
13,DVA66             * EQT 42      DS   RECEIVE   /
27,DVA66,X=12        * EQT 43      DS   TRANSMIT  \
27,DVA66             * EQT 44      DS   RECEIVE   /
51,DVA32,D,T=100     * EQT 45      PERIPHERAL DISK
50,DVR32,D,T=100     * EQT 46      PERIPHERAL DISK
25,DV800,Gr=Hp_Term:0 * EQT 47      D-Mux port 0
25,DV800,Gr=Hp_Term:1 * EQT 48      D-Mux port 1
25,DV800,Gr=Hp_Term:2 * EQT 49      D-Mux port 2
25,DV800,Gr=Hp_Term:3 * EQT 50      D-Mux port 3
25,DV800,Gr=Hp_Term:4 * EQT 51      D-Mux port 4
25,DV800,Gr=Hp_Term:5 * EQT 52      D-Mux port 5
25,DV800,Gr=Hp_Term:6 * EQT 53      D-Mux port 6
25,DV800,Gr=Hp_Term:7 * EQT 54      D-Mux port 7
26,DVC00,B,T=30000   * EQT 55      TERMINAL DVR

```

/E

*

*

DEVICE REFERENCE TABLE ENTRIES

*

```

*eqt#,subchannel      lu #
2,0                   *001 System Console
1,1                   *002 System Disk
0                     *003 Aux Disk
2,1                   *004 L-CTU
2,2                   *005 R-CTU (System console)
6                     *006 Line Printer
0                     *007 Reserved
8                     *008 Mag Tape
7                     *009 7974/8 Mag Tape
*
*.....

```

```

1,2      *010 <7908>      ^      ^      ^      ^      ^      ^      ^
1,3      *011      :      :      :      :      :      :      :
1,0      *012 ( CTD ) :      :      :      :      :      :      :
*        *.....v <7907> :      :      :      :      :      :      :
1,4      *013      :      :      :      :      :      :      :
*        *.....v <7941> :      :      :      :      :      :      :
1,5      *014      :      :      :      :      :      :      :
*        *.....v <7911> :      :      :      :      :      :      :
1,6      *015      :      :      :      :      :      :      :
*        *.....v <7945> :      :      :      :      :      :      :
1,7      *016      :      :      :      :      :      :      :
*        *.....v <7912> :      :      :      :      :      :      :
1,8      *017      :      :      :      :      :      :      :
*        *.....v <7914> :      :      :      :      :      :      :
1,9      *018      :      :      :      :      :      :      :
*        *.....v <7933/35> :      :      :      :      :      :      :
1,10     *019      :      :      :      :      :      :      :
1,11     *020      :      :      :      :      :      :      :
*        *.....v <7937> :      :      :      :      :      :      :
1,12     *021      :      :      :      :      :      :      :
1,13     *022      :      :      :      :      :      :      :
1,14     *023      :      :      :      :      :      :      :
1,15     *024      :      :      :      :      :      :      :
*        *.....v <7937> :      :      :      :      :      :      :
0        *025      :      :      :      :      :      :      :
0        *026      :      :      :      :      :      :      :
0        *027      :      :      :      :      :      :      :
0        *028      :      :      :      :      :      :      :
0        *029      :      :      :      :      :      :      :
47,0     *030 D-Mux in SC 25
48,0     *031 D-Mux in SC 25
49,0     *032 D-Mux in SC 25
50,0     *033 D-Mux in SC 25
51,0     *034 D-Mux in SC 25
52,0     *035 D-Mux in SC 25
53,0     *036 D-Mux in SC 25
54,0     *037 D-Mux in SC 25
47,1     *038 Left CTU on LU 30
47,2     *039 Right CTU on LU 30
0        *040      :      :      :      :      :      :      :
0        *041      :      :      :      :      :      :      :
0        *042      :      :      :      :      :      :      :
0        *043      :      :      :      :      :      :      :
*        *.....v <7937> :      :      :      :      :      :      :
7        *044 7974A Mag tape unit
0        *045 (Spare)
*        *.....v <7937> :      :      :      :      :      :      :
9        *046 Multipoint Interface
10       *047 " Terminal #1
11       *048 " " #2
12       *049 " " #3
13       *050 " " #4
*        *.....v <7937> :      :      :      :      :      :      :
5,0      *051 HP-IB Interface
5,1      *052 " Device #1
5,2      *053 " " #2
5,3      *054 " " #3
5,4      *055 " " #4
5,5      *056 " " #5

```

```

5,6          *057      "      "      #6
5,7          *058      "      "      #7
5,8          *059      "      "      #8
5,9          *060      "      "      #9
5,10         *061      "      "      #10
5,11         *062      "      "      #11
5,12         *063      "      "      #12
5,13         *064      "      "      #13
5,14         *065      "      "      #14
*           *
55,0         *066      Terminal
55,1         *067      L-CTU
55,2         *068      R-CTU
23           *069      Terminal
23,1         *070      L-CTU
23,2         *071      R-CTU
24           *072      Terminal
24,1         *073      L-CTU
24,2         *074      R-CTU
25           *075      Terminal
25,1         *076      L-CTU
25,2         *077      R-CTU
26           *078      Powerfail
*           *
4            *079      DVR00 Terminal
3            *080      Graphics line printer
3,3         *081      2608B Line printer read back
14          *082      Mux      Port      #0
15          *083      "      "      #1
16          *084      "      "      #2
17          *085      "      "      #3
18          *086      "      "      #4
19          *087      "      "      #5
20          *088      "      "      #6
21          *089      "      "      #7
27          *090      Spooling #1
28          *091      "      #2
29          *092      "      #3
30          *093      "      #4
31          *094      "      #5
32          *095      "      #6
35          *096      DS \ SC14  DVA66
36          *097      DS /      DVA66
40          *098      DS      DVG67
37,1        *099      DS      DVA65  DIRECT CONNECT
38          *100      DS      DVA65
39,1        *101      DS      DVA65
33          *102      DS  RMTE I\O MAPPING DDV00
34          *103      DS  "      "      "      "
41          *104      DS \ SC13  DVA66
42          *105      DS /      DVA66
43          *106      DS \ SC27  DVA66
44          *107      DS /      DVA66
0           *108      "
0           *109      "
0           *110      "
0           *111      "
0           *112      "
0           *113      "

```

```

0          *114      "
0          *115      "
0          *116      "
0          *117      "
0          *118      "
0          *119      "
0          *120      "
0          * Spare           121
0          * Spare           122
0          * Spare           123
0          * Spare           124
0          * Spare           125
0          * Spare           126
0          * Spare           127
0          * Spare           128
0          * Spare           129
0          * Spare           130

```

```
/E
```

```
*
```

```
*
```

```
INTERRUPT TABLE ENTRIES
```

```
*
```

```

4, ENT, $POWR      *   Powerfail
12, EQT, 1         *   System Disk
13, EQT, 41        *   DS
14, EQT, 35        *   DS
15, PRG, PRMPT     *   System Console
16, EQT, 6         *   Line Printer (2608S)
17, EQT, 8         *   Mag tape
20, EQT, 8         *   Mag tape
21, EQT, 5         *   HP-IB
22, PRG, PRMPT     *   12792A Mux
23, PRG, PRMPT     *   Multipoint
24, EQT, 7         *   7974A Mag tape unit
25, ENT, MPRDV     *   D-Mux
26, EQT, 55        *   BACI Serial Driver
27, EQT, 43        *   DS
50, EQT, 46        *   Peripheral Disk
51, EQT, 45        *   Peripheral Disk
52, EQT, 27        *   Spooling
53, EQT, 28        *   "
54, EQT, 29        *   "
55, EQT, 30        *   "
56, EQT, 31        *   "
57, EQT, 32        *   "
60, EQT, 22        *   Line Printer 2613/17/19/31
61, PRG, PRMPT     *   Terminal
62, PRG, PRMPT     *   Terminal
63, PRG, PRMPT     *   Terminal
64, PRG, PRMPT     *   Terminal
65, EQT, 40        *   DS
66, EQT, 37        *   DS
67, EQT, 38        *   DS
70, EQT, 39        *   DS
71, ABS, 0         *   Multipoint Terminals
72, EQT, 3         *   2608B Graphic printer
73, PRG, PRMPT     *   DS
76, EQT, 43        *   Dummy Driver
77, EQT, 44        *   Dummy Driver

```

```
/E
```

```

*
3          * Change DP Size
0          * RT Common Change
0          * BG Common Change
40         * # of I/O Classes
16         * # of LU Mappings
30         * # of Resource Numbers
100,400   * Buffer Limits
25         * # of Blank ID Segments
20         * # of Blank Short ID Segments
10         * # of Blank ID Extensions
16         * Max Number of Partitions

```

```

*
*          PARTITION DEFINITION

```

```

0          * Change 1st part PG?
37,BG,R
NO
136,BG
YES
51,S
32,S
32,S
21,S
/D

```

```

* PROGRAM PAGE MODIFICATIONS

```

```

*
FMGR,17
LOADR,26
CI,32
CIX,32
DSRTR,23
D.RTR,28,8
/E

```

```

* PROGRAM PARTITION ASSIGNMENTS

```

```

*
3,FST1
/E
/E
D.RTR,1
/E

```

Sample Generation Listing

```

RT6GN REV.6000 <<920911.1202>>      8:08 AM  FRI., 28  MAY , 1993

RU,RT6GN,/GENS/PRIMARY6/PRIM6_CS80.ANS

LIST FILE NAMR?
/GENS/PRIMARY6/PRIM6_CS80.LST::::96,R          * LIST FILE

ECHO?
*****
*
* PRIMARY SYSTEM #604      (7908/11/12/14/33 CS80)  *
*
*****
No                      * Echo on

OUTPUT FILE NAMR?
/gens/primary6/Prim6_cs80.sys::::6100,R        * Absolute System File

SYSTEM DISK MODEL?
CS80                      * Target Disk

CONTROLLER SELECT CODE?
12                        * Disk Channel

DEVICE (MODEL,HP-IB ADDR,UNIT,VOLUME)?
CTD,0,1,0
SUBCHANNEL 0  ASSIGNED

DEVICE (MODEL,HP-IB ADDR,UNIT,VOLUME)?
7937,0,0,0                * SUBCHANNEL                      LU #

2232204      BLOCKS REMAINING (STARTING AT 0          )
SUBCHANNEL 1  (TRACKS,BLOCKS/TRACK)?
300,48              * 01 (Starts at block 0)                2

2217804      BLOCKS REMAINING (STARTING AT 14400      )
SUBCHANNEL 2  (TRACKS,BLOCKS/TRACK)?
900,48              * 02 (Starts at block 14400)            10

2174604      BLOCKS REMAINING (STARTING AT 57600      )
SUBCHANNEL 3  (TRACKS,BLOCKS/TRACK)?
143,48              * 03 (Starts at block 57600)            11

2167740      BLOCKS REMAINING (STARTING AT 64464      )
SUBCHANNEL 4  (TRACKS,BLOCKS/TRACK)?
CTD,0                * (Starts at 64464)                12 (CTD)

```

```

2167484   BLOCKS REMAINING (STARTING AT 64720   )
SUBCHANNEL 4 (TRACKS,BLOCKS/TRACK)?
-30,1           *           (Starts at 64720)

2167454   BLOCKS REMAINING (STARTING AT 64750   )
SUBCHANNEL 4 (TRACKS,BLOCKS/TRACK)?
*           END OF 7908 (64750 Blks)
320,48           * 04 (Starts at block 64750)           13

2152094   BLOCKS REMAINING (STARTING AT 80110   )
SUBCHANNEL 5 (TRACKS,BLOCKS/TRACK)?
-18,1           *           (Starts at 80110)

2152076   BLOCKS REMAINING (STARTING AT 80128   )
SUBCHANNEL 5 (TRACKS,BLOCKS/TRACK)?
*           End of 7907 (80128 Blks)
304,48           * 05 (Starts at block 80128)           14

2137484   BLOCKS REMAINING (STARTING AT 94720   )
SUBCHANNEL 6 (TRACKS,BLOCKS/TRACK)?
-32,1           *           (Starts at 94720)

2137452   BLOCKS REMAINING (STARTING AT 94752   )
SUBCHANNEL 6 (TRACKS,BLOCKS/TRACK)?
*           End of 7941 (94752 Blks)
314,48           * 06 (Starts at 94752)           15

2122380   BLOCKS REMAINING (STARTING AT 109824   )
SUBCHANNEL 7 (TRACKS,BLOCKS/TRACK)?
*           End of 7911 (109824 Blks)
2229,48           * 07 (Starts at 109824 blocks)           16

2015388   BLOCKS REMAINING (STARTING AT 216816   )
SUBCHANNEL 8 (TRACKS,BLOCKS/TRACK)?
-15,1

2015373   BLOCKS REMAINING (STARTING AT 216831   )
SUBCHANNEL 8 (TRACKS,BLOCKS/TRACK)?
*           End of 7945 (216831 Blks)
821,48           * 08           17

1975965   BLOCKS REMAINING (STARTING AT 256239   )
SUBCHANNEL 9 (TRACKS,BLOCKS/TRACK)?
-17,1

1975948   BLOCKS REMAINING (STARTING AT 256256   )
SUBCHANNEL 9 (TRACKS,BLOCKS/TRACK)?
*           End of 7912 (256256 Blks)
981,64           * 09 (Starts at block 256256)           18

1913164   BLOCKS REMAINING (STARTING AT 319040   )
SUBCHANNEL 10 (TRACKS,BLOCKS/TRACK)?
-55,1

1913109   BLOCKS REMAINING (STARTING AT 319095   )
SUBCHANNEL 10 (TRACKS,BLOCKS/TRACK)?
*           End of 7957 (319095 Blks)
3078,64           * 10 (Starts at block 319095)           19

```

F-2 Sample Generation Listing


```

1716117      BLOCKS REMAINING (STARTING AT 516087      )
SUBCHANNEL 11 (TRACKS,BLOCKS/TRACK)?
-9,1

1716108      BLOCKS REMAINING (STARTING AT 516096      )
SUBCHANNEL 11 (TRACKS,BLOCKS/TRACK)?
*           End of 7914   (516096 Blks)
3572,64          * 11 (Starts at block 516096)           20

1487500      BLOCKS REMAINING (STARTING AT 744704      )
SUBCHANNEL 12 (TRACKS,BLOCKS/TRACK)?
3572,64          * 12 (Starts at block 744704)           21

1258892      BLOCKS REMAINING (STARTING AT 973312      )
SUBCHANNEL 13 (TRACKS,BLOCKS/TRACK)?
3572,64          * 13 (Starts at block 973312)           22

1030284      BLOCKS REMAINING (STARTING AT 1201920     )
SUBCHANNEL 14 (TRACKS,BLOCKS/TRACK)?
-36,1

1030248      BLOCKS REMAINING (STARTING AT 1201956     )
SUBCHANNEL 14 (TRACKS,BLOCKS/TRACK)?
*           End of 7936   (1201956 Blks)
5905,64          * 14 (Starts at block 1201956)           23

652328       BLOCKS REMAINING (STARTING AT 1579876     )
SUBCHANNEL 15 (TRACKS,BLOCKS/TRACK)?
-40,1

652288       BLOCKS REMAINING (STARTING AT 1579916     )
SUBCHANNEL 15 (TRACKS,BLOCKS/TRACK)?
*           End of 7933/35 (1579916 Blks)
10192,64        * 15 (Starts at block 1579916)           24

DEVICE (MODEL,HP-IB ADDR,UNIT,VOLUME)?
*           End of 7937   (2232204 Blks)
/E

SYSTEM SUBCHNL?
1              * SYSTEM SUBCHANNEL

AUX DISK (YES OR NO OR # TRKS)?
NO            * AUX DISK

TBG SELECT CODE?
11           * TBG

PRIV. INT. SELECT CODE?
0            * NO PRIV. INT.

MEM. RES. ACCESS TABLE AREA II?
YES          * MR ACCESS TA II

RT MEMORY LOCK?
YES          * RT MEMORY LOCK

BG MEMORY LOCK?

```

```

YES                                     * BG MEMORY LOCK

SWAP DELAY?
50                                     * SWAP DELAY

MEM SIZE?
256                                    * MEM SIZE

BOOT FILE DESCRIPTOR?
0                                       * NO BOOT FILE

PROG INPUT PHASE:
-
MAP Modules, links
-
LINKS IN CURRENT
-
*
*           RTE-VI  OPERATING SYSTEM
*
REL,%CR6S1                            * MEM RES OP SYS 1
-
REL,%CR6S2                            * MEM RES OP SYS 2
-
REL,%CR6S3                            * MEM RES OP SYS 3
-
REL,%$CNFG                            * CONFIGURATOR
-
*
*           I/O DRIVERS
*
REL,%DVR00                            * RS-232 TERMINALS
-
REL,%DVC00.REL                        * Serial Driver (point to point)
-
REL,%DVA05                            * 2645/2648 SYSTEM CONSOLE
-
REL,%DVM00                            * 12792A MUX
-
REL,%PVM00                            *   "
-
REL,%DDV05                            *   "
-
REL,%DDV12                            *   "
-
REL,%$DVTB                            *   "
-
REL,%DVR07::MULTIPOINT                * MULTIPOINT
-
REL,%DVA12                            * 2613,2617,2818,2631 LINE PRINTERS
-
REL,%DVB12                            * 2608 LINE PRINTER
-
REL,%DVC12                            * 2608S GRAPHICS PRINTER
-
REL,%DVD12                            * 2608S GRAPHICS PRINTER
-

```

```

REL,%DVR23          * 7970 MAGNETIC TAPE UNIT
-
REL,%DVS23          * 7974A MAGNETIC TAPE UNIT
-
REL,%$TB32          * TRACK MAP
-
REL,%DVR32          * 7906/7920/7925 (PERIPHERAL DISK)
-
REL,%DVA32          * HP-IB DISK (PERIPHERAL)
-
REL,%$TA32          * TRACK MAP
-
REL,%DVM33          * CS80 DISK (SYSTEM DISK)
-
REL,%6DV37          * HP-IB
-
REL,%6DP43          * POWERFAIL
-
REL,%DVA65::DS1000 * (DS) 1000-3000 12771/73 LINK
-
REL,%DVA66::DS1000 * (DS) 1000-1000 HDLC & 1000-3000 BISYNC
-
REL,%DVG67::DS1000 * (DS) 1000-3000 12889 HSI LINK
-
REL,%MDV00::DS1000 * (DS) REMOTE I/O MAP DVR--RTEIVB&RTE-MIII
-
LINKS IN BASE
-
REL,DV800_1.REL    * D-MUX
-
LINKS IN CURRENT
-
*
*           MODULES
*
MAP OFF, MODULES
-
REL,%BMPG1          * FMGR
-
REL,%BMPG2          * D.RTR
-
REL,%BMPG3          * FMP
-
REL,%QUEUE::DS1000 * (DS) INTERRUPT REQUEST HANDLER
-
REL,%DSRTR          * (DS) TRANSPARENCY SOFTWARE
-
*
MAP OFF, modules, links
-
REL,%RESSM::DS1000 * (DS) ENTRY POINTS IN SSGA FOR RTE-IVB
-
REL,%#SPLU::DS1000 * (DS) ENTRY POINT FOR REMOTE I/O MAPPING
-
*
REL,%SMON2          * SESSION MONITOR #2
-
MAP OFF, MODULES
-

```

```

REL,%SMON1          * SESSION MONITOR #1
-
REL,%T5IDM          * SHORT ID SEGMENT HANDLER
-
REL,%IOMAP::DS1000 * (DS) INTERFACE FOR MAPPED LUS
-
REL,%DSMOD::DS1000 * (DS) ALTERS DS PARAM SET AT INITIALIZATION
-
REL,%DINIS::DS1000 * (DS) NETWORK INITIALIZATION WITH SHUTDOWN
-
REL,%GRPM ::DS1000 * (DS) REQUEST/REPLY PRE-PROCESSOR
-
REL,$D3N25::DS1000 * (DS) SATISFIES D$X25 ENTRY PT.
-
*
NOLIB
-
REL,%CI             * CI UTILITY
-
REL,%CIX           * CIX UTILITY
-
REL,%CISU6         * RTE-6 LIBRARY
-
REL,%CI000         * CI MESSAGES
-
REL,%CR000         * CI LIBRARY MESSAGES
-
REL,%CX000         * CIX MESSAGES
-
REL,$CRLIB         * CI LIBRARY
-
LIB
-
*
*
*
LIBRARIES
*
REL,$DSMX6::DS1000 * (DS) LIB FOR RTE-6/VM
-
REL,$SYLB6         * SYSTEM LIBRARY
-
REL,$MATH          * SYSTEM IND. MATH LIBRARY
-
REL,$FLIB          * FORTRAN SYSTEM IND. LIBRARY
-
REL,$FMP6,NOLIB   * FMP LIBRARY
-
REL,$FOLDF         * FORTRAN FILE I/O (FMGR)
-
REL,$D3KLB::DS1000 * (DS) HP 1000-3000 BASE LIB
-
REL,$D3KBB::DS1000 * (DS) 1072 WORD COMMUNICATION BUFFER
-
REL,$DSL1::DS1000 * (DS) REQUIRED IN ALL DS/1000-IV NODES
-
REL,$DSL2::DS1000 * (DS) REQUIRED IN ALL NODES W/ OTHER RTE LINKS
-
REL,$DSRR ::DS1000 * (DS) RE-ROUTING LIBRARY
-
REL,$DSSM ::DS1000 * (DS) SESSION MONITOR

```

```

-
* NOTE: IF GEN NON-DS SYSTEM, EITHER SESSION OR
*       NON-SESSION, A UNDEF .CLGF WILL BE OK
*
REL, $FDSL B      * FTN WITH DS LIB
-
REL, %MPLIB::MULTIPOINT * MULTIPOINT LIB
-
REL, $LDRLN      * LOADER LIB
-
REL, $UTLIB, NOLIB * UTILITY LIB
-
REL, %CSERR      * CS80 DISK ERROR PROGRAM
-
REL, %DBUGR      * DEBUG ROUTINE
-
REL, %DECAR      * RTE DEC STRING ARITH
-
REL, $DSMA ::DS1000 * (DS) MESSAGE ACCOUNTING LIB
-
REL, $MLSLB      * MLS PROG LIB
-
*
*           ADDITIONAL MODULES
*
REL, %SPOL1      * SPOOLING
-
REL, %SPOL2      * MORE SPOOLING
-
REL, %WHZAT      * SYSTEM STATUS PROGRAM
-
REL, %LGTAT      * SYSTEM DISK LOG TABLE
-
REL, %$LDR       * RELOCATING LOADER
-
REL, %AUTO7::MULTIPOINT * AUTO RESTART (MULTIPOINT)
-
REL, %ACCTS      * ACCOUNT MAINTENANCE
-
REL, $ACCLB, NOLIB * ACCOUNTS LIBRARY
-
*
*
/E              * TERMINATE RELOCATABLE SPECIFICATIONS
NO UNDEFS

PARAMETERS
-
*
*
*
*****
*           PROGRAM PARAMETERS           *
*****
*
* PROGRAM, TYPE, PRIORITY, EXECUTION INTERVAL
*
CI, 6          * Command Interpreter
-

```

```

CIX,6                * CI Auxiliary Program
-
WHZAT,1,2            * MEMORY RESIDENT-PRIORITY OF 2
-
SMP,19               * CHANGE FROM RT DISK RES TO BG DISK RES
-
JOB,19               * CHANGE FROM RT DISK RES TO BG DISK RES
-
FMGR,3,50            * BG PRI 50
-
AUTOR,4,10           * BG NO TA2, PRI=10
-
PVM00,13
-
/E

CHANGE ENTS?
-
*
*
TR,]RT6OS            * E/F OS FIRMWARE ENTRY POINT
-
* ]RT6OS 92084-17271 REV.5010 <880617.1559>
*
* RTE-6/VM E/F-Series Operatng System Firmware Entry Points
*
*     *** USER CALLABLE OP SYS ENTRY POINTS
*     (F AND E SERIES IN RTE-6/VM ONLY)  *****
*
$LIBR,RP,105340      * EMULATE SYSTEM ENTRY $LIBR
-
$LIBX,RP,105341      * EMULATE SYSTEM ENTRY $LIBX
-
$SIP ,RP,0           * USE $SIP ONLY IF THE SYSTEM IS
-
*                   *   PRIVILEGED OR A MICROINSTRUCTION
*                   *   IS STORED IN A TRAP CELL
.FNW ,RP,105345      * FIND WORD WITH USER INCREMENT
-
.LLS ,RP,105347      * LINKED LIST SEARCH
-
.CPM ,RP,105352      * COMPARE WORDS IN MEMORY
-
.ENTN,RP,105354      * ENTRY POINT RESOLVER
-
.ENTC,RP,105356      * ENTRY POINT RESOLVER
-
.STIO,RP,105344      * Configure I/O instructions for drivers
-
.dspi,rp,105357      * show low 6 bits of A-Register in
*                   *   the display indicator register on front panel
*
-
TR,]RT6VM            * E/F EMA/VMA FIRMWARE ENTRY POINT
-
* ]RT6VM 92084-17272 REV.2440 <840925.1058>
*
* RTE-6/VM E/F-Series Extended/Virtual Memory Area Firmware Entry Points

```

F-8 Sample Generation Listing

```

*
*
*   ***   EMA/VMA ENTRY POINTS (E AND F SERIES IN RTE-6/VM ONLY)   ****
*
*
.PMAP,RP,105240      * MAP EMA/VMA PAGE IN MAP REGISTER
-
$LOC ,RP,105241      * MEMORY RESIDENT NODES LOAD ON CALL
-
.IMAP,RP,105250      * SINGLE INT FTN4X ARRAY CALC. + MAP
-
.IMAR,RP,105251      * SINGLE INT SUBSCRIPT ARRAY CALC.
-
.JMAP,RP,105252      * DOUBLE INT FTN4X ARRAY CALC. + MAP
-
.JMAR,RP,105253      * DOUBLE INT SUBSCRIPT ARRAY CALC.
-
.LPXR,RP,105254      * TWO DEF POINTER ADD & MAP
-
.LPX ,RP,105255      * A&BREG POINTER + DEF OFFSET & MAP
-
.LBPR,RP,105256      * ONE DEF POINTER & MAP
-
.LBP ,RP,105257      * MAP POINTER IN A&BREG
-
*
*
-
*           A MICRO INSTRUCTION IS STORED IN A TRAP CELL
Z$CDS,RP,0           * NON-CDS FOR FORTRAN
-
Z$INT,RP,1           * 1 WORD INTEGER
-
Z$DBL,RP,4           * 4 WORD FLOATING POINT
-
Z$LPP,RP,73          * 59 LINES/PG
-
Z$F67,RP,7           * FORTRAN 77 DEFAULT
-
/E

```

CHANGE PROGRAM NAMES?

```

-
*
/E           * NO PROGRAM ALIAS

```

HEAD MODULES

```

$CR61          92084-12024 REV.5010 880729
$CR62          92084-12025 REV.6000 920521
$CR63          92084-12026 REV.5020 900126
$CNFHD        92084-12011 REV.6000 <920908.1718>
BMPG1         92084-12003 REV.6000 <920910.0145>
BMPG2         92084-12014 Rev.6000 <921029.0123>
BMPG3         92084-12004 REV.5020 <891028.0239>
SMON2         92084-12022 REV.5000 <870609.1531>
SMON1         92084-12021 REV.6000 <920905.0156>

```

```

D3N25          91750-12029 REV.2401 840224 ALL W/3K
DSMX6          91750-12023 REV. 5020 $Date: 89/09/21 10:43:24 $RTE-6
SYSLB          92084-12001 Rev.6000 <921031.0130>
$CPU#          92084-1X082 REV.2121 801216
MATH           24998-12007 REV.5010 880603
FLIB           24998-12008 REV.5010 <880915.2228>
FMP6           92084-12071 Rev.6000 <921027.0134>
HPCRT          92077-12035 Rev.6000 920919 HpCrt.lib header
FOLDF          24998-12009 REV.5000 <870609.1039>
D3KLB          91750-12017 REV.5020 $Date: 89/12/27 12:07:38 $ALL w/3k
D3KBB          91750-1X061 REV.2201 810707 ALL W/3K: 1072 BUF
DSLBI          91750-12001 REV.6000 ALL $Date: 92/08/10 13:07:16 $
DSLBI          91750-12002 REV.5020 $Date: 89/09/21 10:48:21 $ALL W/ RTE LINK
DSRR           91750-1X098 REV.2226 820325 ALL W/RR
DSSM           91750-12014 REV.5020 $Date: 89/10/05 13:07:11 $ W/S.M.
FDSLBI         24998-12004 REV.5000 <870609.1040>
MPLIB          91730-12001 REV.2140 <810807.1415>
LDRLN          92084-12038 REV.5020 <890830.2223>
UTLIB          92084-12033 REV.5010 820923
CSEHD          92084-12054 REV.2122 <850802.2203>
DBGHD          92084-12019 REV.2441 <850802.2209>
DECHD          24306-16001 REV.2540 <850919.0940>
DSMA           91750-12008 REV.2440 840621 ALL M.A.
MLSHD          92084-12015 REV.2122 810723
GASPH          92084-12027 REV.6000 920910
SPOLH          92084-12028 REV.5000 <870609.1534>
$LDHD          92084-12013 REV.2540 860221
$ACLB          92068-12018 REV.6000 <920911.0132>

```

TABLE AREA I <<PAGE 00001>>:

```

$VCTR          ( 99) 2000 2226 92084-1X486 REV.6000 920520
BP LINKAGE     1605

```

EQUIPMENT TABLE ENTRY

EQT 0001?

*

*

*

EQUIPMENT TABLE ENTRIES

12,DVM33,D,T=5000 * EQT 01 7908/12/14/33/35 SYSTEM DISK

EQT 0002?

15,DVA05,B,X=13,T=30000 * EQT 02 SYSTEM CONSOLE

EQT 0003?

72,DVB12,B,X=5 * EQT 03 LINE PRINTER (2608B)

EQT 0004?

64,DVR00,B,T=30000 * EQT 04 TERMINAL

EQT 0005?

21,DVA37,X=123,T=6000 * EQT 05 HP-IB (14 AUTO ADDRESS DEVICES)

EQT 0006?

16,DVC12,B,X=10 * EQT 06 LINE PRINTER (2608S)

EQT 0007? 24,DVS23,D,X=26	* EQT 07	7974A MAG TAPE UNIT
EQT 0008? 17,DVR23,B,T=500	* EQT 08	7970B/E MAG TAPE
EQT 0009? 23,DVR07,X=8	* EQT 09	MULTIPOINT INTERFACE
EQT 0010? 71,DVR07,X=8	* EQT 10	" TERMINAL #1
EQT 0011? 71,DVR07,X=8	* EQT 11	" " #2
EQT 0012? 71,DVR07,X=8	* EQT 12	" " #3
EQT 0013? 71,DVR07,X=8	* EQT 13	" " #4
EQT 0014? 22,DVM00,B,X=31	* EQT 14	MULTIPLEXER PORT #1
EQT 0015? 22,DVM00,B,X=31	* EQT 15	" " #2
EQT 0016? 22,DVM00,B,X=31	* EQT 16	" " #3
EQT 0017? 22,DVM00,B,X=31	* EQT 17	" " #4
EQT 0018? 22,DVM00,B,X=31	* EQT 18	" " #5
EQT 0019? 22,DVM00,B,X=31	* EQT 19	" " #6
EQT 0020? 22,DVM00,B,X=31	* EQT 20	" " #7
EQT 0021? 22,DVM00,B,X=31	* EQT 21	" " #8
EQT 0022? 60,DVA12,B,T=6000	* EQT 22	LINE PRINTER 2613/17/19/31
EQT 0023? 61,DVA05,B,X=13,T=30000	* EQT 23	TERMINAL
EQT 0024? 62,DVA05,B,X=13,T=30000	* EQT 24	"
EQT 0025? 63,DVA05,B,X=13,T=30000	* EQT 25	"
EQT 0026? 4,DVP43,M	* EQT 26	POWERFAIL

EQT 0027? 52,DVS43,M,X=18	* EQT 27	SPOOLING	
EQT 0028? 53,DVS43,M,X=18 S,M	* EQT 28	"	
EQT 0029? 54,DVS43,M,X=18 S,M	* EQT 29	"	
EQT 0030? 55,DVS43,M,X=18 S,M	* EQT 30	"	
EQT 0031? 56,DVS43,M,X=18 S,M	* EQT 31	"	
EQT 0032? 57,DVS43,M,X=18 S,M	* EQT 32	"	
EQT 0033? 73,DVV00	* EQT 33	REMOTE I/O MAPPING RESERVED EQT	
EQT 0034? 73,DVV00,X=11	* EQT 34	" " " SUBCH. 0,1,2	
EQT 0035? 14,DVA66,X=12	* EQT 35	DS TRANSMIT \	
EQT 0036? 14,DVA66	* EQT 36	DS RECEIVE /	
EQT 0037? 66,DVA65,X=7,T=3	* EQT 37	DS 12771A	
EQT 0038? 67,DVA65,X=7,T=30	* EQT 38	DS 12773A 12620A	
EQT 0039? 70,DVA65,X=7,T=3	* EQT 39	DS 12771A	
EQT 0040? 65,DVG67,D	* EQT 40	DS 12889A	
EQT 0041? 13,DVA66,X=12	* EQT 41	DS TRANSMIT \	
EQT 0042? 13,DVA66	* EQT 42	DS RECEIVE /	
EQT 0043? 27,DVA66,X=12	* EQT 43	DS TRANSMIT \	
EQT 0044? 27,DVA66	* EQT 44	DS RECEIVE /	

EQT 0045?
51,DVA32,D,T=100 * EQT 45 PERIPHERAL DISK

EQT 0046?
50,DVR32,D,T=100 * EQT 46 PERIPHERAL DISK

EQT 0047?
25,DV800,Gr=Hp_Term:0 * EQT 47 D-Mux port 0
B,T=30000
IF,GEN6,GR=HP_TERM:0,X=26,2,0,170B,100001B

EQT 0048?
25,DV800,Gr=Hp_Term:1 * EQT 48 D-Mux port 1
B,T=30000
IF,GEN6,GR=HP_TERM:1,X=16,2,0,171B,100001B

EQT 0049?
25,DV800,Gr=Hp_Term:2 * EQT 49 D-Mux port 2
B,T=30000
IF,GEN6,GR=HP_TERM:2,X=16,2,0,172B,100001B

EQT 0050?
25,DV800,Gr=Hp_Term:3 * EQT 50 D-Mux port 3
B,T=30000
IF,GEN6,GR=HP_TERM:3,X=16,2,0,173B,100001B

EQT 0051?
25,DV800,Gr=Hp_Term:4 * EQT 51 D-Mux port 4
B,T=30000
IF,GEN6,GR=HP_TERM:4,X=16,2,0,174B,100001B

EQT 0052?
25,DV800,Gr=Hp_Term:5 * EQT 52 D-Mux port 5
B,T=30000
IF,GEN6,GR=HP_TERM:5,X=16,2,0,175B,100001B

EQT 0053?
25,DV800,Gr=Hp_Term:6 * EQT 53 D-Mux port 6
B,T=30000
IF,GEN6,GR=HP_TERM:6,X=16,2,0,176B,100001B

EQT 0054?
25,DV800,Gr=Hp_Term:7 * EQT 54 D-Mux port 7
B,T=30000
IF,GEN6,GR=HP_TERM:7,X=16,2,0,177B,100001B

EQT 0055?
26,DVC00,B,T=30000 * EQT 55 TERMINAL DVR

EQT 0056?
/E

DEVICE REFERENCE TABLE

001 = EQT #?

*

```

*****
*
*           DEVICE REFERENCE TABLE ENTRIES
*
*****
*eqt#,subchannel      lu #
2,0                   *001  System Console

    002 = EQT #?
1,1                   *002  System Disk

    003 = EQT #?
0                     *003  Aux Disk

    004 = EQT #?
2,1                   *004  L-CTU

    005 = EQT #?
2,2                   *005  R-CTU (System console)

    006 = EQT #?
6                     *006  Line Printer

    007 = EQT #?
0                     *007  Reserved

    008 = EQT #?
8                     *008  Mag Tape

    009 = EQT #?
7                     *009  7974/8 Mag Tape

    010 = EQT #?
*
1,2                   *.....v <7908> ^ ^ ^ ^ ^ ^ ^ ^
*
    011 = EQT #?
1,3                   *011          :   :   :   :   :   :   :
*
    012 = EQT #?
1,0                   *012 ( CTD ) :   :   :   :   :   :
*
    013 = EQT #?
*
1,4                   *.....v <7907> :   :   :   :   :   :
*013          :   :   :   :   :   :
*
    014 = EQT #?
*
1,5                   *.....v <7941> :   :   :   :   :
*014          :   :   :   :   :
*
    015 = EQT #?
*
1,6                   *.....v <7911> :   :   :   :
*015          :   :   :   :
*
    016 = EQT #?
*
1,7                   *.....v <7945> :   :   :
*016          :   :   :
*
    017 = EQT #?

```

```

*
1,8      *.....v <7912>      :      :
*017      : <7914>      :

018 = EQT #?
*
1,9      *.....v      :      :
*018      :      :

019 = EQT #?
*
1,10     *.....v      :      :
*019      : <7933/35>

020 = EQT #?
1,11     *020      :

021 = EQT #?
*
1,12     *.....v      :
*021      :

022 = EQT #?
1,13     *022      :

023 = EQT #?
1,14     *023      : <7937>

024 = EQT #?
1,15     *024      :

025 = EQT #?
*
0        *.....v
*025

026 = EQT #?
0        *026

027 = EQT #?
0        *027

028 = EQT #?
0        *028

029 = EQT #?
0        *029

030 = EQT #?
47,0     *030 D-Mux in SC 25

031 = EQT #?
48,0     *031 D-Mux in SC 25

032 = EQT #?
49,0     *032 D-Mux in SC 25

033 = EQT #?
50,0     *033 D-Mux in SC 25

034 = EQT #?
51,0     *034 D-Mux in SC 25

035 = EQT #?

```

52,0		*035	D-Mux in SC 25
036 = EQT #?			
53,0		*036	D-Mux in SC 25
037 = EQT #?			
54,0		*037	D-Mux in SC 25
038 = EQT #?			
47,1		*038	Left CTU on Lu 30
039 = EQT #?			
47,2		*039	Right CTU on Lu 30
040 = EQT #?			
0		*040	
041 = EQT #?			
0		*041	
042 = EQT #?			
0		*042	
043 = EQT #?			
0		*043	
044 = EQT #?			
*		*.....	
7		*044	7974A Mag tape unit
045 = EQT #?			
0		*045	(Spare)
046 = EQT #?			
*		*.....	
9		*046	Multipoint Interface
047 = EQT #?			
10		*047	" Terminal #1
048 = EQT #?			
11		*048	" " #2
049 = EQT #?			
12		*049	" " #3
050 = EQT #?			
13		*050	" " #4
051 = EQT #?			
*		*.....	
5,0		*051	HP-IB Interface
052 = EQT #?			
5,1		*052	" Device #1
053 = EQT #?			
5,2		*053	" " #2

054 = EQT #?				
5,3	*054	"	"	#3
055 = EQT #?				
5,4	*055	"	"	#4
056 = EQT #?				
5,5	*056	"	"	#5
057 = EQT #?				
5,6	*057	"	"	#6
058 = EQT #?				
5,7	*058	"	"	#7
059 = EQT #?				
5,8	*059	"	"	#8
060 = EQT #?				
5,9	*060	"	"	#9
061 = EQT #?				
5,10	*061	"	"	#10
062 = EQT #?				
5,11	*062	"	"	#11
063 = EQT #?				
5,12	*063	"	"	#12
064 = EQT #?				
5,13	*064	"	"	#13
065 = EQT #?				
5,14	*065	"	"	#14
066 = EQT #?				
*55,0	*.....			
	*066	Terminal		
067 = EQT #?				
55,1	*067	L-CTU		
068 = EQT #?				
55,2	*068	R-CTU		
069 = EQT #?				
23	*069	Terminal		
070 = EQT #?				
23,1	*070	L-CTU		
071 = EQT #?				
23,2	*071	R-CTU		
072 = EQT #?				
24	*072	Terminal		
073 = EQT #?				

24,1	*073	L-CTU		
074 = EQT #?				
24,2	*074	R-CTU		
075 = EQT #?				
25	*075	Terminal		
076 = EQT #?				
25,1	*076	L-CTU		
077 = EQT #?				
25,2	*077	R-CTU		
078 = EQT #?				
26	*078	Powerfail		
079 = EQT #?				
*	*.....			
4	*079	DVR00 Terminal		
080 = EQT #?				
3	*080	Graphics line printer		
081 = EQT #?				
3,3	*081	2608B Line printer read back		
082 = EQT #?				
14	*082	Mux	Port	#0
083 = EQT #?				
15	*083	"	"	#1
084 = EQT #?				
16	*084	"	"	#2
085 = EQT #?				
17	*085	"	"	#3
086 = EQT #?				
18	*086	"	"	#4
087 = EQT #?				
19	*087	"	"	#5
088 = EQT #?				
20	*088	"	"	#6
089 = EQT #?				
21	*089	"	"	#7
090 = EQT #?				
27	*090	Spooling		#1
091 = EQT #?				
28	*091	"		#2
092 = EQT #?				
29	*092	"		#3

093 = EQT #? 30	*093	"	#4
094 = EQT #? 31	*094	"	#5
095 = EQT #? 32	*095	"	#6
096 = EQT #? 35	*096	DS \	SC14 DVA66
097 = EQT #? 36	*097	DS /	DVA66
098 = EQT #? 40	*098	DS	DVG67
099 = EQT #? 37,1	*099	DS	DVA65 DIRECT CONNECT
100 = EQT #? 38	*100	DS	DVA65
101 = EQT #? 39,1	*101	DS	DVA65
102 = EQT #? 33	*102	DS	RMTE I\O MAPPING DDV00
103 = EQT #? 34	*103	DS	" " " "
104 = EQT #? 41	*104	DS \	SC13 DVA66
105 = EQT #? 42	*105	DS /	DVA66
106 = EQT #? 43	*106	DS \	SC27 DVA66
107 = EQT #? 44	*107	DS /	DVA66
108 = EQT #? 0	*108	"	
109 = EQT #? 0	*109	"	
110 = EQT #? 0	*110	"	
111 = EQT #? 0	*111	"	
112 = EQT #?			

0	*112	"	
113 = EQT #?			
0	*113	"	
114 = EQT #?			
0	*114	"	
115 = EQT #?			
0	*115	"	
116 = EQT #?			
0	*116	"	
117 = EQT #?			
0	*117	"	
118 = EQT #?			
0	*118	"	
119 = EQT #?			
0	*119	"	
120 = EQT #?			
0	*120	"	
121 = EQT #?			
0	* Spare		121
122 = EQT #?			
0	* Spare		122
123 = EQT #?			
0	* Spare		123
124 = EQT #?			
0	* Spare		124
125 = EQT #?			
0	* Spare		125
126 = EQT #?			
0	* Spare		126
127 = EQT #?			
0	* Spare		127
128 = EQT #?			
0	* Spare		128
129 = EQT #?			
0	* Spare		129
130 = EQT #?			
0	* Spare		130
131 = EQT #?			
/E			

INTERRUPT TABLE

```

-
*
*
*
*
4, ENT, $POWR          *   Powerfail
-
12, EQT, 1             *   System Disk
-
13, EQT, 41            *   DS
-
14, EQT, 35            *   DS
-
15, PRG, PRMPT         *   System Console
-
16, EQT, 6             *   Line Printer (2608S)
-
17, EQT, 8             *   Mag tape
-
20, EQT, 8             *   Mag tape
-
21, EQT, 5             *   HP-IB
-
22, PRG, PRMPT         *   12792A Mux
-
23, PRG, PRMPT         *   Multipoint
-
24, EQT, 7             *   7974A Mag tape unit
-
25, ENT, MPRDV         *   D-Mux
-
26, EQT, 55           *   BACI Serial Driver
-
27, EQT, 43           *   DS
-
50, EQT, 46           *   Peripheral Disk
-
51, EQT, 45           *   Peripheral Disk
-
52, EQT, 27           *   Spooling
-
53, EQT, 28           *   "
-
54, EQT, 29           *   "
-
55, EQT, 30           *   "
-
56, EQT, 31           *   "
-
57, EQT, 32           *   "
-
60, EQT, 22           *   Line Printer 2613/17/19/31
-
61, PRG, PRMPT         *   Terminal
-
62, PRG, PRMPT         *   Terminal
-

```

```

63, PRG, PRMPT      *   Terminal
-
64, PRG, PRMPT      *   Terminal
-
65, EQT, 40         *   DS
-
66, EQT, 37         *   DS
-
67, EQT, 38         *   DS
-
70, EQT, 39         *   DS
-
71, ABS, 0          *   Multipoint Terminals
-
72, EQT, 3          *   2608B Graphic printer
-
73, PRG, PRMPT      *   DS
-
76, EQT, 43         *   Dummy Driver
-
77, EQT, 44         *   Dummy Driver
-
/E

```

TABLE AREA I MODULES

```

$$TB1      ( 99) 6402  6416  92084-1X481 REV.2121 810613
  BP LINKAGE 1605

$BITM      ( 99) 6417  6425  92084-1X484 REV.2121 790420
  BP LINKAGE 1605

$TB32      ( 99) 6426  6452  92084-16605 REV.6000 <920904.1748>
  BP LINKAGE 1605

#SPLU      ( 99) 6453  6453  91750-16221 REV 2013 800115 (IV,L LU MAPPING
  BP LINKAGE 1605

```

```

DRIVR PART 00002
CHANGE DRIVR PART?
*
3          * Change DP Size

```

DP 01 <<PAGE 00004>>:

```

DVM33      ( 0)10061 13716  92084-16650 REV.5020 <891030.1145>
  BP LINKAGE 1604

DVB12      ( 0)13774 15641  92062-16004 REV.2540 <850717.1012>
  BP LINKAGE 1601

```

SUBSYSTEM GLOBAL AREA <<PAGE 00007>>:

```

RESSM      16000 17234  91750-16163 REV.2440 840712 W/S.M.

```

```

BP LINKAGE 1577
$BALC      17235 17714 92084-1X038 REV.2540 850816
BP LINKAGE 1574
.ENTR      17716 20005 24998-1X192 REV.2001 750701
BP LINKAGE 1563

#RQUE      20006 21352 91750-1X027 REV.2113 MEF$Date: 89/04/12 09:5
.ENTR      21353 21442 24998-1X192 REV.2001 750701

PGMAD      21443 21755 91750-1X145 REV.5020 $Date: 89/09/21 10:37:2
.ENTR      21760 22047 24998-1X192 REV.2001 750701

D$EQT      22052 22242 91750-1X056 REV.2013 ALL W/3K $Date: 89/04/1
#LEVL      22243 22243 91750-1X282 REV.2301 ALL $Date: 89/04/04 14:
#NRVS      22244 22406 91750-1X022 REV.2440 ALL$Date: 89/04/05 15:4
.ENTR      22407 22476 24998-1X192 REV.2001 750701
#RR7       22477 22525 91750-1X199 REV.2113 801124 ALL W/RR
#LVSC      22526 22562 91750-1X014 REV.2113 800808 ALL W/RR

```

```

RT COMMON 00000
CHANGE RT COMMON ?
0 * RT Common Change
RT COM ADD 22563

```

```

BG COMMON 00653
CHANGE BG COMMON ?
0 * BG Common Change
BG COM ADD 22563
BG COMMON 00653

```

SYSTEM DRIVER AREA <<PAGE 00010>>:

```

DVS43      ( 0)24000 25115 92084-1X518 REV.2121 810415
DVP43      ( 0)25117 26012 92084-15056 REV.5000 <860930.1134>
BP LINKAGE 1544

```

TABLE AREA II <<PAGE 00011>>:

```

# OF I/O CLASSES?
40 * # of I/O Classes

# OF LU MAPPINGS [, # OF SCHEDULE PROGRAMS]?
16 * # of LU Mappings

# OF RESOURCE NUMBERS [,DEBUG TABLE SIZE]?
30 * # of Resource Numbers

```

BUFFER LIMITS (LOW, HIGH)?
 100,400 * Buffer Limits

 0025 LONG ID SEGMENTS USED
 # OF BLANK LONG ID SEGMENTS?
 25 * # of Blank ID Segments

 0023 SHORT ID SEGMENTS USED
 # OF BLANK SHORT ID SEGMENTS?
 20 * # of Blank Short ID Segments

 0001 ID EXTENSIONS USED
 # OF BLANK ID EXTENSIONS?
 10 * # of Blank ID Extensions

 MAXIMUM # OF PARTITIONS?
 16 * Max Number of Partitions

TABLE AREA II MODULES

\$STB2	(	99)	33526	33564	92084-1X482	REV.2121	810519
BP LINKAGE	1543						
\$EMTB	(	99)	33565	33635	92084-1X483	REV.2121	800408
BP LINKAGE	1543						
\$OSAM	(	99)	33636	33672	92084-1X485	REV.2121	791016
BP LINKAGE	1543						
PVM00	(	99)	33674	34005	12792-16001	REV.2034	800605 V.03
BP LINKAGE	1536						
MPRDV	(	99)	34006	34104	92084-1x068	Rev.5020	890117 Mux Pre-Driver
BP LINKAGE	1534						
\$SUB2	(	99)	34105	34116	92084-1X052	REV.2226	820302
\$SPCL	(	99)	34117	34121	92084-1X523	REV.2121	780921

SYSTEM <<PAGE 00014>>:

SCHD6	(	0)	34166	40065	92084-1X478	REV.5000	860908
BP LINKAGE	213						
DISP6	(	0)	40116	43106	92084-1X471	REV.5000	860909
BP LINKAGE	242						
\$SETP			43172	43216	24998-1X013	REV.2001	781106
BP LINKAGE	243						
RTIME	(	0)	43217	43744	92084-1X473	REV.2340	830803
BP LINKAGE	256						
\$ASC6	(	0)	43745	43776	92084-1X474	REV.2440	<841005.1355>
BP LINKAGE	257						

\$SIP	(	0)43777	44024	92084-1X638	REV.2121	810910
BP LINKAGE	257					
RTIOQ	(	0)44044	46407	92084-1X468	REV.5010	880729
BP LINKAGE	271					
PERR6	(	0)46424	47560	92084-1X480	REV.5000	860421
BP LINKAGE	300					
\$CMND	(	0)47561	47737	92084-1X463	REV.5000	870326
BP LINKAGE	300					
\$SALC	(	0)47741	50031	92084-1X462	REV.2440	<841004.1619>
BP LINKAGE	303					
RTCOM	(	0)50053	52367	92084-1X469	REV.5000	870206
BP LINKAGE	337					
MAPOS	(	0)52404	53323	92084-1X477	REV.5000	861211
BP LINKAGE	417					
\$ALC	(	0)53324	53565	92084-1X479	REV.2440	<841004.1616>
BP LINKAGE	422					
\$TRN6	(	0)53566	53742	92084-1X636	REV.5000	860908
BP LINKAGE	424					
DISPX	(	0)53746	55604	92084-1X472	REV.5000	860307
BP LINKAGE	451					
RTEMA	(	0)55625	56511	92084-1X470	REV.5000	860929
BP LINKAGE	475					
\$SETP		56512	56536	24998-1X013	REV.2001	781106
BP LINKAGE	476					
EXEC6	(	0)56574	60220	92084-1X476	REV.5000	861007
BP LINKAGE	513					
\$CNF1	(	99)60277	62716	92084-1X356	REV.6000	<920904.1718>
BP LINKAGE	522					
\$CNF3	(	99)63005	64306	92084-1X358	REV.2208	<820201.1344>
BP LINKAGE	563					
\$CNF2	(	99)64337	66231	92084-1X357	REV.5000	860507
BP LINKAGE	665					
OS PARTITION 00001<<PAGE 00028>>						
OS1EX	(	0)10000	13755	92084-1X488	REV.2121	810928
BP LINKAGE	673					
OS PARTITION 00002<<PAGE 00030>>						

```

OS2EX      (    0)10000 11027 92084-1X489 REV.5000 860513
  BP LINKAGE 677

OS2SC      (    0)11101 13660 92084-1X490 REV.5000 860507
  BP LINKAGE 711

OS PARTITION 00003<<PAGE 00032>>

OS3SC      (    0)10034 13724 92084-1X491 REV.5000 870115
  BP LINKAGE 744

OS PARTITION 00004<<PAGE 00034>>

OS4DP      (    0)10050 13322 92084-1X492 REV.5010 880902
  BP LINKAGE 1023

OS PARTITION 00005<<PAGE 00036>>

OS5IO      (    0)10007 12340 92084-1X494 REV.5000 870428
  BP LINKAGE 1043

OS5CL      (    0)12346 13765 92084-1X493 REV.5020 900125
  BP LINKAGE 1051

OS PARTITION 00006<<PAGE 00038>>

OS6SN      (    0)10000 11075 92084-1X495 REV.2540 <850816.1055>
  BP LINKAGE 1052

OS6RQ      (    0)11076 11750 92084-1X496 REV.5000 860307
  BP LINKAGE 1053

OS6SP      (    0)11753 13474 92084-1X519 REV.5000 860512

PARTITION DRIVERS

DP 02 <<PAGE 00040>>:

DV800      (    0)10000 13765 92084-15070 Rev.6000 921103.1349 8-Chan Mux
  BP LINKAGE 1521
  $SETP      13767 14013 24998-1X013 REV.2001 781106
  BP LINKAGE 1517

DVC00      (    0)14015 15514 92084-15073 REV.5010 <881014.1524>
  BP LINKAGE 1517

DP 03 <<PAGE 00043>>:

DVR07      (    0)10163 13744 91730-16001 REV 2140 810902 1722 &DVR07
  BP LINKAGE 1515

DVA65      (    0)13767 15412 91750-16105 REV.4010 860721 MEF
  BP LINKAGE 1513

DP 04 <<PAGE 00046>>:

DVG67      (    0)10071 13336 91750-16108 REV.2201 810508 ALL W/3000 HSI

```



```

BP LINKAGE 1513
DVV00      ( 0)13460 14711 91750-16109 REV.2201 820120 MEF
  BP LINKAGE 1470
DVA12      ( 0)14735 15635 92001-16020 REV.1827 780511
  BP LINKAGE 1470
DP 05 <<PAGE 00049>>:
DVM00      ( 0)10074 13314 12792-16002 REV.5000 860703.1100 V.45
  BP LINKAGE 1466
  $DVTB          13425 13427 12792-16005 REV.2341 <850722.1440>
  BP LINKAGE 1465
  DDV12          13430 13670 12792-16004 REV.2141 810821 V.09
  BP LINKAGE 1465
  DDV05          13701 15404 12792-16003 REV.2540 <851217.1641>
  BP LINKAGE 1457
DP 06 <<PAGE 00052>>:
DVA05      ( 0)10106 13232 92084-16607 Rev.5020 890619 12966 Driver
  BP LINKAGE 1457
DVC12      ( 0)13365 15663 92068-16110 REV.5010 <880818.1020>
  BP LINKAGE 1457
DP 07 <<PAGE 00055>>:
DVA37      ( 0)10172 13274 92084-16592 REV.6000 SRQ <920108.0822>
  BP LINKAGE 1457
DVR32      ( 0)13353 15725 92084-16711 REV.5000 <870223.1740>
  BP LINKAGE 1442
DP 08 <<PAGE 00058>>:
DVA66      ( 0)10143 13172 91750-16107 REV.2326 821206 MEF
  BP LINKAGE 1433
DVS23      ( 0)13247 15671 92084-15050 Rev.6000 <921027.1241>
  BP LINKAGE 1433
DP 09 <<PAGE 00061>>:
DVA32      ( 0)10022 12525 92084-16708 REV.2540 <850718.1043>
  BP LINKAGE 1433
  $TA32          12572 12616 92084-16604 REV.6000 <920904.1803>
  BP LINKAGE 1433
DVR00      ( 0)12617 13751 92084-16637 REV.2441 <840921.1508>
  BP LINKAGE 1433
DVR23      ( 0)13754 15173 92202-16001 Rev.5020 <890526.1430>
  BP LINKAGE 1425
MEMORY RESIDENT LIBRARY <<PAGE 00065>>:

```

.ENTR		36000	36067	24998-1X192	REV.2001	750701
BP LINKAGE	2					
IDGET		36070	36152	92084-1X029	REV.2121	790314
BP LINKAGE	2					
BP LINKAGE	2					
DTACH		36153	36233	92084-1X034	REV.2121	800129
BP LINKAGE	2					
CNUMO		36234	36253	92084-1X016	REV.2121	770621
\$CVT3		36254	36341	92084-1X018	REV.2121	770621
.DFER		36342	36377	24998-1X199	REV.2001	790523
CNUMD		36400	36417	92084-1X015	REV.2121	770621
BP LINKAGE	5					
BP LINKAGE	5					
BP LINKAGE	5					
TMVAL		36420	36532	92084-1X014	REV.2226	811214
LUTRU		36533	36640	92084-1X036	REV.2121	810519
BP LINKAGE	6					

MEMORY RESIDENTS <<PAGE 00066>>:

WHZAT program.

WHZAT	(	2)	40046	46730	92084-16526	REV.5000	<861017.1116>
NAMR			46740	47237	92084-1X066	REV.2226	820225
GETST			47240	47421	92077-1X578	REV.2326	<830413.1113>
SYSRQ			47422	47515	92084-1X002	REV.2121	810831
LOGLU			47516	47573	92084-1X027	REV.2121	790228
RMPAR			47574	47624	92084-1X069	REV.2121	811001
IFBRK			47625	47652	92084-1X078	REV.2121	800129
BP LINKAGE	204						

EXTND program.

EXTND	(	10)	47665	50047	92084-1X520	REV.2121	810128
RMPAR			50053	50103	92084-1X069	REV.2121	811001
BP LINKAGE	207						

GRPM program.

GRPM	(	4)	50106	51610	91750-16124	REV.5020	\$Date: 90/01/02 14:12:
#GETR			51611	51763	91750-1X010	REV.6000	\$Date: 92/08/10 13:11:5
D\$XLD			51764	51767	91750-1X278	REV.2326	L,M3,IV,6,A1\$Date: 89/0
D\$MWF			51770	52003	91750-1X279	REV.2326	L,M3,IV,6,A1\$Date: 89/0
#MAPP			52065	54347	91750-1X016	REV.2440	840621 ALL M.A.
#UPDA			54352	55710	91750-1X037	REV.2113	810123 ALL W/RR
#OK?			55711	55764	91750-1X227	REV.2113	ALL\$Date: 89/04/05 15:5
#PUTR			55765	56006	91750-1X025	REV.2301	ALL \$Date: 89/04/12 08:
#UP			56011	57125	91750-1X036	REV.2140	810717 ALL W/RR
#DOWN			57126	57612	91750-1X005	REV.2140	810717 ALL W/RR
SYSRQ			57613	57706	92084-1X002	REV.2121	810831
#PUTD			57707	57753	91750-1X211	REV.2301	ALL \$Date: 89/04/12 08:
D\$MWI			57754	57772	91750-1X281	REV.2326	L,M3,IV,6,A1\$Date: 89/0
D\$XST			57773	60001	91750-1X280	REV.2326	L,M3,IV,6,A1\$Date: 89/0
#FDMN			60002	60177	91750-1X008	REV.2113	800808 ALL W/RR
BP LINKAGE	362						

SPOUT program.

SPOUT (11) 60202 61401 92084-1X522 REV.2121 810401
 SYSRQ 61402 61475 92084-1X002 REV.2121 810831
 .DRCT 61476 61504 24998-1X047 REV.2440 790523
 BP LINKAGE 364

QUEUE program.

QUEUE (2) 61507 61773 91750-16153 REV.2401 840206 ALL
 RMPAR 61774 62024 92084-1X069 REV.2121 811001
 SYSRQ 62027 62122 92084-1X002 REV.2121 810831
 BP LINKAGE 371

PRMPT program.

PRMPT (5) 62125 62770 92084-1X451 REV.5010 880627
 FNDLU 62771 63142 92084-1X037 REV.2121 810519
 .SETB 63143 63236 92084-1X041 REV.5010 880506
 LUSES 63237 63273 92084-1X039 REV.2121 801124
 BP LINKAGE 407

CSERR program.

CSERR (20) 63276 63624 92084-1X703 REV.2121 <811208.0922>
 RMPAR 63625 63655 92084-1X069 REV.2121 811001
 .FION 63656 63705 24998-1X355 REV.2326 830406
 LOGLU 63706 63763 92084-1X027 REV.2121 790228
 ERO.E 63764 63765 24998-1X249 REV.2540 850927
 PAU.E 63766 63767 24998-1X254 REV.2540 850927
 .UFMP 63770 64006 24998-1X296 REV.2326 830406
 GETER 64007 64026 92084-1X913 REV.2121 <811222.0956>
 BP LINKAGE 421

\$YCOM program.

\$YCOM (10) 64031 64221 92084-1X456 REV.2121 810718
 BP LINKAGE 423

RT DISK RESIDENTS

IOMAP program.

IOMAP (90) 36012 36461 91750-16130 REV.5020 \$Date: 89/09/21 10:53:3
 PRTN 36462 36574 92084-1X007 REV.2121 771005
 RMPAR 36575 36625 92084-1X069 REV.2121 811001
 .ENTR 36626 36715 24998-1X192 REV.2001 750701
 #MSSM 37001 41074 91750-1X020 REV.5000 W/S.M. \$Date: 89/04/05
 #POOS 41100 41342 91750-1X277 REV.2340 ALL W/SM\$Date: 89/04/11
 #NAT 41343 41465 91750-1X276 REV.2326 ALL\$Date: 89/04/05 15:4
 #IDSG 41466 41575 91750-1X225 REV.5000 ALL \$Date: 89/04/04 14:
 LUTRU 41576 41703 92084-1X036 REV.2121 810519
 \$SMVE 41704 41776 92084-1X046 REV.2121 800129
 .OPSY 41777 42002 92084-1X062 REV.2121 810126
 DEXEC 42004 44305 91750-1X067 REV.5020 \$Date: 89/09/21 10:48:0
 #MAST 44306 45225 91750-1X019 REV.2301 ALL \$Date: 89/10/26 15:
 #MAAS 45226 45643 91750-1X015 REV.2113 801120 ALL M.A.
 SYSRQ 45644 45737 92084-1X002 REV.2121 810831
 #OSRV 45740 45760 91750-18310 REV.5000 \$Date: 89/04/05 15:55:2

SESSN	45761	45776	92084-1X256	REV.2121	780413
LOGLU	45777	46054	92084-1X027	REV.2121	790228
DSERR	46056	46313	91750-1X076	REV. 2013	ALL \$Date: 89/04/14 10
#GET	46314	46545	91750-1X009	REV.2301	ALL \$Date: 89/04/04 13:
XREIO	46546	46716	92084-1X923	REV.5000	840228
#LOGR	46717	46766	91750-1X013	REV 2013	ALL \$Date: 89/04/05 08:
#GETR	46767	47141	91750-1X010	REV.6000	\$Date: 92/08/10 13:11:5
.DFER	47142	47177	24998-1X199	REV.2001	790523
D\$MWF	47200	47213	91750-1X279	REV.2326	L,M3,IV,6,A1\$Date: 89/0
D\$XLD	47214	47217	91750-1X278	REV.2326	L,M3,IV,6,A1\$Date: 89/0
BP LINKAGE	111				

BG DISK RESIDENTS

\$CNFX program.

\$CNFX	(	99)	36012	43313	92084-1X359	REV.2540	<850819.1320>
BP LINKAGE	173						
\$PARS			43314	43537	92084-1X013	REV.2226	820225
BP LINKAGE	174						
\$FINDIDEXT			43540	43636	92084-1Y037	REV.2540	<850820.1611>
BP LINKAGE	175						
\$CVT3			43637	43724	92084-1X018	REV.2121	770621
BP LINKAGE	176						
.DFER			43725	43762	24998-1X199	REV.2001	790523
BP LINKAGE	177						
\$SETIDEXT			43764	44015	92084-1Y037	REV.2540	<850820.1611>
BP LINKAGE	202						

FMGR program.

FMGR	(	50)	36012	37235	92084-1X121	REV.2340	830812
SEGLD			37236	37456	92084-1X049	REV.5000	<860826.1024>
.ENTR			37457	37546	24998-1X192	REV.2001	750701
IDGET			37547	37631	92084-1X029	REV.2121	790314
.DFER			37632	37667	24998-1X199	REV.2001	790523
RMPAR			37670	37720	92084-1X069	REV.2121	811001
COR.A			37721	37741	92084-1X009	REV.2121	770621
.LWAS			37742	37742	92084-1X411	REV.2121	810717
FM.CM			37743	42067	92084-1X137	REV.2340	830516
OPENF			42105	42413	92077-1X541	REV.2440	841012
OPEN			42414	43025	92077-1X088	REV.2440	841011
CLOSE			43026	43256	92077-1X536	REV.2340	830819
\$OPEN			43257	43507	92077-1X544	REV.5010	<880126.1535>
RWND\$			43510	43642	92077-1X534	REV.2326	<830217.1306>
R/W\$			43643	43760	92077-1X532	REV.2340	830217
SESSN			43761	43776	92084-1X256	REV.2121	780413
OVRD.			43777	43777	92077-1X482	REV.2340	830218
.BFSZ			44000	44074	92077-1X658	REV.2340	830226
.DADS			44075	44204	24998-1X036	REV.2001	780818
SYSRQ			44205	44300	92084-1X002	REV.2121	810831
\$SMVE			44301	44373	92084-1X046	REV.2121	800129
IFTTY			44374	44456	92084-1X025	REV.6000	921030 IFTTY for RTE-6
PTERR			44457	44517	92084-1X044	REV.2121	810126
IFBRK			44520	44545	92084-1X078	REV.2121	800129
.DNG			44546	44555	24998-1X046	REV.2001	780818
.DRCT			44556	44564	24998-1X047	REV.2440	790523

.DBTS	44565	44570	92084-1Y010	REV.2340	830628
.OFLG	44571	44573	92084-1Y010	REV.2340	830628

BP LINKAGE 53

FMGR0 a segment of FMGR

FMGR0	(*****)	44574	44602	92084-1X122	REV.2340	830615
CO..		44603	45516	92084-1X163	REV.2340	811217
GTFIL		45517	45750	92084-1X165	REV.2121	800319 !!
MSC.		45751	45770	92084-1X221	REV.2340	810622
IF.ER		45771	46007	92084-1X167	REV.2340	800314 !!
FM.UT		46013	47632	92084-1X223	REV.2340	810124
LUTRU		47633	47740	92084-1X036	REV.2121	810519
ICAPS		47742	50004	92084-1X255	REV.5000	860430
PK..		50005	51572	92084-1X138	REV.6000	920908
F.SET		51573	51763	92084-1X158	REV.2340	760719
LIMEM		51764	52025	92084-1X050	REV.2121	810717
ST.DU		52034	53614	92084-1X162	REV.2340	810710
.DMP		53615	53762	24998-1X045	REV.2001	780818
LOCK.		53763	54035	92084-1X222	REV.2340	781115
READF		54041	55432	92077-1X528	REV.2440	<840730.0942>
LOCF		55433	55750	92077-1X539	REV.2326	<830217.1307>
.\$SETP		55751	55775	24998-1X013	REV.2001	781106
.DIN		55776	56003	24998-1X042	REV.2001	780818
CR.LU		56005	56560	92077-1X543	REV.2540	<850627.0852>
FSTAT		56561	57347	92084-1X200	REV.2226	820406
UT.BF		57350	57747	92077-1X494	REV.2340	830218
.DDE		57750	57761	24998-1X039	REV.2001	780818
GTOPN		57762	57766	92084-1X283	REV.2121	810401
CHK.X		57770	60022	92077-1X493	REV.2340	830218
COPYF		60024	60537	92077-1X550	REV.2340	<830924.1530>
RW\$UB		60540	61132	92077-1X533	REV.2326	<830217.1306>
CREAT		61133	61517	92077-1X379	REV.2326	<830218.1103>
CLR.C		61520	61747	92084-1X168	REV.6000	920908
TRAK.		61750	62027	92084-1X191	REV.2340	810304
.DDI		62033	62333	24998-1X040	REV.2001	781021
PURGE		62334	62560	92077-1X542	REV.2340	830905
SM.BF		62561	63004	92077-1X495	REV.2340	830218
RP.CK		63005	63213	92084-1X279	REV.2340	810304
XREIO		63214	63364	92084-1X923	REV.5000	840228
GTSCB		63365	63534	92084-1X269	REV.2121	810714
CK.SM		63535	63660	92084-1X225	REV.2340	771205
NAM..		63661	63755	92077-1X530	REV.2340	830217
.OPSY		63756	63761	92084-1X062	REV.2121	810126
P..CK		63763	64037	92077-1X483	REV.2340	830218
CL.SH		64041	64131	92084-1X164	REV.2340	810305
RWPDF		64132	64222	92077-1X529	REV.2326	<830217.1306>

BP LINKAGE 174

FMGR1 a segment of FMGR

FMGR1	(*****)	44574	44721	92084-1X123	REV.2340	830615
TR..		44722	45225	92084-1X145	REV.2340	790403
AB..		45226	45460	92084-1X150	REV.2340	800305
SE..		45461	45645	92084-1X148	REV.2340	740927
.PARS		45646	47542	92084-1X141	REV.2440	850201
CNUMD		47677	47716	92084-1X015	REV.2121	770621
.\$CVT3		47717	50004	92084-1X018	REV.2121	770621
READF		50007	51400	92077-1X528	REV.2440	<840730.0942>

RW\$UB	51401	51773	92077-1X533	REV.2326	<830217.1306>
.DIN	51774	52001	24998-1X042	REV.2001	780818
REA.C	52003	53304	92084-1X142	REV.2340	810225
CAPCK	53305	53655	92084-1X028	REV.2121	810126
\$SETP	53656	53702	24998-1X013	REV.2001	781106
\$ESTB	53703	53717	92084-1X048	REV.2121	790202
.DDE	53720	53731	24998-1X039	REV.2001	780818
.DMP	53736	54103	24998-1X045	REV.2001	780818
.DDI	54105	54405	24998-1X040	REV.2001	781021
C.TAB	54406	54614	92084-1X135	REV.2340	811113
EE..	54615	55260	92084-1X144	REV.2440	840608
MR..	55261	55546	92084-1X147	REV.2340	830630
IF..	55547	55776	92084-1X149	REV.2340	791015
DP..	55777	56044	92084-1X160	REV.2340	760511
POSNT	56046	56416	92077-1X526	REV.2440	<840730.1532>
MESSS	56417	56757	92084-1X458	REV.2440	<841005.1346>
SM.BF	56760	57203	92077-1X495	REV.2340	830218
CA..	57204	57425	92084-1X134	REV.2340	760513
PCIBF	57426	57600	92084-1X143	REV.2121	800428
XREIO	57601	57751	92084-1X923	REV.5000	840228
.DIS	57752	60001	24998-1X044	REV.2001	780818
GTSCB	60002	60151	92084-1X269	REV.2121	810714
WRLG.	60152	60321	92084-1X216	REV.2340	760622
CK.SM	60322	60445	92084-1X225	REV.2340	771205
.SETB	60446	60541	92084-1X041	REV.5010	880506
VSCBA	60542	60611	92084-1X461	REV.2121	810201
BP LINKAGE	204				

FMGR2 a segment of FMGR

FMGR2	(*****)	44574	44601	92084-1X124	REV.2340	830615
PU..		44602	45131	92084-1X159	REV.2340	790319
PURGE		45132	45356	92077-1X542	REV.2340	830905
P..CK		45357	45433	92077-1X483	REV.2340	830218
RP.CK		45434	45642	92084-1X279	REV.2340	810304
LOCK.		45643	45715	92084-1X222	REV.2340	781115
.OPSY		45716	45721	92084-1X062	REV.2121	810126
FM.UT		45722	47541	92084-1X223	REV.2340	810124
LUTRU		47542	47647	92084-1X036	REV.2121	810519
READF		47653	51244	92077-1X528	REV.2440	<840730.0942>
RW\$UB		51276	51670	92077-1X533	REV.2326	<830217.1306>
\$SETP		51671	51715	24998-1X013	REV.2001	781106
.DDE		51716	51727	24998-1X039	REV.2001	780818
.DIN		51730	51735	24998-1X042	REV.2001	780818
.DMP		51742	52107	24998-1X045	REV.2001	780818
IN..		52120	54633	92084-1X152	REV.2540	850806
.DDI		54730	55230	24998-1X040	REV.2001	781021
BLD.X		55231	55417	92077-1X522	REV.2540	850920
XREIO		55420	55570	92084-1X923	REV.5000	840228
FID.		55571	55712	92084-1X219	REV.2340	780515
TRAK.		55713	55772	92084-1X191	REV.2340	810304
IXPUT		55773	56011	92084-1X031	REV.2121	780731
IN.IT		56021	60444	92084-1X151	REV.2440	850125
NAMR		60533	61032	92084-1X066	REV.2226	820225
FD.CK		61033	61175	92077-1X492	REV.2340	830218
NAM..		61176	61272	92077-1X530	REV.2340	830217
ST.SY		61273	61365	92084-1X275	REV.2340	810127
LOGLU		61366	61443	92084-1X027	REV.2121	790228
MM.CK		61444	61517	92077-1X486	REV.2340	830218

TATMP	61520	61562	92084-1X080	REV.2121	800702
ICAPS	61563	61625	92084-1X255	REV.5000	860430
.CFER	61626	61667	24998-1X196	REV.2001	790523
CHK.X	61670	61722	92077-1X493	REV.2340	830218
CLR.X	61723	61750	92077-1X485	REV.2340	830218
J.PUT	61751	61775	92084-1X217	REV.2340	740801
M.CPU	61776	62002	92077-1X487	REV.2340	830218
IPUT	62004	62024	92084-1X218	REV.2121	740801
PARSE	62025	62044	92084-1X012	REV.2121	770714
\$PARS	62045	62270	92084-1X013	REV.2226	820225
MSC.	62271	62310	92084-1X221	REV.2340	810622
BP LINKAGE	204				

FMGR3 a segment of FMGR

FMGR3	(*****)	44574	44600	92084-1X125	REV.2340	830615
CS..		44601	45032	92084-1X185	REV.2340	790406
LULU.		45033	45132	92084-1X234	REV.2340	801212
DL..		45135	47215	92084-1X157	REV.2340	831013
CL.BF		47367	47766	92084-1X249	REV.2340	780714
MSC.		47767	50006	92084-1X221	REV.2340	810622
FM.UT		50011	51630	92084-1X223	REV.2340	810124
LUTRU		51631	51736	92084-1X036	REV.2121	810519
LOCK.		51737	52011	92084-1X222	REV.2340	781115
READF		52015	53406	92077-1X528	REV.2440	<840730.0942>
LOCF		53407	53724	92077-1X539	REV.2326	<830217.1307>
\$SETP		53725	53751	24998-1X013	REV.2001	781106
.DDE		53752	53763	24998-1X039	REV.2001	780818
.DIN		53764	53771	24998-1X042	REV.2001	780818
NAM..		53772	54066	92077-1X530	REV.2340	830217
FSTAT		54072	54660	92084-1X200	REV.2226	820406
UT.BF		54661	55260	92077-1X494	REV.2340	830218
RW\$UB		55261	55653	92077-1X533	REV.2326	<830217.1306>
CHK.X		55654	55706	92077-1X493	REV.2340	830218
.DMP		55716	56063	24998-1X045	REV.2001	780818
.DDI		56065	56365	24998-1X040	REV.2001	781021
SM.BF		56366	56611	92077-1X495	REV.2340	830218
F.SET		56612	57002	92084-1X158	REV.2340	760719
XREIO		57003	57153	92084-1X923	REV.5000	840228
GTSCB		57154	57323	92084-1X269	REV.2121	810714
BP LINKAGE	133					

FMGR4 a segment of FMGR

FMGR4	(*****)	44574	44606	92084-1X126	REV.2340	830615
MC..		44607	45134	92084-1X153	REV.2540	850802
MS..		45135	45447	92084-1X170	REV.2340	810519
F.UTM		45450	45760	92084-1X176	REV.2340	830620
CNUMD		45761	46000	92084-1X015	REV.2121	770621
DCMC		46025	50364	92077-1X491	REV.2340	830627
UT.BF		50451	51050	92077-1X494	REV.2340	830218
RC..		51051	51350	92084-1X154	REV.6000	920908
SM.BF		51351	51574	92077-1X495	REV.2340	830218
AC..		51575	51773	92084-1X155	REV.2340	790129
.CLAD		51774	52013	92084-1Y010	REV.2340	830628
READF		52020	53411	92077-1X528	REV.2440	<840730.0942>
.DDI		53412	53712	24998-1X040	REV.2001	781021
TRAK.		53713	53772	92084-1X191	REV.2340	810304
.DIN		53773	54000	24998-1X042	REV.2001	780818

RW\$UB	54002	54374	92077-1X533	REV.2326	<830217.1306>
RP.CK	54375	54603	92084-1X279	REV.2340	810304
XREIO	54604	54754	92084-1X923	REV.5000	840228
GTSCB	54755	55124	92084-1X269	REV.2121	810714
.DMP	55125	55272	24998-1X045	REV.2001	780818
FD.CK	55273	55435	92077-1X492	REV.2340	830218
VL..	55436	55577	92084-1X587	REV.2340	830701
PRTN	55600	55712	92084-1X007	REV.2121	771005
.ASKD	55713	55764	92084-1Y010	REV.5020	890925
.DDE	55765	55776	24998-1X039	REV.2001	780818
.OPSY	55777	56002	92084-1X062	REV.2121	810126
FSTAT	56004	56572	92084-1X200	REV.2226	820406
CL.BF	56573	57172	92084-1X249	REV.2340	780714
LUTRU	57173	57300	92084-1X036	REV.2121	810519
NAM..	57301	57375	92077-1X530	REV.2340	830217
\$CVT3	57376	57463	92084-1X018	REV.2121	770621
TATMP	57464	57526	92084-1X080	REV.2121	800702
WRIS\$	57527	57565	92084-1X227	REV.2121	740801
CHK.X	57566	57620	92077-1X493	REV.2340	830218
\$SETP	57621	57645	24998-1X013	REV.2001	781106
IPUT	57646	57666	92084-1X218	REV.2121	740801
%WRIS	57700	60305	92084-1X054	REV.2121	810519
BP LINKAGE	155				

FMGR5 a segment of FMGR

FMGR5	(*****)	44574	44604	92084-1X127	REV.2340	830615
CT..		44605	45177	92084-1X190	REV.2340	790226
NAMR		45200	45477	92084-1X066	REV.2226	820225
CNT.		45500	45737	92084-1X228	REV.2540	850729
TL..		45740	45757	92084-1X184	REV.2340	740801
ST.TM		45761	46015	92084-1X232	REV.2340	741223
OPMES		46017	46223	92084-1X177	REV.2226	820114
READF		46224	47615	92077-1X528	REV.2440	<840730.0942>
XREIO		47616	47766	92084-1X923	REV.5000	840228
.DIN		47767	47774	24998-1X042	REV.2001	780818
.DDE		47775	50006	24998-1X039	REV.2001	780818
RW\$UB		50010	50402	92077-1X533	REV.2326	<830217.1306>
.DDI		50403	50703	24998-1X040	REV.2001	781021
.DMP		50704	51051	24998-1X045	REV.2001	780818
LUTRU		51052	51157	92084-1X036	REV.2121	810519
FCONT		51160	51262	92077-1X524	REV.2326	<830217.1318>
.SETB		51263	51356	92084-1X041	REV.5010	880506
\$SETP		51357	51403	24998-1X013	REV.2001	781106
BP LINKAGE	111					

FMGR6 a segment of FMGR

FMGR6	(*****)	44574	44604	92084-1X128	REV.2340	830615
JO..		44605	45704	92084-1X178	REV.2340	790514
SOPN		45705	45771	92084-1X215	REV.2121	801212
KCVT		45772	46005	92084-1X011	REV.2121	770621
LU..		46010	47650	92084-1X183	REV.2340	790514
LUTRU		47651	47756	92084-1X036	REV.2121	810519
RANGE		47757	50002	92084-1X235	REV.2121	740801
READF		50005	51376	92077-1X528	REV.2440	<840730.0942>
RW\$UB		51377	51771	92077-1X533	REV.2326	<830217.1306>
.DIN		51772	51777	24998-1X042	REV.2001	780818
EO..		52000	53050	92084-1X179	REV.2340	820113

CAPCK	53051	53421	92084-1X028	REV.2121	810126
ONOFF	53422	53765	92084-1X236	REV.2121	750128
.DDE	53766	53777	24998-1X039	REV.2001	780818
CN..	54000	54306	92084-1X140	REV.2340	830615
NAMF	54307	54676	92077-1X540	REV.2340	830907
.DDI	54677	55177	24998-1X040	REV.2001	781021
SELUR	55200	55425	92084-1X254	REV.2121	800821
MESSS	55426	55766	92084-1X458	REV.2440	<841005.1346>
\$ESTB	55770	56004	92084-1X048	REV.2121	790202
EX.TM	56006	56223	92084-1X237	REV.2340	771115
FG.LU	56224	56411	92084-1X253	REV.2340	830810
XREIO	56412	56562	92084-1X923	REV.5000	840228
.DMP	56563	56730	24998-1X045	REV.2001	780818
OF..	56731	57062	92084-1X180	REV.2340	790209
LULU.	57063	57162	92084-1X234	REV.2340	801212
NAM..	57163	57257	92077-1X530	REV.2340	830217
AVAIL	57260	57352	92084-1X240	REV.2121	801212
\$CVT3	57353	57440	92084-1X018	REV.2121	770621
DTACH	57441	57521	92084-1X034	REV.2121	800129
LG..	57522	57600	92084-1X182	REV.2340	780929
LOGLU	57601	57656	92084-1X027	REV.2121	790228
LU.CL	57657	57732	92084-1X239	REV.2340	801212
ST.TM	57733	57767	92084-1X232	REV.2340	741223
IPUT	57770	60010	92084-1X218	REV.2121	740801
VSCBA	60013	60062	92084-1X461	REV.2121	810201
B.FLG	60063	60131	92084-1X233	REV.2340	741118
LUSES	60132	60166	92084-1X039	REV.2121	801124
POST	60167	60216	92077-1X527	REV.2326	<830217.1319>
SET.T	60217	60245	92084-1X230	REV.2340	740801
\$SETP	60246	60272	24998-1X013	REV.2001	781106
BP LINKAGE	165				

FMGR7 a segment of FMGR

FMGR7	(*****)	44574	44601	92084-16129	REV.2340	830615
NX.JB		44602	45754	92084-1X181	REV.2340	810804
SET.T		45756	46004	92084-1X230	REV.2340	740801
??..		46005	52376	92084-1X136	REV.6000	920908
READF		52377	53770	92077-1X528	REV.2440	<840730.0942>
.DIN		53771	53776	24998-1X042	REV.2001	780818
.DDE		53777	54010	24998-1X039	REV.2001	780818
RW\$UB		54012	54404	92077-1X533	REV.2326	<830217.1306>
.DDI		54405	54705	24998-1X040	REV.2001	781021
FG.LU		54706	55073	92084-1X253	REV.2340	830810
XREIO		55074	55244	92084-1X923	REV.5000	840228
.DMP		55245	55412	24998-1X045	REV.2001	780818
.LGON		55413	55552	92084-1X265	REV.2340	791028
SY..		55553	55671	92084-1X174	REV.2440	850201
.CLGN		55672	55772	92084-1X262	REV.2340	780928
\$SETP		55773	56017	24998-1X013	REV.2001	781106
MESSS		56021	56361	92084-1X458	REV.2440	<841005.1346>
CAPCK		56362	56732	92084-1X028	REV.2121	810126
LULU.		56733	57032	92084-1X234	REV.2340	801212
SOPN		57033	57117	92084-1X215	REV.2121	801212
DTACH		57120	57200	92084-1X034	REV.2121	800129
LU.CL		57201	57254	92084-1X239	REV.2340	801212
VSCBA		57255	57324	92084-1X461	REV.2121	810201
B.FLG		57325	57373	92084-1X233	REV.2340	741118
ICAPS		57374	57436	92084-1X255	REV.5000	860430

LUSES	57437	57473	92084-1X039	REV.2121	801124
POST	57474	57523	92077-1X527	REV.2326	<830217.1319>
\$ESTB	57524	57540	92084-1X048	REV.2121	790202
BP LINKAGE	143				

FMGR8 a segment of FMGR

FMGR8	(*****)	44574	44601	92084-1X130	REV.2340	830615
SA..		44602	45742	92084-1X146	REV.2340	830701
READ.		45743	45767	92084-1X241	REV.2340	740801
RWNDF		45770	46060	92077-1X529	REV.2326	<830217.1306>
SP..		46071	47677	92084-1X169	REV.2340	830511
IXGET		47700	47707	92084-1X030	REV.2121	780731
CREA.		47711	50031	92084-1X224	REV.2340	781102
FM.UT		50042	51661	92084-1X223	REV.2340	810124
LUTRU		51662	51767	92084-1X036	REV.2121	810519
CK.SM		51770	52113	92084-1X225	REV.2340	771205
READF		52123	53514	92077-1X528	REV.2440	<840730.0942>
XREIO		53515	53665	92084-1X923	REV.5000	840228
\$SETP		53666	53712	24998-1X013	REV.2001	781106
.DDE		53713	53724	24998-1X039	REV.2001	780818
.DIN		53725	53732	24998-1X042	REV.2001	780818
.DMP		53737	54104	24998-1X045	REV.2001	780818
CR..		54106	54751	92084-1X139	REV.2340	800731
SREAD		54752	55414	92084-1X071	REV.2121	771116
LOCF		55415	55732	92077-1X539	REV.2326	<830217.1307>
NAM..		55737	56033	92077-1X530	REV.2340	830217
RW\$UB		56037	56431	92077-1X533	REV.2326	<830217.1306>
CREAT		56432	57016	92077-1X379	REV.2326	<830218.1103>
.DDI		57017	57317	24998-1X040	REV.2001	781021
BP LINKAGE	140					

FMGR9 a segment of FMGR

FMGR9	(*****)	44574	44600	92084-1X131	REV.2340	830615
CL..		44601	45735	92084-1X175	REV.6000	920908
NAM..		45742	46036	92077-1X530	REV.2340	830217
LI..		46051	50145	92084-1X156	REV.2340	810622
READF		50175	51566	92077-1X528	REV.2440	<840730.0942>
XREIO		51567	51737	92084-1X923	REV.5000	840228
\$SETP		51740	51764	24998-1X013	REV.2001	781106
.DDE		51765	51776	24998-1X039	REV.2001	780818
.DIN		51777	52004	24998-1X042	REV.2001	780818
ACNAM		52006	52577	92084-1X252	REV.2121	790102
FSTAT		52600	53366	92084-1X200	REV.2226	820406
CL.BF		53367	53766	92084-1X249	REV.2340	780714
CHK.X		53770	54022	92077-1X493	REV.2340	830218
UT.BF		54024	54423	92077-1X494	REV.2340	830218
RW\$UB		54424	55016	92077-1X533	REV.2326	<830217.1306>
POSNT		55017	55367	92077-1X526	REV.2440	<840730.1532>
LOCF		55370	55705	92077-1X539	REV.2326	<830217.1307>
.DIS		55706	55735	24998-1X044	REV.2001	780818
PGS.		55742	56050	92084-1X251	REV.2340	781002
.DDI		56053	56353	24998-1X040	REV.2001	781021
SM.BF		56354	56577	92077-1X495	REV.2340	830218
GTSCB		56600	56747	92084-1X269	REV.2121	810714
.DMP		56750	57115	24998-1X045	REV.2001	780818
BP LINKAGE	140					

FMGRA a segment of FMGR

FMGRA	(*****)	44574	44600	92084-1X132	REV.2340	830615
SM..		44601	44737	92084-1X188	REV.2340	790102
NAMR		44740	45237	92084-1X066	REV.2226	820225
ME..		45240	45260	92084-1X189	REV.2340	790109
ME.SB		45332	47053	92084-1X261	REV.2340	830511
CREAT		47056	47442	92077-1X379	REV.2326	<830218.1103>
LOCF		47443	47760	92077-1X539	REV.2326	<830217.1307>
.DDE		47761	47772	24998-1X039	REV.2001	780818
NAM..		47773	50067	92077-1X530	REV.2340	830217
SM.SB		50133	52260	92084-1X260	REV.2340	830512
READF		52261	53652	92077-1X528	REV.2440	<840730.0942>
IPRSN		53653	53741	92084-1X258	REV.2121	790103
\$\$SETP		53742	53766	24998-1X013	REV.2001	781106
.DIN		53767	53774	24998-1X042	REV.2001	780818
.DMP		53775	54142	24998-1X045	REV.2001	780818
PARSN		54144	54553	92084-1X257	REV.2121	790801
RW\$UB		54554	55146	92077-1X533	REV.2326	<830217.1306>
POSNT		55147	55517	92077-1X526	REV.2440	<840730.1532>
APOSN		55520	55755	92077-1X523	REV.2326	<830217.1318>
.DIS		55757	56006	24998-1X044	REV.2001	780818
.DDI		56010	56310	24998-1X040	REV.2001	781021
F'TIME		56311	56602	92084-1X032	REV.2121	780731
PURGE		56603	57027	92077-1X542	REV.2340	830905
XREIO		57030	57200	92084-1X923	REV.5000	840228
KHAR		57201	57347	92084-1X042	REV.2121	770525
P..CK		57350	57424	92077-1X483	REV.2340	830218
RP.CK		57425	57633	92084-1X279	REV.2340	810304
.OPSY		57634	57637	92084-1X062	REV.2121	810126
BP LINKAGE	150					

FMGRB a segment of FMGR

FMGRB	(*****)	44574	44602	92084-1X133	REV.2340	830615
RU..		44603	45507	92084-1X161	REV.2340	801223
RP..		45510	45643	92084-1X171	REV.2340	801223
.RENM		45644	45767	92084-1X172	REV.2340	780630
SET.T		45770	46016	92084-1X230	REV.2340	740801
..BF.		46017	52037	92084-1X173	REV.2340	801223
IDRPL		52040	53465	92084-1X243	REV.5000	<860930.1147>
IDRPD		53466	53761	92084-1X245	REV.2121	810507
\$\$SETIDEXT		53763	54014	92084-1Y037	REV.2540	<850820.1611>
READF		54017	55410	92077-1X528	REV.2440	<840730.0942>
MESSS		55411	55751	92084-1X458	REV.2440	<841005.1346>
\$\$SETP		55752	55776	24998-1X013	REV.2001	781106
.DIN		55777	56004	24998-1X042	REV.2001	780818
IDDUP		56006	56456	92084-1X244	REV.5000	<860926.1354>
RW\$UB		56457	57051	92077-1X533	REV.2326	<830217.1306>
CAPCK		57052	57422	92084-1X028	REV.2121	810126
.DDI		57423	57723	24998-1X040	REV.2001	781021
VSCBA		57724	57773	92084-1X461	REV.2121	810201
.DDE		57774	60005	24998-1X039	REV.2001	780818
XREIO		60007	60157	92084-1X923	REV.5000	840228
.DMP		60160	60325	24998-1X045	REV.2001	780818
SETAT		60326	60453	92084-1X081	REV.2301	821014
\$\$FINDIDEXT		60454	60552	92084-1Y037	REV.2540	<850820.1611>
NAM..		60553	60647	92077-1X530	REV.2340	830217
WH..		60650	60735	92084-1X187	REV.2340	810305

IFMTM	60736	61014	92084-1X259	REV.2121	801212
.OWNR	61015	61072	92084-1X040	REV.2121	811126
BUMP.	61073	61131	92084-1X229	REV.2340	741025
TL.	61132	61165	92084-1X231	REV.2340	760322
HE..	61166	61217	92084-1X186	REV.2340	781012
ŞESTB	61220	61234	92084-1X048	REV.2121	790202
BP LINKAGE	136				

LOGON program.

LOGON	(	50)	36012	45364	92084-1X449	REV.6000	920904	
OPEN			45365	45776	92077-1X088	REV.2440	841011	
OVRD.			45777	45777	92077-1X482	REV.2340	830218	
DCMC			46024	50363	92077-1X491	REV.2340	830627	
LSUB1			50450	51202	92084-1X454	REV.5000	860218	
LSUBC			51203	51677	92084-1X453	REV.2121	810416	
NAM..			51700	51774	92077-1X530	REV.2340	830217	
.OFLG			51775	51777	92084-1Y010	REV.2340	830628	
READF			52000	53371	92077-1X528	REV.2440	<840730.0942>	
UT.BF			53372	53771	92077-1X494	REV.2340	830218	
.DBTS			53772	53775	92084-1Y010	REV.2340	830628	
.DIN			53776	54003	24998-1X042	REV.2001	780818	
IDDUP			54005	54455	92084-1X244	REV.5000	<860926.1354>	
RWŞUB			54456	55050	92077-1X533	REV.2326	<830217.1306>	
CAPCK			55051	55421	92084-1X028	REV.2121	810126	
MESSS			55422	55762	92084-1X458	REV.2440	<841005.1346>	
KCVT			55763	55776	92084-1X011	REV.2121	770621	
.DNG			55777	56006	24998-1X046	REV.2001	780818	
.DDI			56010	56310	24998-1X040	REV.2001	781021	
IDRPD			56311	56604	92084-1X245	REV.2121	810507	
FTIME			56605	57076	92084-1X032	REV.2121	780731	
CLOSE			57077	57327	92077-1X536	REV.2340	830819	
ŞOPEN			57330	57560	92077-1X544	REV.5010	<880126.1535>	
RP.CK			57561	57767	92084-1X279	REV.2340	810304	
.OPSY			57770	57773	92084-1X062	REV.2121	810126	
IXGET			57774	60003	92084-1X030	REV.2121	780731	
SM.BF			60004	60227	92077-1X495	REV.2340	830218	
ENCRP			60230	60414	92084-1X449	REV.2440	840523	
MKSCB			60415	60572	92084-1X459	REV.2121	810201	
XREIO			60573	60743	92084-1X923	REV.5000	840228	
GTSCB			60744	61113	92084-1X269	REV.2121	810714	
.DMP			61114	61261	24998-1X045	REV.2001	780818	
FD.CK			61262	61424	92077-1X492	REV.2340	830218	
RWNDŞ			61425	61557	92077-1X534	REV.2326	<830217.1306>	
RLSCB			61560	61675	92084-1X460	REV.2121	780518	
ŞFINDIDEXT			61676	61774	92084-1Y037	REV.2540	<850820.1611>	
.DDE			61775	62006	24998-1X039	REV.2001	780818	
R/WŞ			62010	62125	92077-1X532	REV.2340	830217	
.DADS			62126	62235	24998-1X036	REV.2001	780818	
KBLNK			62236	62340	24998-1X577	REV.2340	<830923.1700>	
.BFSZ			62341	62435	92077-1X658	REV.2340	830226	
SYSRQ			62436	62531	92084-1X002	REV.2121	810831	
.SETB			62532	62625	92084-1X041	REV.5010	880506	
.ISHC			62626	62721	24998-1X451	REV.2140	810317	
ŞSMVE			62722	63014	92084-1X046	REV.2121	800129	
.ENTR			63015	63104	24998-1X192	REV.2001	750701	
ŞCVT3			63105	63172	92084-1X018	REV.2121	770621	
IFTTY			63173	63255	92084-1X025	REV.6000	921030	IFTTY for RTE-6
IDGET			63256	63340	92084-1X029	REV.2121	790314	

DTACH	63341	63421	92084-1X034	REV.2121	800129
.OWNR	63422	63477	92084-1X040	REV.2121	811126
.ASKD	63500	63551	92084-1Y010	REV.5020	890925
.IDL P	63552	63621	24998-1X506	REV.2301	821007
VSCBA	63622	63671	92084-1X461	REV.2121	810201
.DFER	63672	63727	24998-1X199	REV.2001	790523
\$SETIDEXT	63730	63761	92084-1Y037	REV.2540	<850820.1611>
\$ESTB	63762	63776	92084-1X048	REV.2121	790202
SESSN	63777	64014	92084-1X256	REV.2121	780413
RMPAR	64016	64046	92084-1X069	REV.2121	811001
MOD	64047	64076	24998-1X107	REV.2001	751101
.FION	64077	64126	24998-1X355	REV.2326	830406
LOGLU	64127	64204	92084-1X027	REV.2121	790228
\$SETP	64205	64231	24998-1X013	REV.2001	781106
.2TOI	64232	64253	24998-1X517	REV.2140	810317
CNUMD	64254	64273	92084-1X015	REV.2121	770621
.CLAD	64274	64313	92084-1Y010	REV.2340	830628
IXPUT	64314	64332	92084-1X031	REV.2121	780731
.UFMP	64333	64351	24998-1X296	REV.2326	830406
ER0.E	64352	64353	24998-1X249	REV.2540	850927
PAU.E	64354	64355	24998-1X254	REV.2540	850927
BP LINKAGE	471				

LGOFF program.

LGOFF	(	90)	36012	41261	92084-1X450	REV.6000	920904
LSUBC			41262	41756	92084-1X453	REV.2121	810416
CNUMD			41757	41776	92084-1X015	REV.2121	770621
IGET			41777	42005	92084-1X063	REV.2121	770501
DCMC			42033	44372	92077-1X491	REV.2340	830627
LSUB2			44457	45223	92084-1X455	REV.2121	800927
OPEN			45224	45635	92077-1X088	REV.2440	841011
RLSCB			45636	45753	92084-1X460	REV.2121	780518
.CLAD			45754	45773	92084-1Y010	REV.2340	830628
.OFLG			45774	45776	92084-1Y010	REV.2340	830628
OVRD.			45777	45777	92077-1X482	REV.2340	830218
READF			46000	47371	92077-1X528	REV.2440	<840730.0942>
UT.BF			47372	47771	92077-1X494	REV.2340	830218
.DBTS			47772	47775	92084-1Y010	REV.2340	830628
.DIN			47776	50003	24998-1X042	REV.2001	780818
RW\$UB			50005	50377	92077-1X533	REV.2326	<830217.1306>
MESSS			50400	50740	92084-1X458	REV.2440	<841005.1346>
CAPCK			50741	51311	92084-1X028	REV.2121	810126
.DDI			51312	51612	24998-1X040	REV.2001	781021
XREIO			51613	51763	92084-1X923	REV.5000	840228
.DDE			51764	51775	24998-1X039	REV.2001	780818
.DNG			51776	52005	24998-1X046	REV.2001	780818
IDRPD			52007	52302	92084-1X245	REV.2121	810507
F'TIME			52303	52574	92084-1X032	REV.2121	780731
CLOSE			52575	53025	92077-1X536	REV.2340	830819
\$OPEN			53026	53256	92077-1X544	REV.5010	<880126.1535>
SM.BF			53257	53502	92077-1X495	REV.2340	830218
RP.CK			53503	53711	92084-1X279	REV.2340	810304
IFTTY			53712	53774	92084-1X025	REV.6000	921030 IFTTY for RTE-6
.OPSY			53775	54000	92084-1X062	REV.2121	810126
GTSCB			54002	54151	92084-1X269	REV.2121	810714
.DMP			54152	54317	24998-1X045	REV.2001	780818
FD.CK			54320	54462	92077-1X492	REV.2340	830218
RWND\$			54463	54615	92077-1X534	REV.2326	<830217.1306>

R/W\$	54616	54733	92077-1X532	REV.2340	830217
.DADS	54734	55043	24998-1X036	REV.2001	780818
PGNTR	55044	55140	92084-1Y009	REV.2340	830725
NAM..	55141	55235	92077-1X530	REV.2340	830217
.BFSZ	55236	55332	92077-1X658	REV.2340	830226
SYSRQ	55333	55426	92084-1X002	REV.2121	810831
.SETB	55427	55522	92084-1X041	REV.5010	880506
\$SMVE	55523	55615	92084-1X046	REV.2121	800129
.ENTR	55616	55705	24998-1X192	REV.2001	750701
\$CVT3	55706	55773	92084-1X018	REV.2121	770621
KCVT	55774	56007	92084-1X011	REV.2121	770621
IDGET	56012	56074	92084-1X029	REV.2121	790314
DTACH	56075	56155	92084-1X034	REV.2121	800129
.ASKD	56156	56227	92084-1Y010	REV.5020	890925
VSCBA	56230	56277	92084-1X461	REV.2121	810201
.DFER	56300	56335	24998-1X199	REV.2001	790523
LUSES	56336	56372	92084-1X039	REV.2121	801124
RMPAR	56373	56423	92084-1X069	REV.2121	811001
MOD	56424	56453	24998-1X107	REV.2001	751101
.FION	56454	56503	24998-1X355	REV.2326	830406
LOGLU	56504	56561	92084-1X027	REV.2121	790228
\$SETP	56562	56606	24998-1X013	REV.2001	781106
.UFMP	56607	56625	24998-1X296	REV.2326	830406
SESSN	56626	56643	92084-1X256	REV.2121	780413
\$ESTB	56644	56660	92084-1X048	REV.2121	790202
ER0.E	56661	56662	24998-1X249	REV.2540	850927
PAU.E	56663	56664	24998-1X254	REV.2540	850927
BP LINKAGE	261				

R\$PN\$ program.

R\$PN\$	(	5)	36012	37353	92084-1X452	REV.2340	830726
CAPCK			37354	37724	92084-1X028	REV.2121	810126
VSCBA			37725	37774	92084-1X461	REV.2121	810201
\$ESTB			37775	40011	92084-1X048	REV.2121	790202
IDDUP			40013	40463	92084-1X244	REV.5000	<860926.1354>
MESSS			40464	41024	92084-1X458	REV.2440	<841005.1346>
SELUR			41025	41252	92084-1X254	REV.2121	800821
\$PARS			41253	41476	92084-1X013	REV.2226	820225
FNDLU			41477	41650	92084-1X037	REV.2121	810519
LUTRU			41651	41756	92084-1X036	REV.2121	810519
\$SETIDEXT			41761	42012	92084-1Y037	REV.2540	<850820.1611>
\$FINDIDEXT			42015	42113	92084-1Y037	REV.2540	<850820.1611>
NAM..			42114	42210	92077-1X530	REV.2340	830217
.SETB			42211	42304	92084-1X041	REV.5010	880506
\$SMVE			42305	42377	92084-1X046	REV.2121	800129
.ENTR			42400	42467	24998-1X192	REV.2001	750701
\$CVT3			42470	42555	92084-1X018	REV.2121	770621
IDGET			42556	42640	92084-1X029	REV.2121	790314
DTACH			42641	42721	92084-1X034	REV.2121	800129
.OWNR			42722	42777	92084-1X040	REV.2121	811126
PTERR			43000	43040	92084-1X044	REV.2121	810126
SESSN			43041	43056	92084-1X256	REV.2121	780413
BP LINKAGE	33						

T5IDM program.

T5IDM	(	40)	36012	43441	92084-16528	REV.2209	820112
IDRPD			43442	43735	92084-1X245	REV.2121	810507

.DFER	43736	43773	24998-1X199	REV.2001	790523	
SESSN	43774	44011	92084-1X256	REV.2121	780413	
OPEN	44014	44425	92077-1X088	REV.2440	841011	
MESSS	44426	44766	92084-1X458	REV.2440	<841005.1346>	
CAPCK	44767	45337	92084-1X028	REV.2121	810126	
CLOSE	45340	45570	92077-1X536	REV.2340	830819	
SETAT	45571	45716	92084-1X081	REV.2301	821014	
VSCBA	45717	45766	92084-1X461	REV.2121	810201	
.DNG	45767	45776	24998-1X046	REV.2001	780818	
OVRD.	45777	45777	92077-1X482	REV.2340	830218	
ŞOPEN	46000	46230	92077-1X544	REV.5010	<880126.1535>	
RWNDŞ	46231	46363	92077-1X534	REV.2326	<830217.1306>	
R/WŞ	46364	46501	92077-1X532	REV.2340	830217	
PRTN	46502	46614	92084-1X007	REV.2121	771005	
NAM..	46615	46711	92077-1X530	REV.2340	830217	
.BFSZ	46712	47006	92077-1X658	REV.2340	830226	
.DADS	47007	47116	24998-1X036	REV.2001	780818	
SYSRQ	47117	47212	92084-1X002	REV.2121	810831	
ŞSMVE	47213	47305	92084-1X046	REV.2121	800129	
.ENTR	47306	47375	24998-1X192	REV.2001	750701	
IDGET	47376	47460	92084-1X029	REV.2121	790314	
IFTTY	47461	47543	92084-1X025	REV.6000	921030	IFTTY for RTE-6
DTACH	47544	47624	92084-1X034	REV.2121	800129	
RMPAR	47625	47655	92084-1X069	REV.2121	811001	
ŞESTB	47656	47672	92084-1X048	REV.2121	790202	
.DBTS	47673	47676	92084-1Y010	REV.2340	830628	
.OFLG	47677	47701	92084-1Y010	REV.2340	830628	
BP LINKAGE	206					

DSMOD program.

DSMOD	(	26)	36012	43337	91750-16092	REV.5020	ŞDate: 89/10/09 11:45:1
#PKUP			43340	43715	91750-1X023	REV.5020	ŞDate: 89/12/06 19:31:1
LOGLU			43716	43773	92084-1X027	REV.2121	790228
PARSE			43774	44013	92084-1X012	REV.2121	770714
#DSSM			44020	44734	91750-1X006	REV.5000	W/S.M. ŞDate: 89/04/04
DŞRLU			44735	45412	91750-1X258	REV.5000	ALL W/3K 891110.1631
MESSS			45413	45753	92084-1X458	REV.2440	<841005.1346>
ABREG			45754	45775	92084-1X059	REV.2121	750701
.DRCT			45776	46004	24998-1X047	REV.2440	790523
CAPCK			46006	46356	92084-1X028	REV.2121	810126
DŞDN			46357	46673	91750-1X259	REV.2401	ALL W/3K ŞDate: 89/04/1
DŞGBD			46674	47205	91750-1X261	REV.5000	ALL W/3KŞDate: 89/04/13
NAMR			47206	47505	92084-1X066	REV.2226	820225
FMPREAD			47506	47756	92570-1X106	REV.2326	830728
FMPUPDATERECOND			47757	47776	92570-1X106	REV.2326	830728
DŞCON			47777	50004	91750-1X053	REV.2201	811123 ALL W/3K: 1072 B
--FMPREGS			50005	50006			
FMPDOTYPE012			50007	50435	92570-1X106	REV.5010	880712
--FMPBUFFER			50436	50535			
FMPSETWORD			50536	51154	92570-1X106	REV.5010	880712
FMPMOVEDATA			51155	51533	92570-1X106	REV.5010	880308
ŞPARS			51534	51757	92084-1X013	REV.2226	820225
DCBOPEN			51760	51776	92084-1Y014	REV.2340	830809
.DIN			51777	52004	24998-1X042	REV.2001	780818
.DDI			52006	52306	24998-1X040	REV.2001	781021
FMPACCESSDISC			52307	52577	92077-1X503	REV.6000	920325
FMPASKDDOT			52600	53015	92570-1X106	REV.6000	920225
XREIO			53016	53166	92084-1X923	REV.5000	840228

.DMP	53167	53334	24998-1X045	REV.2001	780818	
FMPOPEN	53335	53466	92570-1X106	REV.2326	830728	
.IOER	53467	53643	24998-1X321	REV.5000	850927	
#RR6	53644	53773	91750-1X032	REV.2140	810617	ALL W/RR
FMPENDEVENT	53774	53776	92084-1Y014	REV.2440	841016	
ER0.T	53777	53777	24998-1X321	REV.2540	850927	
.SST	54000	54115	24998-1X336	REV.2140	810812	
PRTN	54116	54230	92084-1X007	REV.2121	771005	
FMPSETRELPOS	54231	54340	92570-1X106	REV.5010	880712	
.DADS	54341	54450	24998-1X036	REV.2001	780818	
.UACT	54451	54552	92084-1X264	REV.2340	790129	
.CLGN	54553	54653	92084-1X262	REV.2340	780928	
FMPCLOSE	54654	54753	92570-1X106	REV.6000	900926	
SYSRQ	54754	55047	92084-1X002	REV.2121	810831	
\$SMVE	55050	55142	92084-1X046	REV.2121	800129	
FMPGETDATA	55143	55234	92077-1X503	REV.2326	830728	
.ENTR	55235	55324	24998-1X192	REV.2001	750701	
IFTTY	55325	55407	92084-1X025	REV.6000	921030	IFTTY for RTE-6
IDGET	55410	55472	92084-1X029	REV.2121	790314	
FMPPOST	55473	55553	92570-1X106	REV.2326	830728	
#RR4	55554	55627	91750-1X030	REV.2140	810717	ALL W/RR
.DCO	55630	55700	24998-1X037	REV.2001	790417	
VSCBA	55701	55750	92084-1X461	REV.2121	810201	
FMPDISCOFFSET	55751	55775	92570-1X236	REV.2326	830407	
OVRD.	55776	55776	92077-1X482	REV.2340	830218	
ER0.E	55777	56000	24998-1X249	REV.2540	850927	
#MAQS	56001	56046	91750-1X207	REV.2113	800808	ALL M.A.
PNAME	56047	56114	92084-1X075	REV.2121	800801	
FMPBUFFERBASE	56115	56161	92077-1X503	REV.2326	830728	
FMPEXTENTSIZ	56162	56226	92077-1X503	REV.2326	830728	
FMPGETLENWORD	56227	56272	92077-1X503	REV.2326	830728	
#RR5	56273	56333	91750-1X031	REV.2113	810120	ALL W/RR
FMPBLOCKSLEFT	56334	56371	92077-1X503	REV.2326	830728	
.DFER	56372	56427	24998-1X199	REV.2001	790523	
FMPBUFFERSIZE	56430	56464	92077-1X503	REV.2326	830728	
FMPDISCDIFF	56465	56521	92570-1X236	REV.2326	830407	
FMPEXTENTBASE	56522	56553	92077-1X503	REV.2326	830728	
RMPAR	56554	56604	92084-1X069	REV.2121	811001	
#OSRV	56605	56625	91750-18310	REV.5000	\$Date: 89/04/05 15:55:2	
.DMOD	56626	56645	24998-1X269	REV.2101	800303	
\$ESTB	56646	56662	92084-1X048	REV.2121	790202	
MOVEWORDS	56663	56676	92570-1X236	REV.2326	830407	
.DDE	56677	56710	24998-1X039	REV.2001	780818	
.DNG	56711	56720	24998-1X046	REV.2001	780818	
DISCWORD	56721	56725	92084-1Y014	REV.2340	830809	
FMPSTARTEVENT	56726	56730	92084-1Y014	REV.2440	841016	
BP LINKAGE	333					

DINIT program.

DINIT	(	26)	36012	45120	91750-16069	REV.5020	\$Date: 89/10/09 11:44:2
#MAUP			45121	45613	91750-1X135	REV.2301	820916 ALL M.A.
--FMPBUFFER			45614	45713			
FMPOPEN			45716	46047	92570-1X106	REV.2326	830728
#DISM			46054	47322	91750-1X203	REV.5010	W/S.M. \$Date: 89/04/04
#PKUP			47323	47700	91750-1X023	REV.5020	\$Date: 89/12/06 19:31:1
SYSRQ			47701	47774	92084-1X002	REV.2121	810831
.DRCT			47775	50003	24998-1X047	REV.2440	790523
D\$RLU			50006	50463	91750-1X258	REV.5000	ALL W/3K 891110.1631

#RRX	50464	51037	91750-1X029	REV.2226	820316	ALL W/RR
MESSS	51040	51400	92084-1X458	REV.2440	<841005.1346>	
CAPCK	51401	51751	92084-1X028	REV.2121	810126	
ABREG	51752	51773	92084-1X059	REV.2121	750701	
\$ESTB	51774	52010	92084-1X048	REV.2121	790202	
D\$DN	52012	52326	91750-1X259	REV.2401	ALL W/3K	\$Date: 89/04/1
D\$GBD	52327	52640	91750-1X261	REV.5000	ALL W/3K	\$Date: 89/04/13
NAMR	52641	53140	92084-1X066	REV.2226	820225	
FMPREAD	53141	53411	92570-1X106	REV.2326	830728	
FMPMOVEDATA	53412	53770	92570-1X106	REV.5010	880308	
D\$CON	53771	53776	91750-1X053	REV.2201	811123	ALL W/3K: 1072 B
MOVEWORDS	53777	54012	92570-1X236	REV.2326	830407	
--FMPREGS	54014	54015				
FMPDOTYPE012	54016	54444	92570-1X106	REV.5010	880712	
FMPSETWORD	54445	55063	92570-1X106	REV.5010	880712	
.DDI	55064	55364	24998-1X040	REV.2001	781021	
FMPACCESSDISC	55365	55655	92077-1X503	REV.6000	920325	
.SST	55656	55773	24998-1X336	REV.2140	810812	
DISCWORD	55774	56000	92084-1Y014	REV.2340	830809	
FMPASKDDOT	56001	56216	92570-1X106	REV.6000	920225	
.IOER	56217	56373	24998-1X321	REV.5000	850927	
XREIO	56374	56544	92084-1X923	REV.5000	840228	
.DMP	56545	56712	24998-1X045	REV.2001	780818	
D\$3IN	56713	57042	91750-1X275	REV.2401	ALL W/3K	\$Date: 89/04/13
PRTN	57043	57155	92084-1X007	REV.2121	771005	
FMPSETRELPOS	57156	57265	92570-1X106	REV.5010	880712	
.DADS	57266	57375	24998-1X036	REV.2001	780818	
.UACT	57376	57477	92084-1X264	REV.2340	790129	
.CLGN	57500	57600	92084-1X262	REV.2340	780928	
FMPCLOSE	57601	57700	92570-1X106	REV.6000	900926	
\$SMVE	57701	57773	92084-1X046	REV.2121	800129	
FMPENDEVENT	57774	57776	92084-1Y014	REV.2440	841016	
ER0.T	57777	57777	24998-1X321	REV.2540	850927	
FMPGETDATA	60000	60071	92077-1X503	REV.2326	830728	
.ENTR	60072	60161	24998-1X192	REV.2001	750701	
ATACH	60162	60247	92084-1X035	REV.2540	<850611.1501>	
IFTTY	60250	60332	92084-1X025	REV.6000	921030	IFTTY for RTE-6
IDGET	60333	60415	92084-1X029	REV.2121	790314	
DTACH	60416	60476	92084-1X034	REV.2121	800129	
FMPPOST	60477	60557	92570-1X106	REV.2326	830728	
LOGLU	60560	60635	92084-1X027	REV.2121	790228	
#RR4	60636	60711	91750-1X030	REV.2140	810717	ALL W/RR
.DCO	60712	60762	24998-1X037	REV.2001	790417	
VSCBA	60763	61032	92084-1X461	REV.2121	810201	
PNAME	61033	61100	92084-1X075	REV.2121	800801	
FMPBUFFERBASE	61101	61145	92077-1X503	REV.2326	830728	
FMPEXTENTSIZE	61146	61212	92077-1X503	REV.2326	830728	
FMPGETLENWORD	61213	61256	92077-1X503	REV.2326	830728	
ICAPS	61257	61321	92084-1X255	REV.5000	860430	
#RR5	61322	61362	91750-1X031	REV.2113	810120	ALL W/RR
D\$X25	61363	61420	91750-1X266	REV.2401	840425	ALL W/3K
FMPBLOCKSLEFT	61421	61456	92077-1X503	REV.2326	830728	
.DFER	61457	61514	24998-1X199	REV.2001	790523	
LUSES	61515	61551	92084-1X039	REV.2121	801124	
FMPBUFFERSIZE	61552	61606	92077-1X503	REV.2326	830728	
FMPDISCDIFF	61607	61643	92570-1X236	REV.2326	830407	
CASEFOLD	61644	61675	92570-1X236	REV.6000	901129	
FMPEXTENTBASE	61676	61727	92077-1X503	REV.2326	830728	
RMPAR	61730	61760	92084-1X069	REV.2121	811001	

SESSN	61761	61776	92084-1X256	REV.2121	780413	
OVRD.	61777	61777	92077-1X482	REV.2340	830218	
FMPDISCOFFSET	62000	62024	92570-1X236	REV.2326	830407	
#OSRV	62025	62045	91750-18310	REV.5000	\$Date: 89/04/05 15:55:2	
PARSE	62046	62065	92084-1X012	REV.2121	770714	
\$PARS	62066	62311	92084-1X013	REV.2226	820225	
CNUMD	62312	62331	92084-1X015	REV.2121	770621	
\$CVT3	62332	62417	92084-1X018	REV.2121	770621	
FMPUPDATERECORD	62420	62437	92570-1X106	REV.2326	830728	
.DMOD	62440	62457	24998-1X269	REV.2101	800303	
DCBOPEN	62460	62476	92084-1Y014	REV.2340	830809	
.DDE	62477	62510	24998-1X039	REV.2001	780818	
.DNG	62511	62520	24998-1X046	REV.2001	780818	
.DIN	62521	62526	24998-1X042	REV.2001	780818	
FMPSTARTEVENT	62527	62531	92084-1Y014	REV.2440	841016	
ER0.E	62532	62533	24998-1X249	REV.2540	850927	
BP LINKAGE	504					

GASP program.

GASP	(	80)	36012	40027	92084-1X498	REV.2121	811014	
READF			40030	41421	92077-1X528	REV.2440	<840730.0942>	
.DDI			41422	41722	24998-1X040	REV.2001	781021	
ICAPS			41723	41765	92084-1X255	REV.5000	860430	
.DNG			41766	41775	24998-1X046	REV.2001	780818	
OVRD.			41776	41776	92077-1X482	REV.2340	830218	
.OFLG			41777	42001	92084-1Y010	REV.2340	830628	
OPEN			42003	42414	92077-1X088	REV.2440	841011	
RW\$UB			42415	43007	92077-1X533	REV.2326	<830217.1306>	
GOQIP			43010	43307	92084-1X503	REV.6000	920910	
CLOSE			43310	43540	92077-1X536	REV.2340	830819	
\$OPEN			43541	43771	92077-1X544	REV.5010	<880126.1535>	
.DIN			43772	43777	24998-1X042	REV.2001	780818	
ST.LU			44000	44204	92084-1X500	REV.2121	800804	
G1ROT			44205	44374	92084-1X501	REV.2121	810506	
SEGLD			44375	44615	92084-1X049	REV.5000	<860826.1024>	
G1CEX			44616	44777	92084-1X499	REV.2121	811014	
XREIO			45000	45150	92084-1X923	REV.5000	840228	
.DMP			45151	45316	24998-1X045	REV.2001	780818	
RWND\$			45317	45451	92077-1X534	REV.2326	<830217.1306>	
R/W\$			45452	45567	92077-1X532	REV.2340	830217	
PRTN			45570	45702	92084-1X007	REV.2121	771005	
SYSRQ			45703	45776	92084-1X002	REV.2121	810831	
.LWAS			45777	45777	92084-1X411	REV.2121	810717	
.DADS			46000	46107	24998-1X036	REV.2001	780818	
LUTRU			46110	46215	92084-1X036	REV.2121	810519	
.BFSZ			46216	46312	92077-1X658	REV.2340	830226	
\$SMVE			46313	46405	92084-1X046	REV.2121	800129	
.ENTR			46406	46475	24998-1X192	REV.2001	750701	
UPASC			46476	46565	24998-1X539	REV.2226	820302	
IFTTY			46566	46650	92084-1X025	REV.6000	921030	IFTTY for RTE-6
IDGET			46651	46733	92084-1X029	REV.2121	790314	
LOGLU			46734	47011	92084-1X027	REV.2121	790228	
PTERR			47012	47052	92084-1X044	REV.2121	810126	
.DFER			47053	47110	24998-1X199	REV.2001	790523	
.CACT			47111	47145	92084-1X263	REV.2340	810128	
RMPAR			47146	47176	92084-1X069	REV.2121	811001	
POST			47177	47226	92077-1X527	REV.2326	<830217.1319>	
\$SETP			47227	47253	24998-1X013	REV.2001	781106	

COR.A	47254	47274	92084-1X009	REV.2121	770621
PARSE	47275	47314	92084-1X012	REV.2121	770714
\$PARS	47315	47540	92084-1X013	REV.2226	820225
SESSN	47541	47556	92084-1X256	REV.2121	780413
KCVT	47557	47572	92084-1X011	REV.2121	770621
\$CVT3	47573	47660	92084-1X018	REV.2121	770621
.DDE	47661	47672	24998-1X039	REV.2001	780818
.DRCT	47673	47701	24998-1X047	REV.2440	790523
.DBTS	47702	47705	92084-1Y010	REV.2340	830628

BP LINKAGE 124

GASP1 a segment of GASP

GASP1	(*****)	47706	47717	92084-1X504	REV.2121	810505
G1CDS		47726	51511	92084-1X507	REV.2121	810506
.UNAM		51514	51627	92084-1X266	REV.2340	790129
.CLGN		51630	51730	92084-1X262	REV.2340	780928
CNUMD		51731	51750	92084-1X015	REV.2121	770621
IPRSN		51753	52041	92084-1X258	REV.2121	790103
G1CCJ		52044	53107	92084-1X506	REV.2121	790621
G1SSN		53110	53665	92084-1X502	REV.2121	810508
KHAR		53666	54034	92084-1X042	REV.2121	770525
G1CDJ		54045	54611	92084-1X505	REV.2121	810506
PARSN		54612	55221	92084-1X257	REV.2121	790801
G1CUP		55222	55612	92084-1X508	REV.2121	811015
G1STM		55626	56070	92084-1X509	REV.2121	790103
MESSS		56071	56431	92084-1X458	REV.2440	<841005.1346>
CAPCK		56432	57002	92084-1X028	REV.2121	810126
VSCBA		57003	57052	92084-1X461	REV.2121	810201
\$ESTB		57053	57067	92084-1X048	REV.2121	790202

BP LINKAGE 224

GASP2 a segment of GASP

GASP2	(*****)	47706	47720	92084-1X510	REV.2121	810505
G1CIN		47721	51511	92084-1X514	REV.6000	920910
CNUMD		51521	51540	92084-1X015	REV.2121	770621
CREAT		51564	52150	92077-1X379	REV.2326	<830218.1103>
G1CKS		52166	53657	92084-1X511	REV.2121	810505
NAM..		53660	53754	92077-1X530	REV.2340	830217
G1C??		53756	55007	92084-1X513	REV.6000	920910
G1CDA		55013	55624	92084-1X515	REV.2121	800102
PURGE		55637	56063	92077-1X542	REV.2340	830905
G1SSN		56072	56647	92084-1X502	REV.2121	810508
G1CSD		56650	57423	92084-1X512	REV.2121	810505
MESSS		57424	57764	92084-1X458	REV.2440	<841005.1346>
\$ESTB		57765	60001	92084-1X048	REV.2121	790202
PARSN		60002	60411	92084-1X257	REV.2121	790801
CAPCK		60412	60762	92084-1X028	REV.2121	810126
.UNAM		60763	61076	92084-1X266	REV.2340	790129
.CLGN		61077	61177	92084-1X262	REV.2340	780928
IPRSN		61200	61266	92084-1X258	REV.2121	790103
KHAR		61267	61435	92084-1X042	REV.2121	770525
P..CK		61436	61512	92077-1X483	REV.2340	830218
RP.CK		61513	61721	92084-1X279	REV.2340	810304
VSCBA		61722	61771	92084-1X461	REV.2121	810201
.OPSY		61772	61775	92084-1X062	REV.2121	810126

BP LINKAGE 252

SMP program.

```
SMP      ( 30) 36012 43253 92084-1X517 REV.5000 861008
XREIO      43254 43424 92084-1X923 REV.5000 840228
PRTN      43425 43537 92084-1X007 REV.2121 771005
LUTRU      43540 43645 92084-1X036 REV.2121 810519
SYSRQ      43646 43741 92084-1X002 REV.2121 810831
.CACT      43742 43776 92084-1X263 REV.2340 810128
.DRCT      43777 44005 24998-1X047 REV.2440 790523
READF      44007 45400 92077-1X528 REV.2440 <840730.0942>
RW$UB      45401 45773 92077-1X533 REV.2326 <830217.1306>
.OFLG      45774 45776 92084-1Y010 REV.2340 830628
.DIN      45777 46004 24998-1X042 REV.2001 780818
.DDI      46006 46306 24998-1X040 REV.2001 781021
.DMP      46307 46454 24998-1X045 REV.2001 780818
RWND$      46455 46607 92077-1X534 REV.2326 <830217.1306>
R/W$      46610 46725 92077-1X532 REV.2340 830217
.DADS      46726 47035 24998-1X036 REV.2001 780818
.BFSZ      47036 47132 92077-1X658 REV.2340 830226
$SMVE      47133 47225 92084-1X046 REV.2121 800129
.ENTR      47226 47315 24998-1X192 REV.2001 750701
$CVT3      47316 47403 92084-1X018 REV.2121 770621
ATACH      47404 47471 92084-1X035 REV.2540 <850611.1501>
DTACH      47472 47552 92084-1X034 REV.2121 800129
.DFER      47553 47610 24998-1X199 REV.2001 790523
LUSES      47611 47645 92084-1X039 REV.2121 801124
RMPAR      47646 47676 92084-1X069 REV.2121 811001
POST      47677 47726 92077-1X527 REV.2326 <830217.1319>
$SETP      47727 47753 24998-1X013 REV.2001 781106
SESSN      47754 47771 92084-1X256 REV.2121 780413
.DBTS      47772 47775 92084-1Y010 REV.2340 830628
.DNG      47776 50005 24998-1X046 REV.2001 780818
.DDE      50007 50020 24998-1X039 REV.2001 780818
BP LINKAGE 320
```

JOB program.

```
JOB      ( 30) 36012 41126 92084-1X521 REV.2121 790529
OPEN      41127 41540 92077-1X088 REV.2440 841011
CLOSE      41541 41771 92077-1X536 REV.2340 830819
.OFLG      41772 41774 92084-1Y010 REV.2340 830628
OVRD.      41775 41775 92077-1X482 REV.2340 830218
.DRCT      41776 42004 24998-1X047 REV.2440 790523
READF      42006 43377 92077-1X528 REV.2440 <840730.0942>
RW$UB      43400 43772 92077-1X533 REV.2326 <830217.1306>
.DIN      43773 44000 24998-1X042 REV.2001 780818
.DDI      44002 44302 24998-1X040 REV.2001 781021
NAMR      44303 44602 92084-1X066 REV.2226 820225
$OPEN      44603 45033 92077-1X544 REV.5010 <880126.1535>
XREIO      45034 45204 92084-1X923 REV.5000 840228
KHAR      45205 45353 92084-1X042 REV.2121 770525
.DMP      45354 45521 24998-1X045 REV.2001 780818
RWND$      45522 45654 92077-1X534 REV.2326 <830217.1306>
R/W$      45655 45772 92077-1X532 REV.2340 830217
.DBTS      45773 45776 92084-1Y010 REV.2340 830628
.DNG      45777 46006 24998-1X046 REV.2001 780818
.DADS      46010 46117 24998-1X036 REV.2001 780818
.UACT      46120 46221 92084-1X264 REV.2340 790129
.CLGN      46222 46322 92084-1X262 REV.2340 780928
```

.BFSZ	46323	46417	92077-1X658	REV.2340	830226	
SYSRQ	46420	46513	92084-1X002	REV.2121	810831	
\$SMVE	46514	46606	92084-1X046	REV.2121	800129	
.ENTR	46607	46676	24998-1X192	REV.2001	750701	
SPOP	46677	46763	92084-1X215	REV.2121	801212	
IFTTY	46764	47046	92084-1X025	REV.6000	921030	IFTTY for RTE-6
LOGLU	47047	47124	92084-1X027	REV.2121	790228	
.DFER	47125	47162	24998-1X199	REV.2001	790523	
.CACT	47163	47217	92084-1X263	REV.2340	810128	
RMPAR	47220	47250	92084-1X069	REV.2121	811001	
POST	47251	47300	92077-1X527	REV.2326	<830217.1319>	
\$SETP	47301	47325	24998-1X013	REV.2001	781106	
SESSN	47326	47343	92084-1X256	REV.2121	780413	
.DDE	47344	47355	24998-1X039	REV.2001	780818	
BP LINKAGE	153					

LGTAT program.

LGTAT	(	99)	36012	40337	92084-16166	REV.6000	920904
SETAT			40340	40465	92084-1X081	REV.2301	821014
.ENTR			40466	40555	24998-1X192	REV.2001	750701
\$CVT3			40556	40643	92084-1X018	REV.2121	770621
RMPAR			40644	40674	92084-1X069	REV.2121	811001
IFBRK			40675	40722	92084-1X078	REV.2121	800129
BP LINKAGE			11				

DSRTR program.

DSRTR	(	30)	24012	24110	92570-16257	REV.6000	910206
--DS_STARTINGLOC			24111	24111			
--DS_CONNUM			24112	24113			
--DS_INPARMS			24114	24120			
--DS_INSTRING			24121	26120			
--DS_MEM			26121	26122			
--DS_OLDSYS			26123	26135			
--DS_NAMEPTRS			26136	26227			
DSBUILDNAMETABLE			26230	27135	92570-16257	REV.5010	880103
DSDONNEWREQ			27136	27666	92570-16257	REV.6000	910206
ADDITEM			27667	27776	92570-1X258	REV.2326	830801
/DS_INSTRING/			27777	27776	92570-16257	REV.6000	851018
ADDRESSOF			27777	30004	92570-1X236	REV.2326	830407
DSSETDEFAULTLOGO			30006	30402	92570-16257	REV.5010	880526
--DS_CONS			30403	33402			
DSNEWFILENAME			33403	33660	92570-16257	REV.2326	830326
.SST			33661	33776	24998-1X336	REV.2140	810812
/DS_NAMEPTRS/			33777	33776	92570-16257	REV.6000	851018
.OPSY			33777	34002	92084-1X062	REV.2121	810126
--DS_LASTDS315ERR			34004	34033			
--DS_OUTPARMS			34034	34040			
DSENDRECEIVE			34041	36310	92570-16257	REV.2326	830326
#MAST			36312	37231	91750-1X019	REV.2301	ALL \$Date: 89/10/26 15:
#MAAS			37232	37647	91750-1X015	REV.2113	801120 ALL M.A.
--FMPBUFFER			37650	37747			
FMPREPORTERROR			37750	40072	92077-1X503	REV.2540	850723
#MSSM			40133	42226	91750-1X020	REV.5000	W/S.M. \$Date: 89/04/05
FMPPARSENAME			42231	42570	92077-1X504	REV.5000	860311
DSNEWOPENCON			42571	43042	92570-16257	REV.2326	830326
DSFIXNAME			43043	43546	92570-16257	REV.2340	830924

DSNEWERRORMSG	43547	43767	92570-16257	REV.2440	840510	
DSNEWUNPURGE	43770	43776	92570-16257	REV.2326	830326	
GNODE	43777	44006	91750-1X123	REV.2013	\$Date: 89/04/18 12:08:3	
#POOS	44010	44252	91750-1X277	REV.2340	ALL W/SM\$Date: 89/04/11	
DSERR	44253	44510	91750-1X076	REV. 2013	ALL \$Date: 89/04/14 10	
#GET	44511	44742	91750-1X009	REV.2301	ALL \$Date: 89/04/04 13:	
DSNEWOPEN	44743	45153	92570-16257	REV.2326	830326	
FMPBUILDNAME	45154	45361	92077-1X504	REV.5000	870121	
DSTRYLOGON	45362	45555	92570-16257	REV.5010	871111	
DSNEWSYSINFO	45556	45750	92570-16257	REV.5000	860702	
DSFINISH	45751	45776	92570-16257	REV.2326	830326	
.IDNA	45777	46010	92084-1Y010	REV.2340	830628	
DSNEWRENAME	46012	46176	92570-16257	REV.5010	871111	
DSNEWOPENROOT	46177	46357	92570-16257	REV.2326	830326	
.IOER	46360	46534	24998-1X321	REV.5000	850927	
XREIO	46535	46705	92084-1X923	REV.5000	840228	
DSNEWIDTOGROUP	46706	47051	92570-16257	REV.5000	860606	
DSNEWIDTOOWNER	47052	47215	92570-16257	REV.5000	860606	
DSNEWDIRINFO	47216	47354	92570-16257	REV.6000	910208	
SPLITSTRING	47355	47512	92077-1X992	Rev.5010	881004	Decompose string
--NLLANGNUMBER	47513	47514				
FMPERROR	47515	47650	92570-1X106	REV.2440	841217	
DSNEWGROUPTOID	47651	47773	92570-16257	REV.5000	860606	
ER0.E	47774	47775	24998-1X249	REV.2540	850927	
ER0.T	47776	47776	24998-1X321	REV.2540	850927	
GETFATHERIDNUM	47777	50010	92084-1Y014	REV.2340	830809	
FMPASKDDOT	50012	50227	92570-1X106	REV.6000	920225	
FMPOPEN	50230	50361	92570-1X106	REV.2326	830728	
#NAT	50362	50504	91750-1X276	REV.2326	ALL\$Date: 89/04/05 15:4	
DSNEWOWNERTOID	50505	50625	92570-16257	REV.5000	860606	
.SCO	50626	50745	24998-1X338	REV.2140	800903	
DSGETACONNECTION	50746	51064	92570-16257	REV.5010	871111	
DSREBUILDNAMETBL	51065	51201	92570-16257	REV.2540	850616	
DELETEITEM	51202	51325	92570-1X258	REV.2326	830801	
FREEMEM	51326	51461	92570-1X258	REV.2326	830801	
PRTN	51462	51574	92084-1X007	REV.2121	771005	
OWNERTOID	51575	51704	92084-1Y014	REV.5010	880118	
.ENTR	51705	51774	24998-1X192	REV.2001	750701	
OVRD.	51775	51775	92077-1X482	REV.2340	830218	
FMPSTARTEVENT	51776	52000	92084-1Y014	REV.2440	841016	
SM.BF	52001	52224	92077-1X495	REV.2340	830218	
#IDSG	52225	52334	91750-1X225	REV.5000	ALL \$Date: 89/04/04 14:	
DSNEWSETPROTECTN	52335	52442	92570-16257	REV.6000	900817	
LUTRU	52443	52550	92084-1X036	REV.2121	810519	
ASKLOGON	52551	52656	92084-1Y014	REV.5000	860219	
FMPREADSTRING	52657	52763	92077-1X503	REV.2326	830728	
UT.BF	52764	53363	92077-1X494	REV.2340	830218	
FMPREAD	53364	53634	92570-1X106	REV.2326	830728	
FMPSETRELPOS	53635	53744	92570-1X106	REV.5010	880712	
CASEFOLD	53745	53776	92570-1X236	REV.6000	901129	
FMPENDEVENT	53777	54001	92084-1Y014	REV.2440	841016	
--FMPREGS	54003	54004				
FMPDOTYPE012	54005	54433	92570-1X106	REV.5010	880712	
FMPSETWORD	54434	55052	92570-1X106	REV.5010	880712	
FMPMOVEDATA	55053	55431	92570-1X106	REV.5010	880308	
.DDI	55432	55732	24998-1X040	REV.2001	781021	
FMPGETLENWORD	55733	55776	92077-1X503	REV.2326	830728	
.DIN	55777	56004	24998-1X042	REV.2001	780818	
FMPACCESSDISC	56006	56276	92077-1X503	REV.6000	920325	

.DMP	56277	56444	24998-1X045	REV.2001	780818
.DADS	56445	56554	24998-1X036	REV.2001	780818
DSNEWCLOSECON	56555	56656	92570-16257	REV.2326	830326
DSFIXDCB	56657	56760	92570-16257	REV.2326	830326
.CLGN	56761	57061	92084-1X262	REV.2340	780928
FMPCLOSE	57062	57161	92570-1X106	REV.6000	900926
DSNEWREADDISC	57162	57260	92570-16257	REV.2326	830326
DECIMALTOINT	57261	57356	92570-1X236	REV.5000	860303
DSNEWDIRFIELD	57357	57452	92570-16257	REV.6000	910206
DSNEWPROTECTION	57453	57546	92570-16257	REV.5010	871111
SYSRQ	57547	57642	92084-1X002	REV.2121	810831
ALLOCATEMEM	57643	57735	92570-1X258	REV.2326	830801
DSNEWTRUNCATE	57736	57776	92570-16257	REV.2326	830326
DISCWORD	57777	60003	92084-1Y014	REV.2340	830809
\$SMVE	60005	60077	92084-1X046	REV.2121	800129
DSTRYLOGOFF	60100	60172	92570-16257	REV.2326	830326
DSGETNODENUMBER	60173	60265	92570-16257	REV.2540	850614
FINDITEM	60266	60366	92570-1X258	REV.2326	830801
--NEXTITEM	60367	60367			
NEXTITEM	60370	60462	92570-1X258	REV.6000	920319
FMPGETDATA	60463	60554	92077-1X503	REV.2326	830728
DSCLOSEREMOTEFIL	60555	60643	92570-16257	REV.5010	871111
HASHITEM	60644	60732	92570-1X258	REV.2440	840503
DSNEWWRITEDISC	60733	61020	92570-16257	REV.2326	830326
DSNEWCREATEDIR	61021	61104	92570-16257	REV.5010	871111
DSNEWPURGE	61105	61170	92570-16257	REV.5010	871111
DSNEWCONNTOID	61171	61253	92570-16257	REV.5000	860606
DTACH	61254	61334	92084-1X034	REV.2121	800129
FMPPOST	61335	61415	92570-1X106	REV.2326	830728
DSNEWDCBPURGE	61416	61474	92570-16257	REV.5010	880525
DSNEWCLOSE	61475	61553	92570-16257	REV.2326	830326
DSNEWPOSITION	61554	61631	92570-16257	REV.2326	830326
INTTODECIMAL	61632	61707	92570-1X236	REV.2540	850606
\$CVT3	61710	61775	92084-1X018	REV.2121	770621
.DDE	61776	62007	24998-1X039	REV.2001	780818
LOGLU	62011	62066	92084-1X027	REV.2121	790228
TRIMLEN	62067	62143	92570-1X236	REV.5000	860612
DSNEWFSTAT	62144	62217	92570-16257	REV.2326	830326
.EXIT	62220	62270	24998-1X320	REV.2440	<841029.1814>
.DCO	62271	62341	24998-1X037	REV.2001	790417
.INDX	62342	62411	24998-1X511	REV.2140	810325
#LOGR	62412	62461	91750-1X013	REV.2013	ALL \$Date: 89/04/05 08:
#GETR	62462	62634	91750-1X010	REV.6000	\$Date: 92/08/10 13:11:5
DSNEWOPENFILES	62635	62703	92570-16257	REV.2326	830326
DSNEWINFO	62704	62752	92570-16257	REV.2326	830326
PNAME	62753	63020	92084-1X075	REV.2121	800801
DSNEWDCBWORD	63021	63065	92570-16257	REV.2326	830326
NONDSLEN	63066	63132	92077-1X504	REV.5000	860311
FMPBUFFERBASE	63133	63177	92077-1X503	REV.2326	830728
FMPEXTENTSIZ	63200	63244	92077-1X503	REV.2326	830728
DSNEWSETDCBWORD	63245	63307	92570-16257	REV.2326	830326
DSNEWDISCSIZE	63310	63352	92570-16257	REV.2326	830326
.SC	63353	63415	24998-1X340	REV.2140	810221
LIMEM	63416	63457	92084-1X050	REV.2121	810717
DSNEWSETEOF	63460	63520	92570-16257	REV.2326	830326
DSNEWSETDIRINFO	63521	63561	92570-16257	REV.6000	900817
.SBST	63562	63617	24998-1X341	REV.2140	810427
.DFER	63620	63655	24998-1X199	REV.2001	790523
FMPBLOCKSLEFT	63656	63713	92077-1X503	REV.2326	830728

NEXTCLASS	63714	63751	92570-1X258	REV.2326	830801	
INITMEM	63752	63776	92570-1X258	REV.2326	830801	
.LWAS	63777	63777	92084-1X411	REV.2121	810717	
FMPBUFFERSIZE	64000	64034	92077-1X503	REV.2326	830728	
FMPDISCDIFF	64035	64071	92570-1X236	REV.2326	830407	
USERISSUPER	64072	64123	92084-1Y014	REV.2440	841102	
FMPEXTENTBASE	64124	64155	92077-1X503	REV.2326	830728	
RMPAR	64156	64206	92084-1X069	REV.2121	811001	
.FION	64207	64236	24998-1X355	REV.2326	830406	
MOD	64237	64266	24998-1X107	REV.2001	751101	
FMPDISCOFFSET	64267	64313	92570-1X236	REV.2326	830407	
CLEARBUFFER	64314	64335	92570-1X236	REV.2326	830407	
CHARSMATCH	64336	64357	92570-1X236	REV.2326	830407	
DSNEWNODENUMBER	64360	64400	92570-16257	REV.2326	830326	
#OSRV	64401	64421	91750-18310	REV.5000	\$Date: 89/04/05 15:55:2	
COR.A	64422	64442	92084-1X009	REV.2121	770621	
FMPUPDATERECORD	64443	64462	92570-1X106	REV.2326	830728	
.DMOD	64463	64502	24998-1X269	REV.2101	800303	
DCBOPEN	64503	64521	92084-1Y014	REV.2340	830809	
.UFMP	64522	64540	24998-1X296	REV.2326	830406	
.ARTN	64541	64556	24998-1X291	REV.2101	800303	
SECPROGCPLV	64557	64574	92084-1Y014	REV.5000	860603	
ICAPS	64575	64637	92084-1X255	REV.5000	860430	
SESSN	64640	64655	92084-1X256	REV.2121	780413	
GETSEQUENCENUM	64656	64672	92084-1Y014	REV.2340	830809	
MOVEWORDS	64673	64706	92570-1X236	REV.2326	830407	
D\$MWF	64707	64722	91750-1X279	REV.2326	L,M3,IV,6,A1\$Date: 89/0	
SECWORDGET	64723	64734	92084-1Y014	REV.5000	860603	
.DNG	64735	64744	24998-1X046	REV.2001	780818	
.IOCL	64745	64753	24998-1X305	REV.5000	860619	
.IOCM	64754	65017	24998-1X327	REV.2101	801007	
D\$XLD	65020	65023	91750-1X278	REV.2326	L,M3,IV,6,A1\$Date: 89/0	
PAU.E	65024	65025	24998-1X254	REV.2540	850927	
BP LINKAGE	421					

LOADR program.

LOADR	(	90)	16012	23577	92084-1X376	REV.2226	820330	
XREIO			23600	23750	92084-1X923	REV.5000	840228	
IFBRK			23751	23776	92084-1X078	REV.2121	800129	
SGET			23777	24014	92068-1X105	REV.2226	820115	(.LBT version)
\$OVLY			24026	26724	92084-1X377	REV.2121	811118	
\$AOUT			26750	27636	92084-1X380	REV.2121	810831	
SETAT			27637	27764	92084-1X081	REV.2301	821014	
POST			27766	30015	92077-1X527	REV.2326	<830217.1319>	
READF			30022	31413	92077-1X528	REV.2440	<840730.0942>	
POSNT			31414	31764	92077-1X526	REV.2440	<840730.1532>	
.DDE			31765	31776	24998-1X039	REV.2001	780818	
.OFLG			31777	32001	92084-1Y010	REV.2340	830628	
\$LDIO			32003	32612	92084-1X384	REV.2121	810801	
\$LUTL			32613	33417	92084-1X383	REV.2121	810907	
LOCF			33420	33735	92077-1X539	REV.2326	<830217.1307>	
PTERR			33736	33776	92084-1X044	REV.2121	810126	
.DIN			33777	34004	24998-1X042	REV.2001	780818	
\$SNAP			34006	34612	92084-1X379	REV.2121	810908	
OPEN			34613	35224	92077-1X088	REV.2440	841011	
L.FLG			35225	35617	92084-1X614	REV.5020	<890830.1533>	
L.CLS			35620	35765	92084-1X625	REV.2540	850509	
.DNG			35766	35775	24998-1X046	REV.2001	780818	

OVRD.	35776	35776	92077-1X482	REV.2340	830218	
SESSN	35777	36014	92084-1X256	REV.2121	780413	
RW\$UB	36016	36410	92077-1X533	REV.2326	<830217.1306>	
\$LDER	36411	36713	92084-1X382	REV.2226	820401	
.DDI	36714	37214	24998-1X040	REV.2001	781021	
NAMR	37215	37514	92084-1X066	REV.2226	820225	
APOSN	37515	37752	92077-1X523	REV.2326	<830217.1318>	
\$SETP	37753	37777	24998-1X013	REV.2001	781106	
CLOSE	40000	40230	92077-1X536	REV.2340	830819	
\$OPEN	40231	40461	92077-1X544	REV.5010	<880126.1535>	
\$SUBS	40462	40662	92084-1X385	REV.2121	810801	
.DMP	40663	41030	24998-1X045	REV.2001	780818	
RWND\$	41031	41163	92077-1X534	REV.2326	<830217.1306>	
R/W\$	41164	41301	92077-1X532	REV.2340	830217	
.DADS	41302	41411	24998-1X036	REV.2001	780818	
\$SCAN	41412	41510	92084-1X381	REV.2121	810801	
.BFSZ	41511	41605	92077-1X658	REV.2340	830226	
SYSRQ	41606	41701	92084-1X002	REV.2121	810831	
\$SMVE	41702	41774	92084-1X046	REV.2121	800129	
.DBTS	41775	42000	92084-1Y010	REV.2340	830628	
UPASC	42001	42070	24998-1X539	REV.2226	820302	
.ENTR	42071	42160	24998-1X192	REV.2001	750701	
\$CVT3	42161	42246	92084-1X018	REV.2121	770621	
IFTTY	42247	42331	92084-1X025	REV.6000	921030	IFTTY for RTE-6
\$SEGL	42332	42373	92084-1X378	REV.2121	800821	
.DFER	42374	42431	24998-1X199	REV.2001	790523	
RMPAR	42432	42462	92084-1X069	REV.2121	811001	
.DIS	42463	42512	24998-1X044	REV.2001	780818	
BP LINKAGE	545					

LODR1 a segment of LOADR

LODR1	(*****)	42513	62025	92084-1X386	REV.2226	820401	
CREAT		62026	62412	92077-1X379	REV.2326	<830218.1103>	
PURGE		62413	62637	92077-1X542	REV.2340	830905	
MXMNI		62640	62747	24998-1X109	REV.2001	750701	
NAM..		62750	63044	92077-1X530	REV.2340	830217	
P..CK		63045	63121	92077-1X483	REV.2340	830218	
RP.CK		63122	63330	92084-1X279	REV.2340	810304	
.OPSY		63331	63334	92084-1X062	REV.2121	810126	
BP LINKAGE	617						

LODR2 a segment of LOADR

LODR2	(*****)	42513	42624	92084-1X387	REV.2121	810801	
CREAT		42625	43211	92077-1X379	REV.2326	<830218.1103>	
NAM..		43212	43306	92077-1X530	REV.2340	830217	
IDGET		43307	43371	92084-1X029	REV.2121	790314	
.OWNR		43372	43447	92084-1X040	REV.2121	811126	
LOGLU		43450	43525	92084-1X027	REV.2121	790228	
BP LINKAGE	556						

LODR3 a segment of LOADR

LODR3	(*****)	42513	42765	92084-1X388	REV.2121	810801	
L.SYE		42766	43156	92084-1X620	REV.2121	810922	
L.LUN		43157	43303	92084-1X618	REV.2121	810826	
L.LDF		43304	43423	92084-1X617	REV.2226	820405	
L.INT		43424	43534	92084-1X615	REV.2121	<811113.1029>	

L.MLS	43535	43641	92084-1X628	REV.2121	810129
L.MAT	43642	43724	92084-1X624	REV.2121	810129
L.ADD	43725	43771	92084-1X616	REV.2121	810129
L.SGN	43772	44006	92084-1X623	REV.2121	<8111113.1045>
L.REL	44105	52302	92084-1X612	REV.5020	<890828.2035>
L.IFX	52320	52376	92084-1X621	REV.2121	810128
L.FXE	52377	52437	92084-1X630	REV.2121	810129
L.SG0	52440	52455	92084-1X622	REV.2121	<8111113.1044>
L.LNK	52471	54321	92084-1X613	REV.2440	<850212.1633>

BP LINKAGE 1107

LODR4 a segment of LOADR

LODR4	(*****)	42513	42542	92084-1X389	REV.2121	810801
\$LDN1		42563	44723	92084-1X390	REV.2540	<850819.1348>
FTIME		44745	45236	92084-1X032	REV.2121	780731
PRTN		45237	45351	92084-1X007	REV.2121	771005
\$FREEIDEXT		45352	45456	92084-1Y037	REV.2540	<850820.1611>
\$LKL2		45457	45507	92084-1Y037	REV.2540	<850820.1611>
\$LDN2		45515	46624	92084-1X391	REV.2540	<860221.1414>
\$FINDIDEXT		46635	46733	92084-1Y037	REV.2540	<850820.1611>
\$SETDRIDEXT		46734	47002	92084-1Y037	REV.2540	<850820.1611>
\$SETIDEXT		47003	47034	92084-1Y037	REV.2540	<850820.1611>

BP LINKAGE 616

AUTOR program.

AUTOR	(	10)	16012	16412	91730-16009	REV.2140	<810902.0949>
FIXMP			16413	16505	91730-1X008	REV.2140	<810824.0822>
.OPSY			16506	16511	92084-1X062	REV.2121	810126

BP LINKAGE 4

ACCTS program.

ACCTS	(	90)	24012	24430	92067-16361	REV.6000	920909
ACXFR			24431	25377	92067-16361	REV.1940	790722
LOCF			25400	25715	92077-1X539	REV.2326	<830217.1307>
DTACH			25716	25776	92084-1X034	REV.2121	800129
.OFLG			25777	26001	92084-1Y010	REV.2340	830628
ACOM1			26003	27423			
ACHLP			27424	27736	92067-16361	REV.1940	790722
RMPAR			27737	27767	92084-1X069	REV.2121	811001
ACOMA			27770	27774			
ACOM5			27775	27777			
ACMND			30000	30745	92067-16361	REV.2226	820317
ACOM3			30746	31641			
ACOMB			31642	31774			
OPSYS			31775	32000	92084-1X057	REV.2121	800507
ACREI			32001	32423	92067-16363	REV.2340	830728
OPEN			32424	33035	92077-1X088	REV.2440	841011
ACOPL			33036	33414	92067-16363	REV.2001	791016
NAMR			33415	33714	92084-1X066	REV.2226	820225
LOGLU			33715	33772	92084-1X027	REV.2121	790228
.OPSY			33773	33776	92084-1X062	REV.2121	810126
OVRD.			33777	33777	92077-1X482	REV.2340	830218
READF			34000	35371	92077-1X528	REV.2440	<840730.0942>
RW\$UB			35372	35764	92077-1X533	REV.2326	<830217.1306>
.DDE			35765	35776	24998-1X039	REV.2001	780818
.DIN			35777	36004	24998-1X042	REV.2001	780818

.DDI	36006	36306	24998-1X040	REV.2001	781021	
ACPAS	36307	36603	92067-16362	REV.2440	840522	
ACPSN	36604	37042	92067-16362	REV.1940	790801	
PARSN	37043	37452	92084-1X257	REV.2121	790801	
APOSN	37453	37710	92077-1X523	REV.2326	<830217.1318>	
ACPRM	37711	37776	92067-16361	REV.1940	790125	
.DNG	37777	40006	24998-1X046	REV.2001	780818	
CLOSE	40010	40240	92077-1X536	REV.2340	830819	
\$OPEN	40241	40471	92077-1X544	REV.5010	<880126.1535>	
ACOM9	40472	40701				
IFBNR	40702	41110	92067-16361	REV.1940	790104	
ACWRI	41111	41314	92067-16361	REV.1940	781024	
ENCRP	41315	41501	92084-1X449	REV.2440	840523	
ACWRL	41502	41655	92067-16361	REV.1940	790606	
ACTIN	41656	41774	92067-16361	REV.1940	781024	
ACOMD	41775	42005				
XREIO	42006	42156	92084-1X923	REV.5000	840228	
.DMP	42157	42324	24998-1X045	REV.2001	780818	
ACTRM	42325	42471	92067-16363	REV.2001	791020	
ACLCK	42472	42635	92067-16363	REV.1940	790721	
RWND\$	42636	42770	92077-1X534	REV.2326	<830217.1306>	
ACUSH	42771	43114	92067-16363	REV.2126	810414	
R/W\$	43115	43232	92077-1X532	REV.2340	830217	
ACOPN	43233	43343	92067-1X366	REV.2301	821001	
.DADS	43344	43453	24998-1X036	REV.2001	780818	
LUTRU	43454	43561	92084-1X036	REV.2121	810519	
ACROP	43562	43667	92067-16363	REV.1940	790721	
.BFSZ	43670	43764	92077-1X658	REV.2340	830226	
.DBTS	43765	43770	92084-1Y010	REV.2340	830628	
ACOM6	43771	44003				
CREAT	44004	44370	92077-1X379	REV.2326	<830218.1103>	
POSNT	44371	44741	92077-1X526	REV.2440	<840730.1532>	
NAM..	44742	45036	92077-1X530	REV.2340	830217	
SYSRQ	45037	45132	92084-1X002	REV.2121	810831	
ACITA	45133	45226	92067,16361	REV.1940	780801	
.ISHC	45227	45322	24998-1X451	REV.2140	810317	
\$SMVE	45323	45415	92084-1X046	REV.2121	800129	
.ENTR	45416	45505	24998-1X192	REV.2001	750701	
IFTTY	45506	45570	92084-1X025	REV.6000	921030	IFTTY for RTE-6
ACOM4	45571	45645				
ACLLL	45646	45722	92067-16361	REV.1940	790721	
ACCLS	45723	45776	92067-16361	REV.1940	790722	
SESSN	45777	46014	92084-1X256	REV.2121	780413	
ACOM8	46016	46066				
PNAME	46067	46134	92084-1X075	REV.2121	800801	
ACLNK	46135	46175	92067-16361	REV.1940	790214	
SEGLD	46176	46416	92084-1X049	REV.5000	<860826.1024>	
IDGET	46417	46501	92084-1X029	REV.2121	790314	
ACERR	46502	46542	92067-16361	REV.1940	790307	
PTERR	46543	46603	92084-1X044	REV.2121	810126	
.DFER	46604	46641	24998-1X199	REV.2001	790523	
.FION	46642	46671	24998-1X355	REV.2326	830406	
.DIS	46672	46721	24998-1X044	REV.2001	780818	
ACOM7	46722	46750				
IFBRK	46751	46776	92084-1X078	REV.2121	800129	
\$SETP	46777	47023	24998-1X013	REV.2001	781106	
ACOM2	47024	47045				
ABREG	47046	47067	92084-1X059	REV.2121	750701	
.2TOI	47070	47111	24998-1X517	REV.2140	810317	

ACOMC	47112	47132			
COR.A	47133	47153	92084-1X009	REV.2121	770621
.UFMP	47154	47172	24998-1X296	REV.2326	830406
MBYTE	47173	47210	92067-16361	REV.1940	780822
ER0.E	47211	47212	24998-1X249	REV.2540	850927
PAU.E	47213	47214	24998-1X254	REV.2540	850927
.LWAS	47215	47215	92084-1X411	REV.2121	810717
BP LINKAGE	214				

ACCT1 a segment of ACCTS

ACCT1	(*****)	47216	53422	92067-16361	REV.6000	920909
ACDIR		53423	53656	92067-16361	REV.1940	781024
ACCRE		53657	53754	92067-1X365	REV.2301	821008
ACINT		53755	53770	92067-16361	REV.1940	790515
MOD		53771	54020	24998-1X107	REV.2001	751101
ACACP		54025	55337	92067-16363	REV.2126	810414
ACINM		55340	55761	92067-16363	REV.2001	791016
.GOTO		55763	56020	24998-1X051	REV.2101	800502
ACSES		56021	56527	92067-16363	REV.5020	900105
\$BALC		56530	57207	92084-1X038	REV.2540	850816
ACFDA		57210	57663	92067-16361	REV.1940	781024
.EXIT		57664	57734	24998-1X320	REV.2440	<841029.1814>
ACPGA		57735	57776	92067-16361	REV.1940	781011
ER0.T		57777	57777	24998-1X321	REV.2540	850927
NAMF		60000	60367	92077-1X540	REV.2340	830907
MESSS		60370	60730	92084-1X458	REV.2440	<841005.1346>
CAPCK		60731	61301	92084-1X028	REV.2121	810126
ACSID		61302	61542	92067-16361	REV.1940	790117
PURGE		61543	61767	92077-1X542	REV.2340	830905
.IOCL		61770	61776	24998-1X305	REV.5000	860619
\$ESTB		61777	62013	92084-1X048	REV.2121	790202
ACGSP		62015	62227	92067-16361	REV.1940	790124
.IOER		62230	62404	24998-1X321	REV.5000	850927
IVBUF		62405	62545	92067-16361	REV.1940	781010
P. .CK		62546	62622	92077-1X483	REV.2340	830218
RP. CK		62623	63031	92084-1X279	REV.2340	810304
VSCBA		63032	63101	92084-1X461	REV.2121	810201
ACNVS		63102	63147	92067-16361	REV.1940	781024
.IOCM		63150	63213	24998-1X327	REV.2101	801007
ACSBT		63214	63237	92067-16361	REV.1940	781212
BP LINKAGE	501					

ACCT2 a segment of ACCTS

ACCT2	(*****)	47216	47314	92067-16361	REV.1940	790725
.EXIT		47315	47365	24998-1X320	REV.2440	<841029.1814>
.IOER		47366	47542	24998-1X321	REV.5000	850927
.GOTO		47543	47600	24998-1X051	REV.2101	800502
.IOCL		47601	47607	24998-1X305	REV.5000	860619
.IOCM		47610	47653	24998-1X327	REV.2101	801007
ER0.T		47654	47654	24998-1X321	REV.2540	850927
ACLOA		47655	51542	92067-16362	REV.6000	920909
PURGE		51544	51770	92077-1X542	REV.2340	830905
ACNVS		51771	52036	92067-16361	REV.1940	781024
ACNWU		52103	55777	92067-16362	REV.2540	850731
ACNWG		56000	56737	92067-16361	REV.1940	790227
ACSES		56740	57446	92067-16363	REV.5020	900105
ACGID		57447	57755	92067-16361	REV.1940	781024

ACMSN	57756	60001	92067-16361	REV.1940	781226
ACFDA	60002	60455	92067-16361	REV.1940	781024
NAMF	60456	61045	92077-1X540	REV.2340	830907
ACDIR	61046	61301	92067-16361	REV.1940	781024
ACDFD	61302	61441	92067-16361	REV.1940	781211
ACREL	61442	61547	92067-16361	REV.2340	830729
ACCRE	61550	61645	92067-1X365	REV.2301	821008
ACGTU	61646	61731	92067-16361	REV.1940	781024
ACPGA	61732	61773	92067-16361	REV.1940	781011
MOD	61774	62023	24998-1X107	REV.2001	751101
ACGBT	62030	62106	92067-16361	REV.1940	780807
P. .CK	62107	62163	92077-1X483	REV.2340	830218
RP. CK	62164	62372	92084-1X279	REV.2340	810304
BP LINKAGE	400				

ACCT3 a segment of ACCTS

ACCT3	(*****)	47216	47260	92067-16361	REV.1940	790724
.EXIT		47261	47331	24998-1X320	REV.2440	<841029.1814>
.IOER		47332	47506	24998-1X321	REV.5000	850927
.GOTO		47507	47544	24998-1X051	REV.2101	800502
.IOCL		47545	47553	24998-1X305	REV.5000	860619
.IOCM		47554	47617	24998-1X327	REV.2101	801007
ER0.T		47620	47620	24998-1X321	REV.2540	850927
ACAPA		47621	50417	92067-16362	REV.5020	891020
ACDIR		50431	50664	92067-16361	REV.1940	781024
ACPUU		50717	52441	92067-16361	REV.1940	790725
ACFDA		52460	53133	92067-16361	REV.1940	781024
KHAR		53134	53302	92084-1X042	REV.2121	770525
IPRSN		53303	53371	92084-1X258	REV.2121	790103
ACNVS		53372	53437	92067-16361	REV.1940	781024
MOD		53440	53467	24998-1X107	REV.2001	751101
ACALU		53470	60424	92067-16361	REV.6000	920909
ACSID		60437	60677	92067-16361	REV.1940	790117
ACAST		60700	61105	92067-16361	REV.1940	781024
IVBUF		61106	61246	92067-16361	REV.1940	781010
ACDFD		61247	61406	92067-16361	REV.1940	781211
ACGTU		61407	61472	92067-16361	REV.1940	781024
ACPGA		61473	61534	92067-16361	REV.1940	781011
ACSBT		61535	61560	92067-16361	REV.1940	781212
BP LINKAGE	515					

ACCT4 a segment of ACCTS

ACCT4	(*****)	47216	47350	92067-16361	REV.1940	790725
.EXIT		47351	47421	24998-1X320	REV.2440	<841029.1814>
.IOER		47422	47576	24998-1X321	REV.5000	850927
.GOTO		47577	47634	24998-1X051	REV.2101	800502
.IOCL		47635	47643	24998-1X305	REV.5000	860619
.IOCM		47644	47707	24998-1X327	REV.2101	801007
ER0.T		47710	47710	24998-1X321	REV.2540	850927
ACPUA		47711	51265	92067-16361	REV.2226	820318
ACSES		51266	51774	92067-16363	REV.5020	900105
ACNVS		51775	52042	92067-16361	REV.1940	781024
ACLIA		52077	54775	92067-16362	REV.6000	920909
ACFMT		55023	55400	92067-16361	REV.1940	790725
ACLTM		55401	55724	92067-16361	REV.1940	780823
ACSTR		55725	55776	92067-16361	REV.1940	781024
MOD		55777	56026	24998-1X107	REV.2001	751101

ACLIU	56111	60366	92067-16361	REV.6000	920909
ACTIM	60404	60644	92067-16361	REV.1940	781024
ACGSP	60645	61057	92067-16361	REV.1940	790124
ACSDN	61060	61245	92067-16361	REV.1940	790111
IVBUF	61246	61406	92067-16361	REV.1940	781010
ACNFG	61407	61503	92067-16361	REV.1940	790309
ACGTG	61504	61571	92067-16361	REV.1940	781024
ACGTU	61572	61655	92067-16361	REV.1940	781024
LUSES	61656	61712	92084-1X039	REV.2121	801124
ACDDV	61713	61741	92067-16361	REV.1940	790306
ACFDA	61745	62420	92067-16361	REV.1940	781024
BP LINKAGE	277				

ACCT5 a segment of ACCTS

ACCT5	(*****)	47216	47253	92067-16361	REV.1940	781213
.EXIT		47254	47324	24998-1X320	REV.2440	<841029.1814>
.IOER		47325	47501	24998-1X321	REV.5000	850927
.GOTO		47502	47537	24998-1X051	REV.2101	800502
.IOCL		47540	47546	24998-1X305	REV.5000	860619
.IOCM		47547	47612	24998-1X327	REV.2101	801007
ER0.T		47613	47613	24998-1X321	REV.2540	850927
ACTEL		47623	50445	92067-16361	REV.2426	840403
ACFDA		50466	51141	92067-16361	REV.1940	781024
ACCGT		51142	51234	92067-16361	REV.1940	790412
ACASB		51235	51327	92067-16361	REV.1940	781111
IVBUF		51330	51470	92067-16361	REV.1940	781010
RWNDF		51471	51561	92077-1X529	REV.2326	<830217.1306>
MOD		51562	51611	24998-1X107	REV.2001	751101
ACUNL		51612	53147	92067-16361	REV.1940	790625
ACNXA		53157	53363	92067-16361	REV.1940	781116
.DCO		53364	53434	24998-1X037	REV.2001	790417
ACFID		53435	53464	92067-16361	REV.1940	781116
ACMSN		53465	53510	92067-16361	REV.1940	781226
ACWRH		53512	56024	92067-16361	REV.1940	790801
ACALT		56067	61245	92067-16361	REV.6000	920909
ACINM		61271	61712	92067-16363	REV.2001	791016
ACNVS		61713	61760	92067-16361	REV.1940	781024
ACSES		61762	62470	92067-16363	REV.5020	900105
\$BALC		62473	63152	92084-1X038	REV.2540	850816
BP LINKAGE	304					

D.RTR program.

D.RTR	(	1)	2012	2135	92077-1X455	REV.5000	861007
--REQUEST			2136	2136			
--MEMSIZE			2137	2137			
--MEM			2140	2141			
--STARTINGLOC			2142	2142			
--CALLERLEVEL			2143	2145			
--INPARMS			2146	2152			
DNEWREQ			2153	2530	92077-1X457	REV.6000	920529
--SCRATCHNAME			2531	2531			
--SHAREDENTRY			2532	2571			
--SUPER_USER			2572	2572			
--INSTRING			2573	3172			
NEWOPEN			3224	4325	92077-1X455	REV.5000	860617
--D_STATS_PARMS			4334	4337			

--DHEAD	4340	4344				
--FREEDIRENTRY	4345	4346				
--FATHER	4347	4350				
OPENNEWFILE	4351	5175	92077-1X455	REV.5020	890824	
--LUIINFO	5176	5575				
--CALLERID	5576	5577				
NEWCREATEDIR	5610	6374	92077-1X456	REV.5000	870319	
FINDNEWFILE	6403	7470	92077-1X455	REV.5020	891106	
--TAG	7471	7472				
--EPTR	7473	7475				
ALLOCATEDIR	7476	7771	92077-1X456	REV.5000	860626	
ADDRESSOF	7772	7777	92570-1X236	REV.2326	830407	
NEWSCAN	10000	11057	92077-1X455	REV.5020	891024	
--CACHE	11060	11240				
--LULOCK	11241	11341				
--LASTREAD	11342	11346				
--CLPTR	11347	11450				
--FLAGCOUNT	11451	11451				
--FLAGPTRS	11452	11537				
--GDIRPTRS	11540	11625				
D_DEBUG	11633	12372	92077-1X902	REV.5000	861126	
--OLDENTRY	12400	12417				
--OLDFLAG	12420	12420				
--DEADSCRATCHFILE	12421	12422				
CREATEOLDFILE	12423	13127	92077-1X459	REV.5020	900221	
--SESSION	13130	13130				
--TEMPSPACE	13131	13350				
--CL	13351	13750				
SETUPDISCS	13752	14472	92077-1X460	REV.5000	860221	
--LOWDIRTRACK	14507	14507				
FINDOLDFILE	14510	15455	92077-1X459	REV.5000	860821	
MAKEFILEDCB	15456	15775	92077-1X455	REV.2326	830705	
/D_STATS_PARMS/	15776	15775				
/LUIINFO/	15776	15775	92077-1X458	REV.5000	860626	
/TAG/	15776	15775	92077-1X458	REV.5000	860626	
/EPTR/	15776	15775	92077-1X458	REV.5000	860626	
.DIN	15776	16003	24998-1X042	REV.2001	780818	
CREATEFILEENTRY	16005	16445	92077-1X455	REV.5000	860221	
NEWDISMOUNT	16446	17065	92077-1X456	REV.5270	901008	
NAMEOFFILE	17066	17514	92077-1X457	REV.2540	851004	
CLOSEOLDFILE	17515	17770	92077-1X459	REV.5000	860719	
SECONOF	17771	17775	92084-1Y014	REV.5000	860603	
FTRAP	17776	20004	24998-1X609	REV.2440	<841025.1554>	
MAKEDEVICEDCB	20006	20413	92077-1X455	REV.5020	890821	
NEWUNPURGE	20414	21016	92077-1X456	REV.5270	891205	
SELECTCACHE	21017	21416	92077-1X458	REV.5000	860627	
NEWOPENTEMP	21417	21764	92077-1X455	REV.5000	861010	
NEWMOUNT	21765	21776	92077-1X456	REV.2326	830615	
/CACHE/	21777	21776	92077-1X458	REV.5000	860626	
/LULOCK/	21777	21776	92077-1X458	REV.5000	860626	
/LASTREAD/	21777	21776	92077-1X458	REV.5000	860626	
/FLAGCOUNT/	21777	21776	92077-1X458	REV.5000	860626	
/FLAGPTRS/	21777	21776	92077-1X458	REV.5000	860626	
/GDIRPTRS/	21777	21776	92077-1X458	REV.5000	860626	
ER0.T	21777	21777	24998-1X321	REV.2540	850927	
--NEWTEMPS	22000	22021				
MOUNTNEWDISC	22022	23321	92077-1X456	REV.5270	910604	
OPENOLDFILE	23322	23661	92077-1X459	REV.5000	860509	
GETALLOCINFO	23662	23775	92077-1X458	REV.2326	830316	

.DNG	23776	24005	24998-1X046	REV.2001	780818
FMPPARSENAME	24007	24346	92077-1X504	REV.5000	860311
EMACHANGEBITS	24347	24676	92570-1X258	REV.5010	880818
NEWOPENFILES	24677	25206	92077-1X457	REV.2326	830705
.DDI	25207	25507	24998-1X040	REV.2001	781021
DIRENTRYTONAME	25510	25775	92077-1X457	REV.5000	860617
IXGET	25776	26005	92084-1X030	REV.2121	780731
OLDPURGE	26006	26302	92077-1X459	REV.5000	860721
NEWSETPROTECTION	26303	26572	92077-1X457	REV.5020	891024
READBLOCK	26573	27057	92077-1X458	REV.5000	860627
--OUTPARMS	27060	27064			
--OKDISCS	27065	27066			
ACCESSDISC	27067	27416	92077-1X458	REV.5000	870415
NEWDCBPURGE	27417	27667	92077-1X456	REV.5000	860702
FINISH	27670	27776	92077-1X457	REV.6000	900628
/OKDISCS/	27777	27776	92077-1X460	REV.2340	830811
DISCWORD	27777	30003	92084-1Y014	REV.2340	830809
PURGENEWFIL	30005	30322	92077-1X456	REV.5020	891024
VMAIO	30323	30573	92084-1X098	REV.5000	<870327.1013>
GETADISC	30574	31040	92077-1X460	REV.5010	880211
NEWPROTECTION	31041	31303	92077-1X457	REV.5020	891024
TRUNCATEOLDFILE	31304	31537	92077-1X459	REV.2326	830616
WRITEBLOCK	31540	31762	92077-1X458	REV.5000	860722
ERRFINISH	31763	31776	92077-1X457	REV.2326	830705
.DDE	31777	32010	24998-1X039	REV.2001	780818
--D_STATS_TABLE	32012	32014			
D_STATS_	32015	32237	92077-1X902	REV.5000	860326
--REOPENFLAG	32240	32240			
CHECKOLDFLAGS	32241	32461	92077-1X459	REV.2540	850930
WDCHK	32462	32702	92084-1Y014	REV.2440	840627
NEWSETWORKINGDIR	32703	33121	92077-1X457	REV.5020	891024
NEWSETOWNER	33122	33334	92077-1X457	REV.5020	891024
RP.CK	33335	33543	92084-1X279	REV.2340	810304
FMPBUILDNAME	33544	33751	92077-1X504	REV.5000	870121
INITMEM	33752	33776	92570-1X258	REV.2326	830801
/D_STATS_TABLE/	33777	33776			
.OPSY	33777	34002	92084-1X062	REV.2121	810126
NEWSETDIRINFO	34004	34207	92077-1X457	REV.5000	861014
RESCAN	34210	34411	92077-1X459	REV.5020	900221
UPDATENEXTTRACK	34412	34602	92077-1X460	REV.5000	860719
READCL	34603	34771	92077-1X460	REV.5000	850226
NEWRENAME	34772	35156	92077-1X456	REV.2540	850722
NAMR	35157	35456	92084-1X066	REV.2226	820225
RENAMEOLDFILE	35457	35723	92077-1X459	REV.2540	850507
ISITMOUNTED	35724	35775	92077-1X458	REV.5270	900627
UDSP.DECODE	35776	36005	92077-1X504	REV.2440	840628
RENAMENEWFIL	36007	37035	92077-1X456	REV.5020	891024
NEWTOOLDCHECK	37036	37221	92077-1X455	REV.2326	830705
INITIALIZE	37222	37403	92077-1X457	REV.5000	860924
DOPURGE	37404	37564	92077-1X456	REV.5000	860226
.IOER	37565	37741	24998-1X321	REV.5000	850927
FMPEXPANDSIZE	37742	37776	92077-1X503	REV.2326	830728
ER0.E	37777	40000	24998-1X249	REV.2540	850927
MOVEFROMEMA	40001	40151	92570-1X258	REV.5000	860722
XREIO	40152	40322	92084-1X923	REV.5000	840228
GTSCB	40323	40472	92084-1X269	REV.2121	810714
NEWOPENROOT	40473	40641	92077-1X455	REV.5000	861203
GETDISCINFO	40642	41007	92077-1X458	REV.5020	890925
.DMP	41010	41155	24998-1X045	REV.2001	780818

D_STATS_END	41156	41322	92077-1X902	REV.5000	860326
\$EMAS\$	41323	41464	92084-1X085	REV.5000	<861124.1212>
\$SWP\$	41465	41654	92084-1X086	REV.2440	<841114.1528>
SETOPENFLAG	41655	41776	92077-1X458	REV.5000	860226
PROGISSUPER	41777	42004	92084-1Y014	REV.5000	860715
FREEMEM	42006	42141	92570-1X258	REV.2326	830801
NEWPURGE	42142	42274	92077-1X456	REV.5000	860611
DOOLDREQ	42275	42425	92077-1X459	REV.2440	841005
OLDMOUNT	42426	42762	92077-1X460	REV.5000	860626
OLDWRITEDIR	42763	43242	92077-1X460	REV.5010	880330
OLDDISMOUNT	43243	43442	92077-1X460	REV.5000	870506
OLDPOSITION	43443	43607	92077-1X459	REV.2326	830616
OLDSETLOCK	43610	43752	92077-1X460	REV.5000	860626
DISCTOBLOCK	43753	43775	92570-1X236	REV.2326	830407
OLDMCOPEN	43776	44004	92077-1X460	REV.2540	850507
POSITIONNEWFILE	44007	45167	92077-1X456	REV.5000	860702
POSITIONOLDFILE	45170	45404	92077-1X459	REV.2540	851004
UPDATEPROT	45405	45535	92077-1X457	REV.5000	860221
OLDOPEN	45536	45666	92077-1X459	REV.2540	850805
ALLOCATESPACE	45667	45776	92077-1X458	REV.5000	860624
OLDMCRECOVER	45777	46005	92077-1X460	REV.2540	851004
UPDATEBITMAP	46007	46147	92077-1X458	REV.5000	870415
INITCACHE	46150	46276	92077-1X458	REV.5020	890206
CLOSENEWFILE	46277	46425	92077-1X455	REV.2326	830705
TESTACCESS	46426	46554	92077-1X458	REV.5000	860221
EMAFINDBITS	46555	46703	92570-1X258	REV.5000	860620
EMAFINDNBITS	46704	47316	92570-1X236	REV.5000	860620
NEWPOSITION	47317	47443	92077-1X456	REV.2540	851004
GLOBALDIRLOC	47444	47566	92077-1X458	REV.5270	900627
PREVIOUSENTRY	47567	47707	92077-1X460	REV.2326	830811
FMPLASTFILENAME	47710	47776	92077-1X503	REV.5000	860312
OLDMCFLAGS	47777	50005	92077-1X460	REV.2540	850508
NEWSIZE	50007	50126	92077-1X457	REV.5020	891024
UDSP.GETENTRY	50127	50245	92077-1X504	REV.2440	840628
UDSP.MOVE	50246	50403	92084-1Y014	REV.2440	841011
WDNAME	50404	50522	92077-1X457	REV.6000	920529
.SST	50523	50640	24998-1X336	REV.2140	810812
FINDGDIR	50641	50756	92077-1X458	REV.2326	830316
OLDWRITEBLOCK	50757	51073	92077-1X460	REV.5000	860619
PRTN	51074	51206	92084-1X007	REV.2121	771005
NEWTRUNCATE	51207	51320	92077-1X457	REV.2540	851004
TRUNCATENNEWFILE	51321	51714	92077-1X457	REV.5010	880122
OLDDIRADDTONEW	51715	51776	92077-1X458	REV.2326	830316
.IRES	51777	52010	92084-1X091	REV.2121	801106
DIRADDRESSOF	52012	52122	92077-1X458	REV.2326	830316
TAKEDISCS	52123	52233	92077-1X460	REV.5010	881028
.DADS	52234	52343	24998-1X036	REV.2001	780818
MXMNI	52344	52453	24998-1X109	REV.2001	750701
ADDITEM	52454	52563	92570-1X258	REV.2326	830801
READTRACK	52564	52670	92077-1X460	REV.5000	860617
DDIR	52671	52773	92084-1Y014	REV.2340	830809
NEWINFO	52774	53075	92077-1X457	REV.5000	861021
NEWDIRINFO	53076	53176	92077-1X457	REV.6000	920529
FLAGWITHIN	53177	53277	92077-1X457	REV.2326	830705
FINDITEM	53300	53400	92570-1X258	REV.2326	830801
OLDCREATE	53401	53477	92077-1X459	REV.2326	830616
DECIMALTOINT	53500	53575	92570-1X236	REV.5000	860303
REMOVEDEADFLAGS	53576	53673	92077-1X458	REV.5000	860226
FILEOPEN	53674	53770	92077-1X458	REV.5000	860502

GETFATHERIDNUM	53771	54002	92084-1Y014	REV.2340	830809	
GETEXTENT	54003	54077	92077-1X458	REV.2326	830316	
.LKWD	54100	54174	92084-1Y010	REV.5000	861023	
D_STATS_COUNT	54175	54271	92077-1X902	REV.5000	860326	
ENCRYPTNAME	54272	54366	92570-1X236	REV.2326	830407	
ZAPBUFFER	54367	54462	92077-1X458	REV.5000	860626	
READBITMAP	54463	54556	92077-1X458	REV.5000	860617	
NEWWORKINGDIR	54557	54651	92077-1X457	REV.6000	920529	
\$SMVE	54652	54744	92084-1X046	REV.2121	800129	
ALLOCATEMEM	54745	55037	92570-1X258	REV.2326	830801	
--NEXTITEM	55040	55040				
NEXTITEM	55041	55133	92570-1X258	REV.6000	920319	
PUTOLDENTRY	55134	55225	92077-1X460	REV.5000	860617	
OLDFREE	55226	55317	92077-1X460	REV.2326	830811	
OLDDIROK	55320	55411	92077-1X460	REV.2326	830811	
DEADOWNER	55412	55503	92077-1X460	REV.5000	860514	
NEWERRORMSG	55504	55574	92077-1X457	REV.5000	860603	
FREESPACE	55575	55665	92077-1X458	REV.5010	880122	
OLDFILESIZE	55666	55756	92077-1X457	REV.2326	830705	
USNUM	55757	55776	92084-1Y014	REV.2440	840731	
.IDNA	55777	56010	92084-1Y010	REV.2340	830628	
.ENTR	56012	56101	24998-1X192	REV.2001	750701	
OKASCII	56102	56171	92570-1X258	REV.2326	830801	
CLEAREMA	56172	56260	92570-1X258	REV.5000	860722	
DELETEDIRS	56261	56347	92077-1X458	REV.2326	830316	
DELETEITEM	56350	56473	92570-1X258	REV.2326	830801	
--ELAPSEDTIME	56474	56475				
ELAPSEDTIME	56476	56564	92570-1X258	REV.6000	920319	
EXEC11TOMS	56565	56665	92570-1X258	REV.2326	830801	
HASHITEM	56666	56754	92570-1X258	REV.2440	840503	
ATACH	56755	57042	92084-1X035	REV.2540	<850611.1501>	
CAPCHECK	57043	57130	92077-1X458	REV.5020	890912	
REMOVEOPENFLAG	57131	57216	92077-1X458	REV.5000	860226	
DELETFROMCL	57217	57303	92077-1X460	REV.2326	830811	
ERRABORTMOUNTNEW	57304	57370	92077-1X456	REV.5270	901008	
RPERROR	57371	57454	92077-1X456	REV.2326	830615	
GETOLDENTRY	57455	57540	92077-1X460	REV.5000	860617	
GETEXTENTBLOCK	57541	57624	92077-1X458	REV.2326	830316	
ADDOCL	57625	57710	92077-1X460	REV.2326	830811	
IFTTY	57711	57773	92084-1X025	REV.6000	921030	IFTTY for RTE-6
SECWORDGET	57774	60005	92084-1Y014	REV.5000	860603	
KILLSCRATCHFILE	60007	60067	92077-1X459	REV.2326	830616	
DTACH	60070	60150	92084-1X034	REV.2121	800129	
D_STATS_INIT	60151	60230	92077-1X902	REV.5000	860326	
DCBPOSITION	60231	60310	92077-1X456	REV.2326	830615	
NEWDIRFIELD	60311	60366	92077-1X457	REV.5020	891024	
INTTODECIMAL	60367	60444	92570-1X236	REV.2540	850606	
\$CVT3	60445	60532	92084-1X018	REV.2121	770621	
OLDRPERROR	60533	60610	92077-1X456	REV.2540	850727	
INITIALMOUNT	60611	60665	92077-1X457	REV.2326	830705	
NEWSETEOF	60666	60742	92077-1X457	REV.2326	830705	
TRIMLEN	60743	61017	92570-1X236	REV.5000	860612	
OLDCLOSE	61020	61074	92077-1X459	REV.5000	860221	
PUTDIRINFO	61075	61150	92077-1X458	REV.5000	860617	
NEWDIRADDTOOLD	61151	61224	92077-1X458	REV.2326	830316	
.ASKD	61225	61276	92084-1Y010	REV.5020	890925	
.DCO	61277	61347	24998-1X037	REV.2001	790417	
ADDGDIR	61350	61420	92077-1X458	REV.2326	830316	
.IDL	61421	61470	24998-1X506	REV.2301	821007	

.INDX	61471	61540	24998-1X511	REV.2140	810325
FMPRWBITS	61541	61607	92077-1X503	REV.2326	830728
OLDPACK	61610	61656	92077-1X460	REV.2326	830811
VMAST	61657	61725	92084-1X101	REV.2121	810513
GETDIRINFO	61726	61773	92077-1X458	REV.5000	860617
GETMYSESSWORD	61774	62006	92084-1Y014	REV.2440	840731
TESTSPACE	62010	62055	92077-1X458	REV.5000	860617
EMACHECKBITS	62056	62347	92570-1X258	REV.5000	880620
PNAME	62350	62415	92084-1X075	REV.2121	800801
NEWPACK	62416	62462	92077-1X458	REV.2326	830316
NONDSLEN	62463	62527	92077-1X504	REV.5000	860311
GET1DISC	62530	62574	92077-1X460	REV.2326	830811
FMPBUFFERBASE	62575	62641	92077-1X503	REV.2326	830728
OLDCLEARLOCK	62642	62705	92077-1X460	REV.5000	860626
RETURNPARMS	62706	62750	92077-1X460	REV.2326	830811
CLEAROPENFLAG	62751	63013	92077-1X458	REV.5000	860226
LIMEM	63014	63055	92084-1X050	REV.2121	810717
NEWCLOSE	63056	63117	92077-1X455	REV.2326	830705
SINGLESIZE	63120	63161	92077-1X460	REV.2326	830811
OLDUNPACK	63162	63223	92077-1X460	REV.2326	830811
LOSEONOLD	63224	63265	92077-1X457	REV.2340	830816
FMPPACKSIZE	63266	63326	92077-1X503	REV.2326	830728
CINDEX	63327	63366	92570-1X236	REV.2326	830407
DOUBLESIZE	63367	63426	92077-1X460	REV.2326	830811
D_STATS_SEND	63427	63466	92077-1X902	REV.5000	860716
FINDFLAG	63467	63525	92077-1X458	REV.2326	830316
DELETEGDIR	63526	63564	92077-1X458	REV.2326	830316
LJLOCKED	63565	63623	92084-1Y014	REV.2340	830809
OLDRENAME	63624	63662	92077-1X459	REV.2340	830616
RETURNSTRING	63663	63721	92077-1X458	REV.2326	830316
.SBST	63722	63757	24998-1X341	REV.2140	810427
CHECKDS	63760	63776	92077-1X458	REV.2326	830316
.LWAS	63777	63777	92084-1X411	REV.2121	810717
NEWUNPACK	64000	64035	92077-1X458	REV.2326	830316
.DFER	64036	64073	24998-1X199	REV.2001	790523
NEXTCLASS	64074	64131	92570-1X258	REV.2326	830801
DIRADDOK	64132	64166	92077-1X458	REV.2326	830316
LUSES	64167	64223	92084-1X039	REV.2121	801124
FMPDISCDIFF	64224	64260	92570-1X236	REV.2326	830407
.ISH	64261	64313	24998-1X292	REV.2101	801023
D_STATS_START	64314	64346	92077-1X902	REV.5000	860326
TIMENOW	64347	64400	92570-1X258	REV.2326	830801
SECONDS	64401	64526	92570-1X258	REV.2326	830801
CASEFOLD	64527	64560	92570-1X236	REV.6000	901129
SEQUENTIAL	64561	64612	92077-1X458	REV.2326	830316
USERISSUPER	64613	64644	92084-1Y014	REV.2440	841102
OLDALTERCL	64645	64676	92077-1X460	REV.2326	830811
FMPEXTENTBASE	64677	64730	92077-1X503	REV.2326	830728
FMPEXTENTSIZE	64731	64775	92077-1X503	REV.2326	830728
GETCALLERID	64776	65026	92084-1Y014	REV.5000	860221
SETOPENFILEBIT	65027	65057	92084-1Y014	REV.2340	830809
RMPAR	65060	65110	92084-1X069	REV.2121	811001
.FION	65111	65140	24998-1X355	REV.2326	830406
LOGLU	65141	65216	92084-1X027	REV.2121	790228
CHECKTAG	65217	65246	92077-1X458	REV.2326	830316
MOD	65247	65276	24998-1X107	REV.2001	751101
NEWFILENAME	65277	65325	92077-1X457	REV.2440	840725
OLDLU	65326	65354	92077-1X460	REV.2326	830811
.IBCL	65355	65402	24998-1X501	REV.2140	810317

.IBST	65403	65427	24998-1X500	REV.2140	810317
LUI\$ACTU	65430	65454	92084-1Y014	REV.2340	830809
BLANKSTRING	65455	65476	92570-1X236	REV.2326	830407
CHAR\$MATCH	65477	65520	92570-1X236	REV.2326	830407
CLEARBUFFER	65521	65542	92570-1X236	REV.2326	830407
.2TOI	65543	65564	24998-1X517	REV.2140	810317
L\$PTE	65565	65605	92084-1X099	REV.2121	801204
COR.A	65606	65626	92084-1X009	REV.2121	770621
BLOCKTODISC	65627	65646	92570-1X236	REV.2326	830407
.DMOD	65647	65666	24998-1X269	REV.2101	800303
.CLAD	65667	65706	92084-1Y010	REV.2340	830628
.UFMP	65707	65725	24998-1X296	REV.2326	830406
.ARTN	65726	65743	24998-1X291	REV.2101	800303
MAILCL	65744	65761	92077-1X457	REV.2326	830705
LUOF	65762	65776	92077-1X458	REV.2326	830316
PAU.E	65777	66000	24998-1X254	REV.2540	850927
SECPRG\$CPLV	66001	66016	92084-1Y014	REV.5000	860603
ICAPS	66017	66061	92084-1X255	REV.5000	860430
SESSN	66062	66077	92084-1X256	REV.2121	780413
.DLDE	66100	66115	24998-1X516	REV.5010	880303
GETSEQUENCENUM	66116	66132	92084-1Y014	REV.2340	830809
LU2.3	66133	66147	92084-1Y010	REV.2340	830927
MOVEWORDS	66150	66163	92570-1X236	REV.2326	830407
OPENFILEBIT	66164	66177	92084-1Y014	REV.2340	830809
MCLIB	66200	66212	92077-1X825	REV.2540	<850813.1217>
BAILOUT	66213	66225	92077-1X458	REV.2440	840806
MOVE2	66226	66240	92570-1X258	REV.2326	830801
ACCESSLU	66241	66253	92084-1Y014	REV.5000	861003
LUTRU	66254	66361	92084-1X036	REV.2121	810519
BYT\$STRINGADDRESS	66362	66374	92570-1X259	REV.5000	860312
BP LINKAGE	641				

D.ERR program.

D.ERR	(	1)	2012	2671	92570-16189	REV.6000	<901119.1520>
--NLLANGNUMBER			2672	2673			
--INSTRING			2674	3273			
--INPARMS			3274	3300			
.IOER			3301	3455	24998-1X321	REV.5000	850927
XREIO			3456	3626	92084-1X923	REV.5000	840228
NL\$READREL			3627	3756	92089-1X015	REV.5010	<880512.0955>
.ARTN			3757	3774	24998-1X291	REV.2101	800303
ER0.E			3775	3776	24998-1X249	REV.2540	850927
ER0.T			3777	3777	24998-1X321	REV.2540	850927
D.ER000			4000	7755	92570-16190	REV.6000	<920811.1206>
NLLANGID			7756	7762	92089-1X045	REV.2440	<840917.1421>
NL\$POINTERS			7763	7767	92089-1X015	REV.2440	<880512.0955>
D.ER291			7770	7770	92077-1X780	REV.2440	840919
D.ER041			7771	7771	92077-1X780	REV.2440	840919
D.ER013			7772	7772	92077-1X780	REV.2440	840919
D.ER012			7773	7773	92077-1X780	REV.2440	840919
D.ER011			7774	7774	92077-1X780	REV.2440	840919
D.ER010			7775	7775	92077-1X780	REV.2440	840919
D.ER009			7776	7776	92077-1X780	REV.2440	840919
D.ER001			7777	7777	92077-1X780	REV.2441	840919
NL\$RELMODULE			10000	10256	92089-1X015	REV.2440	<880512.0955>
.SST			10257	10374	24998-1X336	REV.2140	810812
PRTN			10375	10507	92084-1X007	REV.2121	771005
DD\$SYSINFO			10510	10614	92570-16189	REV.5000	860702

.ENTR	10615	10704	24998-1X192	REV.2001	750701
DTACH	10705	10765	92084-1X034	REV.2121	800129
INTTODECIMAL	10766	11043	92570-1X236	REV.2540	850606
\$CVT3	11044	11131	92084-1X018	REV.2121	770621
TRIMLEN	11132	11206	92570-1X236	REV.5000	860612
PNAME	11207	11254	92084-1X075	REV.2121	800801
DDCONNTOID	11255	11321	92570-16189	REV.5000	860618
DDIDTOGROUP	11322	11362	92570-16189	REV.5000	860606
IDTOOWNER	11363	11460	92084-1Y014	REV.5010	880118
SM.BF	11461	11704	92077-1X495	REV.2340	830218
DDIDTOOWNER	11705	11745	92570-16189	REV.5000	860606
RMPAR	11746	11776	92084-1X069	REV.2121	811001
D.ER002	11777	11777	92077-1X780	REV.2440	840919
ASKLOGON	12000	12105	92084-1Y014	REV.5000	860219
.CLGN	12106	12206	92084-1X262	REV.2340	780928
DDGROUPTOID	12207	12246	92570-16189	REV.5000	860618
OWNERTOID	12247	12356	92084-1Y014	REV.5010	880118
DDOWNERTOID	12357	12415	92570-16189	REV.5000	860618
USNAM	12416	12454	92084-1Y014	REV.2440	840731
CHARFILL	12455	12514	92570-1X236	REV.2440	840731
.SBST	12515	12552	24998-1X341	REV.2140	810427
.DFER	12553	12610	24998-1X199	REV.2001	790523
NL\$SETPARAMS	12611	12646	92089-1X015	REV.2440	<880512.0955>
TIMENOW	12647	12700	92570-1X258	REV.2326	830801
SECONDS	12701	13026	92570-1X258	REV.2326	830801
.DMP	13027	13174	24998-1X045	REV.2001	780818
.DADS	13175	13304	24998-1X036	REV.2001	780818
USERISSUPER	13305	13336	92084-1Y014	REV.2440	841102
GETCALLERID	13337	13367	92084-1Y014	REV.5000	860221
.FION	13370	13417	24998-1X355	REV.2326	830406
LOGLU	13420	13475	92084-1X027	REV.2121	790228
USNUM	13476	13515	92084-1Y014	REV.2440	840731
.UFMP	13516	13534	24998-1X296	REV.2326	830406
GETMYSESSWORD	13535	13547	92084-1Y014	REV.2440	840731
SESSN	13550	13565	92084-1X256	REV.2121	780413
GETFATHERIDNUM	13566	13577	92084-1Y014	REV.2340	830809
.IDNA	13600	13611	92084-1Y010	REV.2340	830628
.OPSY	13612	13615	92084-1X062	REV.2121	810126
PAU.E	13616	13617	24998-1X254	REV.2540	850927
D.ER008	13620	13620	92077-1X780	REV.2440	840919
D.ER007	13621	13621	92077-1X780	REV.2440	840919
D.ER006	13622	13622	92077-1X780	REV.2440	840919
D.ER005	13623	13623	92077-1X780	REV.2440	840919
D.ER004	13624	13624	92077-1X780	REV.2440	840919
D.ER003	13625	13625	92077-1X780	REV.2440	840919
BP LINKAGE	74				

CI program.

CI	(	51)	2012	7630	92077-16445	Rev.6000	<920828.1626>
--PWD_BLK			7631	7633			
--POLL			7634	7637			
--ALL_GOOD_CHARS			7640	7662			
--RETURNS			7663	7751			
--CI_DCBS			7752	10211			
--SPECIAL_VARS			10212	10215			
--FLAGS2			10216	10217			
--FLAGS			10220	10230			
--INIT_AND_READ			10231	10233			

--STACK_MESSAGES	10234	10247			
--STACK_VARS	10250	10252			
--EX	10253	10255			
--CIBREAKFLAG	10256	10256			
--FRAME_SIZE	10257	10257			
--TO_BIT	10260	10260			
--BLANK_STRING	10261	10261			
--FMP_SCHEDULE	10262	10262			
--GLOBAL	10263	10476			
--INPUT_STRINGS	10477	11503			
--RUN_STRING	11504	11704			
--PROMPT	11705	11722			
--VARIABLES	11723	13722			
--CONTROL_STACK	13723	16276			
--NLLANGNUMBER	16277	16300			
--DONSROUTTEMPBUFS	16301	17010			
DEFINE_VARIABLE	17040	20741	92570-16156	rev.6000	920602
FMPRUNPROGRAM	20756	21714	92570-1X107	REV.5020	900329
INTTODECIMAL	21715	21772	92570-1X236	REV.2540	850606
MYIDADD	21773	21776	92084-1Y014	REV.2340	830809
NLLANGID	21777	22003	92089-1X045	REV.2440	<840917.1421>
CONTROLCOMMAND	22005	23503	92570-16156	Rev.5020	890525
FMPIHIERARCHNAME	23504	23755	92077-1X500	REV.5000	870130
IDCLR	23756	23775	92084-1Y074	Rev.5020	<891024.1826>
ADDRESSOF	23776	24003	92570-1X236	REV.2326	830407
PREPROCESSOR	24006	25463	92570-16156	Rev.6000	920528
FMPPARSEPATH	25464	25774	92570-1X259	REV.5000	860312
CMNDSTACKUNMARK	25775	26001	92077-1X991	Rev.5020	880426 Clear Marks
--.C.S.DATA.	26003	26020			
CMNDSTACKSCREEN	26032	30141	92077-1X990	Rev.6000	920604 Stack screen mod
FMPPRPPROGRAM	30144	31367	92084-1Y012	REV.6000	920605
UT.BF	31370	31767	92077-1X494	REV.2340	830218
FTRAP	31770	31776	24998-1X609	REV.2440	<841025.1554>
ER0.T	31777	31777	24998-1X321	REV.2540	850927
IDRPL	32000	33425	92084-1X243	REV.5000	<860930.1147>
MESSS	33426	33766	92084-1X458	REV.2440	<841005.1346>
IXGET	33767	33776	92084-1X030	REV.2121	780731
ATCRT	33777	34003	92084-1X945	REV.2340	830718
CIMSG	34005	35157	92570-16161	REV.6000	<920602.1313>
PREDEFINE_VARS	35160	35763	92570-16156	Rev.6000	920609
GETPROGCPLV	35764	35775	92084-1X945	REV.5000	860504
.OPSY	35776	36001	92084-1X062	REV.2121	810126
COMMAND_NUM	36003	37050	92077-16445	Rev.6000	920527
IS_TR_FILE	37051	37612	92570-16156	rev.5010	920529
PRESUBSTITUTE	37613	37771	92570-16156	Rev.5020	891102
SETCMCPLV	37772	37776	92084-1X945	REV.2340	830718
SYSTEMPROCESS	37777	40007	92084-1Y012	REV.2340	830914
--FMPREGS	40011	40012			
FMPSETPOSITION	40013	40546	92570-1X106	REV.5010	880628
CICOMC2	40547	41301	92570-1X162	REV.5010	871023
ACTIONROUTINE	41302	41776	92084-1X945	REV.5010	880512
.DIN	41777	42004	24998-1X042	REV.2001	780818
CNCOMMAND	42006	42570	92084-1X945	REV.5010	880609
SUBSTITUTE	42571	43320	92570-16156	Rev.6000	920602
IDDUP	43321	43771	92084-1X244	REV.5000	<860926.1354>
.DNG	43772	44001	24998-1X046	REV.2001	780818
PROCESS_STRING	44003	44431	92077-1X973	Rev.6000	900927
--FMPBUFFER	44432	44531			
FMPSETWORD	44532	45150	92570-1X106	REV.5010	880712

CAPCK	45151	45521	92084-1X028	REV.2121	810126	
FMPCLONENAME	45522	45773	92084-1Y012	REV.2340	830914	
DOEXIT	45774	46004	92084-1X945	REV.2340	830718	
FMPPARSENAME	46007	46346	92077-1X504	REV.5000	860311	
SLCOMMAND	46347	46706	92084-1X945	REV.2340	830718	
FMPBUILDPATH	46707	47217	92570-1X259	REV.5000	860616	
.DDI	47220	47520	24998-1X040	REV.2001	781021	
FMPREAD	47521	47771	92570-1X106	REV.2326	830728	
OVRD.	47772	47772	92077-1X482	REV.2340	830218	
LOGOFFCLEANUP	47773	50003	92084-1X945	REV.5000	860503	
FMPDOTYPE012	50006	50434	92570-1X106	REV.5010	880712	
FMPMOVEDATA	50435	51013	92570-1X106	REV.5010	880308	
NAMR	51014	51313	92084-1X066	REV.2226	820225	
FMPACCESSDISC	51314	51604	92077-1X503	REV.6000	920325	
CICROUTMSG	51605	51775	92570-16159	REV.2440	<920807.1013>	
DISCWORD	51776	52002	92084-1Y014	REV.2340	830809	
HPCRTCHECKSTRAPS	52004	52250	92077-1X990	Rev.6000	920604	CRT strap check
FMPBUILDEITHER	52251	52515	92077-1X973	REV.5000	870119	
UNDEFINE_VARIABLE	52516	52755	92570-16156	rev.5010	871023	
SPECIAL_VARIABLE	52756	53276	92570-16156	Rev.6000	920528	
SWAPEM	53277	53534	92570-16156	Rev.6000	920521	
SELUR	53535	53762	92084-1X254	REV.2121	800821	
MOVEWORDS	53763	53776	92570-1X236	REV.2326	830407	
RELEASESESSTERM	53777	54010	92084-1X945	REV.5010	880504	
FMPASKDDOT	54012	54227	92570-1X106	REV.6000	920225	
FIRSTPROG	54230	54442	92084-1X945	REV.2340	830718	
MESSCOMMAND	54443	54653	92084-1X945	REV.5010	880509	
FG.LU	54654	55041	92084-1X253	REV.2340	830810	
.IOER	55042	55216	24998-1X321	REV.5000	850927	
--CICOMCOMMON	55217	55533				
CICOMDL	55534	55706	92570-1X162	REV.5010	871023	
NLAPPEND	55707	55776	92089-1X015	REV.2440	<880512.0955>	
ER0.E	55777	56000	24998-1X249	REV.2540	850927	
XREIO	56001	56151	92084-1X923	REV.5000	840228	
.DMP	56152	56317	24998-1X045	REV.2001	780818	
SPLITSTRING	56320	56455	92077-1X992	Rev.5010	881004	Decompose string
FILECOMM	56456	56613	92570-16156	Rev.6000	920602	
CICOMRP	56614	56766	92570-1X162	REV.5010	880719	
PROCESS_GLOBALS	56767	57124	92570-16156	Rev.5020	890525	
CICOMMC	57125	57262	92570-1X162	REV.5010	871023	
CRMC	57263	57466	92077-1X548	REV.2326	<830217.1311>	
FMPERROR	57467	57622	92570-1X106	REV.2440	841217	
FMPOPEN	57623	57754	92570-1X106	REV.2326	830728	
CPLVCHECK	57755	57776	92084-1X945	REV.5010	871023	
.OFLG	57777	60001	92084-1Y010	REV.2340	830628	
FMPPOSITION	60003	60134	92570-1X106	REV.5010	880308	
NLREADREL	60135	60264	92089-1X015	REV.5010	<880512.0955>	
NL\$RELMODULE	60265	60543	92089-1X015	REV.2440	<880512.0955>	
SETAT	60544	60671	92084-1X081	REV.2301	821014	
DELETEITEM	60672	61015	92570-1X258	REV.2326	830801	
FREEMEM	61016	61151	92570-1X258	REV.2326	830801	
.SCO	61152	61271	24998-1X338	REV.2140	800903	
.SST	61272	61407	24998-1X336	REV.2140	810812	
NLWRITEREL	61410	61523	92089-1X015	REV.2440	<880512.0955>	
--CITEMPBUFFER	61524	61617				
CI_FMPREPORTERR	61620	61733	92570-1X162	REV.2540	850729	
HPCRTXSENDCHAR	61734	61776	92077-1x951	Rev.5000	860528	EXEC 2 for Chara
FMPSTARTEVENT	61777	62001	92084-1Y014	REV.2440	841016	
PRTN	62003	62115	92084-1X007	REV.2121	771005	

ADDITEM	62116	62225	92570-1X258	REV.2326	830801	
.DADS	62226	62335	24998-1X036	REV.2001	780818	
FMPSETRELPOS	62336	62445	92570-1X106	REV.5010	880712	
PRINTERROR	62446	62553	92084-1X945	REV.2440	840928	
LUTRU	62554	62661	92084-1X036	REV.2121	810519	
FMPFILENAME	62662	62766	92570-1X106	REV.2440	840725	
FMPREADSTRING	62767	63073	92077-1X503	REV.2326	830728	
DDIR	63074	63176	92084-1Y014	REV.2340	830809	
FMPWORKINGDIR	63177	63301	92570-1X106	REV.6000	900807	
FCONT	63302	63404	92077-1X524	REV.2326	<830217.1318>	
FINDITEM	63405	63505	92570-1X258	REV.2326	830801	
FMPCLOSE	63506	63605	92570-1X106	REV.6000	900926	
FMPINFO	63606	63705	92570-1X106	REV.5000	861030	
.ENTR	63706	63775	24998-1X192	REV.2001	750701	
FMPENDEVENT	63776	64000	92084-1Y014	REV.2440	841016	
\$FINDIDEXT	64001	64077	92084-1Y037	REV.2540	<850820.1611>	
FMPUDSPINFO	64100	64176	92077-1X504	REV.2440	840628	
UDSP.MOVE	64177	64334	92084-1Y014	REV.2440	841011	
DECIMALTOINT	64335	64432	92570-1X236	REV.5000	860303	
CMNDSTACKSTORE	64433	64530	92077-1X991	Rev.5020	880426	Stack->File
FMPWRITE	64531	64765	92570-1X106	REV.2326	830728	
RESTOFSTRING	64766	65063	92570-16156	Rev.5020	900306	
INTSTRING	65064	65161	92570-1X236	REV.2540	850917	
FMPSHORTNAME	65162	65256	92077-1X503	REV.6000	920429	
FMPBUILDNAME	65257	65464	92077-1X504	REV.5000	870121	
NAM..	65465	65561	92077-1X530	REV.2340	830217	
PGNTR	65562	65656	92084-1Y009	REV.2340	830725	
YSRQ	65657	65752	92084-1X002	REV.2121	810831	
PERMANENTIDSEG	65753	65776	92084-1Y012	REV.2340	830914	
DLCROUTMSG	65777	66002	92570-16159	REV.2540	<920807.1013>	
.SETB	66003	66076	92084-1X041	REV.5010	880506	
LOGOFF	66077	66171	92084-1X945	REV.2340	830718	
--NEXTITEM	66172	66172				
NEXTITEM	66173	66265	92570-1X258	REV.6000	920319	
\$SMVE	66266	66360	92084-1X046	REV.2121	800129	
ALLOCATEMEM	66361	66453	92570-1X258	REV.2326	830801	
FMPGETDATA	66454	66545	92077-1X503	REV.2326	830728	
CMNDSTACKRESTORE	66546	66634	92077-1X991	Rev.5020	880426	File->Stack
HASHITEM	66635	66723	92570-1X258	REV.2440	840503	
\$CVT3	66724	67011	92084-1X018	REV.2121	770621	
ATACH	67012	67077	92084-1X035	REV.2540	<850611.1501>	
CI_STRING_ERR	67100	67164	92570-16156	REV.2326	830802	
NEXTPRAM	67165	67247	92570-16156	Rev.5020	890531	
IDGET	67250	67332	92084-1X029	REV.2121	790314	
IFTTY	67333	67415	92084-1X025	REV.6000	921030	IFTTY for RTE-6
DTACH	67416	67476	92084-1X034	REV.2121	800129	
FMPPOST	67477	67557	92570-1X106	REV.2326	830728	
LOGLU	67560	67635	92084-1X027	REV.2121	790228	
PUTINCOMMAS	67636	67713	92077-1X992	Rev.5010	881004	Turn blanks into
.OWNR	67714	67771	92084-1X040	REV.2121	811126	
NL\$POINTERS	67772	67776	92089-1X015	REV.2440	<880512.0955>	
UDSP.DECODE	67777	70006	92077-1X504	REV.2440	840628	
FMPPOSTEOF	70010	70065	92570-1X106	REV.2326	830728	
FMPWRITESTRING	70066	70142	92077-1X503	REV.2326	830728	
TRIMLEN	70143	70217	92570-1X236	REV.5000	860612	
CONCAT	70220	70274	92570-1X259	REV.2326	830721	
FIND_DELIM	70275	70351	92077-1X504	REV.2540	850821	
ACTIONCOMMAND	70352	70425	92084-1X945	REV.5010	880512	
CMCHECK	70426	70477	92084-1X945	REV.5010	880505	

IDADDDTONAME	70500	70560	92084-1Y013	REV.2340	830812	
.ASKD	70561	70632	92084-1Y010	REV.5020	890925	
.DCO	70633	70703	24998-1X037	REV.2001	790417	
.IDLPL	70704	70753	24998-1X506	REV.2301	821007	
.INDX	70754	71023	24998-1X511	REV.2140	810325	
BUSYPROCESS	71024	71073	92084-1Y012	REV.2540	850730	
VSCBA	71074	71143	92084-1X461	REV.2121	810201	
CMNDSTACKINIT	71144	71211	92077-1X990	Rev.6000	920604	Setup Stack
PNAME	71212	71257	92084-1X075	REV.2121	800801	
SHOOTPROGRAM	71260	71325	92570-1X107	REV.5020	891208	
ETIME	71326	71372	92570-1X236	REV.5020	890815	
NONDSLEN	71373	71437	92077-1X504	REV.5000	860311	
FMPBUFFERBASE	71440	71504	92077-1X503	REV.2326	830728	
FMPEXTENTSIZ	71505	71551	92077-1X503	REV.2326	830728	
FMPGETLENWORD	71552	71615	92077-1X503	REV.2326	830728	
ICAPS	71616	71660	92084-1X255	REV.5000	860430	
LIMEM	71661	71722	92084-1X050	REV.2121	810717	
FMPBUILDHIERARCH	71723	71764	92077-1X500	REV.5000	861007	
.DDE	71765	71776	24998-1X039	REV.2001	780818	
.LWAS	71777	71777	92084-1X411	REV.2121	810717	
PTERR	72000	72040	92084-1X044	REV.2121	810126	
CINDEX	72041	72100	92570-1X236	REV.2326	830407	
GPNAM	72101	72137	92084-1Y014	REV.5000	860423	
IDTOOWNER	72140	72235	92084-1Y014	REV.5010	880118	
SM.BF	72236	72461	92077-1X495	REV.2340	830218	
ASKLOGON	72462	72567	92084-1Y014	REV.5000	860219	
.CLGN	72570	72670	92084-1X262	REV.2340	780928	
CHARFILL	72671	72730	92570-1X236	REV.2440	840731	
USNAM	72731	72767	92084-1Y014	REV.2440	840731	
NL\$WRITEBUF	72770	73026	92089-1X015	REV.2440	<880512.0955>	
.SBST	73027	73064	24998-1X341	REV.2140	810427	
.DFER	73065	73122	24998-1X199	REV.2001	790523	
NEXTCLASS	73123	73160	92570-1X258	REV.2326	830801	
FMPBLOCKSLEFT	73161	73216	92077-1X503	REV.2326	830728	
NL\$SETPARAMS	73217	73254	92089-1X015	REV.2440	<880512.0955>	
GETSTRING	73255	73311	92077-1X973	Rev.6000	901016	Move substring w
EXTRACT	73312	73346	92077-1X504	REV.2540	850826	
FMPBUFFERSIZE	73347	73403	92077-1X503	REV.2326	830728	
IFDSC	73404	73440	92084-1X945	REV.2340	830718	
LUSES	73441	73475	92084-1X039	REV.2121	801124	
FMPDISCDIFF	73476	73532	92570-1X236	REV.2326	830407	
FMPINTERACTIVE	73533	73565	92077-1X503	REV.2326	830728	
FMPMOUNT	73566	73620	92570-1X106	REV.2326	830728	
CASEFOLD	73621	73652	92570-1X236	REV.6000	901129	
LOWERCASE	73653	73704	92570-1X236	REV.6000	901129	
\$SETIDEXT	73705	73736	92084-1Y037	REV.2540	<850820.1611>	
FMPEXTENTBASE	73737	73770	92077-1X503	REV.2326	830728	
GETFATHERIDNUM	73771	74002	92084-1Y014	REV.2340	830809	
FMPDEVICE	74003	74034	92077-1X503	REV.2326	830728	
RMPAR	74035	74065	92084-1X069	REV.2121	811001	
.FION	74066	74115	24998-1X355	REV.2326	830406	
.DIS	74116	74145	24998-1X044	REV.2001	780818	
MOD	74146	74175	24998-1X107	REV.2001	751101	
IFBRK	74176	74223	92084-1X078	REV.2121	800129	
CHARIS	74224	74250	92570-1X236	REV.2326	830407	
HPCRTSSRCDRIVER	74251	74275	92077-1x951	Rev.5000	860528	S.Status Compati
INITMEM	74276	74322	92570-1X258	REV.2326	830801	
FMPDISCOFFSET	74323	74347	92570-1X236	REV.2326	830407	
IDNUMBERTOADD	74350	74374	92084-1Y013	REV.2340	830812	

CLEARBUFFER	74375	74416	92570-1X236	REV.2326	830407
BLANKSTRING	74417	74440	92570-1X236	REV.2326	830407
TIMEOUT	74441	74462	92570-1X162	REV.5000	861024
CHARSMATCH	74463	74504	92570-1X236	REV.2326	830407
COR.A	74505	74525	92084-1X009	REV.2121	770621
USNUM	74526	74545	92084-1Y014	REV.2440	840731
.DMOD	74546	74565	24998-1X269	REV.2101	800303
FMPUPDATERECD	74566	74605	92570-1X106	REV.2326	830728
CNUMD	74606	74625	92084-1X015	REV.2121	770621
DCBOPEN	74626	74644	92084-1Y014	REV.2340	830809
.UFMP	74645	74663	24998-1X296	REV.2326	830406
SESSN	74664	74701	92084-1X256	REV.2121	780413
.ARTN	74702	74717	24998-1X291	REV.2101	800303
REPORTANYERROR	74720	74735	92570-1X108	REV.2326	830728
FMPREPORTERROR	74736	75060	92077-1X503	REV.2540	850723
FMPSETWORKINGDIR	75061	75075	92570-1X106	REV.2326	830728
FMPONESTRING	75076	75134	92570-1X106	REV.2326	830728
STRDSC	75135	75151	92570-1X236	REV.2326	830407
FMPPURGE	75152	75166	92570-1X106	REV.2326	830728
\$ESTB	75167	75203	92084-1X048	REV.2121	790202
GETMYSESSWORD	75204	75216	92084-1Y014	REV.2440	840731
PAU.E	75217	75220	24998-1X254	REV.2540	850927
BP LINKAGE	640				

CIX program.

CIX	(	51)	2012	2632	92570-16164	REV.6000	<901127.1531>
--nl\$termchar			2633	2633			
--CICOMCOMMON			2634	3150			
TMCOMMAND			3151	3604	92570-1X162	REV.2540	850605
.IOER			3605	3761	24998-1X321	REV.5000	850927
FTRAP			3762	3770	24998-1X609	REV.2440	<841025.1554>
ADDRESSOF			3771	3776	92570-1X236	REV.2326	830407
ER0.T			3777	3777	24998-1X321	REV.2540	850927
CROUTMSG			4000	5044	92570-16159	REV.6000	<920807.1013>
FILECOMMDX			5045	5465	92570-16164	REV.5000	860601
CICOMOWNER			5466	5771	92570-1X162	Rev.5020	890611
SECONOF			5772	5776	92084-1Y014	REV.5000	860603
ER0.E			5777	6000	24998-1X249	REV.2540	850927
--CIBREAKFLAG			6001	6001			
CICOMCO			6002	7303	92570-1X162	REV.5010	880202
CICOMIN			7304	7776	92570-1X162	REV.5000	870220
REPORTANYERROR			7777	10014	92570-1X108	REV.2326	830728
--DONSROUTTEMPBUFS			10016	10525			
FMPCOPY			10557	13725	92570-1X151	REV.6000	920923
FMPPACKSIZE			13736	13776	92077-1X503	REV.2326	830728
.DIN			13777	14004	24998-1X042	REV.2001	780818
FMPINITMASK			14006	15335	92570-1X108	REV.6000	920221
FATTENMASK			15336	15740	92570-1X107	REV.5000	870129
.SBST			15741	15776	24998-1X341	REV.2140	810427
.DNG			15777	16006	24998-1X046	REV.2001	780818
CICOMPROT			16010	17050	92570-1X162	REV.5010	871023
CICOMPU			17051	17634	92570-1X162	REV.5000	860903
PREENTMATCH			17635	17776	92570-1X107	REV.6000	910204
DOUBLESTUFF			17777	20011	92570-1X107	REV.2326	830728
QUALTOINT			20012	21022	92570-1X107	REV.2326	830728
CICOMMO			21023	21523	92570-1X162	Rev.5020	890626
COUNTRECORDS			21524	21774	92570-1X151	REV.2326	830728
.DDE			21775	22006	24998-1X039	REV.2001	780818

CICOMCL	22010	22506	92570-1X162	REV.2440	162401
FSTAT	22507	23275	92084-1X200	REV.2226	820406
RMACCTPW	23276	23746	92570-1X162	REV.5000	860308
.FION	23747	23776	24998-1X355	REV.2326	830406
PAU.E	23777	24000	24998-1X254	REV.2540	850927
PU6	24001	24426	92084-1X945	REV.2540	850731
UT.BF	24427	25026	92077-1X494	REV.2340	830218
CALC_DEST_NAME	25027	25410	92077-1X500	REV.5000	870121
FMPOWNER	25411	25770	92570-1X107	REV.6000	920317
OVRD.	25771	25771	92077-1X482	REV.2340	830218
IXGET	25772	26001	92084-1X030	REV.2121	780731
--LOCALCOMWILDCARD	26002	26171			
WILDCARDMASK	26172	26543	92570-1X108	REV.5000	861016
DAYTIMENOW	26544	27112	92570-1X258	REV.2326	830801
COPYSPARSE	27113	27461	92570-1X151	REV.2326	830728
FMPPARSEPATH	27462	27772	92570-1X259	REV.5000	860312
KCVT	27773	30006	92084-1X011	REV.2121	770621
--FMPBUFFER	30011	30110			
FMPSETWORD	30111	30527	92570-1X106	REV.5010	880712
FMPPARSENAME	30530	31067	92077-1X504	REV.5000	860311
FMPBUILDPATH	31070	31400	92570-1X259	REV.5000	860616
.DDI	31401	31701	24998-1X040	REV.2001	781021
CIX_STRING_ERR	31702	31773	92570-16164	REV.2440	840712
MOVEWORDS	31774	32007	92570-1X236	REV.2326	830407
NAMR	32013	32312	92084-1X066	REV.2226	820225
SEARCHOPEN	32313	32605	92570-1X108	REV.5000	870521
FMPNEXTMASK	32606	33075	92570-1X108	REV.6000	920325
SETTM	33076	33363	92084-1X920	REV.5010	880104
MESSS	33364	33724	92084-1X458	REV.2440	<841005.1346>
.DCO	33725	33775	24998-1X037	REV.2001	790417
\$ESTB	33776	34012	92084-1X048	REV.2121	790202
CAPCK	34014	34364	92084-1X028	REV.2121	810126
FMPREAD	34365	34635	92570-1X106	REV.2326	830728
--FMPREGS	34636	34637			
FMPDOTYPE012	34640	35266	92570-1X106	REV.5010	880712
FMPMOVEDATA	35267	35645	92570-1X106	REV.5010	880308
NEXTNEWLU	35646	35776	92570-1X107	REV.4010	860414
STRDSC	35777	36013	92570-1X236	REV.2326	830407
FMPACCESSDISC	36015	36305	92077-1X503	REV.6000	920325
CICOMUNPU	36306	36555	92570-1X162	REV.5000	860729
FMPBUILDEITHER	36556	37022	92077-1X973	REV.5000	870119
SPLIT_DIRPATH	37023	37263	92077-1X500	REV.2540	850821
ISLOOPNAME	37264	37523	92570-1X162	REV.2340	830725
FMPWRITE	37524	37760	92570-1X106	REV.2326	830728
FMPPURGE	37761	37775	92570-1X106	REV.2326	830728
DISCWORD	37776	40002	92084-1Y014	REV.2340	830809
SM.BF	40004	40227	92077-1X495	REV.2340	830218
SETOWNERMASK	40230	40452	92570-1X107	REV.5000	860626
MASKGETNEXTENT	40453	40672	92570-1X108	REV.6000	910211
DIRECPOSITION	40673	41234	92570-1X108	REV.5000	860523
POPDIR	41235	41543	92570-1X108	REV.6000	900716
FREADDIR	41544	41764	92570-1X108	REV.6000	910221
FMPUNPURGE	41765	42001	92570-1X106	REV.2326	830728
OLDDIRREAD	42003	42340	92570-1X108	REV.5000	870521
ALTEROLDTONEW	42341	42563	92570-1X108	REV.5000	860520
FMPASKDDOT	42564	43001	92570-1X106	REV.6000	920225
CIREPORTERR	43002	43200	92570-1X162	REV.2540	850730
FMPSETEOF	43201	43376	92570-1X106	REV.2540	850721
FMPDISCSIZE	43377	43566	92570-1X259	REV.2326	830721

FMPTEMPNAME	43567	43751	92570-1X151	REV.6000	910219	
LUISACTU	43752	43776	92084-1Y014	REV.2340	830809	
FMPSTARTEVENT	43777	44001	92084-1Y014	REV.2440	841016	
--FMPUNIQUE TIME	44003	44003				
FMPUNIQUE NAME	44004	44245	92570-1X106	REV.2540	850730	
NEXTOLDLU	44246	44427	92570-1X108	REV.5000	860414	
RENAMEDESTNAME	44430	44606	92570-1X162	REV.2326	830404	
NEWDIRREAD	44607	44765	92570-1X108	REV.5000	860516	
FMPPROTECTION	44766	45142	92570-1X106	REV.5000	860417	
CICOMDL	45143	45315	92570-1X162	REV.5010	871023	
XREIO	45316	45466	92084-1X923	REV.5000	840228	
GTSCB	45467	45636	92084-1X269	REV.2121	810714	
CRDC	45637	45776	92084-1Y015	REV.2341	<860224.1042>	
/FMPUNIQUE TIME/	45777	45776	92570-1X106	REV.2540	850730	
.OFLG	45777	46001	92084-1Y010	REV.2340	830628	
FMPRUNPROGRAM	46003	46741	92570-1X107	REV.5020	900329	
.DMP	46742	47107	24998-1X045	REV.2001	780818	
FMPSETDIRINFO	47110	47250	92570-1X106	REV.6000	900801	
MASKDCBTOLUTAB	47251	47411	92570-1X108	REV.5000	860519	
SPLITSTRING	47412	47547	92077-1X992	Rev.5010	881004	Decompose string
CICOMDC	47550	47704	92570-1X162	REV.2440	162401	
FMPGETDATA	47705	47776	92077-1X503	REV.2326	830728	
FMPENDEVENT	47777	50001	92084-1Y014	REV.2440	841016	
FMPRPPROGRAM	50003	51226	92084-1Y012	REV.6000	920605	
IDDUP	51227	51677	92084-1X244	REV.5000	<860926.1354>	
FMPSETDCBININFO	51700	51776	92077-1X503	REV.2326	830728	
DLCROUTMSG	51777	52002	92570-16159	REV.2540	<920807.1013>	
IDRPL	52003	53430	92084-1X243	REV.5000	<860930.1147>	
FMPCLONENAME	53431	53702	92084-1Y012	REV.2340	830914	
\$.SMVE	53703	53775	92084-1X046	REV.2121	800129	
MYIDADD	53776	54001	92084-1Y014	REV.2340	830809	
FMPOPEN	54003	54134	92570-1X106	REV.2326	830728	
FMPMASKNAME	54135	54266	92570-1X108	REV.5000	860605	
FMPFORCEDCBBUFFS	54267	54420	92570-1X151	REV.2326	830728	
OLDDIROPEN	54421	54552	92570-1X108	REV.5000	860414	
NLREADREL	54553	54702	92089-1X015	REV.5010	<880512.0955>	
NL\$.RELMODULE	54703	55161	92089-1X015	REV.2440	<880512.0955>	
FMPSETPROTECTION	55162	55307	92570-1X106	REV.5000	860220	
SETAT	55310	55435	92084-1X081	REV.2301	821014	
FMPREPORTERROR	55436	55560	92077-1X503	REV.2540	850723	
--NLLANGNUMBER	55561	55562				
FMPERROR	55563	55716	92570-1X106	REV.2440	841217	
DSOWNERTOID	55717	55776	92077-1X507	REV.5000	860702	
NL\$.POINTERS	55777	56003	92089-1X015	REV.2440	<880512.0955>	
.SCO	56004	56123	24998-1X338	REV.2140	800903	
.SST	56124	56241	24998-1X336	REV.2140	810812	
NLWRITEREL	56242	56355	92089-1X015	REV.2440	<880512.0955>	
--CITEMPBUFFER	56356	56451				
CI_FMPREPORTERR	56452	56565	92570-1X162	REV.2540	850729	
PRTN	56566	56700	92084-1X007	REV.2121	771005	
FIXDEF	56701	57013	92570-1X108	REV.5000	860529	
CIXMSG	57014	57125	92570-16232	REV.6000	<901127.1533>	
FMPTRUNCATE	57126	57237	92570-1X106	REV.2326	830728	
MASKDISCREAD	57240	57350	92570-1X259	REV.6000	910207	
.DADS	57351	57460	24998-1X036	REV.2001	780818	
MXMNI	57461	57570	24998-1X109	REV.2001	750701	
DIRENTMATCH	57571	57700	92570-1X107	REV.6000	910221	
DECIMALTOINT	57701	57776	92570-1X236	REV.5000	860303	
SYSTEMPROCESS	57777	60007	92084-1Y012	REV.2340	830914	

OTHERMATCH	60011	60323	92570-1X107	REV.6000	920602	
MASKOPENID	60324	60454	92570-1X108	REV.5000	860520	
NAMEMATCH	60455	60600	92077-1X992	Rev.5020	890926	Masked name comp
FMPSETRELPOS	60601	60710	92570-1X106	REV.5010	880712	
FMPREADSTRING	60711	61015	92077-1X503	REV.2326	830728	
CICOMCRDIR	61016	61121	92570-1X162	REV.2440	162401	
FMPWORKINGDIR	61122	61224	92570-1X106	REV.6000	900807	
CICOMCR	61225	61326	92570-1X162	REV.2540	850730	
FMPCLOSE	61327	61426	92570-1X106	REV.6000	900926	
FMPINFO	61427	61526	92570-1X106	REV.5000	861030	
CRNTOSTRING	61527	61625	92570-1X108	REV.2326	830728	
\$FINDIDEXT	61626	61724	92084-1Y037	REV.2540	<850820.1611>	
DSNODENUMBER	61725	61775	92077-1X507	REV.2340	830728	
SESSN	61776	62013	92084-1X256	REV.2121	780413	
IDTOOWNER	62016	62113	92084-1Y014	REV.5010	880118	
ASKLOGON	62114	62221	92084-1Y014	REV.5000	860219	
.CLGN	62222	62322	92084-1X262	REV.2340	780928	
INTSTRING	62323	62420	92570-1X236	REV.2540	850917	
NAM..	62421	62515	92077-1X530	REV.2340	830217	
SYSRQ	62516	62611	92084-1X002	REV.2121	810831	
DSFSTAT	62612	62704	92077-1X507	REV.2340	830728	
SLASHPEEL	62705	62777	92570-1X108	REV.2326	830728	
.ENTR	63000	63067	24998-1X192	REV.2001	750701	
FINDDIGIT	63070	63156	92570-1X107	REV.2326	830728	
\$CVT3	63157	63244	92084-1X018	REV.2121	770621	
NEWROOTOPEN	63245	63332	92570-1X108	REV.5000	860606	
ASKDSRTR	63333	63416	92077-1X507	REV.2340	830728	
IDGET	63417	63501	92084-1X029	REV.2121	790314	
FMPRENAME	63502	63563	92570-1X106	REV.2326	830728	
FMPOPENROOT	63564	63644	92570-1X106	REV.2326	830728	
FMPPOST	63645	63725	92570-1X106	REV.2326	830728	
SCANDIR	63726	63776	92570-1X108	REV.6000	910211	
DCBOPEN	63777	64015	92084-1Y014	REV.2340	830809	
PUSHDIR	64017	64665	92570-1X108	REV.6000	920221	
CONCATSPACE	64666	64744	92570-1X259	REV.2326	830721	
GETLOC	64745	65023	92570-1X107	REV.5000	860603	
INTTODECIMAL	65024	65101	92570-1X236	REV.2540	850606	
LOGLU	65102	65157	92084-1X027	REV.2121	790228	
DSOPYS	65160	65235	92077-1X507	REV.5000	860702	
PUTINCOMMAS	65236	65313	92077-1X992	Rev.5010	881004	Turn blanks into
MASKBYOWNER	65314	65371	92570-1X108	REV.5000	860619	
.OWNR	65372	65447	92084-1X040	REV.2121	811126	
FMPWRITESTRING	65450	65524	92077-1X503	REV.2326	830728	
CICOMAT	65525	65601	92570-1X162	REV.5000	860506	
TRIMLEN	65602	65656	92570-1X236	REV.5000	860612	
CONCAT	65657	65733	92570-1X259	REV.2326	830721	
DSCONNTOID	65734	65776	92077-1X507	REV.5000	860702	
.UFMP	65777	66015	24998-1X296	REV.2326	830406	
FIND_DELIM	66016	66072	92077-1X504	REV.2540	850821	
DSGROUPTOID	66073	66145	92077-1X507	REV.5000	860702	
FMPOPENFILES	66146	66216	92570-1X106	REV.2326	830728	
.INDX	66217	66266	24998-1X511	REV.2140	810325	
VSCBA	66267	66336	92084-1X461	REV.2121	810201	
.IDL	66337	66406	24998-1X506	REV.2301	821007	
BUSYPROCESS	66407	66456	92084-1Y012	REV.2540	850730	
DSDISINFO	66457	66525	92077-1X507	REV.2340	830728	
PNAME	66526	66573	92084-1X075	REV.2121	800801	
MASKFILLBUF	66574	66641	92570-1X108	REV.5000	860520	
SHOOTPROGRAM	66642	66707	92570-1X107	REV.5020	891208	

NONDSLEN	66710	66754	92077-1X504	REV.5000	860311	
FMPBUFFERBASE	66755	67021	92077-1X503	REV.2326	830728	
FMPEXTENTSIZ	67022	67066	92077-1X503	REV.2326	830728	
FMPGETLENWORD	67067	67132	92077-1X503	REV.2326	830728	
LIMEM	67133	67174	92084-1X050	REV.2121	810717	
FMPCREATEDIR	67175	67236	92570-1X106	REV.2326	830728	
DSDISCREAD	67237	67300	92077-1X507	REV.2340	830728	
MASKSECURITY	67301	67341	92570-1X108	REV.5000	860630	
FMPSETIOPTIONS	67342	67401	92077-1X503	REV.2326	830728	
FMPONESTRING	67402	67440	92570-1X106	REV.2326	830728	
NL\$WRITEBUF	67441	67477	92089-1X015	REV.2440	<880512.0955>	
FMPFORCEDCB	67500	67535	92570-1X151	REV.2326	830728	
FMPBLOCKSLEFT	67536	67573	92077-1X503	REV.2326	830728	
.DFER	67574	67631	24998-1X199	REV.2001	790523	
NL\$SETPARAMS	67632	67667	92089-1X015	REV.2440	<880512.0955>	
FMPSETOWNER	67670	67724	92570-1X106	REV.6000	920429	
FMPIOPTIONS	67725	67761	92077-1X503	REV.2326	830728	
.LWAS	67762	67762	92084-1X411	REV.2121	810717	
FMPUPDATERECD	67763	70002	92570-1X106	REV.2326	830728	
FMPSETOWNERID	70004	70133	92570-1X106	REV.5000	860625	
OWNERTOID	70134	70243	92084-1Y014	REV.5010	880118	
STRIPTRAILING	70244	70300	92077-1X504	REV.2540	850820	
EXTRACT	70301	70335	92077-1X504	REV.2540	850826	
FMPBUFFERSIZE	70336	70372	92077-1X503	REV.2326	830728	
FMPDISCDIFF	70373	70427	92570-1X236	REV.2326	830407	
DSCLOSECON	70430	70463	92077-1X507	REV.2340	830728	
LASTMATCH	70464	70517	92570-1X236	REV.2440	840731	
DSDCBWORD	70520	70553	92077-1X507	REV.2340	830728	
MASKMATCHLEVEL	70554	70606	92570-1X108	REV.6000	920702	
FMPMOUNT	70607	70641	92570-1X106	REV.2326	830728	
FMPINTERACTIVE	70642	70674	92077-1X503	REV.2326	830728	
IFTTY	70675	70757	92084-1X025	REV.6000	921030	IFTTY for RTE-6
CHK.X	70760	71012	92077-1X493	REV.2340	830218	
USERISSUPER	71013	71044	92084-1Y014	REV.2440	841102	
CASEFOLD	71045	71076	92570-1X236	REV.6000	901129	
FMPDEVICE	71077	71130	92077-1X503	REV.2326	830728	
DSUSERISSUPER	71131	71162	92077-1X507	REV.5000	860702	
FMPEXTENTBASE	71163	71214	92077-1X503	REV.2326	830728	
MASKSETERROR	71215	71246	92570-1X108	REV.5000	860521	
\$SETIDEXT	71247	71300	92084-1Y037	REV.2540	<850820.1611>	
ATCOMMAND	71301	71332	92084-1X945	REV.2340	830718	
RMPAR	71333	71363	92084-1X069	REV.2121	811001	
DSSYSINFO	71364	71414	92077-1X507	REV.5000	870702	
DSOPENCON1	71415	71444	92570-1X108	REV.2326	830728	
DSOPENCON	71445	71513	92077-1X507	REV.2341	830728	
MOD	71514	71543	24998-1X107	REV.2001	751101	
STRINGCOPY	71544	71572	92570-1X259	REV.2326	830721	
DSSETDCBWORD	71573	71621	92077-1X507	REV.2340	830728	
IFBRK	71622	71647	92084-1X078	REV.2121	800129	
CHARIS	71650	71674	92570-1X236	REV.2326	830407	
.IBST	71675	71721	24998-1X500	REV.2140	810317	
FMPDISCOFFSET	71722	71746	92570-1X236	REV.2326	830407	
PERMANENTIDSEG	71747	71772	92084-1Y012	REV.2340	830914	
.DMOD	71773	72012	24998-1X269	REV.2101	800303	
FMPDISMOUNT	72014	72036	92570-1X106	REV.2326	830728	
FMPALLOWEXTENTS	72037	72060	92570-1X151	REV.2326	830728	
FMPNOEXTENTS	72061	72102	92570-1X151	REV.2326	830728	
CLEARBUFFER	72103	72124	92570-1X236	REV.2326	830407	
BLANKSTRING	72125	72146	92570-1X236	REV.2326	830407	

.2TOI	72147	72170	24998-1X517	REV.2140	810317
COR.A	72171	72211	92084-1X009	REV.2121	770621
FMPENDMASK	72212	72231	92570-1X108	REV.5000	860606
MSC.	72232	72251	92084-1X221	REV.2340	810622
CNUMD	72252	72271	92084-1X015	REV.2121	770621
BP LINKAGE	574				

RT PARTITION REQMTS:
IOMAP 006 PAGES

BG PARTITION REQMTS:

\$CNFX	005	PAGES	BG
FMGR	013	PAGES	BG
LOGON	013	PAGES	BG
LGOFF	010	PAGES	BG
R\$PN\$	004	PAGES	BG
T5IDM	006	PAGES	BG
DSMOD	010	PAGES	BG
DINIT	012	PAGES	BG
GASP	011	PAGES	BG
SMP	007	PAGES	BG
JOB	006	PAGES	BG
LGTAT	003	PAGES	BG
DSRTR	018	PAGES	L BG
LOADR	020	PAGES	L BG
AUTOR	002	PAGES	L BG
ACCTS	017	PAGES	L BG
D.RTR	037	PAGES	EMA
D.ERR	006	PAGES	X BG
CI	031	PAGES	X BG
CIX	030	PAGES	X BG

MAXIMUM PROGRAM SIZE:
W/O COM 26 PAGES
W/ COM 23 PAGES
W/ TA2 18 PAGES

SYS AV MEM: 04673 WORDS

ENTER 1ST PARTITION PAGE: 00077(DEFAULT) TO 00081:

*
* PARTITION DEFINITION
*
0 * Change 1st part PG?

SYS AV MEM: 04673 WORDS

PAGES REMAINING: 00179

DEFINE PARTITIONS:

PART 01, 0179 PAGES?
37,BG,R

SUBPARTITIONS?
NO

PART 02, 0142 PAGES?
136,BG

SUBPARTITIONS?
YES

PART 03, 0006, (0136) PAGES?
51,S

PART 04, 0006, (0085) PAGES?
32,S

PART 05, 0006, (0053) PAGES?
32,S

PART 06, 0006, (0021) PAGES?
21,S

PART 07, 0006 PAGES?
/D

MODIFY PROGRAM PAGE REQUIREMENTS?

-
*
* PROGRAM PAGE MODIFICATIONS
*
FMGR,17
-
LOADR,26
-
CI,32
-
CIX,32
-
DSRTR,23
-
D.RTR,28,8
-
/E
MAX # SHAREABLE EMA PARTITIONS IS 00008

SHAREABLE EMA PARTITIONS ?

-
*
* PROGRAM PARTITION ASSIGNMENTS
*
3,FST1
-

/E
SHAREABLE EMA PROGRAMS ?

-
/E

ASSIGN PROGRAM PARTITIONS?

-
D.RTR,1
-
/E

SYSTEM STORED IN FILE
SYS SIZE:112 TRKS, 010 SECS (48 SECTORS/TRACK)
= 05386 BLOCKS (128 WORDS/BLOCK)

05394 BLOCKS OF OUTPUT FILE USED

RT6GN FINISHED

0000 ERRORS

EMA USAGE: 109 PAGE SYMBOL TABLE
4 PAGE FIX UP TABLE
113 TOTAL EMA PAGES USED.

TOTAL ELAPSED GEN TIME = 0 HRS. 8 MIN. 14.40 SEC.

Index

Symbols

!! (ABORT) command, 2-8
? command (Help), 2-7
\$ALC, B-3
\$ASC6, B-3
\$TRN6, B-3
* command, 2-6

A

assign program partitions, 2-82, 3-17
auxiliary disk, subchannel, 2-21, 3-8

B

background (BG) COMMON, 2-63, B-2
 changing, 2-62
background (BG) disk residents, 2-70
background map, B-5
base page, B-1
 mapping and organization, B-13
BG (background) memory lock, 2-22
blank ID extensions, 3-14
blank ID segments, 3-14
blank long ID segments, 2-67
blank short ID segments, 2-68
blocks remaining, 2-19
boot extension, 2-25
boot file NAMR, 2-25
BR (BREAK) command, 2-8
buffer limits, 2-66, 3-14
buffered output, 2-76

C

cache, disk, 2-20
change
 background (BG) COMMON, 2-62, 3-13
 driver partition, 2-60, 3-13
 ENTS, 2-45
 real-time (RT) COMMON, 2-61, 3-13
Change Name Phase, 3-10
Class I/O, 2-65, 2-77
comments, 2-6, 3-3
controller select code, 2-16, 2-17, 3-6
CS/80 disks, 2-16

D

device, 2-18, 2-19
Device Reference Table, 2-57, 3-12
disk cache, 2-20

disk subchannel, 2-20
 restrictions, 2-20
disk-resident programs, B-18
 background (BG), 2-70
 real-time (RT), 2-70
 type 4 BG programs, 2-70, B-18
DISP6, B-2
DISPLAY command, 2-36
driver partition, overflow, 3-5
Driver Partition #1, B-1
Driver Partitions #2 - #N, B-4

E

ECHO option, 3-3
Equipment Table Entry, 3-11
error codes, A-1
error handling, 3-4
error reporting, 2-3
EXEC6 system module, B-3
extended background map, B-5
extended background program, type 6, B-18

F

FMP disk files, 1-2
FMP errors, 3-4, A-1

G

generation planning, 2-1
generator relocation guidelines, modules, B-17
generator requirements, 1-3

I

ID extensions, 2-68, 3-14
ID segments
 blank, 3-14
 long, 2-67
 short, 2-68, 3-14
initialization, 2-2
Initialization Phase, 2-9, 3-6
Interrupt Table, 2-58, 3-12

L

large background program map, B-5
LIB/NOLIB command, 2-35
LINKS IN command, 2-32
LINKS IN CURRENT command, B-13
logical memory organization, B-5
long ID segments, 2-67
LU mappings, 2-65, 3-14

M

- MAP command, 2-26
- MAP LINKS command, B-13
- maximum number of partitions, 2-68
- memory
 - lock
 - background (BG), 2-22
 - real-time (RT), 2-22
 - organization
 - logical, B-5
 - physical, B-1
 - protection, B-13
 - size, 2-24
- memory-resident
 - access table area II, 2-22
 - base page, B-4
 - library, 2-2, 2-69, B-4
 - library modules, B-18
 - map, B-5
 - program area, B-4
 - programs, 2-69, B-18
- microcode replacement values, 2-45
- modify program page requirements, 2-80, 3-17
- modules
 - system, B-18
 - table area II, B-17
- Multi-Terminal Monitor (MTM), 2-67
- multi-terminal environment, 2-67

N

- number of
 - blank ID extensions, 2-68, 3-14
 - blank ID segments, 3-14
 - blank long ID segments, 2-67
 - blank short ID segments, 2-68
 - blocks on device, 2-18
 - I/O classes, 2-65
 - LU mappings, 2-65
 - partitions, 3-14
 - partitions, maximum, 2-68
 - resource numbers, 2-66, 3-14
 - short ID segments, 3-14
- number systems, 3-5

O

- online generator, 1-2
 - commands, 2-3
 - comments, 3-3
 - dialogue, 2-2
 - error codes, A-1
 - error handling, 3-4
 - executing, 3-1
 - features, 1-2
- operating system
 - area, B-2
 - description, 1-4

P

- pages remaining, 2-76
- parameter input, 2-2
- Parameter Input Phase, 2-37, 3-10
- parameters, 2-37
- partition
 - defining as RT or BG, 2-78
 - definition, 2-2
 - drivers, 2-69
 - specifying maximum number of, 3-14
- Partition Definition Phase, 2-70, 3-15
- partition-resident drivers, B-17
- permanent program usage, 2-67
- PERR6, B-3
- physical memory organization, B-1
- planning, generator responses, 2-1
- privileged interrupt select code, 2-21
- program
 - disk-resident, B-18
 - input, 2-2
 - loading, 2-2
 - memory-resident, B-18
 - page requirements, modifying, 2-80
 - partitions, B-4
 - assigning, 2-82, 3-17
 - shareable EMA, 2-81
 - type 4 background disk-resident, 2-70, B-18
 - type 6 extended background, B-18
- Program Input Phase, 2-26, 3-9

R

- real-time (RT) COMMON, B-2
 - changing, 2-61
- real-time (RT) disk residents, 2-70
- real-time map, B-5
- reentrant I/O, 2-77
- reentrant subroutine, 2-77
- RELOCATE command, 2-35
- replacement values, 2-45
- resource numbers, 2-66
- response preparation, 2-8
- RT (real-time) memory lock, 2-22
- RTCOM, B-3
- RTE-6/VM memory organization, B-1
- RTEMA, B-3
- RTERR, B-3
- RTIME, B-3
- RTIOQ, B-3

S

- sample generation, 3-5
- SCHD6, B-3
- scheduling string passage, 2-77
- shareable EMA
 - partitions, 2-81, 3-17
 - programs, 2-81
- short ID segments, 2-68, 3-14
- SSGA (Subsystem Global Area), B-2, B-17
- string passage, 2-77

- subchannel, 2-20
 - restrictions, 2-20
- subchannel xx assigned, 2-19
- subpartitions, 2-78
- Subsystem Global Area (SSGA), 2-2
- subsystem usage, 2-78
- swap delay, 2-24
- SWTCH, 1-2
- System and Program Loading Phase, 2-63, 3-13
- System Available Memory (\$CNFG), B-4
- System Available Memory (SAM), 2-76, B-1
- system available memory extension, B-4
- system boundaries, 2-2
- System Boundaries Phase, 2-60, 3-13
- System Driver Area (SDA), B-2, B-17
- system loading, 2-2
- system map, B-5
- system modules, 2-69, B-18
- system subchannel, 2-20
 - restrictions, 2-20

T

- Table Area I, B-1
- Table Area II, B-2
 - modules, 2-69, B-17
- table generation, 2-2
- Table Generation Phase, 2-46, 3-11
- TBG select code, 2-21
- temporary program usage, 2-67
- TR command, 1-2, 2-3
 - alternate versions of, 2-4
- type 4 BG disk-resident programs, 2-70
 - with common, B-18
 - without common, B-18
- type 6 extended BG programs, with common, B-18
- type 6 file usage, 2-67

U

- user partitions, 1-4