

RSX-11D System Release Notes

Order No. DEC-11-OXRNA-E-D



READ RSX-11D SOFTWARE DISPATCH FOR ADDITIONAL INFORMATION

RSX-11D System Release Notes

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RSX-11D V6.2

ABSTRACT

Distribution information covers media, partition and component sizes, patching the executive, and a directory of the binary files. Changes from V6B (V6.1) affecting function, operation, documentation and compatibility are summarized. The RSX-11D Software Dispatch, which contains current software articles, should be used in conjunction with this document.

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1.0 THE RSX-11D V6.2 DISTRIBUTION SYSTEM

The RSX-llD V6.2 system is distributed to customers on one of three basic media: magnetic tape (7-track or 9-track), RK05 disk cartridges or RK06 disk cartridges.

The number of distribution tape reels or disk volumes is as follows:

7-track magnetic tape	-	3 reels (see Note)
9-track magnetic tape		2 reels (see Note)
RKØ5 disk cartridge	-	4 volumes (see Note)
RKØ6 disk cartridge	-	l volume (see Note)

NOTE

Additionally, an extra tape reel or disk volume containing the FORTRAN IV distribution is provided with each distribution system.

Customers purchasing source distribution receive an additional set of volumes, distributed on the same medium as the basic system.

1.1 Magnetic Tape Distribution

The complete magnetic tape distribution for RSX-11D V6.2 (including FORTRAN IV) is provided on three reels for 9-track tapes or four reels for 7-track tapes. The first magnetic tape is a bootable RSX-11D system kit tape. This reel contains a number of system images which are run in sequence to create a single-terminal RSX-11D system from the files contained on the reel. The second magnetic tape for 9-track (or two tapes for 7-track) contains all the object files and command files for rebuilding the system components, if necessary. The final magnetic tape contains all files necessary for the FORTRAN IV distribution. Instructions for installing the FORTRAN compiler, OTS, etc., are detailed in the IAS/RSX-11 FORTRAN IV Installation Guide.

1.1.1 Creating the Initial System

The procedures for creating an initial system from the RSX-11D system kit tape are described in Chapter 2 of the RSX-11D System Generation Reference Manual.

1.1.2 Updating Existing RSX-11D Systems

The RSX-11D V6.2 magtape distribution system can be used to update an existing RSX-11D V6B (V6.1) system. The existing RSX-11D system disk need not be re-initialized and therefore the existing files remain intact. When running the system kit tape, answer 'NO' to the questions FORMAT DISK?, RUN BADBLOCKS? and INITIALIZE SYSTEM DISK?

NOTE

To accommodate the new task images and object module library files, a minimum of 4500 free blocks with sufficient contiguous disk space for the new files must be available on the system disk.

It is advisable to back up an existing system disk before attempting an update if there is any doubt that sufficient contiguous space is available. See the IAS/RSX-11 Disk Save and Compress User's <u>Guide</u>, (below, section 3.6.6) or the IAS/RSX-11 Preserve Utility User's <u>Guide</u>.

Users updating RK05-based systems should create new system disks because there will not be sufficient space on a single RK05 disk for the old and new files.

1.1.3 Procedures for Using Auxiliary Tapes

The directory organization of RSX-11D is described in the <u>RSX-11D</u> System Generation Reference Manual, section 2.2, and below, section 2.2.

Except for FORTRAN, all files in the distributed system are listed in Appendix A. The files for the FORTRAN IV tape are listed in the IAS/RSX-11 FORTRAN IV Installation Guide.

Distribution tapes containing auxiliary files are written in DOS format. The file interchange utility (FLX) should be used to obtain files from the tape. The commands submitted to FLX are described in the RSX-11 Utilities Procedures Manual.

1.2 RK05 Disk Cartridge Distribution

The complete RK05 distribution (including FORTRAN IV) is provided on five separate disk cartridges. The first cartridge contains a basic 48K, single-user RSX-11D system. The following three cartridges contain object files and command files for rebuilding system components, should this prove necessary. See Appendix A for directory listings. The final cartridge contains the FORTRAN IV distribution. Instructions for installing the FORTRAN compiler, OTS, etc., are described in the IAS/RSX-11 FORTRAN IV Installation Guide.

All RKØ5 disk cartridges are distributed in Files-11 format. The directory organization for Files-11 files is described in the <u>RSX-11D</u> System Generation Reference Manual. See Section 1.4 for further distribution information.

1.3 RK06 Disk Cartridge Distribution

The complete RK06 distribution (including FORTRAN IV) is provided on two separate disk cartridges. The first cartridge contains a basic 48K, single-user RSX-11D system, object files and command files for rebuilding system components, should this prove necessary. This system disk cartridge is a Files-11 volume with a directory organisation are described in the <u>RSX-11D System Generation Reference</u> <u>Manual</u>, section 2.2, and below, section 2.2. All files detailed in Appendix A are contained on this volume.

The second disk cartridge contains the FORTRAN IV distribution. Instructions for installing the FORTRAN compiler, OTS, etc., are described in the IAS/RSX-11 FORTRAN IV Installation Guide.

See Section 1.4, below, for further distribution implementation.

1.4 Disk Distribution Information (All Disk Types)

For backup purposes, it is strongly advised that all disks be copied prior to being used. The Disk Save and Compress (DSC) Utility should be used for this operation (see the IAS/RSX-11 Disk Save and Compress User's Guide and below, section 3.6.6).

The system disk need only be bootstrapped from device Ø. See the RSX-11D System Generation Reference Manual, section 2.3, for the appropriate bootstrap operation. When the disk is booted, the system displays the sign-on message for that version of the RSX-11D executive. All of the system memory will be available. If, however, the hardware has more than the basic 48K, a message of the following format is printed on the terminal:

SAV -- PARTITION GEN EXPANDED BY nnnn*32 (DEC) WORD BLOCKS

Additionally, if the central processor is a PDP-11/70, it will have been enabled as such, thereby overriding any previous specification.

RSX-11D V6.2 SYSTEM RELEASE NOTES

2.0 CONTENTS AND CHARACTERISTICS OF THE DISTRIBUTED SYSTEM

This section describes the basic 48K RSX-11D V6.2 system and the UFD conventions for holding files containing system components.

2.1 The Basic 48K System

The basic 48K RSX-11D system as produced from the system kit contains the terminal handler TT.... built for one terminal (the console terminal). To rebuild the handler for the number of terminals and terminal interfaces on the user's configuration, see the <u>RSX-11D</u> System Generation Reference Manual, section 2.4.

2.2 RSX-11D System Components

In RSX-11D the following UFD conventions are used for holding files containing system components:

UFD FILE TYPE

- [11,*] OBJs and Command files to build task images
- [111,*] MAP listings for system tasks
- [211,*] Listing files of source modules
- [311,*] Source modules and command files to assemble the source files

where * takes values representing the system components.

UFD

CONTENTS

[1,1] General system files

MACRO Library (RSXMAC.SML) On-line debugger (ODT.OBJ) Relocatable library (SYSLIB.OLB) File Control Services SGA (SYSRES.TSK, SYSRES.STB)

- [1,2] System message files handled by MO....
- [1,3] Temporary files for VERIFY Task
- [1,4] Input/Output Spool file area
- [1,6] Files produces by error logging
- [1,27] Diagnostic libraries
- [11,1] System task files

COMPONENT

- [*,2] File Control Services and SYSLIB Components
- [*,4] File exchange utility FLX
- [*,5] File utilities DUMP, ZAP, VERIFY, PIP
- [*,6] Batch editor SLP
- [*,7] Librarian LBR

UFD

- [*,10] MACRO assembler
- [*,11] Task builder
- [*,12] Spooler and Queue Manager Tasks
- [*,13] MCR system tasks
- [*,14] I/O handlers other than TT....
- [*,15] RSX-11D Executive
- [*,16] File Control Primitives and device management system tasks
- [*,17] System Generation
- [*,20] EDITOR
- [*,21] System Test Routines
- [*,23] BATCH
- [*,25] Unsupported Software
- [*,26] Accounting
- [*,27] Diagnostic handlers and tasks
- [*,30] PRESRV, DSC
- [*,32] CREF
- [*,33] Subroutines common to MACRO and CREF for virtual symbol table processing.
- [*,41] FORTRAN IV Compiler
- [*,42] FORTRAN IV OTS
- [*,103] Core Dump Analyzer
- [*,114] Terminal handler.

RSX-11D V6.2 SYSTEM RELEASE NOTES

3.0 FUNCTIONAL CHANGES BETWEEN RSX-11D V6B (V6.1) AND RSX-11D V6.2

This section contains descriptions of the following:

- . New hardware support
- . New terminal handler
- . System generation changes
- . Time slicer information
- . MCR changes
- . Additions to utility functions
- . Output spooler information
- . MOP FORTRAN
- . Unsupported software

3.1 New Hardware Support

For the full list of hardware supported see the Software Product Description (SDP) for RSX-11D V6.2.

3.1.1 New Devices and Device Handlers

The following new devices and device handlers are supported:

- . RKØ6 disk cartridge
- . RKØ5F (supported as two RKØ5s)
- . RPØ5/RPØ6 disk cartridges
- . RXØl floppy disk (as a data device only)
- . DKOVL (The overlapped seek version of the RK05 disk handler has been reissued)

The LP handler additionally includes all functionality of the RSX-11D V6B (V6.1) LPCENT handler.

NOTE

The LP05 printer should be identified as an LS type (and not an LP) at System Generation time.

3.1.2 New Processor Support

The following new processor types are supported:

- . PDP-11/34 (with optional hardware floating point processor)
- . PDP-11/35
- . PDP-11/50
- . PDP-11/55

The PDP-11/34 supplied without hardware sense switches uses a software switch register to simulate the hardware switches. This software switch register is accessed via the SET /SWR command (see the <u>RSX-11D</u> <u>User's Guide</u>, Chapter 6). The directive GSSW\$ (Get Sense Switches) automatically refers to the appropriate register (see the <u>RSX-11D</u> <u>Executive Reference Manual</u>, section 3.29). The executive will also cope with the absence of a hardware stack limit register on the PDP-11/34.

3.1.3 New Terminal Support

The following new VDU terminals and hardware interface are supported:

- . VT52 . VT55 . VT61
- . DZll interface

3.2 New Terminal Handler

The terminal handler has been rewritten. The new handler supports a greatly increased range of functions (see the <u>IAS/RSX-11D Device</u> <u>Handlers Reference Manual</u>, Chapter 2). The new functions include escape sequences, block mode, remote paper tape, and CTRL/C ASTs. The handler does not use nodes from the SCOM node pool for type-ahead and DH11 buffering.

The distributed MACRO assembler can be used to assemble the terminal handler (see the <u>RSX-11D System Generation Reference Manual</u>, section 2.4.4). However, as the in-core portion of the symbol table is small, considerable time will be taken performing disk I/O when expanding macros. Before assembling the terminal handler it is suggested that the following commands be executed if the GEN partition is greater than 32K:

MCR>REM ...MAC MCR>INS [11,1]MAC/INC=12000

The faster and larger version of MAC may be included for a subsequent system generation by editing the file [11,17]SYSBLD.CMD.

3.3 System Generation Enhancements

This section describes briefly the terminal handler, SGAs and multiuser tasks, POOL directive and SYSBLD directive.

3.3.1 Terminal Handler

The RSX-11D V6.2 system transferred from the distribution kit supports only one terminal, the console. The terminal handler must then be configured before phases 1 and 2 of system generation. Of the five interface types supported (DL, DH, DJ, DZ, DC) only three may be configured if all other features are present. Since all systems have a console DL11, only two of DH, DJ, DZ and DC may be used on the same system (see the <u>RSX-11D System Generation Reference Manual</u>, section 2.4.3.).

Errors during terminal handler generation are grouped together in the RSX-11D System Generation Reference Manual, section 2.4.5.

3.3.2 Shareable Global Areas and Multiuser Tasks

SGAs and multiuser tasks may now be installed during phase 1 of system generation, subject to the restrictions described in the <u>RSX-llD</u> System Generation Reference Manual, section 4.13.

3.3.3 POOL Directive

The POOL directive has been deleted because the new terminal handler does not use nodes from the SCOM node pool.

3.3.4 SYSBLD Directive

A new directive, SYSBLD, has been added for phase 2 of system generation so that an alternative command file can be specified in place of [11,17]SYSBLD.CMD. See the RSX-11D System Generation Reference Manual, sections 4.14 and 5.3.

3.3.5 Phase 2 System Generation

The System Generation task is now placed at the top of the partition in which it is installed (normally the GEN partition). This enables the terminal handler task and SGAs to be loaded at the bottom of the partition. The terminal handler can then be re-generated (for example, to include new terminals) and can be included in the system without change to the system generation command files. No separate partition is required for the terminal handler.

3.3.6 Console Log Output

The console log output is now directed to TI, rather than to CL as in previous versions. The log itself may be suppressed by typing CTRL/O. In this event, error messages and the end message will, however, be printed.

3.4 NEW TIME SLICER

A new time slicer has been incorporated into the executive. This is essentially the same version as distributed with the Time Slice Update kit for RSX-11D V6B (V6.1). For a functional description see the RSX-11D V6.2 System Manager's Guide, chapter 7.

3.5 New MCR Commands

This section describes new MCR commands and CDA switches.

3.5.1 Terminal Characteristics

A new MCR command TER has been addded in order to set terminal characteristics. This command can be issued either non-privileged to set the user's terminal, or [1,1] privileged to set one or more named terminals. See the <u>RSX-11D User's Guide</u>, chapter 5 and 6.

For facilities transferred from the RSX-11D V6B (V6.1) MCR SET commands note the deleted lines in the RSX-11D User's Guide, section 6.24.

3.5.2 Set Switch Register

A new privileged MCR set switch register option, SET /SWR, has been added. This option gives access to the software switch register for PDP-11/34 processors without a hardware switch register (see the <u>RSX-11D User's Guide</u>, Chapter 6).

3.5.3 <u>New CDA Switches</u>

CDA has three new switches, /CKQ (dump of clock gueue), /ASQ(dump of AST queues) and /SGA(dump of an SGA). See the <u>RSX-11D System Manager's</u> Guide, Chapter 6.

3.6 UTILITY ENHANCEMENTS

This section briefly describes enhancements to LBR, SLP, ZAP, PIP and DMP, and the new CMP, DSC and PAT utilities.

3.6.1 Librarian

LBR has two additional switches; extract module (/EX) and insert without entry point (/-EP). See the <u>RSX-11D User's Guide</u>, Appendix G.

3.6.2 Sliper Batch Editor

SLP can now locate lines specified by character strings. These strings can be specified either as a whole or by one or more initial and final characters. The user can also now change the audit trail marker and enable/disable its placing (see the <u>RSX-ll Utilities</u> <u>Procedures Manual</u>, Chapter 6).

3.6.3 ZAP Patching Utility

ZAP has been extended to support operations on tasks which have more than 64 segments.

NOTE

The number of overlay segments that ZAP can support is determined by extending the task size via the /INC option when the task is installed. Five additional words are required for each additional segment. The task is distributed with an increment of 350.

3.6.4 Peripheral Interchange Program

The following PIP switches, as documented in the <u>RSX-11 Utilities</u> Procedures <u>Manual</u>, are not supported for RSX-11D V6.2:

/BS	/SP
/RW	/UF

3.6.5 File Dump

The following DMP switches, as documented in the <u>RSX-11 Utilities</u> Procedures Manual, are not supported for RSX-11D V6.2:

/RS /DC /SP /RC

3.6.6 Disk Save and Compress Utility (DSC)

A new utility, DSC, is distributed with the RSX-11D V6.2 release. DSC provides media copy facilities for Files-11 volumes which allow disk-to-disk copy and disk-to-tape backup facilities. Disk-to-disk and tape-to-disk copies will effect a disk compression and will also take account of bad blocks information on the target disk.

DSC is intended as a replacement utility to Preserve (PRE). Although Preserve is still distributed, it is recommended that DSC be used for Files-11 disk copy and backup purposes.

Both input and output volumes should normally be mounted as foreign, thus

MOU ddnn:volid/CHA=[FOR]

However, if the system disk itself is to be backed up on-line, it should be mounted with device control functions enabled, thus

MOU ddnn:volid/CHA=[DCF]

DSC is not automatically installed. To install DSC either edit [11,17]SYSBLD.CMD or install by hand.

Unlike PRESRV, DSC does not write a bootable image onto the target medium. Hence a backup copy of a volume produced using DSC is normally restored using DSC running under the host system. Where this is impractical a 'stand-alone' DSC can be created in the following way:

- 1. From the binary distribution obtain the task image VMR.TSK and the file DSCSYS.SYS these are located in UFD [11,25].
- 2. Use the following command sequence to generate stand-alone DSC on the target device (ddnn)

MCR>RUN [11,25]VMR (altmode) ENTER FILENAME: [11,25]DSCSYS/IM VMR>SAVE ddnn:volid VMR>^2

where volid is any volume identifier.

3. Bootstrap the device (ddnn), when DSC V2.4 will announce itself. Proceed to use it in the normal way (see the IAS/RSX-11 Disk Save and Compress User's Guide).

3.6.7 File Compare Utility (CMP)

A new utility, CMP, is distributed with the RSX-11D V6.2 release. CMP compares two files, line by line, and prints a choice of:

1. Lines in each file not matching lines in the other.

2. One file, marked where it differs from the other.

3. An SLP command stream to convert one to the other.

See the RSX-11 Utilities Procedures Manual.

3.6.8 Object Module Patch Utility (PAT)

PAT allows the user to patch or update the code in a relocatable binary object module. Corrections are prepared in source form and assembled separately before patching. The patched modules then require relinking.

3.6.9 Bad Block Locator Utility (BAD)

The BAD Utility has the same function as the MCR>BAD command currently described in the <u>RSX-11D User's Guide</u> chapter 6, and updated for V6.2.

3.7 Output Spooler Enhancements

The output spooler (SPR2) now contains an optional one-page header and trailer feature for every file sent to a spooled printer-like device (that is, a device for which bit 2 of characteristics word 1 in the PUD (UC.TTY in U.Cl) is zero).

To enable this feature, SPR2 must be rebuilt (using the TKB command in [11,12]TKB12.CMD) with the two global patches (NOHD for headers and NOTR for trailers) removed.

UC.TTY is also used to determine whether a form feed should be output at the beginning of a file. If a terminal is being used as a printer and form feeds are required, the UC.TTY bit should be cleared. SYS /DEV should be used to find the location of the PUD and OPEN location /KNL to change the PUD. Conversely, if a plotter is being spooled, if the UC.TTY flag is set form feeds and headers and trailers will be suppressed.

3.8 MOP FORTRAN

MOP FORTRAN is no longer supported under RSX-11D.

3.9 Unsupported Software

The UFD [*,25] has been included in the RSX-11D V6.2 distribution to contain items of software which have been produced to run under RSX-11D but which are not supported as part of the standard RSX-11D V6.2 system. Some components have been distributed with earlier versions of RSX-11D (for example, TECO, RUNOFF) and others are new

components (for example, DDT). These components are provided as possible useful tools for customers who may wish to spend time investigating their usefulness. Digital make no claim that these components will either build or run successfully and no documentation is supplied. However, the reporting of any information regarding the usefulness of these software items and any suggested enhancements would be viewed with interest and the unsupported status of these components does not preclude such communications.

3.10 System Tests

The hardware system tests have been withdrawn. The diagnostics tasks should be used instead to investigate suspected hardware malfunction. See the RSX-11D Diagnostics Reference Manual. (Compate section 5.7 below.)

3.11 MACRO-11/CREF Subroutine Library

[11,33] contains an object module library of subroutines common to MACRO-11 and CREF. These subroutines perform virtual symbol table processing (see also 9.4, 9.5).

4.Ø OPERATIONAL CHANGES BETWEEN RSX-11D V6.B (V6.1) AND RSX-11D V6.2

This section describes the major operational changes and bug fixes for RSX-11D V6.2.

4.1 FORTRAN IV Distribution

FORTRAN IV is now distributed as part of the standard RSX-11D V6.2 kit either on a separate magnetic tape or an RK05 volume. The <u>IAS/RSX-11D</u> <u>FORTRAN IV Installation Guide</u> supersedes all references to the now deleted FORTRAN installation information in the <u>RSX-11D</u> System Manager's Guide, section 5.7.

4.2 System Generation INSTALL Commands

Install commands for a given partition in System Generation, phase 1, are no longer restricted to one line.

4.3 Date Standard

RSX-11D V6.2 incorporates Digital's date standard. The format is

dd-mmm-yy

where mmm is the first three letters of the month for example, 31-DEC-76. See the RSX-11D User's Guide, Chapters 5 and 6.

RSX-11D V6.2 SYSTEM RELEASE NOTES

4.4 Input Spooling

Input spooled job files are now written to the spool area SP:[1,4]. See the RSX-11D System Manager's Guide, section 3.3.4.1.

4.5 CREATE Cards

Account (UFD) specification is no longer optional on CREATE cards. A default of [200,200] is NOT used. (See the <u>RSX-11D System Manager's</u> <u>Guide</u>, section 3.3 and Table 3-3).

4.6 Card Input

On specification of 'Blank Suppress' on card input, a blank line now appears as a null record, instead of being completely removed. (See the RSX-11D System Manager's Guide, Table 3-4).

4.7 BATCH Management

The management of BATCH has been corrected and clarified. This includes the steps necessary at system generation, the listing of error messages, aborting an individual BATCH job and the use of \$EOD with FORTRAN source input. (See the <u>RSX-11D BATCH Reference Manual</u>, Chapters 3 and 4).

4.8 New Terminal Control Characters

CTRL/T is used to halt a paper tape reader (See the <u>User's Guide</u>, Table 3-5) when the terminal is in TAPE mode. CTRL/B is used to start or restart. CTRL/V cancels all type-ahead, unless a read-ahead is in progress, in which case it is ignored.

4.9 Updating an RSX-11D System

New procedures for creating the initial system from the distribution medium include the ability to update a previous system without initializing the system disk (see Section 1.1.2).

4.10 EDI Enhancements and Fixes

- A new EDI set-up command, UC ON, reversed by UC OFF, converts lower case characters entered from the terminal to upper case. The default initial state is UC ON. With UC OFF, all input characters are accepted as entered, except that all EDI commands are converted to upper case. (See the <u>RSX-11</u> Utility Programs Procedures Manual, Chapter 5).
- 2. CD and ED no longer delete the output file if there is no input file.
- 3. If an output file is renamed the same as the input file, the original file is no longer deleted.
- 4. The TYPE command given during line-by-line mode is executed as a PRINT command.

- 5. The TYPE command in block mode is executed as P%&N-%&N rather than P%&N&N-%.
- 6. EOB no longer returns the line pointer to the top of buffer. The line pointer remains at the end of the buffer.
- 7. The RENEW command now renews the number of buffers specified.
- 8. PASTE and SEARCH AND CHANGE no longer clear MACRO in progress.

5.0 DOCUMENTATION CHANGES

This section summarizes the documentation changes made to the manuals affected by this RSX-11D V6.2 release.

5.1 RSX-11D Batch Reference Manual

This manual has been revised with operating procedure information and \$EOD functional changes.

5.2 IAS/RSX-11D Device Handlers Reference Manual

This manual has been revised with further information regarding the enhanced multi-terminal handler and new disk support.

5.3 RSX-11D Executive Reference Manual

This manual has been updated with new stack state information following an AST and minor alterations to system directives.

5.4 IAS/RSX-11D Guide to Writing a Device Handler Task

This manual has been updated with new and corrected information on the system routines ..DQRE, ..DISP, ..ENBØ, ..RNTP and ..RNTV, on the system macros .INHØ, .INH and .ENB, on disk support, UITs and UMRs.

5.5 RSX-11D System Generation Reference Manual

This manual has been revised for RSX-11D V6.2. Major points of revision are as follows:

- 1. The DEV directive usage has been simplified.
- 2. The POOL directive has been deleted.
- 3. SYSBLD is a new directive for the user to specify an alternative command file in Phase 2.
- 4. The multi-terminal and communication line interface handler is configured before phase 1.

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- SGAs and multiuser tasks may now be installed during phase 1, subject to certain restrictions.
- 6. Preserve has been deleted and placed in a separate manual (see the RSX-11D Documentation Directory).

5.6 RSX-11D System Manager's Guide

This manual has been revised with new spooling and accounting information.

5.7 RSX-11D System Test Procedures Manual

This manual has been updated with corrections to system software test. The hardware test information has been removed.

5.8 RSX-11D Task Builder Reference Manual

This manual has been updated with information regarding task builder modifications for improved system performance. Minor corrections include the use of the /MP switch and the POOL option.

5.9 RSX-11D User' Guide

This manual has been updated with new information regarding control characters, date standard, spooling and the Compare Files (CMP) utility. New MCR commands TER and DEMO have been added and new LBR switches have been incorporated.

5.10 Utilities

There are two new manuals, the IAS/RSX-11 Disk Save and Compress User's Guide and the IAS/RSX-11 Preserve Utility User's Guide.

The <u>RSX-11 Utilities Procedures Manual</u> has been revised and is now common to <u>RSX-11D</u> and <u>RSX-11M</u>. For the enhancements documented and applicable to <u>RSX-11D</u> V6.2 see section 3.6 onwards.

5.11 <u>MACRO-11</u>

The <u>IAS/RSX-11 MACRO-11 Assembler Reference Manual</u> has been revised and is now common to RSX-11D, RSX-11M and IAS. The major change for RSX-11D V6.2 is the documentation of the Cross Reference (CREF) facility for listing references to global symbols.

5.12 IAS/RSX-11 I/O Operations Reference Manual

This manual has been revised. New topics include the support of sequenced variable-length records, the Table-driven command line Parser (TPARS), parameters FSRSZ\$ psect and CSI\$SW compflg. Enhancements include further magtape support. Minor corrections

affect CS.EQU, CSI\$SV and F.NREC.

5.13 RSX-11D Diagnostics Reference Manual

This manual has been updated with the RK06S and RK06D User Mode diagnostics programs and with minor corrections to operational information.

6.0 PARTITION AND COMPONENT SIZES

The standard RSX-11D V6.2 system provides three partitions:

- 1. SYDISK (see Section 6.1)
- 2. MCR (see Section 6.2)*
- 3. GEN (see Section 6.3)

6.1 SYDISK Partition

The SYDISK partition is used for holding the system disk handler and should be set to the size of the system disk handler being used, as follows:

DB (RPØ4) - size 77 octal blocks
(RPØ5)
(RPØ6)
DP (RPØ2) - size 41 octal blocks
(RPØ3)
DK (RKØ5) - standard version size 37 octal blocks
(RKØ5) - overlapped seek version (DKOVL) size 63 octal

blocks. DM (RKØ6) - size 104 octal blocks

6.2 MCR Partition

The MCR partition is used to run the MCR dispatcher. If all terminals require MCR active, the size of the MCR partition should be set so that the partition can contain as many active versions of MCR as there are terminals.

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The size should be calculated in octal core blocks, as follows:

MCR size = 13+n*10

where

n is the number of terminals

In order to allow MFT to execute (compare <u>RSX-11D BATCH Reference</u> <u>Manual</u>, section 3.4) the MCR partition should not be set less than 35 octal core blocks.

6.3 GEN Partition

The GEN partition is used for all other tasks in the distributed system, including the terminal handler and file system task.

NOTE

In phase 2 of System Generation the task SGN2 now runs at the 'top' of partition in which it is installed (normally GEN). When SGN1 requests the terminal handler, the handler is loaded with its SGAs at the 'bottom' of the partition. Therefore, the terminal handler can be modified (probably changing its size) and placed in the system by a system generation without the former necessity (as in V6.B) of determining its size and editing generation command files.

6.4 Partition Usage for Spooler Tasks

If input and/or output spooling are frequently used it may be advisable to run the output spooler tasks SPR... and SPR2.. and the input spooler task SPL... in a separate partition. If these tasks are not run in a separate partition it is possible that memory fragmentation may occur in the GEN partition. The gueue manager (SPR...) is non-checkpointable and although the despooler task (SPR2..) is checkpointable, it may be returned to memory so as to fragment the partition. If the priority of other executing tasks in the partition is lower than that of the spooler tasks, memory lockout situations could occur.

In the distributed system the priorities are:

SPR... (spool gueue manager) - priority minimum 100

SPR2.. (output despooler) - priority minimum 90

SPL... (input spooler) - priority minimum 80.

6.5 Terminal Handler Size Information

There are a number of options when building the terminal handler as documented in the <u>RSX-11D System Generation Reference Manual</u>. Most of these contribute to the size of the handler.

The major optional items are:

Features Supported	Parameter	Words	Reguired
'bells and whistles'	B\$\$AW	1.ØK	
escape sequences	E\$\$SEQ	Ø.7K	
set/get/dump characteristics	S\$\$CHR	Ø.8K	
dial-up	D\$\$IAL	Ø.2K	
block mode	B\$\$LCK	Ø.2K	

The following features each contribute less than 100 words:

22-bit support	B\$\$22
remote paper tape	T\$\$APE
backspace	B\$\$SP
silo fill	D\$\$HSF
terminal hold	H\$\$OLD
LA30S support	L\$\$3ØS
newline terminals	N\$\$L
simulated formfeed	S\$\$FF
VTØ5 support	V\$\$FIL

Each additional terminal requires about 32 words - the exact amount depends on other parameters. Each additional interface requires:

DC11	6 words
DH11	22 words
DJ11	22 words
DL11	6 words
DZ11	14 words

All sizes are approximate. The exact size of any particular configuration of the terminal handler may be computed by adding the size of the task TT... (obtained from the SYS /TAS command) and the two libraries TTLIBA and TTLIBB (obtained from the SYS /COM command). In addition, the handler requires the system library SYSRES to be resident.

7.0 COMPATIBILITY WITH RSX-11D V6B (V6.1)

This section briefly describes general rebuilding considerations, terminal characteristics information and system generation of user-written device handlers.

7.1 General Re-building Considerations

The following general considerations should be noted:

- 1. Privileged tasks will require rebuilding.
- 2. Tasks which link into SYSRES require rebuilding.
- 3. Tasks which contain routines taken from the system library [1,1]SYSLIB.OLB require re-task building.

7.2 Terminal Characteristics Information

The terminal handler now holds information regarding terminals internally. Previously, terminal information was stored in the device

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characteristics words and the GLUN\$ directive was used to obtain this Whenever possible, a task should be modified to use the get data. characteristics functions terminal handler of the (see the IAS/RSX-11D Device Handlers Reference Manual, chapter 2). If this is not possible, the device characteristics should be given explicitly via the DEV directive in System Generation, phase 1, rather than using TERM device name. The values used should be identical to those for RSX-11D V6B (V6.1); the terminal handler does not use these words and their value is irrelevant to its operation. Future versions of the terminal handler may use these words and new software should not be written to depend upon their contents.

7.3 System Generation of User-written Device Handlers

The handler ISR node pool has been eliminated for RSX-11D V6.2. Handlers which pick nodes at ISR level may cause system failure because the routine ..PENV operates at a priority of 3. Such handlers should be modified to pick all nodes required at task level.

8.0 PATCHING THE RSX-11D V6.2 EXECUTIVE

The RSX-11D executive is not distributed with patch space. If it is necessary to publish a patch which requires the inclusion of additional code, the following procedure will be used. The procedure places the additional code at the end of the executive and uses global patch statements to insert instructions to call this at the appropriate place in the new code.

- 1. Edit the executive task build command file [11,15]TKB15.CMD and insert immediately before the line [11,15]EXEC/LI:LVEND the line [11,15]PATCH.
- 2. Create a source file [311,15] PATCH.MAC:

.TITLE EXECUTIVE PATCH AREA

.IDENT "V6.2"

.END

.

.

Then, for each executive patch supplied by Digital, use the following procedure:

- 1. Insert any source code patches in the file [311,15]PATCH.MAC between the .IDENT and .END statements. Instructions which are referenced by the executive main code will be given global labels.
- 2. Assemble PATCH using the command:

MCR>MAC [11,15] PATCH, [211,15] PATCH/-SP=[311,15] PATCH

3. Rebuild the executive to include the new PATCH object module:

MCR>TKB @[11,15]TKB15

- From [111,15]EXEC.MAP determine the addresses of the patch's global labels.
- 5. Edit [11,15]TKB15.CMD to insert the global or absolute patch statements substituting for the global label names the values determined from the map in the step above.
- 6. Rebuild the executive using the new [11,15]TKB15.CMD file:

MCR>TKB @[11,15]TKB15

7. Rebuild the system bootstraps:

MCR>TKB @[11,17]BOOTSBLD

8. Perform a system generation to incorporate the new executive into the system. If SGN1 returns a REAL MEMORY EXCEEDED message it will be necessary to reduce the size of one of the partitions. This condition is caused by the real memory consumption of the patch.

9.0 VARIATIONS OF SYSTEM TASKS

This section briefly describes certain features that may be modified to enable an installation to best configure software components to suit specific requirements.

9.1 Timeslicer Parameters

The timeslicer parameters described in chapter 7 of the <u>RSX-llD System</u> <u>Manager's Guide</u>, Table 7-1, are globally defined variables in the system common area SCOM. In order to modify parameter locations, addresses must first be obtained by consulting [111,15]EXEC.MAP or using the command:

MCR>TKB LP:=[1,1]EXEC.STB

The MCR function 'open' can then be used (by privileged users only) to tune the timeslicing operation by modifying the timeslicer parameter locations, for example:

MCR>OPE "SL.SWP"/KNL

The parameter most critical for performance is the memory swap slice (SL.SWP). This is initially set to 15 (decimal). The following values are recommended, depending on the type of the checkpoint disk. They are estimates based on considerations of rotational latency, seek time, etc., for each disk.

Type	Recommended SL.SWP
RPØ4/5/6	12.
RPØ3	30.
RKØ5	60.
RSØ3	10.
RSØ4	6.

The timeslicer parameter PR.MAX, which is subject to change, must not be set greater than 127 (decimal).

9.2 Ancillary Control Processors

A number of ACPs are provided in the released system:

- FCP.TSK This is a minimum size, heavily overlaid version of FllACP. It is recommended for systems with limited space and where high file processing throughput is not essential.
- BIGFCP.TSK This is a minimally overlaid FllACP with additional buffer space. It incurs almost no overlay switching during normal operation of disk access due to its additional buffer space.
- DTAACP.TSK This is a version of FllACP that can be used for DECtape operation. Task name DTAACP.
- DTFACP.TSK This is a fixable version of DTAACP.
- MTAACP.TSK This is the ACP for magnetic tape processing.
- MTAFACP.TSK This is a fixable version of MTAACP.

NOTE

FllACP should always be fixed in memory.

When using DECtape, it is advisable to use the DTAACP. This is because all processing in an ACP is serial and if F11ACP is used for processing DECtapes it can reduce the file processing throughput for other devices. DTAACP can be set as the default ACP for DECtape at system generation time.

9.3 Task Builder

The task builder uses dynamic memory for symbol processing, keeping a workfile partly in core and partly on disk.

The performance of the task builder can be increased if the disk portion of the workfile resides on a fast device (for example, RSØ4). The task builder uses LUN8 for its dynamic workfile. In the released system, this LUN is assigned to the device on which task builder resides. This LUN can be reassigned to another device before system startup.

Example:

MCR>REA ... TKB 8 DS1:

Performance can also be increased if extra core is available and if TKB itself can be rebuilt. Parameters which can be altered to take advantage of extra core are described in the <u>RSX-11D Task Builder</u> <u>Reference Manual</u>, Appendix I. These include FRSI21, the size of the in-core portion of TKB's dynamic memory.

9.4 MACRO Assembler

Only one configuration of the MACRO assembler is distributed. It is small and heavily overlaid to ensure that it can be used on the smallest supported configuration.

A larger, faster version may be built using the TKB command files available in [11,10]. This version can be of advantage if the source program requires considerable use of macro expansions.

Both versions of MACRO use symbol table space partly in core located above the task image and partly on the system disk. The size of the core resident area, having a default value defined when the task is built, can be altered dynamically by REMoving the task and re-installing it with a new value of increment.

The user should refer to Appendix F of the <u>IAS/RSX-11 MACRO-11</u> <u>Assembler Reference Manual</u> in order to select a suitable value of in-core work space.

Speed of access to the disk-resident portion of the assembler symbol table can be increased by using a work file on a fast disk. This can be achieved using an MCR command of the form:

MCR>REA ...MAC 8 ddnn:

9.5 CREF

CREF uses an identical method to Task Builder's for symbol processing (see section 9.3). To reassign CREF's workfile use a command of the form:

MCR>REA CRF... 7 ddnn:

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10.0 SOFTWARE DISPATCH INFORMATION

The DIGITAL Software Dispatch, published monthly, contains product announcements, informational notes, descriptions of software problems and solutions, and other information pertinent to Category A and B software. The Dispatch is automatically sent for one year to a Category A or B software installation site. It is addressed to the person at the installation who has been designated as the software contact. After the first year of service, please contact your local DIGITAL field office for information concerning Software Maintenance Service.

The Software Dispatch Review, which has been enclosed with this manual contains initial articles concerning current software set, documentation and the status of known software problems. This material should be inserted into a system maintenance notebook and supplemented with articles as they are published in the monthly Software Dispatch. The format of the articles has been designed to aid the user to (1) quickly determine the specific application of information within an article and (2) file the information in the proper location in the system maintenance notebook. Each article published contains information about a single topic, with the topic title printed at the top of each page. In addition, the following information is printed at the top of each page:

Software Product -- The software products and versions for which the article is relevant.

Component -- The system component, within the software product, that is described or affected by the article.

Sequence Number -- The unique number that identifies an article with respect to a system component. This number is increased by one for each new article published for a particular system component. An asterisk (*) may appear after the sequence number to indicate that the article contains a patch to the software product.

Occasionally, a prior article is to be replaced with a newly published article. This is indicated by a note at the top of the page.

Certain articles in the Software Dispatch are published in response to Software Performance Reports (SPR's) that are sent by customers to report any problems encountered with DIGITAL software. In most cases, an article of this type will describe the procedure for a software patch to remedy a problem.

A supply of SPR forms, along with instructions for their use, has been included with this manual set.

APPENDIX A

A.Ø DIRECTORY LISTING FOR BINARY DISTRIBUTION FILES

The files in the Binary Distribution Kit are shipped as follows.

- RKØ5 on 3 disks. The files are on individual disks as listed, beginning overleaf.
- 2. RKØ6 all on the same disk. Files as overleaf.
- 3. 7-track magtape on 2 tapes.

For each UFD the filenames are as listed overleaf. The UFDs are allotted as follows:

[1,1] [311,13] [1,2] [11,14] [11,2] [311,14] [21,4] [11,17]	<u>Tape 1</u>	Tape 2
[11,5] [11,21] [11,6] [11,22] [11,7] [11,23] [11,10] [11,25] [11,11] [311,25] [11,12] [11,26] [11,13] [1,27] [11,16] [11,103] [11,20] [11,14] [11,30] [311,114] [11,33] [11,10]	[1,2] [11,2] [21,4] [11,5] [11,6] [11,7] [11,10] [11,11] [11,12] [11,13] [11,15] [11,16] [11,20] [11,30] [11,32] [11,33]	[11,14] [311,14] [11,17] [11,21] [11,22] [11,23] [11,25] [311,25] [11,26] [1,27] [11,27] [11,27] [11,103] [11,114]

4. 9-track magtape - As overleaf but all on the same tape.

1

.

Disk #1 DIRECTORY DK0:[1,1] 7=DEC=76 22:46 194. RSXMAC.SML13 07-DEC-76 22:41 18. 07-DEC-76 22:42 EXEC.ST813 ODT.OBJ14 07=DEC=76 22:42 9. PRESRV.SYS14 66. C Ø7=DEC=76 22:42 UDLIB.OLB;3 16. C 07-DEC-76 22:42 SYSLIB. OLBIJ 07-DEC-76 22:42 162. C Ĭ6. SYSRES. TSK13 C 07-DEC-76 22:42 2. Ø7-DEC-76 22:42 SYSRES, STB13 2. 07=DEC=76 22:42 07=DEC=76 22:42 TRACE, OBJ13 TTLIBA.TSK13 3. C TTLIBB, TSK13 8. Ç 07-DEC-76 22:42 TOTAL OF 496, BLOCKS IN 11, FILES DIRECTORY DK0: [1,2] 7=DEC=76 22146 5. LBR.MSG12 07-DEC-76 22:42 PRT.MSG13 2, 07=DEC=76 22:42 QIOSYM.MSG1323 29. 07=DEC=76 22:42 6, 07-DEC-76 22:42 PIP_MSG115 2, 07=DEC=76 22:42 VFY_MSG;10 TOTAL OF 44, BLOCKS IN 5, FILES DIRECTORY DKØ: [11,2] 7-DEC=76 22:46 CMLLBR.CMD12 07-DEC-76 22:42 1. BUILDALL.CMD16 2. 07-DEC-76 22:42 LSLBR_CHD12 1. 07-DEC-76 22:42 PURLBR.CMD12 07-DEC-76 22:42 1. 07-DEC-76 22:42 SYSLIBLBR CHD17 1. Ø7=DEC=76 22:42 OVRLBR.CMD12 1. R8XMACSML . CHD;7 07=DEC=76 22:42 1. EXELBR, CMD16 1. Ø7=DEC=76 22:42 UTLLBR.CMD/10 07=DEC=76 22:42 1. 87=DEC=76 22142 FCSLBR.CMDJ17 4. 07=DEC=76 22:42 UDLIB.CMD13 1. SYSRESLBR, CMD; 13 SQZBLD, CMD; 3 07=DEC=76 22:42 5 Ø7-DEC-76 22:42 1. TKB2 CMD13 07-DEC-76 22:42 1. SYSBLD_CMD111 1. 07-DEC-76 22:42 SYSRESLIB, OLB/2 68. C Ø7=DEC=76 22:42 TOTAL OF 91. BLOCKS IN 16. FILES DIRECTORY DK0: [11,4] 7=DEC=76 22146 TKB4_CMD16 1. Ø7-DEC-76 22:42 8. 07=DEC=76 22:42 FLXBLD.0DL111 FLX.OLB12 150. 07=DEC=76 22:42

TOTAL OF 159, BLOCKS IN 3, FILES

Disk #1 (Continued)

DIRECTORY DK0:111,51 7-DEC-76 22:46

TKB5.CMD;22 PIPBLD.CMD;15 PURPIP.CMD;11 DMPBLD.CMD;6 VFYBLD.CMD;14 ZAPBLD.CMD;1 GIOBLD.CMD;1 GIOBLD.CMD;33 ZAPBLD.ODL;13 PIPBLD.ODL;23 PATBLD.ODL;23 PATBLD.ODL;33 UTLLIB.OLB;2 PIP.OLB;2 PIP.OLB;2 PIP.OLB;2 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 PIP.OBJ;1322 VFY.CMD.OBJ;104 VFYSBR.OBJ;104 VFYLOS.OBJ;104 VFYLOS.OBJ;104	1. 2. 1. 1. 1. 1. 1. 2. 2. 1. 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	Ø7=DEC=76 22:42 Ø7=DEC=76 22:42
VFYCMD.0BJ1104 VFYSBR.0BJ1103 VFYCCK.0BJ1100 VFYFRE.0BJ1100	4 . 9 . 4 . 2 .	07-DEC-76 22:42 07-DEC-76 22:42 07-DEC-76 22:42

TOTAL OF 251, BLOCKS IN 39, FILES

DIRECTORY DK0:[1 7-DEC-76 22:46	1,14]		
MOODL.ODL;11 DPBLD.CMD;6 DKOVBLD.CMD;1 DKOVL.CMD;1 DFBLD.CMD;7 DKBLD.CMD;7 DKBLD.CMD;12 LBR14.CMD;16 UDTRACE.CMD;6 UDHTBLD.CMD;1 DBBLD.CMD;1 MOBLD.CMD;6		07 = DEC = 76 07 = DEC = 76	22143 22143 22143 22143 22143 22143 22143 22143 22143 22143 22143 22143

Disk #1 (Continued)

DXBLD.CMD;3 DMBLD.CMD;17 TKB14.CMD;3 AF.OBJ;1 AD.OBJ;1 CRBR.OBJ;1 CRBR.OBJ;1 DF.OBJ;1 DF.OBJ;1 DKOVL.OBJ;1 DX.OBJ;1 DX.OBJ;1 LSOATA.OBJ;1 TU10.OBJ;1 TU10.OBJ;1 TU16.OBJ;1 TTØ1.OBJ;1 DP.OBJ;1 DP.OBJ;1 DP.OBJ;1 PP.OBJ;1 PP.OBJ;1 PP.OBJ;1 PP.OBJ;1 MOROOT.OBJ;1 MOROOT.OBJ;1 MOROOT.OBJ;1 MOFCS.OBJ;1 UDLAINLIN.CBJ;1 UDLBC.OBJ;1 UDLBC.OBJ;1 UDLBC.OBJ;1 UDLBA.OBJ;1 UDLBIN.OBJ;1 UDCONFIG.OBJ;1 TKB14X.CMD;2 TOTAL OF 23	1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	07-DEC-76 22:43 07-DEC-76 22:43 07-DEC
DIRECTORY DK0:[31], 7-DEC-76 22:46	,14]	
CRBR, MACJ20 CRNP, MACJ22 PR, MACJ6 PP, MACJ11 UDCONFIG, MACJ31 UDSYMBOLS, MACJ30 UDMACDEFS, MACJ30	100. 115. 54. 52. 11. 11.	07-DEC-76 22:43 07-DEC-76 22:43 07-DEC-76 22:43 07-DEC-76 22:43 07-DEC-76 22:43 07-DEC-76 22:43 07-DEC-76 22:43

TOTAL OF 354. BLOCKS IN 7. FILES

Disk #1 (Continued)

DIRECTORY DK0:[11,114] 7=DEC=76 22:46

LBR114.CMDJ1	1.	07=DEC=76 22:43
TKB114.CMD11	1.	07-DEC-76 22:43
TTTKB CMD;1	4	07-DEC-76 22:43
TTTKBNMAP, CMD;1	4,	07-DEC-76 22:43
TTUNOVR . CMDJ1	4,	07=DEC=76 22:43
TTODL, ODL 11	2,	07=DEC=76 22:43

TOTAL OF 16. BLOCKS IN 6. FILES

DIRECTORY DK0: [311,114] 7-DEC-76 22:46

	. .	0- bee - 00.47
SETCH.MAC135	84.	07-DEC-76 22:43
ICHAR MACJ101	57.	07-DEC-76 22:43
ESCSEG, MAC124	31.	07-DEC-76 22:43
TT, MACJ67	57.	07-DEC-76 22:43
IDLE MACIII0	65.	07=DEC=76 22:43
RCHAR MAC131	19.	07=DEC=76 22:43
TSKDAT.MACI22	11.	Ø7=DEC=76 22:43
TBLEND, MACI3	3.	07-DEC-76 22:43
TDEF MACIS	2.	07=DEC=76 22:43
INIRTN.MAC:30	26.	07=DEC=76 22:43
ERRPRT.MAC112	10.	07-DEC-76 22:44
ERMSG MAC 17	7,	07=DEC=76 22:44
	2	07=DEC=76 22:44
POWERF. MACI7	5.	
PARCHK.MACI10	9.	07=DEC=76 22:44
OCHAR_MAC135	36.	07=DEC=76 22:44
DATA.MACF11	62.	07-DEC-76 22:44
MODEM MAC 133	48.	07-DEC-76 22:44
		07=DEC=76 22:44
BUFMAN.MAC153	58.	
WRITE, MAC:54	27 🕯	07=DEC=76 22:44
ESGSY MAC17	10.	Ø7=DEC=76 22:44
TTSYM, MAC120	17.	07=DEC=76 22:44
NODES MAC 15	4,	07-DEC-76 22:44
TTSYMD.MAC11	3	07-DEC-76 22:44
ESGSYD.MACJ1	3.	
TSKRTN. MAC: 103	72.	07=DEC=76 22:44
TBLS, MACI14	54.	07=DEC=76 22:44
HEADER, MACI36	21.	07-DEC-76 22:44
INIT MACI65	54.	97-DEC-76 22:44
	20.	07-DEC-76 22:44
ESQTEL.MAC124		
LINES MACI76	101.	07=DEC=76 22:44
CONFIG_MACJ1	6,	07-DEC-76 22:44
READ, MACF133	7Ö.	07-DEC-76 22:44
ISRRTN. MACI62	40.	07-DEC-76 22:44
PARAMS, MACII		
FARADO BANDI	30.	07=DEC=76 22144
TTMAC CHDIS	5.	07=DEC=76 22:44
MAC114.CMD11	1.	07=DEC=76 22:44
CONFIGMAC, CMD/1	1.	07=DEC=76 22:44
TTMACCHK.CMDJ1	i.	07-DEC-76 22144
TTHACNLST.CHD14		07=DEC=76 22:44
IIMACNEQ: COUP4	3.	D/-DEV-/A 58144

TOTAL OF 1133, BLOCKS IN 39, FILES

22:46:17 22:46:17 22:46:18 22:46:19 22:46:19	SI SMCR SMES SI SEOJ	DMO DKØ: Unload dkø
--	----------------------------------	------------------------

Disk #2

DIRECTORY DKØ:1 7-DEC-76 22:55		
TKB6.CMD/1 SLPBLD.CMD/7 SLPCRF.OBJ/1 CMPRS.OBJ/1 ERSLP.OBJ/1 GETLN.OBJ/1 GTSLP.OBJ/1 IOSLP.OBJ/1 POSIT.OBJ/1 PUTLN.OBJ/1 SCSLP.OBJ/1 SLPSB.OBJ/1	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	07-DEC-76 22:47 07-DEC-76 22:47 1N 14, FILES

DIRECTORY DK0:[11,12] 7-DEC=76 22:55

OPR.ODL13	1.	07=DEC=76 22:47
TKB12 CHD;1		07-DEC-76 22:47
		07-DEC-76 22:47
IOPRT, OBJ/1	1.	07-DEC-76 22:47
PRT.OBJ11	4	07-DEC-76 22:47
PRTX OBJ71	1.	07=DEC=76 22:47
SPR2_OBJ71	5.	07-DEC-76 22:47
SETUP OBJ11	2,	07=DEC=76 22:47
RCVAST.0BJ11	6	07=DEC=76 22:47
IDAST OBJ;1	9,	07-DEC-76 22:47
OPR.OBJ11	2,	07=DEC=76 22:47
FORMAT.OBJ11	3.	07=DEC=78 22:47
INLINE.0BJ/1	5	07=DEC=76 22:47
QUE, OBJ11	14	07=DEC=76 22:47
PRSFND, OBJ;1	3.	07=DEC=76 22:47
TMPDIR, 08J;1	2,	07=DEC=76 22:47
SPR.OBJ11	11.	07=DEC=76 22:47
SPL,OBJ11	7.	07=DEC=76 22:47

TOTAL OF 81. BLOCKS IN 18. FILES

DIRECTORY DK 7-DEC=76 22		
TKB13.CMD;1 CMPTKB.CMD;3 INSBLD.CMD;3 REMBLD.CMD;1 INFOBLD.CMD;1 RUNBLD.CMD;1 DEMOBLD.CMD;1 INSODL.ODL;1 SYSTAS.ODL;1	1 2 1 7 1 1 1 0 1 1 4 5 2 1	07-DEC-76 22:47 07-DEC-76 22:47 07-DEC-76 22:47 07-DEC-76 22:47 07-DEC-76 22:47 07-DEC-76 22:47 07-DEC-76 22:47 07-DEC-76 22:47 07-DEC-76 22:47
RUNODL.ODL;1: ACT.OBJ;1 BYE.OBJ;1		07=DEC=76 22:47 07=DEC=76 22:47 07=DEC=76 22:47

Disk #2 (Continued)

451 00 111	F	47-DEC-76 00147
HEL,OBJJ1	5.	07-DEC-76 22:47
LUN.OBJ11	4.	07=DEC=76 22:47
MCRERR, OBJ11	5,	07-DEC-76 22:47
MCR,0BJ11	4	07=DEC=76 22:47
TTMCR.OBJ11	4.	07=DEC=76 22147
MEM OBJII	3	07-DEC-76 22:47
MFT OBJ11	7	07=DEC=76 22147
	1	
OPE.OBJ11	8,	07-DEC-76 22:47
PWD, OBJ31	4.	07-DEC-76 22:47
REA.OBJ11	4.	07=DEC=76 22:47
RED,OBJ11	4.	07=DEC=76 22:48
SET, OBJ31	8	07=DEC=76 22:48
TER OBJ11	16.	07-DEC-76 22:48
TIM OBJ/1	4	07-DEC-76 22:48
	7.	
TKTN.OBJ11	4.	07-DEC-76 22:48
UNL OBJII	4.	Ø7=DEC=76 22148
BLDGC.0BJ;1	3,	07-DEC-76 22;48
BLDST, OBJ;1	3.	07=DEC=76 22:48
DPMLT OBJ11	1,	07=DEC=76 22148
ERINS OBJ:1	10.	07-DEC-76 22:48
GTMCR OBJ11	2.	
INSTL OBJ11	3,	07-DEC-76 22148
IOINS, OBJ/1	2.	07-DEC-76 22:48
INSPR_OBJ;1	7.	07=DEC=76 22:48
INSRU, OBJ71	1.	07-DEC-76 22:48
SCINS.OBJ;1	2,	07=DEC=76 22:48
SRSTD, OBJ;1	1.	07-DEC-76 22:48
VRFHD OBJ11	9	07-DEC-76 22:48
VDELD 091+4	<i>,</i>	
VRFLB, OBJ;1	6.	07-DEC-76 22:48
REMOV.OBJ;1	6.	07=DEC=76 22:48
ERREM, OBJ11	4.	07=DEC=76 22:48
CONTN_OBJ;1	2,	07-DEC-76 22;48
ERCON, OBJ11	2	07=DEC=76 22:48
RUNMN, OBJ;1	3,	07-DEC-76 22:48
RUNPRS, OBJ11	6	07-DEC-76 22:48
RUNDSP.0BJ;1		07-DEC-76 22:48
RUNUSP OBJ1	3.	
RUNERR, OBJ11	3.	07-DEC-76 22:48
RUNINS.OBJ11	3.	07=DEC=76 22:48
RUNCSI OBJ11	3,	07=DEC=76 22:48
SYSPRS. OBJ11	3,	07=DEC=76 22:48
SYSSCN, OBJ11	6	07=DEC=76 22:48
TASSYS. OBJ11	4.	Ø7-DEC=76 22148
DEVSYS.OBJ11	2,	07-DEC-76 22:48
PARSYS, OBJ11	2	07-DEC-76 22:48
COMOVO OB 114	2,	
COMSYS.OBJ11	3.	07-DEC-76 22:48
WHO, OBJ11	2,	07-DEC=76 22148
POOL OBJII	2.	Ø7=DEC=76 22148
SGA_OBJ;1	2.	07=DEC=76 22:48
DEMO OBJ11	11	07-DEC-76 22148
CMP OBJ11	6	07-DEC-76 22148
CMPMAIN 08J;1	4,	07-DEC-76 22148
	7	
CMPRTNS OBJ;1	7.	07-DEC-76 22:48
CMPDATA OBJ11	3.	07-DEC-76 22:48
CMPSAVRG.OBJ11	1.	07-DEC-76 22:48
TERTKB, CMD17	1.	07=DEC=76 22:48
MCRERR.STB13	2.	07-DEC-76 22:48
	-	

TOTAL OF 267. BLOCKS IN 68. FILES

Disk #2 (Continued)			
DIRECTORY DK0:[311, 7-DEC-76 22:55	13]		
DEMO.MACJ105 Demoasm.CmDj1	74. 1.	07=DEC=76 07=DEC=76	
TOTAL OF 75	. BLOCKS IN	2, FILES	
DIRECTORY DK0:[11,1 7-DEC=76 22:55	5)		
EXEC.OLB/2 TKB15.CMD;1		07=DEC=76 07=DEC=76	
TOTAL OF 16	64. BLOCKS I	N 2, FILES	
DIRECTORY DK0:[11,1 7-DEC=76 22:55	.6)		
F11MSG.ODL;2 FCP.ODL;1 BIGFCP.ODL;1 MTAACP.ODL;1 F11MSG.CMD;7 INIT'CMD;1 UFD.CMD;1 MTALBR.CMD;1 MTALBR.CMD;1 MOU.CMD;1 DMO.CMD;1 PCP.CMD;1 DTAACP.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 BAD.CMD;1 INIROT.OBJ;1 INIROT.OBJ;1 INIBIT.OBJ;1 INIBIT.OBJ;1 INIMAG.OBJ;1 INIMAG.OBJ;1 INIMAG.OBJ;1 INIMOM.OBJ;1 COT2B.OBJ;1 MOUPRT.OBJ;1 MOUPRT.OBJ;1 MOUPAR.OBJ;1 UFD.OBJ;1 VFD.OBJ;1	4. 8. 1. 1. 5. 1. 1. 1. 2. 2. 1.	07 - DEC - 76 07 -	22:48 22:48 22:48 22:48 22:48 22:48 22:48 22:48 22:48 48 22:48 48 48 48 48 48 48 48 48 48 48 48 48 4

UFDPTB.0BJ;1 F11ACP.0BJ;1 F11CM.0BJ;1 DISPAT.0BJ;1	3. 1. 2. 4.	07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49
ACCESS.0BJ/1 ALLOC.0BJ/1 ATCTL.0BJ/1 BLXI0.0BJ/1	2, 1. 1. 1.	07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
CKSUM OBJ11 CLACC OBJ11 CLCOM OBJ11 CLCRE OBJ11 CLCRE OBJ11 CLDAC OBJ11	1. 1. 2. 1.	07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
CLDIR.08J11 CLEXT.08J11 CLFCB.08J11 CLNUP.08J11 CNTRL.08J11	1. 2. 1. 2. 1.	07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49
CRFID.0BJ}1 CRFIL.0BJ}1 DARITH.0BJ}1 DATIM.0BJ}1	1. 2. 1. 1.	07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49
DEACC.0BJ11 DLBLK.0BJ11 DLFIL.0BJ11 DLHDR.0BJ11 DLHDR.0BJ11	2. 1. 1. 1.	07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49
DMOUNT.OBJ;1 DRACC OBJ;1 DRALC.OBJ;1 DRCPY.OBJ;1 DRCPY.OBJ;1 DREOF.OBJ;1	2. 2. 1. 1.	07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
DREX.OBJ/1 DREXT.OBJ/1 DRGET.OBJ/1 DRINI.OBJ/1	1. 2. 1. 1.	07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
DRPAC.0BJ;1 DRVLB.0BJ;1 DRWRT.0BJ;1 ENTNM.0BJ;1 ERRMSG.0BJ;1	1. 1. 2. 2.	07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
EXCOM OBJ;1 EXTEN OBJ;1 EXTHD OBJ;1 FDRMV OBJ;1 FNDNM OBJ;1	3, 1, 2, 2, 1,	07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
GTFID.OBJ/1 GTMAP.OBJ/1 INFCB.OBJ/1 INIT.OBJ/1	1. 1. 1.	07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
INWIN OBJ;1 IXEXT.OBJ;1 LOCAT.OBJ;1 MOUNT.OBJ;1 MOUPAR.OBJ;1	1. 1. 1. 5. 5.	07=DEC=76 22:49 07=DEC=76 22:49 27=DEC=76 22:49 07=DEC=76 22:49 07=DEC=76 22:49
MPHDR,0BJ;1 MPVBN,0BJ;1 MXQI0,0BJ;1 NXHDR,0BJ;1 OVERR,0BJ;1	1. 1. 1. 1.	07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49 07-DEC-76 22:49
PROCK.OBJ11	1.	07=DEC=76 22:49

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PURGE.OBJ11	2.	07=DEC=76 22:49
RATCH OBJ71	1,	07-DEC-76 22:49
		07-DEC-76 22:49
RDATT, OBJ;1	1.	
RDHDR, OBJ;1	2,	07-DEC-76 22:49
RLEAS, OBJ; 1	1.	Ø7-DEC-76 22:49
RLFCB OBJ11	1.	07-DEC-76 22:49
RMVNM, OBJ; 1	Ĩ.	07-DEC-76 22:49
RWATT.OBJ;1	1.	07-DEC-76 22:49
RWVB.OBJ71	2,	07-DEC-76 22:49
RWVBL,OBJ;1	2.	Ø7=DEC=76 22:49
RW1LB_OBJ#1	1.	07-DEC-76 22:49
SCFAC, OBJ;1	1.	07-DEC-76 22:49
SCFCB, OBJ;1	1	07-DEC-76 22:49
CMALE OB IN		
SMALC, OBJ;1	3.	
SMCOM, OBJ11	1.	07-DEC-76 22:49
SMDEL OBJ;1	1.	07-DEC-76 22:49
SMNXB OBJ;1	1.	07-DEC-76 22:49
SMRVB OBJ;1	i,	Ø7-DEC-76 22:49
		07-DEC-76 22:49
SMSCN.OBJ11	1.	
TRUNC, OBJ11	2,	07-DEC-76 22:49
WACCK_OBJ;1	1.	Ø7=DEC=76 22:49
WATCM OBJ;1	2,	Ø7=DEC=76 22:49
WITRN OBJ;1	1,	07-DEC-76 22:49
WRATT OBJ11	1.	07=DEC=76 22149
WRHDR.08J11	1.	07-DEC-76 22149
WTRN1,08J71	1.	Ø7=DEC=76 22149
F11MSG.OBJ;1	2.	07-DEC-76 22149
FI1MDF.OBJ;1	1.	07-DEC-76 22:49
F11MGØ.0BJ11	2	07-DEC-76 22:49
F11MG1 OBJ11		07-DEC-76 22149
	2.	
F11MG2.0BJ11	1.	07-DEC-76 22:49
FCPLIB, OLB12	92.	C 07+DEC-76 22:50
MTALIB.OLB;2	85.	C 07-DEC-76 22150
F11MSGSTB, STB; 3	1.	07-DEC-76 22:50

TOTAL OF 426, BLOCKS IN 135, FILES

DIRECTORY DK0:[11,17] 7=DEC=76 22:55

TKB17.CMD124	•	07-DEC-76 22:50
	2.	
SG1BLD.CMD;63	1.	07-DEC-76 22:50
SG2BLD.CMD127	1.	07=DEC=76 22:50
INVBLD_CMD;40	1.	07=DEC=76 22:50
BOOTSBLD.CMD;1	2.	07-DEC-76 22:50
SAVBLD.CMD126	1.	07=DEC=76 22:50
MCRBOTBLD, CMD;31	1,	07-DEC-76 22:50
SGIBLD, ODL16	3.	07-DEC-76 22:50
INVODL ODL:23	2	07-DEC-76 22:50
SYCOM OBJ11	6	07-DEC-76 22:50
MAIN, OBJ#1	2.	07=DEC=76 22:50
SYINF OBJ11	2.	07-DEC-76 22:50
MGPAR OBJ;1	13.	07-DEC-76 22:50
SOLIC OBJ11	1.	07-DEC-76 22:50
NMCHK OBJ11	1.	07-DEC-76 22:50
GTCHL OBJ11	2,	07-DEC-76 22:50
CLRBF OBJ;1	1.	07-DEC-76 22:50
CKTB, OBJ/1	1.	07=DEC=76 22:50
CCTB_OBJ/1	1.	07-DEC-76 22:50
CSTS.OBJ11	1.	07-DEC-76 22:50

A-10

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EDTMG_OBJ;1	2,	07=DEC=76 22:50
CVTD OB.111		07-DEC-76 22:50
SCVTR, OBJ;1	1.	
PTOUT OBJ11	1.	07=DEC=76 22:50
ERMSG OBJ11	1 1.	Ø7=DEC=76 22:50
	••••	
MADC_OBJ11	5,	07-DEC-76 22:50
OVRLP,OBJ;1	2,	07=DEC=76 22150
ETLES OB.111	-	07-DEC-76 22:50
FILES, OBJ/1	4.	
POSWT.OBJ11	1.	07=DEC=76 22:50
GENER OBJ11	3,	07-DEC-76 22:50
POOLG OBJ11	1,	07=DEC=76 22:50
CRBOT, OBJ11	2,	07=DEC=76 22:50
DEVON OB 1+4		
DEVGN, OBJ11	4.	
GBLGN OBJ;1	1.	07=DEC=76 22:50
DVSCH.OBJ;1	4	07-DEC-76 22:50
TPDGN,OBJ ; 1	7.	07=DEC=76 22:50
LUNAS OBJ71	2,	07-DEC-76 22:50
STOLC OB ILL		
STDAG, OBJ;1	7.	
STKNUL, OBJ11	2,	07=DEC=76 22:50
PARGN, OBJ11	2,	07=DEC=76 22:50
DYNAM OBJ71	3.	07-DEC-76 22:50
VPICV OBJji	2,	Ø7=DEC=76 22:50
SGN2 OBJ11		07-DEC-76 22:50
	11.	
BSGGC,OBJ;1	3.	07=DEC=76 22:50
BSGST_OBJ11	2,	07 - 0 <u>E</u> C - 76 22:50
ERINS, OBJ 1	10.	07-DEC-76 22:50
GTMCR, OBJ11	2.	07=DEC=76 22:50
		07-DEC-76 22:50
INSTL, OBJ/1	3,	
IOINS OBJ;1	2.	07=DEC=76 22:50
ISGPR OBJ;1	7	07=DEC=76 22:50
SCINS, OBJ;1	2.	07=DEC=76 22:50
SSGTD.0BJ/1	1.	07=DEC=76 22:50
VSCUP DRJIL		07-DEC-76 22:50
VSGHD OBJ11	8,	''
VRFLB_OBJ;1	6.	07=DEC=76 22:50
DPMLT.OBJ11	1.	07-DEC-76 22:50
RKØ5BOOT.OBJ;1	2.	07-DEC-76 22:50
RF11BOOT,OBJ31	2.	07-DEC-76 22150
		07-DEC-76 22:50
RP03BOOT.OBJ11	2.	
RP04800T.08J11	2,	07-DEC-76 22:50
R\$048007.08J;1	2.	07-DEC-76 22150
	-	
RKØ6BOOT.OBJ11	2.	07-DEC-76 22:50
MCRBOT.OBJ;1	6.	07-DEC-76 22150
BOTERR, OBJ11		07=DEC=76 22150
SUILER OP II		
MESOUT, OBJ11	2.	07=DEC=76 22:50
SAV, OBJ/1	31.	07-DEC-76 22150
TPDADJ.08J/1	4	07-DEC-76 22:50
TOPCHK, OBJ11	1.	07=DEC=76 22:50
PANICP_OBJ11	1	07=DEC=76 22150
		07-DEC-76 22:50
SYSGENREM, CHD; 1	2.	
SYSBLD,CMD/1	21.	07-DEC-76 22:50
RK05148K.CMD11	2,	07-DEC-76 22:50
RKØ5P48K,CMD11	2,	07=DEC=76 22150
RP02148K.CMD;1	2.	07-DEC=76 22:50
RP02P48K.CMD11	2,	07-DEC-76 22:50
	F .	
RPØ3L48K,CMDJ1	2,	07=DEC=76 22:50
RPØ3P48K CMD11	2	07-DEC-76 22:50
RP04L48K.CMD11	▲ ⁻	07-DEC-76 22:50
RPØ4P48K.CMDJ1	2.	07=DEC=76 22150
RP05L48K.CMD11	2	07-DEC-76 22:50
RPØ5P48K.CMD11	2.	07-DEC-76 22:50
RP06L48K.CMD;1	2,	07=DEC=76 22150
RP06P48K.CMD11	2.	07-DEC-76 22:50
र र अन्द्रता एक सार्वे सामिति कि		

Disk #2 (Continued) RKØ6L48K.CMD11 2. 07-DEC-76 22:50 2, RKØ6P48K.CMD;1 07-DEC=76 22:50 TOTAL OF 282. BLOCKS IN 83. FILES DIRECTORY DK0: [11,20] 7-DEC=76 22:55 TKB20_CMD13

 1.
 07-DEC-76
 22:50

 2.
 07-DEC-76
 22:50

 3.
 07-DEC-76
 22:50

 2.
 07-DEC-76
 22:50

 5.
 07-DEC-76
 22:50

 4.
 07-DEC-76
 22:50

 11.
 07-DEC-76
 22:50

 2.
 07-DEC-76
 22:50

 4.
 07-DEC-76
 22:50

 6.
 07-DEC-76
 22:50

 6.
 07-DEC-76
 22:51

 1.
 07-DEC-76
 22:51

 2.
 07-DEC-76
 22:51

 3.
 07-DEC-76
 22:51

 1.
 07-DEC-76
 22:51

 2.
 07-DEC-76
 22:51

 3.
 07-DEC-76
 22:51

 1.
 07-DEC-76
 22:51

 1.
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 3.
 07-DEC-76
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 2.
 07-DEC-76
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 07-DEC-76
 22:51

 2.
 07-DEC-76
 22:51

 1. 07-DEC-76 22:50 EDIBLD.CMD11 BOTTM.OBJ11 2. 07-DEC-76 22:50 CMSUB OBJ11 EDMCM, OBJ11 EDIMP OBJ11 EDMRS OBJ11 EDSUB OBJ11 ERROR OBJ11 FILE OBJ11 FILE.0BJ/1 GETNM.0BJ/1 LINMP.0BJ/1 MCALL.0BJ/1 MSCCM.0BJ/1 OPCLS.0BJ/1 SAVE.0BJ/1 SCAN.0BJ/1 SRCCM.0BJ/1 START.0BJ/1 JTYI0.0BJ/1 JTYIO OBJ;1 UNSAV OBJ;1 2. 07-DEC-76 22151 UNSAV OBJII 07-DEC-76 22:51 2. TOTAL OF 65. BLOCKS IN 21. FILES DIRECTORY DK0: [11,21] 7-DEC-76 22:55 1. 07-DEC-76 22151 14. 07-DEC-76 22151 ····· 1. TKB21 CMD13

 1.
 07-DEC-76
 22151

 14.
 07-DEC-76
 22151

 3.
 07-DEC-76
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 6.
 07-DEC-76
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 22151

 3.
 07-DEC-76
 22151

 4.
 07-DEC-76
 22151

 12.
 07-DEC-76
 22151

 8.
 07-DEC-76
 22151

 1.
 07-DEC-76
 22151

 TKB21D.CMDJ1 TKB21F, CMD16 TKB21F.CMDJ6 TSTSY3.0BJJ1 TSTDAT.0BJJ1 TSTGLB.0BJJ1 TSTGL7.0BJJ1 TSTGL7.0BJJ1 TSTGL7.0BJJ1 TSTG1A.0BJJ1 TST02A.0BJJ1 TST02B.0BJJ1 TST03B.0BJJ1 TST03B.0BJJ1 TST03B.0BJJ1 TST04A.0BJJ1 TST04A.0BJJ1

 8.
 07-DEC-76
 22:01

 12.
 07-DEC-76
 22:01

 1.
 07-DEC-76
 22:51

 1.
 07-DEC-76
 22:51

 9.
 07-DEC-76
 22:51

 1.
 07-DEC-76
 22:51

 1.
 07-DEC-76
 22:51

 5.
 07-DEC-76
 22:51

 7.
 07-DEC-76
 22:51

 07-DEC-76
 22:51
 07-DEC-76

 07-DEC-76
 22:51
 07-DEC-76

 TST05A. OBJ11

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TST058.0BJ11 TSTØ6A.0BJ11

TSTO7A, OBJII TST078.08311

TST10A.08JJ1

TST108_08J11

07-DEC-76 22:51 07-DEC-76 22:51

07-DEC-76 22151

07-DEC-76 22:51

TST10C,08J11	1.	07-DEC-76 22:51
101100-08114	**	
TST10D.0BJ11	2.	
TST11A.08J11	3.	07-DEC-76 22151
TST11B.0BJ11	2,	07-DEC-76 22:51
TST12A.0BJ11	4,	07=DEC=76 22151
TST128.08J11	1.	37=DEC=76 22:51
TST12C.08J11	2	07-DEC-76 22151
VOTANA ARTA		07-DEC=76 22151
TST13A.0BJ11	3.	
TST13B.0BJ11	1.	07=DEC=76 22:51
TST14A.0BJ11	5.	07=DEC=76 22:51
TST148.0 ^B J/1	2,	07=DEC=76 22:51
TST14C.0BJ11	3,	Ø7=DEC=76 22:51
TST140.08J11	1.	07-DEC-76 22:51
TST14E.0BJ/1	2.	07-DEC-76 22:51
TST14F.0BJ11	1.	07-DEC-76 22:51
TST15A, OBJ11	6,	07=DEC=76 22:51
TST16A, OBJ11	7.	07-DEC-76 22:51
TST16B.0BJ11	1,	07=DEC=76 22:51
TST16C.0BJ;1	Ĩ,	07-DEC-76 22:51
TST17A.0BJ11		07=DEC=76 22:51
	7.	
TST178.08J11	2.	07-DEC-76 22:51
TST20A,0BJ11	5.	07-DEC-76 22:51
TST208.08J;1	. 3,	07=DEC=76 22:51
TST21A.0BJ11	3,	07=DEC=76 22:51
TST218,0BJ11	1,	07-DEC-76 22:51
TST22A, OBJ11	<u>.</u>	07=DEC=76 22151
	2.	
TST23A.0BJ11	3,	Ø7=DEC=76 22:51
TST24A,08J11	5,	Ø7=DEC=76 22:51
TST24B, OBJ11	1.	07-DEC-76 22151
TST24C, OBJ11	2,	07=DEC=76 22:51
TST25A, OBJ11	4,	07-DEC-76 22:51
TST258,08J11		07-DEC-76 22:51
101200.00001	1.	
TST46A, OBJ11	6	07=DEC=76 22:51
TST47A.0BJ11	5.	07=DEC=76 22:51
TST35A, OBJ11	5,	07=DEC=76 22:51
TST36A OBJ11	7	07=DEC=76 22:51
TST37A, OBJ11	8	07=DEC=76 22:51
TST40A.0BJ11		07=DEC=76 22:51
TST41A.08J11	7.	07=DEC=76 22:51
TST42A, OBJ11	11.	07=DEC=76 22:51
TST43A.0BJ11	14.	07=DEC=76 22:51
TST44A. OBJ11	8,	07=DEC=76 22:51
TST45A.0BJ11	9	07=DEC=76 22:51
TST50A.OBJ11	6.	07-DEC-76 22:51
TOTODALOWAT		
TST51A.08JJ1	5.	07=DEC=76 22:51
FCPREJ OBJ11	2.	07=DEC=76 22151
TST30A, OBJ11	11.	07-DEC-76 22151
TST31A, OBJ11	8,	07=DEC=76 22151
TST32A.0BJ11	5,	07-DEC-76 22:51
TST328,08J11	4	07-DEC-76 22:51
18132C, 08J11	3,	07-DEC-76 22:51
101350.00411	7 <u>2</u>	
TST33A.08J11	15.	07=DEC=76 22:51
T9734A.08J11	15.	07-DEC-76 22:51
TST34B.0BJ11	21.	07-DEC-76 22:51
		· · · · ·
TOTAL C	F 394, BLOCKS	IN 78, FILES
· • • • • • • •	· ** ** ********	

DIRECTORY DK0: (11,23) 7-DEC-76 22:55

TKB23_CMD117	2,	07=DEC=76 22:51
BAT, ODL14	1.	07=DEC=76 22:51
BPR, ODL 16	1.	Ø7=DEC=76 22;51
BAT.OBJ11	9,	07=DEC=76 22:51
INI OBJ/1	5,	07=DEC=76 22:51
COB, OBJ11	6,	07=DEC=76 22:51
SOR, OBJ11	4	07-DEC-76 22:51
ERR, OBJ11	6	07-DEC-76 22:52
SEG OBJ11	2,	07-DEC-76 22:52
JOB OBJ11	5,	07-DEC-76 22:52
MES, OBJ 1	2,	07=DEC=76 22:52
	5 g 7	
MOU,OBJ;1	7.	07-DEC-76 22:52
DIS OBJ11	3.	07-DEC-76 22:52
LIN.OBJ/1	8,	07-DEC-76 22152
RUN.OBJ;1	4	07-DEC-76 22152
DAT OBJ11	-4,	07=DEC=76 22:52
EOJ.OBJ11	3	07=DEC=76 22:52
MCR, OBJ 1	5.	07-DEC-76 22:52
CRE OBJ11	3.	07-DEC-76 22:52
COP OBJ11	5	07-DEC-76 22:52
DEL OBJ11	2	07-DEC-76 22:52
		07=DEC=76 22:52
DIR,OBJ11	3,	
PRI OBJ/1	2.	07-DEC-76 22152
FOR OBJ;1	7.	07-DEC-76 22:52
MAC, OBJ71	7.	07-DEC-76 22:52
MAIN_OBJ11	4	07-DEC-76 22:52
INIT_OBJ/1	5,	07=DEC=76 22:52
PROC.OBJ/1	2,	07-DEC-76 22:52
CLOSE, OBJ;1	2	07=DEC=76 22:52
FLUSH OBJ11	5	07-DEC-76 22:52
ERRMES OBJ11	2	07-DEC-76 22:52
SNAME, OBJ 1		07=DEC=76 22:52
		07=DEC=76 22:52
SOJ OBJII	4.	
UTIL'OBJ71	1.	07-DEC-76 22:52
HEADER OBJ11	3	07=DEC=76 22:52
LOGGER.OBJ11	2.	07-DEC-76 22:52
OPR, OBJ11	3.	07=DEC=76 22:52
REQTSK OBJ11	2,	07=DEC=76 22:52
PUTBAT,08J11	1.	Ø7=DEC=76 22:52
DELFIL.08J11	2.	07=DEC=76 22:52
CHGUIC, OBJ;1	1.	07-DEC-76 22:52
STMKT OBJ11	1,	07=DEC=76 22152
JOBACT OBJ11	3	07-DEC-76 22152
0-0AC1.0-071	· •	
TOTAL OF	150. BLOCKS	IN 43. FILES
GIAL OF	TANE DPACKO	en ant LèPèna
NTREATORY DEC. 1	1 061	
DIRECTORY DK0:11	1/201	
7=DEC=76 22155		
	-	
TKB05ACC.CMD11	5,	07=DEC=76 22152
TKBØ7ACC+CMDJ1	1.	07-DEC-76 22:52
TKB1ØACC.CMDJ1	9	07=DEC=76 22152
TKBØ4ACC.CMDJ1	1.	07=DEC=76 22:52
TKRAAACC CNDAA	2.*	

INDIGALLELMUII	Υ.	0/=UCU=/0 22102	
TKB04ACC.CHD11	1.	07-DEC-76 22:52	
TKB41ACC.CMD11	3.	07-DEC-76 22:52	
TKB11ACC.CMDJ1	9	07=DEC=76 22:52	
TKB20ACC.CMD11	2	07-DEC-76 22:52	
TKBØ6ACC.CMD11	1.	07=DEC=76 22:52	

TKB26 CMD;1	1.	07-DEC-76 22:52
RPTBLD.CMD11	1	07=DEC=76 22:52
UTLACCELD, BIS12	1,	07=DEC=76 22:52
ACCLOG.OBJ;1	3	07=DEC=76 22:52
ACCRPT, OBJ11	10.	07=DEC=76 22152
ACCABT, OBJ;1	1.	07-DEC-76 22152
ACCOFF, OBJ11	2,	07=DEC=76 22:52

TOTAL OF 50, BLOCKS IN 15, FILES

DIRECTORY DK0:[11,30] 7-DEC=70 22:55

1.		07-DEC-76 22:52
2.		07-DEC-76 22152
2.		07-DEC-76 22:52
1		Ø7=DEC=76 22:52
1,		07-DEC-76 22:52
1		07=DEC=76 22:52
66.	C	07=DEC=76 22152
21.		07=DEC=76 22:52
4.		07=DEC=76 22:52
3,		07-DEC-76 22:52
2.		07-DEC-76 22152
9		07=DEC=76 22:52
9,		07=DEC=76 22:52
6		07-DEC-76 22:52
2.		Ø7=DEC=76 22152
1.		07=DEC=76 22:52
1,		Ø7=DEC=76 22:52
3,		Ø7=DEC=76 22152
5		07=DEC=76 22:52
2,		07-DEC-76 22:52
141.		07=DEC=76 22:52
	2. 1. 1. 661. 3. 9. 6. 1. 1. 5. 2. 1. 3. 5. 2. 1. 1. 5. 2. 1. 1. 5. 2. 1. 1. 5. 2. 1. 1. 5. 2. 1. 1. 5. 2. 1. 5. 5. 2. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	2, 1, 1, 1, 66, C 21, 4, 3, 2, 9, 9, 6, 2, 1, 1, 1, 3, 5, 2,

TOTAL OF 283, BLOCKS IN 21, FILES

•

Disk #3 DIRECTORY DK0: [11,7] 7=DEC=70 23:00 07-DEC-76 22:56 TKB7 CMD11 1. 07-DEC-76 22156 LBRBLD.ODL110 4. LBRBLD.CMD12 2. 07-DEC-76 22156 LBR.OLB12 62. 07=DEC=76 22:56 C TOTAL OF 69. BLOCKS IN 4. FILES DIRECTORY DK0: [11,10] 7-DEC-76 23:00 07=DEC=76 22:56 07=DEC=76 22:56 07=DEC=76 22:56 07=DEC=76 22:56 07=DEC=76 22:56 TKB10.CMD12 1. 4. MACBLD.CMD114 6. PURMACBLD, CMD114 MACBLD. ODL110 5, C Ø7-DEC-76 22:56 MACLIB, OLB;2 148, TOTAL OF 164, BLOCKS IN 5, FILES DIRECTORY DK0:[11,11] 7-DEC-76 23:00 3. 07=DEC=76 22:56 07=DEC=76 22:56 TKBBLD.CMD116 UNOVRTKB.CMD147 4. TKBODL ODLIIG 07-DEC-76 22156 10. 192. TK8.0LB12 Ĉ 07-DEC-76 22:56 TOTAL OF 209. BLOCKS IN 4. FILES DIRECTORY DK0: [11,32] 7-DEC-76 23:00 07-DEC-76 22:56 3. CRFBLD.CMD151 CRFBLD. 0DL155 4. Ø7-DEC-76 22156 50, C 07-DEC-76 22:56 CRF.OL812 4. SRCIV, OBJ11 Ø7=DEC=76 22:56 4. UNOVRCRF . CMD14 07=DEC=76 22156 CRFPIPCON.CHD12 07=DEC=76 22:56 1. TOTAL OF 66, BLOCKS IN 6, FILES DIRECTORY DK0: [11,33] 7-DEC=76 23:00 C 07-DEC-76 22:56 CRFLIB.OLB/2 23.

TOTAL OF 23, BLOCKS IN 1, FILE

Disk #3 (Continued)			
DIRECTORY DK0:[1,27] 7-DEC-76 23:00			
SYE.OLB13 DIAGD.OLB13 DIAGU.OLB13	246. 25. C	07=DEC=76 07=DEC=76 07=DEC=76 07=DEC=76 07=DEC=76	22156 22156
TOTAL OF 453	BLOCKS IN	5. FILES	
DIRECTORY DK0:[11,27] 7-DEC=76 23:00	1		
ERLBLD.CMDJ1 ERFBLD.CMDJ1 SYEBLD.CMDJ1 DGNBLD.CMDJ1 DGNBLD.CMDJ6 P8EBLD.ODLJ1 SYEBLD.ODLJ1 ERRLOG.OBJJ1 DTD.OBJJ1 DFD.OBJJ1 DFD.OBJJ1 TU10D.OBJJ1 TU10D.OBJJ1 DSD.OBJJ1 DBD.OBJJ1 RDBD.OBJJ1	1. 1. 4. 5. 2. 3. 8. 1. 1. 1. 7. 8. 1. 1. 7. 9. 6. 1.1.	07 = DEC = 76 07 = DEC = 76	22156 22156 22157
DIRECTORY DK0: [11,10]			
CDATKB,CMDJ2 CDAODL,ODLJ1	1. 4. 100. C	07-DEC-76 07-DEC-76 07-DEC-76 07-DEC-76 4. FILES	22:57 22:57
DIRECTORY DK0:[11,110 7-DEC-76 23:00	9]		
TKB110.CMDJ3 MAC.CMDJ10 MAX.CMDJ7 PURMAC.CMDJ2 PURMAX.CMDJ136 MAC.ODLJ4 MAX.ODLJ3	2 2 3 3 3 3 3 3	07-DEC-76 07-DEC-76 07-DEC-76 07-DEC-76 07-DEC-76 07-DEC-76 07-DEC-76 07-DEC-76	22157 22157 22157 22157 22157 22157 22157

.

ASGMT.OBJ;1 ASSEM.OBJ;1 CNDTL.OBJ;1 CODHD.OBJ;1 DATDR.OBJ;1 ENBDS.OBJ;1 ENDDS.OBJ;1 ENDPS.OBJ;1 ENDPS.OBJ;1 FLOAT.OBJ;1 GETLN.OBJ;1 INFIL.OBJ;1 INFIL.OBJ;1 LSTCG.OBJ;1 MACRG.OBJ;1 MACRS.OBJ;1 MACRS.OBJ;1 MACRS.OBJ;1 MACRC.OBJ;1 MACRC.OBJ;1 MACRC.OBJ;1 MACRC.OBJ;1 MCALL.OBJ;1 MCALL.OBJ;1 PROFC.OBJ;1 PROPC.OBJ;1 PROPC.OBJ;1 PROPC.OBJ;1 PROPC.OBJ;1 REPT.OBJ;1 REPT.OBJ;1 REPT.OBJ;1 RSDAT.OBJ;1 RSDAT.OBJ;1 SETIMM.OBJ;1 SETIMM.OBJ;1 SETIMM.OBJ;1 SETIMM.OBJ;1 SETMX.OBJ;1 STACE.OBJ;1 STMNT.OBJ;1	2,3,4,2,4,4,6,3,3,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4	07-DEC-76 22:57 07-DEC-76 22:57 07-DEC
TOTAL OF DIRECTORY DK0: [11	-	3 IN 54, FILES
7-DEC-76 23100	•	
RNOLBR.CMD;2 INDBLD.CMD;2 RNOBLD.CMD;2 TECBLD.CMD;5 MCRBLD.CMD;5 INDLBR.CMD;4 INDLST.CMD;1 LBR25.CMD;3	1. 1. 3. 1. 1. 1.	07-DEC-76 22:57 07-DEC-76 22:57 07-DEC-76 22:57 07-DEC-76 22:57 07-DEC-76 22:57 07-DEC-76 22:58 07-DEC-76 22:58 07-DEC-76 22:58

TKB25,CMD)10	1.		07-DEC-76	22:58
VMRBLD.CMD15	1		07=DEC=76	22158
RNOBLD. ODL14	1.		07-DEC-76	22:58
INDBLD. ODL12	1.		07=DEC=76	22:58
MCRBLD.ODL12	1.		07-DEC-76	22158
VMRBLD. 0DL122	5.		07-DEC-76	22158
DSCSYSSYSJ1	98.	C	07=DEC=76	22158
VMR.OLBI1	183.	Ç	07=DEC=76	22158

TOTAL OF 306, BLOCKS IN 16, FILES

DIRECTORY DK0: [311,25] 7-DEC-76 23:00

RNPRE, MACII	3.	07-DEC-76	22:58
COMND, MAC 11	7	07-DEC-76	
HYPHEN.MAC15	55.	07-DEC-76	22:58
FMTCM_MACI1	27.	07-DEC-76	22158
ERMSG MACI1	9.	07-DEC-76	22158
START_MAC11	9	07-DEC-76	
RUNOFF MACI10	81.	07-DEC-76	- 0
RNCHD MAC:1	21.	07-DEC-76	
INDEX MACTI	12.	07=DEC=76	22:58
PINDX MACI1	6	07-DEC-76	
RNFID, MAC11	10.	07=DEC=76	
RNORSX.MACI30	5	07-DEC-76	
RNDASM.CMD12	2.	07-DEC-76	22:58
DDTASM. CMD15	1	07-DEC-76	22:58
DDTRSX.MAC15	171.	07-DEC-76	
GETNUM MACII	4.	07=DEC=76	
GNBLK MACI1	5	07-DEC-76	
INDASH CMD15	1	07-DEC-76	
INDCMD.MACI1	1.90.	07-DEC-76	
INDFCS.MACJ1	9	07-DEC-76	
INDMCR_MACI1	14.	07-DEC-76	
INDPRE_MACI1	2.	07-DEC-76	
INDRCT.MAGI1	84.	07-DEC-76	22:58
INDSUB_MAC;1	89.	07-DEC-76	22:58
	* •	07-DEC-76	22158
MAC25 CMD35 MGCML MAC31	1.	07-DEC-76	22:58
TECASM. CMD12	30.	07-DEC-76	
TECO MACII	1. 146.	07-DEC-76	
		07=DEC=76	
TECOIO.MACI1	76.		66100

TOTAL OF 971. BLOCKS IN 29. FILES

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