



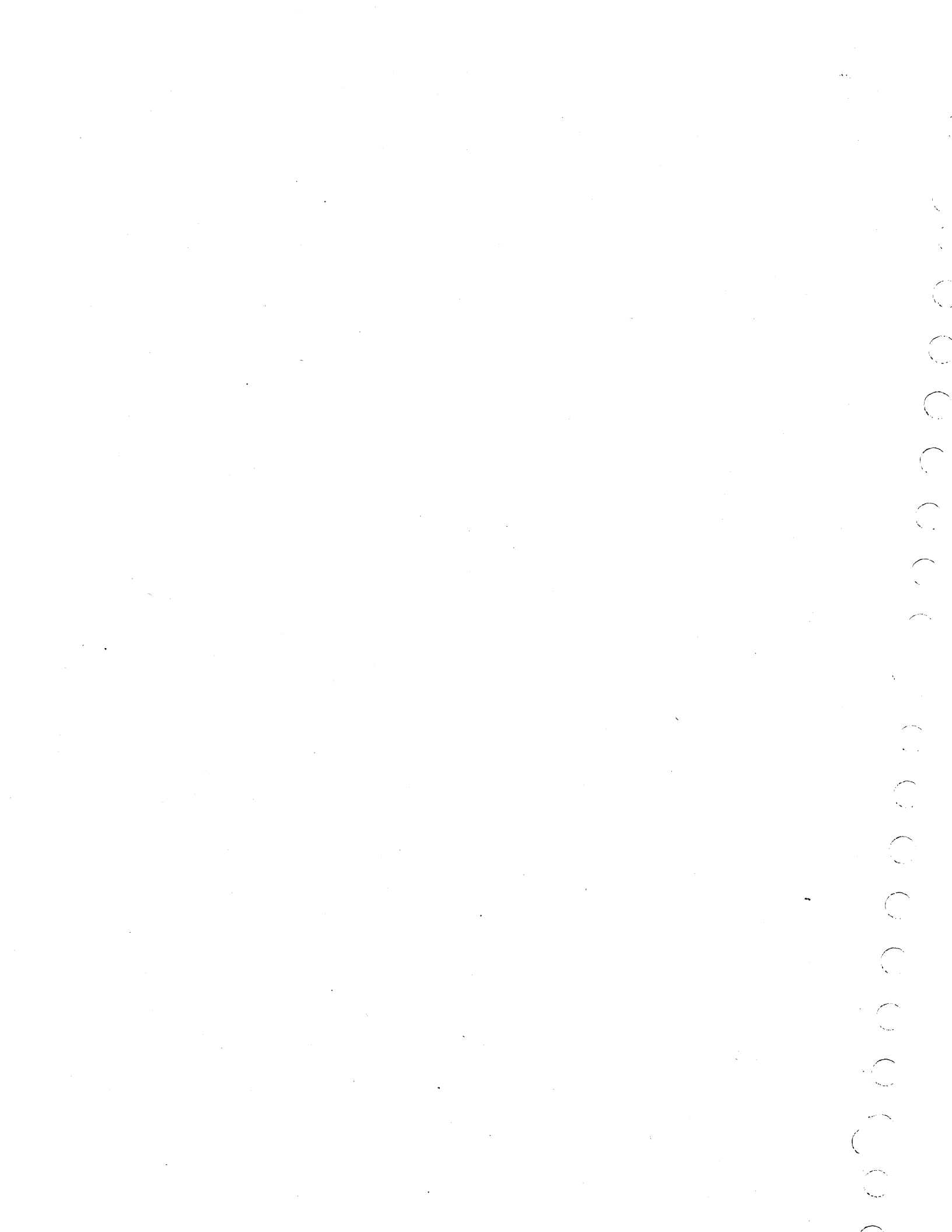
**INTERACTIVE TERMINAL-ORIENTED
SYSTEM (ITOS) VERSION 2
INSTALLATION HANDBOOK**

**CDC® COMPUTER SYSTEMS:
CYBER 18 MODELS 10M AND 20**

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PREFACE

This installation handbook describes the procedures necessary to install a CDC® CYBER 18-10M/18-20 Interactive Terminal-Oriented System (ITOS) Version 2.0. All materials necessary to install a particular user's operational system are supplied by the distribution center.

The installation procedures refer to materials provided on removable disk packs or magnetic tape for the system and flexible disk for products.

It is assumed that the reader has a basic knowledge of the CYBER 18 Mass Storage Operating System (MSOS).

Additional information may be found in the following publications:

<u>Publication</u>	<u>Publication Number</u>
BAM 18 Reference Manual	60475420
COBOL Version 1 Reference Manual	96769060
Interactive Terminal-Oriented System (ITOS) Version 2 Reference Manual	96769240
Macro Assembler Reference Manual	60361900
Mass Storage FORTRAN Version 3A/B Reference Manual	60362000
Mass Storage Operating System (MSOS) Version 5 Reference Manual	96769400
RPG II Version 2 Reference Manual	96768710
Software Peripheral Drivers Reference Manual	96769390
X780 Remote Job Entry Reference Manual	60475430

This product is intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undescribed features or unidentified parameters.



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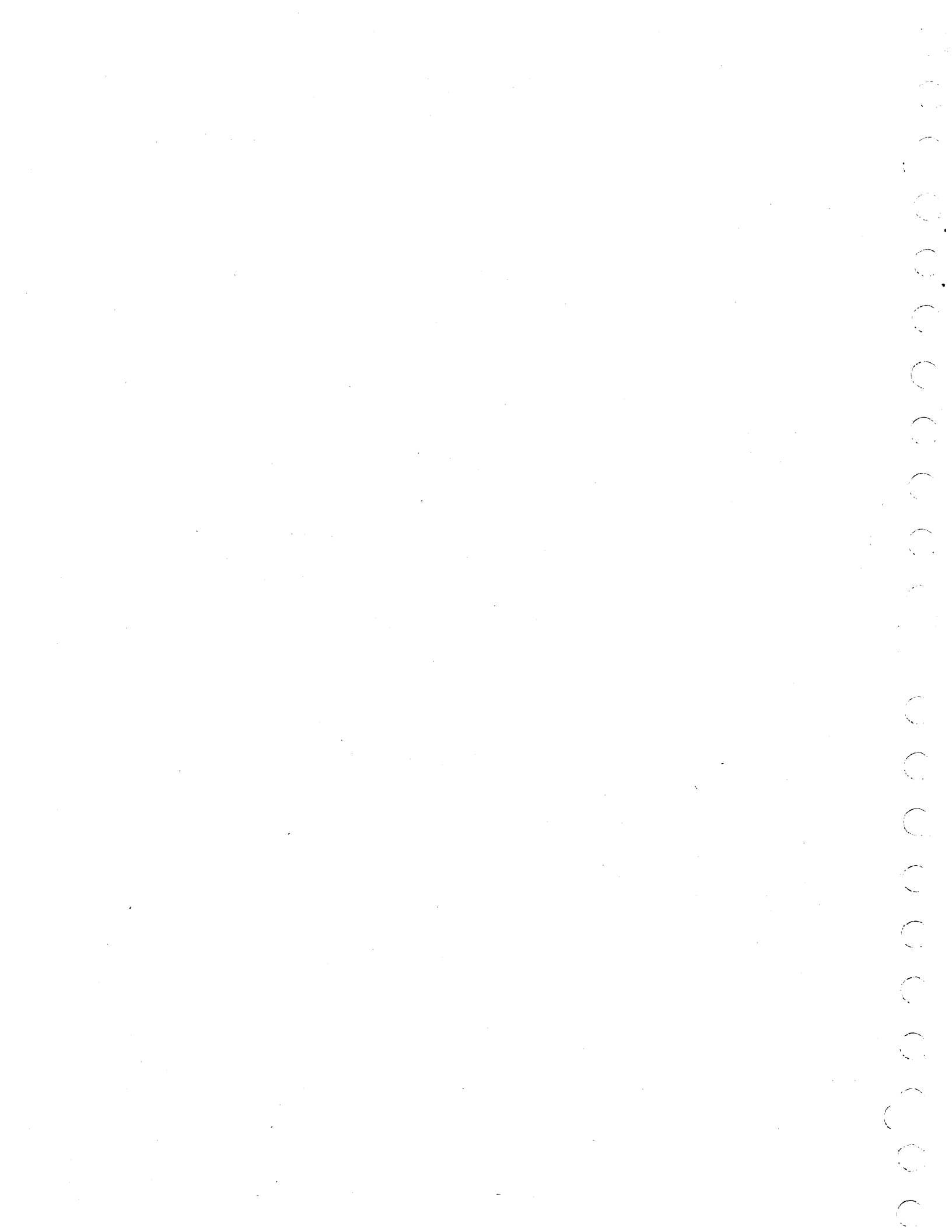
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The installation procedure for the Interactive Terminal-Oriented System (ITOS) Version 2 is straightforward and flexible.

If the user has a tape drive, he receives the following:

- A magnetic tape containing the basic ITOS system
- Deadstart utilities on flexible disk which enable the user to transfer the basic ITOS system from magnetic tape onto a disk pack.
- Flexible disk of any additional products purchased

If the user does not have a tape drive, he receives the following:

- An operational basic ITOS system on a removable disk pack
- Flexible disk of any additional products purchased

The basic ITOS system residing on a disk pack (after being transferred from tape if necessary) is then used to configure an ITOS system to the particular peripheral configuration of the user. The basic system is retained on the removable disk pack to allow reconfiguration at any time. Any software products purchased later are loaded onto the system from flexible disk.

The procedure for system generation is described in detail in section 3. It consists of transferring the basic system from tape onto a disk pack, if necessary, via the disk-to-tape utility (DTLP) (appendix Z), autoloading the basic system (appendix J), interactively executing the configure utility program, and then autoloading the operational configured system.

Refer to section 4 for detailed information on the product installation procedure.

HARDWARE REQUIREMENTS

The hardware requirements for the CYBER 18-10M and CYBER 18-20 Systems are shown in table 2-1.

TABLE 2-1. CYBER 18-10M AND 18-20 HARDWARE REQUIREMENTS

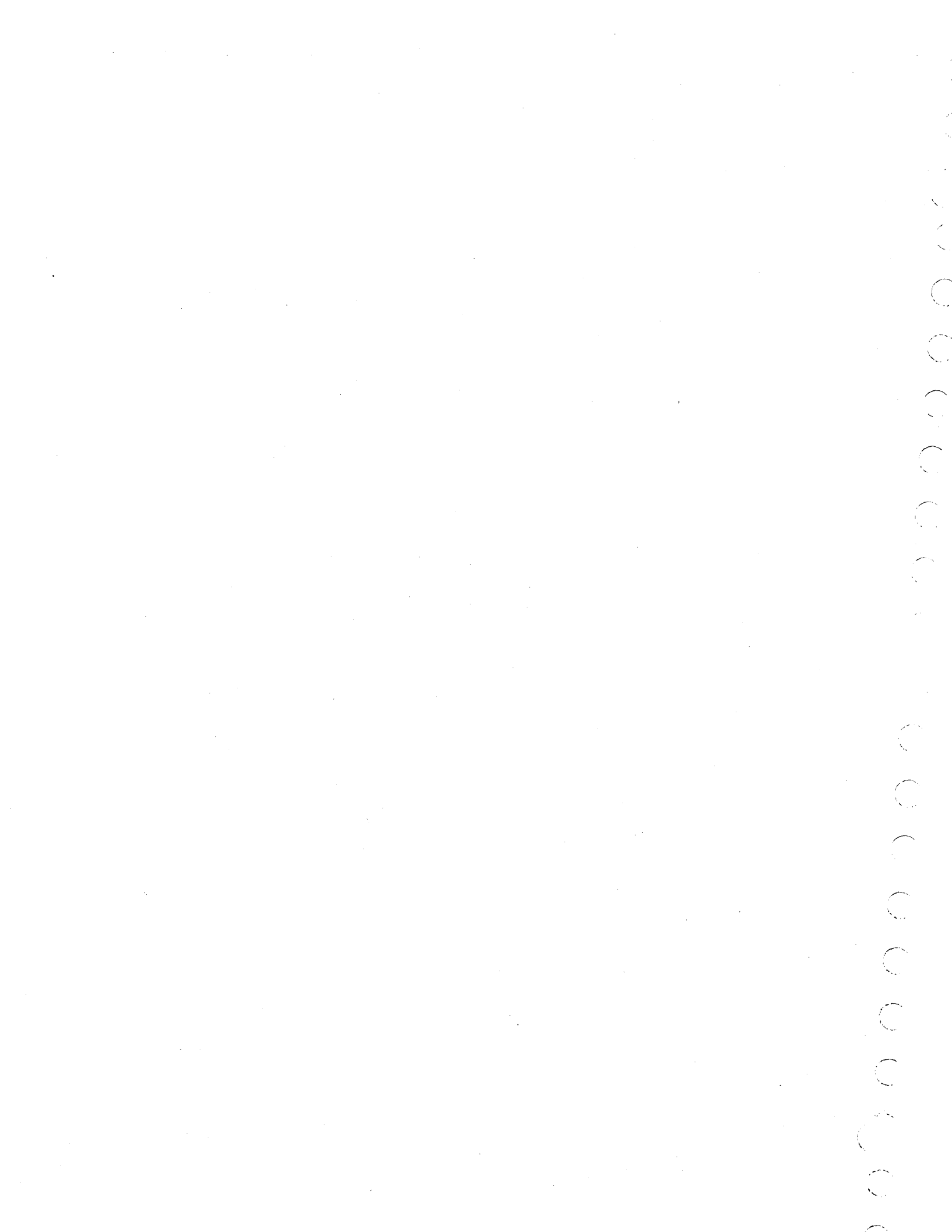
Peripheral	Equipment Code†	Macro Interrupt	Micro Interrupt
Teletypewriter/console display	1	1	1
Paper tape reader††	2	2	2
Paper tape punch††	2	2	2
Communication line adapter (CLA) (1x2)	2	2	2
None	3	3	3
Line printer	4	4	4
None	5	5	5
None	6	6	6
Flexible disk	7	7	N/A
Clock	1	8	8
Magnetic tape transport (NRZI only)†††	9	9	0 and 9
Communication line adapter (1x8)††††	10	10	N/A
Card reader	11	11	11
Magnetic tape controller/formatter (NRZI and phase encoded)	12	12	N/A
Storage module drive	14	14	N/A
Cartridge disk drive	14	14	N/A
Protect, parity, and power failure (internal)	N/A	0	N/A
Macro stop and panel (internal)	N/A	N/A	12-15

†Equipment codes 0, 3, 5, 6, 8, and 15 are currently unassigned and reserved for future use.

††Not used on ITOS 2

†††The magnetic tape transport (NRZI only) micro interrupt is wired to both micro interrupts 0 and 9. The software has the responsibility to select the desired one.

††††The second CLA uses the same EQUIPMENT CODE and the interrupts are jumpered together.



The operating system is either delivered on magnetic tape or on a system disk pack. If the operating system is delivered on magnetic tape, it must first be loaded onto a disk pack. Appendix Z describes this procedure.

The system disk pack (after being loaded from tape if necessary) contains a basic ITOS system, referred to as system A, which is configured with one mass memory unit and one terminal. This is used to configure the desired operational system, which is referred to as system B. System A may be recalled at any time to reconfigure another system B that replaces the current system B on the pack.

NOTE

A user unfamiliar with **CONFIG** operation should read the **Configure Worksheet** appendix before proceeding with CONFIG execution.

A user with a cartridge-disk-drive-based (CDD-based) system should follow the procedures defined in the appendix on Installation of a CDD-Based System.

A system configured with COMM 18 does not support a maximum configuration of peripherals. COMM 18 requires the addition of core-resident routines that correspondingly reduce the pool area. The specific limitations depend upon the COMM 18 configuration selected.

A CDD-based system supports a maximum of eight terminals.

Refer to appendix FF for constraints for a system configured with BAM 18.

To start ITOS, perform the following:

1. Mount the system pack containing an ITOS system A on drive 0.
2. Press the following switches on the front panel in order:

STOP
MASTER CLEAR
AUTOLOAD

"S B A"

On the master console, press the ESC key to enter panel mode.

3. On the master console, enter:
J24G
I@
4. Respond to message output by entering:
ESC J28@
5. Enter date and time as indicated.
6. Start up the ITOS system as follows:

Display/Keyboard	Comments
CONTROL G	Manual interrupt
MI	Manual interrupt is active.
START (cr)	Start ITOS.
BUILDING SYSTEM FILES	Message appears only if a START has never before been executed on this system.
ITOS ACTIVE AT hhmm	Confirms that ITOS is active
+ (cr)	Log on.
.	Screen displays system ID information.
.	
.	
USER ID =>	Request for user ID information
\$\$ (cr)	Use system access \$\$.
PRINTFILE =>	Request for print file
(cr)	None needed
REQUEST =>	Select operation.

To proceed with system configuration, follow the steps in table 3-1.

TABLE 3-1. CONFIGURING THE SYSTEM

Display/Keyboard	Comments
<p>1. CONFIG (cr)</p> <p>CONFIG IN NOTE: TO DEFAULT ANY CONFIGURATION OPTION, RESPOND TO THE INPUT PROMPTER WITH ONLY A CARRIAGE RETURN.</p>	<p>Operator requests CONFIG. The master terminal must be in page mode.</p> <p>System confirms that CONFIG is active.</p>
<p>2. SYSTEM 'B' INITIALIZATION STARTED SYSTEM 'B' INITIALIZATION COMPLETED.</p>	<p>Wait for complete message (message delay of approximately one minute).</p>
<p>3. TYPE 'C' IF THIS SYSTEM CONTAINS COBOL. <i>No.</i> > C (cr)</p>	<p>Query for COBOL. Default response means no COBOL.</p> <p>Operator requests COBOL.</p>
<p>4. SPECIFY IDENTIFICATION ENTER SYSTEM NAME (1-31 CHARACTERS) > <i>KNOWO COMPUTER PRODUCTIONS</i> SYSTEM 1 (cr)</p>	<p>CONFIG requests system name. Default response causes CONFIG to use system A name.</p> <p>Operator enters system name.</p>
<p>5. SPECIFY CARD READER TYPE 'C' FOR 1829-30/60 CARD READER > <i>No.</i> C (cr)</p> <p>DEFAULT CONVERSION FORMAT IS 029 TYPE '6' FOR 026 FORMAT > 6 (cr)</p>	<p>Query for card reader. Default is no card reader, which causes CONFIG to advance to step 6.</p> <p>Operator requests card reader.</p> <p>If a card reader is specified, a conversion format selection request is displayed.</p> <p>Operator selects 026 conversion.</p>
<p>6. SPECIFY MAGNETIC TAPE ENTER 4 FOR 1832-4/1860 MAGNETIC TAPE OR 6 FOR 1832-6/1860 MAGNETIC TAPE. > <i>" 6 "</i> 4 (cr)</p> <p>ENTER NUMBER OF TAPE UNITS (1-4) > <i>" 2 "</i> 2 (cr)</p> <p>DEFAULT TAPE MODE IS 9-TRACK TYPE '7' FOR EACH 7-TRACK UNIT UNIT 0 > UNIT 1 > <i>(cr) 9 track</i> <i>(cr)</i></p>	<p>Query for magnetic tape. Default is no tape units, which causes CONFIG to advance to step 7. Entry 4 selects NRZI magnetic tape. Entry 6 selects dual mode (NRZI/phase encode magnetic tape).</p> <p>Operator desires magnetic tape units and indicates that he has 1832-4/1860 tape drives.</p> <p>If tape units are specified, the number of tape units is requested. Default selects one tape unit.</p> <p>Operator requests two tape units.</p> <p>For each tape unit specified, the tape mode is requested.</p> <p>Operator specifies 9-track for both magnetic tape drives.</p>

NOTE: The pool listing constructed by CONFIG is in a file manager file labeled \$\$POOLST, owner=\$\$. This file can be listed using an unformatted LIST under UTIL.

TABLE 3-1. CONFIGURING THE SYSTEM (Contd)

Display/Keyboard	Comments
<p>7. SPECIFY ITOS TERMINALS ENTER NAME OF TERMINALS INCLUDING MASTER (1-7) > 4 (cr) "9" ENTER COMMUNICATIONS CHANNEL NUMBER FOR ASSOCIATED TERMINAL (1-16) TERMINAL 0 - MASTER TERMINAL TERMINAL 1 TERMINAL 2 TERMINAL 3 (cr) (cr) (cr) 8. SPECIFY LINE PRINTER ENTER 3 FOR 1827-30 LINE PRINTER (NON-BAND PRINTER) 6 FOR 1827-60 LINE PRINTER, OR FOR 1827-30 BAND PRINTER, OR 7 FOR 1827-7 LINE PRINTER > 6 (cr) "3" 9. SPECIFY SYSTEM CARD PUNCH TYPE 'P' FOR 501-12 CARD PUNCH > P (cr) No ENTER COMMUNICATIONS CHANNEL NUMBER FOR CARD PUNCH (1-16) > 5 (cr) 10. SPECIFY TERMINAL WORKSTATIONS TYPE 'W' TO REQUEST WORKSTATIONS > W (cr) "W" - (3)? TYPE 'C' TO SELECT 501-12 CARD PUNCH 'M' TO SELECT 1827-7 MATRIX PRINTER OR 'CM' TO SELECT BOTH DEVICES TERMINAL 0 - MASTER TERMINAL TERMINAL 1 > TERMINAL 2 > TERMINAL 3 ></p>	<p>CONFIG requests the number of ITOS terminals. Default is one terminal (master terminal), which causes CONFIG to advance to step 8.</p> <p>Operator requests a total of four terminals.</p> <p>CONFIG requests channel number assignments for each remote terminal. Default selects the next available unallocated channel per appendix 0.</p> <p>Note: To prevent conflicts, the average CONFIG Operator should either default all of the responses for channel allocation or enter all of the channel assignments.</p> <p>Operator allows CONFIG to assign terminal channel numbers.</p> <p>Query for line printer. Default is no line printer. Selection of 1827-7 line printer requires communi- cation channel 8. Entry 3 selects 300 line-per- minute drum printer. Entry 6 selects 300 or 600 line-per-minute band printer. Entry 7 selects matrix printer.</p> <p>Operator selects 1827-60 line printer.</p> <p>Query for card punch. Default is no punch, which causes CONFIG to advance to step 10.</p> <p>Operator requests 501-12 TAB Card Punch.</p> <p>CONFIG requests the channel number for the card punch. Default selects next available unallocated channel per appendix 0).</p> <p>Operator assigns communication channel 5 to the card punch.</p> <p>Query for terminal work stations. Default is no work stations, which causes CONFIG to advance to step 11.</p> <p>User requests terminal work stations.</p> <p>CONFIG requests definition to terminal work stations. Each remote terminal specified can be made into a work station by attaching a card punch and/or matrix printer. Default causes no work station devices to be assigned to the terminal in question.</p>
<p>NOTE: The pool listing constructed by CONFIG is in a file manager file labeled \$\$POOLST, owner=\$\$. This file can be listed using an unformatted LIST under UTIL.</p>	

TABLE 3-1. CONFIGURING THE SYSTEM (Contd)

Display/Keyboard	Comments
<p>10. (contd)</p> <p>C (cr)</p> <p>M (cr)</p> <p>CM (cr)</p> <p>ENTER COMMUNICATIONS CHANNEL NUMBER AT ASSOCIATED TERMINAL FOR EACH 501-12 CARD PUNCH WORKSTATION (1-16)</p> <p>TERMINAL 0 - MASTER TERMINAL TERMINAL 1 C > TERMINAL 2 M TERMINAL 3 CM ></p> <p>9 (cr)</p> <p>10 (cr)</p> <p>ENTER COMMUNICATIONS CHANNEL NUMBER AT ASSOCIATED TERMINAL FOR EACH 1827-7 MATRIX PRINTER WORKSTATION (1-16)</p> <p>TERMINAL 0 - MASTER TERMINAL TERMINAL 1 C TERMINAL 2 M > TERMINAL 3 CM ></p> <p>11 (cr)</p> <p>12 (cr)</p> <p>11. SPECIFY MASS MEMORY ENTER NUMBER OF MASS MEMORY UNITS (1-8) ></p> <p>2 (cr) 3</p> <p>DEFAULT IS 1867-20 (50 M BYTE) TYPE '1' FOR EACH 1867-10 (25 M BYTE) TYPE '2' FOR EACH 1867-40 (180 M BYTE) UNIT 0 UNIT 1 ></p> <p>(cr) "CR"</p> <p>12. SPECIFY THE SYSTEM FIRMWARE DEFAULT IS NO FIRMWARE ENTER 1 FOR SCIENTIFIC, 2 FOR COMMERCIAL OR 3 FOR SCIENTIFIC AND COMMERCIAL.</p> <p>2 (cr) 2</p> <p>PLEASE NOTE THAT IT MAY BE NECESSARY TO REABSOLUTE FORTRAN EXECUTABLE FILES TO UTILIZE THE NEW FIRMWARE CONFIGURATION.</p>	<p>Operator has decided that terminal 1 requires a card punch, terminal 2 requires a matrix line printer, and terminal 3 requires both a card punch and matrix printer.</p> <p>CONFIG requests channel number assignments for each card punch work station. Default selects next available unallocated channel per appendix 0).</p> <p>Operator decides to put the card punch of terminal 1 on channel 9 and the card punch of terminal 3 on channel 10.</p> <p>CONFIG requests channel number assignments for each matrix printer work station. Default selects next available unallocated channel per appendix 0.</p> <p>Operator decides to put the printer of terminal 2 on channel 11 and the printer of terminal 3 on channel 12.</p> <p>CONFIG requests number of disk drives desired. Default is one drive, which causes CONFIG to advance to step 12.</p> <p>Operator requests two drives.</p> <p>If more than one disk drive is specified, disk density is requested. Unit 0 density is always the system A disk drive density.</p> <p>Operator selects high density for the unit 1 drive.</p> <p>Query for system firmware. Default causes CONFIG to advance to step 13.</p> <p>Operator requests inclusion of commercial firmware package.</p> <p>Message appears if firmware is selected. Operator is warned that the file may have to be absolutized.</p>

NOTE: The pool listing constructed by CONFIG is in a file manager file labeled \$POOLST, owner=\$\$. This file can be listed using an unformatted LIST under UTIL.

TABLE 3-1. CONFIGURING THE SYSTEM (Contd)

Display/Keyboard	Comments
<p>12. (contd)</p> <p>PAUSE ></p> <p>(cr)</p>	<p>Operator responds with carriage return to continue CONFIG processing.</p>
<p>13. SPECIFY SYSTEM MEMORY SIZE IN BYTES</p> <p>ENTER 1 FOR 96K 2 FOR 128K 3 FOR 160K 4 FOR 192K 5 FOR 224K 6 FOR 256K</p> <p>></p> <p>2 (cr)</p>	<p>Query for system memory size. Default selects 96K bytes.</p> <p>Operator responds with 2 (128K bytes).</p> <p>If this not a COMM 18 system, proceed to step 15.</p>
<p>14. SPECIFY THE DESIRED COMM-18 VARIANT</p> <p>ENTER 1 FOR ONE HASP, 2 FOR ONE 20OUT, 3 FOR TWO HASPS, 4 FOR TWO 20OUTS OR 5 FOR ONE HASP AND ONE 20OUT.</p> <p>></p> <p>1 (cr)</p>	<p>Query for COMM 18 variant. Default selects one HASP and one 20OUT.</p> <p>Operator requests one HASP terminal.</p>
<p>SPECIFY CONCURRENCY REQUIREMENTS</p> <p>ENTER 1 FOR CONCURRENT ITOS/COMM-18 BACKGROUND, 2 FOR CONCURRENT ITOS/COMM-18 3 FOR CONCURRENT ITOS/BACKGROUND, 4 FOR CONCURRENT COMM-18/ BACKGROUND OR 5 FOR NON-CONCURRENT</p> <p>3 (cr)</p>	<p>CONFIG requests specification of system concurrency requirements. Default selects nonconcurrent mode. If COBOL is in the system, only option 2, 3, or 5 may be selected.</p> <p>Operator requires ITOS and background to be active simultaneously.</p> <p>If concurrency option 1 or 3 above is selected and a choice of system memory size is allowed, CONFIG advances to step 15. Otherwise, CONFIG skips to step 16.</p>
<p>15. ENTER ONE OF THE FOLLOWING INDEXES, ASSOCIATED WITH A MEMORY SIZING OPTION, THAT IS MOST APPROPRIATE TO YOUR SYSTEM APPLICATION REQUIREMENTS.</p> <p>OPTION INDEX > 1 2 3 - 5 6</p> <p>ATTRIBUTES N R R</p> <p>MAX USER SIZE (K BYTES) 64 32 44 - 36 48</p> <p>BACKGROUND SIZE 64 32 20 64 32 20</p> <p>MAX CONTIG USER SPACE 68 32 44 - 36 48</p>	<p>CONFIG generates the memory-sizing options matrix based on equipment choices and memory available. Up to six options are available. Options 1, 5, and 6 in this system have associated attributes which, if selected, cause CONFIG to display a legend of pertinent attributes. For COBOL, a 64K-byte background size is required.</p>

NOTE: The pool listing constructed by CONFIG is in a file manager file labeled \$\$POOLST, owner=\$\$. This file can be listed using an unformatted LIST under UTIL.

TABLE 3-1. CONFIGURING THE SYSTEM (Contd)

Display/Keyboard	Comments
<p>15. (contd)</p> <p>ATTRIBUTES OF YOUR SELECTED OPTION FOLLOW:</p> <p>N-YOU CAN NOT RUN BACKGROUND AND USER PROGRAMS CONCURRENTLY.</p> <p>R-YOU MUST RELOAD PROGRAM LIBRARY FILES</p> <p>PAUSE ></p> <p>TYPE 'C' TO CANCEL/RESPECIFY MEMORY SIZING OPTION</p> <p>2 (cr)</p> <p>16. CONFIGURATION COMPLETE TYPE 'R' TO RERUN CONFIG OR PRESS CARRIAGE RETURN TO EXIT ></p> <p>(cr)</p> <p>AUTOLOAD TO BRING IN THE NEW CONFIGURATION SYSTEM.</p> <p>CONFIG OUT</p> <p>REQUEST= ></p>	<p>CONFIG displays this message only when the selected sizing option has associated attributes.</p> <p>Displayed only when the selected memory-sizing option includes the N attribute.</p> <p>Displayed only when the selected memory-sizing option includes the R attribute. See appendix AA.</p> <p>Displayed only when the selected sizing option has associated attributes and only one memory-sizing option exists. Operator responds with carriage return to advance to step 16.</p> <p>Displayed only when multiple options exist and the selected sizing option has associated attributes. Default verifies the operator response.</p> <p>Type C to return to step 15.</p> <p>Operator selects option 2, which has no special attributes; thus, CONFIG advances to step 16.</p> <p>CONFIG completes configuration of the new operating system. R response causes CONFIG to recycle to step 2.</p> <p>Operator is satisfied with the configuration and exits CONFIG.</p> <p>CONFIG's closing messages</p> <p>ITOS prompt to select next operation</p>
<p>NOTE: The pool listing constructed by CONFIG is in a file manager file labeled \$\$POOLST, owner=\$\$. This file can be listed using an unformatted LIST under UTIL.</p>	

The following products may be installed onto the configured system B using flexible disk input:

- Macro Assembler 3
- FORTRAN 3A
- FORTRAN 3B
- RPG II Version 2
- COBOL Version 1

Procedures for installing the various products follow.

NOTE

For the installation times referred to in this chapter, it is assumed that the print spooler is turned off and the system is not concurrently busy with some other task. However, neither is a requirement to install a product.

MACRO ASSEMBLER 3 PRODUCT

The macro assembler install consists of one diskette. To install the macro assembler 3, load the macro assembler install diskette on the flexible disk drive unit 0.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	The operator performs a manual interrupt by pressing CONTROL and G simultaneously.
MI >	The system indicates that manual interrupt is active.
SPHT (cr)	The operator enters a request to halt the print spooler.
MI COMPLETE	The system indicates that the manual interrupt is complete.
CONTROL G	The operator performs a manual interrupt by pressing CONTROL and G simultaneously.
MI >	The system indicates that manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation. The installation requires approximately five minutes.
*CTO,1700 MACRO ASSEMBLER 3 INSTALL *CTO,COPYRIGHT CONTROL DATA CORPORATION 1978	

*CTO,ASSEM INSTALL COMPLETE The information is displayed showing installation is complete. A load map should be listed on the printer. An example of this load map is shown in appendix D.

FORTRAN 3A PRODUCT/ FORTRAN 3B PRODUCT

The FORTRAN 3A/3B product consists of a compiler and a single- or double-precision runtime library. The single and double precision runtime are each available with a software or firmware runtime interface. Use of the firmware version requires the firmware equipment and the CONFIG selection of scientific or scientific and commercial option. The single-precision runtime library is a collection of routines that interfaces FORTRAN program execution to the system and includes arithmetic, input/output, and data format processors. The double-precision runtime is a set of additional routines that extends precision of real-type data to approximately 11.5 decimal digits using the software version and 9.5 decimal digits using the firmware version. Use of the double-precision runtime causes the size of the total program to be larger.

Each compiler install is comprised of two diskettes and each runtime is on a separate diskette.

INSTALLING FORTRAN 3A/3B COMPILER

Load the FORTRAN compiler install 1 of 2 diskette on the flexible disk drive unit 0.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	The system indicates that the manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation.

*CTO,FORTRAN 3.3x
 COMPILER INSTALL
 *CTO,COPYRIGHT
 CONTROL DATA
 CORPORATION 1978

Information is displayed indicating x=A or B depending on the compiler. This diskette requires approximately seven minutes to install.

*CTO,MOUNT 2nd
 DISKETTE IN UNIT 0
 READY?
 >

The system indicates that the operator should remove the FORTRAN compiler install 1 of 2 diskette from the flexible disk drive and load the FORTRAN compiler 2 of 2 diskette on flexible disk drive unit 0.

(cr)

After the operator enters a carriage return, approximately seven minutes are required to complete the install.

*CTO,FORTRAN 3.3x
 INSTALL COMPLETE

The information is displayed showing installation is complete. A load map should be listed on the printer. See appendix E for FORTRAN 3A or appendix F for FORTRAN 3B sample install listing. The operator may now install the desired FORTRAN runtime library.

INSTALLING SINGLE-PRECISION SOFTWARE FORTRAN RUNTIME

Refer to the section on entry point removal (following the runtime installation descriptions) if the system already contains a FORTRAN runtime.

Load the FORTRAN runtime 1 of 1 single-precision software diskette on flexible disk drive unit 0.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation. The installation requires approximately six minutes.

Display/Keyboard

Comments

*CTO,FORTRAN S.P.
 S/W RUNTIME INSTALL
 *CTO,COPYRIGHT
 CONTROL DATA
 CORPORATION 1978

*CTO,FORTRAN S.P.
 RUNTIME INSTALL
 COMPLETE

The information is displayed showing installation is complete. An install listing of the runtime library should be listed on the printer. See appendix DD for sample install listing.

INSTALLING DOUBLE-PRECISION SOFTWARE FORTRAN RUNTIME

Refer to the section on entry point removal (following the runtime installation descriptions) if the system already contains a FORTRAN runtime.

Load the FORTRAN runtime 1 of 1 double-precision software diskette on flexible disk drive unit 0.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation. The installation requires approximately six minutes.
*CTO,FORTRAN D.P. S/W RUNTIME INSTALL *CTO,COPYRIGHT CONTROL DATA CORPORATION 1978	
*CTO,FORTRAN D.P. RUNTIME INSTALL COMPLETE	The information is displayed showing installation is complete. An install listing of the runtime library should be listed on the printer. A sample install listing appears in appendix DD.

INSTALLING SINGLE-PRECISION FIRMWARE FORTRAN RUNTIME

Refer to the section on entry point removal (following the runtime installation descriptions) if the system already contains a FORTRAN runtime.

Load the FORTRAN runtime 1 of 1 single-precision firmware diskette on flexible disk drive unit 0.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation. The installation requires approximately six minutes.
*CTO,FORTRAN S.P. F/W RUNTIME INSTALL *CTO,COPYRIGHT CONTROL DATA CORPORATION 1978	
*CTO,FORTRAN S.P. RUNTIME INSTALL COMPLETE	The information is displayed showing installation is complete. An install listing of the runtime library should be listed on the printer. See appendix DD for sample install listing. The listing produced by the installation would be the same as shown in appendix DD, differing only in the content of the informative comments to the operator and modules FLOTN and COMNFP replaced by CFLOTN.

INSTALLING DOUBLE-PRECISION FIRMWARE FORTRAN RUNTIME

Refer to the section on entry point removal (following the runtime installation descriptions) if the system already contains a FORTRAN runtime.

Load the FORTRAN runtime 1 of 1 double-precision firmware diskette on flexible disk drive unit 0.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation. The installation requires approximately six minutes.
*CTO,FORTRAN D.P. F/W RUNTIME INSTALL *CTO,COPYRIGHT CONTROL DATA CORPORATION 1978	
*CTO,FORTRAN D.P. RUNTIME INSTALL COMPLETE	The information is displayed showing installation is complete. An install listing of the runtime library should be listed on the printer. A sample install listing appears in appendix DD. The listing produced by the installation would be the same as shown in appendix DD, differing only in the content of the informative comments to the operator and modules FLOTN and COMNFP are replaced by CFLOTN.

ENTRY POINT REMOVAL

To install a different FORTRAN runtime on a system which currently has a runtime installed on it may require the removal of certain entry points from the program library before re-installation can occur. Entry point removal is accomplished by using the *R function under LIBEDT.

The following example illustrates how the *R function works.

Do the following at the display/keyboard (operator entries are underlined to distinguish them from information displayed by ITOS):

CONTROL G

MI
>

*BATCH,4 (cr)

J

*JOB (cr)

J

*LIBEDT (cr)

LIB

IN

*R,Q8DXP9 (cr)

IN

*R,DOUT (cr)

*Z (cr)

J

*Z (cr)

When all required entry points have been removed, the new runtime may be installed. Refer to table 4-1 for specific entry point names to be removed based on runtime currently installed versus runtime to be installed.

TABLE 4-1. FORTRAN RUNTIME ENTRY POINT REMOVAL

Runtime Currently Installed	Runtime To Be Installed	Entry Point Name To Be Removed
Single Precision S/W	Double Precision S/W	(None)
	Single Precision F/W	Q8DXP9, IFALT
	Double Precision F/W	DOUT, IFALT
Double Precision S/W	Single Precision S/W	Q8DXP9, DOUT
	Single Precision F/W	HDFLOT, Q8DXP9, DOUT, IFALT
	Double Precision F/W	HDFLOT, Q8DXP9, DOUT, IFALT
Single Precision F/W	Single Precision S/W	Q8DXP9, IFALT
	Double Precision S/W	Q8DXP9, IFALT
	Double Precision F/W	DOUT, IFALT
Double Precision F/W	Single Precision S/W	DOUT, IFALT, Q8DXP9
	Double Precision S/W	DOUT, IFALT, Q8DXP9
	Single Precision F/W	DOUT, IFALT, Q8DXP9

RPG II VERSION 2 PRODUCT

The RPG II Version 2 product install consists of two diskettes. To install RPG II Version 2, load the RPG II install 1 of 2 diskette on the flexible disk drive unit 0.

NOTE

ITOS must be stopped before initiating installation.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation.
*CTO,RPGII V2.1 INSTALL *CTO,COPYRIGHT CONTROL DATA CORPORATION 1978	This diskette requires approximately eight minutes to install.
*CTO,MOUNT 2ND RPGII DISKETTE IN UNIT 0 READY? >	The system indicates that the operator should remove the RPG II install 1 of 2 diskette from the flexible disk drive and load the RPG II install 2 of 2 diskette on the flexible disk drive unit 0.
(cr)	After the operator enters a carriage return, approximately 10 minutes are required to complete the install.
*CTO,RPGII INSTALL COMPLETE	The information is displayed showing installation is complete. A load map should be listed on the printer. A sample load map is contained in appendix G.

COBOL VERSION 1 PRODUCT

COBOL install materials consist of three diskettes for the compiler and one diskette containing COBOL error message files.

INSTALLING COBOL VERSION 1

Load the COBOL compiler 1 of 3 diskette on the flexible disk drive unit 0.

NOTE

ITOS must be stopped before initiating installation.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation.
*CTO, COBOL 1.0 INSTALL *CTO,COPYRIGHT CONTROL DATA 1978	Information is displayed showing that the diskette is being installed. This diskette requires approximately 10 minutes to install.
*CTO,MOUNT 2ND COBOL DISKETTE IN UNIT 0 READY? (cr)	The system indicates that the operator should remove the COBOL compiler 1 of 3 diskette from the flexible disk drive and load the COBOL compiler 2 of 3 diskette on the flexible disk drive unit 0. After the operator enters a carriage return, this diskette requires approximately five minutes to install.
*CTO,MOUNT 3RD COBOL DISKETTE IN UNIT 0 READY? (cr)	The system indicates that the operator should remove the COBOL compiler 2 of 3 diskette from the flexible disk drive and load the COBOL compiler 3 of 3 diskette on the flexible disk drive unit 0. After the operator enters a carriage return, approximately seven minutes are required to complete the install.
*CTO,COBOL 1.0 INSTALL COMPLETE	Information is displayed showing installation is complete. A load map should be listed on the printer. A sample load map is contained in appendix H.

LOADING THE COBOL ERROR MESSAGE FILES

Start and log on to ITOS.

Display/Keyboard	Comments
USER ID = >	Request for user ID information.
\$\$ (cr)	Use system access \$\$.
PRINTFILE = >	Request for print file.
(cr)	None needed.
REQUEST = >	Select operation.
FLEXTAPE (cr)	The operator enters a request to load the files. This load takes approximately one minute.

*
*COBOL 1.0 SUMMARY -132 DEBUGGER AND
RUNTIME ERROR MESSAGE FILES

C7ERRMSG \$\$	LOADING
MSG.FILE \$\$	LOADING

END UTIL

REQUEST = >

EX (cr)	The operator exits from ITOS. COBOL install is complete.
---------	---

X780 VERSION 1 PRODUCT

The X780 (2780/3780) Remote Job Entry Product install consists of one diskette and runs on the BAM 18 system only. Load the diskette on flexible disk unit 0.

NOTE

ITOS must be stopped before beginning installation.

To initiate installation, refer to table 4-2.

TABLE 4-2. X780 VERSION 1 INSTALLATION PROCEDURES

Display/Keyboard	Comments
Control G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	Operator halts the print spooler.
MI complete >	Manual interrupt is complete.
Control G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start installation.
*CTO,X780 V1.0 INSTALL *CTO,COPYRIGHT CONTROL DATA CORPORATION 1979	This diskette requires approximately three minutes to install.
*CTO,X780 INSTALL COMPLETE	The information is displayed showing installation is complete. A load map should be listed on the printer. Appendix HH provides a sample load map.

Verification tests ensure that the ITOS system and required software products are installed and operating. Verification is conducted after product installation by performing a separate set of tests for ITOS and each software product. A set of tests is provided on diskettes for the following products:

- ITOS Version 2
- Macro Assembler Version 3
- FORTTRAN Version 3
- RPG II Version 2
- COBOL Version 1

Procedures for verifying the above products and COMM 18 follow.

ITOS VERIFICATION TEST

The approximate time required for the ITOS verification test is 15 minutes. For CDC systems, make sure that volume CCD01 is mounted before initiating the verification test. (CDD01 is usually mounted after the MOVFIL request has been executed during system configuration.) The operator may verify that CDD01 is mounted by taking a STATUS of CDD01. If the message VOLUME SPECIFIED NOT MOUNTED AND READY is output, initialize and mount CDD01 according to instructions in the ITOS reference manual.

Load the ITOS 2.0 verification tests diskette on the flexible disk drive unit 0.

Start and log on to ITOS.

<u>Display/Keyboard</u>	<u>Comments</u>
USER ID = > (cr)	Request for user ID information. The operator uses a blank user ID.
PRINTFILE = >	Request for print file.
VERIFY (cr)	Enter the print file name VERIFY.
REQUEST = >	Select operation.
SPIN (cr)	The operator should make sure the print spooler is turned on to test this feature.

VERIFY >	Request for verification.
OK (cr)	The operator responds with okay.
REQUEST = >	Select operation.
FLEXTAPE (cr)	The operator responds with a request to start verification.
*PROCEDURE STREAM TO VERIFY ITOS * DEFINE LARGE FILES AND TAKE STATUS *LOAD LARGE FILES * *COPY LARGE SEQUENTIAL FILE *RENAME AND CLEAR FILE *SORT LARGE FILE *ADDROUT SORT VOLUME=SYSVOL FILNAM=TESTFLS, PASSED=00 000 500 DONE=00 000 500 VOLUME=SYSVOL FILNAM=ADDRTST, PASSED= 00 000 500 DONE= 00 000 500 *DELETE ALL TEST FILES *VERIFICATION COMPLETE	The system displays messages that tell the operator what task the test program is currently performing
REQUEST = >	The system responds that the test is complete.
EX (cr)	The operator exits from ITOS.
A status of the test files is listed on the printer. (See appendix I.)	

NOTE

If the test is aborted before it has been completed, the test files defined by the test program must be deleted before attempting to rerun the test. These test files are TESTFLS, TESTFLI, TESTFLC, TESTFLR, ADDRST, and SORTTST.

MACRO ASSEMBLER VERIFICATION TEST

The approximate time required for the macro assembler verification test is five minutes.

Load the macro assembler verification test diskette on the flexible disk drive unit 0.

Initiate the test as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start the verification test.

The following messages are displayed on the screen during the test procedure:

```
*CTO, MACRO ASSEMBLER V3.0 VERIFICATION TESTS
*CTO, START ASSEMBLY OF TEST PROGRAM
*CTO, ASSEMBLY COMPLETE
*CTO, TWO ASSEMBLY ERRORS ARE INTENTIONALLY
*CTO, INCLUDED IN TEST PROGRAM
*CTO, SUCCESSFUL EXECUTION TERMINATES WITH
*CTO, MACRO ASSEM TST OK
*CTO, WRITTEN TWICE ON THE SYSTEM COMMENT
      DEVICE
      MACRO ASSEM TST OK  MACRO ASSEM TST OK
*CTO, EXECUTION COMPLETE
*CTO, END OF MACRO ASSEMBLY TEST.
```

An assembly listing of a test program is listed on the printer. (See appendix Y.)

FORTRAN VERIFICATION TEST

The approximate time required for the FORTRAN verification test is five minutes.

Load the FORTRAN verification tests diskette on flexible disk drive unit 0.

Initiate the test as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.

CONTROL G

Manual interrupt is performed.

MI
>

Manual interrupt is active.

*BATCH,17 (cr)

The operator enters a request to start the testing procedure. No further comments are displayed on the console. The test procedure utilizes four test routines:

- FTNMAY
- FTNSUB
- FTNFCN
- Q8QBDS

A compilation of these routines is listed on the printer. The verification test is complete when the compilation listing of Q8QBDS has been listed.

A copy of the output is listed in appendix Y.

RPG II VERIFICATION TEST

The approximate time required for the RPG II verification test is 50 minutes.

NOTE

The RPG II verification test is contained on two diskettes; one compiles test programs and the other executes the test programs. To execute the test programs, ITOS must be active. If ITOS was started before the RPG compiler was loaded, and has not since been stopped, it is necessary to stop ITOS and then restart before executing the test programs.

To rerun the RPG II verification test, (whether the test has been successfully completed or not) the following files must first be deleted: IN1V, DUMMY, TESTFL, ADDRST, COMDA, OPCLS1, OPCLS2, OPCLS3, OPCLS4, V9PROC, and CARDIN.

Load the RPG II verification compile diskette on flexible disk drive unit 0. The compilation phase takes approximately 25 minutes.

Initiate installation as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.

MI COMPLETE Manual interrupt is complete.
 CONTROL G Manual interrupt is performed.
 MI Manual interrupt is active.
 >

*BATCH,17 (cr) The operator enters a request to compile test programs.

*CTO, *** VERIFICATION TEST
 COMPILING ***
 *CTO, *** VTEST0
 COMPILING ***
 *CTO, *** VTEST1
 COMPILING ***
 *CTO, *** VTEST2
 COMPILING ***
 *CTO, *** VTEST3
 COMPILING ***
 *CTO, *** VTEST4
 COMPILING ***
 *CTO, *** VTEST5
 COMPILING ***
 *CTO, *** PRTCOM
 COMPILING ***
 *CTO, *** VTEST6
 COMPILING ***
 *CTO, *** VTIME5
 COMPILING ***
 *CTO, *** VTEST7
 COMPILING ***
 *CTO, *** VTEST8
 COMPILING ***
 *CTO, *** VTEST9
 COMPILING ***
 *CTO, *** LABELS
 COMPILING ***
 *CTO, *** INPUTS
 COMPILING ***

The system displays messages that tell the operator which test program is currently being compiled.

*CTO, *** END OF
 COMPILATION
 *CTO, START ITOS
 *CTO, ENTER
 CARRIAGE RETURN
 AFTER USER=
 *CTO, ENTER
 CARRIAGE RETURN
 AFTER PRINTFILE=
 *CTO, AFTER REQUEST=,
 ENTER FLEXTAPE
 *CTO, AFTER REQUEST=,
 ENTER FLEXTAPE

The system indicates that compilation is complete. Compilation listings of each program should be listed on the printer.

Remove the RPG II verification compile diskette from the flexible disk drive. Load the RPG execution verification tests diskette on flexible disk drive unit 0.

Start and log on to ITOS.

<u>Display/Keyboard</u>	<u>Comments</u>
USER ID = >	Request for user ID information.
(cr)	The operator logs on with a blank user ID.

PRINTFILE=> Request for print file.

(cr) None needed.

REQUEST=> Select operation.

FLEXTAPE (cr) The operator enters a request to position the flexible tape.

REQUEST=> Select operation.

FLEXTAPE (cr) The operator enters a request to start execution of test files.

The execution of the RPG test files requires approximately 20 minutes. During this period, several messages are printed on the terminal. The last of these messages should be as follows:

```
*START MULTITERMINAL TESTS
*END OF PROCEDURE
REQUEST =>
```

Log on to all terminals with a blank user ID and no print file. Make sure the PAGE key is pushed down. On all terminals (including the master terminal), after REQUEST = enter VTEST5.

The VTEST5 program runs on each terminal. It displays a message with cursor positioning and updates a file common to all terminals once per line. To terminate VTEST5, enter

CONTROL A

After terminating VTEST5 at each terminal, exit from ITOS.

The RPG verification test is now complete. Output from the test programs should be listed on the printer. Appendix Y contains a copy of correct output from the execution phase. (The compilation listings are not included.)

COBOL VERIFICATION TEST

The approximate time required for the COBOL verification test is 40 minutes.

NOTE

The COBOL verification test consists of compiling and then executing test programs. To execute the test programs, ITOS must be active. If ITOS was started before the COBOL compiler was loaded, and has not since been stopped, it is necessary to stop ITOS and then restart before executing the test programs.

If the COBOL verification test aborts, the SQFS1 file may need to be deleted to rerun the test.

In order to rerun the verification test after the test files have compiled successfully, it is not necessary to

recompile these tests. To execute the verification tests without recompiling, the diskette containing the verification tests must be advanced 2256 records, then (while in the job processor) give control to the flexible disk drive via the instruction *V,17. The first message to be output on the console should be:

*CTO, START ITOS, LOG ONTO ITOS WITH BLANK USER ID AS PER INSTRUCTIONS.

The operator may now follow the instructions given to execute the verification tests.

To initiate the compilation phase of the COBOL verification test, load the COBOL verification test diskette on flexible disk drive unit 0.

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
*BATCH,17 (cr)	The operator enters a request to start the compilation.
*CTO, COBOL COMPILATIONS BEGINNING	The system begins compilation. Approximately 30 minutes are needed to compile the test programs.
*CTO, COBOL COMPILATIONS COMPLETE	The system indicates that compilation is complete.
*CTO, START ITOS, LOG ONTO ITOS WITH BLANK USER ID AS PER INSTRUCTIONS.	

Compilation listings should be listed on the printer.

To initiate the execution of the verification test, start and log on to ITOS. Then do the following:

<u>Display/Keyboard</u>	<u>Comments</u>
USER ID => (cr)	Request for user ID information. The operator logs on with blank user ID.

PRINTFILE=>	Request for print file.
(cr)	None needed.
REQUEST=>	Select operation.
FLEXTAPE (cr)	The operator enters a request to start execution of test programs.
END UTIL	The execution phase takes approximately five minutes.
STOP RUN. STOP RUN. STOP RUN. END UTIL	
REQUEST=>	
EX (cr)	The operator exits from ITOS. The verification test is complete.

Output from the execution phase should be listed on the printer. Appendix Y contains a copy of correct output from the execution phase. (The compilation listings are not included.)

COMM 18 VERIFICATION TESTS

Five variants of COMM 18 may be configured into an ITOS system:

- One HASP
- One 200UT
- Two HASPs
- Two 200UTs
- One HASP and one 200UT

The test procedure for each of these variants consists of the following steps:

1. Reserve buffer areas for the terminal(s)
2. Activate the terminal(s)
3. Log on to a host computer
4. Log off the host computer
5. Release the terminal(s)

Test procedures for each of the five variants are discussed below:

VERIFICATION TEST FOR ONE HASP

To reserve the buffer areas and activate a HASP work station terminal, perform the following procedure:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
RSV,,1 (cr)	The operator enters a command to reserve buffer areas for one HASP.
SIMULATORS SPACE RESERVED 05 PAGES (PAGE = 4096 BYTES)	The system indicates that a space has been reserved.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
HWS, (cr)	The operator activates a HASP work station terminal. (The communication channel has been assigned a default unit of 21.)
HASP WS TERMINAL=0 -0- TERMINAL INAC COMM.-21 KEYBRD-04 DSPLY-04 11 1L 1P TRANSP-ON -0- INPUT 1-10 -0- LIST 1-09 -0- PUNCH 1-02	A message is displayed indicating that the HASP workstation has been successfully activated.

Log on to host. Log off the host. For procedures, see the section on On-Line Test for a HASP Work Station Terminal.

The following procedure releases the HASP work station terminal:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
-REL (cr)	The operator enters a command to release the HASP work station terminal.
-0- COMMAND PROCESSED -0- TERMINAL RELEASED ALL HASP TERMINALS RELEASED- SIMULATION TERMINATED COMM 18 RELEASED	Information is displayed indicating that the HASP terminal has been released. The verification test is complete.

VERIFICATION TEST FOR ONE 200UT

Reserve the buffer area and activate a 200UT:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
RSV,1 (cr)	The operator enters a command to reserve buffer areas for one 200UT.
SIMULATORS SPACE RESERVED 04 PAGES (PAGE = 4096 BYTES)	The system responds that space has been reserved.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
UT2, (cr)	The operator activates a 200 user terminal.
UT200 TERMINAL ID=0 COMMUN. CHANNEL-21 INPUT DEVICE----- 10 LIST DEVICE----- 12 CONSOLE DEVICE--- 4	Information displayed indicates that the 200UT has been successfully activated. (The communication channel has been assigned a default unit of 21.)

Log on to the host. Log off the host. Refer to the section on on-line test for a 200UT terminal for procedures.

To release the 200UT terminal; perform the following procedure:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
/REL (cr)	The operator enters a command to release the 200UT terminal.
/O/ TERMINAL RELEASED	The system shows that the 200UT has been released.
ALL UT200 TERMINALS RELEASED- SIMULATION TERMINATED COMM 18 RELEASED	Information is displayed showing that the verification test is complete.

VERIFICATION TEST FOR TWO HASPS

To reserve the buffer areas and activate the terminals, proceed as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
RSV,,2 (cr)	The operator enter a command to reserve buffer areas for two HASP work stations.
SIMULATORS SPACE RESERVED 06 PAGES (PAGE=4096 BYTES)	
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
HWS, (cr)	The operator enters a command to activate the first HASP work station. (The communication channel has been assigned a default unit of 21.)
HASP WS TERMINAL ID=0 -0- TERMINAL INAC COMM. -21 KEYBRD - 04 DSPLY - 04 11 1L 1P TRANSP-ON -0- INPUT 1-10 -0- LIST 1-09 -0- PUNCH 1-02	Information is displayed indicating that the first work station has been successfully activated.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
HWS,22 (cr)	The operator enters a command to activate the second HASP work station with a communication channel of 22.
-1- WARNING, UNIT BUSY - ASSIGNMENT IGNORED - STREAM P1, UNIT 02 HASP WS TERMINAL ID=1 -1- TERMINAL INAC COMM. 22 KEYBRD - 04 DSPLY-04 11 1L 1P TRANSP-ON -1- INPUT 1-10 -1- LIST 1-09 -1- PUNCH 1-**	Information is displayed indicating that the second HASP station has been successfully activated.
Log on to host. Log off the host. For procedures, see the section on On-line Test for a HASP Work Station Terminal. Follow the procedures for each of the terminals.	

The following procedure releases the terminals.

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
-0- REL (cr)	The operator enters a command to release HASP work station terminal 0.
-0- COMMAND PROCESSED -0- TERMINAL RELEASED	The system indicates that HASP terminal 0 has been released.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
-1- REL (cr)	The operator enters a command to release HASP work station terminal 1.
-1- COMMAND PROCESSED -1- TERMINAL RELEASED	The system indicates that HASP terminal 1 has been released.
ALL HASP TERMINALS RELEASED- SIMULATION TERMINATED COMM 18 RELEASED	Information is displayed showing that the verification test is complete.

VERIFICATION TEST FOR TWO 200UTs

To reserve the buffer areas and activate the terminals, perform the following:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
RSV,2 (cr)	The operator enters a command to reserve buffer areas for two 200UT terminals.
SIMULATORS SPACE RESERVED 05 PAGES (PAGE=4096 BYTES)	The system responds that space has been reserved.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.

UT2, (cr) The operator enters a command to activate the first 200UT. Request default synchronous communications channel.

UT200 TERMINAL ID=0 The system indicates that
 COMMUN.CHANNEL-21 the first 200UT has been
 INPUT DEVICE— 10 successfully activated.
 LIST DEVICE— 12
 CONSOLE DEVICE— 4

CONTROL G Manual interrupt is performed.

MI Manual interrupt is active.

>

UT2,22 (cr) The operator enters a command to activate the second 200UT on synchronous communication channel 22.

LIST DEVICE 12 The system requests that the
 ALREADY RESERVED operator specify an alternate
 ALTERNATE=> list device.
 9 (cr)

UT200 TERMINAL ID=1
 COMMUN.CHANNEL-22
 INPUT DEVICE— 10
 LIST DEVICE— 9
 CONSOLE DEVICE— 4

Log on to the host. Log off from host. Follow the procedure for On-line Test for a 200UT Terminal for each of the terminals.

To release the terminals, perform the following:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.

MI	Manual interrupt is active.
----	-----------------------------

>

/0/ REL (cr)	The operator enters a command to release user terminal 0.
--------------	---

/0/ TERMINAL RELEASED	The system indicates terminal 0 has been released.
--------------------------	--

CONTROL G	Manual interrupt is performed.
-----------	--------------------------------

MI	Manual interrupt is active.
----	-----------------------------

>

/1/ REL (cr)	The operator enters a command to release user terminal 1.
--------------	---

/1/ TERMINAL RELEASED	The system indicates that the 200UT terminal 1 has been released.
--------------------------	---

ALL UT200 TERMINALS The system indicates that the
 RELEASED- verification test has been
 SIMULATION completed.
 TERMINATED
 COMM 18 RELEASED

VERIFICATION TEST FOR ONE HASP AND ONE 200UT

To reserve buffer areas and activate the terminals, proceed as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.

MI	Manual interrupt is active.
----	-----------------------------

>

RSV,1,1 (cr)	The operator enters a request to reserve buffer areas for one 200UT and one HASP work station.
--------------	--

SIMULATORS SPACE RESERVED 07 PAGES (PAGE=4096 BYTES)	The system indicates that space has been reserved.
---	--

CONTROL G	Manual interrupt is performed.
-----------	--------------------------------

MI	Manual interrupt is active.
----	-----------------------------

>

UT2, (cr)	The operator enters a request to activate the 200UT.
-----------	--

UT200 TERMINAL ID=0 COMMUN.CHANNEL-21 INPUT DEVICE— 10 LIST DEVICE— 12 CONSOLE DEVICE— 4	The system indicates that the 200UT has been successfully activated. (The communication channel has been assigned a default unit of 21.)
--	--

CONTROL G	Manual interrupt is performed.
-----------	--------------------------------

MI	Manual interrupt is active.
----	-----------------------------

>

HWS,22 (cr)	The operator enters a request to activate the HASP work station with a communication channel of 22.
-------------	---

HASP WS TERMINAL=0 -0- TERMINAL INAC COMM.-21 KEYBRD-04 DSPLY-04 1I 1L 1P TRANSP-ON	Information is displayed showing that the HASP work station has been successfully activated.
---	--

-0- INPUT 1-10	
----------------	--

-0- LIST 1-09	
---------------	--

-0- PUNCH 1-02	
----------------	--

Log on to the host. Log off the host. Follow the procedure for on-line test for each of the terminals.

To release the terminals, complete the following procedure:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
-REL (cr)	The operator enters a command to release the HASP work station terminal.
-0- COMMAND PROCESSED -0- TERMINAL RELEASED	The system indicates that the HASP terminal has been released.
ALL HASP TERMINALS RELEASED- SIMULATION TERMINATED	
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
/REL (cr)	The operator enters a request to release the 200UT terminal.
/0/ TERMINAL RELEASED	The system indicates that the 200UT has been released.
ALL UT200 TERMINALS RELEASED- SIMULATION TERMINATED COMM 18 RELEASED	Information is displayed showing that verification test is complete.

ON-LINE TEST FOR A HASP WORK STATION TERMINAL

To perform on-line tests, the operator must know a valid host computer telephone number and the assigned baud rate. No information can be sent back by the host unless a sign-on card is first sent. If an incorrect sign-on card is sent, the host computer sends back an error message. To perform an on-line test, proceed as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
	Place the sign-on card in the card reader and hit the READY button.
	Dial the host number and press the data button on the phone as

soon as a high-pitched tone is heard.

CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
-SON (cr)	The operator requests the sign-on card to be read.
-0- COMMAND PROCESSED -0- TERMINAL SIGNED ON	The system indicates that the sign-on card has been accepted by the host and the terminal is now signed-on.
	Place the sign-off card in the card reader, and ready the card reader.
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
-READ,1 (cr)	The operator enters a request to read the sign-off card.
-0- COMMAND PROCESSED -0- COMMUNICATIONS TERMINATED	Information is displayed showing the operator is now signed off.

ON-LINE TEST FOR A 200UT TERMINAL

To perform on-line tests, the operator must know a valid host computer telephone number and the assigned baud rate. A valid sign-on is also required.

All commands and console displays are host dependent and, therefore, are not detailed here.

The following procedure should be performed:

- Dial the host number and press the data button on the phone as soon as a high-pitched tone is heard.
- After the data button is pressed, the host program causes information to be displayed on the screen.
- A message requesting a log on should be displayed.
- Enter the appropriate log-on command required by the specific host.
- A message should be displayed acknowledging a successful log on.
- Enter the appropriate log-off command required by the specific host.
- A message should be displayed acknowledging a successful log off.

BAM 18 VERIFICATION TEST

All or part (depending on the peripherals available) of the BAM 18 verification test procedure in table 5-1 may be used to verify the BAM 18 software. Refer to

appendix GG, BAM 18 Acceptance Test, for more information regarding the BAM 18 verification procedures and a detailed description of the possible error messages with suggested corrective action.

TABLE 5-1. BAM 18 VERIFICATION TEST PROCEDURES

Display/Keyboard	Comments
<pre> + (cr) USER ID = > (cr) PRINTFILE = > P01 (cr) REQUEST = > BAMATS (cr) START OF BAMATS THIS IS THE ACCEPTANCE TEST FOR THE BISYNCHRONOUS ACCESS METHOD 'BAM18' THE USER CONTROLS EXECUTION OF THE TEST WHICH CONSISTS OF TRANSMISSION OF A MESSAGE TO A REMOTE STATION AND RECEPTION OF A MESSAGE FROM THE REMOTE STATION THIS TEST PACKAGE IS IBM 3780 COMPATIBLE SELECT SOURCE OF TEST MESSAGE 1 INTERNAL TEST DATA 2 USER DEFINED INTERNAL TEST DATA (CONSOLE INPUT) 3 CARD READER INPUT TEST DATA 1 (cr) COMMUNICATION ADAPTER IS OPEN ESTABLISH COMMUNICATION LINK THEN CONTINUE SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST 1 (cr) ENTER MESSAGE 1 2 7 12345678901234567890....12345678901234567890 MESSAGE IS BEING SENT BLOCK nnnn STATUS nnnn nnnn MESSAGE COMPLETE </pre>	<pre> Operator logs onto ITOS. System requests print file. Operator enters a print file name. System requests operation. Operator requests BAM 18 tests. System confirms BAMATS is active. BAMATS requests source of test data. Operator enters 1. BAMATS requests operation. Operator enters 1 to transmit a console message. BAMATS requests a console message in card format. Operator enters appropriate log-in message or other message. BAMATS informs operator that the message is being sent, provides the number of blocks and any error status, and indicates that the message is complete. </pre>

TABLE 5-1. BAM 18 VERIFICATION TEST PROCEDURES (Contd)

Display/Keyboard	Comments
<p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>3 (cr)</p> <p>BLOCK nnnn STATUS \$nnnn \$nnnn</p>	<p>BAMATS requests operation. Operator may transmit another message from the console, receive a message from the host, or exit and restart BAMATS in order to stipulate a different source of data.</p> <p>Operator enters 3 to receive a message.</p> <p>BAMATS informs operator that the message is being received and provides the number of blocks and any error status.</p>
<p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>4 (cr)</p> <p>TEST COMPLETE RNAK RWAK RTTD RCRC TNAK TWAK TTTD TTOT RTOT RUNK XERR nn nn nn nn nn nn nn nn nn nn nn nn</p>	<p>BAMATS requests operation.</p> <p>Operator enters 4 to terminate the test.</p> <p>System displays line statistics.</p>
<p>THE LINE ACTIVITY HAS BEEN TRACED TO DUMP THE TRACE DATA, EXECUTE THE PROGRAM 'RTRC,FF' UNDER MANUAL INTERRUPT MODE AND 'CTRC' TO CLEAR THE DATA END BAMATS</p> <p>REQUEST = ></p>	<p>If there were errors, the operator should execute 'RTRC,FF' to assist the analyst in troubleshooting.</p>
<p>BAMATS (cr)</p> <p>START OF BAMATS THIS IS THE ACCEPTANCE TEST FOR THE BISYNCHRONOUS ACCESS METHOD 'BAM18' THE USER CONTROLS THE EXECUTION OF THE TEST WHICH CONSISTS OF TRANSMISSION OF A MESSAGE TO A REMOTE STATION AND RECEPTION OF A MESSAGE FROM THE REMOTE STATION THIS TEST PACKAGE IS IBM 3780 COMPATIBLE SELECT SOURCE OF TEST MESSAGE 1 INTERNAL TEST DATA 2 USER DEFINED INTERNAL TEST DATA (CONSOLE INPUT) 3 CARD READER INPUT TEST DATA</p>	<p>Operator requests BAM 18 test.</p> <p>System confirms BAMATS is active.</p>
<p>2 (cr)</p> <p>ENTER UP TO 100 RECORDS UP TO 80 CHARACTERS IN LENGTH ENTER '/EOT' AFTER THE LAST RECORD</p> <p>COMMUNICATION ADAPTER IS OPEN ESTABLISH COMMUNICATION LINK THEN CONTINUE</p>	<p>BAMATS requests the source of test data.</p> <p>Operator enters 2.</p> <p>BAMATS requests data from the console display.</p> <p>Operator enters any desired ASCII characters.</p>

TABLE 5-1. BAM 18 VERIFICATION TEST PROCEDURES (Contd)

Display/Keyboard	Comments
<p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>2 (cr)</p> <p>MESSAGE IS BEING SENT BLOCK nnnn STATUS \$nnnn \$nnnn MESSAGE COMPLETE</p> <p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>3 (cr)</p> <p>MESSAGE IS BEING RECEIVED BLOCK nnnn STATUS \$nnnn \$nnnn MESSAGE COMPLETE</p> <p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>4 (cr)</p> <p>TEST COMPLETE RNAK RWAK RTTD RCRC TNAK TWAK TTDD TTOT RTOT RUNK XERR nn nn nn nn nn nn nn nn nn nn nn</p> <p>THE LINE ACTIVITY HAS BEEN TRACED TO DUMP THE TRACE DATA EXECUTE THE PROGRAM 'RTRC,FF' UNDER MANUAL INTERRUPT MODE AND 'CTRC' TO CLEAR THE DATA END BAMATS</p> <p>REQUEST = ></p> <p>BAMATS (cr)</p> <p>START OF BAMATS THIS IS THE ACCEPTANCE TEST FOR THE BISYNCHRONOUS ACCESS METHOD 'BAM18' THE USER CONTROLS THE EXECUTION OF THE TEST WHICH CONSISTS OF TRANSMISSION OF A MESSAGE TO A REMOTE STATION AND RECEPTION OF A MESSAGE FROM THE REMOTE STATION THIS TEST PACKAGE IS IBM 3780 COMPATIBLE SELECT SOURCE OF TEST MESSAGE 1 INTERNAL TEST DATA 2 USER DEFINED INTERNAL TEST DATA (CONSOLE INPUT) 3 CARD READER INPUT TEST DATA</p> <p>3 (cr)</p>	<p>BAMATS requests operation.</p> <p>Operator enters 2.</p> <p>System sends informative message to operator.</p> <p>BAMATS requests operation.</p> <p>Operator enters 3 to receive data.</p> <p>System sends informative message to operator.</p> <p>BAMATS requests operation.</p> <p>Operator enters 4.</p> <p>System displays line statistics.</p> <p>If there were errors, the operator should execute 'RTRC,FF' to assist the analyst in troubleshooting.</p> <p>Operator requests BAM 18 test.</p> <p>System confirms BAMATS is active.</p> <p>BAMATS requests source of test data.</p> <p>Operator enters 3.</p>

TABLE 5-1. BAM 18 VERIFICATION TEST PROCEDURES (Contd)

Display/Keyboard	Comments
<p>COMMUNICATION ADAPTER IS OPEN ESTABLISH COMMUNICATION LINK THEN CONTINUE: PAUSE:</p> <p>(cr)</p> <p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>2 (cr)</p> <p>MESSAGE IS BEING SENT BLOCK nnnn STATUS \$nnnn \$nnnn</p> <p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>3 (cr)</p> <p>MESSAGE IS BEING RECEIVED BLOCK nnnn STATUS \$nnnn \$nnnn MESSAGE COMPLETE</p> <p>SELECT OPERATION 1 TRANSMIT CONSOLE TEST MESSAGE 2 TRANSMIT TEST MESSAGE 3 RECEIVE TEST MESSAGE 4 TERMINATE TEST</p> <p>4 (cr)</p> <p>TEST COMPLETE RNAK RWAK RTTD RCRC TNAK TWAK TTTD TTOT RTOT RUNK XERR nn nn nn nn nn nn nn nn nn nn nn</p> <p>THE LINE ACTIVITY HAS BEEN TRACED TO DUMP THE TRACE DATA EXECUTE THE PROGRAM 'RTRC,FF' UNDER MANUAL INTERRUPT MODE AND 'CTRC' TO CLEAR THE DATA END BAMATS</p> <p>REQUEST = ></p>	<p>Operator enters carriage return. BAMATS requests operation.</p> <p>Operator readies cards in card reader and enters 2. System sends informative message to operator. BAMATS requests operation.</p> <p>Operator enters 3 to receive message. System sends informative message to operator. BAMATS requests operation.</p> <p>Operator enters 4 to terminate test. System displays line statistics.</p> <p>If there were errors, the operator should execute 'RTRC,FF' to assist the analyst in troubleshooting.</p> <p>Operator signs off if required (similar to sign-on procedure). If there were errors, operator may now run the trace routine, 'RTRC,FF', as previously described or sign off ITOS to list the PRINTFILE. The file may then be examined to ensure the accuracy of the received data.</p>

X780 VERIFICATION TEST

The verification test for the X780 (2780/3780) remote job entry subsystem (table 5-2) entails transmitting a user-supplied test job to a 2780/3780 compatible communication system (remote) and receiving a response from that system. It is assumed that a 2780/3780 remote, a sign-on/sign-off procedure, and a test job are available for verification testing. The verification sequence appears in the following steps.

1. Initiate X780.
2. Transmit sign on to remote.
3. Transmit test job to remote.
4. Receive response from remote.
5. Transmit sign off to remote.
6. Terminate X780.

TABLE 5-2. X780 VERIFICATION TEST PROCEDURES

Display/Keyboard	Comments
<pre> CONTROL G MI > SPHT (cr) MI COMPLETE CONTROL G MI > START (cr) I T O S ACTIVE AT 1400+ JUL 09 79 14:00:18 CDC CYBER-18 I T O S SYSTEM - VER 2.0 ITOS 2.0/COMM18/BAM18 07/09/79 TERMINAL = 00 USER ID. = > (cr) PRINTFILE = > (cr) REQUEST = > BAMRJE (cr) START OF BAMRJE STANDARD CONFIGURATION .PT TO PT .DEDICATED .EBCDIC CODE .PORT 0 .3780 MODE SELECT OTHER CONFIGURATION FEATURES FROM LIST 0-CONTINUE 4-ASCII TRANSMIT CODE 1-2780 MODE 5-SLOW LINE USED 2-AUTO ANSWER 6-MULTIPOINT NETWORK 3-SWITCHED ID 7-PORT SPECIFICATION > 0 (cr) </pre>	<pre> Manual interrupt is performed. Manual interrupt is active. Operator halts the print spooler. Manual interrupt is complete. Manual interrupt is performed. Manual interrupt is active. Operator initiates ITOS 2. ITOS 2 is active. Operator initiates a request to start the X780 remote job entry subsystem. System indicates that the X780 is active. Operator selects the default standard configuration. It may be necessary to configure differently for various remotes. </pre>

TABLE 5-2. X780 VERIFICATION TEST PROCEDURES (Contd)

Display/Keyboard	Comments
<p>SELECT OPERATION 0-TERMINATE 1-TRANSMIT FILE 2-TRANSMIT FILE COMPRESSED 3-TRANSMIT FILE TRANSPARENT ENTER 'NUMBER,FILENAME' ></p> <p>4-RECEIVE FILE 5-SELECT FEATURES 6-AUTO ANSWER OPERATION</p>	<p>System displays a menu of possible operations.</p> <p>At this point the communication link to the remote should be established.</p>
<p>1 (cr)</p> <p>TRANSMITTING FROM CARDS</p>	<p>Operator selects the option to transmit a sign-on record to the remote site.</p> <p>X780 indicates that the sign-on record is being transmitted from cards.</p>
<p>SELECT OPERATION 0-TERMINATE 1-TRANSMIT FILE 2-TRANSMIT FILE COMPRESSED 3-TRANSMIT FILE TRANSPARENT ENTER 'NUMBER,FILENAME' ></p> <p>4-RECEIVE FILE 5-SELECT FEATURES 6-AUTO ANSWER OPERATION</p>	<p>System indicates that data transmission is complete and requests next operation.</p>
<p>1 (cr)</p> <p>TRANSMITTING FROM CARDS</p>	<p>Operator selects option to transmit test job to remote site.</p> <p>X780 indicates that data is being transmitted from cards.</p>
<p>SELECT OPERATION 0-TERMINATE 1-TRANSMIT FILE 2-TRANSMIT FILE COMPRESSED 3-TRANSMIT FILE TRANSPARENT ENTER 'NUMBER,FILENAME' ></p> <p>4-RECEIVE FILE 5-SELECT FEATURES 6-AUTO ANSWER OPERATION</p>	<p>System indicates that data transmission is complete and requests next operation.</p>
<p>4 (cr)</p> <p>RECEIVING TO LINE PRINTER</p>	<p>Operator selects option to receive a response from remote site.</p> <p>X780 indicates that data is being received from the remote to the line printer.</p> <p>To receive a complete job from the remote may require that several receive file operations be initiated by the operator. Monitor the line printer for complete reception of the job.</p>
<p>SELECT OPERATION 0-TERMINATE 1-TRANSMIT FILE 2-TRANSMIT FILE COMPRESSED 3-TRANSMIT FILE TRANSPARENT ENTER 'NUMBER,FILENAME' ></p> <p>4-RECEIVE FILE 5-SELECT FEATURES 6-AUTO ANSWER OPERATION</p>	<p>System indicates that data reception is complete and requests next operation.</p> <p>Operator selects option to transmit a sign-off record to remote site.</p>

TABLE 5-2. X780 VERIFICATION TEST PROCEDURES (Contd)

Display/Keyboard	Comments
<p>TRANSMITTING FROM CARDS</p> <p>SELECT OPERATION 0-TERMINATE 1-TRANSMIT FILE 2-TRANSMIT FILE COMPRESSED 3-TRANSMIT FILE TRANSPARENT ENTER 'NUMBER,FILENAME' ></p> <p>0 (cr)</p> <p>LINE STATISTICS RNAK RWAK RTTD RCRC TNAK TWAK TTTD TTOT RTOT RUNK XERR 0 0 0 0 0 12 0 0 1 0 0 REQUEST = ></p> <p>EX (cr)</p>	<p>X780 indicates that data is being transmitted from cards.</p> <p>System indicates that data transmission is complete and requests next operator.</p> <p>Operator selects X780 termination.</p> <p>X780 terminates and prints line statistics.</p> <p>Exit ITOS 2.</p>

- BGNMON** - The first address of the system monitor, ITOS executive, and I/O drivers. This parameter defines the first location for the programs loaded by the *LP initializer declaration.
- BOOTSTRAP** - A set of machine language instructions designed to read in a program from an input device and begin execution of that program
- BYTE** - A sequence of adjacent binary digits operated upon as a unit and usually shorter than a word. Within the CYBER 18 computer systems, a byte is eight bits; in other words, a byte is one-half of a 16-bit word.
- COSY** - A format for compressing information in source decks or source deck images by replacing three or more sequential blanks with two special ASCII characters
- DEADSTART** - CYBER 18-10M/18-20 hardware logic that allows execution of panel mode instructions input from an external input device. These instructions may load a bootstrap into macro memory and initiate its execution.
- ENDOV4** - The last address of system allocatable core. It must be one word less than the parameter BGNMON.
- MSIZV4** - The highest directly addressable location in the system. It may be less than, but must not exceed, a value of $FFFE_{16}$ (65,535).
- OPERATOR MODE** - CYBER 18-10M/18-20 operational mode in which input from the operator's console is communicated to MSOS, and any output displayed on the operator's console is a message from MSOS
- PANEL MODE** - CYBER 18-10M/18-20 operational mode in which input from the operator's console is a panel mode command such as J11, K, and so forth. While in this mode, any output appearing on the operator's console is a display of the register selected by the current control and display command.
- PARTBL** - The partitioned core table, located in the SYSDAT program. This table is used to control the address locations of the file manager processor area and the ITOS user area.
- STRBAS** - The beginning address of the ITOS start processor. To avoid possible interference with the MSOS batch background or COMM 18, the start processor is executed in the highest address locations in the system. This parameter is normally 4096 words less than the MSIZV4 parameter.
- SYSTEM A** - The basic ITOS 2 system, configured with one mass memory unit and one terminal. System A is used to configure system B.
- SYSTEM B** - Any system which is configured using system A and the system configurator and which is the desired operational system for the user's requirements
- UNPEND** - The ending address of the unprotected batch area. In nonconcurrent batch systems, this value is the same as the MSIZV4 parameter. In concurrent batch systems, it should not exceed the maximum requirements for system batch since this memory is reserved from the user program pool during batch execution.
- UNPSRT** - The beginning address of the unprotected batch area. This value is normally the same as the start of the ITOS user area. All programs loaded in the MSOS batch background are absolutized at this location.



BASIC SYSTEM LOAD MAP

B

```
DATE 092178
*V
*V
*S.SYSMUN.$3039
*S.SYSUAY.$3231
*S.SYSYEM.$3738
*S.SYSLVL.$3334
*V
*V      1700 MASS STORAGE OPERATING SYSTEM - VER 5.0
*V      CYBER 18 INTERACTIVE TERMINAL ORIENTED SYSTEM -
*V      VERSION 2.0
*V
*V
*V      COPYRIGHT CONTROL DATA CORPORATION - 1976
*V
*V      ITUS 2-COMM18 'A' SYSTEM CDD
*V
*YM.LIHED1.1
*YM.LUANSU.2
*YM.JUHENT.3
*YM.JUHPRU.4
*YM.PKUTEC.5
*YM.JPLUAD.6
*YM.JPCHGE.7
*YM.JPT13.8
*YM.JCHDV4.9
*YM.JLGOV4.10
*YM.JFSTV4.11
*YM.NAMEV4.12
*YM.JPFLV4.13
*YM.AFILV4.14
*YM.FESTUM.15
*YM.KCOVER.16
*YM.FRKKI.17
*YM.ULRHUG.18
*YM.SYSCOP.19
*YM.SYSSG.20
*YM.MIPRU.21
*YM.TUFUNC.22
*YM.EFSTUF.23
*YM.CNNAME.24
*YM.SYUTIL.25
*YM.MNTCHN.26
*YM.DISMNT.27
*YM.ALTHI.28
*YM.SIMSV.29
*YM.U2INIT.30
*YM.HWINIT.31
*YM.HWMSWH.32
*YM.HXCHPH.33
*YM.DUMMY1.34
*YM.DUMMY2.35
*S.ENDOV4.$28BF
*S.BGNMUN.$2XCO
*S.UNPSWT.$BLC0
*S.UNPERF.$HFFF
```

DATE 092178
 *S,STRRAS,\$B000
 *S,MSIZV4,\$BFFF
 *S,SECTOR,\$3FFF

*L SYSTEM DATA PROGRAM
 SYSJAT 0000 ITOS 2-CUMM18 'A' SYSTEM CDD SUMMARY-132
 *L SPACE REQUEST PROCESSOR
 SPACE 1464 DECK-ID M02 ITOS 2.0 SUMMARY-132

* SYSTEM CORE RESIDENT PROGRAMS

*LP ITOS EXECUTIVE
 TSTASK 28C0 DECK-ID A01 ITOS 2.0 SUMMARY-132
 TSSUHR 28FD DECK-ID A02 ITOS 2.0 SUMMARY-132
 TSPRGT 2E67 DECK-ID A03 ITOS 2.0 SUMMARY-132
 TSUREG 3396 DECK-ID A04 ITOS 2.0 SUMMARY-132
 TSIOCP 3485 DECK-ID A05 ITOS 2.0 SUMMARY-132
 TSMMER 358E DECK-ID A06 ITOS 2.0 SUMMARY-132
 EXTREG 35CD DECK-ID A07 ITOS 2.0 SUMMARY-132
 SETBND 35E1 DECK-ID A08 ITOS 2.0 SUMMARY-132
 CONPNT 35F3 DECK-ID A09 ITOS 2.0 SUMMARY-132

*LP MONITOR
 NMONI 36FE DECK-ID M10 MSOS 5.0 SUMMARY-122
 RDISP 374A DECK-ID 058 MSOS 5.0 SUMMARY-126
 RW 390C DECK-ID M09 MSOS 5.0 SUMMARY-110
 T14 39HA DECK-ID M26 MSOS 5.0 SUMMARY-110
 T16 39C8 DECK-ID M04 MSOS 5.0 SUMMARY-110
 PARAME 39D6 DECK-ID M03 MSOS 5.0 SUMMARY-110
 COMMON 3A47 DECK-ID 055 MSOS 5.0 SUMMARY-116
 NIPROC 3A9C DECK-ID M12 MSOS 5.0 SUMMARY-118
 ALVOL 3B2E DECK-ID M16 MSOS 5.0 SUMMARY-110
 UFVOL 3B4B DECK-ID M15 MSOS 5.0 SUMMARY-110
 ALCORE 3B58 DECK-ID M17 MSOS 5.0 SUMMARY-110
 DCORE 3C06 DECK-ID 057 MSOS 5.0 SUMMARY-132
 NFNK 3D72 DECK-ID M21 MSOS 5.0 SUMMARY-110
 NCMFRQ 3DE7 DECK-ID M20 MSOS 5.0 SUMMARY-110
 MAKU 3E17 DECK-ID M08 MSOS 5.0 SUMMARY-110
 ADEV 3E45 DECK-ID M22 MSOS 5.0 SUMMARY-132
 TINT 3F88 DECK-ID M06 MSOS 5.0 SUMMARY-116
 LTIMER 404A DECK-ID M05 MSOS 5.0 SUMMARY-110
 TOD 406C DECK-ID M25 MSOS 5.0 SUMMARY-110
 MINT 4088 DECK-ID M01 ITOS 2.0 SUMMARY-132
 TRVEC 41FA DECK-ID M14 MSOS 5.0 SUMMARY-116
 MOV 424D DECK-ID A11 ITOS 2.0 SUMMARY-132

*LP DEBUGGING / CHECKOUT
 R1F334 4264 DECK-ID D66 PERIPH. DRIVERS 1.2C SUMMARY-122

*LP FILE MANAGER
 FMEXEC 42DF DECK-ID F01 ITOS 2.0 SUMMARY-132
 FMSUMS 458A DECK-ID F02 ITOS 2.0 SUMMARY-132
 PUTREC 480F DECK-ID F03 ITOS 2.0 SUMMARY-132
 HEADPC 48FA DECK-ID F04 ITOS 2.0 SUMMARY-132
 GETXAT 49E3 DECK-ID F05 ITOS 2.0 SUMMARY-132
 WRTRAK 4A11 DECK-ID F06 ITOS 2.0 SUMMARY-132
 MRECAU 4A7F DECK-ID F07 ITOS 2.0 SUMMARY-132
 COMSEQ 4ACC DECK-ID F08 ITOS 2.0 SUMMARY-132
 LUKUNL 4C24 DECK-ID F09 ITOS 2.0 SUMMARY-132

DATE 092178

SSMGK	4C4C	DECK-ID F10	ITOS 2.0	SUMMARY-132
DWMATH	4D15	DECK-ID A10	ITOS 2.0	SUMMARY-132
*LP	CORE RESIDENT DRIVERS			
EFDATA	4D67	DECK-ID M27	MSOS 5.0	SUMMARY-110
DUMMY	4ED4	DECK-ID M30	MSOS 5.0	SUMMARY-110
D18334	4EF7	DECK-ID D50	PERIPH. DRIVERS 1.2C	SUMMARY-128
CDUCP	5348	DECK-ID D62	PERIPH. DRIVERS 1.2C	SUMMARY-122
MMEEXEC	536B	DECK-ID M15	ITOS 2.0	SUMMARY-132
TRMDVH	5511	DECK-ID P01	ITOS 2.0	SUMMARY-132
TKMIUR	5766	DECK-ID P02	ITOS 2.0	SUMMARY-132
S1811T	59A6	DECK-ID P03	ITOS 2.0	SUMMARY-132
DCONSL	5A25	DECK-ID P04	ITOS 2.0	SUMMARY-132
NXTLUC	5ACF	NEXT AVAILABLE LOCATION		

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* POOL AREA PARTITION
*

*LP 36610

PLSTRT	6610	DECK-ID M17	ITOS 2.0	SUMMARY-132
ECMDMP	6A1D	DECK-ID D10	PERIPH. DRIVERS 1.1C	SUMMARY-116
NXTLUC	68C4	NEXT AVAILABLE LOCATION		

*
* SYSTEM MASS RESIDENT PROGRAMS
*

*+ LIBEDT 1

LIBEDT	0512	DECK-ID M14	ITOS 2.0	SUMMARY-132
JPROC	187E	DECK-ID M10	ITOS 2.0	SUMMARY-132
NXTLUC	1A07	NEXT AVAILABLE LOCATION		

*+ LOADSD 2

LOAD1	055H	DECK-ID M36	MSOS 5.0	SUMMARY-110
HKNCH1	0236	DECK-ID M37	MSOS 5.0	SUMMARY-132
PG2KRD	0398	DECK-ID 069	MSOS 5.0	SUMMARY-116
LIDRV1	03C9	DECK-ID M38	MSOS 5.0	SUMMARY-110
LCORV1	041A	DECK-ID M39	MSOS 5.0	SUMMARY-110
LMDRV1	0447	DECK-ID M40	MSOS 5.0	SUMMARY-110
LLDRV1	0466	DECK-ID M41	MSOS 5.0	SUMMARY-110
ADJOF1	0474	DECK-ID M42	MSOS 5.0	SUMMARY-110
CNVPT1	0480	DECK-ID M43	MSOS 5.0	SUMMARY-110
LSTOT1	0498	DECK-ID M44	MSOS 5.0	SUMMARY-110
LINK11	04EB	DECK-ID M45	MSOS 5.0	SUMMARY-110
LOADH1	052E	DECK-ID M46	MSUS 5.0	SUMMARY-116
NAMPH1	05A7	DECK-ID M47	MSOS 5.0	SUMMARY-110
RBDHZ1	0648	DECK-ID M48	MSUS 5.0	SUMMARY-110
ENTEX1	0741	DECK-ID M49	MSUS 5.0	SUMMARY-110
XFRPK1	0777	DECK-ID M50	MSOS 5.0	SUMMARY-110
STRASE	0788	DECK-ID M51	MSUS 5.0	SUMMARY-110
LNKENT	0870	DECK-ID M52	MSOS 5.0	SUMMARY-110
LNKCK1	088C	DECK-ID M53	MSOS 5.0	SUMMARY-110
PATCH	08CD	DECK-ID M54	MSOS 5.0	SUMMARY-110
TBSCH1	090F	DECK-ID M55	MSUS 5.0	SUMMARY-110
HASH	0957	DECK-ID M56	MSUS 5.0	SUMMARY-110
THSTR1	096F	DECK-ID M57	MSUS 5.0	SUMMARY-110
PAGE	09C4	DECK-ID M58	MSOS 5.0	SUMMARY-110
PRUGLD	0AB4	DECK-ID M59	MSOS 5.0	SUMMARY-110
SCAN1	08B6	DECK-ID M60	MSOS 5.0	SUMMARY-110
CHPU1	0C7C	DECK-ID M61	MSOS 5.0	SUMMARY-110
ADJOV2	0C89	DECK-ID M62	MSOS 5.0	SUMMARY-110

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	ADRPR1	0CA2	DECK-ID M63 MSOS 5.0	SUMMARY-110
	NXTLOC	0D03	NEXT AVAILABLE LOCATION	
*M		JOBENT	3	
	JOBENT	0578	DECK-ID M04 ITOS 2.0	SUMMARY-132
	T11	0128	DECK-ID M65 MSOS 5.0	SUMMARY-110
	T7	015F	DECK-ID M66 MSOS 5.0	SUMMARY-110
	T5	0281	DECK-ID M67 MSOS 5.0	SUMMARY-110
	T3	02DA	DECK-ID M68 MSOS 5.0	SUMMARY-110
	GRARM	0311	DECK-ID A12 ITOS 2.0	SUMMARY-132
	NXTLOC	0367	NEXT AVAILABLE LOCATION	
*S,N1,P				
*M		JOBPRO	4	
	JOHPRO	0585	DECK-ID M09 ITOS 2.0	SUMMARY-132
	ONE	0237	DECK-ID M70 MSOS 5.0	SUMMARY-110
	TWO	023A	DECK-ID M71 MSOS 5.0	SUMMARY-110
	THREE	023D	DECK-ID M72 MSOS 5.0	SUMMARY-110
	CLPTFL	0240	DECK-ID I09 ITOS 2.0	SUMMARY-132
	IVPTTC	0265	DECK-ID I10 ITOS 2.0	SUMMARY-132
	QBPREP	027A	DECK-ID I11 ITOS 2.0	SUMMARY-132
	HFCLUS	028B	DECK-ID I12 ITOS 2.0	SUMMARY-132
	NXTLOC	02C5	NEXT AVAILABLE LOCATION	
*M		PROTEC	5	
	UPROTK	058D	DECK-ID 060 MSOS 5.0	SUMMARY-120
	JBKILL	04AC	DECK-ID M75 MSOS 5.0	SUMMARY-110
	NXTLOC	050C	NEXT AVAILABLE LOCATION	
*M		JLOAD	6	
	JLOAD	059B	DECK-ID M76 MSOS 5.0	SUMMARY-110
	NXTLOC	01A3	NEXT AVAILABLE LOCATION	
*S,N2,P				
*M		JPCHGE	7	
	JPCHGE	05A0	DECK-ID M16 ITOS 2.0	SUMMARY-132
	ASCHEX	0186	DECK-ID M78 MSOS 5.0	SUMMARY-110
	NXTLOC	01DB	NEXT AVAILABLE LOCATION	
*M		JPT13	8	
	T13	05A5	DECK-ID M79 MSOS 5.0	SUMMARY-110
	NXTLOC	018F	NEXT AVAILABLE LOCATION	
*M		JCRDV4	9	
	JCRDV4	05AA	DECK-ID M05 ITOS 2.0	SUMMARY-132
	NXTLOC	016E	NEXT AVAILABLE LOCATION	
*M		JLGOV4	10	
	JLGOV4	05AE	DECK-ID M81 MSOS 5.0	SUMMARY-110
	NXTLOC	00F2	NEXT AVAILABLE LOCATION	
*M		JPSTV4	11	
	JPSTV4	05B1	DECK-ID M08 ITOS 2.0	SUMMARY-132
	GRARM	0088	DECK-ID A12 ITOS 2.0	SUMMARY-132
	CLPTFL	00E1	DECK-ID I09 ITOS 2.0	SUMMARY-132
	IVPTTC	0106	DECK-ID I10 ITOS 2.0	SUMMARY-132
	QBPREP	011B	DECK-ID I11 ITOS 2.0	SUMMARY-132
	HFCLUS	012C	DECK-ID I12 ITOS 2.0	SUMMARY-132
	NXTLOC	0166	NEXT AVAILABLE LOCATION	
*M		NAMEV4	12	
	NAMEV4	05H5	DECK-ID M18 ITOS 2.0	SUMMARY-132
	NXTLOC	02E1	NEXT AVAILABLE LOCATION	
*M		JPFLV4	13	
	JPFLV4	05HD	DECK-ID M11 ITOS 2.0	SUMMARY-132
	UPNPT2	01A8	DECK-ID J01 ITOS 2.0	SUMMARY-132

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MTGETF	037C	DECK-ID I07	ITOS 2.0	SUMMARY-132
PAHIDX	03F8	DECK-ID J03	ITOS 2.0	SUMMARY-132
CUNVHT	0440	DECK-ID J02	ITOS 2.0	SUMMARY-132
IVPTTC	0467	DECK-ID I10	ITOS 2.0	SUMMARY-132
PTOPEN	047C	DECK-ID I08	ITOS 2.0	SUMMARY-132
CLPTFL	04AA	DECK-ID I09	ITOS 2.0	SUMMARY-132
QBPREP	04CF	DECK-ID I11	ITOS 2.0	SUMMARY-132
FMENTP	04E0	DECK-ID F58	ITOS 2.0	SUMMARY-132
NATLUC	0541	NEXT AVAILABLE LOCATION		
*M	AFILV4	14		
JPF2V4	05CC	DECK-ID M12	ITOS 2.0	SUMMARY-132
CLPTFL	0108	DECK-ID I09	ITOS 2.0	SUMMARY-132
IVPTTC	012D	DECK-ID I10	ITOS 2.0	SUMMARY-132
QBPREP	0142	DECK-ID I11	ITOS 2.0	SUMMARY-132
NATLUC	0153	NEXT AVAILABLE LOCATION		
*M	RESTOR	15		
RESTOR	05D0	DECK-ID M86	MSOS 5.0	SUMMARY-114
NATLUC	00D3	NEXT AVAILABLE LOCATION		
*M	RCOVER	16		
RCOVER	05D3	DECK-ID M87	MSOS 5.0	SUMMARY-110
OUTSEL	0144	DECK-ID M88	MSOS 5.0	SUMMARY-110
RDMPV4	0189	DECK-ID M89	MSOS 5.0	SUMMARY-110
MASIMP	0249	DECK-ID M90	MSOS 5.0	SUMMARY-110
NATLUC	0340	NEXT AVAILABLE LOCATION		
*M	BRKPT	17		
BRKPT1	05DC	DECK-ID N01	MSOS 5.0	SUMMARY-110
NATLUC	049B	NEXT AVAILABLE LOCATION		
*M	ODEBUG	18		
ODHUG1	05E9	DECK-ID N07	MSOS 5.0	SUMMARY-116
GETREG	0120	DECK-ID N08	MSOS 5.0	SUMMARY-110
LHXREG	0240	DECK-ID N09	MSOS 5.0	SUMMARY-110
DPCREG	0300	DECK-ID N10	MSOS 5.0	SUMMARY-132
SCNREG	03C0	DECK-ID N11	MSOS 5.0	SUMMARY-116
SETRREG	0480	DECK-ID N12	MSOS 5.0	SUMMARY-110
MBCREG	04E0	DECK-ID N13	MSOS 5.0	SUMMARY-110
SCHREG	05A0	DECK-ID N14	MSOS 5.0	SUMMARY-116
SPEREG	0660	DECK-ID N15	MSOS 5.0	SUMMARY-113
CPPREG	06C0	DECK-ID N16	MSOS 5.0	SUMMARY-110
SPPREG	0720	DECK-ID N17	MSOS 5.0	SUMMARY-110
ADHREG	0780	DECK-ID N18	MSOS 5.0	SUMMARY-110
SBHREG	07E0	DECK-ID N19	MSOS 5.0	SUMMARY-110
ALCREG	0840	DECK-ID N20	MSOS 5.0	SUMMARY-116
RELREG	0900	DECK-ID N21	MSOS 5.0	SUMMARY-110
DACREG	0960	DECK-ID N22	MSOS 5.0	SUMMARY-116
PTHREG	0A40	DECK-ID N23	MSOS 5.0	SUMMARY-116
*TKREG	0BA0	DECK-ID N24	MSOS 5.0	SUMMARY-116
MSIREG	0C00	DECK-ID N25	MSOS 5.0	SUMMARY-116
CLUREG	0CC0	DECK-ID N26	MSOS 5.0	SUMMARY-110
WCDREG	0D20	DECK-ID N27	MSOS 5.0	SUMMARY-116
LASREG	0D80	DECK-ID N28	MSOS 5.0	SUMMARY-110
DASREG	0EA0	DECK-ID N29	MSOS 5.0	SUMMARY-116
MLUREG	0F60	DECK-ID N30	MSOS 5.0	SUMMARY-110
DPTRREG	0FC0	DECK-ID N31	MSOS 5.0	SUMMARY-116
SLDREG	1080	DECK-ID N32	MSOS 5.0	SUMMARY-116
CWAREG	10E0	DECK-ID N33	MSOS 5.0	SUMMARY-132
DMHREG	1200	DECK-ID N34	MSOS 5.0	SUMMARY-116

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SMNREQ	12C0	DECK-ID N35	MSOS 5.0	SUMMARY-116
SMPREQ	1440	DECK-ID N36	MSOS 5.0	SUMMARY-116
LSPREQ	1500	DECK-ID N37	MSOS 5.0	SUMMARY-116
DSPREQ	15C0	DECK-ID N38	MSOS 5.0	SUMMARY-116
DMSREQ	16E0	DECK-ID N39	MSOS 5.0	SUMMARY-116
LSUREQ	1860	DECK-ID N40	MSOS 5.0	SUMMARY-116
CCCREQ	1980	DECK-ID N41	MSOS 5.0	SUMMARY-116
CCMREQ	1AA0	DECK-ID N42	MSOS 5.0	SUMMARY-116
CMMREQ	1BC0	DECK-ID N43	MSOS 5.0	SUMMARY-116
MMMREQ	1CE0	DECK-ID N44	MSOS 5.0	SUMMARY-116
LICREQ	1E60	DECK-ID N45	MSOS 5.0	SUMMARY-118
LIOREQ	1FE0	DECK-ID N46	MSOS 5.0	SUMMARY-116
LAMREQ	2160	DECK-ID N47	MSOS 5.0	SUMMARY-116
JDPREQ	2280	DECK-ID N48	MSOS 5.0	SUMMARY-116
LDPREQ	23A0	DECK-ID N49	MSOS 5.0	SUMMARY-116
LDOREQ	24C0	DECK-ID N50	MSOS 5.0	SUMMARY-116
DMREQ	2640	DECK-ID N51	MSOS 5.0	SUMMARY-116
WDKREQ	27C0	DECK-ID N52	MSOS 5.0	SUMMARY-116
LSTREQ	28E0	DECK-ID N53	MSOS 5.0	SUMMARY-116
PHINT	2A60	DECK-ID N54	MSOS 5.0	SUMMARY-116
GETFLD	2B20	DECK-ID N55	MSOS 5.0	SUMMARY-110
ASHX	28E0	DECK-ID N56	MSOS 5.0	SUMMARY-110
DMPBUF	2C40	DECK-ID N57	MSOS 5.0	SUMMARY-116
ASCDEC	2D00	DECK-ID N58	MSOS 5.0	SUMMARY-110
HXAS	2D60	DECK-ID N59	MSOS 5.0	SUMMARY-110
UECDMP	2DC0	DECK-ID N60	MSOS 5.0	SUMMARY-116
FETMM	2E80	DECK-ID N61	MSOS 5.0	SUMMARY-132
PNTMU	2FA0	DECK-ID N62	MSOS 5.0	SUMMARY-116
MASOT	3060	DECK-ID N63	MSOS 5.0	SUMMARY-116
CONFM	3180	DECK-ID N64	MSOS 5.0	SUMMARY-116
GETINT	32A0	DECK-ID N65	MSOS 5.0	SUMMARY-116
FLCVSG	3360	DECK-ID N66	MSOS 5.0	SUMMARY-116
FLCVDB	3480	DECK-ID N67	MSOS 5.0	SUMMARY-116
NAMEMS	35A0	DECK-ID N68	MSOS 5.0	SUMMARY-110
UCONV	3A20	DECK-ID N69	MSOS 5.0	SUMMARY-110
LAZY2	3B40	DECK-ID N70	MSOS 5.0	SUMMARY-110
ODDFLT	3C00	DECK-ID N71	MSOS 5.0	SUMMARY-110
ODDFTN	3CC0	DECK-ID N72	MSOS 5.0	SUMMARY-110
ECUNV	4080	DECK-ID N73	MSOS 5.0	SUMMARY-110
LAZY1	4140	DECK-ID N74	MSOS 5.0	SUMMARY-110
UDFLUT	4200	DECK-ID N75	MSOS 5.0	SUMMARY-110
UDFXFL	4440	DECK-ID N76	MSOS 5.0	SUMMARY-110
NXTLUC	4500	NEXT AVAILABLE LOCATION		
*M	SYSCOP	19		
SYSCOP	06A1	DECK-ID N77	MSOS 5.0	SUMMARY-110
NXTLUC	0192	NEXT AVAILABLE LOCATION		
*M	SYSSEG	20		
CU1ST	06A6	DECK-ID N78	MSOS 5.0	SUMMARY-110
CO2ND	04E0	DECK-ID N79	MSOS 5.0	SUMMARY-110
CU3RD	0080	DECK-ID N80	MSOS 5.0	SUMMARY-110
CULAST	1500	DECK-ID N81	MSOS 5.0	SUMMARY-110
NATLUC	1560	NEXT AVAILABLE LOCATION		
*M	MIPRO	21		
MIPRO	06DF	DECK-ID M03	ITOS 2.0	SUMMARY-132
NXTLUC	02DC	NEXT AVAILABLE LOCATION		
*M	TUFUNC	22		

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TDFUNC	06E7	DECK-ID 067	MSOS 5.0	SUMMARY-110
NXTLOC	0160	NEXT AVAILABLE LOCATION		
*M	EFSTOR	23		
EFSTOR	06EB	DECK-ID N04	MSOS 5.0	SUMMARY-110
NXTLOC	019D	NEXT AVAILABLE LOCATION		
*M	CNWARE	24		
LUDMIC	06F0	DECK-ID P01	MSOS 5.1	SUMMARY-126
NXTLOC	00E8	NEXT AVAILABLE LOCATION		
*M	SYUTIL	25		
SYUTIL	06F3	DECK-ID A15	ITOS 2.0	SUMMARY-132
BIN2AS	03A6	DECK-ID A16	ITOS 2.0	SUMMARY-132
DEC2HX	0407	DECK-ID A17	ITOS 2.0	SUMMARY-132
Q8PRMR	045E	DECK-ID A18	ITOS 2.0	SUMMARY-132
IMAGE	046E	DECK-ID A19	ITOS 2.0	SUMMARY-132
NXTLOC	0467	NEXT AVAILABLE LOCATION		
*M	MNTCHK	26		
MNTCHK	0700	DECK-ID A20	ITOS 2.0	SUMMARY-132
NXTLOC	00CA	NEXT AVAILABLE LOCATION		
*M	DISMNT	27		
DISMNT	0703	DECK-ID A21	ITOS 2.0	SUMMARY-132
NXTLOC	0081	NEXT AVAILABLE LOCATION		
*M	AUTOBT	28		
AUTOBT	0705	DECK-ID A47	ITOS 2.0	SUMMARY-132
FMENTP	0123	DECK-ID F58	ITOS 2.0	SUMMARY-132
NXTLOC	0184	NEXT AVAILABLE LOCATION		
*M	SIMRSV	29		
SIMRSV	070A	DECK-ID L06	COMM18 2.0	SUMMARY-132
GRABMM	028A	DECK-ID A12	ITOS 2.0	SUMMARY-132
LOCATE	02E0	DECK-ID A13	ITOS 2.0	SUMMARY-132
NXTLOC	0371	NEXT AVAILABLE LOCATION		
*M	U2INIT	30		
U2INIT	0714	DECK-ID L08	COMM18 2.0	SUMMARY-132
NXTLOC	03D8	NEXT AVAILABLE LOCATION		
*M	HWINIT	31		
HWINIT	071F	DECK-ID L10	COMM18 2.0	SUMMARY-132
NXTLOC	05E3	NEXT AVAILABLE LOCATION		
*M	HWMSWR	32		
HWMSWR	072F	DECK-ID L11	COMM18 2.0	SUMMARY-132
NXTLOC	02D1	NEXT AVAILABLE LOCATION		
*M	HWCMPK	33		
HWCMPK	0737	DECK-ID L12	COMM18 2.0	SUMMARY-132
HWCMDP	02AB	DECK-ID L13	COMM18 2.0	SUMMARY-132
NXTLOC	0966	NEXT AVAILABLE LOCATION		
*M	DUMMY1	34		
*M	DUMMY2	35		
*M	MICRO-MEMORY LOAD 00			
DECDA6	0751	DECK-ID T02	ITOS 2.0	SUM-132
NXTLOC	004C	NEXT AVAILABLE LOCATION		
*S.CWSECO.S				
*S.CWLGTO.P				
*M	MICRO-MEMORY LOAD 01			
CFLUAT	0752	DECK-ID T01	ITOS 2.0	SUM-132
NXTLOC	0808	NEXT AVAILABLE LOCATION		
*S.CWSEC1.S				
*S.CWLG1.P				
*M	MICRO-MEMORY LOAD 02			

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CISCUM 0768 DECK-ID T03 ITOS 2.0 SUM-132
NXTLUC 0808 NEXT AVAILABLE LOCATION

*S,CWSEC2,S
*S,CWLGT2,P
*M MICRO-MEMORY LOAD 03
SICCOM 077E DECK-ID T04 ITOS 2.0 SUM-132
NXTLUC 1008 NEXT AVAILABLE LOCATION

*S,CWSEC3,S
*S,CWLGT3,P
*
* MASS RESIDENT DRIVERS
*
*M 1833-5/1865 FLEXIBLE DISK
D18335 07A9 DECK-ID P05 ITOS 2.0 SUMMARY-132
NXTLUC 02C0 NEXT AVAILABLE LOCATION

*S,S18335,S
*S,L18335,P
*M 1860-3/4 MAG TAPE
D1860 07B1 DECK-ID C13 PERIPH. DRIVERS 1.0C SUMMARY-113
K1860 0073 DECK-ID C14 PERIPH. DRIVERS 1.0C SUMMARY-123
CKREG 012A DECK-ID C15 PERIPH. DRIVERS 1.0C SUMMARY-106
MEWCKL 0150 DECK-ID C16 PERIPH. DRIVERS 1.0C SUMMARY-106
FUHMIT 0191 DECK-ID C17 PERIPH. DRIVERS 1.0C SUMMARY-106
WAIT 01CC DECK-ID C18 PERIPH. DRIVERS 1.0C SUMMARY-106
AMOT 01DB DECK-ID C19 PERIPH. DRIVERS 1.0C SUMMARY-106
AFER 0233 DECK-ID C20 PERIPH. DRIVERS 1.0C SUMMARY-116
NEXTIO 029A DECK-ID C21 PERIPH. DRIVERS 1.0C SUMMARY-113
MECVHY 031C DECK-ID C24 PERIPH. DRIVERS 1.0C SUMMARY-106
TK7DAT 0489 DECK-ID C22 PERIPH. DRIVERS 1.0C SUMMARY-106
TK7 0603 DECK-ID C23 PERIPH. DRIVERS 1.0C SUMMARY-106
NXTLUC 061C NEXT AVAILABLE LOCATION

*S,S1860,S
*S,L1860,P
*M 1860-3/4 MAG TAPE
D1860 07C2 DECK-ID C13 PERIPH. DRIVERS 1.0C SUMMARY-113
K1860 0073 DECK-ID C14 PERIPH. DRIVERS 1.0C SUMMARY-123
CKREG 012A DECK-ID C15 PERIPH. DRIVERS 1.0C SUMMARY-106
MEWCKL 0150 DECK-ID C16 PERIPH. DRIVERS 1.0C SUMMARY-106
FUHMIT 0191 DECK-ID C17 PERIPH. DRIVERS 1.0C SUMMARY-106
WAIT 01CC DECK-ID C18 PERIPH. DRIVERS 1.0C SUMMARY-106
AMOT 01DB DECK-ID C19 PERIPH. DRIVERS 1.0C SUMMARY-106
AFER 0233 DECK-ID C20 PERIPH. DRIVERS 1.0C SUMMARY-116
NEXTIO 029A DECK-ID C21 PERIPH. DRIVERS 1.0C SUMMARY-113
MECVHY 031C DECK-ID C24 PERIPH. DRIVERS 1.0C SUMMARY-106
UMY860 0489 DECK-ID P14 ITOS 2.0 SUMMARY-132
NXTLUC 0489 NEXT AVAILABLE LOCATION

*S,S18609,S
*S,L18609,P
*M 1860-5/6 MAG TAPE
D18326 07CF DECK-ID D51 PERIPH. DRIVERS 1.2C SUMMARY-132
K18326 004F DECK-ID D52 PERIPH. DRIVERS 1.2C SUMMARY-132
B18326 009A DECK-ID D53 PERIPH. DRIVERS 1.2C SUMMARY-132
T18326 00C5 DECK-ID D54 PERIPH. DRIVERS 1.2C SUMMARY-122
V18326 00CA DECK-ID D55 PERIPH. DRIVERS 1.2C SUMMARY-122
N18326 00F2 DECK-ID D56 PERIPH. DRIVERS 1.2C SUMMARY-132
L18326 028E DECK-ID D57 PERIPH. DRIVERS 1.2C SUMMARY-122

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W18326	029E	DECK-ID D58 PERIPH. DRIVERS 1.2C	SUMMARY-122
R18326	02D7	DECK-ID D59 PERIPH. DRIVERS 1.2C	SUMMARY-132
S18326	03AD	DECK-ID D60 PERIPH. DRIVERS 1.2C	SUMMARY-122
NXTLOC	04F4	NEXT AVAILABLE LOCATION	

*S,S18326,S
*S,L18326,P
*M

MAGNETIC TAPE SIMULATOR

DMTSIM	07DD	DECK-ID P12 ITOS 2.0	SUMMARY-132
NXTLOC	0337	NEXT AVAILABLE LOCATION	

*S,SMTSIM,S
*S,LMTSIM,P
*M

1827-30/60 LINE PRINTER

D1827	07E6	DECK-ID C01 PERIPH. DRIVERS 1.3C	SUMMARY-132
K1827	012B	DECK-ID C02 PERIPH. DRIVERS 1.3C	SUMMARY-126
LPWAIT	0260	DECK-ID C03 PERIPH. DRIVERS 1.0C	SUMMARY-106
CKGINT	0264	DECK-ID C04 PERIPH. DRIVERS 1.0C	SUMMARY-106
EDIT	0274	DECK-ID C05 PERIPH. DRIVERS 1.3C	SUMMARY-126
DUMMY	02BE	DECK-ID C06 PERIPH. DRIVERS 1.3C	SUMMARY-126
NXTLOC	030A	NEXT AVAILABLE LOCATION	

*S,S1827,S
*S,L1827,P
*M

1827-7 MATRIX PRINTER

DP8277	07EF	DECK-ID P08 ITOS 2.0	SUMMARY-132
KQ8277	0200	DECK-ID P09 ITOS 2.0	SUMMARY-132
NXTLOC	0257	NEXT AVAILABLE LOCATION	

*S,S18277,S
*S,L18277,P
*M

1829-3/6 CARD READER - 026 FORMAT

D1829	07F6	DECK-ID C07 PERIPH. DRIVERS 1.3C	SUMMARY-128
K1829	0027	DECK-ID C08 PERIPH. DRIVERS 1.3C	SUMMARY-128
FURMT	00B3	DECK-ID C09 PERIPH. DRIVERS 1.3C	SUMMARY-128
FAULTN	0265	DECK-ID C10 PERIPH. DRIVERS 1.3C	SUMMARY-128
ESTAT	0283	DECK-ID C11 PERIPH. DRIVERS 1.0C	SUMMARY-106
CK2629	028C	DECK-ID D93 PERIPH. DRIVERS 1.3C	SUMMARY-126
NXTLOC	02CC	NEXT AVAILABLE LOCATION	

*S,S1829,S
*S,L1829,P
*M

501-12 TAB CARD PUNCH

DPP560	07FE	DECK-ID P10 ITOS 2.0	SUMMARY-132
KGP560	01A7	DECK-ID P11 ITOS 2.0	SUMMARY-132
NXTLOC	01FE	NEXT AVAILABLE LOCATION	

*S,SP560,S
*S,LP560,P
*M

BATCH INPUT DRIVER

DMATIN	0804	DECK-ID A39 ITOS 2.0	SUMMARY-132
HOPENF	03A9	DECK-ID A40 ITOS 2.0	SUMMARY-132
HCLUSF	03F7	DECK-ID A41 ITOS 2.0	SUMMARY-132
HREADK	040C	DECK-ID A42 ITOS 2.0	SUMMARY-132
HGETS	042D	DECK-ID A43 ITOS 2.0	SUMMARY-132
HUPREC	044E	DECK-ID A44 ITOS 2.0	SUMMARY-132
HIMER	046H	DECK-ID A45 ITOS 2.0	SUMMARY-132
HFWRT	0480	DECK-ID A46 ITOS 2.0	SUMMARY-132
FMENTP	051F	DECK-ID F58 ITOS 2.0	SUMMARY-132
NXTLOC	0580	NEXT AVAILABLE LOCATION	

*S,SBATIN,S
*S,LBATIN,P

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*M	BATCH OUTPUT DRIVER			
	DBATOU	0813	DECK-ID A38 ITOS 2.0	SUMMARY-132
	BOPENF	03FA	DECK-ID A40 ITOS 2.0	SUMMARY-132
	BCL0SF	0448	DECK-ID A41 ITOS 2.0	SUMMARY-132
	BREADR	045D	DECK-ID A42 ITOS 2.0	SUMMARY-132
	BGETS	047E	DECK-ID A43 ITOS 2.0	SUMMARY-132
	BUPREC	049F	DECK-ID A44 ITOS 2.0	SUMMARY-132
	BTIMER	04B9	DECK-ID A45 ITOS 2.0	SUMMARY-132
	BFWRT	04D1	DECK-ID A46 ITOS 2.0	SUMMARY-132
	FMENTP	0570	DECK-ID F58 ITOS 2.0	SUMMARY-132
	NXTLOC	05D1	NEXT AVAILABLE LOCATION	
*S	SBATOU	.S		
*S	LBATOU	.P		
*M	PRINT SPOOL DRIVER			
	FSPOLR	0823	DECK-ID I14 ITOS 2.0	SUMMARY-132
	FMENTP	02E7	DECK-ID F58 ITOS 2.0	SUMMARY-132
	NXTLOC	0348	NEXT AVAILABLE LOCATION	
*S	SSPOLR	.S		
*S	LSPOLR	.P		
*M	PRINT SPOOL OVERLAY - CONVERSATION			
	SPRCUN	082C	DECK-ID I15 ITOS 2.0	SUMMARY-132
	NXTLOC	00B2	NEXT AVAILABLE LOCATION	
*S	SSPRCN	.S		
*M	PRINT SPOOL OVERLAY - HEADER OUTPUT			
	SPRHDR	082E	DECK-ID I16 ITOS 2.0	SUMMARY-132
	NXTLOC	00A4	NEXT AVAILABLE LOCATION	
*S	SSPRHI	.S		
*M	PRINT SPOOL OVERLAY - FILE ERRORS			
	SPRFME	0830	DECK-ID I18 ITOS 2.0	SUMMARY-132
	NXTLOC	005C	NEXT AVAILABLE LOCATION	
*S	SSPRFE	.S		
*M	PRINT SPOOL OVERLAY - DRIVER ERRORS			
	SPRFRR	0831	DECK-ID I17 ITOS 2.0	SUMMARY-132
	NXTLOC	0079	NEXT AVAILABLE LOCATION	
*S	SSPRER	.S		
*M	1827-30/60 LINE PRINTER DUMP ROUTINE			
	ECMDMP	0833	DECK-ID D10 PERIPH. DRIVERS 1.1C	SUMMARY-116
	NXTLOC	01A7	NEXT AVAILABLE LOCATION	
*S	SUMP36	.S		
*S	LUMP36	.P		
*M	1827-7 LINE PRINTER DUMP ROUTINE			
	ECMDMP	0838	DECK-ID D77 PERIPH. DRIVERS 1.2C	SUMMARY-122
	NXTLOC	01A0	NEXT AVAILABLE LOCATION	
*S	SUMP77	.S		
*S	LUMP77	.P		
*M	PSEUDO-TAPE VERSION 2 DRIVER			
	DPTAM2	083D	DECK-ID I01 ITOS 2.0	SUMMARY-132
	KPTAM2	0024	DECK-ID I02 ITOS 2.0	SUMMARY-132
	PTMUTN	0041	DECK-ID I03 ITOS 2.0	SUMMARY-132
	PTRHEAD	0117	DECK-ID I04 ITOS 2.0	SUMMARY-132
	PTRITE	012E	DECK-ID I05 ITOS 2.0	SUMMARY-132
	PTSUBS	0149	DECK-ID I06 ITOS 2.0	SUMMARY-132
	FMENTP	022F	DECK-ID F58 ITOS 2.0	SUMMARY-132
	NXTLOC	0290	NEXT AVAILABLE LOCATION	
*S	SPTAM2	.S		
*S	LPTAM2	.P		

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DATE 092178
*M
  FMDJUMY 0844 DECK-ID F29 ITOS 2.0 SUMMARY-132
*S,MTBFS0,S SPECIFY THE MAG. TAPE SIM. UNIT 0 SPACE
*M,MTBFS0+$672
*M
  FMDJUMY 0E86 DECK-ID F29 ITOS 2.0 SUMMARY-132
*S,MTBFE0,S
*
* UT200 MASS STORAGE AREA
*
*M
*S,UT2MS1,S
*M,UT2MS1+$001A
*M
*S,UT2MS2,S
*M,UT2MS2+$001A
*
* MASS RESIDENT FILE MANAGER
*
*MP,0,1 EXEC FUNCTION
CS6469
  PROC01 0E8B DECK-ID F11 ITOS 2.0 SUMMARY-132
  FFCL05 5803 DECK-ID F31 ITOS 2.0 SUMMARY-132
  UCTMGR 5C39 DECK-ID F32 ITOS 2.0 SUMMARY-132
  FILL5 5CC3 DECK-ID F33 ITOS 2.0 SUMMARY-132
  PICKUP 5D5F DECK-ID F30 ITOS 2.0 SUMMARY-132
  FMDJUMY 5D73 DECK-ID F29 ITOS 2.0 SUMMARY-132
  NXTLOC 5D75 NEXT AVAILABLE LOCATION
*S,FMPA01,S
*S,FMPL01,P
*MP,0,1 CREATE FILE
CS6469
  PROC02 0EF6 DECK-ID F12 ITOS 2.0 SUMMARY-132
  CREATE 5803 DECK-ID G02 ITOS 2.0 SUMMARY-132
  FLDFDD 5C37 DECK-ID G03 ITOS 2.0 SUMMARY-132
  GETSPC 5CEE DECK-ID G04 ITOS 2.0 SUMMARY-132
  FLDFDS 5EC7 DECK-ID G05 ITOS 2.0 SUMMARY-132
  FLDFCK 5F3C DECK-ID G06 ITOS 2.0 SUMMARY-132
  STULBL 5FE2 DECK-ID G07 ITOS 2.0 SUMMARY-132
  FC-IX 6031 DECK-ID G08 ITOS 2.0 SUMMARY-132
  FNDVIT 60AE DECK-ID F34 ITOS 2.0 SUMMARY-132
  FNDVDS 60EF DECK-ID G09 ITOS 2.0 SUMMARY-132
  FMHASH 6185 DECK-ID G10 ITOS 2.0 SUMMARY-132
  MMIOF 6186 DECK-ID F35 ITOS 2.0 SUMMARY-132
  FDWMTN 620E DECK-ID F36 ITOS 2.0 SUMMARY-132
  DNDIV 6269 DECK-ID F37 ITOS 2.0 SUMMARY-132
  PICKUP 62D0 DECK-ID F30 ITOS 2.0 SUMMARY-132
  FMDJUMY 62E4 DECK-ID F24 ITOS 2.0 SUMMARY-132
  NATLOC 62E6 NEXT AVAILABLE LOCATION
*S,FMPA02,S
*S,FMPL02,P
*MP,0,1 CLEAR FILE
CS6469
  PROC03 0F10 DECK-ID F13 ITOS 2.0 SUMMARY-132
  CLEAR 5803 DECK-ID G11 ITOS 2.0 SUMMARY-132
  GETFLS 5C2E DECK-ID G12 ITOS 2.0 SUMMARY-132

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SFARCH	5CA0	DECK-ID 613	ITOS 2.0	SUMMARY-132
STOLBL	5CF9	DECK-ID 607	ITOS 2.0	SUMMARY-132
FCHIX	5D48	DECK-ID 608	ITOS 2.0	SUMMARY-132
IUVCHK	5DC5	DECK-ID F38	ITOS 2.0	SUMMARY-132
FNDVIT	5DDF	DECK-ID F34	ITOS 2.0	SUMMARY-132
FNDFUS	5E20	DECK-ID 609	ITOS 2.0	SUMMARY-132
FMHASH	5EB6	DECK-ID 610	ITOS 2.0	SUMMARY-132
UCTMGR	5EE7	DECK-ID F32	ITOS 2.0	SUMMARY-132
FDMTH	5F71	DECK-ID F36	ITOS 2.0	SUMMARY-132
MMIOF	5FCC	DECK-ID F35	ITOS 2.0	SUMMARY-132
PICKUP	6024	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	6038	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLUC	603A	NEXT AVAILABLE LOCATION		

*S,FMPA03.S

*S,FMPL03.P

*MP,0.1

DELETE FILE

CS6469

PROC04	UF23	DECK-ID F14	ITOS 2.0	SUMMARY-132
DELETE	5B03	DECK-ID 614	ITOS 2.0	SUMMARY-132
GETFDS	5BEE	DECK-ID 612	ITOS 2.0	SUMMARY-132
SEARCH	5C60	DECK-ID 613	ITOS 2.0	SUMMARY-132
STOLBL	5CB9	DECK-ID 607	ITOS 2.0	SUMMARY-132
IUVCHK	5D08	DECK-ID F38	ITOS 2.0	SUMMARY-132
FCHIX	5D22	DECK-ID 608	ITOS 2.0	SUMMARY-132
FNDVIT	5D9F	DECK-ID F34	ITOS 2.0	SUMMARY-132
FNDFUS	5DE0	DECK-ID 609	ITOS 2.0	SUMMARY-132
FMHASH	5E76	DECK-ID 610	ITOS 2.0	SUMMARY-132
UCTMGR	5EA7	DECK-ID F32	ITOS 2.0	SUMMARY-132
FDMTH	5F31	DECK-ID F36	ITOS 2.0	SUMMARY-132
MMIOF	5F8C	DECK-ID F35	ITOS 2.0	SUMMARY-132
PICKUP	5FE4	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5FF8	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLUC	5FFA	NEXT AVAILABLE LOCATION		

*S,FMPA04.S

*S,FMPL04.P

*MP,0.1

OPEN FILE

CS6464

PROC05	UF35	DECK-ID F15	ITOS 2.0	SUMMARY-132
OPENFL	5B03	DECK-ID F39	ITOS 2.0	SUMMARY-132
MOVFCB	5CE2	DECK-ID 615	ITOS 2.0	SUMMARY-132
CRPOST	5E22	DECK-ID 616	ITOS 2.0	SUMMARY-132
UCTMGR	5F10	DECK-ID F32	ITOS 2.0	SUMMARY-132
FILLS	5F9A	DECK-ID F33	ITOS 2.0	SUMMARY-132
GETFDS	6036	DECK-ID 612	ITOS 2.0	SUMMARY-132
FNDVIT	60A8	DECK-ID F34	ITOS 2.0	SUMMARY-132
SEARCH	60E9	DECK-ID 613	ITOS 2.0	SUMMARY-132
FNDFUS	6142	DECK-ID 609	ITOS 2.0	SUMMARY-132
IUVCHK	61D8	DECK-ID F38	ITOS 2.0	SUMMARY-132
FMHASH	61F2	DECK-ID 610	ITOS 2.0	SUMMARY-132
MMIOF	6223	DECK-ID F35	ITOS 2.0	SUMMARY-132
PICKUP	6275	DECK-ID F30	ITOS 2.0	SUMMARY-132
FCRSS	628F	DECK-ID F41	ITOS 2.0	SUMMARY-132
FMDUMY	63F8	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLUC	63FA	NEXT AVAILABLE LOCATION		

*S,FMPA05.S

*S,FMPL05.P

DATE 09217H

*MP.0.1

CLOSE FILE

CS6469

PROCO6	0F52	DECK-ID F16	ITOS 2.0	SUMMARY-132
CLOSFL	5803	DECK-ID F40	ITOS 2.0	SUMMARY-132
UCTMGR	5880	DECK-ID F32	ITOS 2.0	SUMMARY-132
FILLS	5C17	DECK-ID F33	ITOS 2.0	SUMMARY-132
PICKUP	5C83	DECK-ID F30	ITOS 2.0	SUMMARY-132
FCHSS	5CC7	DECK-ID F41	ITOS 2.0	SUMMARY-132
FMDUMY	5E30	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	5E32	NEXT AVAILABLE LOCATION		

*S.FMPA06.S

*S.FMPL06.P

*MP.0.1

GET FILE CONTROL BLOCK

CS6469

PROCO7	0F5F	DECK-ID F17	ITOS 2.0	SUMMARY-132
GETFCB	5803	DECK-ID F42	ITOS 2.0	SUMMARY-132
FMDUMY	58F5	DECK-ID F29	ITOS 2.0	SUMMARY-132
NATLUC	58F7	NEXT AVAILABLE LOCATION		

*S.FMPA07.S

*S.FMPL07.P

*MP.0.1

UPDATE FILE CONTROL BLOCK

CS6469

PROCO8	0F66	DECK-ID F18	ITOS 2.0	SUMMARY-132
UPDFCB	5803	DECK-ID F43	ITOS 2.0	SUMMARY-132
FMDUMY	5892	DECK-ID F29	ITOS 2.0	SUMMARY-132
NATLUC	5894	NEXT AVAILABLE LOCATION		

*S.FMPA08.S

*S.FMPL08.P

*MP.0.1

RENAME FILE

CS6469

PROCO9	0F6C	DECK-ID F19	ITOS 2.0	SUMMARY-132
RENAME	5803	DECK-ID G17	ITOS 2.0	SUMMARY-132
BLDFDS	5808	DECK-ID G05	ITOS 2.0	SUMMARY-132
GETFDS	5C40	DECK-ID G12	ITOS 2.0	SUMMARY-132
FNIVIT	5CAF	DECK-ID F34	ITOS 2.0	SUMMARY-132
SEARCH	5D00	DECK-ID G13	ITOS 2.0	SUMMARY-132
FNDFDS	5D59	DECK-ID G09	ITOS 2.0	SUMMARY-132
FMHASH	5DEF	DECK-ID G10	ITOS 2.0	SUMMARY-132
MMIUF	5E20	DECK-ID F35	ITOS 2.0	SUMMARY-132
IUVCHR	5E78	DECK-ID F38	ITOS 2.0	SUMMARY-132
PICKUP	5E92	DECK-ID F30	ITOS 2.0	SUMMARY-132
UCTMGR	5EA6	DECK-ID F32	ITOS 2.0	SUMMARY-132
FMDUMY	5F30	DECK-ID F29	ITOS 2.0	SUMMARY-132
NATLUC	5F32	NEXT AVAILABLE LOCATION		

*S.FMPA09.S

*S.FMPL09.P

*MP.0.1

WRITE INDEXED RECORD

CS6469

PROC10	0F7C	DECK-ID F20	ITOS 2.0	SUMMARY-132
ADDILA	5803	DECK-ID G18	ITOS 2.0	SUMMARY-132
ADDKIS	5C20	DECK-ID G19	ITOS 2.0	SUMMARY-132
SPECIAL	5FED	DECK-ID G34	ITOS 2.0	SUMMARY-132
CKUFCH	6030	DECK-ID F44	ITOS 2.0	SUMMARY-132
CMPSTG	6059	DECK-ID F45	ITOS 2.0	SUMMARY-132
CPUTAL	6081	DECK-ID F46	ITOS 2.0	SUMMARY-132
FWAKIS	6095	DECK-ID G20	ITOS 2.0	SUMMARY-132

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MMIOF	60AD	DECK-ID F35	ITOS 2.0
NEXTSS	6105	DECK-ID G21	ITOS 2.0
NATKIB	614D	DECK-ID F47	ITOS 2.0
PICKUP	61A5	DECK-ID F30	ITOS 2.0
PLACE	61B9	DECK-ID F48	ITOS 2.0
PUSKID	61CC	DECK-ID G22	ITOS 2.0
RDKIB	6311	DECK-ID G23	ITOS 2.0
UDSKIB	6322	DECK-ID G24	ITOS 2.0
WTKIB	635E	DECK-ID G25	ITOS 2.0
XIKEY	6361	DECK-ID G26	ITOS 2.0
FMDUMY	63E7	DECK-ID F29	ITOS 2.0
NATLUC	63E9	NEXT AVAILABLE LOCATION	

SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132

*S.FMPALU.S

*S.FMPL10.P

*MP.0.1

CS6459

HEAD RECORD BY KEY

PHOC11	0F99	DECK-ID F21	ITOS 2.0
HTVIDX	5H03	DECK-ID G27	ITOS 2.0
SPECIAL	5C9E	DECK-ID G39	ITOS 2.0
CKADMP	5CEE	DECK-ID F49	ITOS 2.0
CMPSIG	5003	DECK-ID F45	ITOS 2.0
CPUTKL	5D2H	DECK-ID F46	ITOS 2.0
FWAKIS	503F	DECK-ID G20	ITOS 2.0
IUVCHK	5D57	DECK-ID F38	ITOS 2.0
MMIOF	5D71	DECK-ID F35	ITOS 2.0
NEXTSS	5DC9	DECK-ID G21	ITOS 2.0
PICKUP	5E11	DECK-ID F30	ITOS 2.0
PUSKID	5E25	DECK-ID G22	ITOS 2.0
RDKIB	5F6A	DECK-ID G23	ITOS 2.0
RDFECD	5F7H	DECK-ID F50	ITOS 2.0
FMDUMY	5F9F	DECK-ID F29	ITOS 2.0
NATLUC	5FA1	NEXT AVAILABLE LOCATION	

SUMMARY-132
SUMMARY-132
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SUMMARY-132

*S.FMPAL1.S

*S.FMPL11.P

*MP.0.1

CS6459

GET NEXT RECORD BY KEY

PHOC12	0FAA	DECK-ID F22	ITOS 2.0
HTVIDX	5H03	DECK-ID G28	ITOS 2.0
SPECIAL	5D93	DECK-ID G39	ITOS 2.0
CKADMP	5DE3	DECK-ID F49	ITOS 2.0
CMPSIG	5DFH	DECK-ID F45	ITOS 2.0
CPUTKL	5E20	DECK-ID F46	ITOS 2.0
FWAKIS	5E34	DECK-ID F51	ITOS 2.0
IUVCHK	5E63	DECK-ID F38	ITOS 2.0
MMIOF	5E7D	DECK-ID F35	ITOS 2.0
NEXTSS	5ED5	DECK-ID G21	ITOS 2.0
PICKUP	5F1D	DECK-ID F30	ITOS 2.0
PUSKID	5F31	DECK-ID G22	ITOS 2.0
RDKIB	6076	DECK-ID G23	ITOS 2.0
RDFECD	6087	DECK-ID F50	ITOS 2.0
FMDUMY	60AH	DECK-ID F29	ITOS 2.0
NATLUC	60AD	NEXT AVAILABLE LOCATION	

SUMMARY-132
SUMMARY-132
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SUMMARY-132
SUMMARY-132

*S.FMPAL2.S

*S.FMPL12.P

*MP.0.1

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CS6469

PROCL3	0FBE	DECK-ID F23	ITOS 2.0	SUMMARY-132
DELIDX	5B03	DECK-ID G29	ITOS 2.0	SUMMARY-132
CMPSTG	5BC6	DECK-ID F45	ITOS 2.0	SUMMARY-132
CPUTKL	5BEE	DECK-ID F46	ITOS 2.0	SUMMARY-132
DELKIS	5C02	DECK-ID G30	ITOS 2.0	SUMMARY-132
SPECAL	5D37	DECK-ID G39	ITOS 2.0	SUMMARY-132
FWAKIS	5D87	DECK-ID G20	ITOS 2.0	SUMMARY-132
PICKUP	5D9F	DECK-ID F30	ITOS 2.0	SUMMARY-132
NEXTSS	5D83	DECK-ID G21	ITOS 2.0	SUMMARY-132
PUSKID	5DFB	DECK-ID G22	ITOS 2.0	SUMMARY-132
RDKIH	5F40	DECK-ID G23	ITOS 2.0	SUMMARY-132
UDFKIH	5F51	DECK-ID G31	ITOS 2.0	SUMMARY-132
MMIOF	5FDE	DECK-ID F35	ITOS 2.0	SUMMARY-132
WRTDEL	6036	DECK-ID F52	ITOS 2.0	SUMMARY-132
WRTKIH	6052	DECK-ID G25	ITOS 2.0	SUMMARY-132
XTKEY	6075	DECK-ID G26	ITOS 2.0	SUMMARY-132
FMDUMY	60DB	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	60DD	NEXT AVAILABLE LOCATION		

*S,FMPA13.S
*S,FMPL13.P
*MP,0.1
CS6469

COMPRESS INDEXED FILE

PRUC14	0FD3	DECK-ID F24	ITOS 2.0	SUMMARY-132
CUMIDX	5B03	DECK-ID G32	ITOS 2.0	SUMMARY-132
AUDKIS	5BDA	DECK-ID G19	ITOS 2.0	SUMMARY-132
SPECAL	5F9A	DECK-ID G39	ITOS 2.0	SUMMARY-132
CKUFCH	5FEA	DECK-ID F44	ITOS 2.0	SUMMARY-132
CMPSTG	6006	DECK-ID F45	ITOS 2.0	SUMMARY-132
CUMREC	602E	DECK-ID F53	ITOS 2.0	SUMMARY-132
CPUTKL	6041	DECK-ID F46	ITOS 2.0	SUMMARY-132
FWAKIS	6055	DECK-ID G20	ITOS 2.0	SUMMARY-132
MMIOF	606D	DECK-ID F35	ITOS 2.0	SUMMARY-132
NEXTSS	60C5	DECK-ID G21	ITOS 2.0	SUMMARY-132
NATKIH	610D	DECK-ID F47	ITOS 2.0	SUMMARY-132
PICKUP	6165	DECK-ID F30	ITOS 2.0	SUMMARY-132
PUSKID	6179	DECK-ID G22	ITOS 2.0	SUMMARY-132
RDKIH	628E	DECK-ID G23	ITOS 2.0	SUMMARY-132
UDSKIH	62CF	DECK-ID G24	ITOS 2.0	SUMMARY-132
WRTKIH	630B	DECK-ID G25	ITOS 2.0	SUMMARY-132
XTKEY	632E	DECK-ID G26	ITOS 2.0	SUMMARY-132
FMDUMY	6394	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	6396	NEXT AVAILABLE LOCATION		

*S,FMPA14.S
*S,FMPL14.P
*MP,0.1
CS6469

ALLOCATE MASS STORAGE

PRUC15	0FEF	DECK-ID F25	ITOS 2.0	SUMMARY-132
MASALC	5B03	DECK-ID G33	ITOS 2.0	SUMMARY-132
CKLGBL	5C41	DECK-ID G34	ITOS 2.0	SUMMARY-132
MOVE	5C62	DECK-ID G35	ITOS 2.0	SUMMARY-132
MMIOF	5C83	DECK-ID F35	ITOS 2.0	SUMMARY-132
FDWTH	5CDB	DECK-ID F36	ITOS 2.0	SUMMARY-132
PICKUP	5D36	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5D4A	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	5D4C	NEXT AVAILABLE LOCATION		

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*S,FMPA15,S

*S,FMPL15,P

*MP,0,1

RELEASE MASS STORAGE

CS6469

PROC16	OFFA	DECK-ID F26	ITOS 2.0	SUMMARY-132
MASREL	5803	DECK-ID G36	ITOS 2.0	SUMMARY-132
GETFNT	5C2B	DECK-ID G37	ITOS 2.0	SUMMARY-132
CKLGBL	5D8A	DECK-ID G34	ITOS 2.0	SUMMARY-132
MUVE	5DAB	DECK-ID G35	ITOS 2.0	SUMMARY-132
MMIOF	5DCC	DECK-ID F35	ITOS 2.0	SUMMARY-132
FUWMTH	5E24	DECK-ID F36	ITOS 2.0	SUMMARY-132
PICKUP	5E7F	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5E93	DECK-ID F29	ITOS 2.0	SUMMARY-132
NATLUC	5E95	NEXT AVAILABLE LOCATION		

*S,FMPA16,S

*S,FMPL16,P

*MP,0,1

ENABLE/DISABLE VOLUME USE PROCESSOR

CS6469

PROC17	1008	DECK-ID F27	ITOS 2.0	SUMMARY-132
VOLUSE	5803	DECK-ID F54	ITOS 2.0	SUMMARY-132
CMPSTG	5B8A	DECK-ID F45	ITOS 2.0	SUMMARY-132
PICKUP	5B82	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5BC6	DECK-ID F29	ITOS 2.0	SUMMARY-132
NATLUC	5BC8	NEXT AVAILABLE LOCATION		

*S,FMPA17,S

*S,FMPL17,P

*MP,0,1

CORRECT FCB FOR OPEN SECONDARY PROCESSOR

CS6469

PROC18	100F	DECK-ID F28	ITOS 2.0	SUMMARY-132
CUKFCB	5803	DECK-ID F55	ITOS 2.0	SUMMARY-132
CUMPKS	5C07	DECK-ID F56	ITOS 2.0	SUMMARY-132
PICKUP	5D18	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5D2F	DECK-ID F29	ITOS 2.0	SUMMARY-132
NATLUC	5D31	NEXT AVAILABLE LOCATION		

*S,FMPA18,S

*S,FMPL18,P

*MP,0,1

REDUCE FILE SPACE PROCESSOR

CS6469

PROC19	101A	DECK-ID F60	ITOS 2.0	SUMMARY-132
REDUCE	5803	DECK-ID G38	ITOS 2.0	SUMMARY-132
PICKUP	5C9E	DECK-ID F30	ITOS 2.0	SUMMARY-132
UCTMGH	5CB2	DECK-ID F32	ITOS 2.0	SUMMARY-132
GETFDS	5D3C	DECK-ID G12	ITOS 2.0	SUMMARY-132
FUWMTH	5DAE	DECK-ID F36	ITOS 2.0	SUMMARY-132
DWDIV	5E09	DECK-ID F37	ITOS 2.0	SUMMARY-132
MMIOF	5E70	DECK-ID F35	ITOS 2.0	SUMMARY-132
FNDVIT	5EC8	DECK-ID F34	ITOS 2.0	SUMMARY-132
FNDFDS	5F09	DECK-ID G09	ITOS 2.0	SUMMARY-132
SEARCH	5F9F	DECK-ID G13	ITOS 2.0	SUMMARY-132
FMHASH	5FF8	DECK-ID G10	ITOS 2.0	SUMMARY-132
FMDUMY	6029	DECK-ID F29	ITOS 2.0	SUMMARY-132
NATLUC	602B	NEXT AVAILABLE LOCATION		

*S,FMPA19,S

*S,FMPL19,P

*MP,0,3

FILE MANAGER PROCESSOR SWAP AREA

RZ53K	102D	DECK-ID F57	ITOS 2.0	SUMMARY-132
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DATE 092178
FMDUNY 66HA DECK-ID F29 ITOS 2.0 SUMMARY-132
NXTLUC 66BC NEXT AVAILABLE LOCATION

*S.FMSAVA.S
*MP.STRRAS ITOS START UTILITY
START 104D DECK-ID A22 ITOS 2.0 SUMMARY-132
FMENTP 8709 DECK-ID F58 ITOS 2.0 SUMMARY-132
IULUNT 876A DECK-ID A31 ITOS 2.0 SUMMARY-132
IMAGE 88R9 DECK-ID A19 ITOS 2.0 SUMMARY-132
HINHEX 88D2 DECK-ID A23 ITOS 2.0 SUMMARY-132
HINASC 890C DECK-ID A24 ITOS 2.0 SUMMARY-132
GMPRMA 896D DECK-ID A25 ITOS 2.0 SUMMARY-132
NXTLUC 8979 NEXT AVAILABLE LOCATION

*S.STRSEC.S
*S.STRLEN.P
*MP.3.1 ITOS LOG-IN PROCESSOR
TSLUG 1067 DECK-ID A30 ITOS 2.0 SUMMARY-132
IGLUNT 8C75 DECK-ID A31 ITOS 2.0 SUMMARY-132
FMCALL 80C4 DECK-ID A32 ITOS 2.0 SUMMARY-132
SYSMSG 8E03 DECK-ID A33 ITOS 2.0 SUMMARY-132
EXENTP 8F93 DECK-ID A34 ITOS 2.0 SUMMARY-132
NXTLUC 8F8B NEXT AVAILABLE LOCATION

*S.TSLSEC.S
*S.TSLEN.P
*T END OF SYSTEM
*** UNPATCHED EXTERNALS ***
PARITY
POWERD

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DATE 092178

*S,FMPA15,S

*S,FMPL15,P

*MP,0,1

RELEASE MASS STORAGE

CS6469

PROC16	0FFA	DECK-ID F26	ITOS 2.0	SUMMARY-132
MASREL	5B03	DECK-ID G36	ITOS 2.0	SUMMARY-132
GETENT	5C2B	DECK-ID G37	ITOS 2.0	SUMMARY-132
CKLGBL	5D8A	DECK-ID G34	ITOS 2.0	SUMMARY-132
MUVE	5DAB	DECK-ID G35	ITOS 2.0	SUMMARY-132
MMIOF	5DCC	DECK-ID F35	ITOS 2.0	SUMMARY-132
FUWMTH	5E24	DECK-ID F36	ITOS 2.0	SUMMARY-132
PICKUP	5E7F	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5E93	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	5E95	NEXT AVAILABLE LOCATION		

*S,FMPA16,S

*S,FMPL16,P

*MP,0,1

ENABLE/DISABLE VOLUME USE PROCESSOR

CS6469

PROC17	1008	DECK-ID F27	ITOS 2.0	SUMMARY-132
VOLUSE	5B03	DECK-ID F54	ITOS 2.0	SUMMARY-132
CMPSTG	5B8A	DECK-ID F45	ITOS 2.0	SUMMARY-132
PICKUP	5BB2	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5BC6	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	5BC8	NEXT AVAILABLE LOCATION		

*S,FMPA17,S

*S,FMPL17,P

*MP,0,1

CORRECT FCB FOR OPEN SECONDARY PROCESSOR

CS6469

PROC18	100F	DECK-ID F28	ITOS 2.0	SUMMARY-132
COHFCB	5B03	DECK-ID F55	ITOS 2.0	SUMMARY-132
CUMPKS	5C07	DECK-ID F56	ITOS 2.0	SUMMARY-132
PICKUP	5D1B	DECK-ID F30	ITOS 2.0	SUMMARY-132
FMDUMY	5D2F	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	5D31	NEXT AVAILABLE LOCATION		

*S,FMPA18,S

*S,FMPL18,P

*MP,0,1

REDUCE FILE SPACE PROCESSOR

CS6469

PROC19	101A	DECK-ID F60	ITOS 2.0	SUMMARY-132
REDUCE	5B03	DECK-ID G38	ITOS 2.0	SUMMARY-132
PICKUP	5C9E	DECK-ID F30	ITOS 2.0	SUMMARY-132
UCTMGR	5CB2	DECK-ID F32	ITOS 2.0	SUMMARY-132
GETFDS	5D3C	DECK-ID G12	ITOS 2.0	SUMMARY-132
FUWMTH	5DAE	DECK-ID F36	ITOS 2.0	SUMMARY-132
DWDIV	5E09	DECK-ID F37	ITOS 2.0	SUMMARY-132
MMIOF	5E70	DECK-ID F35	ITOS 2.0	SUMMARY-132
FNDVIT	5EC8	DECK-ID F34	ITOS 2.0	SUMMARY-132
FNDFDS	5F09	DECK-ID G09	ITOS 2.0	SUMMARY-132
SEARCH	5F9F	DECK-ID G13	ITOS 2.0	SUMMARY-132
FMHASH	5FF8	DECK-ID G10	ITOS 2.0	SUMMARY-132
FMDUMY	6029	DECK-ID F29	ITOS 2.0	SUMMARY-132
NXTLOC	602B	NEXT AVAILABLE LOCATION		

*S,FMPA19,S

*S,FMPL19,P

*MP,0,3

FILE MANAGER PROCESSOR SWAP AREA

RZS3K	102D	DECK-ID F57	ITOS 2.0	SUMMARY-132
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BASIC PROGRAM LIBRARY INSTALL

C

JOB: I.NSTAL.SYSTM
1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0 DATE OF RUN: 09/21/78 SYSTEM ID: ITOS 2-COMM18 *A* SYSTEM CDD (09/21/78)

IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
III	NNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNN NNN	NNN	SSS SSS	TTT	AAA AAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL

*K,IN
*LIBEDT
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*K,IN
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*V DEFINE REQUEST PRIORITIES
IN

*S,001,03,M
IN

*S,002,00,M
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*S,003,01,M
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*S,004,03,M
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*S,005,03,M
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*S,006,02,M
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*S,007,04,M
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*S,008,02,M
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*S,009,02,M
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*S,010,02,M
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*S,011,02,M
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*S,012,03,M
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*S,013,03,M
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*S,014,03,M
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*S,015,04,M
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*S,016,03,M

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*S.017.03.M
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*S.018.04.M
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*S.019.04.M
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*S.020.04.M
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*S.021.04.M
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*S.022.04.M
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*S.024.04.M
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*S.025.04.M
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*S.026.04.M
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*S.030.04.M
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*S.031.04.M
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*S.033.04.M
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*S.034.04.M
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*S.035.04.M
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*V C U M M - 1 8 P R O

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*V
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*V UT200 FILE
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*K,I6
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*K,PH
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*P,C,3	COMINT	H200	DECK-ID L01	COMM18 2.0	SUMMARY-132
	GRABMM	H2F6	DECK-ID A12	ITOS 2.0	SUMMARY-132
	DB431S	H34C	DECK-ID L03	COMM18 2.0	SUMMARY-132
	UT200	H4C3	DECK-ID L09	COMM18 2.0	SUMMARY-132
	WMINTX	H5F1	DECK-ID L05	COMM18 2.0	SUMMARY-132
	NXTLOC	H6A6	NEXT AVAILABLE LOCATION		

IN

*K,I6
IN

*N,UT200...H
IN

*V
IN

*V HASP FILE
IN

*K,I6
IN

*K,PH
IN

*P,C,3	COMINT	H200	DECK-ID L01	COMM18 2.0	SUMMARY-132
	GRABMM	H2F6	DECK-ID A12	ITOS 2.0	SUMMARY-132
	DB431S	H34C	DECK-ID L03	COMM18 2.0	SUMMARY-132
	DB430C	H4C3	DECK-ID L04	COMM18 2.0	SUMMARY-132
	HWIRPT	H4EC	DECK-ID L14	COMM18 2.0	SUMMARY-132
	HWISCK	H5F7	DECK-ID L15	COMM18 2.0	SUMMARY-132
	HWCOMP	H62D	DECK-ID L16	COMM18 2.0	SUMMARY-132
	HWTRFL	H720	DECK-ID L17	COMM18 2.0	SUMMARY-132
	HWXMPH	H8E8	DECK-ID L18	COMM18 2.0	SUMMARY-132
	HWKVPH	H8H4	DECK-ID L19	COMM18 2.0	SUMMARY-132
	HWSAFL	H8HC	DECK-ID L20	COMM18 2.0	SUMMARY-132
	HWSCIL	901C	DECK-ID L21	COMM18 2.0	SUMMARY-132
	HWDECP	9064	DECK-ID L22	COMM18 2.0	SUMMARY-132
	HWOUT	91EE	DECK-ID L23	COMM18 2.0	SUMMARY-132
	HWYSM	934D	DECK-ID L24	COMM18 2.0	SUMMARY-132
	HWIFBQ	9444	DECK-ID L25	COMM18 2.0	SUMMARY-132
	HWICBQ	9466	DECK-ID L26	COMM18 2.0	SUMMARY-132
	HWIEBQ	9492	DECK-ID L27	COMM18 2.0	SUMMARY-132

HWFSAG	9485	DECK-ID	L28	COMM18	2.0	SUMMARY-132
HWESAG	94F2	DECK-ID	L29	COMM18	2.0	SUMMARY-132
HWCEBC	950E	DECK-ID	L30	COMM18	2.0	SUMMARY-132
HWCLNP	954F	DECK-ID	L31	COMM18	2.0	SUMMARY-132
HWIMR	9661	DECK-ID	L32	COMM18	2.0	SUMMARY-132
HWOPKO	96B3	DECK-ID	L33	COMM18	2.0	SUMMARY-132
HWMSH	984F	DECK-ID	L34	COMM18	2.0	SUMMARY-132
HWCRCL	9862	DECK-ID	L35	COMM18	2.0	SUMMARY-132
HWLIST	9880	DECK-ID	L36	COMM18	2.0	SUMMARY-132
GMINTX	9934	DECK-ID	L05	COMM18	2.0	SUMMARY-132
NATLOC	9940	NEXT AVAILABLE LOCATION				

IN

*K,IR

IN

*N,HASP,,,B

IN

*V

IN

*V UT200/COMM-18 FILE

IN

*K,16

IN

*K,PH

IN

*P,C,3

CUMINT	8200	DECK-ID	L01	COMM18	2.0	SUMMARY-132
GRAHMM	82F6	DECK-ID	A12	ITOS	2.0	SUMMARY-132
DB4315	834C	DECK-ID	L03	COMM18	2.0	SUMMARY-132
DB43CC	84C3	DECK-ID	L04	COMM18	2.0	SUMMARY-132
UT200	84EC	DECK-ID	L09	COMM18	2.0	SUMMARY-132
HWINPT	8F7A	DECK-ID	L14	COMM18	2.0	SUMMARY-132
HWISCN	9085	DECK-ID	L15	COMM18	2.0	SUMMARY-132
HWCOMP	908H	DECK-ID	L16	COMM18	2.0	SUMMARY-132
HWTRFL	91AE	DECK-ID	L17	COMM18	2.0	SUMMARY-132
HWXMPH	9376	DECK-ID	L18	COMM18	2.0	SUMMARY-132
HWKVPH	9642	DECK-ID	L19	COMM18	2.0	SUMMARY-132
HWSAFL	9A1A	DECK-ID	L20	COMM18	2.0	SUMMARY-132
HWSTL	9AAA	DECK-ID	L21	COMM18	2.0	SUMMARY-132
HWDECF	9AF2	DECK-ID	L22	COMM18	2.0	SUMMARY-132
HWOUT	9C7C	DECK-ID	L23	COMM18	2.0	SUMMARY-132
HWYSM	9E0H	DECK-ID	L24	COMM18	2.0	SUMMARY-132
HWIFHQ	9ED2	DECK-ID	L25	COMM18	2.0	SUMMARY-132
HWICBU	9EF4	DECK-ID	L26	COMM18	2.0	SUMMARY-132
HWIRBU	9F20	DECK-ID	L27	COMM18	2.0	SUMMARY-132
HWFSAG	9F43	DECK-ID	L28	COMM18	2.0	SUMMARY-132
HWESAG	9F80	DECK-ID	L29	COMM18	2.0	SUMMARY-132
HWCEBC	9F9C	DECK-ID	L30	COMM18	2.0	SUMMARY-132
HWCLNP	9FDD	DECK-ID	L31	COMM18	2.0	SUMMARY-132
HWIMR	A0EF	DECK-ID	L32	COMM18	2.0	SUMMARY-132
HWOPKO	A141	DECK-ID	L33	COMM18	2.0	SUMMARY-132
HWMSH	A200	DECK-ID	L34	COMM18	2.0	SUMMARY-132
HWCRCL	A2FU	DECK-ID	L35	COMM18	2.0	SUMMARY-132
HWLIST	A30F	DECK-ID	L36	COMM18	2.0	SUMMARY-132

GMINTX A3C2 DECK-ID L05 COMM18 2.0
NXTLOC A3DH NEXT AVAILABLE LOCATION
IN

SUMMARY-132

*K.14
IN

*N.COMM18...B
IN

*V SYSTEM UTILITY PROGRAMS
IN

*K.16
IN

*L.LULIST
IN

*L.LISTR
IN

*L.OPSORT
IN

*L.PFSORT
IN

*L.COSY
IN

*L.LCOSY
IN

*L.CYFI
IN

*L.10UP
IN

*K.PA
IN

*P.P
10UP P000 DECK-ID N82 MSUS 5.0
10UPV* P012 DECK-ID N83 MSUS 5.0
NXTLOC P000 NEXT AVAILABLE LOCATION
IN

SUMMARY-110
SUMMARY-113

*K.14
IN

*N.10UPV4...B
IN

*K.16
IN

*L.LI-ILD
IN

*K,P8
IN

*P,F

LIBID0	8000	DECK-ID	030	MSOS	5.0	SUMMARY-110
CGMVRS	8010	DECK-ID	038	MSOS	5.0	SUMMARY-110
MESSY	8292	DECK-ID	031	MSOS	5.0	SUMMARY-110
LJAZB	830B	DECK-ID	037	MSOS	5.0	SUMMARY-110
MOVECH	8358	DECK-ID	032	MSOS	5.0	SUMMARY-132
PICKUP	83AC	DECK-ID	033	MSOS	5.0	SUMMARY-110
IOSUB	83CS	DECK-ID	034	MSOS	5.0	SUMMARY-110
NXTLOC	83E9	NEXT AVAILABLE LOCATION				

IN

*K,IR

IN

*N,LIBID0,,,R

IN

*K,I6

IN

*K,PH

IN

*P,F

HELPER	8000	DECK-ID	035	MSOS	5.0	SUMMARY-110
MOVECH	82EA	DECK-ID	032	MSOS	5.0	SUMMARY-132
HELPO	833E	DECK-ID	039	MSOS	5.0	SUMMARY-123
HELPI	896J	DECK-ID	040	MSOS	5.0	SUMMARY-110
HELPI2	8986	DECK-ID	041	MSOS	5.0	SUMMARY-110
HELPI3	89FD	DECK-ID	042	MSOS	5.0	SUMMARY-110
HELPI4	8A59	DECK-ID	043	MSOS	5.0	SUMMARY-110
HELPI5	8CF0	DECK-ID	044	MSOS	5.0	SUMMARY-110
HELPI6	8E89	DECK-ID	045	MSOS	5.0	SUMMARY-110
HELPI7	8F93	DECK-ID	046	MSOS	5.0	SUMMARY-110
HELPI8	9052	DECK-ID	047	MSOS	5.0	SUMMARY-117
HELPI9	90C8	DECK-ID	048	MSOS	5.0	SUMMARY-110
HELPI10	9118	DECK-ID	049	MSOS	5.0	SUMMARY-110
HELPI11	9315	DECK-ID	050	MSOS	5.0	SUMMARY-110
HELPI12	9377	DECK-ID	036	MSOS	5.0	SUMMARY-132
NATLOC	9383	NEXT AVAILABLE LOCATION				

IN

*K,IR

IN

*N,HELPER,,,R

IN

*V INSTALL SKELETON EDITOR

IN

*K,I6

IN

*L,SKED

IN

*K, P8
IN

*P, F
SKFILE 8000 DECK-ID 052 MSOS 5.0
NXTLUC 9088 NEXT AVAILABLE LOCATION
IN

SUMMARY-110

*K, I8
IN

*N, SKFILE...B
IN

*V I T O S PROGRAM LIBRARY
IN

*K, I6
IN

*L, SUHRCM
IN

*L, GETCHR
IN

*L, CREATE
IN

*L, PGMIN
IN

*L, INPEU
IN

*L, SYSMS6
IN

*L, GETAUD
IN

*K, I6
IN

*K, P8
IN

*P, F.3
TALK 8206 DECK-ID A29 ITOS 2.0
EXENTP 82E9 DECK-ID A34 ITOS 2.0
GETADD 8311 DECK-ID A49 ITOS 2.0
FMENTP 83AD DECK-ID F58 ITOS 2.0
IN

SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132

*K, I8
IN

*J, TALK, \$\$
IN

*K.16
IN

*K.P8
IN

*P.F.3

CONFIG	8200	DECK-ID K01	ITOS 2.0	SUMMARY-132
PREP	87F4	DECK-ID K02	ITOS 2.0	SUMMARY-132
SYSNAM	8929	DECK-ID K03	ITOS 2.0	SUMMARY-132
FRMWRE	8989	DECK-ID K04	ITOS 2.0	SUMMARY-132
NUMTRM	8A48	DECK-ID K05	ITOS 2.0	SUMMARY-132
MASMEM	8C61	DECK-ID K06	ITOS 2.0	SUMMARY-132
CKDRDR	8FFD	DECK-ID K07	ITOS 2.0	SUMMARY-132
MAGTAP	90A5	DECK-ID K08	ITOS 2.0	SUMMARY-132
PKINTR	91C7	DECK-ID K09	ITOS 2.0	SUMMARY-132
CKDPCH	9329	DECK-ID K10	ITOS 2.0	SUMMARY-132
WORKST	93E9	DECK-ID K11	ITOS 2.0	SUMMARY-132
MEMC18	9762	DECK-ID K29	ITOS 2.0	SUMMARY-132
POST	9C18	DECK-ID K13	ITOS 2.0	SUMMARY-132
SETLUG	9C26	DECK-ID K14	ITOS 2.0	SUMMARY-132
MESSAGE	9DA2	DECK-ID K15	ITOS 2.0	SUMMARY-132
MEMORY	AAE3	DECK-ID K16	ITOS 2.0	SUMMARY-132
PHSPRU	AB52	DECK-ID K17	ITOS 2.0	SUMMARY-132
CONVERT	AF6E	DECK-ID K18	ITOS 2.0	SUMMARY-132
FIELD	AFD7	DECK-ID K19	ITOS 2.0	SUMMARY-132
INTMSK	B010	DECK-ID K20	ITOS 2.0	SUMMARY-132
DTABLE	B062	DECK-ID K21	ITOS 2.0	SUMMARY-132
SETL1A	B08A	DECK-ID K22	ITOS 2.0	SUMMARY-132
DELAY	B0CB	DECK-ID K23	ITOS 2.0	SUMMARY-132
GTCHAN	B0DD	DECK-ID K24	ITOS 2.0	SUMMARY-132
NEXTLU	B13B	DECK-ID K26	ITOS 2.0	SUMMARY-132
XSTARM	B1E6	DECK-ID K27	ITOS 2.0	SUMMARY-132
LUPORT	B24E	DECK-ID K28	ITOS 2.0	SUMMARY-132
GETADD	B3F4	DECK-ID A49	ITOS 2.0	SUMMARY-132
FMENTP	B490	DECK-ID F58	ITOS 2.0	SUMMARY-132
FXENTP	B4F1	DECK-ID A34	ITOS 2.0	SUMMARY-132

IN

*K.18
IN

*J.CONFIG.55
IN

*K.16
IN

*K.P8
IN

*P.F.3

FUNSEL	8200	DECK-ID A35	ITOS 2.0	SUMMARY-132
FMENTP	86D8	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	8739	DECK-ID A34	ITOS 2.0	SUMMARY-132
SYMSG	8761	DECK-ID A33	ITOS 2.0	SUMMARY-132

IN

*K.18

IN

*J,MNUPRO,33

IN

*K,I6

IN

*K,PH

IN

*P,F,3

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLAB	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NATVOL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
CUMSEK	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MOVEH	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IOLUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
BINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
UTSTRT	8FF0	DECK-ID	B12	ITOS	2.0	SUMMARY-132
NATLUC	8926	NEXT AVAILABLE LOCATION				

IN

*K,IH

IN

*J,UTIL,33

IN

*K,I6

IN

*K,PH

IN

*P,F,3

SPDL	8200	DECK-ID	J10	ITOS	2.0	SUMMARY-132
OPNEKR	84E0	DECK-ID	J15	ITOS	2.0	SUMMARY-132
GETEKR	85EF	DECK-ID	J14	ITOS	2.0	SUMMARY-132
PUTEKR	869A	DECK-ID	J16	ITOS	2.0	SUMMARY-132
QBPRMA	8730	DECK-ID	A25	ITOS	2.0	SUMMARY-132
ITSTOP	873C	DECK-ID	I19	ITOS	2.0	SUMMARY-132
FMENTP	873E	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	879F	DECK-ID	A34	ITOS	2.0	SUMMARY-132
SYSMSG	87C7	DECK-ID	A33	ITOS	2.0	SUMMARY-132

IN

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*J,SPDL,\$\$
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*K,I6
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*K,P8
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*P,F,3						
SPST	8200	DECK-ID	J07	ITOS	2.0	SUMMARY-132
UPNERR	9290	DECK-ID	J15	ITOS	2.0	SUMMARY-132
GETERR	939F	DECK-ID	J14	ITOS	2.0	SUMMARY-132
CLEARB	944A	DECK-ID	J13	ITOS	2.0	SUMMARY-132
CONVER	94CE	DECK-ID	C10	ITOS	2.0	SUMMARY-132
CHO2LR	953A	DECK-ID	B51	ITOS	2.0	SUMMARY-132
QBPRMA	956C	DECK-ID	A25	ITOS	2.0	SUMMARY-132
NDWMTH	9578	DECK-ID	A36	ITOS	2.0	SUMMARY-132
FDWMTH	95C5	DECK-ID	F36	ITOS	2.0	SUMMARY-132
ITSTOP	9620	DECK-ID	I19	ITOS	2.0	SUMMARY-132
KRAKER	9622	DECK-ID	I20	ITOS	2.0	SUMMARY-132
FMENTP	96E1	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	9742	DECK-ID	A34	ITOS	2.0	SUMMARY-132
SYSMSG	976A	DECK-ID	A33	ITOS	2.0	SUMMARY-132

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*K,I8
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*J,SPST,\$\$
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*K,I6
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*K,P8
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*P,F,3						
SPIN	8200	DECK-ID	J11	ITOS	2.0	SUMMARY-132
QBPRMA	826A	DECK-ID	A25	ITOS	2.0	SUMMARY-132
ITSTOP	8276	DECK-ID	I19	ITOS	2.0	SUMMARY-132
EXENTP	8278	DECK-ID	A34	ITOS	2.0	SUMMARY-132
SYSMSG	82A0	DECK-ID	A33	ITOS	2.0	SUMMARY-132
FMENTP	8430	DECK-ID	F58	ITOS	2.0	SUMMARY-132

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*K,I8
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*J,SPIN,\$\$
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*K,I6
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*K,P8
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*P.F.3				
SPHT	8200	DECK-ID J12	ITOS 2.0	SUMMARY-132
UPNEHR	8391	DECK-ID J15	ITOS 2.0	SUMMARY-132
PUTERR	84A0	DECK-ID J16	ITOS 2.0	SUMMARY-132
QBPRMA	8536	DECK-ID A25	ITOS 2.0	SUMMARY-132
ITSTOP	8542	DECK-ID I19	ITOS 2.0	SUMMARY-132
FMENTP	8544	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	85A5	DECK-ID A34	ITOS 2.0	SUMMARY-132
IOLUNT	85CD	DECK-ID A31	ITOS 2.0	SUMMARY-132
SYSMSG	871C	DECK-ID A33	ITOS 2.0	SUMMARY-132

IN

*K.I8

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*J.SPHT. \$\$

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*K.I6

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*K.P8

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*P.F.3				
SPFN	8200	DECK-ID J09	ITOS 2.0	SUMMARY-132
UPNEHR	8536	DECK-ID J15	ITOS 2.0	SUMMARY-132
PUTERR	8645	DECK-ID J16	ITOS 2.0	SUMMARY-132
QBPRMA	86DB	DECK-ID A25	ITOS 2.0	SUMMARY-132
ITSTOP	86E7	DECK-ID I19	ITOS 2.0	SUMMARY-132
KRAKER	86E9	DECK-ID I20	ITOS 2.0	SUMMARY-132
FMENTP	87A8	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	8809	DECK-ID A34	ITOS 2.0	SUMMARY-132
IOLUNT	8831	DECK-ID A31	ITOS 2.0	SUMMARY-132
SYSMSG	8980	DECK-ID A33	ITOS 2.0	SUMMARY-132

IN

*K.I8

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*J.SPFN. \$\$

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*K.I6

IN

*K.P8

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*P.F.3				
SPPR	8200	DECK-ID J08	ITOS 2.0	SUMMARY-132
UPNEHR	85FF	DECK-ID J15	ITOS 2.0	SUMMARY-132
PUTERR	870E	DECK-ID J16	ITOS 2.0	SUMMARY-132
QBPRMA	87A4	DECK-ID A25	ITOS 2.0	SUMMARY-132
ITSTOP	87B0	DECK-ID I19	ITOS 2.0	SUMMARY-132
KRAKER	87B2	DECK-ID I20	ITOS 2.0	SUMMARY-132
FMENTP	8871	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	88D2	DECK-ID A34	ITOS 2.0	SUMMARY-132
IOLUNT	88FA	DECK-ID A31	ITOS 2.0	SUMMARY-132

SYSMSG 8A49 DECK-ID A33 ITOS 2.0 SUMMARY-132

IN

*K.I8

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*J.SPPR.33

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*K.I6

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*K.P8

IN

*P.F.3.MARKER

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLAR	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
COMSEK	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MOVEK	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
LULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F5B	DECK-ID	A34	ITOS	2.0	SUMMARY-132
BINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GETHAT	8FF0	DECK-ID	B31	ITOS	2.0	SUMMARY-132
BATC	8FF4	DECK-ID	C23	ITOS	2.0	SUMMARY-132
JCLE	B23D	DECK-ID	C25	ITOS	2.0	SUMMARY-132
GETAUD	B421	DECK-ID	A49	ITOS	2.0	SUMMARY-132
MVCHAR	B4BD	DECK-ID	C06	ITOS	2.0	SUMMARY-132
CNTCHR	B51F	DECK-ID	H32	ITOS	2.0	SUMMARY-132
NXTLUC	B544	NEXT AVAILABLE LOCATION				

IN

*K.I8

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*J.UTHATC.33

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*K.I6

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*K.P8

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*P.F.3.MARKER

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132

REDLAK	86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY	86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK	872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MUVEL	8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MUVER	87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD	8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID B10	ITOS 2.0	SUMMARY-132
GETVIT	8937	DECK-ID B11	ITOS 2.0	SUMMARY-132
SYSMSG	8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IOLUNT	8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK	8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	8F5B	DECK-ID A34	ITOS 2.0	SUMMARY-132
HINASC	8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTDISC	8FF0	DECK-ID B38	ITOS 2.0	SUMMARY-132
DISC	8FF4	DECK-ID C28	ITOS 2.0	SUMMARY-132
GETADD	95CC	DECK-ID A49	ITOS 2.0	SUMMARY-132
NXTLOC	9668	NEXT AVAILABLE LOCATION		

IN

*K,IA

IN

*J,UTDISC,SS

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*K,I6

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*K,Pn

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*P,F,3,MARKER

FMULUD	8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKUIT	8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
REDLAK	86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY	86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK	872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MUVEL	8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MUVER	87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD	8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID B10	ITOS 2.0	SUMMARY-132
GETVIT	8937	DECK-ID B11	ITOS 2.0	SUMMARY-132
SYSMSG	8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IOLUNT	8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK	8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	8F5B	DECK-ID A34	ITOS 2.0	SUMMARY-132
HINASC	8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTHOST	8FF0	DECK-ID B41	ITOS 2.0	SUMMARY-132
HUST	8FF4	DECK-ID C05	ITOS 2.0	SUMMARY-132
NXTLOC	9525	NEXT AVAILABLE LOCATION		

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*K,IA

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*J,UTHUST,\$\$

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*K,I6

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*K,PA

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*P,F,3,MARKER

FMULUD 8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
KEDLAH 86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVOL 86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MUVEL 8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MUVER 87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD 8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ 88AD	DECK-ID B10	ITOS 2.0	SUMMARY-132
GETVIT 8937	DECK-ID B11	ITOS 2.0	SUMMARY-132
SYMSG 8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IOLUNT 8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK 8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP 8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
FXENTP 8F5B	DECK-ID A34	ITOS 2.0	SUMMARY-132
BINASC 8FH3	DECK-ID A24	ITOS 2.0	SUMMARY-132
QBPRMA 8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTSET 8FF0	DECK-ID B43	ITOS 2.0	SUMMARY-132
UTLSET 8FF4	DECK-ID C32	ITOS 2.0	SUMMARY-132
NXTLUC 9499	NEXT AVAILABLE LOCATION		

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*K,IA

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*J,UTSET,\$\$

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*K,I6

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*K,PA

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*P,F,3,MARKER

FMULUD 8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
KEDLAH 86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVOL 86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MUVEL 8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MUVER 87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD 8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ 88AD	DECK-ID B10	ITOS 2.0	SUMMARY-132

GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
BINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTPRIN	8FF0	DECK-ID	B42	ITOS	2.0	SUMMARY-132
PRINT	8FF4	DECK-ID	C31	ITOS	2.0	SUMMARY-132
GETADD	9H49	DECK-ID	A49	ITOS	2.0	SUMMARY-132
PRINZ	9BE5	DECK-ID	B44	ITOS	2.0	SUMMARY-132
MDPRT	9C19	DECK-ID	C46	ITOS	2.0	SUMMARY-132
PUSPL	9D22	DECK-ID	C47	ITOS	2.0	SUMMARY-132
NXTLUC	9E0B	NEXT AVAILABLE LOCATION				

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*K, I8
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*J, UTPRIN, 85
IN

*K, I6
IN

*K, PR
IN

*P, F, 3, MARKER

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVI	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLH	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TUWAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NXTVUL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
CUMSEK	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MOVEK	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	8FAD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
BINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTRATS	8FF0	DECK-ID	B37	ITOS	2.0	SUMMARY-132
BATS	8FF4	DECK-ID	C24	ITOS	2.0	SUMMARY-132
HATCHK	9H2A	DECK-ID	C45	ITOS	2.0	SUMMARY-132
CLRSCH	9HDC	DECK-ID	C16	ITOS	2.0	SUMMARY-132
TUWT	9HF9	DECK-ID	B60	ITOS	2.0	SUMMARY-132
NXTLUC	9C1A	NEXT AVAILABLE LOCATION				

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*K, I8
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*J,UTBATS,SS
IN

*K,I6
IN

*K,P8
IN

*P,F,3,MARKER

FMULUD 8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
REDLAH 86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVUL 86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MOVEL 8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MOVER 87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD 8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ 88AD	DECK-ID H10	ITOS 2.0	SUMMARY-132
GETVIT 8937	DECK-ID H11	ITOS 2.0	SUMMARY-132
SYMSG 8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IOLUNT 8AEB	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK 8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP 8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP 8F58	DECK-ID A34	ITOS 2.0	SUMMARY-132
BINASC 8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
GBPRMA 8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTDISP 8FF0	DECK-ID B39	ITOS 2.0	SUMMARY-132
DISPOS 8FF4	DECK-ID C29	ITOS 2.0	SUMMARY-132
GETADD 9888	DECK-ID A49	ITOS 2.0	SUMMARY-132
CHARMV 9924	DECK-ID B35	ITOS 2.0	SUMMARY-132
CRVHT 9977	DECK-ID H52	ITOS 2.0	SUMMARY-132
NDRMTH 99EA	DECK-ID A36	ITOS 2.0	SUMMARY-132
NXTLUC 9A37	NEXT AVAILABLE LOCATION		

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*K,IA
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*J,UTDISP,SS
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*K,I6
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*K,P8
IN

*P,F,3,MARKER

FMULUD 8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
REDLAH 86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVUL 86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MOVEL 8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MOVER 87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132

*J.UTINIT.55

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*K.16

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*K.P8

IN

*P.F.3.MARKER

FMULOU	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLAK	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
CUMSEK	872C	DECK-ID	H06	ITOS	2.0	SUMMARY-132
MUVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MUVER	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F56	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
BINASC	8FH3	DECK-ID	A24	ITOS	2.0	SUMMARY-132
GRPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GETDEF	8FF0	DECK-ID	B14	ITOS	2.0	SUMMARY-132
DEFINE	8FF4	DECK-ID	C07	ITOS	2.0	SUMMARY-132
ERPROC	B768	DECK-ID	C08	ITOS	2.0	SUMMARY-132
NDWMTM	B78E	DECK-ID	A36	ITOS	2.0	SUMMARY-132
CNVRT	B7DR	DECK-ID	B52	ITOS	2.0	SUMMARY-132
NXTLUC	B84E	NEXT AVAILABLE LOCATION				SUMMARY-132

IN

*K.18

IN

*J.UTDEFI.55

IN

*K.16

IN

*K.P8

IN

*P.F.3.MARKER

FMULOU	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLAK	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
CUMSEK	872C	DECK-ID	H06	ITOS	2.0	SUMMARY-132
MUVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MUVER	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132

GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IOLUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
BINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTSTAT	8FF0	DECK-ID	B15	ITOS	2.0	SUMMARY-132
STATUS	8FF4	DECK-ID	C09	ITOS	2.0	SUMMARY-132
UTPRCK	996C	DECK-ID	B63	ITOS	2.0	SUMMARY-132
FDWMTH	9981	DECK-ID	F36	ITOS	2.0	SUMMARY-132
NDWMTH	99UC	DECK-ID	A36	ITOS	2.0	SUMMARY-132
OPNCH	9A29	DECK-ID	B47	ITOS	2.0	SUMMARY-132
CONVER	9A60	DECK-ID	C10	ITOS	2.0	SUMMARY-132
CLRSCK	9ACC	DECK-ID	C16	ITOS	2.0	SUMMARY-132
TOWT	9AE9	DECK-ID	B60	ITOS	2.0	SUMMARY-132
VLTUI	9B0A	DECK-ID	B61	ITOS	2.0	SUMMARY-132
BLDZ	9B3F	DECK-ID	B55	ITOS	2.0	SUMMARY-132
FL2SP	9B75	DECK-ID	C42	ITOS	2.0	SUMMARY-132
CHUPLH	9B93	DECK-ID	B51	ITOS	2.0	SUMMARY-132
ASZ	9BC5	DECK-ID	B50	ITOS	2.0	SUMMARY-132
RIGJST	9BDC	DECK-ID	C44	ITOS	2.0	SUMMARY-132
FRHX	9C42	DECK-ID	B53	ITOS	2.0	SUMMARY-132
GENEUF	9C65	DECK-ID	B54	ITOS	2.0	SUMMARY-132
NATLUC	9C7E	NEXT AVAILABLE LOCATION				

IN

*K.IH

IN

*J.UTSTAT.33

IN

*K.IA

IN

*K.PR

IN

*P.F.3.MARKER

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
FEGLAB	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NATVOL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
CUMSEK	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MOVEK	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IOLUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132

BINASC	8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GETDEL	8FF0	DECK-ID B18	ITOS 2.0	SUMMARY-132
DELET	8FF4	DECK-ID C13	ITOS 2.0	SUMMARY-132
NXTLOC	91CD	NEXT AVAILABLE LOCATION		

IN

*K,I8
IN

*J,UTDELE,\$\$
IN

*K,I6
IN

*K,PH
IN

*P,F,3,MARKER				
FMULUD	8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVI	8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
REDLAB	86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY	86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK	872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MOVEL	8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MUVER	87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD	8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID B10	ITOS 2.0	SUMMARY-132
GETVIT	8937	DECK-ID B11	ITOS 2.0	SUMMARY-132
SYMSG	8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IOLUNT	8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK	8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	8F58	DECK-ID A34	ITOS 2.0	SUMMARY-132
BINASC	8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTCLFA	8FF0	DECK-ID B19	ITOS 2.0	SUMMARY-132
CLEER	8FF4	DECK-ID C14	ITOS 2.0	SUMMARY-132
ERPRUC	8566	DECK-ID C08	ITOS 2.0	SUMMARY-132
NXTLOC	858C	NEXT AVAILABLE LOCATION		

IN

*K,I8
IN

*J,UTCLEA,\$\$
IN

*K,I6
IN

*K,PH
IN

*P,F,3,MARKER				
FMULUD	8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132

SEKVI	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLH	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NATVUL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
CUMSEK	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MUVFL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MUVFH	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F5H	DECK-ID	A34	ITOS	2.0	SUMMARY-132
HINASC	8FB3	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPHMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTLIST	8FF0	DECK-ID	B20	ITOS	2.0	SUMMARY-132
LIST	8FF4	DECK-ID	C15	ITOS	2.0	SUMMARY-132
UTGTYF	A860	DECK-ID	B64	ITOS	2.0	SUMMARY-132
ASCFCB	A875	DECK-ID	B21	ITOS	2.0	SUMMARY-132
CLRSCH	A975	DECK-ID	C16	ITOS	2.0	SUMMARY-132
FLHXLK	A992	DECK-ID	C41	ITOS	2.0	SUMMARY-132
KINP	A9DD	DECK-ID	C43	ITOS	2.0	SUMMARY-132
TOWT	AA29	DECK-ID	B60	ITOS	2.0	SUMMARY-132
VLTUI	AA4A	DECK-ID	B61	ITOS	2.0	SUMMARY-132
BLU2	AA7F	DECK-ID	B55	ITOS	2.0	SUMMARY-132
FLZSP	AAH5	DECK-ID	C42	ITOS	2.0	SUMMARY-132
CHUPLK	AAD3	DECK-ID	B51	ITOS	2.0	SUMMARY-132
RIGJST	AB05	DECK-ID	C44	ITOS	2.0	SUMMARY-132
FHHX	AB68	DECK-ID	B53	ITOS	2.0	SUMMARY-132
ASZ	AB8E	DECK-ID	B50	ITOS	2.0	SUMMARY-132
GENEUF	ABA5	DECK-ID	B54	ITOS	2.0	SUMMARY-132
NATLOC	ABBE	NEXT AVAILABLE LOCATION				

IN

*K,IA

IN

*J,UTLIST,\$\$

IN

*K,IA

IN

*K,PH

IN

*P,F,3-MARKER

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMTFA	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVI	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLH	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NATVUL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
CUMSEK	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MUVFL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MUVFH	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132

*K,PH
IN

*P,F,3,MARKER

FMULUD 8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
HEDLAB 86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NATVOL 86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MOVEL 8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MOVER 87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD 8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ 88AD	DECK-ID B10	ITOS 2.0	SUMMARY-132
GETVIT 8937	DECK-ID B11	ITOS 2.0	SUMMARY-132
SYSMSG 8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IULUNT 8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK 8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP 8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP 8F5B	DECK-ID A34	ITOS 2.0	SUMMARY-132
HINASC 8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
QBPRMA 8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTMOUN 8FF0	DECK-ID B24	ITOS 2.0	SUMMARY-132
UTMGUT 8FF4	DECK-ID C18	ITOS 2.0	SUMMARY-132
NXTLUC 9351	NEXT AVAILABLE LOCATION		

IN

*K,18
IN

*J,UTMOUN,55
IN

*K,1A
IN

*K,PH
IN

*P,F,3,MARKER

FMULUD 8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID B03	ITOS 2.0	SUMMARY-132
HEDLAB 86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NATVOL 86FC	DECK-ID B05	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MOVEL 8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MOVER 87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD 8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ 88AD	DECK-ID B10	ITOS 2.0	SUMMARY-132
GETVIT 8937	DECK-ID B11	ITOS 2.0	SUMMARY-132
SYSMSG 8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IULUNT 8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK 8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP 8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP 8F5B	DECK-ID A34	ITOS 2.0	SUMMARY-132
HINASC 8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
QBPRMA 8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132

*J,UTCUMP,SS
IN

*K,I6
IN

*K,PH
IN

*P,F,3,MARKER

FMULUD 8200	DECK-ID 801	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID 802	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID 803	ITOS 2.0	SUMMARY-132
HEDLAM 86AE	DECK-ID 804	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NATVUL 86FC	DECK-ID 805	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID 806	ITOS 2.0	SUMMARY-132
MOVEL 8756	DECK-ID 807	ITOS 2.0	SUMMARY-132
MOVER 87AF	DECK-ID 808	ITOS 2.0	SUMMARY-132
GETFLD 8827	DECK-ID 809	ITOS 2.0	SUMMARY-132
MMSIZ 88AD	DECK-ID 810	ITOS 2.0	SUMMARY-132
GETVIT 8937	DECK-ID 811	ITOS 2.0	SUMMARY-132
SYMSMG 8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IOLUNT 8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
FCHK 8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP 8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP 8F58	DECK-ID A34	ITOS 2.0	SUMMARY-132
HINASC 8F83	DECK-ID A24	ITOS 2.0	SUMMARY-132
QMPRMA 8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTDUMP 8FF0	DECK-ID 616	ITOS 2.0	SUMMARY-132
DMPFIL 8FF4	DECK-ID C11	ITOS 2.0	SUMMARY-132
EKPRUC A62H	DECK-ID C08	ITOS 2.0	SUMMARY-132
MFWRXX A651	DECK-ID 845	ITOS 2.0	SUMMARY-132
OHFIMK A67A	DECK-ID 846	ITOS 2.0	SUMMARY-132
KWBUMM A68A	DECK-ID 848	ITOS 2.0	SUMMARY-132
UTEFCK A6A9	DECK-ID 849	ITOS 2.0	SUMMARY-132
NATLUC A6B7	NEXT AVAILABLE LOCATION		

IN

*K,I8
IN

*J,UTDUMP,SS
IN

*K,I6
IN

*K,PH
IN

*P,F,3,MARKER

FMULUD 8200	DECK-ID 801	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID 802	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID 803	ITOS 2.0	SUMMARY-132
HEDLAM 86AE	DECK-ID 804	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NATVUL 86FC	DECK-ID 805	ITOS 2.0	SUMMARY-132
CUMSEK 872C	DECK-ID 806	ITOS 2.0	SUMMARY-132

MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MOVEK	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
HINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTRFLU	8FF0	DECK-ID	B34	ITOS	2.0	SUMMARY-132
RELOAD	8FF4	DECK-ID	C27	ITOS	2.0	SUMMARY-134
ERPRUC	A58A	DECK-ID	C08	ITOS	2.0	SUMMARY-132
MVCHAR	A580	DECK-ID	C06	ITOS	2.0	SUMMARY-132
MPWRXX	A612	DECK-ID	B45	ITOS	2.0	SUMMARY-132
GRFIMK	A638	DECK-ID	B46	ITOS	2.0	SUMMARY-132
KWBUMM	A648	DECK-ID	B48	ITOS	2.0	SUMMARY-132
UTFCCK	A66A	DECK-ID	B49	ITOS	2.0	SUMMARY-132
BMPRRN	A678	DECK-ID	B36	ITOS	2.0	SUMMARY-132
NATLUC	A692	NEXT AVAILABLE LOCATION				

IN

*K, IN

IN

*J, UTPELU, 33

IN

*K, IN

IN

*K, PA

IN

*F. F. 3. MANNER

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEA	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVID	8676	DECK-ID	B03	ITOS	2.0	SUMMARY-132
MEDLAF	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NATVUL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
COMSER	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MOVEK	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
HINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTCOPY	8FF0	DECK-ID	B17	ITOS	2.0	SUMMARY-132
COPY	8FF4	DECK-ID	C12	ITOS	2.0	SUMMARY-132
MVCHAR	A502	DECK-ID	C06	ITOS	2.0	SUMMARY-132
FLWMTM	A564	DECK-ID	F36	ITOS	2.0	SUMMARY-132

NDWMTM A5BF
NXTLOC A60C

DECK-ID A36 ITOS 2.0
NEXT AVAILABLE LOCATION

SUMMARY-132

IN

*K.18

IN

*J.UTCOPY.55

IN

*K.16

IN

*K.P8

IN

*P.F.3.MARKER

FMULUD 8200	DECK-ID B01	ITOS 2.0	SUMMARY-132
FMUTEX 84A3	DECK-ID B02	ITOS 2.0	SUMMARY-132
SEKVIT 8678	DECK-ID H03	ITOS 2.0	SUMMARY-132
REDLAB 86AE	DECK-ID B04	ITOS 2.0	SUMMARY-132
TODAY 86E0	DECK-ID C02	ITOS 2.0	SUMMARY-132
NXTVOL 86FC	DECK-ID H05	ITOS 2.0	SUMMARY-132
COMSEK 872C	DECK-ID B06	ITOS 2.0	SUMMARY-132
MOVEL 8756	DECK-ID B07	ITOS 2.0	SUMMARY-132
MUVER 87AF	DECK-ID B08	ITOS 2.0	SUMMARY-132
GETFLD 8827	DECK-ID B09	ITOS 2.0	SUMMARY-132
MMSIZ 8HAD	DECK-ID B10	ITOS 2.0	SUMMARY-132
GETVIT 8937	DECK-ID B11	ITOS 2.0	SUMMARY-132
SYSMSG 8958	DECK-ID A33	ITOS 2.0	SUMMARY-132
IOLUNT 8AE8	DECK-ID A31	ITOS 2.0	SUMMARY-132
ERCHK 8C37	DECK-ID C03	ITOS 2.0	SUMMARY-132
FMENTP 8EFA	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXFNTP 8F5H	DECK-ID A34	ITOS 2.0	SUMMARY-132
HINASC 8FH3	DECK-ID A24	ITOS 2.0	SUMMARY-132
GRPRMA 8FE4	DECK-ID A25	ITOS 2.0	SUMMARY-132
GTLOAD 8FF0	DECK-ID H28	ITOS 2.0	SUMMARY-132
PKELUD 8FF4	DECK-ID H57	ITOS 2.0	SUMMARY-132
SEOLUD 9077	DECK-ID B59	ITOS 2.0	SUMMARY-132
LOAD 907E	DECK-ID C21	ITOS 2.0	SUMMARY-132
ASCEBC A3E4	DECK-ID B21	ITOS 2.0	SUMMARY-132
REDREC A4E4	DECK-ID B29	ITOS 2.0	SUMMARY-132
MVCHAR A517	DECK-ID C06	ITOS 2.0	SUMMARY-132
BMPRRN A579	DECK-ID H36	ITOS 2.0	SUMMARY-132
NXTLOC A593	NEXT AVAILABLE LOCATION		

IN

*K.1H

IN

*J.UTLOAD.55

IN

*K.16

IN

*K.P8

IN

*P.F.3.UTSPEC

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLAK	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
COMSEK	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MUVER	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132
ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F5H	DECK-ID	A34	ITOS	2.0	SUMMARY-132
HINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
GBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTLOAD	8FF0	DECK-ID	B28	ITOS	2.0	SUMMARY-132
PPELUD	8FF4	DECK-ID	B57	ITOS	2.0	SUMMARY-132
ORDER	9077	DECK-ID	B56	ITOS	2.0	SUMMARY-132
LDIXUD	907E	DECK-ID	C40	ITOS	2.0	SUMMARY-132
BMPRRN	A85F	DECK-ID	B36	ITOS	2.0	SUMMARY-132
DWDIV	A879	DECK-ID	F37	ITOS	2.0	SUMMARY-132
FDWMTH	AHE0	DECK-ID	F36	ITOS	2.0	SUMMARY-132
NDWMTH	AC38	DECK-ID	A36	ITOS	2.0	SUMMARY-132
ASCEBC	AC88	DECK-ID	B21	ITOS	2.0	SUMMARY-132
REDFEC	AD88	DECK-ID	B29	ITOS	2.0	SUMMARY-132
MVCHAR	AD88	DECK-ID	C06	ITOS	2.0	SUMMARY-132
NXTLOC	AE1D	NEXT AVAILABLE LOCATION				

IN

*K.18

IN

*J.UTOKLD.33

IN

*K.16

IN

*K.PR

IN

*P.F.3.UTSPEC

FMULUD	8200	DECK-ID	B01	ITOS	2.0	SUMMARY-132
FMUTEX	84A3	DECK-ID	B02	ITOS	2.0	SUMMARY-132
SEKVIT	8678	DECK-ID	B03	ITOS	2.0	SUMMARY-132
REDLAK	86AE	DECK-ID	B04	ITOS	2.0	SUMMARY-132
TODAY	86E0	DECK-ID	C02	ITOS	2.0	SUMMARY-132
NXTVOL	86FC	DECK-ID	B05	ITOS	2.0	SUMMARY-132
COMSEN	872C	DECK-ID	B06	ITOS	2.0	SUMMARY-132
MOVEL	8756	DECK-ID	B07	ITOS	2.0	SUMMARY-132
MUVER	87AF	DECK-ID	B08	ITOS	2.0	SUMMARY-132
GETFLD	8827	DECK-ID	B09	ITOS	2.0	SUMMARY-132
MMSIZ	88AD	DECK-ID	B10	ITOS	2.0	SUMMARY-132
GETVIT	8937	DECK-ID	B11	ITOS	2.0	SUMMARY-132
SYSMSG	8958	DECK-ID	A33	ITOS	2.0	SUMMARY-132
IULUNT	8AE8	DECK-ID	A31	ITOS	2.0	SUMMARY-132

ERCHK	8C37	DECK-ID	C03	ITOS	2.0	SUMMARY-132
FMENTP	8EFA	DECK-ID	F58	ITOS	2.0	SUMMARY-132
EXENTP	8F58	DECK-ID	A34	ITOS	2.0	SUMMARY-132
BINASC	8F83	DECK-ID	A24	ITOS	2.0	SUMMARY-132
QBPRMA	8FE4	DECK-ID	A25	ITOS	2.0	SUMMARY-132
GTLOAD	8FF0	DECK-ID	H28	ITOS	2.0	SUMMARY-132
PRELUD	8FF4	DECK-ID	B57	ITOS	2.0	SUMMARY-132
RANDUM	9077	DECK-ID	B58	ITOS	2.0	SUMMARY-132
BLDIUR	907E	DECK-ID	C39	ITOS	2.0	SUMMARY-132
UPDIUX	9CC4	DECK-ID	C33	ITOS	2.0	SUMMARY-132
UTPOSK	A229	DECK-ID	C34	ITOS	2.0	SUMMARY-132
UTNXSS	A360	DECK-ID	C35	ITOS	2.0	SUMMARY-132
UTFWAK	A386	DECK-ID	C37	ITOS	2.0	SUMMARY-132
UTUOSK	A39E	DECK-ID	C38	ITOS	2.0	SUMMARY-132
CMPSTG	A408	DECK-ID	F45	ITOS	2.0	SUMMARY-132
UTXKEY	A433	DECK-ID	C36	ITOS	2.0	SUMMARY-132
KIHMGH	A48D	DECK-ID	B62	ITOS	2.0	SUMMARY-132
FDWMTH	B68A	DECK-ID	F36	ITOS	2.0	SUMMARY-132
NDWMTH	B6E5	DECK-ID	A36	ITOS	2.0	SUMMARY-132
BMPRKN	H732	DECK-ID	B36	ITOS	2.0	SUMMARY-132
REDREC	B74C	DECK-ID	B29	ITOS	2.0	SUMMARY-132
ASCEHC	B77F	DECK-ID	B21	ITOS	2.0	SUMMARY-132
MVCHAR	B87F	DECK-ID	C06	ITOS	2.0	SUMMARY-132
NXTLUC	B8E1	NEXT AVAILABLE LOCATION				

IN

*K.IH
IN

*J.UTRMLD.SS
IN

*K.I6
IN

*K.PR
IN

*P.F.3

GUENIT	H200	DECK-ID	D01	ITOS	2.0	SUMMARY-132
EDCUMM	96A6	DECK-ID	E02	ITOS	2.0	SUMMARY-132
EDITZH	96A9	DECK-ID	D02	ITOS	2.0	SUMMARY-132
FMENTP	96A9	DECK-ID	F58	ITOS	2.0	SUMMARY-132
IU	970A	DECK-ID	D03	ITOS	2.0	SUMMARY-132
LOCAL	9762	DECK-ID	D04	ITOS	2.0	SUMMARY-132
SET	9858	DECK-ID	E03	ITOS	2.0	SUMMARY-132
SYSMSG	9878	DECK-ID	A33	ITOS	2.0	SUMMARY-132
EXENTP	9A08	DECK-ID	A34	ITOS	2.0	SUMMARY-132
EBEGIN	9A30	DECK-ID	D05	ITOS	2.0	SUMMARY-132
INITLE	9A3C	DECK-ID	E04	ITOS	2.0	SUMMARY-132
EDITUS	9B92	DECK-ID	D06	ITOS	2.0	SUMMARY-132
AUTPRU	9D4E	DECK-ID	E05	ITOS	2.0	SUMMARY-132
CHAPRU	A11C	DECK-ID	E06	ITOS	2.0	SUMMARY-132
CLEPRU	A34E	DECK-ID	E07	ITOS	2.0	SUMMARY-132
CTAPRU	A38E	DECK-ID	E08	ITOS	2.0	SUMMARY-132
DELPRU	A3DA	DECK-ID	E09	ITOS	2.0	SUMMARY-132
GETPRU	A465	DECK-ID	E10	ITOS	2.0	SUMMARY-132
LINPRU	A531	DECK-ID	E11	ITOS	2.0	SUMMARY-132
LSTPRU	A807	DECK-ID	E12	ITOS	2.0	SUMMARY-132
KSUPRU	A978	DECK-ID	E13	ITOS	2.0	SUMMARY-132

SEAPRO	AC08	DECK-ID E14	ITOS 2.0	SUMMARY-132
SEOPRO	AD4F	DECK-ID E35	ITOS 2.0	SUMMARY-132
STAPRO	AEF1	DECK-ID E15	ITOS 2.0	SUMMARY-132
CLRMEM	AF63	DECK-ID E16	ITOS 2.0	SUMMARY-132
CLRSVM	AF79	DECK-ID E17	ITOS 2.0	SUMMARY-132
DECHEX	AFC9	DECK-ID 008	ITOS 2.0	SUMMARY-132
ELNSCN	H010	DECK-ID E18	ITOS 2.0	SUMMARY-132
FNDEND	H043	DECK-ID E19	ITOS 2.0	SUMMARY-132
FNDNXT	H070	DECK-ID E20	ITOS 2.0	SUMMARY-132
FNDSLI	H0C3	DECK-ID E21	ITOS 2.0	SUMMARY-132
GETAFD	H0E3	DECK-ID E22	ITOS 2.0	SUMMARY-132
GETNAM	H142	DECK-ID E23	ITOS 2.0	SUMMARY-132
GETNUM	H18C	DECK-ID E24	ITOS 2.0	SUMMARY-132
GETONE	H283	DECK-ID E25	ITOS 2.0	SUMMARY-132
GETSTR	H2CC	DECK-ID E26	ITOS 2.0	SUMMARY-132
HEXDEC	H33F	DECK-ID E27	ITOS 2.0	SUMMARY-132
LOCATE	H380	DECK-ID E28	ITOS 2.0	SUMMARY-132
SETAUT	H4CA	DECK-ID E29	ITOS 2.0	SUMMARY-132
SETTAB	H55D	DECK-ID E30	ITOS 2.0	SUMMARY-132
SLIPLD	H623	DECK-ID E31	ITOS 2.0	SUMMARY-132
STRMCH	H772	DECK-ID E32	ITOS 2.0	SUMMARY-132
UPNREC	H787	DECK-ID E33	ITOS 2.0	SUMMARY-132
UPOREC	H7FD	DECK-ID E34	ITOS 2.0	SUMMARY-132
ENDLUC	H850	DECK-ID D09	ITOS 2.0	SUMMARY-132

IN

*K,IA
IN

*J,EDITOR,SS
IN

*K,I6
IN

*K,PH
IN

*P,F,3				
EFLIST	H200	DECK-ID L01	ITOS 2.0	SUMMARY-132
FMENTP	H803	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	H864	DECK-ID A34	ITOS 2.0	SUMMARY-132
GETADD	H88C	DECK-ID A49	ITOS 2.0	SUMMARY-132
NATLUC	H828	NEXT AVAILABLE LOCATION		

IN

*K,IA
IN

*J,EFLIST,SS
IN

*V DEBUGGING AND CHECKOUT
IN

*K,IA
IN

*L,TRACE
IN

*K.I6
IN

*K.P8
IN

*P.F
SETHK1 8000 DECK-ID M91 MSOS 5.0 SUMMARY-110
IN

*K.I8
IN

*N.BPST...E
IN

*K.I6
IN

*K.P8
IN

*P.F
TERMI1 8000 DECK-ID M92 MSOS 5.0 SUMMARY-110
IN

*K.I8
IN

*N.RPCLK...B
IN

*K.I6
IN

*K.P8
IN

*P.F
ENTCUI 8000 DECK-ID M93 MSOS 5.0 SUMMARY-110
IN

*K.I8
IN

*N.RPLOAD...R
IN

*K.I6
IN

*K.P8
IN

*P.F
RFSUM1 8000 DECK-ID M94 MSOS 5.0 SUMMARY-110
IN

*K.I8

IN

*N,bPEND...B
IN

*K,I6
IN

*K,PH
IN

*P,F
PRTR1 8000 DECK-ID M95 MSOS 5.0 SUMMARY-110
IN

*K,IA
IN

*N,bPRLST...B
IN

*K,I6
IN

*K,PH
IN

*P,F
SETAG1 8000 DECK-ID M96 MSOS 5.0 SUMMARY-110
IN

*K,IA
IN

*N,bPHSET...B
IN

*K,I6
IN

*K,PH
IN

*P,F
CUMDM1 8000 DECK-ID M97 MSOS 5.0 SUMMARY-110
IN

*K,IA
IN

*N,bPDMPC...B
IN

*K,I6
IN

*K,PH
IN

*P,F

JUMPR1 8000 DECK-ID M98 MSOS 5.0 SUMMARY-110

IN

*K,I8

IN

*N,BPJMP...B

IN

*K,I6

IN

*K,PH

IN

*P,F

LUCHG1 8000 DECK-ID M99 MSOS 5.0 SUMMARY-110

IN

*K,I8

IN

*N,BPRPLU...B

IN

*K,I6

IN

*K,PH

IN

*P,F

HPTAP1 8000 DECK-ID N02 MSOS 5.0 SUMMARY-110

IN

*K,I8

IN

*N,HPTAPC...B

IN

*K,I6

IN

*K,PH

IN

*P,F

MASDM1 8000 DECK-ID N03 MSOS 5.0 SUMMARY-110

IN

*K,I8

IN

*N,BPMASS...B

IN

*V SORT/MERGE

IN

*K,P8
IN

*K,I6
IN

*P,f.3

SMCLNK 8200 DECK-ID H01 ITOS 2.0
FMEN TP 8202 DECK-ID F58 ITOS 2.0
SYSMSG 8263 DECK-ID A33 ITOS 2.0
EXENTP 83F3 DECK-ID A34 ITOS 2.0
DSORT 841B DECK-ID H02 ITOS 2.0

SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132

IN

*K,I8
IN

*J,DSORT,55
IN

*K,I6
IN

*K,PA
IN

*P,F,3

SMCMON 8200 DECK-ID H03 ITOS 2.0

SUMMARY-132

IN

*K,I8
IN

*J,SMCMON,55
IN

*K,I6
IN

*K,PA
IN

*P,F,3

SMCEDT 8200 DECK-ID H04 ITOS 2.0

SUMMARY-132

IN

*K,I8
IN

*J,SMCEDT,55
IN

*K,I6
IN

*K,P8
IN

*P,F,3

SMCSRT 8200 DECK-ID H05 ITOS 2.0

SUMMARY-132

IN

*K.I8
IN

*J.SMCSRT,\$\$
IN

*K.I6
IN

*K.PR
IN

*P.F.3
SMCIMG 8200 DECK-ID H06 ITOS 2.0
IN

SUMMARY-132

*K.IA
IN

*J.SMCIMG,\$\$
IN

*K.I6
IN

*K.PR
IN

*P.F.3
SMCFMG 8200 DECK-ID H07 ITOS 2.0
IN

SUMMARY-132

*K.IA
IN

*J.SMCFMG,\$\$
IN

*K.I6
IN

*Z

*CTO. PROGRAM INSTALL COMPLETE - TO LOAD SYSTEM FILES:

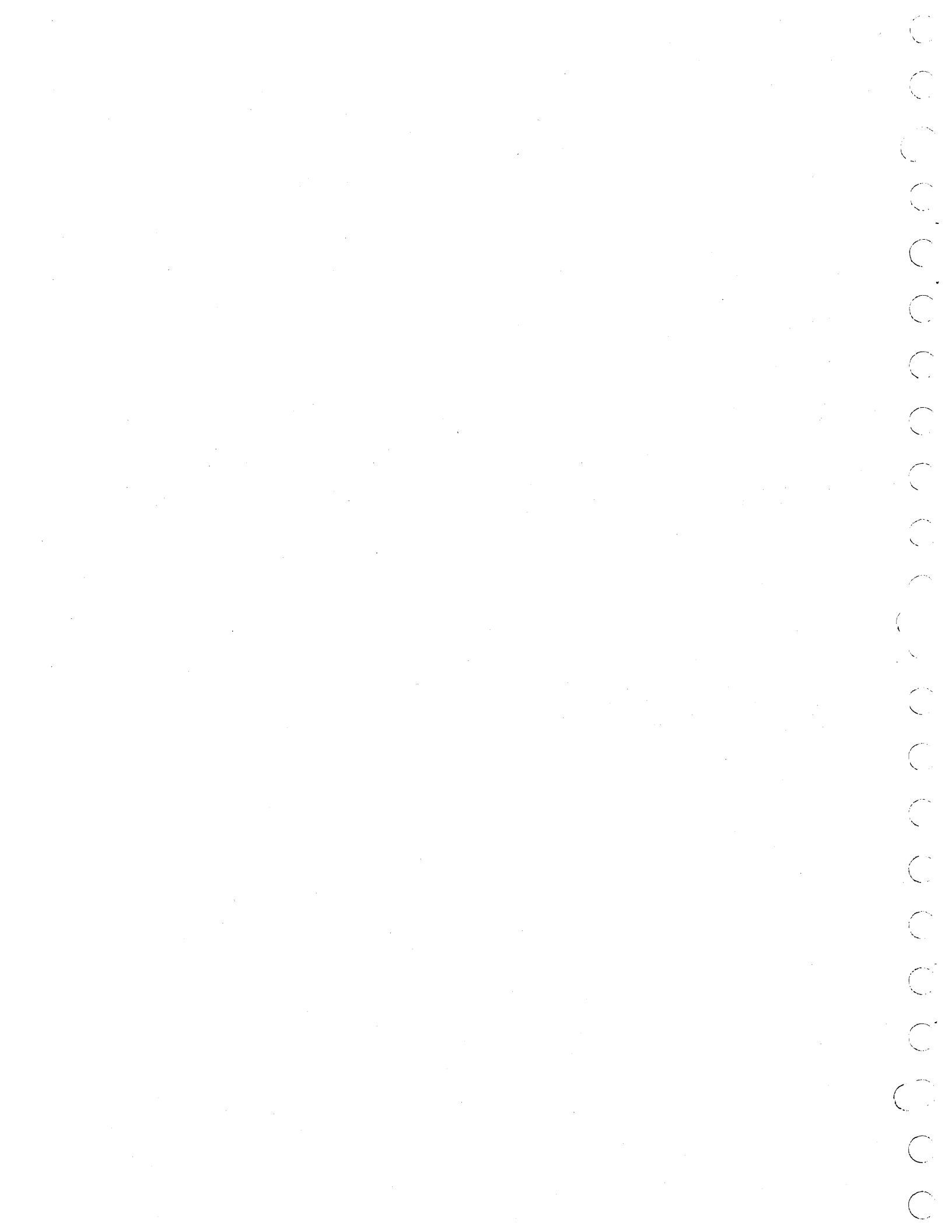
*CTO. 1. PERFORM 'START'

*CTO. 2. LOG-IN WITH USER ID = \$\$

*CTO. 3. REQUEST = TAPE0

*K.I10.P11.L9

*Z



MACRO ASSEMBLER INSTALL

D

JGB, INSTAL, ASSEM

1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0

DATE OF RUN: 09/27/78

SYSTEM ID: ITOS 2.0 I/E 'B' SYSTEM

(09/22/78)

```
IIIIIIIIIIII  MNM    MNM    SSSSSSSSSS  TTTTTTTTTTTT  AAAAAAAAAAAA  LLL
IIIIIIIIIIII  MNM    MNM    SSSSSSSSSSSS  TTTTTTTTTTTT  AAAAAAAAAAAA  LLL
IIIIIIIIIIII  MNM    MNM    SSSSSSSSSSSS  TTTTTTTTTTTT  AAAAAAAAAAAA  LLL
   III         MNMN   MNM    SSS    SSS  TTT         AAA    AAA  LLL
   III         MNMNM  MNM    SSS         TTT         AAA    AAA  LLL
   III         MNMNM  MNM    SSS         TTT         AAA    AAA  LLL
   III         MNM MNM MNM  SSSSSSSSSSSS  TTT         AAA    AAA  LLL
   III         MNM MNM MNM  SSSSSSSSSSSS  TTT         AAA    AAA  LLL
   III         MNM MNM MNM  SSSSSSSSSSSS  TTT         AAA    AAA  LLL
   III         MNM MNM MNM  SSSSSSSSSSSS  TTT         AAA    AAA  LLL
   III         MNM MNM MNM  SSS         TTT         AAA    AAA  LLL
   III         MNM MNM MNM  SSS         TTT         AAA    AAA  LLL
   III         MNM MNM MNM  SSS         TTT         AAA    AAA  LLL
IIIIIIIIIIII  MNM    MNM    SSSSSSSSSSSS  TTT         AAA    AAA  LLLLLLLLLLLLLL
IIIIIIIIIIII  MNM    MNM    SSSSSSSSSSSS  TTT         AAA    AAA  LLLLLLLLLLLLLL
IIIIIIIIIIII  MNM    MNM    SSSSSSSSSSSS  TTT         AAA    AAA  LLLLLLLLLLLLLL
```

*CTD, 1700 MACRO ASSEMBLER 3. INSTALL
*CTC, COPYRIGHT CONTROL DATA CORPORATION 1978
*K,I17
*LIBEDT
LIB

IN

*V 1700 MACRO ASSEMBLER 3.
IN

*K,I17
IN

*L,LIBMAC
IN

*L,ASSEM
IN

*K,P8
IN

*P,F
PASS1 7000 DECK-ID A02 MACRO ASSEMBLER SUMMARY-110
PA1PR2 76B2 DECK-ID A03 MACRO ASSEMBLER SUMMARY-120
NXTLCC 807F NEXT AVAILABLE LOCATION
IN

*K,I8
IN

*N,PASS1,,,B
IN

*K,I17
IN

*K,P8
IN

*P,F
PASS2 70C0 DECK-ID A04 MACRO ASSEMBLER SUMMARY-110
PA2PR2 74DC DECK-ID A05 MACRO ASSEMBLER SUMMARY-120
NXTLCC 79BB NEXT AVAILABLE LOCATION
IN

*K,I8
IN

*N,PASS2,,,B
IN

*K,I17
IN

*K,P8
IN

*P,F
PASS3 7000 DECK-ID A06 MACRO ASSEMBLER SUMMARY-110
PA3PR2 74A3 DECK-ID A07 MACRO ASSEMBLER SUMMARY-120
PA3PR3 78E1 DECK-ID A08 MACRO ASSEMBLER SUMMARY-110
NXTLGC 7DB6 NEXT AVAILABLE LOCATION

IN

*K,I8
IN

*N,PASS3,,,B
IN

*K,I17
IN

*K,P8
IN

*P,F
TABLST 7000 DECK-ID A09 MACRO ASSEMBLER SUMMARY-110
NXTLGC 7784 NEXT AVAILABLE LOCATION

IN

*K,I8
IN

*N,TABLST,,,B
IN

*K,I17
IN

*K,P8
IN

*P,F
XREF 7000 DECK-ID A10 MACRO ASSEMBLER SUMMARY-110
NXTLGC 7612 NEXT AVAILABLE LOCATION

IN

*K,I8
IN

*N,XREF,,,B
IN

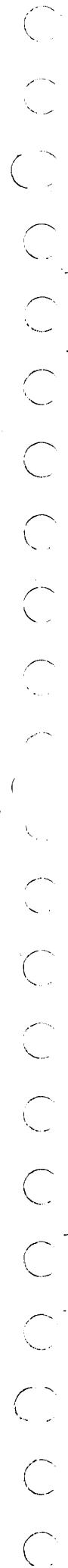
*K,I17
IN

*N,MACSKL,,,B
IN

*N,MACRDS,,,B
IN

*Z

*CTC, ASSEM INSTALL COMPLETE



FORTRAN 3A INSTALL

E

JCE, INSTAL,FTN33A
1700 PASS STORAGE OPERATING SYSTEM VERSION 5.0 DATE OF RUN: 09/27/78 SYSTEM ID: ITOS 2.0 I/E 'B' SYSTEM (09/22/78)

IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
III	NNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN NNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNN NNN NNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNN NNN NNN	NNN	SSS SSS	TTT	AAA AAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL

*CTO, FORTRAN 3.3A COMPILER INSTALL
 *CTC, COPYRIGHT CONTROL DATA CORPORATION 1978
 *K,117
 *LIBEDT
 LIB

IN

*V FTM 3.3A COMPILER
 IN

*V
 IN

*K,117
 IN

*L,FTN
 IN

*K,P8
 IN

*P					
FTN33A	70C0	DECK-ID	F01	FORTRAN 3.3A	SUMMARY-132
GOA	7774	DECK-ID	F02	FORTRAN 3.3A	SUMMARY-114
IDPRBA	77CD	DECK-ID	F08	FORTRAN 3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FORTRAN 3.3A	SUMMARY-102
CONV	7ABA	DECK-ID	F03	FORTRAN 3.3A	SUMMARY-102
DIAG	7AEC	DECK-ID	F04	FORTRAN 3.3A	SUMMARY-102
DIACRG	7B99	DECK-ID	F65	FORTRAN 3.3A	SUMMARY-102
GETC	7B85	DECK-ID	F13	FORTRAN 3.3A	SUMMARY-102
GETSYM	7BEC	DECK-ID	F12	FORTRAN 3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID	A07	FORTRAN 3.3A	SUMMARY-102
PACK	7C4C	DECK-ID	F09	FORTRAN 3.3A	SUMMARY-102
Q8PRMS	7C72	DECK-ID	F10	FORTRAN 3.3A	SUMMARY-102
STGRE	7C8C	DECK-ID	F11	FORTRAN 3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-ID	A03	FORTRAN 3.3A	SUMMARY-102
LOCLAA	7E9F	DECK-ID	F17	FORTRAN 3.3A	SUMMARY-102
DUMYAA	7F58	DECK-ID	F18	FORTRAN 3.3A	SUMMARY-102
PHASEA	7FBF	DECK-ID	A08	FORTRAN 3.3A	SUMMARY-102
ARAYSZ	850A	DECK-ID	A42	FORTRAN 3.3A	SUMMARY-102
CPLGDP	858B	DECK-ID	A43	FORTRAN 3.3A	SUMMARY-102
ENDDC	8631	DECK-ID	A29	FORTRAN 3.3A	SUMMARY-102
GNST	8732	DECK-ID	A06	FORTRAN 3.3A	SUMMARY-114
HEADER	8C64	DECK-ID	F64	FORTRAN 3.3A	SUMMARY-102
IGETCF	8CA9	DECK-ID	F14	FORTRAN 3.3A	SUMMARY-102
OPTICN	8CC2	DECK-ID	F15	FORTRAN 3.3A	SUMMARY-114
PLABEL	8D61	DECK-ID	A09	FORTRAN 3.3A	SUMMARY-102
Q8CBDS	8DB7	DECK-ID	A10	FORTRAN 3.3A	SUMMARY-102
RDLABL	8DB7	DECK-ID	A11	FORTRAN 3.3A	SUMMARY-102
SAVEID	8E55	DECK-ID	A04	FORTRAN 3.3A	SUMMARY-102
STCHAR	8EFB	DECK-ID	A12	FORTRAN 3.3A	SUMMARY-102
ENDLCC	8F2D	DECK-ID	F16	FORTRAN 3.3A	SUMMARY-102

IN

*K,18
 IN

*N,FTN3AA,,,B
IN

*K,I17
IN

*K,P8
IN

*P,,,MARKER

FTN33A	700C	DECK-ID	F01	FCRTRAN	3.3A	SUMMARY-132
GOA	7774	DECK-ID	F02	FCRTRAN	3.3A	SUMMARY-114
ICPRBA	77CC	DECK-ID	F08	FCRTRAN	3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FCRTRAN	3.3A	SUMMARY-102
CCNV	7ABA	DECK-ID	F03	FCRTRAN	3.3A	SUMMARY-102
DIAG	7AED	DECK-ID	F04	FCRTRAN	3.3A	SUMMARY-102
DIAGRG	7B59	DECK-ID	F65	FCRTRAN	3.3A	SUMMARY-102
GETC	7BB5	DECK-ID	F13	FCRTRAN	3.3A	SUMMARY-102
GETSYM	7BE0	DECK-ID	F12	FCRTRAN	3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID	A07	FCRTRAN	3.3A	SUMMARY-102
PACK	7C4C	DECK-ID	F09	FCRTRAN	3.3A	SUMMARY-102
CBPRFS	7C72	DECK-ID	F10	FCRTRAN	3.3A	SUMMARY-102
STCRE	7C8C	DECK-ID	F11	FCRTRAN	3.3A	SUMMARY-102
SYMBOL	7CE3	DECK-ID	A03	FCRTRAN	3.3A	SUMMARY-102
LCLLAB	7E9F	DECK-ID	F19	FCRTRAN	3.3A	SUMMARY-102
DUMYAB	7F58	DECK-ID	F20	FCRTRAN	3.3A	SUMMARY-102
BYECPR	7F5B	DECK-ID	A19	FCRTRAN	3.3A	SUMMARY-102
DFLOT	814F	DECK-ID	F06	FCRTRAN	3.3A	SUMMARY-102
DUMVCL	8386	DECK-ID	F07	FCRTRAN	3.3A	SUMMARY-102
DXP9	8385	DECK-ID	F05	FCRTRAN	3.3A	SUMMARY-102
GETF	84E1	DECK-ID	A05	FCRTRAN	3.3A	SUMMARY-102
GPOT	88ED	DECK-ID	A02	FCRTRAN	3.3A	SUMMARY-102
SAVEID	8916	DECK-ID	A04	FCRTRAN	3.3A	SUMMARY-102
STCHAR	89BC	DECK-ID	A12	FCRTRAN	3.3A	SUMMARY-102
SUBPPR	89EE	DECK-ID	A23	FCRTRAN	3.3A	SUMMARY-102
TYPE	8AA2	DECK-ID	A13	FCRTRAN	3.3A	SUMMARY-102
ENCLCC	8CF4	DECK-ID	F16	FCRTRAN	3.3A	SUMMARY-102

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FTN33A	700C	DECK-ID	F01	FCRTRAN	3.3A	SUMMARY-132
GOA	7774	DECK-ID	F02	FCRTRAN	3.3A	SUMMARY-114
ICPRBA	77CC	DECK-ID	F08	FCRTRAN	3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FCRTRAN	3.3A	SUMMARY-102
CCNV	7ABA	DECK-ID	F03	FCRTRAN	3.3A	SUMMARY-102
DIAG	7AED	DECK-ID	F04	FCRTRAN	3.3A	SUMMARY-102
DIAGRG	7B59	DECK-ID	F65	FCRTRAN	3.3A	SUMMARY-102

GETC	78B5	DECK-ID	F13	FORTRAN	3.3A	SUMMARY-102
GETSYM	7BEC	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID	A07	FORTRAN	3.3A	SUMMARY-102
PACK	7C4C	DECK-IC	F09	FORTRAN	3.3A	SUMMARY-102
Q8PRMS	7C72	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STORE	7C8C	DECK-ID	F11	FORTRAN	3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-ID	A03	FORTRAN	3.3A	SUMMARY-102
LOCLAC	7E9F	DECK-ID	F21	FORTRAN	3.3A	SUMMARY-102
DUMYAC	7F5F	DECK-ID	F22	FORTRAN	3.3A	SUMMARY-102
ASGNPR	7F5F	DECK-ID	A32	FORTRAN	3.3A	SUMMARY-102
BDGPR	7FA5	DECK-ID	A33	FORTRAN	3.3A	SUMMARY-102
CFIVCC	80DF	DECK-ID	A34	FORTRAN	3.3A	SUMMARY-102
CKIYC	813D	DECK-ID	A35	FORTRAN	3.3A	SUMMARY-102
CKNAME	814D	DECK-ID	A36	FORTRAN	3.3A	SUMMARY-102
CCHNPR	815D	DECK-ID	A15	FORTRAN	3.3A	SUMMARY-102
DFLCT	81F3	DECK-IC	F06	FORTRAN	3.3A	SUMMARY-102
DIMPR	842A	DECK-ID	A16	FORTRAN	3.3A	SUMMARY-102
DUMVCL	85D4	DECK-IC	F07	FORTRAN	3.3A	SUMMARY-102
DXP9	86C3	DECK-ID	F05	FORTRAN	3.3A	SUMMARY-102
ERBPR	872F	DECK-ID	A38	FORTRAN	3.3A	SUMMARY-102
EXRLPR	878D	DECK-IC	A24	FORTRAN	3.3A	SUMMARY-102
GETF	87EB	DECK-IC	A05	FORTRAN	3.3A	SUMMARY-102
GPUT	8BF7	DECK-IC	A02	FORTRAN	3.3A	SUMMARY-102
RDLABL	8C2C	DECK-ID	A11	FORTRAN	3.3A	SUMMARY-102
TYPEPR	8CBE	DECK-ID	A18	FORTRAN	3.3A	SUMMARY-102
ENDLCC	8CD5	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7C0C	DECK-IC	F01	FORTRAN	3.3A	SUMMARY-132
GOA	7774	DECK-ID	F02	FORTRAN	3.3A	SUMMARY-114
IOPRBA	77CD	DECK-IC	F08	FORTRAN	3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
CGNY	7ABA	DECK-IC	F03	FORTRAN	3.3A	SUMMARY-102
DIAG	7AED	DECK-ID	F04	FORTRAN	3.3A	SUMMARY-102
DIAGRG	7B99	DECK-IC	F65	FORTRAN	3.3A	SUMMARY-102
GETC	78B5	DECK-ID	F13	FORTRAN	3.3A	SUMMARY-102
GETSYM	7BEC	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
OUTENT	7C19	DECK-IC	A07	FORTRAN	3.3A	SUMMARY-102
PACK	7C4C	DECK-ID	F09	FORTRAN	3.3A	SUMMARY-102
Q8PRMS	7C72	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STORE	7C8C	DECK-IC	F11	FORTRAN	3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-ID	A03	FORTRAN	3.3A	SUMMARY-102
LOCLAC	7E9F	DECK-IC	F23	FORTRAN	3.3A	SUMMARY-102
DUMYAD	7F59	DECK-ID	F24	FORTRAN	3.3A	SUMMARY-102
ASEMPR	7F59	DECK-ID	A40	FORTRAN	3.3A	SUMMARY-102
DFLCT	8118	DECK-ID	F06	FORTRAN	3.3A	SUMMARY-102
DUMVCL	8352	DECK-IC	F07	FORTRAN	3.3A	SUMMARY-102

DXP9	8381	DECK-ID F05	F0RTRAN 3.3A	SUMMARY-102
GETF	84AD	DECK-ID A05	FCRTRAN 3.3A	SUMMARY-102
GPLT	88B9	DECK-ID A02	FCRTRAN 3.3A	SUMMARY-102
IGETCF	88E2	DECK-ID F14	F0RTRAN 3.3A	SUMMARY-102
PUNT	88FB	DECK-ID A27	FCRTRAN 3.3A	SUMMARY-102
ROLABL	8933	DECK-ID A11	F0RTRAN 3.3A	SUMMARY-102
SUBSCR	89D1	DECK-ID A17	FCRTRAN 3.3A	SUMMARY-102
ENDLOC	8CA5	DECK-ID F16	FCRTRAN 3.3A	SUMMARY-102

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FTN33A	7C0C	DECK-ID F01	FCRTRAN 3.3A	SUMMARY-132
GCA	7774	DECK-ID F02	FCRTRAN 3.3A	SUMMARY-114
IOPRBA	77CD	DECK-ID F08	FCRTRAN 3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID A01	FCRTRAN 3.3A	SUMMARY-102
CONV	7ABA	DECK-ID F03	F0RTRAN 3.3A	SUMMARY-102
DIAG	7AED	DECK-ID F04	FCRTRAN 3.3A	SUMMARY-102
DIACRG	7B99	DECK-ID F65	F0RTRAN 3.3A	SUMMARY-102
GETC	7BB5	DECK-ID F13	FCRTRAN 3.3A	SUMMARY-102
GETSYM	7BE0	DECK-ID F12	FCRTRAN 3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID A07	F0RTRAN 3.3A	SUMMARY-102
PACK	7C4D	DECK-ID F09	FCRTRAN 3.3A	SUMMARY-102
Q8PRMS	7C72	DECK-ID F10	FCRTRAN 3.3A	SUMMARY-102
STCR	7C8C	DECK-ID F11	FCRTRAN 3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-ID A03	FCRTRAN 3.3A	SUMMARY-102
LOCLAE	7E9F	DECK-ID F25	FCRTRAN 3.3A	SUMMARY-102
DUNYAE	7F59	DECK-ID F26	FCRTRAN 3.3A	SUMMARY-102
CONSUB	7F59	DECK-ID A30	FCRTRAN 3.3A	SUMMARY-102
DATAPR	7FE0	DECK-ID A31	FCRTRAN 3.3A	SUMMARY-102
DFLOT	84EA	DECK-ID F06	F0RTRAN 3.3A	SUMMARY-102
DUMVCL	8721	DECK-ID F07	FCRTRAN 3.3A	SUMMARY-102
DXP9	8750	DECK-ID F05	FCRTRAN 3.3A	SUMMARY-102
GETF	887C	DECK-ID A05	FCRTRAN 3.3A	SUMMARY-102
GPLT	8C8E	DECK-ID A02	FCRTRAN 3.3A	SUMMARY-102
STCHAR	8CB1	DECK-ID A12	F0RTRAN 3.3A	SUMMARY-102
ENDLCC	8CE3	DECK-ID F16	FCRTRAN 3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOA	7774	DECK-ID	F02	FORTRAN	3.3A	SUMMARY-114
IOPREA	77CD	DECK-ID	F08	FORTRAN	3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
CONV	7ABA	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
DIAG	7AED	DECK-ID	F04	FORTRAN	3.3A	SUMMARY-102
DIAGRG	7B99	DECK-IC	F65	FORTRAN	3.3A	SUMMARY-102
GETC	7BB5	DECK-IC	F13	FORTRAN	3.3A	SUMMARY-102
GETSYM	7BE0	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID	A07	FORTRAN	3.3A	SUMMARY-102
PACK	7C4D	DECK-ID	F09	FORTRAN	3.3A	SUMMARY-102
Q8PRMS	7C72	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STORE	7C8C	DECK-IC	F11	FORTRAN	3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-ID	A03	FORTRAN	3.3A	SUMMARY-102
LOCLAF	7E9F	DECK-ID	F27	FORTRAN	3.3A	SUMMARY-102
DUMYAF	7F59	DECK-ID	F28	FORTRAN	3.3A	SUMMARY-102
CHECKF	7F59	DECK-IC	A20	FORTRAN	3.3A	SUMMARY-102
FGETC	80CC	DECK-ID	A21	FORTRAN	3.3A	SUMMARY-102
FORK	80E2	DECK-ID	A22	FORTRAN	3.3A	SUMMARY-102
PEQVS	82C4	DECK-ID	A25	FORTRAN	3.3A	SUMMARY-102
PRNTM	86EB	DECK-ID	A26	FORTRAN	3.3A	SUMMARY-102
STCFAR	877A	DECK-ID	A12	FORTRAN	3.3A	SUMMARY-102
SYMSCN	87AC	DECK-IC	A28	FORTRAN	3.3A	SUMMARY-102
ENCLOC	87CB	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOA	7774	DECK-ID	F02	FORTRAN	3.3A	SUMMARY-114
IOPRBA	77CD	DECK-ID	F08	FORTRAN	3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
CONV	7ABA	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
DIAG	7AED	DECK-ID	F04	FORTRAN	3.3A	SUMMARY-102
DIAGRG	7B99	DECK-IC	F65	FORTRAN	3.3A	SUMMARY-102
GETC	7BB5	DECK-ID	F13	FORTRAN	3.3A	SUMMARY-102
GETSYM	7BE0	DECK-IC	F12	FORTRAN	3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID	A07	FORTRAN	3.3A	SUMMARY-102
PACK	7C4D	DECK-ID	F09	FORTRAN	3.3A	SUMMARY-102
Q8PRMS	7C72	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STORE	7C8C	DECK-ID	F11	FORTRAN	3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-IC	A03	FORTRAN	3.3A	SUMMARY-102
LOCLAG	7E9F	DECK-ID	F29	FORTRAN	3.3A	SUMMARY-102
DUMYAG	7F58	DECK-IC	F30	FORTRAN	3.3A	SUMMARY-102
ARITH	7F6B	DECK-ID	A14	FORTRAN	3.3A	SUMMARY-102
IGETCF	85FC	DECK-ID	F14	FORTRAN	3.3A	SUMMARY-102

PUNT	8615	DECK-ID	A27	FORTRAN	3.3A	SUMMARY-102
TREE	864D	DECK-ID	A41	FORTRAN	3.3A	SUMMARY-102
ENDLCC	8B5B	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7C00	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GDA	7774	DECK-ID	F02	FORTRAN	3.3A	SUMMARY-114
IOPRBA	77CD	DECK-ID	F08	FORTRAN	3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
CONV	7ABA	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
DIAG	7AEC	DECK-ID	F04	FORTRAN	3.3A	SUMMARY-102
DIARGR	7B99	DECK-ID	F65	FORTRAN	3.3A	SUMMARY-102
GETC	7BB5	DECK-ID	F13	FORTRAN	3.3A	SUMMARY-102
GETSYH	7BE0	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID	A07	FORTRAN	3.3A	SUMMARY-102
PACK	7C4D	DECK-ID	F09	FORTRAN	3.3A	SUMMARY-102
QBPRMS	7C72	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STORE	7C8C	DECK-ID	F11	FORTRAN	3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-ID	A03	FORTRAN	3.3A	SUMMARY-102
LCCLAH	7E9F	DECK-ID	F31	FORTRAN	3.3A	SUMMARY-102
CUHYAH	7F58	DECK-ID	F32	FORTRAN	3.3A	SUMMARY-102
IGETCF	7F58	DECK-ID	F14	FORTRAN	3.3A	SUMMARY-102
MCDHXR	7F71	DECK-ID	A39	FORTRAN	3.3A	SUMMARY-102
PUNT	85FB	DECK-ID	A27	FORTRAN	3.3A	SUMMARY-102
ENDLCC	8633	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	700C	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GDA	7774	DECK-ID	F02	FORTRAN	3.3A	SUMMARY-114
IOPRBA	77CD	DECK-ID	F08	FORTRAN	3.3A	SUMMARY-114
CNVT	7A7C	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
CONV	7ABA	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
DIAG	7AEC	DECK-ID	F04	FORTRAN	3.3A	SUMMARY-102
DIARGR	7B99	DECK-ID	F65	FORTRAN	3.3A	SUMMARY-102

GETC	78B5	DECK-ID	F13	FORTRAN	3.3A	SUMMARY-102
GETSYM	78EC	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
OUTENT	7C19	DECK-ID	A07	FORTRAN	3.3A	SUMMARY-102
PACK	7C4C	DECK-ID	F09	FORTRAN	3.3A	SUMMARY-102
QBPRMS	7C72	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STGRE	7C8C	DECK-ID	F11	FORTRAN	3.3A	SUMMARY-102
SYMBCL	7CE3	DECK-ID	A03	FORTRAN	3.3A	SUMMARY-102
LOCLAI	7E9F	DECK-ID	F33	FORTRAN	3.3A	SUMMARY-102
DUMYAI	7F58	DECK-ID	F34	FORTRAN	3.3A	SUMMARY-102
IOSPR	7F71	DECK-ID	A37	FORTRAN	3.3A	SUMMARY-102
ENDDG	85A7	DECK-ID	A29	FORTRAN	3.3A	SUMMARY-102
RDLABL	86A8	DECK-ID	A11	FORTRAN	3.3A	SUMMARY-102
STCHAR	8746	DECK-ID	A12	FORTRAN	3.3A	SUMMARY-102
ENDLOC	8778	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FIN33A	7C0C	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOB	77E2	DECK-ID	F35	FORTRAN	3.3A	SUMMARY-102
CNVT	77FA	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
DUMMY	7838	DECK-ID	B01	FORTRAN	3.3A	SUMMARY-102
FCSTK	7945	DECK-ID	B02	FORTRAN	3.3A	SUMMARY-102
GETSYM	79CF	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
IGPRBB	7A08	DECK-ID	F36	FORTRAN	3.3A	SUMMARY-102
KCPART	78C6	DECK-ID	B03	FORTRAN	3.3A	SUMMARY-102
KCLTPT	7BF7	DECK-ID	B04	FORTRAN	3.3A	SUMMARY-102
KPCSTK	7C09	DECK-ID	B05	FORTRAN	3.3A	SUMMARY-102
KPC3PR	81C1	DECK-ID	B06	FORTRAN	3.3A	SUMMARY-102
KSYMGN	81C9	DECK-ID	B07	FORTRAN	3.3A	SUMMARY-102
LABKPC	8221	DECK-ID	B08	FORTRAN	3.3A	SUMMARY-102
LABLER	8235	DECK-ID	B09	FORTRAN	3.3A	SUMMARY-102
PUNT	8253	DECK-ID	B10	FORTRAN	3.3A	SUMMARY-102
CONV	8276	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
QBPRMS	82A9	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STOREB	82C3	DECK-ID	F37	FORTRAN	3.3A	SUMMARY-102
SYMBCL	82F7	DECK-ID	B11	FORTRAN	3.3A	SUMMARY-102
TSALCC	8394	DECK-ID	B12	FORTRAN	3.3A	SUMMARY-102
LOCLBA	8455	DECK-ID	F38	FORTRAN	3.3A	SUMMARY-102
DUMYBA	8511	DECK-ID	F39	FORTRAN	3.3A	SUMMARY-102
PHASEE	8554	DECK-ID	B21	FORTRAN	3.3A	SUMMARY-102
INXRST	89F1	DECK-ID	B19	FORTRAN	3.3A	SUMMARY-102
NOPRCC	8A05	DECK-ID	B20	FORTRAN	3.3A	SUMMARY-102
READIR	8A42	DECK-ID	B22	FORTRAN	3.3A	SUMMARY-102
ENDLCC	8A9A	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOB	77E2	DECK-ID	F35	FURTRAN	3.3A	SUMMARY-102
CNVT	77FA	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
DUMMY	7838	DECK-ID	B01	FORTRAN	3.3A	SUMMARY-102
FCHSTK	7945	DECK-ID	B02	FORTRAN	3.3A	SUMMARY-102
GETSYM	79CF	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
IOPRBB	7A08	DECK-ID	F36	FORTRAN	3.3A	SUMMARY-102
KCPART	7BC6	DECK-ID	B03	FORTRAN	3.3A	SUMMARY-102
KCUTPT	7BF7	DECK-ID	B04	FORTRAN	3.3A	SUMMARY-102
KPCSTK	7C09	DECK-ID	B05	FORTRAN	3.3A	SUMMARY-102
KPC3PR	81C1	DECK-ID	B06	FORTRAN	3.3A	SUMMARY-102
KSYGMN	81D9	DECK-ID	B07	FORTRAN	3.3A	SUMMARY-102
LABKPC	8221	DECK-ID	B08	FORTRAN	3.3A	SUMMARY-102
LABLER	8235	DECK-ID	B09	FORTRAN	3.3A	SUMMARY-102
PUNT	8253	DECK-ID	B10	FORTRAN	3.3A	SUMMARY-102
CONV	8276	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
QBPRMS	82A9	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STOREB	82C3	DECK-ID	F37	FORTRAN	3.3A	SUMMARY-102
SYMBCL	82F7	DECK-ID	B11	FORTRAN	3.3A	SUMMARY-102
TSALCC	8394	DECK-ID	B12	FORTRAN	3.3A	SUMMARY-102
LOCLBB	8455	DECK-ID	F40	FORTRAN	3.3A	SUMMARY-102
DUMYBB	8516	DECK-ID	F41	FORTRAN	3.3A	SUMMARY-102
AFIDL	851D	DECK-ID	B25	FORTRAN	3.3A	SUMMARY-102
ASSET	859C	DECK-ID	B13	FORTRAN	3.3A	SUMMARY-102
BANANA	860C	DECK-ID	B14	FORTRAN	3.3A	SUMMARY-102
END	86D6	DECK-ID	B16	FORTRAN	3.3A	SUMMARY-102
ENTCCD	8727	DECK-ID	B17	FORTRAN	3.3A	SUMMARY-102
INXRST	87F7	DECK-ID	B19	FORTRAN	3.3A	SUMMARY-102
SUBFLN	880B	DECK-ID	B23	FORTRAN	3.3A	SUMMARY-102
INTRAM	8872	DECK-ID	B29	FORTRAN	3.3A	SUMMARY-102
ENCLUC	8A87	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOB	77E2	DECK-ID	F35	FORTRAN	3.3A	SUMMARY-102
CNVT	77FA	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
DUMY	7838	DECK-ID	B01	FORTRAN	3.3A	SUMMARY-102
FCMSTK	7945	DECK-ID	B02	FORTRAN	3.3A	SUMMARY-102
GETSYM	79CF	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
IDPRBB	7A08	DECK-ID	F36	FORTRAN	3.3A	SUMMARY-102
KCPART	78C6	DECK-ID	B03	FORTRAN	3.3A	SUMMARY-102
KOUTPT	7BF7	DECK-ID	B04	FORTRAN	3.3A	SUMMARY-102
KPCSTK	7C09	DECK-ID	B05	FORTRAN	3.3A	SUMMARY-102
KPC3PR	81C1	DECK-ID	B06	FORTRAN	3.3A	SUMMARY-102
KSYMGN	81D9	DECK-ID	B07	FORTRAN	3.3A	SUMMARY-102
LABKPC	8221	DECK-ID	B08	FORTRAN	3.3A	SUMMARY-102
LABLER	8235	DECK-ID	B09	FORTRAN	3.3A	SUMMARY-102
PUNT	8253	DECK-ID	B1C	FORTRAN	3.3A	SUMMARY-102
CONV	8276	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
QBPRMS	82A9	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STCREB	82C3	DECK-ID	F37	FORTRAN	3.3A	SUMMARY-102
SYMBCL	82F7	DECK-ID	B11	FORTRAN	3.3A	SUMMARY-102
TSALCC	8394	DECK-ID	B12	FORTRAN	3.3A	SUMMARY-102
LOCLBC	8455	DECK-ID	F42	FORTRAN	3.3A	SUMMARY-102
DUMYBC	8514	DECK-ID	F43	FORTRAN	3.3A	SUMMARY-102
ASUPER	8527	DECK-ID	B26	FORTRAN	3.3A	SUMMARY-102
ARAYSZ	85FA	DECK-ID	A42	FORTRAN	3.3A	SUMMARY-102
BGINDD	867B	DECK-ID	B15	FORTRAN	3.3A	SUMMARY-102
CGCTC	8784	DECK-ID	B27	FORTRAN	3.3A	SUMMARY-102
HELEN	8815	DECK-ID	B18	FORTRAN	3.3A	SUMMARY-102
SYMSCN	896C	DECK-ID	A28	FORTRAN	3.3A	SUMMARY-102
ENDLCC	898E	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOB	77E2	DECK-ID	F35	FORTRAN	3.3A	SUMMARY-102
CNVT	77FA	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
DUMY	7838	DECK-ID	B01	FORTRAN	3.3A	SUMMARY-102
FCMSTK	7945	DECK-ID	B02	FORTRAN	3.3A	SUMMARY-102
GETSYM	79CF	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
IDPRBB	7A08	DECK-ID	F36	FORTRAN	3.3A	SUMMARY-102
KCPART	78C6	DECK-ID	B03	FORTRAN	3.3A	SUMMARY-102
KOUTPT	7BF7	DECK-ID	B04	FORTRAN	3.3A	SUMMARY-102
KPCSTK	7C09	DECK-ID	B05	FORTRAN	3.3A	SUMMARY-102
KPC3PR	81C1	DECK-ID	B06	FORTRAN	3.3A	SUMMARY-102

KSYMGN	81D9	DECK-ID	B07	FORTRAN	3.3A	SUMMARY-102
LABKPC	8221	DECK-ID	B08	FORTRAN	3.3A	SUMMARY-102
LABLER	8235	DECK-ID	B09	FORTRAN	3.3A	SUMMARY-102
PUNT	8253	DECK-ID	B10	FORTRAN	3.3A	SUMMARY-102
CONV	8276	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
Q8PRMS	82A9	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STGREB	82C3	DECK-ID	F37	FORTRAN	3.3A	SUMMARY-102
SYMBOL	82F7	DECK-ID	B11	FORTRAN	3.3A	SUMMARY-102
TSALOC	8394	DECK-ID	B12	FORTRAN	3.3A	SUMMARY-102
LOCLBD	8455	DECK-ID	F44	FORTRAN	3.3A	SUMMARY-102
DUMYBC	8512	DECK-ID	F45	FORTRAN	3.3A	SUMMARY-102
ARITHR	851F	DECK-ID	B34	FORTRAN	3.3A	SUMMARY-102
FINK	872A	DECK-ID	B28	FORTRAN	3.3A	SUMMARY-102
INTRAM	87E6	DECK-ID	B29	FORTRAN	3.3A	SUMMARY-102
ENDLOC	89FB	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOB	77E2	DECK-ID	F35	FORTRAN	3.3A	SUMMARY-102
CNVT	77FA	DECK-ID	A01	FORTRAN	3.3A	SUMMARY-102
DUMY	7838	DECK-ID	B01	FORTRAN	3.3A	SUMMARY-102
FCPSTK	7945	DECK-ID	B02	FORTRAN	3.3A	SUMMARY-102
GETSYM	79CF	DECK-ID	F12	FORTRAN	3.3A	SUMMARY-102
IOPRBB	7A08	DECK-ID	F36	FORTRAN	3.3A	SUMMARY-102
KCPART	7BC6	DECK-ID	B03	FORTRAN	3.3A	SUMMARY-102
KOUTPT	7BF7	DECK-ID	B04	FORTRAN	3.3A	SUMMARY-102
KPCSTK	7C09	DECK-ID	B05	FORTRAN	3.3A	SUMMARY-102
KPC3PR	81C1	DECK-ID	B06	FORTRAN	3.3A	SUMMARY-102
KSYMGN	81D9	DECK-ID	B07	FORTRAN	3.3A	SUMMARY-102
LABKPC	8221	DECK-ID	B08	FORTRAN	3.3A	SUMMARY-102
LABLER	8235	DECK-ID	B09	FORTRAN	3.3A	SUMMARY-102
PUNT	8253	DECK-ID	B10	FORTRAN	3.3A	SUMMARY-102
CONV	8276	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
Q8PRMS	82A9	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
STGREB	82C3	DECK-ID	F37	FORTRAN	3.3A	SUMMARY-102
SYMBOL	82F7	DECK-ID	B11	FORTRAN	3.3A	SUMMARY-102
TSALCC	8394	DECK-ID	B12	FORTRAN	3.3A	SUMMARY-102
LOCLBE	8455	DECK-ID	F46	FORTRAN	3.3A	SUMMARY-102
DUMYBE	8511	DECK-ID	F47	FORTRAN	3.3A	SUMMARY-102
ACP	8528	DECK-ID	B24	FORTRAN	3.3A	SUMMARY-102
ENDLCC	8A38	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7C0C	DECK-ID	F01	F0RTRAN	3.3A	SUMMARY-132
GOB	77E2	DECK-ID	F35	FCRTRAN	3.3A	SUMMARY-102
CNVT	77FA	DECK-ID	A01	F0RTRAN	3.3A	SUMMARY-102
DUMHY	7838	DECK-ID	B01	F0RTRAN	3.3A	SUMMARY-102
FCMSTK	7945	DECK-ID	B02	F0RTRAN	3.3A	SUMMARY-102
GETSYM	79CF	DECK-ID	F12	F0RTRAN	3.3A	SUMMARY-102
IOPRBB	7A08	DECK-ID	F36	FCRTRAN	3.3A	SUMMARY-102
KCPART	7BC6	DECK-ID	B03	F0RTRAN	3.3A	SUMMARY-102
KOUTPT	7BF7	DECK-ID	B04	F0RTRAN	3.3A	SUMMARY-102
KPCSTK	7CC9	DECK-ID	B05	F0RTRAN	3.3A	SUMMARY-102
KPC3PR	81C1	DECK-ID	B06	F0RTRAN	3.3A	SUMMARY-102
KSYMGN	81D9	DECK-ID	B07	F0RTRAN	3.3A	SUMMARY-102
LABKPC	8221	DECK-ID	B08	FCRTRAN	3.3A	SUMMARY-102
LABLER	8235	DECK-ID	B09	F0RTRAN	3.3A	SUMMARY-102
PUNT	8253	DECK-ID	B10	F0RTRAN	3.3A	SUMMARY-102
CONV	8276	DECK-ID	F03	F0RTRAN	3.3A	SUMMARY-102
QBPRMS	82A9	DECK-ID	F10	FCRTRAN	3.3A	SUMMARY-102
STOREB	82C3	DECK-ID	F37	FCRTRAN	3.3A	SUMMARY-102
SYMBOL	82F7	DECK-ID	B11	FCRTRAN	3.3A	SUMMARY-102
TSALCC	8394	DECK-ID	B12	F0RTRAN	3.3A	SUMMARY-102
LCCLBF	8455	DECK-ID	F48	F0RTRAN	3.3A	SUMMARY-102
DUMYBF	8515	DECK-ID	F49	F0RTRAN	3.3A	SUMMARY-102
SUBPR3	851C	DECK-ID	B33	F0RTRAN	3.3A	SUMMARY-102
INTRAM	856E	DECK-ID	B29	FCRTRAN	3.3A	SUMMARY-102
PARTSB	8783	DECK-ID	B30	F0RTRAN	3.3A	SUMMARY-102
SUBPR1	8831	DECK-ID	B31	FCRTRAN	3.3A	SUMMARY-102
SUBPR2	886C	DECK-ID	B32	FCRTRAN	3.3A	SUMMARY-102
ENDLCC	8955	DECK-ID	F16	FURTRAN	3.3A	SUMMARY-102

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FTN33A	7C00	DECK-ID	F01	F0RTRAN	3.3A	SUMMARY-132
GOC	7CB4	DECK-ID	F50	FCRTRAN	3.3A	SUMMARY-102
IOPRBC	7CD4	DECK-ID	F51	FCRTRAN	3.3A	SUMMARY-112
BKDNW	7F49	DECK-ID	C01	F0RTRAN	3.3A	SUMMARY-102
BLDUP	7FA8	DECK-ID	C02	F0RTRAN	3.3A	SUMMARY-102
BSS	7FEB	DECK-ID	C03	F0RTRAN	3.3A	SUMMARY-102
CHKWD	8CC9	DECK-ID	C04	FCRTRAN	3.3A	SUMMARY-102
CCN	8184	DECK-ID	C07	F0RTRAN	3.3A	SUMMARY-102

COUNT	81D7	DECK-ID	C08	FORTRAN	3.3A	SUMMARY-102
DATAS	81F5	DECK-ID	C09	FORTRAN	3.3A	SUMMARY-102
GETSYM	82DA	DECK-ID	C10	FORTRAN	3.3A	SUMMARY-102
INOUT	837E	DECK-ID	C11	FORTRAN	3.3A	SUMMARY-102
LABEL	83ED	DECK-ID	C14	FORTRAN	3.3A	SUMMARY-102
LABIN	840F	DECK-ID	C15	FORTRAN	3.3A	SUMMARY-102
QBPRMS	8475	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
REED	848F	DECK-ID	C17	FORTRAN	3.3A	SUMMARY-102
SYMSCN	84EC	DECK-ID	C19	FORTRAN	3.3A	SUMMARY-102
LOCLCA	8508	DECK-ID	F52	FORTRAN	3.3A	SUMMARY-102
DUMYCA	85A4	DECK-ID	F53	FORTRAN	3.3A	SUMMARY-102
PHASEC	85C7	DECK-ID	C13	FORTRAN	3.3A	SUMMARY-102
ENCLCC	898C	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	70C0	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOC	7CB4	DECK-ID	F50	FORTRAN	3.3A	SUMMARY-102
IOPRBC	7CD4	DECK-ID	F51	FORTRAN	3.3A	SUMMARY-112
BKDHN	7F49	DECK-ID	C01	FORTRAN	3.3A	SUMMARY-102
BLDUP	7FA8	DECK-ID	C02	FORTRAN	3.3A	SUMMARY-102
BSS	7FEB	DECK-ID	C03	FORTRAN	3.3A	SUMMARY-102
CHKWC	8009	DECK-ID	C04	FORTRAN	3.3A	SUMMARY-102
CON	8184	DECK-ID	C07	FORTRAN	3.3A	SUMMARY-102
CCUNT	81D7	DECK-ID	C08	FORTRAN	3.3A	SUMMARY-102
DATAS	81F5	DECK-ID	C09	FORTRAN	3.3A	SUMMARY-102
GETSYM	82DA	DECK-ID	C10	FORTRAN	3.3A	SUMMARY-102
INOUT	837E	DECK-ID	C11	FORTRAN	3.3A	SUMMARY-102
LABEL	83ED	DECK-ID	C14	FORTRAN	3.3A	SUMMARY-102
LABIN	840F	DECK-ID	C15	FORTRAN	3.3A	SUMMARY-102
QBPRMS	8475	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
REED	848F	DECK-ID	C17	FORTRAN	3.3A	SUMMARY-102
SYMSCN	84EC	DECK-ID	C19	FORTRAN	3.3A	SUMMARY-102
LOCLCB	8508	DECK-ID	F54	FORTRAN	3.3A	SUMMARY-102
CHCP	85A8	DECK-ID	C05	FORTRAN	3.3A	SUMMARY-102
CL12	883C	DECK-ID	C06	FORTRAN	3.3A	SUMMARY-102
SKIP	892C	DECK-ID	C18	FORTRAN	3.3A	SUMMARY-102
IXCPT	8983	DECK-ID	C12	FORTRAN	3.3A	SUMMARY-102
QXLD	8AC4	DECK-ID	C16	FORTRAN	3.3A	SUMMARY-102
ENDLCC	8B58	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A 7000 DECK-ID F01 FORTRAN 3.3A SUMMARY-132
GOOD 7534 DECK-ID F55 FORTRAN 3.3A SUMMARY-102
INDEX 755D DECK-ID D01 FORTRAN 3.3A SUMMARY-102
IOPRBC 7579 DECK-ID F56 FORTRAN 3.3A SUMMARY-112
NPUNCH 7815 DECK-ID D02 FORTRAN 3.3A SUMMARY-102
QBPRPS 795C DECK-ID F1C FORTRAN 3.3A SUMMARY-102
LOCLDA 7976 DECK-ID F58 FORTRAN 3.3A SUMMARY-102
DUMYDA 7A32 DECK-ID F59 FORTRAN 3.3A SUMMARY-102
PHASE6 7A39 DECK-ID D03 FORTRAN 3.3A SUMMARY-102
BEGIN0 7ADA DECK-ID D21 FORTRAN 3.3A SUMMARY-102
CONV 7CE7 DECK-ID F57 FORTRAN 3.3A SUMMARY-102
FINISH 7D20 DECK-ID D22 FORTRAN 3.3A SUMMARY-102
GETSYM 7ED2 DECK-ID D16 FORTRAN 3.3A SUMMARY-102
IACON 7F00 DECK-ID D17 FORTRAN 3.3A SUMMARY-102
HCON 7F5A DECK-ID D18 FORTRAN 3.3A SUMMARY-102
NWRITE 7F87 DECK-ID D19 FORTRAN 3.3A SUMMARY-102
PACK 7FC8 DECK-ID F09 FORTRAN 3.3A SUMMARY-102
SYMSCN 7FED DECK-ID D20 FORTRAN 3.3A SUMMARY-102
ENDLGC 80C9 DECK-ID F16 FORTRAN 3.3A SUMMARY-102

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FTN33A 7000 DECK-ID F01 FORTRAN 3.3A SUMMARY-132
GOOD 7534 DECK-ID F55 FORTRAN 3.3A SUMMARY-102
INDEX 755D DECK-ID D01 FORTRAN 3.3A SUMMARY-102
IOPRBC 7579 DECK-ID F56 FORTRAN 3.3A SUMMARY-112
NPUNCH 7815 DECK-ID C02 FORTRAN 3.3A SUMMARY-102
QBPRPS 795C DECK-ID F1C FORTRAN 3.3A SUMMARY-102
LOCLDB 7976 DECK-ID F6C FORTRAN 3.3A SUMMARY-102
DUMYCB 7A32 DECK-ID F61 FORTRAN 3.3A SUMMARY-102
AMOLT 7A39 DECK-ID D04 FORTRAN 3.3A SUMMARY-102
BKDWN 8CC1 DECK-ID D06 FORTRAN 3.3A SUMMARY-102
CGUNT 8C6A DECK-ID D07 FORTRAN 3.3A SUMMARY-102
GETSYM 8C88 DECK-ID D14 FORTRAN 3.3A SUMMARY-102
LABCUT 8CC4 DECK-ID D08 FORTRAN 3.3A SUMMARY-102
NP2OLT 61A3 DECK-ID D09 FORTRAN 3.3A SUMMARY-102
RBCX 81D2 DECK-ID D10 FORTRAN 3.3A SUMMARY-102
RBPX 820E DECK-ID D11 FORTRAN 3.3A SUMMARY-102
SYMSCN 8238 DECK-ID D15 FORTRAN 3.3A SUMMARY-102
TABDEC 825F DECK-ID D12 FORTRAN 3.3A SUMMARY-102
UNPUNC 82E3 DECK-ID D13 FORTRAN 3.3A SUMMARY-102

ENDLOC 82F9 DECK-ID F16 FORTRAN 3.3A SUMMARY-102

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FTN33A	7000	DECK-ID F01	FORTRAN 3.3A	SUMMARY-132
GOCC	7534	DECK-ID F55	FORTRAN 3.3A	SUMMARY-102
INDEX	755C	DECK-ID D01	FORTRAN 3.3A	SUMMARY-102
IOPRBD	7579	DECK-ID F56	FORTRAN 3.3A	SUMMARY-112
NPLNCH	7815	DECK-ID D02	FORTRAN 3.3A	SUMMARY-102
C8PRMS	795C	DECK-ID F10	FORTRAN 3.3A	SUMMARY-102
LOCLDC	7976	DECK-ID F62	FORTRAN 3.3A	SUMMARY-102
ADMAX	7A32	DECK-ID D05	FORTRAN 3.3A	SUMMARY-102
GETSYM	7C38	DECK-ID D14	FORTRAN 3.3A	SUMMARY-102
TABDEC	7C74	DECK-ID D12	FORTRAN 3.3A	SUMMARY-102
SYMSCN	7CF8	DECK-ID D15	FORTRAN 3.3A	SUMMARY-102
ENDLOC	7D1F	DECK-ID F16	FORTRAN 3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID F01	FORTRAN 3.3A	SUMMARY-132
GCE	7534	DECK-ID F63	FORTRAN 3.3A	SUMMARY-102
INDEX	755C	DECK-ID E01	FORTRAN 3.3A	SUMMARY-102
IOPRBD	7578	DECK-ID F56	FORTRAN 3.3A	SUMMARY-112
NPUNCH	7814	DECK-ID E02	FORTRAN 3.3A	SUMMARY-102
C8PRMS	7958	DECK-ID F10	FORTRAN 3.3A	SUMMARY-102
LOCLDA	7975	DECK-ID F58	FORTRAN 3.3A	SUMMARY-102
CUMYDA	7A31	DECK-ID F59	FORTRAN 3.3A	SUMMARY-102
PHASE6	7A38	DECK-ID E03	FORTRAN 3.3A	SUMMARY-102
BEGINC	7AC9	DECK-ID E19	FORTRAN 3.3A	SUMMARY-102
CCNV	7C88	DECK-ID F57	FORTRAN 3.3A	SUMMARY-102
FINISH	7CC1	DECK-ID E2C	FORTRAN 3.3A	SUMMARY-102
GETSYM	7E45	DECK-ID E14	FORTRAN 3.3A	SUMMARY-102
IACON	7E92	DECK-ID E15	FORTRAN 3.3A	SUMMARY-102
IHCCN	7EEC	DECK-ID E16	FORTRAN 3.3A	SUMMARY-102
NWRITE	7F18	DECK-ID E17	FORTRAN 3.3A	SUMMARY-102
PACK	7F59	DECK-ID F09	FORTRAN 3.3A	SUMMARY-102

SETPRT	7F7E	DECK-ID	E18	FORTRAN	3.3A	SUMMARY-102
SYMSCN	8104	DECK-ID	D20	FORTRAN	3.3A	SUMMARY-102
ENDLCC	8120	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOE	7534	DECK-ID	F63	FORTRAN	3.3A	SUMMARY-102
INDEX	755C	DECK-ID	E01	FORTRAN	3.3A	SUMMARY-102
ICPRBD	7578	DECK-ID	F56	FORTRAN	3.3A	SUMMARY-112
NPUNCH	7814	DECK-ID	E02	FORTRAN	3.3A	SUMMARY-102
Q8PRMS	7958	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
LOCLDB	7975	DECK-ID	F60	FORTRAN	3.3A	SUMMARY-102
DUPYDB	7A31	DECK-ID	F61	FORTRAN	3.3A	SUMMARY-102
AMOUT	7A38	DECK-ID	E04	FORTRAN	3.3A	SUMMARY-102
BKDOWN	600A	DECK-ID	E06	FORTRAN	3.3A	SUMMARY-102
CONV	8073	DECK-ID	F57	FORTRAN	3.3A	SUMMARY-102
CCUNT	80AC	DECK-ID	E07	FORTRAN	3.3A	SUMMARY-102
GETSYM	8CC3	DECK-ID	E14	FORTRAN	3.3A	SUMMARY-102
IACON	8110	DECK-ID	E15	FORTRAN	3.3A	SUMMARY-102
IHCON	816A	DECK-ID	E16	FORTRAN	3.3A	SUMMARY-102
LABCUT	8196	DECK-ID	E08	FORTRAN	3.3A	SUMMARY-102
NP2CLT	82B4	DECK-ID	E09	FORTRAN	3.3A	SUMMARY-102
NWRITE	82EC	DECK-ID	E17	FORTRAN	3.3A	SUMMARY-102
PACK	832D	DECK-ID	F09	FORTRAN	3.3A	SUMMARY-102
RBCX	8352	DECK-ID	E10	FORTRAN	3.3A	SUMMARY-102
RRPK	838F	DECK-ID	E11	FORTRAN	3.3A	SUMMARY-102
SETPRT	8389	DECK-ID	E18	FORTRAN	3.3A	SUMMARY-102
SYMSCN	853F	DECK-ID	C20	FORTRAN	3.3A	SUMMARY-102
TABDEC	855E	DECK-ID	E12	FORTRAN	3.3A	SUMMARY-102
UNPUNC	85D7	DECK-ID	E13	FORTRAN	3.3A	SUMMARY-102
ENDLCC	85EC	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132

GOE	7534	DECK-ID	F63	FORTRAN	3.3A	SUMMARY-102
INDEX	755C	DECK-ID	E01	FORTRAN	3.3A	SUMMARY-102
IDPRBD	7578	DECK-ID	F56	FORTRAN	3.3A	SUMMARY-112
NPUNCH	7814	DECK-ID	E02	FORTRAN	3.3A	SUMMARY-102
QBPRMS	795B	DECK-ID	F10	FORTRAN	3.3A	SUMMARY-102
LOCLDC	7975	DECK-ID	F62	FORTRAN	3.3A	SUMMARY-102
ADMAX	7A31	DECK-ID	E05	FORTRAN	3.3A	SUMMARY-102
GETSYM	7C37	DECK-ID	E14	FORTRAN	3.3A	SUMMARY-102
SYMSCN	7C84	DECK-ID	D20	FORTRAN	3.3A	SUMMARY-102
TABDEC	7CA0	DECK-ID	E12	FORTRAN	3.3A	SUMMARY-102
ENCLCC	7D1C	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7C00	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
GOF	7534	DECK-ID	F66	FORTRAN	3.3A	SUMMARY-102
PHASEF	753E	DECK-ID	G01	FORTRAN	3.3A	SUMMARY-102
GETSYM	77CF	DECK-ID	G02	FORTRAN	3.3A	SUMMARY-102
ACGN	77FE	DECK-ID	G03	FORTRAN	3.3A	SUMMARY-102
HCON	785D	DECK-ID	G04	FORTRAN	3.3A	SUMMARY-102
LWRITE	789C	DECK-ID	G05	FORTRAN	3.3A	SUMMARY-102
MATCH	7917	DECK-ID	G06	FORTRAN	3.3A	SUMMARY-102
SOPT	796A	DECK-ID	G07	FORTRAN	3.3A	SUMMARY-102
IREPAK	79CF	DECK-ID	G08	FORTRAN	3.3A	SUMMARY-102
SYMSCN	7A27	DECK-ID	D2C	FORTRAN	3.3A	SUMMARY-102
CONV	7A43	DECK-ID	F03	FORTRAN	3.3A	SUMMARY-102
PACK	7A76	DECK-ID	F09	FORTRAN	3.3A	SUMMARY-102
IDPRBD	7A9B	DECK-ID	F56	FORTRAN	3.3A	SUMMARY-112
QBPRMS	7C37	DECK-ID	F1C	FORTRAN	3.3A	SUMMARY-102
GETSYR	7C51	DECK-ID	F67	FORTRAN	3.3A	SUMMARY-102
TITLE	7C66	DECK-ID	F68	FORTRAN	3.3A	SUMMARY-102
IFCVPF	7F2B	DECK-ID	F69	FORTRAN	3.3A	SUMMARY-102
ENCLCC	7F42	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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FTN33A	7000	DECK-ID	F01	FORTRAN	3.3A	SUMMARY-132
ERRMSG	7CB4	DECK-ID	F7C	FORTRAN	3.3A	SUMMARY-102
IDPRBD	8C3E	DECK-ID	F56	FORTRAN	3.3A	SUMMARY-112
ENCLCC	8EDA	DECK-ID	F16	FORTRAN	3.3A	SUMMARY-102

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*CTG, FORTRAN 3.3A INSTALL COMPLETE

FORTRAN 3B INSTALL

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JCB, INSTAL, FTN33E

1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0

DATE OF RUN: 09/29/78

SYSTEM ID: CH SHIT AGAIN

(09/29/78)

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IIIIIIIIIIII  NNN  NNN  SSSSSSSSSS  TTTTTTTTTTTT  AAAAAAAAAA  LLL
IIIIIIIIIIII  NNN  NNN  SSSSSSSSSSSS  TTTTTTTTTTTT  AAAAAAAAAA  LLL
IIIIIIIIIIII  NNN  NNN  SSSSSSSSSSSS  TTTTTTTTTTTT  AAAAAAAAAA  LLL
   III  NNNN  NNN  SSS  SSS  TTT  AAA  AAA  LLL
   III  NNNNN  NNN  SSS  TTT  AAA  AAA  LLL
   III  NNNNN  NNN  SSS  TTT  AAA  AAA  LLL
   III  NNNNN  NNN  SSS  TTT  AAA  AAA  LLL
   III  NNN  NNN  NNN  SSSSSSSSSSSS  TTT  AAAAAAAAAA  LLL
   III  NNN  NNN  NNN  SSSSSSSSSSSS  TTT  AAAAAAAAAA  LLL
   III  NNN  NNN  NNN  SSSSSSSSSSSS  TTT  AAAAAAAAAA  LLL
   III  NNN  NNN  NNN  SSSSSSSSSSSS  TTT  AAAAAAAAAA  LLL
   III  NNN  NNN  NNN  SSS  SSS  TTT  AAA  AAA  LLL
   III  NNN  NNN  NNN  SSS  SSS  TTT  AAA  AAA  LLL
   III  NNN  NNN  NNN  SSS  SSS  TTT  AAA  AAA  LLL
IIIIIIIIIIII  NNN  NNN  SSSSSSSSSSSS  TTT  AAA  AAA  LLLLLLLLLLLLLL
IIIIIIIIIIII  NNN  NNN  SSSSSSSSSSSS  TTT  AAA  AAA  LLLLLLLLLLLLLL
IIIIIIIIIIII  NNN  NNN  SSSSSSSSSSSS  TTT  AAA  AAA  LLLLLLLLLLLLLL
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*CTC, FORTRAN 3.3B COMPILER INSTALL
 *CTC, COPYRIGHT CONTROL DATA CORPORATION 1978
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FTN33B	8C00	DECK-10	01F	FORTRAN	3.3B	SUMMARY-132
GOA	8774	DECK-10	02F	FORTRAN	3.3B	SUMMARY-114
PHASEA	87CF	DECK-10	07A	FORTRAN	3.3B	SUMMARY-102
ICPRBA	8D1A	DECK-10	08F	FORTRAN	3.3B	SUMMARY-114
Q8PRMS	9GCO	DECK-10	10F	FORTRAN	3.3B	SUMMARY-102
CFIVDC	90CA	DECK-10	34A	FORTRAN	3.3B	SUMMARY-102
CKNAME	9138	DECK-10	36A	FORTRAN	3.3B	SUMMARY-102
CNVT	9148	DECK-10	01A	FORTRAN	3.3B	SUMMARY-102
CONV	9186	DECK-10	03F	FORTRAN	3.3B	SUMMARY-102
DIAG	9189	DECK-10	04F	FORTRAN	3.3B	SUMMARY-102
DIAGRG	9265	DECK-10	37F	FORTRAN	3.3B	SUMMARY-102
DXP9	9281	DECK-10	05F	FORTRAN	3.3B	SUMMARY-102
DFLCT	93AD	DECK-10	06F	FORTRAN	3.3B	SUMMARY-102
DUMPVL	95E4	DECK-10	35F	FORTRAN	3.3B	SUMMARY-102
GETC	9613	DECK-10	14F	FORTRAN	3.3B	SUMMARY-102
GETF	963E	DECK-10	04A	FORTRAN	3.3B	SUMMARY-102
GETSYM	9A4B	DECK-10	07F	FORTRAN	3.3B	SUMMARY-102
GPUT	9A84	DECK-10	02A	FORTRAN	3.3B	SUMMARY-102
IGETCF	9AAD	DECK-10	15F	FORTRAN	3.3B	SUMMARY-102
PACK	9AC6	DECK-10	09F	FORTRAN	3.3B	SUMMARY-102
RDLABL	9AE6	DECK-10	10A	FORTRAN	3.3B	SUMMARY-102
STORE	9E69	DECK-10	11F	FORTRAN	3.3B	SUMMARY-102
SYMBCL	9E6F	DECK-10	03A	FORTRAN	3.3B	SUMMARY-102
ENDDC	9D9C	DECK-10	29A	FORTRAN	3.3B	SUMMARY-102
GNST	9EA1	DECK-10	05A	FORTRAN	3.3B	SUMMARY-114
HEADER	A3D7	DECK-10	36F	FORTRAN	3.3B	SUMMARY-102
OPTICN	A41C	DECK-10	16F	FORTRAN	3.3B	SUMMARY-114
CUTENT	A48B	DECK-10	06A	FORTRAN	3.3B	SUMMARY-102
PLABEL	A4LF	DECK-10	08A	FORTRAN	3.3B	SUMMARY-102
STCHAR	A545	DECK-10	11A	FORTRAN	3.3B	SUMMARY-102
TYPE	A577	DECK-10	12A	FORTRAN	3.3B	SUMMARY-102
SAVEID	A7C3	DECK-10	13A	FORTRAN	3.3B	SUMMARY-102
LOGCLAI	A879	DECK-10	12F	FORTRAN	3.3B	SUMMARY-102
DUMYAI	A93F	DECK-10	13F	FORTRAN	3.3B	SUMMARY-109

Q8QBDS	A9A6	DECK-10	09A	FLRTRAN	3.38	SUMMARY-102
ENDLCC	A9A6	DECK-10	17F	FLRTRAN	3.38	SUMMARY-102

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FTN330	E000	DECK-10	01F	FLRTRAN	3.38	SUMMARY-132
GCA	8774	DECK-10	02F	FLRTRAN	3.38	SUMMARY-114
PHASEA	87CF	DECK-10	07A	FLRTRAN	3.38	SUMMARY-102
IOPREA	8L1A	DECK-10	08F	FLRTRAN	3.38	SUMMARY-114
C8PRFS	9000	DECK-10	10F	FLRTRAN	3.38	SUMMARY-102
CFIVCC	90LA	DECK-10	34A	FLRTRAN	3.38	SUMMARY-102
CKNAME	9138	DECK-10	36A	FLRTRAN	3.38	SUMMARY-102
CMVT	9148	DECK-10	01A	FLRTRAN	3.38	SUMMARY-102
CCNV	9186	DECK-10	03F	FLRTRAN	3.38	SUMMARY-102
DIAG	9189	DECK-10	04F	FLRTRAN	3.38	SUMMARY-102
DIAGRC	9285	DECK-10	37F	FLRTRAN	3.38	SUMMARY-102
CXP9	9281	DECK-10	05F	FLRTRAN	3.38	SUMMARY-102
CFLCT	93AD	DECK-10	06F	FLRTRAN	3.38	SUMMARY-102
DUMVCL	95E4	DECK-10	35F	FLRTRAN	3.38	SUMMARY-102
GETC	9613	DECK-10	14F	FLRTRAN	3.38	SUMMARY-102
GETF	963E	DECK-10	04A	FLRTRAN	3.38	SUMMARY-102
GETSYM	9A43	DECK-10	07F	FLRTRAN	3.38	SUMMARY-102
GPUT	9A84	DECK-10	02A	FLRTRAN	3.38	SUMMARY-102
IGETCF	9AAL	DECK-10	15F	FLRTRAN	3.38	SUMMARY-102
PALK	9AC6	DECK-10	09F	FLRTRAN	3.38	SUMMARY-102
RCLABL	9ALB	DECK-10	10A	FLRTRAN	3.38	SUMMARY-102
STGR	9689	DECK-10	11F	FLRTRAN	3.38	SUMMARY-102
SYMBLL	98CF	DECK-10	03A	FLRTRAN	3.38	SUMMARY-102
ENCLL	9D9C	DECK-10	29A	FLRTRAN	3.38	SUMMARY-102
GNST	9EAI	DECK-10	05A	FLRTRAN	3.38	SUMMARY-114
HEADER	A3D7	DECK-10	36F	FLRTRAN	3.38	SUMMARY-102
CPTICN	A41C	DECK-10	16F	FLRTRAN	3.38	SUMMARY-114
CUTENT	A488	DECK-10	06A	FLRTRAN	3.38	SUMMARY-102
PLABEL	A4EF	DECK-10	08A	FLRTRAN	3.38	SUMMARY-102
STCHAR	A545	DECK-10	11A	FLRTRAN	3.38	SUMMARY-102
TYPE	A577	DECK-10	12A	FLRTRAN	3.38	SUMMARY-102
SAVEIL	A7D3	DECK-10	13A	FLRTRAN	3.38	SUMMARY-102
LCCLAZ	A879	DECK-10	18F	FLRTRAN	3.38	SUMMARY-104
DUMYAZ	A93F	DECK-10	19F	FLRTRAN	3.38	SUMMARY-104
BYEQFR	A9A6	DECK-10	19A	FLRTRAN	3.38	SUMMARY-102
CHECKF	AE9A	DECK-10	20A	FLRTRAN	3.38	SUMMARY-102
CCMPPF	AC4C	DECK-10	15A	FLRTRAN	3.38	SUMMARY-102
CCNSLE	ACE4	DECK-10	30A	FLRTRAN	3.38	SUMMARY-102
DATAPK	AD68	DECK-10	31A	FLRTRAN	3.38	SUMMARY-102
DIMPR	E267	DECK-10	16A	FLRTRAN	3.38	SUMMARY-102
EXRLPR	E411	DECK-10	24F	FLRTRAN	3.38	SUMMARY-102
FGETC	546F	DECK-10	21A	FLRTRAN	3.38	SUMMARY-102
FORK	6546	DECK-10	22A	FLRTRAN	3.38	SUMMARY-102
SUBPPF	E744	DECK-10	23A	FLRTRAN	3.38	SUMMARY-102
TYPEPP	E7ED	DECK-10	18A	FLRTRAN	3.38	SUMMARY-102
ENCLCC	E6C4	DECK-10	17F	FLRTRAN	3.38	SUMMARY-102

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FTN33B	8000	DECK-ID	01F	FORTRAN	3.3B	SUMMARY-132
GOA	8774	DECK-ID	02F	FORTRAN	3.3B	SUMMARY-114
PHASEA	87CF	DECK-ID	07A	FORTRAN	3.3B	SUMMARY-102
IOPRBA	8C1A	DECK-ID	08F	FORTRAN	3.3B	SUMMARY-114
QBPRMS	9CC0	DECK-ID	10F	FORTRAN	3.3B	SUMMARY-102
CFIVCC	90DA	DECK-ID	34A	FORTRAN	3.3B	SUMMARY-102
CKNAME	9138	DECK-ID	36A	FORTRAN	3.3B	SUMMARY-102
CNVT	9148	DECK-ID	01A	FORTRAN	3.3B	SUMMARY-102
CONV	9186	DECK-ID	03F	FORTRAN	3.3B	SUMMARY-102
DIAG	9189	DECK-ID	04F	FORTRAN	3.3B	SUMMARY-102
DIAGRG	9265	DECK-ID	37F	FORTRAN	3.3B	SUMMARY-102
DXP9	9281	DECK-ID	05F	FORTRAN	3.3B	SUMMARY-102
DFLGT	93AD	DECK-ID	06F	FORTRAN	3.3B	SUMMARY-102
DUMVCL	95E4	DECK-ID	35F	FORTRAN	3.3B	SUMMARY-102
GETC	9613	DECK-ID	14F	FORTRAN	3.3B	SUMMARY-102
GETF	963E	DECK-ID	04A	FORTRAN	3.3B	SUMMARY-102
GETSYH	9A48	DECK-ID	07F	FORTRAN	3.3B	SUMMARY-102
GPUT	9A84	DECK-ID	02A	FORTRAN	3.3B	SUMMARY-102
IGETCF	9AAC	DECK-ID	15F	FORTRAN	3.3B	SUMMARY-102
PACK	9AC6	DECK-ID	09F	FORTRAN	3.3B	SUMMARY-102
RDLABL	9AE8	DECK-ID	10A	FORTRAN	3.3B	SUMMARY-102
STGRE	9B89	DECK-ID	11F	FORTRAN	3.3B	SUMMARY-102
SYMBCL	9BDF	DECK-ID	03A	FORTRAN	3.3B	SUMMARY-102
ENCDD	9D9C	DECK-ID	29A	FORTRAN	3.3B	SUMMARY-102
GNST	9E41	DECK-ID	05A	FORTRAN	3.3B	SUMMARY-114
HEADER	A3D7	DECK-ID	36F	FORTRAN	3.3B	SUMMARY-102
OPTICN	A41C	DECK-ID	16F	FORTRAN	3.3B	SUMMARY-114
OUTENT	A48B	DECK-ID	06A	FORTRAN	3.3B	SUMMARY-102
PLABEL	A4EF	DECK-ID	08A	FORTRAN	3.3B	SUMMARY-102
STCHAR	A545	DECK-ID	11A	FORTRAN	3.3B	SUMMARY-102
TYPE	A577	DECK-ID	12A	FORTRAN	3.3B	SUMMARY-102
SAVEID	A7D3	DECK-ID	13A	FORTRAN	3.3B	SUMMARY-102
LDCLA3	A879	DECK-ID	20F	FORTRAN	3.3B	SUMMARY-102
DUMYA3	A93F	DECK-ID	21F	FORTRAN	3.3B	SUMMARY-109
ARAYSZ	A9A6	DECK-ID	42A	FORTRAN	3.3B	SUMMARY-102
ASEMPR	AA27	DECK-ID	40A	FORTRAN	3.3B	SUMMARY-102
ASGNPR	ABE7	DECK-ID	32A	FORTRAN	3.3B	SUMMARY-102
BDCPR	AC2C	DECK-ID	33A	FORTRAN	3.3B	SUMMARY-102
CHECKF	AD69	DECK-ID	20A	FORTRAN	3.3B	SUMMARY-102
CKIVC	AE1C	DECK-ID	35A	FORTRAN	3.3B	SUMMARY-102
CGNSUB	AE2C	DECK-ID	30A	FORTRAN	3.3B	SUMMARY-102
CPLQCP	AE83	DECK-ID	43A	FORTRAN	3.3B	SUMMARY-102
FGETC	AF59	DECK-ID	21A	FORTRAN	3.3B	SUMMARY-102
FORK	B032	DECK-ID	22A	FORTRAN	3.3B	SUMMARY-102
ERBPR	B22E	DECK-ID	38A	FORTRAN	3.3B	SUMMARY-102
MCDMXR	B28C	DECK-ID	39A	FORTRAN	3.3B	SUMMARY-102
PUNT	B912	DECK-ID	27A	FORTRAN	3.3B	SUMMARY-102
ENDLCC	B94A	DECK-ID	17F	FORTRAN	3.3B	SUMMARY-102

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FTN33B	6000	DECK-ID	01F	FLRTRAN	3.3B	SUMMARY-132
GDA	8774	DECK-ID	02F	FLRTRAN	3.3B	SUMMARY-114
PHASEA	87CF	DECK-ID	07A	FLRTRAN	3.3B	SUMMARY-102
IGPREA	6L1A	DECK-ID	08F	FLRTRAN	3.3B	SUMMARY-114
QSPRPS	90CC	DECK-ID	10F	FLRTRAN	3.3B	SUMMARY-102
CFIVCC	90DA	DECK-ID	34A	FLRTRAN	3.3B	SUMMARY-102
CKNAME	913B	DECK-ID	36A	FLRTRAN	3.3B	SUMMARY-102
CNVT	914B	DECK-ID	01A	FLRTRAN	3.3B	SUMMARY-102
CCNV	918B	DECK-ID	03F	FLRTRAN	3.3B	SUMMARY-102
DIAG	9189	DECK-ID	04F	FLRTRAN	3.3B	SUMMARY-102
LIACRG	9265	DECK-ID	37F	FLRTRAN	3.3B	SUMMARY-102
DXPS	9281	DECK-ID	05F	FLRTRAN	3.3B	SUMMARY-102
DFLEET	93AD	DECK-ID	06F	FLRTRAN	3.3B	SUMMARY-102
CUMVCL	95E4	DECK-ID	35F	FLRTRAN	3.3B	SUMMARY-102
GETC	9613	DECK-ID	14F	FLRTRAN	3.3B	SUMMARY-102
GETF	963E	DECK-ID	04A	FLRTRAN	3.3B	SUMMARY-102
GETSYM	9A4B	DECK-ID	07F	FLRTRAN	3.3B	SUMMARY-102
GPUL	9A84	DECK-ID	02A	FLRTRAN	3.3B	SUMMARY-102
IGETCF	9AAD	DECK-ID	15F	FLRTRAN	3.3B	SUMMARY-102
PACK	9AC6	DECK-ID	09F	FLRTRAN	3.3B	SUMMARY-102
RELACL	9AEB	DECK-ID	10A	FLRTRAN	3.3B	SUMMARY-102
STCR	9L89	DECK-ID	11F	FLRTRAN	3.3B	SUMMARY-102
SYMBLL	9BCF	DECK-ID	03A	FLRTRAN	3.3B	SUMMARY-102
ENCLL	9C9C	DECK-ID	29A	FLRTRAN	3.3B	SUMMARY-102
GNST	9EA1	DECK-ID	05A	FLRTRAN	3.3B	SUMMARY-114
HEALDR	A3D7	DECK-ID	36F	FLRTRAN	3.3B	SUMMARY-102
OPTICN	A41C	DECK-ID	16F	FLRTRAN	3.3B	SUMMARY-114
CUTENT	A4B8	DECK-ID	06A	FLRTRAN	3.3B	SUMMARY-102
PLABELL	A4EF	DECK-ID	08A	FLRTRAN	3.3B	SUMMARY-102
STCHAR	A545	DECK-ID	11A	FLRTRAN	3.3B	SUMMARY-102
TYPE	A577	DECK-ID	12A	FLRTRAN	3.3B	SUMMARY-102
SAVEID	A7D3	DECK-ID	13A	FLRTRAN	3.3B	SUMMARY-102
LCCLA4	A879	DECK-ID	22F	FLRTRAN	3.3B	SUMMARY-102
BUPY44	A93F	DECK-ID	23F	FLRTRAN	3.3B	SUMMARY-109
ARITH	A9A6	DECK-ID	14A	FLRTRAN	3.3B	SUMMARY-102
SUBSCK	B03F	DECK-ID	17A	FLRTRAN	3.3B	SUMMARY-102
TREE	B313	DECK-ID	41A	FLRTRAN	3.3B	SUMMARY-102
ENLLLC	B83C	DECK-ID	17F	FLRTRAN	3.3B	SUMMARY-102

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FTN33B	8000	DECK-ID	01F	FORTRAN	3.3B	SUMMARY-132
GCA	8774	DECK-ID	02F	FORTRAN	3.3B	SUMMARY-114
PHASEA	87CF	DECK-ID	07A	FORTRAN	3.3B	SUMMARY-102
IOPRBA	8D1A	DECK-ID	08F	FORTRAN	3.3B	SUMMARY-114
Q8PRMS	90C0	DECK-ID	10F	FORTRAN	3.3B	SUMMARY-102
CFIVCC	90CA	DECK-ID	34A	FORTRAN	3.3B	SUMMARY-102
CKNAME	9138	DECK-ID	36A	FORTRAN	3.3B	SUMMARY-102
CNVT	9148	DECK-ID	01A	FORTRAN	3.3B	SUMMARY-102
CCNV	9186	DECK-ID	03F	FORTRAN	3.3B	SUMMARY-102
DIAG	9189	DECK-ID	04F	FORTRAN	3.3B	SUMMARY-102
DIAGRG	9265	DECK-ID	37F	FORTRAN	3.3B	SUMMARY-102
DXP9	9281	DECK-ID	05F	FORTRAN	3.3B	SUMMARY-102
DFLCT	93AD	DECK-ID	06F	FORTRAN	3.3B	SUMMARY-102
DUMVGL	95E4	DECK-ID	35F	FORTRAN	3.3B	SUMMARY-102
GETC	9613	DECK-ID	14F	FORTRAN	3.3B	SUMMARY-102
GETF	963E	DECK-ID	04A	FORTRAN	3.3B	SUMMARY-102
GETSYH	9A48	DECK-ID	07F	FORTRAN	3.3B	SUMMARY-102
GPUT	9A84	DECK-ID	02A	FORTRAN	3.3B	SUMMARY-102
IGETCF	9AAC	DECK-ID	15F	FORTRAN	3.3B	SUMMARY-102
PACK	9AC6	DECK-ID	09F	FORTRAN	3.3B	SUMMARY-102
RDLABL	9AEB	DECK-ID	10A	FORTRAN	3.3B	SUMMARY-102
STCRE	9B89	DECK-ID	11F	FORTRAN	3.3B	SUMMARY-102
SYMBOL	9BCF	DECK-ID	03A	FORTRAN	3.3B	SUMMARY-102
ENDDO	9D9C	DECK-ID	29A	FORTRAN	3.3B	SUMMARY-102
GNST	9EA1	DECK-ID	05A	FORTRAN	3.3B	SUMMARY-114
HEADER	A3D7	DECK-ID	36F	FORTRAN	3.3B	SUMMARY-102
OPTICN	A41C	DECK-ID	16F	FORTRAN	3.3B	SUMMARY-114
OUTENT	A48B	DECK-ID	06A	FORTRAN	3.3B	SUMMARY-102
PLABEL	A4EF	DECK-ID	08A	FORTRAN	3.3B	SUMMARY-102
STCHAR	A545	DECK-ID	11A	FORTRAN	3.3B	SUMMARY-102
TYPE	A577	DECK-ID	12A	FORTRAN	3.3B	SUMMARY-102
SAVEID	A7D3	DECK-ID	13A	FORTRAN	3.3B	SUMMARY-102
LCCLA5	A879	DECK-ID	24F	FORTRAN	3.3B	SUMMARY-109
DUMYA5	A93F	DECK-ID	25F	FORTRAN	3.3B	SUMMARY-109
BDDPK	A9A6	DECK-ID	33A	FORTRAN	3.3B	SUMMARY-102
CKIVC	AAE2	DECK-ID	35A	FORTRAN	3.3B	SUMMARY-102
IOSPR	AAF2	DECK-ID	37A	FORTRAN	3.3B	SUMMARY-102
PEQVS	B138	DECK-ID	25A	FORTRAN	3.3B	SUMMARY-102
PRNTNH	B5C0	DECK-ID	26A	FORTRAN	3.3B	SUMMARY-102
SYMSCN	B5FB	DECK-ID	26A	FORTRAN	3.3B	SUMMARY-102
ENDLCC	B617	DECK-ID	17F	FORTRAN	3.3B	SUMMARY-102

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FTN33B	8000	DECK-ID	01F	FURTRAN	3.3B	SUMMARY-132
GOB	87E2	DECK-ID	26F	FURTRAN	3.3B	SUMMARY-102
PHASEB	87F8	DECK-ID	21B	FURTRAN	3.3B	SUMMARY-102
IOPREB	8CA2	DECK-ID	27F	FURTRAN	3.3B	SUMMARY-102
QBPRFS	9216	DECK-ID	10F	FURTRAN	3.3B	SUMMARY-102
CNVT	9230	DECK-ID	01A	FURTRAN	3.3B	SUMMARY-102
DUPHY	926E	DECK-ID	01B	FURTRAN	3.3B	SUMMARY-102
FCMSTK	937D	DECK-ID	02B	FURTRAN	3.3B	SUMMARY-102
GETSYH	9407	DECK-ID	07F	FURTRAN	3.3B	SUMMARY-102
KCPART	9440	DECK-ID	03B	FURTRAN	3.3B	SUMMARY-102
KCLTPT	9471	DECK-ID	04B	FURTRAN	3.3B	SUMMARY-102
KPCSTK	9483	DECK-ID	05B	FURTRAN	3.3B	SUMMARY-102
KPC3PR	9A3B	DECK-ID	06B	FURTRAN	3.3B	SUMMARY-102
KSYHGN	9A53	DECK-ID	07B	FURTRAN	3.3B	SUMMARY-102
LABKPC	9A9B	DECK-ID	08B	FURTRAN	3.3B	SUMMARY-102
LABLER	9AAF	DECK-ID	09B	FURTRAN	3.3B	SUMMARY-102
PUNT	9ACC	DECK-ID	10B	FURTRAN	3.3B	SUMMARY-102
CGNV	9AF0	DECK-ID	03F	FURTRAN	3.3B	SUMMARY-102
STCREB	9B23	DECK-ID	34F	FURTRAN	3.3B	SUMMARY-102
SYMBOL	9b57	DECK-ID	11B	FURTRAN	3.3B	SUMMARY-102
TSALCC	9BF4	DECK-ID	12B	FURTRAN	3.3B	SUMMARY-102
ARAYSZ	9CB5	DECK-ID	42A	FURTRAN	3.3B	SUMMARY-102
ASSEM	9D36	DECK-ID	13B	FURTRAN	3.3B	SUMMARY-102
BAMANA	9DA6	DECK-ID	14B	FURTRAN	3.3B	SUMMARY-102
BGINCC	9E71	DECK-ID	15B	FURTRAN	3.3B	SUMMARY-102
ENC	9F7A	DECK-ID	16B	FURTRAN	3.3B	SUMMARY-102
ENTCCC	9FCB	DECK-ID	17B	FURTRAN	3.3B	SUMMARY-102
HELEN	A09B	DECK-ID	18B	FURTRAN	3.3B	SUMMARY-102
INXRS	A1F2	DECK-ID	19B	FURTRAN	3.3B	SUMMARY-102
NGPROC	A206	DECK-ID	20B	FURTRAN	3.3B	SUMMARY-102
READIR	A243	DECK-ID	22B	FURTRAN	3.3B	SUMMARY-102
SUBFUN	A29B	DECK-ID	23B	FURTRAN	3.3B	SUMMARY-102
SYMSCN	A302	DECK-ID	28A	FURTRAN	3.3B	SUMMARY-102
ACP	A31E	DECK-ID	24B	FURTRAN	3.3B	SUMMARY-102
AFIDL	A7F1	DECK-ID	25B	FURTRAN	3.3B	SUMMARY-102
ASUPER	A869	DECK-ID	26B	FURTRAN	3.3B	SUMMARY-102
CGOTC	A91F	DECK-ID	27B	FURTRAN	3.3B	SUMMARY-102
FINK	A9B3	DECK-ID	28B	FURTRAN	3.3B	SUMMARY-102
INTRAM	AA6F	DECK-ID	29B	FURTRAN	3.3B	SUMMARY-102
PARTSE	AC84	DECK-ID	30B	FURTRAN	3.3B	SUMMARY-102
SUBPR1	AD32	DECK-ID	31B	FURTRAN	3.3B	SUMMARY-102
SUBPR2	AD70	DECK-ID	32B	FURTRAN	3.3B	SUMMARY-102
SUBPR3	AE56	DECK-ID	33B	FURTRAN	3.3B	SUMMARY-102
ARITHR	AE9C	DECK-ID	34B	FURTRAN	3.3B	SUMMARY-102
ENDLCC	BOAD	DECK-ID	17F	FURTRAN	3.3B	SUMMARY-102

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FTN33B	8000	DECK-ID 01F	FORTRAN 3.3B	SUMMARY-132
GOC	8CB4	DECK-ID 28F	FORTRAN 3.3B	SUMMARY-102
PHASEC	8CD2	DECK-ID 13C	FURTRAN 3.3B	SUMMARY-102
IOPRBC	904A	DECK-ID 29F	FORTRAN 3.3B	SUMMARY-112
Q8PRMS	9EE2	DECK-ID 10F	FORTRAN 3.3B	SUMMARY-102
8K0WN	9EFC	DECK-ID 01C	FORTRAN 3.3B	SUMMARY-102
8LDUP	9F58	DECK-ID 02C	FORTRAN 3.3B	SUMMARY-102
BSS	9F9L	DECK-ID 03C	FORTRAN 3.3B	SUMMARY-102
CHKWD	9F8C	DECK-ID 04C	FORTRAN 3.3B	SUMMARY-102
CHOP	A147	DECK-ID 05C	FORTRAN 3.3B	SUMMARY-102
CL12	A3D1	DECK-ID 06C	FORTRAN 3.3B	SUMMARY-102
CON	A4CE	DECK-ID 07C	FORTRAN 3.3B	SUMMARY-102
COUNT	A521	DECK-ID 08C	FURTRAN 3.3B	SUMMARY-102
DATAS	A53F	DECK-ID 09C	FORTRAN 3.3B	SUMMARY-102
GETSYH	A624	DECK-ID 10C	FORTRAN 3.3B	SUMMARY-102
INCU	A6C8	DECK-ID 11C	FORTRAN 3.3B	SUMMARY-102
IXOPT	A737	DECK-ID 12C	FORTRAN 3.3B	SUMMARY-102
LABEL	A87C	DECK-ID 14C	FORTRAN 3.3B	SUMMARY-102
LABIN	A89F	DECK-ID 15C	FORTRAN 3.3B	SUMMARY-102
QXLD	A905	DECK-ID 16C	FORTRAN 3.3B	SUMMARY-102
REED	A999	DECK-ID 17C	FURTRAN 3.3B	SUMMARY-102
SKIP	A9F6	DECK-ID 18C	FORTRAN 3.3B	SUMMARY-102
SYMSCN	AA4C	DECK-ID 19C	FORTRAN 3.3B	SUMMARY-102
ENDLOC	AA68	DECK-ID 17F	FURTRAN 3.3B	SUMMARY-102

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FTN33B	8000	DECK-ID 01F	FORTRAN 3.3B	SUMMARY-132
GUCC	8CB4	DECK-ID 30F	FORTRAN 3.3B	SUMMARY-102
PHASEC	8CDE	DECK-ID 14L	FORTRAN 3.3B	SUMMARY-102
IOPRBC	8D78	DECK-ID 31F	FORTRAN 3.3B	SUMMARY-112
Q8PRMS	9310	DECK-ID 10F	FURTRAN 3.3B	SUMMARY-102
AMCUT	932A	DECK-ID 01C	FURTRAN 3.3B	SUMMARY-102
ADMAX	98E9	DECK-ID 02C	FORTRAN 3.3B	SUMMARY-102
BEGIND	9AF3	DECK-ID 03C	FURTRAN 3.3B	SUMMARY-102
8K0WN	9C6C	DECK-ID 04C	FURTRAN 3.3B	SUMMARY-102
COUNT	9CC9	DECK-ID 05C	FORTRAN 3.3B	SUMMARY-102
FINISH	9CE7	DECK-ID 06C	FURTRAN 3.3B	SUMMARY-102
GETSYH	9E68	DECK-ID 10C	FURTRAN 3.3B	SUMMARY-102
IACGN	9FCF	DECK-ID 07C	FURTRAN 3.3B	SUMMARY-102
IHCEN	9F69	DECK-ID 08C	FURTRAN 3.3B	SUMMARY-102
INDEX	9F96	DECK-ID 09C	FURTRAN 3.3B	SUMMARY-102
LABULT	9FB2	DECK-ID 10C	FORTRAN 3.3B	SUMMARY-102
NP2CUT	A092	DECK-ID 11C	FURTRAN 3.3B	SUMMARY-102
NPUNCT	ACC1	DECK-ID 12C	FURTRAN 3.3B	SUMMARY-102
NWRITE	A208	DECK-ID 13C	FURTRAN 3.3B	SUMMARY-102
PACK	A24C	DECK-ID 09F	FURTRAN 3.3B	SUMMARY-102
K8UX	A271	DECK-ID 15L	FURTRAN 3.3B	SUMMARY-102

RBPK	A2AD	DECK-ID 16D	FURTRAN 3.38	SUMMARY-102
SYMSCN	A2C7	DECK-ID 17D	FURTRAN 3.38	SUMMARY-102
TABDEC	A2F3	DECK-ID 18D	FURTRAN 3.38	SUMMARY-102
UNPLNC	A377	DECK-ID 19D	FURTRAN 3.38	SUMMARY-102
CONV	A38D	DECK-ID 33F	FURTRAN 3.38	SUMMARY-102
ENDLOC	A3C6	DECK-ID 17F	FURTRAN 3.38	SUMMARY-102

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FTN33B	80C0	DECK-ID 01F	FURTRAN 3.38	SUMMARY-132
GOE	8CB4	DECK-ID 32F	FURTRAN 3.38	SUMMARY-102
PHASE6	8CDA	DECK-ID 14E	FURTRAN 3.38	SUMMARY-102
IOPRBC	8D77	DECK-ID 31F	FURTRAN 3.38	SUMMARY-112
CSPRMS	93CF	DECK-ID 10F	FURTRAN 3.38	SUMMARY-102
AMCLT	9329	DECK-ID 01E	FURTRAN 3.38	SUMMARY-102
ADMAX	98F8	DECK-ID 02E	FURTRAN 3.38	SUMMARY-102
BEGINC	98C2	DECK-ID 03E	FURTRAN 3.38	SUMMARY-102
BKDNW	9CA4	DECK-ID 04E	FURTRAN 3.38	SUMMARY-102
CONV	9C0C	DECK-ID 33F	FURTRAN 3.38	SUMMARY-102
CCUNT	9L46	DECK-ID 05E	FURTRAN 3.38	SUMMARY-102
FINISH	9D5C	DECK-ID 06E	FURTRAN 3.38	SUMMARY-102
GETSYM	9EE1	DECK-ID 10C	FURTRAN 3.38	SUMMARY-102
IACCN	9F85	DECK-ID 07E	FURTRAN 3.38	SUMMARY-102
IHCLM	9FDF	DECK-ID 08E	FURTRAN 3.38	SUMMARY-102
INDEX	A00B	DECK-ID 09E	FURTRAN 3.38	SUMMARY-102
LABCLT	A027	DECK-ID 10E	FURTRAN 3.38	SUMMARY-102
NP2OUT	A146	DECK-ID 11E	FURTRAN 3.38	SUMMARY-102
NPUNCH	A17E	DECK-ID 12E	FURTRAN 3.38	SUMMARY-102
NWRITE	A2C8	DECK-ID 13E	FURTRAN 3.38	SUMMARY-102
PACK	A309	DECK-ID 09F	FURTRAN 3.38	SUMMARY-102
RBDX	A32E	DECK-ID 15E	FURTRAN 3.38	SUMMARY-102
RBPK	A36B	DECK-ID 16E	FURTRAN 3.38	SUMMARY-102
SETPRT	A395	DECK-ID 17E	FURTRAN 3.38	SUMMARY-102
SYMSCN	A51D	DECK-ID 17D	FURTRAN 3.38	SUMMARY-102
TABDEC	A5J9	DECK-ID 18E	FURTRAN 3.38	SUMMARY-102
UNPUNC	A585	DECK-ID 19E	FURTRAN 3.38	SUMMARY-102
ENDLOC	A5CB	DECK-ID 17F	FURTRAN 3.38	SUMMARY-102

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FTN33B	8CC0	DECK-ID 01F	FURTRAN 3.38	SUMMARY-132
GOF	8CB4	DECK-ID 38F	FURTRAN 3.38	SUMMARY-102

SYMSCN	8CBE	DECK-ID	28A	FORTRAN	3.38	SUMMARY-102
PHASEF	8CDA	DECK-ID	01G	FORTRAN	3.38	SUMMARY-102
Q8PRMS	8F9B	DECK-ID	10F	FORTRAN	3.38	SUMMARY-102
GETSYN	8FB5	DECK-ID	02G	FORTRAN	3.38	SUMMARY-102
ACCN	9015	DECK-ID	03G	FORTRAN	3.38	SUMMARY-102
HCON	9074	DECK-ID	04G	FORTRAN	3.38	SUMMARY-102
LWRITE	90A7	DECK-ID	05G	FORTRAN	3.38	SUMMARY-102
MATCH	912E	DECK-ID	06G	FORTRAN	3.38	SUMMARY-102
SORT	9181	DECK-ID	07G	FORTRAN	3.38	SUMMARY-102
IREPAK	91E6	DECK-ID	08G	FORTRAN	3.38	SUMMARY-102
CONV	923E	DECK-ID	03F	FORTRAN	3.38	SUMMARY-102
GETSYR	9271	DECK-ID	39F	FORTRAN	3.38	SUMMARY-102
TITLE	9266	DECK-ID	40F	FORTRAN	3.38	SUMMARY-102
IFOVPF	944B	DECK-ID	41F	FORTRAN	3.38	SUMMARY-102
PACK	9462	DECK-ID	09F	FORTRAN	3.38	SUMMARY-102
IOPRBC	9487	DECK-ID	31F	FORTRAN	3.38	SUMMARY-112
ENDLCC	9A1F	DECK-ID	17F	FORTRAN	3.38	SUMMARY-102

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FTN33B	8000	DECK-ID	01F	FORTRAN	3.38	SUMMARY-132
ERRMSG	8CB4	DECK-ID	42F	FORTRAN	3.38	SUMMARY-102
IOPRBD	9C3E	DECK-ID	31F	FORTRAN	3.38	SUMMARY-112
ENDLCC	A1D6	DECK-ID	17F	FORTRAN	3.38	SUMMARY-102

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*CTL, FORTRAN 3.38 INSTALL COMPLETE

RPG II INSTALL

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JCB, INSTAL, RPGII
1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0 DATE OF RUN: 09/26/78 SYSTEM ID: ITOS 2.0 I/E '6' SYSTEM (09/22/78)

IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL	
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL	
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL	
III	NNNN	NNN	SSS	SSS	AAA	AAA	LLL
III	NNNN	NNN	SSS	SSS	AAA	AAA	LLL
III	NNNN	NNN	SSS	SSS	AAA	AAA	LLL
III	NNNN	NNN	SSSSSSSSSS	SSS	AAA	AAA	LLL
III	NNN	NNN	SSSSSSSSSSSS	SSS	AAA	AAA	LLL
III	NNN	NNN	SSSSSSSSSSSS	SSS	AAA	AAA	LLL
III	NNN	NNN	SSSSSSSSSSSS	SSS	AAA	AAA	LLL
III	NNN	NNN	SSS	SSS	AAA	AAA	LLL
III	NNN	NNN	SSS	SSS	AAA	AAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTTT	AAA	AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTTT	AAA	AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTT	AAA	AAA	LLLLLLLLLLLL

*CTG, RPGII V2.0 INSTALL
 *CTG, COPYRIGHT CONTROL DATA CORPORATION 1978
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*P,F,3,R9BEGN

R9CNTR	820C	DECK-ID P44	RPGII 2.1	SUMMARY-132
R9RCCM	82B2	DECK-ID R35	RPGII 2.1	SUMMARY-132
R9RPRT	83C5	DECK-ID R37	RPGII 2.1	SUMMARY-132
R9SAVE	83BB	DECK-ID R40	RPGII 2.1	SUMMARY-132
SYSMSG	8467	DECK-ID A33	ITOS 2.0	SUMMARY-132
FMENTP	85F7	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	8658	DECK-ID A34	ITOS 2.0	SUMMARY-132
FMCALL	8680	DECK-ID R92	RPGII 2.1	SUMMARY-132
STRACE	8688	DECK-ID S06	RPGII 2.1	SUMMARY-132
R9CHAR	86A4	DECK-ID P33	RPGII 2.1	SUMMARY-132
R9ENTS	87BC	DECK-ID P59	RPGII 2.1	SUMMARY-132
*PAGE	87BC			
R9ELDC	8800	DECK-ID P57	RPGII 2.1	SUMMARY-132
R9DUMG	880C	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	88G1			
R9DUMO	900C	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	9001			
R9DUMO	9800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	9801			
R9DUMC	A00C	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	A001			
R9DUMO	A800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	A801			
R9DUMO	B0G0	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	BC01			
R9DLMO	B800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	B801			
R9DUMO	C0C0	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	C0G1			
R9DUMO	C800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	C801			
R9DLMO	DC00	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	D001			
R9DUMO	D800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	D8C1			
R9BEG1	E00C	DECK-ID P20	RPGII 2.1	SUMMARY-132
R9INTL	E002	DECK-ID P81	RPGII 2.1	SUMMARY-132
R9OPNY	E04B	DECK-ID R19	RPGII 2.1	SUMMARY-132
R9SAV1	E05B	DECK-ID R41	RPGII 2.1	SUMMARY-132
R9DUM1	E065	DECK-ID P53	RPGII 2.1	SUMMARY-132
R9SHCH	E065	DECK-ID R58	RPGII 2.1	SUMMARY-132
R9BINP	E065	DECK-ID P27	RPGII 2.1	SUMMARY-135
R9CLRC	E171	DECK-ID P38	RPGII 2.1	SUMMARY-132

R9FILR	E17B	DECK-ID	P62	RPGII	2.1	SUMMARY-132
R9FLCL	E1AA	DECK-IC	P64	RPGII	2.1	SUMMARY-132
R9FN8G	E1DD	DECK-ID	P67	RPGII	2.1	SUMMARY-132
R9GETS	E1DD	DECK-ID	P72	RPGII	2.1	SUMMARY-132
R9IDHX	E23A	DECK-ID	P76	RPGII	2.1	SUMMARY-132
R9INTA	E24E	DECK-ID	P80	RPGII	2.1	SUMMARY-132
R9ICCL	E2DA	DECK-ID	P83	RPGII	2.1	SUMMARY-132
R9IPBG	E2F1	DECK-ID	P84	RPGII	2.1	SUMMARY-132
R9ITLP	E2F1	DECK-ID	P86	RPGII	2.1	SUMMARY-132
R9LEL	E333	DECK-ID	P90	RPGII	2.1	SUMMARY-132
R9LOAD	E366	DECK-ID	P92	RPGII	2.1	SUMMARY-132
R9LCCL	E395	DECK-IC	P93	RPGII	2.1	SUMMARY-132
R9MIH	E3B4	DECK-ID	P97	RPGII	2.1	SUMMARY-132
R9MVBX	E3BB	DECK-ID	R07	RPGII	2.1	SUMMARY-132
R9MYTA	E3F3	DECK-ID	R08	RPGII	2.1	SUMMARY-135
R9MVH	E4D9	DECK-ID	R09	RPGII	2.1	SUMMARY-132
R9CPNF	E4E6	DECK-ID	R18	RPGII	2.1	SUMMARY-132
R9PACK	E551	DECK-IC	R25	RPGII	2.1	SUMMARY-132
R9PTCH	E59D	DECK-ID	R30	RPGII	2.1	SUMMARY-132
R9SPTP	E5CE	DECK-ID	R52	RPGII	2.1	SUMMARY-132
R9STHO	E6C0	DECK-IC	R54	RPGII	2.1	SUMMARY-132
R9TSTN	E64C	DECK-IC	R66	RPGII	2.1	SUMMARY-132
R9UNPK	E661	DECK-ID	R69	RPGII	2.1	SUMMARY-132
R9GTHG	E683	DECK-ID	R20	RPGII	2.1	SUMMARY-132
R9XR5C	E6CD	DECK-ID	R73	RPGII	2.1	SUMMARY-132
OPEN01	E6EF	DECK-ID	S14	RPGII	2.1	SUMMARY-132
OPEN02	E839	DECK-IC	S15	RPGII	2.1	SUMMARY-132
CPENC3	E934	DECK-ID	S16	RPGII	2.1	SUMMARY-132
OPEN04	EA55	DECK-ID	S17	RPGII	2.1	SUMMARY-132
READ09	EC7E	DECK-ID	S18	RPGII	2.1	SUMMARY-132
READ10	ED70	DECK-ID	S19	RPGII	2.1	SUMMARY-132
READ11	EE74	DECK-ID	S20	RPGII	2.1	SUMMARY-132
READ12	EFB2	DECK-ID	S21	RPGII	2.1	SUMMARY-132
READ13	FC8D	DECK-IC	S22	RPGII	2.1	SUMMARY-132
ROCT43	F170	DECK-IC	S36	RPGII	2.1	SUMMARY-132
ROCT44	F1DA	DECK-ID	S37	RPGII	2.1	SUMMARY-132
ROGT45	F2A9	DECK-ID	S38	RPGII	2.1	SUMMARY-132
ERRC46	F357	DECK-IC	R91	RPGII	2.1	SUMMARY-132
NTAP48	F367	DECK-IC	S39	RPGII	2.1	SUMMARY-132
NTAP49	F6A6	DECK-ID	S40	RPGII	2.1	SUMMARY-132
NTAP52	F744	DECK-ID	S41	RPGII	2.1	SUMMARY-132
NTAP53	F7E1	DECK-ID	S42	RPGII	2.1	SUMMARY-132
NTAP54	F855	DECK-IC	S43	RPGII	2.1	SUMMARY-132
NTAP55	F8DE	DECK-IC	S44	RPGII	2.1	SUMMARY-132
NTAP57	F92A	DECK-ID	S45	RPGII	2.1	SUMMARY-132
NTAP58	F949	DECK-IC	S46	RPGII	2.1	SUMMARY-132
FHMV63	F9F6	DECK-ID	S51	RPGII	2.1	SUMMARY-132
R9ENCL	FA42	DECK-IC	P58	RPGII	2.1	SUMMARY-132

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R9CNTR	8200	DECK-ID P44	RPGII 2.1	SUMMARY-132
R9ROOM	82B2	DECK-ID R35	RPGII 2.1	SUMMARY-132
R9RPRT	8305	DECK-ID R37	RPGII 2.1	SUMMARY-132
R9SAVE	6388	DECK-ID R40	RPGII 2.1	SUMMARY-132
SYMSG	8467	DECK-ID A33	ITOS 2.0	SUMMARY-132
FMENTP	85F7	DECK-ID F58	ITOS 2.0	SUMMARY-132
EXENTP	8658	DECK-ID A34	ITOS 2.0	SUMMARY-132
FMCALL	8680	DECK-ID R92	RPGII 2.1	SUMMARY-132
STRACE	8688	DECK-IC S06	RPGII 2.1	SUMMARY-132
R9CHAR	86A4	DECK-ID P33	RPGII 2.1	SUMMARY-132
R9ENTS	878C	DECK-ID P59	RPGII 2.1	SUMMARY-132
*PAGE	878C			
R9ELCC	8800	DECK-IC P57	RPGII 2.1	SUMMARY-132
R9CUM0	8800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	8801			
R9DUHO	9000	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	9001			
R9CUM0	9800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	9801			
R9DLHO	A000	DECK-IC P52	RPGII 2.1	SUMMARY-132
*PAGE	A001			
R9DUHO	A800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	A801			
R9DUHO	BC00	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	B001			
R9DUHO	B800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	B801			
R9BEG2	C000	DECK-IC P21	RPGII 2.1	SUMMARY-132
R9IPUT	C0G2	DECK-IC P85	RPGII 2.1	SUMMARY-132
R9INTV	C007	DECK-ID P82	RPGII 2.1	SUMMARY-132
R9OPCC	C0CF	DECK-ID R17	RPGII 2.1	SUMMARY-132
R9WCTV	C047	DECK-ID R70	RPGII 2.1	SUMMARY-132
R9SAV2	C066	DECK-IC R42	RPGII 2.1	SUMMARY-132
R9ADSB	C0D2	DECK-ID P14	RPGII 2.1	SUMMARY-132
R9ASGR	C1A3	DECK-ID P17	RPGII 2.1	SUMMARY-132
R9ATON	C1C4	DECK-ID P18	RPGII 2.1	SUMMARY-132
R9BOPK	C1E7	DECK-ID P19	RPGII 2.1	SUMMARY-132
R9BINP	C261	DECK-ID P27	RPGII 2.1	SUMMARY-135
R9EINT	C36D	DECK-ID P28	RPGII 2.1	SUMMARY-132
R9BITF	C3F1	DECK-ID P29	RPGII 2.1	SUMMARY-132
R9BITN	C41A	DECK-ID P30	RPGII 2.1	SUMMARY-132
R9BGCL	C444	DECK-ID P25	RPGII 2.1	SUMMARY-132
R9CALC	C444	DECK-ID P31	RPGII 2.1	SUMMARY-132
R9CHAN	C460	DECK-ID P32	RPGII 2.1	SUMMARY-132
R9CHIN	C4C5	DECK-ID P34	RPGII 2.1	SUMMARY-132
R9CLRC	C4FE	DECK-IC P38	RPGII 2.1	SUMMARY-132
R9CLRE	C508	DECK-ID P39	RPGII 2.1	SUMMARY-132
R9CNBC	C521	DECK-IC P41	RPGII 2.1	SUMMARY-132
R9CMCV	C536	DECK-IC P42	RPGII 2.1	SUMMARY-132
R9CCMP	C5FF	DECK-ID P45	RPGII 2.1	SUMMARY-132
R9CRIN	C6B6	DECK-ID P46	RPGII 2.1	SUMMARY-132
R9CEBG	C6C1	DECK-IC P47	RPGII 2.1	SUMMARY-132
R9DETP	C87C	DECK-IC P48	RPGII 2.1	SUMMARY-132
R9DIVD	C8B0	DECK-IC P49	RPGII 2.1	SUMMARY-132
R9DMND	C988	DECK-IC P50	RPGII 2.1	SUMMARY-132
R9DSPY	C9C3	DECK-IC P51	RPGII 2.1	SUMMARY-132
R9ECOD	CAF0	DECK-ID P54	RPGII 2.1	SUMMARY-132

R9EDCN	CBC8	DECK-ID	P55	RPGII	2.1	SUMMARY-132
R9EDIT	CC57	DECK-ID	P56	RPGII	2.1	SUMMARY-132
R9EXCP	CC66	DECK-ID	P60	RPGII	2.1	SUMMARY-132
R9EXIT	CC71	DECK-ID	P61	RPGII	2.1	SUMMARY-132
R9FILR	CC96	DECK-ID	P62	RPGII	2.1	SUMMARY-132
R9FLDL	CCC5	DECK-ID	P64	RPGII	2.1	SUMMARY-132
R9FLCH	CCF8	DECK-ID	P65	RPGII	2.1	SUMMARY-132
R9FMAL	CD13	DECK-ID	P66	RPGII	2.1	SUMMARY-132
R9FNBG	CD54	DECK-ID	P67	RPGII	2.1	SUMMARY-132
R9FORC	CD54	DECK-ID	P68	RPGII	2.1	SUMMARY-132
R9FTGV	CD66	DECK-ID	P71	RPGII	2.1	SUMMARY-132
R9GETS	CDA4	DECK-ID	P72	RPGII	2.1	SUMMARY-132
R9GOTO	CE01	DECK-ID	P73	RPGII	2.1	SUMMARY-132
R9ICTL	CE48	DECK-ID	P75	RPGII	2.1	SUMMARY-132
R9IDAX	CF1F	DECK-ID	P76	RPGII	2.1	SUMMARY-132
R9INDM	CF2D	DECK-ID	P77	RPGII	2.1	SUMMARY-132
R9INIT	CF8A	DECK-ID	P78	RPGII	2.1	SUMMARY-132
R9INMV	CFBA	DECK-ID	P79	RPGII	2.1	SUMMARY-132
R9IGCL	D11C	DECK-ID	P83	RPGII	2.1	SUMMARY-132
R9LAHD	D133	DECK-ID	P87	RPGII	2.1	SUMMARY-132
R9LCAE	D154	DECK-ID	P89	RPGII	2.1	SUMMARY-132
R9LEL	D1B4	DECK-ID	P90	RPGII	2.1	SUMMARY-132
R9LKUP	D1E7	DECK-ID	P91	RPGII	2.1	SUMMARY-135
R9LGAD	D340	DECK-ID	P92	RPGII	2.1	SUMMARY-132
R9LECL	D36F	DECK-ID	P93	RPGII	2.1	SUMMARY-132
R9LRCK	D38E	DECK-ID	P94	RPGII	2.1	SUMMARY-132
R9FIH	D3C4	DECK-ID	P97	RPGII	2.1	SUMMARY-132
R9MHGV	D3C8	DECK-ID	P98	RPGII	2.1	SUMMARY-132
R9MOVA	D4B8	DECK-ID	P99	RPGII	2.1	SUMMARY-132
R9MQVE	D4DA	DECK-ID	R01	RPGII	2.1	SUMMARY-132
R9MOVZ	D5B9	DECK-ID	R02	RPGII	2.1	SUMMARY-132
R9MTRN	D62E	DECK-ID	R03	RPGII	2.1	SUMMARY-132
R9MTHK	D659	DECK-ID	R04	RPGII	2.1	SUMMARY-132
R9MLLT	D674	DECK-ID	R05	RPGII	2.1	SUMMARY-132
R9MV6X	D6E9	DECK-ID	R07	RPGII	2.1	SUMMARY-132
R9MVH	D721	DECK-ID	R09	RPGII	2.1	SUMMARY-132
R9NRMX	D72E	DECK-ID	R12	RPGII	2.1	SUMMARY-132
R9NSGR	D797	DECK-ID	R13	RPGII	2.1	SUMMARY-132
R9NTCA	D7DE	DECK-ID	R14	RPGII	2.1	SUMMARY-132
R9NXFL	D807	DECK-ID	R15	RPGII	2.1	SUMMARY-132
R9NXRC	D829	DECK-ID	R16	RPGII	2.1	SUMMARY-132
R9CTMY	D857	DECK-ID	R21	RPGII	2.1	SUMMARY-132
R9BGOT	DA29	DECK-ID	P26	RPGII	2.1	SUMMARY-132
R9CTPT	DA29	DECK-ID	R22	RPGII	2.1	SUMMARY-132
R9CVGP	DA33	DECK-ID	R23	RPGII	2.1	SUMMARY-132
R9DV50	DA6D	DECK-ID	R24	RPGII	2.1	SUMMARY-132
R9PACK	CAA4	DECK-ID	R25	RPGII	2.1	SUMMARY-132
R9PAGE	DAF0	DECK-ID	R26	RPGII	2.1	SUMMARY-132
R9PCSS	DB11	DECK-ID	R27	RPGII	2.1	SUMMARY-132
R9PRCL	DC13	DECK-ID	R28	RPGII	2.1	SUMMARY-132
R9PRFN	DE3C	DECK-ID	R29	RPGII	2.1	SUMMARY-135
R9PTCH	DE67	DECK-ID	R30	RPGII	2.1	SUMMARY-132
R9PUTS	DE92	DECK-ID	R31	RPGII	2.1	SUMMARY-132
R9RCAD	DEE7	DECK-ID	R32	RPGII	2.1	SUMMARY-132
R9RDEN	DFA4	DECK-ID	R33	RPGII	2.1	SUMMARY-132
R9REAC	E03E	DECK-ID	R34	RPGII	2.1	SUMMARY-132
R9RSLT	E045	DECK-ID	R38	RPGII	2.1	SUMMARY-132
R9RSTS	E089	DECK-ID	R39	RPGII	2.1	SUMMARY-132
R9SETF	E0B1	DECK-ID	R47	RPGII	2.1	SUMMARY-132
R9SETN	E0C7	DECK-ID	R48	RPGII	2.1	SUMMARY-132

R9SHFT	E0E3	DECK-ID	R49	RPGII	2.1	SUMMARY-132
R9SKIP	E126	DECK-ID	R50	RPGII	2.1	SUMMARY-132
R9SPAC	E17C	DECK-ID	R51	RPGII	2.1	SUMMARY-132
R9SGRT	E199	DECK-ID	R53	RPGII	2.1	SUMMARY-132
R9STHO	E279	DECK-ID	R54	RPGII	2.1	SUMMARY-132
R9STLL	E2C5	DECK-ID	R55	RPGII	2.1	SUMMARY-132
R9STON	E32A	DECK-ID	R56	RPGII	2.1	SUMMARY-132
R9TIME	E344	DECK-ID	R60	RPGII	2.1	SUMMARY-132
R9TP40	E367	DECK-ID	R61	RPGII	2.1	SUMMARY-132
R9TRAL	E377	DECK-ID	R62	RPGII	2.1	SUMMARY-132
R9XSTB	E38C	DECK-ID	R65	RPGII	2.1	SUMMARY-132
R9TSTN	E3EE	DECK-ID	R66	RPGII	2.1	SUMMARY-132
R9TSTZ	E403	DECK-ID	R67	RPGII	2.1	SUMMARY-132
R9TTCP	E445	DECK-ID	R68	RPGII	2.1	SUMMARY-132
R9UNPK	E46B	DECK-ID	R69	RPGII	2.1	SUMMARY-132
R9XCPT	E48C	DECK-ID	R71	RPGII	2.1	SUMMARY-132
R9XFQT	E4C4	DECK-ID	R72	RPGII	2.1	SUMMARY-132
R9CTMG	E531	DECK-ID	R20	RPGII	2.1	SUMMARY-132
R9XRSD	E54B	DECK-ID	R73	RPGII	2.1	SUMMARY-132
R9YCCD	E56D	DECK-ID	R74	RPGII	2.1	SUMMARY-132
R9ZADS	E5A7	DECK-ID	R75	RPGII	2.1	SUMMARY-132
R9ZCGD	E5D4	DECK-ID	R76	RPGII	2.1	SUMMARY-132
READ09	E60C	DECK-ID	S18	RPGII	2.1	SUMMARY-132
READ10	E6FE	DECK-ID	S19	RPGII	2.1	SUMMARY-132
READ11	E802	DECK-ID	S20	RPGII	2.1	SUMMARY-132
READ12	E94C	DECK-ID	S21	RPGII	2.1	SUMMARY-132
READ13	EA4B	DECK-ID	S22	RPGII	2.1	SUMMARY-132
WRIT17	EAFE	DECK-ID	S23	RPGII	2.1	SUMMARY-132
WRIT18	EBB5	DECK-ID	S24	RPGII	2.1	SUMMARY-132
WRIT20	EC57	DECK-ID	S26	RPGII	2.1	SUMMARY-132
WRIT19	EDCA	DECK-ID	S25	RPGII	2.1	SUMMARY-132
WRIT21	EE4F	DECK-ID	S27	RPGII	2.1	SUMMARY-132
WRIT23	EF01	DECK-ID	S28	RPGII	2.1	SUMMARY-132
UPCT25	EF95	DECK-ID	S29	RPGII	2.1	SUMMARY-132
UPDT26	F035	DECK-ID	S30	RPGII	2.1	SUMMARY-132
SETL33	F10A	DECK-ID	S31	RPGII	2.1	SUMMARY-132
ROCT43	F18C	DECK-ID	S36	RPGII	2.1	SUMMARY-132
ROCT44	F1F6	DECK-ID	S37	RPGII	2.1	SUMMARY-132
ROCT45	F2C5	DECK-ID	S38	RPGII	2.1	SUMMARY-132
ERR046	F373	DECK-ID	R91	RPGII	2.1	SUMMARY-132
NTAP48	F3A3	DECK-ID	S39	RPGII	2.1	SUMMARY-132
NTAP49	F6C2	DECK-ID	S40	RPGII	2.1	SUMMARY-132
NTAP52	F760	DECK-ID	S41	RPGII	2.1	SUMMARY-132
NTAP53	F7FD	DECK-ID	S42	RPGII	2.1	SUMMARY-132
NTAP54	F871	DECK-ID	S43	RPGII	2.1	SUMMARY-132
NTAP55	F8FA	DECK-ID	S44	RPGII	2.1	SUMMARY-132
NTAP57	F946	DECK-ID	S45	RPGII	2.1	SUMMARY-132
NTAP58	F965	DECK-ID	S46	RPGII	2.1	SUMMARY-132
ROCT60	FA12	DECK-ID	S48	RPGII	2.1	SUMMARY-132
FHMV63	FA29	DECK-ID	S51	RPGII	2.1	SUMMARY-132
R9ENCL	FA75	DECK-ID	P58	RPGII	2.1	SUMMARY-132

IN

*K,18

IN

*J,RHLCSH,33

IN

*K,117

IN

*K,P8
IN

*P,F,3,R9BECN

R9CNTR	8200	DECK-ID	P44	RPGII	2.1	SUMMARY-132
R9RCCM	8282	DECK-ID	R35	RPGII	2.1	SUMMARY-132
R9RPRT	8305	DECK-ID	R37	RPGII	2.1	SUMMARY-132
R9SAVE	8388	DECK-ID	R40	RPGII	2.1	SUMMARY-132
SYSHSG	8467	DECK-ID	A33	ITGS	2.0	SUMMARY-132
FMENTP	85F7	DECK-ID	F58	ITGS	2.0	SUMMARY-132
EXENTP	8658	DECK-ID	A34	ITGS	2.0	SUMMARY-132
FMCALL	8680	DECK-ID	R92	RPGII	2.1	SUMMARY-132
STRACE	8688	DECK-ID	S06	RPGII	2.1	SUMMARY-132
R9CHAR	86A4	DECK-ID	P33	RPGII	2.1	SUMMARY-132
R9ENTS	878C	DECK-ID	P59	RPGII	2.1	SUMMARY-132
*PAGE	878C					
R9ELCC	8800	DECK-ID	P57	RPGII	2.1	SUMMARY-132
R9DUMO	8800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	8801					
R9DUMO	9C00	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	9C01					
R9DUMG	980C	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	9801					
R9DUMG	A000	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	A001					
R9DUMG	A80C	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	A801					
R9DUMG	B000	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	B001					
R9DUMG	B800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	B801					
R9DUMG	C000	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	C001					
R9DUMG	C800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	C801					
R9DUMG	D000	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	D001					
R9BEC3	D800	DECK-ID	P22	RPGII	2.1	SUMMARY-132
R9IPLT	D802	DECK-ID	P85	RPGII	2.1	SUMMARY-132
R9INTV	D807	DECK-ID	P82	RPGII	2.1	SUMMARY-132
R9CPCD	D80F	DECK-ID	R17	RPGII	2.1	SUMMARY-132
R9HGTV	D847	DECK-ID	R70	RPGII	2.1	SUMMARY-132
R9SAV3	D866	DECK-ID	R43	RPGII	2.1	SUMMARY-132
R9ARTH	D8C4	DECK-ID	P16	RPGII	2.1	SUMMARY-132
R9ASQR	D9DC	DECK-ID	P17	RPGII	2.1	SUMMARY-132
R9ATGN	D9FE	DECK-ID	P18	RPGII	2.1	SUMMARY-132
R9BDPR	DA21	DECK-ID	P19	RPGII	2.1	SUMMARY-132
R9BINT	DA9B	DECK-ID	P28	RPGII	2.1	SUMMARY-132
R9BGCL	DB1F	DECK-ID	P25	RPGII	2.1	SUMMARY-132
R9CALC	DB1F	DECK-ID	P31	RPGII	2.1	SUMMARY-132
R9CHAN	DB3B	DECK-ID	P32	RPGII	2.1	SUMMARY-132
R9CHIN	DBAC	DECK-ID	P34	RPGII	2.1	SUMMARY-132
R9CLPR	DBD9	DECK-ID	P37	RPGII	2.1	SUMMARY-132
R9CLRC	DDF1	DECK-ID	P38	RPGII	2.1	SUMMARY-132
R9CLRE	DDFB	DECK-ID	P39	RPGII	2.1	SUMMARY-132
R9CMBC	DE14	DECK-ID	P41	RPGII	2.1	SUMMARY-132
R9CMGV	DE29	DECK-ID	P42	RPGII	2.1	SUMMARY-132
R9CMPR	DEF2	DECK-ID	P43	RPGII	2.1	SUMMARY-132

R9CRIN	DF44	DECK-ID	P46	RPGII	2.1	SUMMARY-132
R9DETP	DF4F	DECK-ID	P48	RPGII	2.1	SUMMARY-132
R9DMND	DF83	DECK-ID	P50	RPGII	2.1	SUMMARY-132
R9ECGD	DFBE	DECK-ID	P54	RPGII	2.1	SUMMARY-132
R9EDCN	E096	DECK-ID	P55	RPGII	2.1	SUMMARY-132
R9EDIT	E125	DECK-ID	P56	RPGII	2.1	SUMMARY-132
R9EXCP	E134	DECK-ID	P60	RPGII	2.1	SUMMARY-132
R9EXIT	E13F	DECK-ID	P61	RPGII	2.1	SUMMARY-132
R9FILR	E164	DECK-ID	P62	RPGII	2.1	SUMMARY-132
R9FLDL	E193	DECK-ID	P64	RPGII	2.1	SUMMARY-132
R9FLOW	E1C6	DECK-ID	P65	RPGII	2.1	SUMMARY-132
R9FHAL	E1E1	DECK-ID	P66	RPGII	2.1	SUMMARY-132
R9FN8G	E222	DECK-ID	P67	RPGII	2.1	SUMMARY-132
R9FGRG	E222	DECK-ID	P68	RPGII	2.1	SUMMARY-132
R9FTQV	E234	DECK-ID	P71	RPGII	2.1	SUMMARY-132
R9GETS	E272	DECK-ID	P72	RPGII	2.1	SUMMARY-132
R9GUTO	E2CF	DECK-ID	P73	RPGII	2.1	SUMMARY-132
R9GRAR	E316	DECK-ID	P74	RPGII	2.1	SUMMARY-132
R9ICTL	E39C	DECK-ID	P75	RPGII	2.1	SUMMARY-132
R9IDMX	E473	DECK-ID	P76	RPGII	2.1	SUMMARY-132
R9INIT	E481	DECK-ID	P78	RPGII	2.1	SUMMARY-132
R9INMV	E481	DECK-ID	P79	RPGII	2.1	SUMMARY-132
R9IGCL	E613	DECK-ID	P83	RPGII	2.1	SUMMARY-132
R9LAHD	E62A	DECK-ID	P87	RPGII	2.1	SUMMARY-132
R9LCAE	E64B	DECK-ID	P89	RPGII	2.1	SUMMARY-132
R9LEL	E6AB	DECK-ID	P90	RPGII	2.1	SUMMARY-132
R9LKLP	E6DE	DECK-ID	P91	RPGII	2.1	SUMMARY-135
R9LGAD	E837	DECK-ID	P92	RPGII	2.1	SUMMARY-132
R9LCCL	E866	DECK-ID	P93	RPGII	2.1	SUMMARY-132
R9LRCK	E885	DECK-ID	P94	RPGII	2.1	SUMMARY-132
R9LSMB	E888	DECK-ID	P95	RPGII	2.1	SUMMARY-132
R9MHCV	E903	DECK-ID	P98	RPGII	2.1	SUMMARY-132
R9MCVA	E9F0	DECK-ID	P99	RPGII	2.1	SUMMARY-132
R9MCVE	EA12	DECK-ID	R01	RPGII	2.1	SUMMARY-132
R9MTHK	EAF1	DECK-ID	R04	RPGII	2.1	SUMMARY-132
R9MVHD	EB0C	DECK-ID	R10	RPGII	2.1	SUMMARY-132
R9MHI	EB13	DECK-ID	R11	RPGII	2.1	SUMMARY-132
R9NSGR	EB1F	DECK-ID	R13	RPGII	2.1	SUMMARY-132
R9NTCA	EB66	DECK-ID	R14	RPGII	2.1	SUMMARY-132
R9NXFL	EB8F	DECK-ID	R15	RPGII	2.1	SUMMARY-132
R9NXRC	EBB1	DECK-ID	R16	RPGII	2.1	SUMMARY-132
R9CTMV	EBDF	DECK-ID	R21	RPGII	2.1	SUMMARY-132
R9BGCT	EDB1	DECK-ID	P26	RPGII	2.1	SUMMARY-132
R9OTPT	EDB1	DECK-ID	R22	RPGII	2.1	SUMMARY-132
R9CVGP	EDBB	DECK-ID	R23	RPGII	2.1	SUMMARY-132
R9OV50	EDF5	DECK-ID	R24	RPGII	2.1	SUMMARY-132
R9PACK	EE2C	DECK-ID	R25	RPGII	2.1	SUMMARY-132
R9PAGE	EE78	DECK-ID	R26	RPGII	2.1	SUMMARY-132
R9PGSS	EE99	DECK-ID	R27	RPGII	2.1	SUMMARY-132
R9PRFN	EF9B	DECK-ID	R29	RPGII	2.1	SUMMARY-135
R9PLTS	EFC6	DECK-ID	R31	RPGII	2.1	SUMMARY-132
R9RDEN	F01B	DECK-ID	R33	RPGII	2.1	SUMMARY-132
R9READ	F0B5	DECK-ID	R34	RPGII	2.1	SUMMARY-132
R9RSTS	F0BC	DECK-ID	R39	RPGII	2.1	SUMMARY-132
R9SETF	F0E4	DECK-ID	R47	RPGII	2.1	SUMMARY-132
R9SETN	F0FA	DECK-ID	R48	RPGII	2.1	SUMMARY-132
R9SKIP	F116	DECK-ID	R50	RPGII	2.1	SUMMARY-132
R9SPAC	F16C	DECK-ID	R51	RPGII	2.1	SUMMARY-132
R9STHO	F189	DECK-ID	R54	RPGII	2.1	SUMMARY-132
R9STLL	F1C5	DECK-ID	R55	RPGII	2.1	SUMMARY-132

R9STON	F23A	DECK-ID	R56	RPGII	2.1	SUMMARY-132
R9STUB	F254	DECK-ID	R57	RPGII	2.1	SUMMARY-132
R9TIME	F25C	DECK-ID	R60	RPGII	2.1	SUMMARY-132
R9TP40	F27F	DECK-ID	R61	RPGII	2.1	SUMMARY-132
R9TSTN	F28F	DECK-ID	R66	RPGII	2.1	SUMMARY-132
R9TTCP	F2A4	DECK-ID	R68	RPGII	2.1	SUMMARY-132
R9UNPK	F2CA	DECK-ID	R69	RPGII	2.1	SUMMARY-132
R9XCPT	F31C	DECK-ID	R71	RPGII	2.1	SUMMARY-132
R9CTFG	F323	DECK-ID	R20	RPGII	2.1	SUMMARY-132
R9XRSD	F33D	DECK-ID	R73	RPGII	2.1	SUMMARY-132
R9YCOD	F35F	DECK-ID	R74	RPGII	2.1	SUMMARY-132
R9ZCOD	F399	DECK-ID	R76	RPGII	2.1	SUMMARY-132
READ09	F3D1	DECK-ID	S18	RPGII	2.1	SUMMARY-132
READ10	F4C3	DECK-ID	S19	RPGII	2.1	SUMMARY-132
READ12	F5C7	DECK-ID	S21	RPGII	2.1	SUMMARY-132
READ13	F6D2	DECK-ID	S22	RPGII	2.1	SUMMARY-132
WRIT17	F785	DECK-ID	S23	RPGII	2.1	SUMMARY-132
WRIT18	F83C	DECK-ID	S24	RPGII	2.1	SUMMARY-132
WRIT20	F8DE	DECK-ID	S26	RPGII	2.1	SUMMARY-132
WRIT21	F991	DECK-ID	S27	RPGII	2.1	SUMMARY-132
WRIT23	FA43	DECK-ID	S28	RPGII	2.1	SUMMARY-132
UPDT25	FAD7	DECK-ID	S29	RPGII	2.1	SUMMARY-132
SETL33	FB77	DECK-ID	S31	RPGII	2.1	SUMMARY-132
RCOT44	FBF9	DECK-ID	S37	RPGII	2.1	SUMMARY-132
ROCT45	FCC8	DECK-ID	S38	RPGII	2.1	SUMMARY-132
ERRC46	FD76	DECK-ID	R91	RPGII	2.1	SUMMARY-132
KOCT60	FDA6	DECK-ID	S48	RPGII	2.1	SUMMARY-132
RCOT61	FDBD	DECK-ID	S49	RPGII	2.1	SUMMARY-132
UPCT62	FDFE	DECK-ID	S50	RPGII	2.1	SUMMARY-132
FMMV63	FECO	DECK-ID	S51	RPGII	2.1	SUMMARY-132
R9ENDL	FFOC	DECK-ID	P56	RPGII	2.1	SUMMARY-132

IN

*K,I8
IN

*J,RMUCFO,\$\$
IN

*K,I17
IN

*K,P8
IN

*P,F,3,R9BEGN						
R9CNTR	8200	DECK-ID	P44	RPGII	2.1	SUMMARY-132
R9RCOM	82B2	DECK-ID	R35	RPGII	2.1	SUMMARY-132
R9RPRT	8305	DECK-ID	R37	RPGII	2.1	SUMMARY-132
R9SAVE	83EB	DECK-ID	K40	RPGII	2.1	SUMMARY-132
SYSHSG	8467	DECK-ID	A33	ITCS	2.0	SUMMARY-132
FMENTP	85F7	DECK-ID	F58	ITCS	2.0	SUMMARY-132
EXENTP	8658	DECK-ID	A34	ITOS	2.0	SUMMARY-132
FMCALL	8680	DECK-ID	R92	RPGII	2.1	SUMMARY-132
STRACE	8688	DECK-ID	S06	RPGII	2.1	SUMMARY-132
R9CHAR	86A4	DECK-ID	P33	RPGII	2.1	SUMMARY-132
R9ENTS	87BC	DECK-ID	P59	RPGII	2.1	SUMMARY-132
*PAGE	87BC					
R9ELCC	8800	DECK-ID	P57	RPGII	2.1	SUMMARY-132
R9GUM0	8800	DECK-ID	P52	RPGII	2.1	SUMMARY-132

*PAGE	8801			
R9DUM0	9000	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	9001			
R9DUM0	9800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	9801			
R9DUM0	A000	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	A001			
R9DUM0	A800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	A801			
R9DUM0	B000	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	B001			
R9DUM0	B800	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	B801			
R9DUM0	C000	DECK-ID P52	RPGII 2.1	SUMMARY-132
*PAGE	C001			
R9BEG4	C800	DECK-ID P23	RPGII 2.1	SUMMARY-132
R9IPUT	C802	DECK-ID P85	RPGII 2.1	SUMMARY-132
R9INTV	C807	DECK-ID P82	RPGII 2.1	SUMMARY-132
R90PCE	C80F	DECK-ID R17	RPGII 2.1	SUMMARY-132
R9HOTV	C847	DECK-ID R70	RPGII 2.1	SUMMARY-132
R9SAV4	C866	DECK-ID R44	RPGII 2.1	SUMMARY-132
R9ARTH	C8CE	DECK-ID P16	RPGII 2.1	SUMMARY-132
R9ASQR	C9E7	DECK-ID P17	RPGII 2.1	SUMMARY-132
R9ATCN	CA08	DECK-IC P18	RPGII 2.1	SUMMARY-132
R9BCPR	CA2B	DECK-ID P19	RPGII 2.1	SUMMARY-132
R9BINP	CAA5	DECK-IC P27	RPGII 2.1	SUMMARY-135
R9BINT	CB81	DECK-ID P28	RPGII 2.1	SUMMARY-132
R9BITF	CC35	DECK-IC P29	RPGII 2.1	SUMMARY-132
R9BITN	CC5E	DECK-ID P30	RPGII 2.1	SUMMARY-132
R9BGCL	CC88	DECK-ID P25	RPGII 2.1	SUMMARY-132
R9CALC	CC88	DECK-ID P31	RPGII 2.1	SUMMARY-132
R9CHAN	CCA4	DECK-IC P32	RPGII 2.1	SUMMARY-132
R9CFIN	CC09	DECK-IC P34	RPGII 2.1	SUMMARY-132
R9CLPR	CD42	DECK-ID P37	RPGII 2.1	SUMMARY-132
R9CLRC	CF5A	DECK-IC P38	RPGII 2.1	SUMMARY-132
R9CLRE	CF64	DECK-IC P39	RPGII 2.1	SUMMARY-132
R9CMBD	CF7D	DECK-ID P41	RPGII 2.1	SUMMARY-132
R9CMCV	CF92	DECK-IC P42	RPGII 2.1	SUMMARY-132
R9CHPR	D05B	DECK-ID P43	RPGII 2.1	SUMMARY-132
R9CRIN	D0AD	DECK-ID P46	RPGII 2.1	SUMMARY-132
R9DEBG	D0B8	DECK-IC P47	RPGII 2.1	SUMMARY-132
R9DETP	D273	DECK-ID P48	RPGII 2.1	SUMMARY-132
R9DMND	D2A7	DECK-ID P50	RPGII 2.1	SUMMARY-132
R9DSPY	D2E2	DECK-IC P51	RPGII 2.1	SUMMARY-132
R9ECOD	D40F	DECK-ID P54	RPGII 2.1	SUMMARY-132
R9EDCN	D4E7	DECK-ID P55	RPGII 2.1	SUMMARY-132
R9EDIT	D576	DECK-ID P56	RPGII 2.1	SUMMARY-132
R9EXCP	D585	DECK-IC P60	RPGII 2.1	SUMMARY-132
R9EXIT	D590	DECK-ID P61	RPGII 2.1	SUMMARY-132
R9FILR	D585	DECK-ID P62	RPGII 2.1	SUMMARY-132
R9FLDL	D5E4	DECK-IC P64	RPGII 2.1	SUMMARY-132
R9FLGH	D617	DECK-IC P65	RPGII 2.1	SUMMARY-132
R9FMAL	D632	DECK-ID P66	RPGII 2.1	SUMMARY-132
R9FNBC	D673	DECK-ID P67	RPGII 2.1	SUMMARY-132
R9FORC	D673	DECK-IC P68	RPGII 2.1	SUMMARY-132
R9FTCV	D685	DECK-ID P71	RPGII 2.1	SUMMARY-132
R9GETS	D6C3	DECK-ID P72	RPGII 2.1	SUMMARY-132
R9GOTG	D720	DECK-ID P73	RPGII 2.1	SUMMARY-132
R9GRAR	D767	DECK-ID P74	RPGII 2.1	SUMMARY-132
R9ICTL	D7ED	DECK-IC P75	RPGII 2.1	SUMMARY-132

R9IDMX	D8C4	DECK-ID	P76	RPGII	2.1	SUMMARY-132
R9INDH	D8D2	DECK-ID	P77	RPGII	2.1	SUMMARY-132
R9INIT	D92F	DECK-ID	P78	RPGII	2.1	SUMMARY-132
R9INMV	D95F	DECK-ID	P79	RPGII	2.1	SUMMARY-132
R9ICCL	DAC1	DECK-ID	P83	RPGII	2.1	SUMMARY-132
R9LAHD	CAD8	DECK-ID	P87	RPGII	2.1	SUMMARY-132
R9LCAE	DAF9	DECK-ID	P89	RPGII	2.1	SUMMARY-132
R9LEL	DB59	DECK-ID	P90	RPGII	2.1	SUMMARY-132
R9LKUP	DB8C	DECK-ID	P91	RPGII	2.1	SUMMARY-135
R9LCAD	DCE5	DECK-ID	P92	RPGII	2.1	SUMMARY-132
R9LCCL	DD14	DECK-ID	P93	RPGII	2.1	SUMMARY-132
R9LRCK	DD33	DECK-ID	P94	RPGII	2.1	SUMMARY-132
R9LSHB	DD69	DECK-ID	P95	RPGII	2.1	SUMMARY-132
R9HMCV	CDB1	DECK-ID	P98	RPGII	2.1	SUMMARY-132
R9HQA	DE9E	DECK-ID	P99	RPGII	2.1	SUMMARY-132
R9MCVE	DECO	DECK-ID	R01	RPGII	2.1	SUMMARY-132
R9HGVZ	CF9F	DECK-ID	R02	RPGII	2.1	SUMMARY-132
R9MTRN	EO14	DECK-ID	R03	RPGII	2.1	SUMMARY-132
R9MTHK	EO3F	DECK-ID	R04	RPGII	2.1	SUMMARY-132
R9MVHD	EO5A	DECK-ID	R10	RPGII	2.1	SUMMARY-132
R9MHI	EO61	DECK-ID	R11	RPGII	2.1	SUMMARY-132
R9NRMX	EO6C	DECK-ID	R12	RPGII	2.1	SUMMARY-132
R9NSCR	EOD6	DECK-ID	R13	RPGII	2.1	SUMMARY-132
R9NTOA	E11D	DECK-ID	R14	RPGII	2.1	SUMMARY-132
R9NXFL	E146	DECK-ID	R15	RPGII	2.1	SUMMARY-132
R9NXRC	E168	DECK-ID	R16	RPGII	2.1	SUMMARY-132
R9CTHV	E196	DECK-ID	R21	RPGII	2.1	SUMMARY-132
R9BGGT	E368	DECK-ID	R26	RPGII	2.1	SUMMARY-132
R9OTPT	E368	DECK-ID	R22	RPGII	2.1	SUMMARY-132
R9OVOP	E372	DECK-ID	R23	RPGII	2.1	SUMMARY-132
R9OV50	E3AC	DECK-ID	R24	RPGII	2.1	SUMMARY-132
R9PACK	E3E3	DECK-ID	R25	RPGII	2.1	SUMMARY-132
R9PAGE	E42F	DECK-ID	R26	RPGII	2.1	SUMMARY-132
R9PGSS	E450	DECK-ID	R27	RPGII	2.1	SUMMARY-132
R9PRFN	E552	DECK-ID	R29	RPGII	2.1	SUMMARY-135
R9PUTS	E57D	DECK-ID	R31	RPGII	2.1	SUMMARY-132
R9RDEN	E5D2	DECK-ID	R33	RPGII	2.1	SUMMARY-132
R9READ	E66C	DECK-ID	R34	RPGII	2.1	SUMMARY-132
R9RSLT	E673	DECK-ID	R38	RPGII	2.1	SUMMARY-132
R9RSTS	E6B7	DECK-ID	R39	RPGII	2.1	SUMMARY-132
R9SETF	E6DF	DECK-ID	R47	RPGII	2.1	SUMMARY-132
R9SETN	E6F5	DECK-ID	R48	RPGII	2.1	SUMMARY-132
R9SHFT	E711	DECK-ID	R49	RPGII	2.1	SUMMARY-132
R9SKIP	E754	DECK-ID	R50	RPGII	2.1	SUMMARY-132
R9SPAC	E7AA	DECK-ID	R51	RPGII	2.1	SUMMARY-132
R9SQRT	E7C7	DECK-ID	R53	RPGII	2.1	SUMMARY-132
R9STHC	E8A7	DECK-ID	R54	RPGII	2.1	SUMMARY-132
R9STLL	E8F3	DECK-ID	R55	RPGII	2.1	SUMMARY-132
R9STCN	E958	DECK-ID	R56	RPGII	2.1	SUMMARY-132
R9TIME	E972	DECK-ID	R60	RPGII	2.1	SUMMARY-132
R9TP40	E995	DECK-ID	R61	RPGII	2.1	SUMMARY-132
R9TRAL	E9A5	DECK-ID	R62	RPGII	2.1	SUMMARY-132
R9TSTB	E9EA	DECK-ID	R65	RPGII	2.1	SUMMARY-132
R9TSTN	EA1C	DECK-ID	R66	RPGII	2.1	SUMMARY-132
R9TSTZ	EA31	DECK-ID	R67	RPGII	2.1	SUMMARY-132
R9TTUP	EA73	DECK-ID	R68	RPGII	2.1	SUMMARY-132
R9UNPK	EA99	DECK-ID	R69	RPGII	2.1	SUMMARY-132
R9XCPT	EAEB	DECK-ID	R71	RPGII	2.1	SUMMARY-132
R9CTMG	EAF2	DECK-ID	R20	RPGII	2.1	SUMMARY-132
R9XRSD	EBOC	DECK-ID	R73	RPGII	2.1	SUMMARY-132

R9YCCD	EB2E	DECK-ID R74	RPGII 2.1	SUMMARY-132
R9ZCDD	EB68	DECK-ID R76	RPGII 2.1	SUMMARY-132
READ09	EBA0	DECK-ID S18	RPGII 2.1	SUMMARY-132
READ10	EC92	DECK-ID S19	RPGII 2.1	SUMMARY-132
READ11	ED96	DECK-ID S20	RPGII 2.1	SUMMARY-132
READ12	EED4	DECK-ID S21	RPGII 2.1	SUMMARY-132
READ13	EFD4	DECK-ID S22	RPGII 2.1	SUMMARY-132
WRIT17	F092	DECK-ID S23	RPGII 2.1	SUMMARY-132
WRIT18	F149	DECK-ID S24	RPGII 2.1	SUMMARY-132
WRIT20	F1EB	DECK-ID S26	RPGII 2.1	SUMMARY-132
WRIT19	F29E	DECK-ID S25	RPGII 2.1	SUMMARY-132
WRIT21	F3E3	DECK-ID S27	RPGII 2.1	SUMMARY-132
WRIT23	F495	DECK-ID S28	RPGII 2.1	SUMMARY-132
UPDT25	F529	DECK-ID S29	RPGII 2.1	SUMMARY-132
SEIL33	F5C9	DECK-ID S31	RPGII 2.1	SUMMARY-132
ROCT44	F648	DECK-ID S37	RPGII 2.1	SUMMARY-132
ROCT45	F71A	DECK-ID S38	RPGII 2.1	SUMMARY-132
ERR046	F7C8	DECK-ID R91	RPGII 2.1	SUMMARY-132
NTAP48	F7F8	DECK-ID S39	RPGII 2.1	SUMMARY-132
NTAP49	FB17	DECK-ID S40	RPGII 2.1	SUMMARY-132
NTAP52	FBB5	DECK-ID S41	RPGII 2.1	SUMMARY-132
NTAP53	FC52	DECK-ID S42	RPGII 2.1	SUMMARY-132
NTAP54	FCC6	DECK-ID S43	RPGII 2.1	SUMMARY-132
NTAP55	FD4F	DECK-ID S44	RPGII 2.1	SUMMARY-132
NTAP57	FD9B	DECK-ID S45	RPGII 2.1	SUMMARY-132
NTAP58	FCBA	DECK-ID S46	RPGII 2.1	SUMMARY-132
ROCT60	FE67	DECK-ID S48	RPGII 2.1	SUMMARY-132
ROCT61	FE7E	DECK-ID S49	RPGII 2.1	SUMMARY-132
UPDT62	FEBF	DECK-ID S50	RPGII 2.1	SUMMARY-132
FHMV63	FF81	DECK-ID S51	RPGII 2.1	SUMMARY-132
R9ENDL	FFCD	DECK-ID P58	RPGII 2.1	SUMMARY-132

IN

*K,18
IN

*J,RHUCFT,SS
IN

*2
*CTC, MCUNT 2ND RPGII DISKETTE IN UNIT C
*PAUS
*LIBEDT
LIB

IN

*K,117
IN

*K,P8
IN

*P,F,3,R9BEGN				
R9CNTR	8200	DECK-ID P44	RPGII 2.1	SUMMARY-132
R9RCCM	82B2	DECK-ID R35	RPGII 2.1	SUMMARY-132
R9RPRT	8305	DECK-ID R37	RPGII 2.1	SUMMARY-132
R9SAVE	83BB	DECK-ID R40	RPGII 2.1	SUMMARY-132
SYMSG	8467	DECK-ID A33	ITDS 2.0	SUMMARY-132
FMENTP	85F7	DECK-ID F58	ITDS 2.0	SUMMARY-132

EXENTP	8658	DECK-IC	A34	ITOS	2.0	SUMMARY-132
FMCALL	8680	DECK-ID	R92	RPGII	2.1	SUMMARY-132
STRACE	8688	DECK-IC	S06	RPGII	2.1	SUMMARY-132
R9CHAR	86A4	DECK-IC	P33	RPGII	2.1	SUMMARY-132
R9ENTS	878C	DECK-ID	P59	RPGII	2.1	SUMMARY-132
*PAGE	878C					
R9ELGC	8800	DECK-ID	P57	RPGII	2.1	SUMMARY-132
R9DUM0	8800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	8801					
R9DUM0	9000	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	9001					
R9DUM0	9800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	9801					
R9DUM0	ACC0	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	A001					
R9DUM0	A800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	A801					
R9DUM0	B00C	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	B001					
R9DUM0	B800	DECK-IC	P52	RPGII	2.1	SUMMARY-132
*PAGE	B801					
R9DUM0	C000	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	CC01					
R9DUM0	C800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	C801					
R9DUM0	DOC0	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	DC01					
R9DUM0	D800	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	D801					
R9DUM0	E000	DECK-ID	P52	RPGII	2.1	SUMMARY-132
*PAGE	E001					
R9BEG5	E800	DECK-ID	P24	RPGII	2.1	SUMMARY-132
R9FINS	E802	DECK-IC	P63	RPGII	2.1	SUMMARY-132
R9CLSV	E813	DECK-ID	P40	RPGII	2.1	SUMMARY-132
R9SAV5	E823	DECK-ID	K45	RPGII	2.1	SUMMARY-132
R9DUM1	E82E	DECK-IC	P53	RPGII	2.1	SUMMARY-132
R9BINT	E82E	DECK-ID	P28	RPGII	2.1	SUMMARY-132
R9CLCS	E8B2	DECK-ID	P36	RPGII	2.1	SUMMARY-132
R9CLRE	E8F5	DECK-IC	P39	RPGII	2.1	SUMMARY-132
R9CLRC	E90E	DECK-IC	P38	RPGII	2.1	SUMMARY-132
R9CHBD	E918	DECK-IC	P41	RPGII	2.1	SUMMARY-132
R9FILR	E92D	DECK-ID	P62	RPGII	2.1	SUMMARY-132
R9FLDL	E95C	DECK-IC	P64	RPGII	2.1	SUMMARY-132
R9ICCL	E98F	DECK-ID	P83	RPGII	2.1	SUMMARY-132
R9IPBG	E9A6	DECK-IC	P84	RPGII	2.1	SUMMARY-132
R9LEL	E9A6	DECK-ID	P90	RPGII	2.1	SUMMARY-132
R9LCCL	E9D9	DECK-ID	P93	RPGII	2.1	SUMMARY-132
R9F1H	E9F8	DECK-ID	P97	RPGII	2.1	SUMMARY-132
R9HVBX	E9FF	DECK-ID	K07	RPGII	2.1	SUMMARY-132
R9PUTS	EA37	DECK-IC	K31	RPGII	2.1	SUMMARY-132
R9STHO	EA8C	DECK-ID	R54	RPGII	2.1	SUMMARY-132
R9TBOT	EAD8	DECK-IC	R59	RPGII	2.1	SUMMARY-132
R9LNPk	EC3D	DECK-ID	R69	RPGII	2.1	SUMMARY-132
R9GTHG	EC8F	DECK-IC	K20	RPGII	2.1	SUMMARY-132
WRIT17	ECA9	DECK-IC	S23	RPGII	2.1	SUMMARY-132
WRIT18	ED60	DECK-IC	S24	RPGII	2.1	SUMMARY-132
WRIT19	EE02	DECK-ID	S25	RPGII	2.1	SUMMARY-132
WRIT20	EF47	DECK-IC	S26	RPGII	2.1	SUMMARY-132
WRIT21	EFFA	DECK-ID	S27	RPGII	2.1	SUMMARY-132
WRIT23	FOAC	DECK-IC	S28	RPGII	2.1	SUMMARY-132

CLOS35	F140	DECK-ID	S32	RPGII	2.1	SUMMARY-132
CLGS36	F19D	DECK-ID	S33	RPGII	2.1	SUMMARY-132
CLOS37	F219	DECK-ID	S34	RPGII	2.1	SUMMARY-132
CLOS38	F2AE	DECK-ID	S35	RPGII	2.1	SUMMARY-132
ROGT43	F363	DECK-ID	S36	RPGII	2.1	SUMMARY-132
ROGT45	F3CD	DECK-ID	S38	RPGII	2.1	SUMMARY-132
ERR046	F47B	DECK-ID	R91	RPGII	2.1	SUMMARY-132
NTAP48	F4AB	DECK-ID	S39	RPGII	2.1	SUMMARY-132
NTAP49	F7CA	DECK-ID	S40	RPGII	2.1	SUMMARY-132
NTAP52	F868	DECK-ID	S41	RPGII	2.1	SUMMARY-132
NTAP53	F905	DECK-ID	S42	RPGII	2.1	SUMMARY-132
NTAP54	F979	DECK-ID	S43	RPGII	2.1	SUMMARY-132
NTAP55	FA02	DECK-ID	S44	RPGII	2.1	SUMMARY-132
NTAP57	FA4E	DECK-ID	S45	RPGII	2.1	SUMMARY-132
NTAP58	FA6D	DECK-ID	S46	RPGII	2.1	SUMMARY-132
FMMV63	FB1A	DECK-ID	S51	RPGII	2.1	SUMMARY-132
R9ENDL	FB66	DECK-ID	P58	RPGII	2.1	SUMMARY-132

IN

*K,I8

IN

*J,RHUCLO,33

IN

*K,I17

IN

*K,P8

IN

*P,F,,R9BASE

RPG	7000	DECK-ID	P12	RPGII	2.1	SUMMARY-132
RPGDMY	7024	DECK-ID	P11	RPGII	2.1	SUMMARY-132
R9LBY	7026	DECK-ID	P88	RPGII	2.1	SUMMARY-132
R9S8Y	7033	DECK-ID	R46	RPGII	2.1	SUMMARY-132
R9M1W	7046	DECK-ID	P97	RPGII	2.1	SUMMARY-132
R9MVH	704C	DECK-ID	R09	RPGII	2.1	SUMMARY-132
R9M1E	705A	DECK-ID	P96	RPGII	2.1	SUMMARY-132
R9FV6	706E	DECK-ID	R06	RPGII	2.1	SUMMARY-132
R9ARC	7089	DECK-ID	P15	RPGII	2.1	SUMMARY-132
RPGRCT	70A1	DECK-ID	P10	RPGII	2.1	SUMMARY-132

IN

*K,I8

IN

*N,RPGSMO,,,B

IN

*K,I17

IN

*P,F,,CVLYPT

RPG	7000	DECK-ID	P12	RPGII	2.1	SUMMARY-132
RPGDMY	7024	DECK-ID	P11	RPGII	2.1	SUMMARY-132
R9LBY	7026	DECK-ID	P88	RPGII	2.1	SUMMARY-132
R9S8Y	7033	DECK-ID	R46	RPGII	2.1	SUMMARY-132
R9M1W	7046	DECK-ID	P97	RPGII	2.1	SUMMARY-132
R9MVH	704D	DECK-ID	R09	RPGII	2.1	SUMMARY-132

R9M1B	705A	DECK-ID	P96	RPGII	2.1	SUMMARY-132
R9MVB	706E	DECK-ID	R06	RPGII	2.1	SUMMARY-132
R9ARG	7089	DECK-ID	P15	RPGII	2.1	SUMMARY-132
RPGRCT	70A1	DECK-ID	P10	RPGII	2.1	SUMMARY-132
RPGI1H	7CD8	DECK-ID	P01	RPGII	2.1	SUMMARY-132

IN

*K, I8
IN

*N, R9GSM1, , , B
IN

*K, I17
IN

*P, F, , CVLYPT						
RPG	7000	DECK-ID	P12	RPGII	2.1	SUMMARY-132
RPGDFY	7024	DECK-ID	P11	RPGII	2.1	SUMMARY-132
R9LBY	7026	DECK-ID	P88	RPGII	2.1	SUMMARY-132
R9SBY	7033	DECK-ID	R46	RPGII	2.1	SUMMARY-132
R9M1H	7046	DECK-ID	P97	RPGII	2.1	SUMMARY-132
R9MVB	704D	DECK-ID	R09	RPGII	2.1	SUMMARY-132
R9M1B	705A	DECK-ID	P96	RPGII	2.1	SUMMARY-132
R9MVB	706E	DECK-ID	R06	RPGII	2.1	SUMMARY-132
R9ARG	7089	DECK-ID	P15	RPGII	2.1	SUMMARY-132
RPGRCT	70A1	DECK-ID	P10	RPGII	2.1	SUMMARY-132
RPGI1F	7CD8	DECK-ID	P02	RPGII	2.1	SUMMARY-132

IN

*K, I8
IN

*N, R9GSM2, , , B
IN

*K, I17
IN

*P, F, , CVLYPT						
RPG	7000	DECK-ID	P12	RPGII	2.1	SUMMARY-132
RPGDHY	7024	DECK-ID	P11	RPGII	2.1	SUMMARY-132
R9LBY	7026	DECK-ID	P88	RPGII	2.1	SUMMARY-132
R9SBY	7033	DECK-ID	R46	RPGII	2.1	SUMMARY-132
R9M1H	7046	DECK-ID	P97	RPGII	2.1	SUMMARY-132
R9MVB	704D	DECK-ID	R09	RPGII	2.1	SUMMARY-132
R9M1B	705A	DECK-ID	P96	RPGII	2.1	SUMMARY-132
R9MVB	706E	DECK-ID	R06	RPGII	2.1	SUMMARY-132
R9ARG	7089	DECK-ID	P15	RPGII	2.1	SUMMARY-132
RPGRCT	70A1	DECK-ID	P10	RPGII	2.1	SUMMARY-132
RPGI1E	7CD8	DECK-ID	P03	RPGII	2.1	SUMMARY-132

IN

*K, I8
IN

*N, R9GSM3, , , B
IN

*K, I17

IN

*P,F,,OVLYPT

RPG	7000	DECK-ID P12	RPGII 2.1	SUMMARY-132
RPGDHY	7024	DECK-ID P11	RPGII 2.1	SUMMARY-132
R9LBY	7026	DECK-ID P88	RPGII 2.1	SUMMARY-132
R9SBY	7033	DECK-ID R46	RPGII 2.1	SUMMARY-132
R9MIW	7046	DECK-ID P97	RPGII 2.1	SUMMARY-132
R9MVH	704C	DECK-ID R09	RPGII 2.1	SUMMARY-132
R9MIB	705A	DECK-ID P96	RPGII 2.1	SUMMARY-132
R9MVB	706E	DECK-ID R06	RPGII 2.1	SUMMARY-132
R9ARG	7089	DECK-ID P15	RPGII 2.1	SUMMARY-132
RPGRCT	70A1	DECK-ID P10	RPGII 2.1	SUMMARY-132
RPGIIL	7CD8	DECK-ID P04	RPGII 2.1	SUMMARY-132

IN

*K,I8

IN

*N,RPGSM4,,,B

IN

*K,I17

IN

*P,F,,CVLYPT

RPG	7000	DECK-ID P12	RPGII 2.1	SUMMARY-132
RPGDHY	7024	DECK-ID P11	RPGII 2.1	SUMMARY-132
R9LBY	7026	DECK-ID P88	RPGII 2.1	SUMMARY-132
R9SBY	7033	DECK-ID R46	RPGII 2.1	SUMMARY-132
R9MIW	7046	DECK-ID P97	RPGII 2.1	SUMMARY-132
R9MVH	704C	DECK-ID R09	RPGII 2.1	SUMMARY-132
R9MIB	705A	DECK-ID P96	RPGII 2.1	SUMMARY-132
R9MVB	706E	DECK-ID R06	RPGII 2.1	SUMMARY-132
R9ARG	7089	DECK-ID P15	RPGII 2.1	SUMMARY-132
RPGRCT	70A1	DECK-ID P10	RPGII 2.1	SUMMARY-132
RPGIIL	7CD8	DECK-ID P05	RPGII 2.1	SUMMARY-132

IN

*K,I8

IN

*N,RPGSM5,,,B

IN

*K,I17

IN

*P,F,,CVLYPT

RPG	7000	DECK-ID P12	RPGII 2.1	SUMMARY-132
RPGDHY	7024	DECK-ID P11	RPGII 2.1	SUMMARY-132
R9LBY	7026	DECK-ID P88	RPGII 2.1	SUMMARY-132
R9SBY	7033	DECK-ID R46	RPGII 2.1	SUMMARY-132
R9MIW	7046	DECK-ID P97	RPGII 2.1	SUMMARY-132
R9MVH	704C	DECK-ID R09	RPGII 2.1	SUMMARY-132
R9MIB	705A	DECK-ID P96	RPGII 2.1	SUMMARY-132
R9MVB	706E	DECK-ID R06	RPGII 2.1	SUMMARY-132
R9ARG	7089	DECK-ID P15	RPGII 2.1	SUMMARY-132
RPGRCT	70A1	DECK-ID P10	RPGII 2.1	SUMMARY-132
RPGIIL	7CD8	DECK-ID P06	RPGII 2.1	SUMMARY-132

IN

*K,18
IN

*N,RPGSM6,,,B
IN

*K,117
IN

*P,F,,OVLYPT

RPG	7000	DECK-ID P12	KPGII 2.1	SUMMARY-132
RPGDMY	7024	DECK-ID P11	KPGII 2.1	SUMMARY-132
R9LBY	7026	DECK-ID P86	RPGII 2.1	SUMMARY-132
R9S8Y	7033	DECK-ID R46	KPGII 2.1	SUMMARY-132
R9M1H	7046	DECK-ID P97	RPGII 2.1	SUMMARY-132
R9MVB	704D	DECK-ID R09	RPGII 2.1	SUMMARY-132
R9M1B	705A	DECK-ID P96	KPGII 2.1	SUMMARY-132
R9MVB	706E	DECK-ID R06	KPGII 2.1	SUMMARY-132
R9ARG	7089	DECK-ID P15	RPGII 2.1	SUMMARY-132
RPGRGT	7CA1	DECK-ID P10	RPGII 2.1	SUMMARY-132
RPGIID	7CD8	DECK-ID P07	KPGII 2.1	SUMMARY-132

IN

*K,18
IN

*N,RPGSM7,,,B
IN

*K,117
IN

*P,F,,CVLYPT

RPG	7000	DECK-ID P12	RPGII 2.1	SUMMARY-132
RPGDMY	7024	DECK-ID P11	KPGII 2.1	SUMMARY-132
R9LBY	7026	DECK-ID P88	KPGII 2.1	SUMMARY-132
R9S8Y	7033	DECK-ID R46	KPGII 2.1	SUMMARY-132
R9M1H	7046	DECK-ID P97	RPGII 2.1	SUMMARY-132
R9MVB	704D	DECK-ID R09	RPGII 2.1	SUMMARY-132
R9M1B	705A	DECK-ID P96	RPGII 2.1	SUMMARY-132
R9MVB	706E	DECK-ID R06	KPGII 2.1	SUMMARY-132
R9ARG	7089	DECK-ID P15	RPGII 2.1	SUMMARY-132
RPGRGT	7CA1	DECK-ID P10	KPGII 2.1	SUMMARY-132
RPGIIA	7CD8	DECK-ID P08	RPGII 2.1	SUMMARY-132

IN

*K,18
IN

*N,RPGSM8,,,B
IN

*K,117
IN

*P,F,,GVLYPT

RPG	7000	DECK-ID P12	RPGII 2.1	SUMMARY-132
RPGDMY	7024	DECK-ID P11	RPGII 2.1	SUMMARY-132

R9LBY 7026 DECK-ID P88 RPGII 2.1
R9SBY 7033 DECK-ID R46 RPGII 2.1
R9MIH 7046 DECK-ID P97 RPGII 2.1
R9MVW 7040 DECK-ID R09 RPGII 2.1
R9MIB 705A DECK-ID P96 RPGII 2.1
R9MVB 706E DECK-ID R06 RPGII 2.1
R9ARG 7089 DECK-ID P15 RPGII 2.1
RPGROT 70A1 DECK-ID P10 RPGII 2.1
RPGIIM 7CD8 DECK-ID P09 RPGII 2.1

SUMMARY-132
SUMMARY-132
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SUMMARY-132
SUMMARY-132

IN

*K,I8
IN

*N,RPGSH9,,,B
IN

*K,I17
IN

*L,RPGII
IN

*L,CATLOG
IN

*L,R9CNTR
IN

*L,R9ROOT
IN

*L,R9RPRT
IN

*L,R9SAVE
IN

*L,R9FLGW
IN

*L,STRACE
IN

*L,SYMSG
IN

*L,R9EXIT
IN

*L,R9FSTL
IN

*L,R9ELCC
IN

*L,R9TRCE
IN

*L,R9TRCT

IN

*L,R9INDM
IN

*L,R9LEL
IN

*L,R9MIW
IN

*L,R9MVEX
IN

*L,R9MVH
IN

*L,R9FTNX
IN

*L,CVASEB
IN

*L,R9FLDL
IN

*L,R9999B
IN

*L,R9LPK1
IN

*L,SUBRFL
IN

*L,SUBRED
IN

*L,SUBRMV
IN

*L,SUBRIN
IN

*L,SUBRAJ
IN

*L,QBPREP
IN

*L,PARABS
IN

*L,R9STF0
IN

*L,ERRD46
IN

*L,FHCALL

IN

*K,P8

IN

*P,F,,CATSEG

CATLOG	7000	DECK-ID R81	RPGII 2.1	SUMMARY-132
CATFIL	7011	DECK-ID R79	RPGII 2.1	SUMMARY-132
CATGET	7268	DECK-ID R80	RPGII 2.1	SUMMARY-132
CATSKL	7288	DECK-ID R85	RPGII 2.1	SUMMARY-132
CATOBJ	7376	DECK-ID R84	RPGII 2.1	SUMMARY-132
CATERR	73F3	DECK-ID R78	RPGII 2.1	SUMMARY-132
CATMSG	74A0	DECK-ID R83	RPGII 2.1	SUMMARY-132
CATLU	74F9	DECK-ID R82	RPGII 2.1	SUMMARY-132
DISKRD	7511	DECK-ID R90	RPGII 2.1	SUMMARY-132
LIST	7541	DECK-ID R96	RPGII 2.1	SUMMARY-132
PUNCH	7574	DECK-ID R98	RPGII 2.1	SUMMARY-132
FORTN	75A5	DECK-ID R93	RPGII 2.1	SUMMARY-132
Q8PRMS	76C2	DECK-ID R99	RPGII 2.1	SUMMARY-132
PARABN	76E6	DECK-ID S53	RPGII 2.1	SUMMARY-132

IN

*K,I8

IN

*N,CATFIL,,,8

IN

*K,I17

IN

*P,F,3

SWITCH	820C	DECK-ID S12	RPGII 2.1	SUMMARY-132
R9SWCF	835E	DECK-ID R58	RPGII 2.1	SUMMARY-132
EXENTP	835E	DECK-ID A34	ITOS 2.0	SUMMARY-132

IN

*K,I8

IN

*J,SWITCH,SS

IN

*K,I17

IN

*P,F,3

TRACER	820C	DECK-ID S13	RPGII 2.1	SUMMARY-132
R9SWCH	8259	DECK-ID R58	RPGII 2.1	SUMMARY-132
EXENTP	8259	DECK-ID A34	ITOS 2.0	SUMMARY-132

IN

*K,I8

IN

*J,TRACER,SS

IN

*K,I17

IN

*P,,3

MOUNT	8200	DECK-ID R97	RPGII 2.1
IDOGWR	8506	DECK-ID R95	RPGII 2.1
FMENTP	8562	DECK-ID F58	ITDS 2.0
ROGT43	85C3	DECK-ID S36	RPGII 2.1
CHOOPT	862D	DECK-ID R86	RPGII 2.1
CHOZIN	8662	DECK-ID R87	RPGII 2.1
CHO3GG	86CB	DECK-ID R88	RPGII 2.1

SUMMARY-132
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SUMMARY-132
SUMMARY-132
SUMMARY-132

IN

*K,I8

IN

*J,MOUNT,SS

IN

*K,I17

IN

*P,F,3

SELMU	8200	DECK-ID S05	RPGII 2.1
EXENTP	82AA	DECK-ID A34	ITDS 2.0

SUMMARY-132
SUMMARY-132

IN

*K,I8

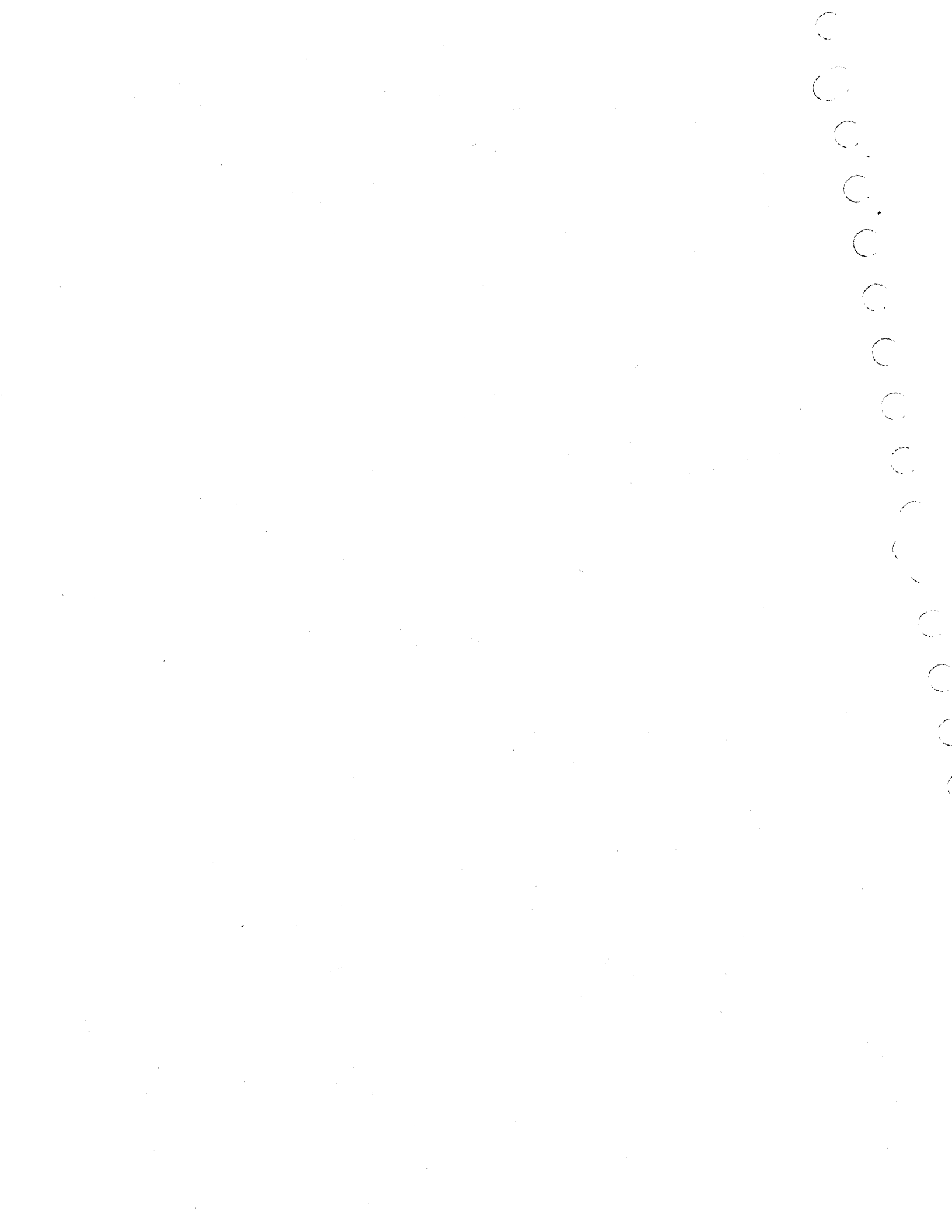
IN

*J,SELMU,SS

IN

*Z

*CTC, RPGII INSTALL COMPLETE



COBOL INSTALL

H

JOB: INSTAL.CE.POLI 1700 MASS STORAGE OPERATING SYSTEM VERSION 4.0 DATE OF RUN: 04/17/79 SYSTEM ID: ITOS 2.0 BASIC A SYSTEM SMP (04/16/79)

IIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTT	AAAAAAAAAA	LLL
TTT	NNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
TTT	NNNN	NNN	SSS	TTT	AAA AAA	LLL
TTT	NNNN	NNN	SSS	TTT	AAA AAA	LLL
TTT	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
TTT	NNN NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
TTT	NNN NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
TTT	NNN NNNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
TTT	NNN NNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
TTT	NNN NNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
TTTTTTTTTT	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLL.LLLLLLLL
TTTTTTTTTT	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLL.LLLLLLLL
TTTTTTTTTT	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLL.LLLLLLLL

*CTO. COROL 1.0 INSTALL
*CTO. COPYRIGHT CONTROL DATA CORPORATION 1978
*K.I17
*LJREFDT
LIR

IN

*K.I17
IN

*L.C4CLOS
IN

*L.C4COMP
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*L.C4DLNK
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*L.C4DADD
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*L.C4DSUB
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*L.C4FXCH
IN

*L.C4MOVE
IN

*L.C4OPEN
IN

*L.C4PDST
IN

*L.C4RDWF
IN

*L.C4READ
IN

*L.C4SORT
IN

*L.C4STWK
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*L.C4WPIT
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*L.C4WPST
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*L.C4WRWF
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*L.C7ACDT
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*L.C7ACDY
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*L.C7ACPC
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*L.C7ACPS
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*L.C7ACTM
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*L.C7ALTS
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*L.C7RLDT
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*L.C7RLDX
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*L.C7RRST
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*L.C7RSAV
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*L.C7RSTM
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*L.C7RSTX
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*L.C7RVAL
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*L.C7CALL
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*L.C7CLSA
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*L.C7CLSN
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*L.C7DRIN
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*L.C7DRMR
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*L.C7DRSU
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*L.C7DRTM
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*L.C7DRTS
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*L.C7DRUG
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*L.C7DFXT
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*L.C7DLRI
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*L.C7DSPC
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*L.C7DSPS
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*L.C7EXIT
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*L.C7FXP
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*L.C7GDPS
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*L.C7GDDP
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*L.C7GDSG
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*L.C7INDX
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*L.C7INIT
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*L.C7ISPT
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*L.C7JFT
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*L.C7LINK
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*L.C7MVAF
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*L.C7MVAJ
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*L.C7MVFF
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*L.C7MVFJ
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*L.C7PCSO
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*L.C7PFMS
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*L.C7PSTM
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*L.C7RDRL
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*L.C7RFTN
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*L.C7RLSE
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*L.C7RSTR
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*L.C7RTSO
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*L.C7RWGI
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*L.C7RWGN
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*L.C7RWGR
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*L.C7RWIN
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*L.C7RWRL
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*L.C7RWTM
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*L.C7RWWT
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*L.C7RWX
IN

*L.C7SAVF
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*L.C7SEFX
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*L.C7SCSU
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*L.C7SEGO
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*L.C7SGIN
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*L.C7SOPT
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*L.C7SHAD
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*L.C7SHC
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*L.C7SHCA
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*L.C7SPCI
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*L.C7SHCL
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*L.C7SHEF
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*L.C7SHX
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*L.C7STAX
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*L.C7STFL
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*L.C7STLD
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*L.C7STLT
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*L.C7STMP
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*L.C7STHG
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*L.C7STRL
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*L.C7STST
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*L.C7STTP
IN

*L.C7TRNC
IN

*L.C7TSW
IN

*L.C7USTG
IN

*L.C7USCN
IN

*L.C7USIN
IN

*L.C7USEN
IN

*L.C7VAR
IN

*L.C7VARM
IN

*L.C7VARX
IN

*L.C7WPRL
IN

*L.C7WTS0
IN

*L.CNVSET
IN

*L.CONVRP
IN

*L.DPLADD
IN

*L.DTW
IN

*L.INCRCN
IN

*L.INCSTK
IN

*L.KEYRKN
IN

*L.LGT
IN

*L.LLT
IN

*L.MP10
IN

*L.RFST12
IN

*L.RRNKEY
IN

*L.SAVE12
IN

*L.SII
IN

*L.TALLY
IN

*L.WTD
IN

*L.WTX
IN

*L.XTW
IN

*L.PINCON
IN

*L.PJNCMP
IN

*L.PSTORE
IN

*L.C7MOVE
IN

*L.DECRIN
IN

*L.C70IOS
IN

*L.C7DUN
IN

*L.MVALPH
IN

*L.C7PACK
IN

*L.SIZERR
IN

*L.TESTZR
IN

*L.C7CJMP
IN

*L.C7CNTR
IN

*L.C7FNTR
IN

*L.C7LNGX
IN

*L.ASCDAT
IN

*L.DATTIM
IN

*L.RQDRTN
IN

*L.STRACE
IN

*L.READ11
IN

*L.READ12
IN

*L.READ13
IN

*L.WRIT17
IN

*L.WRIT19
IN

*L.WRIT21
IN

*L.UPNT26
IN

*L.RQNT43
IN

*L.RQNT44
IN

*L.RQNT45
IN

*L.FRR046
IN

*L.NTAP48
IN

*L.NTAP49
IN

*L.NTAP52
IN

*L.NTAP53
IN

*L.NTAP54
IN

*L.NTAP55
IN

*L.NTAP57
IN

*L.NTAP58
IN

*L.DFLT59
IN

*L.FMCLR
IN

*7
*CTO. MOUNT 2ND COROL DISKETTE IN UNIT 0
*PAUS
*LIHEDT
LIR

IN

*K.I17
IN

*L.COROL
IN

*K.PA
IN

*P.F..CORSCN

CORSCN	4000	DECK-ID R3R	COROL 1.0	SUMMARY-132
GLORLS	404F	DECK-ID D16	COROL 1.0	SUMMARY-132
ADVNCF	404F	DECK-ID D01	COROL 1.0	SUMMARY-132
ADVNC1	40A2	DECK-ID D02	COROL 1.0	SUMMARY-132
ALFALI	4088	DECK-ID D03	COROL 1.0	SUMMARY-132
CRASH	4E68	DECK-ID D05	COROL 1.0	SUMMARY-132
DIAGNO	4EC3	DECK-ID D07	COROL 1.0	SUMMARY-132
FRHFRF	4F16	DECK-ID D09	COROL 1.0	SUMMARY-132
FRROP	4F33	DECK-ID D10	COROL 1.0	SUMMARY-132
FDCC	4F41	DECK-ID D11	COROL 1.0	SUMMARY-132
GETOPT	9007	DECK-ID D13	COROL 1.0	SUMMARY-132
GTICARD	924C	DECK-ID D17	COROL 1.0	SUMMARY-137
GTCHAR	94CR	DECK-ID D18	COROL 1.0	SUMMARY-132
LASTRY	945B	DECK-ID D22	COROL 1.0	SUMMARY-132
NFXTA	9881	DECK-ID D23	COROL 1.0	SUMMARY-132
NUMHEW	98FE	DECK-ID D24	COROL 1.0	SUMMARY-132
NXTCHR	9A41	DECK-ID D25	COROL 1.0	SUMMARY-132
PAKTKN	9A71	DECK-ID D28	COROL 1.0	SUMMARY-132
PARSEC	9898	DECK-ID D29	COROL 1.0	SUMMARY-137
PEFK	A264	DECK-ID D30	COROL 1.0	SUMMARY-132

PRTCRD	A296	DECK-ID	D33	COROL	1.0	SUMMARY-132
PRTLIN	A357	DECK-ID	D35	COROL	1.0	SUMMARY-132
FFGSYM	A398	DECK-ID	D42	COROL	1.0	SUMMARY-132
EXPLICIT	A465	DECK-ID	D44	COROL	1.0	SUMMARY-132
SETCOL	A640	DECK-ID	D48	COROL	1.0	SUMMARY-132
SPTLL	A688	DECK-ID	D50	COROL	1.0	SUMMARY-132
SPCRWT	A6F6	DECK-ID	D53	COROL	1.0	SUMMARY-132
SVCOL	A754	DECK-ID	D55	COROL	1.0	SUMMARY-132
SYMSCR	A768	DECK-ID	D57	COROL	1.0	SUMMARY-132
TRMNR	A7A1	DECK-ID	D58	COROL	1.0	SUMMARY-132
SCAN	A7BE	DECK-ID	D45	COROL	1.0	SUMMARY-132
OUTFXT	AD21	DECK-ID	D26	COROL	1.0	SUMMARY-132
WRITEX	AD83	DECK-ID	D61	COROL	1.0	SUMMARY-132
WTD	ADF3	DECK-ID	D62	COROL	1.0	SUMMARY-132
DTW	AE64	DECK-ID	D08	COROL	1.0	SUMMARY-132
WTX	AERD	DECK-ID	H57	COROL	1.0	SUMMARY-132
SHIFTS	AFFD	DECK-ID	H55	COROL	1.0	SUMMARY-132
PATTIM	AF36	DECK-ID	H42	COROL	1.0	SUMMARY-132
MJN	AF42	DECK-ID	H49	COROL	1.0	SUMMARY-132
CFMNT	AF50	DECK-ID	R33	COROL	1.0	SUMMARY-132
CORMON	AFD6	DECK-ID	H36	COROL	1.0	SUMMARY-132
TARLUK	H037	DECK-ID	H61	COROL	1.0	SUMMARY-132
FSFTUP	H092	DECK-ID	D12	COROL	1.0	SUMMARY-132
FMFNT	H0E6	DECK-ID	F58	ITOS	2.0	SUMMARY-132

IN

*K.IA
IN

*N.COPSCN...R
IN

*K.I17
IN

*K.PA
IN

*P.F..CORINT

CORINT	R000	DECK-ID	R35	COROL	1.0	SUMMARY-132
GLORLS	A039	DECK-ID	D15	COROL	1.0	SUMMARY-132
CRASH	A039	DECK-ID	D04	COROL	1.0	SUMMARY-132
DIAGNO	A0E1	DECK-ID	D06	COROL	1.0	SUMMARY-132
FSFTUP	A134	DECK-ID	D12	COROL	1.0	SUMMARY-132
GFTTOK	A188	DECK-ID	D14	COROL	1.0	SUMMARY-132
LASTPY	A25A	DECK-ID	D21	COROL	1.0	SUMMARY-132
OVERLA	A3DF	DECK-ID	D27	COROL	1.0	SUMMARY-132
POP	A742	DECK-ID	D31	COROL	1.0	SUMMARY-132
POPW	A78D	DECK-ID	D32	COROL	1.0	SUMMARY-132
PRTLIN	A821	DECK-ID	D34	COROL	1.0	SUMMARY-132
PUSH	A867	DECK-ID	D36	COROL	1.0	SUMMARY-132
PUSHW	A8C5	DECK-ID	D37	COROL	1.0	SUMMARY-132
QOSET	A8F5	DECK-ID	D38	COROL	1.0	SUMMARY-132
REFRWN	A91E	DECK-ID	D40	COROL	1.0	SUMMARY-132
FFGSYM	A986	DECK-ID	D41	COROL	1.0	SUMMARY-132
KEWIND	AA91	DECK-ID	D43	COROL	1.0	SUMMARY-132
SCRIPT	AA8F	DECK-ID	D46	COROL	1.0	SUMMARY-132
SETCOL	AA27	DECK-ID	D47	COROL	1.0	SUMMARY-132
SPTLL	AA46	DECK-ID	D49	COROL	1.0	SUMMARY-132
SQZDN	AAF6	DECK-ID	D51	COROL	1.0	SUMMARY-132

SQZUP	ACR0	DECK-ID 052	COROL 1.0	SUMMARY-132
SVCOL	AD55	DECK-ID 054	COROL 1.0	SUMMARY-132
SYMSCH	AD6A	DECK-ID 056	COROL 1.0	SUMMARY-132
UPSYM	ADA2	DECK-ID 059	COROL 1.0	SUMMARY-132
UPTGFD	AF47	DECK-ID 060	COROL 1.0	SUMMARY-132
INTERP	AFC8	DECK-ID 019	COROL 1.0	SUMMARY-132
OUTEXT	HH40	DECK-ID 026	COROL 1.0	SUMMARY-132
*PTTEX	HA2	DECK-ID 061	COROL 1.0	SUMMARY-132
INTEXT	HC02	DECK-ID 020	COROL 1.0	SUMMARY-132
RFADXP	HC54	DECK-ID 039	COROL 1.0	SUMMARY-132
RFPRH	HD07	DECK-ID 052	COROL 1.0	SUMMARY-132
CORFIL	HD30	DECK-ID 034	COROL 1.0	SUMMARY-132
WTD	HD67	DECK-ID 062	COROL 1.0	SUMMARY-132
WTX	HDE8	DECK-ID 057	COROL 1.0	SUMMARY-132
MP10	HF18	DECK-ID 050	COROL 1.0	SUMMARY-132
SHJFS	HE40	DECK-ID 055	COROL 1.0	SUMMARY-132
DATTIM	HE89	DECK-ID 042	COROL 1.0	SUMMARY-132
*IN	HE95	DECK-ID 049	COROL 1.0	SUMMARY-132
CFMENT	HEA3	DECK-ID 033	COROL 1.0	SUMMARY-132
CURRON	HF29	DECK-ID 036	COROL 1.0	SUMMARY-132
CFMENTP	HFRA	DECK-ID 058	ITOS 2.0	SUMMARY-132
IN				
*K.IA				
IN				
*N.COPINT...R				
IN				
*K.I17				
IN				
*L.CORCAT				
IN				
*L.SURCAT				
IN				
*L.DMYSEG				
IN				
*L.FMCALI				
IN				
*K.PA				
IN				
*P.F..CORSEFG				
CORCAT	R000	DECK-ID C02	COROL 1.0	SUMMARY-132
CORFIL	R012	DECK-ID C04	COROL 1.0	SUMMARY-132
CATGET	RE50	DECK-ID C01	COROL 1.0	SUMMARY-132
CORSKL	RE70	DECK-ID C07	COROL 1.0	SUMMARY-132
COROHJ	RE04	DECK-ID C06	COROL 1.0	SUMMARY-132
CORFPP	RA34	DECK-ID C03	COROL 1.0	SUMMARY-132
CORMSG	RE14	DECK-ID C05	COROL 1.0	SUMMARY-132
FUPTN	RE7R	DECK-ID Z32	COROL 1.0	SUMMARY-132
PAPARN	RC9H	DECK-ID Z34	COROL 1.0	SUMMARY-132
QRPRMS	HCAA	DECK-ID Z35	COROL 1.0	SUMMARY-132
IN				

*K,IR
IN

*N,CORFIL...R
IN

*K,I17
IN

*P,F.3				
SWITCH	8200	DECK-ID Z36	COBOL 1.0	SUMMARY-132
R9SWCH	835E	DECK-ID Z37	COBOL 1.0	SUMMARY-132
EXENTP	835E	DECK-ID A34	ITOS 2.0	SUMMARY-132
IN				

*K,IA
IN

*J,SWITCH,\$\$
IN

*Z
*CTO, MOUNT 3RD COBOL DISKETTE IN UNIT 0
*PAUS
*LIBEDT
LIB

IN

*K,I17
IN

*K,PR
IN

*P,F				
PHASE1	8000	DECK-ID A01	COBOL 1.0	SUMMARY-137
IN				

*K,IA
IN

*N,CORPH1...B
IN

*K,I17
IN

*K,PR
IN

*P,F				
PHASE2	8000	DECK-ID A02	COBOL 1.0	SUMMARY-137
IN				

*K,IA
IN

*N,CORPH2...B
IN

*K,I17
IN

*K,P8
IN

*P,F
PHASE3 8000 DECK-ID A03 COBOL 1.0
IN

SUMMARY-137

*K,IA
IN

*N,CORPH3...B
IN

*K,I17
IN

*K,P8
IN

*P,F
PHASE4 8000 DECK-ID A04 COBOL 1.0
IN

SUMMARY-132

*K,IA
IN

*N,CORPH4...B
IN

*K,I17
IN

*K,P8
IN

*P,F
PHASE5 8000 DECK-ID A05 COBOL 1.0
IN

SUMMARY-132

*K,IA
IN

*N,CORPH5...B
IN

*K,I17
IN

*K,P8
IN

*P,F
PHASE6 8000 DECK-ID A06 COBOL 1.0
IN

SUMMARY-137

*K,IA

IN

*N.CORPH6...B
IN

*K.I17
IN

*K.PR
IN

*P,F
PHASE7 8000 DECK-ID A07 COBOL 1.0
IN

SUMMARY-137

*K.IA
IN

*N.CORPH7...R
IN

*K.I17
IN

*K.PR
IN

*P,F
CORFRR 8000 DECK-ID A08 COBOL 1.0
IN

SUMMARY-137

*K.IA
IN

*N.CORERR...B
IN

*K.I17
IN

*K.PR
IN

*P.F.3.CORVT1

C7CJMP 8200 DECK-ID B04 COBOL 1.0
FMCALL 8202 DECK-ID Z31 COBOL 1.0
EXFNTF 820A DECK-ID A34 ITOS 2.0
FMENTP 8232 DECK-ID F58 ITOS 2.0
C7CNTR 8293 DECK-ID B58 COBOL 1.0
GLORLS 85EC DECK-ID F31 COBOL 1.0
*PAGE 85EC
PAGDUM 8800 DECK-ID B51 COBOL 1.0
*PAGE 8801
PAGDUM 9000 DECK-ID B51 COBOL 1.0
*PAGE 9001
PAGDUM 9800 DECK-ID B51 COBOL 1.0
*PAGE 9801
PAGDUM A000 DECK-ID B51 COBOL 1.0
*PAGE A001
PAGDUM A800 DECK-ID B51 COBOL 1.0

SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-132
SUMMARY-137
SUMMARY-132

SUMMARY-132

SUMMARY-132

SUMMARY-132

SUMMARY-132

SUMMARY-132

*PAGE	AH01					
PAGDUM	R000	DECK-ID	B51	COBOL	1.0	SUMMARY-132
*PAGE	R001					
PAGDUM	R800	DECK-ID	B51	COBOL	1.0	SUMMARY-132
*PAGE	HA01					
PAGDUM	C000	DECK-ID	B51	COBOL	1.0	SUMMARY-132
*PAGE	C001					
PAGDUM	CA00	DECK-ID	B51	COBOL	1.0	SUMMARY-132
*PAGE	CA01					
PAGDUM	DA00	DECK-ID	B51	COBOL	1.0	SUMMARY-132
*PAGE	DA01					
CORVT1	DA00	DECK-ID	B39	COBOL	1.0	SUMMARY-132
C7BLD	DA37	DECK-ID	B01	COBOL	1.0	SUMMARY-132
C7RNAP	DA91	DECK-ID	B02	COBOL	1.0	SUMMARY-132
C7RRNH	DA8E	DECK-ID	B03	COBOL	1.0	SUMMARY-132
C7CMFC	D910	DECK-ID	B05	COBOL	1.0	SUMMARY-132
C7CNVT	D97C	DECK-ID	B07	COBOL	1.0	SUMMARY-132
C7DCAR	D9CF	DECK-ID	B08	COBOL	1.0	SUMMARY-132
C7LDFC	DA1E	DECK-ID	B10	COBOL	1.0	SUMMARY-132
C7MVCM	DA63	DECK-ID	B12	COBOL	1.0	SUMMARY-132
C7RND	DB0E	DECK-ID	B13	COBOL	1.0	SUMMARY-132
C7SCRT	DB40	DECK-ID	B14	COBOL	1.0	SUMMARY-132
C7STE	DB99	DECK-ID	B15	COBOL	1.0	SUMMARY-132
C7SZFG	DD0E	DECK-ID	B16	COBOL	1.0	SUMMARY-132
C7TRCL	DD21	DECK-ID	B17	COBOL	1.0	SUMMARY-132
C7RDSQ	DD5D	DECK-ID	E71	COBOL	1.0	SUMMARY-132
C7WRSQ	DEHR	DECK-ID	F22	COBOL	1.0	SUMMARY-137
C7RWSQ	E28C	DECK-ID	E83	COBOL	1.0	SUMMARY-132
C7RDX	E323	DECK-ID	E69	COBOL	1.0	SUMMARY-132
C7WRIX	E552	DECK-ID	F20	COBOL	1.0	SUMMARY-132
C7RWIX	E65C	DECK-ID	E81	COBOL	1.0	SUMMARY-137
C7DLIX	E8D1	DECK-ID	E45	COBOL	1.0	SUMMARY-132
C7STIX	EA0A	DECK-ID	F03	COBOL	1.0	SUMMARY-132
C7CHKY	EBF3	DECK-ID	E32	COBOL	1.0	SUMMARY-132
C7SVKY	EC15	DECK-ID	F24	COBOL	1.0	SUMMARY-132
C7RSKY	ECB2	DECK-ID	E74	COBOL	1.0	SUMMARY-132
C7QIOK	ED0B	DECK-ID	B27	COBOL	1.0	SUMMARY-132
C7ULRW	ED70	DECK-ID	B20	COBOL	1.0	SUMMARY-132
CONVRP	EE15	DECK-ID	B41	COBOL	1.0	SUMMARY-132
DRLADD	EE93	DECK-ID	B43	COBOL	1.0	SUMMARY-132
MP10	EEE9	DECK-ID	B50	COBOL	1.0	SUMMARY-132
C7ORCN	EF11	DECK-ID	B21	COBOL	1.0	SUMMARY-132
C7ORCP	EF78	DECK-ID	B22	COBOL	1.0	SUMMARY-132
C7ORST	EFA6	DECK-ID	B23	COBOL	1.0	SUMMARY-132
C7OCIS	F03A	DECK-ID	B24	COBOL	1.0	SUMMARY-132
C7ODBN	F1CA	DECK-ID	B25	COBOL	1.0	SUMMARY-132
C7ODUN	F284	DECK-ID	B26	COBOL	1.0	SUMMARY-132
C7OMPH	F314	DECK-ID	B28	COBOL	1.0	SUMMARY-132
C7OPCK	F398	DECK-ID	B29	COBOL	1.0	SUMMARY-132
C7OSZR	F425	DECK-ID	B30	COBOL	1.0	SUMMARY-132
C7OTSZ	F466	DECK-ID	B31	COBOL	1.0	SUMMARY-132
C7FXIT	F47D	DECK-ID	E49	COBOL	1.0	SUMMARY-137
C7SEGO	F4F0	DECK-ID	E90	COBOL	1.0	SUMMARY-132
CNVSET	F5C8	DECK-ID	E01	COBOL	1.0	SUMMARY-132
INCSTK	F600	DECK-ID	F26	COBOL	1.0	SUMMARY-132
R9DRTN	F60E	DECK-ID	F29	COBOL	1.0	SUMMARY-132
STRACE	F614	DECK-ID	B56	COBOL	1.0	SUMMARY-136
READ09	F630	DECK-ID	Z04	COBOL	1.0	SUMMARY-132
READ12	F722	DECK-ID	Z06	COBOL	1.0	SUMMARY-132
READ13	F817	DECK-ID	Z07	COBOL	1.0	SUMMARY-132

WHIT17	FAC7	DECK-ID	Z08	COROL	1.0	SUMMARY-132
WHIT20	F97E	DECK-ID	Z10	COROL	1.0	SUMMARY-132
WHIT23	FA31	DECK-ID	Z12	COROL	1.0	SUMMARY-132
WINT26	FAC6	DECK-ID	Z13	COROL	1.0	SUMMARY-132
WINT43	FA9R	DECK-ID	Z17	COROL	1.0	SUMMARY-132
WINT44	FC05	DECK-ID	Z18	COROL	1.0	SUMMARY-132
WINT45	FC04	DECK-ID	Z19	COROL	1.0	SUMMARY-132
FA9046	FDH2	DECK-ID	H46	COROL	1.0	SUMMARY-132
DELTS9	FDR6	DECK-ID	Z28	COROL	1.0	SUMMARY-132
FMMV63	FD0A	DECK-ID	Z29	COROL	1.0	SUMMARY-132
KEYR64	FE24	DECK-ID	Z30	COROL	1.0	SUMMARY-132
FNDVT1	FF61	DECK-ID	H44	COROL	1.0	SUMMARY-132

IN

*K.I9
IN

*J.COMCOM.SS
IN

*K.I17
IN

*K.PH
IN

*P.F.3.CORVT2						
C7CJMP	H200	DECK-ID	H04	COROL	1.0	SUMMARY-132
FMCALL	H202	DECK-ID	Z31	COROL	1.0	SUMMARY-132
FXENTP	H20A	DECK-ID	A34	ITOS	2.0	SUMMARY-132
FMENTP	H232	DECK-ID	F58	ITOS	2.0	SUMMARY-132
C7CNTB	H293	DECK-ID	H58	COROL	1.0	SUMMARY-137
GLOBAL	H5EC	DECK-ID	F31	COROL	1.0	SUMMARY-132
*PAGE	H5FC					
PAGDUM	H800	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	H801					
PAGDUM	9000	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	9001					
PAGDUM	9800	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	9801					
PAGDUM	A000	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	A001					
PAGDUM	A800	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	A801					
PAGDUM	B000	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	B001					
PAGDUM	B800	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	B801					
PAGDUM	C000	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	C001					
PAGDUM	C800	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	C801					
PAGDUM	D000	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	D001					
PAGDUM	D800	DECK-ID	H51	COROL	1.0	SUMMARY-132
*PAGE	D801					
CORVT2	F000	DECK-ID	H40	COROL	1.0	SUMMARY-132
C7CLSQ	F009	DECK-ID	E37	COROL	1.0	SUMMARY-132
C7CLPL	F101	DECK-ID	E34	COROL	1.0	SUMMARY-132
C7CLIX	F2FA	DECK-ID	E33	COROL	1.0	SUMMARY-132

C70PSQ	E446	DECK-ID	E65	COROL	1.0	SUMMARY-132
C70PRL	E430	DECK-ID	F64	COROL	1.0	SUMMARY-132
C70PIX	E43P	DECK-ID	E63	COROL	1.0	SUMMARY-132
C7STOP	EC6R	DECK-ID	F07	COROL	1.0	SUMMARY-137
C7ULCO	EC9D	DECK-ID	H19	COROL	1.0	SUMMARY-132
C7OCIS	ED03	DECK-ID	H24	COROL	1.0	SUMMARY-132
E90PTN	EF93	DECK-ID	F29	COROL	1.0	SUMMARY-132
INCSTK	EF99	DECK-ID	F26	COROL	1.0	SUMMARY-132
CMVSET	FFA7	DECK-ID	E01	COROL	1.0	SUMMARY-132
C7FXIT	FEDF	DECK-ID	E49	COROL	1.0	SUMMARY-137
C7SEGO	FF5P	DECK-ID	F90	COROL	1.0	SUMMARY-132
STRACE	F02A	DECK-ID	H56	COROL	1.0	SUMMARY-136
OPEN01	F046	DECK-ID	Z01	COROL	1.0	SUMMARY-132
OPEN03	F190	DECK-ID	Z02	COROL	1.0	SUMMARY-132
OPEN04	F2R1	DECK-ID	Z03	COROL	1.0	SUMMARY-13A
CL0S35	F4F2	DECK-ID	Z14	COROL	1.0	SUMMARY-132
CL0S37	F53F	DECK-ID	Z15	COROL	1.0	SUMMARY-132
CL0S3H	F5D4	DECK-ID	Z16	COROL	1.0	SUMMARY-132
H00T43	F6R9	DECK-ID	Z17	COROL	1.0	SUMMARY-132
H00T44	F6F3	DECK-ID	Z1R	COROL	1.0	SUMMARY-132
H00T45	F7C2	DECK-ID	Z19	COROL	1.0	SUMMARY-132
FRR046	FR70	DECK-ID	H46	COROL	1.0	SUMMARY-132
NTAP4R	FR74	DECK-ID	Z20	COROL	1.0	SUMMARY-132
NTAP52	FR93	DECK-ID	Z22	COROL	1.0	SUMMARY-132
NTAP53	FC30	DECK-ID	Z23	COROL	1.0	SUMMARY-132
NTAP54	FCA4	DECK-ID	Z24	COROL	1.0	SUMMARY-132
NTAP55	FD2D	DECK-ID	Z25	COROL	1.0	SUMMARY-132
NTAP57	FD79	DECK-ID	Z26	COROL	1.0	SUMMARY-132
NTAP5P	FB9H	DECK-ID	Z27	COROL	1.0	SUMMARY-132
FMV63	FE45	DECK-ID	Z29	COROL	1.0	SUMMARY-132
ENDVT2	FE91	DECK-ID	H45	COROL	1.0	SUMMARY-132

IN

*K.IA

IN

*J.CMUOCL.%%

IN

*Z

*CTO. COROL 1.0 INSTALL COMPLETE

*K.I10.P11.L9

*Z

ITOS VERIFICATION SAMPLE OUTPUT

I

-
- * DEFINE LARGE FILES AND TAKE STATUS
 - * STATUS SHOULD SHOW THE FILES SET UP AS FOLLOWS:
 - * FILE TESTFLS AS SEQUENTIAL FILE 60 CHAR RECORDS 1000 MAX RECORDS
 - * TESTFLI. RANDOM.60 CHAR RECORDS.1 KEY LENGTH 8 POSITION 1. 1000 MAX R
 - * TESTFLC. SEQUENTIAL.60 CHAR RECS.1000 MAX REC

VOLUME:SYSVOL DATE 04/17/79

AVAILABLE SPACE ON VOLUME 221724 SECTORS LARGEST BLOCK IS 221724

MAXIMUM NUMBER OF FILES= 4096 CURRENT NUMBER OF FILES= 67

FILENAME	OWNER	FILEDATE	FILE	RECORD	KEY1	KEY1	KEY2	KEY2	KEY3	KEY3	KEY4	KEY4	START	RECORD	EXPIRE	MAX.	STATUS	S/A
			TYPE	LENGTH	LNG	POS	LNG	POS	LNG	POS	LNG	POS	SECT.	COUNT	DATE	RECORD		
TESTFLS		041779	S	60	0	0	0	0	0	0	0	0	0	11E69	0 041779	1000	CLOSED	N
TESTFLI		041779	H	60	8	1	0	0	0	0	0	0	0	11FA3	0 041779	1000	CLOSED	N
TESTFLC		041779	S	60	0	0	0	0	0	0	0	0	0	1216A	0 041779	1000	CLOSED	N

END UTIL

* LOAD LARGE FILES
* FILES TESTFLS AND TESTFLI SHOULD CONTAIN 500 RECORDS.
END UTIL

* COPY LARGE SEQUENTIAL FILE
* TESTFLC SHOULD NOW CONTAIN 500 RECORDS

VOLUME:SYSVOL DATE 04/17/79

AVAILABLE SPACE ON VOLUME 221724 SECTORS LARGEST BLOCK IS 221724

MAXIMUM NUMBER OF FILES= 4096 CURRENT NUMBER OF FILES= 67

FILENAME	OWNER	FILEDATE	FILE	RECORD	KEY1	KEY1	KEY2	KEY2	KEY3	KEY3	KEY4	KEY4	START	RECORD	FXPIRE	MAX.	STATUS	S/A
			TYPE	LENGTH	LNG	POS	LNG	POS	LNG	POS	LNG	POS	SECT.	COUNT	DATE	RECORD		
TFSTFLS		041779	S	60	0	0	0	0	0	0	0	0	11E69	500	041779	1000	CLOSED	N
TESTFLI		041779	R	60	8	1	0	0	0	0	0	0	11FA3	500	041779	1000	CLOSED	N
TESTFLC		041779	S	60	0	0	0	0	0	0	0	0	1216A	500	041779	1000	CLOSED	N

END UTIL

- RENAME AND CLEAR FILE
- FILE TESTFLR SHOULD APPEAR WITH CLEARED(NO) RECORDS.

VOLUME:SYSVOL DATE 04/17/79

AVAILABLE SPACE ON VOLUME 221724 SECTORS LARGEST BLOCK IS 221724

MAXIMUM NUMBER OF FILES= 4096 CURRENT NUMBER OF FILES= 67

FILENAME	OWNER	FILEDATE	FILE	RECORD	KEY1	KEY1	KEY2	KEY2	KEY3	KEY3	KEY4	KEY4	START	RECORD	EXPIRE	MAX.	STATUS	S/A
			TYPE	LENGTH	LNG	POS	LNG	POS	LNG	POS	LNG	POS	SECT.	COUNT	DATE	RECORD		
TESTFLS		041779	S	60	0	0	0	0	0	0	0	0	0 11E69	500	041779	1000	CLOSED	N
TESTFLI		041779	R	60	8	1	0	0	0	0	0	0	0 11FA3	500	041779	1000	CLOSED	N
TFSTFLR.		041779	S	60	0	0	0	0	0	0	0	0	0 1216A	0	041779	1000	CLOSED	N

END UTTL

* SORT LARGE FILE

* TAG ALONG SORT

VOLUME= SYSVOL
FILNAM= TESTFLS .
PASSED = 00000500
DUNE = 00000500
VOLUME= SYSVOL
FILNAM= SURTTST .
PASSED = 00000500
DONE = 00000500

VOLUME:SYSVOL DATE 04/17/79

AVAILABLE SPACE ON VOLUME 221565 SFCTORS LARGEST BLOCK IS 221158

MAXIMUM NUMBER OF FILES= 4096 CURRENT NUMBER OF FILES= 69

FILENAME	OWNER	FILEDATE	FILE	RECORD	KEY1	KEY1	KEY2	KEY2	KEY3	KEY3	KEY4	KEY4	START	RECORD	EXPIRE	MAX.	STATUS	S/A
			TYPE	LENGTH	LNG	POS	LNG	POS	LNG	POS	LNG	POS	SECT.	COUNT	DATE	RECORD		
TESTFLS		041779	S	60	0	0	0	0	0	0	0	0	11E69	500	041779	1000	CLOSED	N
TESTFLI		041779	R	60	8	1	0	0	0	0	0	0	11FA3	500	041779	1000	CLOSED	N
TESTFLR		041779	S	60	0	0	0	0	0	0	0	0	1216A	0	041779	1000	CLOSED	N
ADDRTST		041779	S	4	0	0	0	0	0	0	0	0	122A6	500	010100	500	CLOSED	N
SORTTST		041779	S	.55	0	0	0	0	0	0	0	0	12447	500	010100	500	CLOSED	N

* DELTTE ALL TEST FILES
* TESTFLS, TESTFLR, TESTFLI, SORTTST, ADDRTST SHOULD NOT APPEAR ON STATUS
END UTIL



AUTOLOADING

J

SYSTEM A

The following procedures are required to autoloading system A:

1. Press STOP (halts machine)
2. Press MASTER CLEAR (master clear)
3. Press AUTOLOAD (autoloading)
4. Press ESC (panel mode)
5. Type:
 J24G
6. Type:
 I@
7. The system outputs:
 ITOS 2.0 - PSR LEVEL XXX mm/dd/yy
 Where: XXX is the version number of the system
 mm/dd/yy is the date of system release
8. The system outputs:
 SET PROGRAM PROTECT (ESC J28@)
 Press ESC.
 Type:
 J28@

(This sets the program protect and reverts to operator mode.)

9. The system outputs the name of the system (a parameter in SYSDAT)
10. The system outputs:
 ENTER DATE/TIME MMDDYYHHMM
11. Enter date and time in the form:
 mmddyymm
 These terms are as follows (left to right, two digits each): month, day, year, hour (out of 24), minutes.
12. The system then outputs the date and time:
 DATE: dd month yy
 TIME: hhmm:00

SYSTEM B

The following procedures are required to autoloading system B:

1. Press STOP. Press MASTER CLEAR
2. Press AUTOLOAD
3. Press RUN
4. Continue with the procedure described for autoloading system A, step 7.



SAMPLE DIRECTORIES AND LOGICAL UNIT LIST

K

SAMPLE DL DIRECTORY

```

JOB
1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0   DATE OF RUN: 10/03/78   SYSTEM ID: SYSTEM DATE 10-03-78   (10/03/78)
LULIST SECT. 2342
LISTH SECT. 236C
UMSURT SECT. 2378
HGND SECT. 2378
EESORT SECT. 2398
CUSY SECT. 2380
LCUSY SECT. 23FF
CYFT SECT. 240A
IOUP SECT. 2417
IOUPV4 SECT. 2418 FILE
LIHILD SECT. 2438
LIH100 SECT. 243C FILE
HELPER SECT. 2447 FILE
SKEL SECT. 247C
SKFILE SECT. 2480 FILE
SUHRCM SECT. 24AD
GETCHR SECT. 24EE
PUTCHR SECT. 24EE
CREATE SECT. 24F3
CLEAR SECT. 24F3
DELETE SECT. 24F3
UPENFL SECT. 24F3
CLUSFL SECT. 24F3
LXFIL SECT. 24F3
UNLFL SECT. 24F3
GETFCB SECT. 24F3
UPDFCB SECT. 24F3
HENAME SECT. 24F3
PUTS SECT. 24F3
WRITER SECT. 24F3
HEADR SECT. 24F3
GETS SECT. 24F3
UPDREC SECT. 24F3
DELMEC SECT. 24F3
COMFIL SECT. 24F3
VOLUSE SECT. 24F3
REDUCE SECT. 24F3
WTHAD SECT. 24FC
SLICUP SECT. 24FC
ATTACH SECT. 24FC
PGMIN SECT. 24FC
PGMINT SECT. 24FC
CHAIN SECT. 24FC
PGMUUT SECT. 24FC
INPEQ SECT. 2500
OUTEQ SECT. 2500
PHTEQ SECT. 2500
LUNEQ SECT. 2500
PRTNAM SECT. 2500
SYSMSG SECT. 250C
GETADD SECT. 251A
NTRTJ SECT. 2522
TRACE SECT. 2522
TRACE? SECT. 2522
TRACE1 SECT. 2522
BPST SECT. 255C FILE
BPCLR SECT. 255F FILE
BPLD SECT. 2561 FILE
    
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HPEND	SECT.	2565	FILE
HPRLST	SECT.	2568	FILE
HPKSET	SECT.	2569	FILE
HPDMPC	SECT.	2568	FILE
HPJMP	SECT.	2570	FILE
HPBPLU	SECT.	2572	FILE
HPAPC	SECT.	2574	FILE
HPMASS	SECT.	2576	FILE
FTN	SECT.	2570	
EXITF	SECT.	2570	
PAGCHK	SECT.	2570	
ASCPT	SECT.	2570	
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FTN3A4	SECT.	264A	FILE
FTN3A5	SECT.	2673	FILE
FTN3B1	SECT.	2696	FILE
FTN3C1	SECT.	2718	FILE
FTN3D1	SECT.	278A	FILE
FTN3E1	SECT.	27EA	FILE
FTN3F1	SECT.	284F	FILE
FTN3ER	SECT.	2895	FILE
READ	SECT.	28E8	
WRITE	SECT.	28E8	
FREAD	SECT.	28E8	
FWRITE	SECT.	28E8	
SCHEDL	SECT.	28E8	
TIMER	SECT.	28E8	
DISPAT	SECT.	28E8	
DISP	SECT.	28E8	
LINK	SECT.	28E8	
ICLUCK	SECT.	28E8	
INPINS	SECT.	28E8	
OUTINS	SECT.	28E8	
HELESE	SECT.	28E8	
ICONCT	SECT.	28E8	
OCONCT	SECT.	28E8	
Q8PREP	SECT.	28F6	
Q8PKUP	SECT.	28F6	
Q9PKUP	SECT.	28F6	
Q8QF2I	SECT.	28FC	
Q8QI2F	SECT.	28FC	
Q8QF2F	SECT.	28FC	
RETAD	SECT.	28FC	
QSAVE	SECT.	28FC	
QBAB	SECT.	2904	
ABS	SECT.	2904	
SQRT	SECT.	2909	
Q8SG	SECT.	2911	
SIGN	SECT.	2911	
Q8QFIX	SECT.	2916	
QBFX	SECT.	2916	
Q8QFLT	SECT.	2916	
Q8FLOT	SECT.	2916	
IFIX	SECT.	2916	

FLOAT	SECT.	2916
DFIX	SECT.	2916
QBDFLT	SECT.	2916
DFLT	SECT.	2916
EXP	SECT.	291C
ALOG	SECT.	2924
TANH	SECT.	292B
SIN	SECT.	2932
COS	SECT.	2932
ATAN	SECT.	293B
PARARS	SECT.	2944
QBIFRM	SECT.	2948
QBFS	SECT.	294E
QBTRAN	SECT.	2987
QBQINI	SECT.	29D3
QBUNIT	SECT.	29D3
QBSKIP	SECT.	29D3
QBQEND	SECT.	29DD
QBQMP0	SECT.	29E2
QBQMP1	SECT.	29E2
QBDFAD	SECT.	29E2
QBQENS	SECT.	29E2
RECEND	SECT.	29E2
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QBFPUT	SECT.	2A19
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QBIGP	SECT.	2A19
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QBEXP2	SECT.	2A4A
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DECODE	SECT.	2A57
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ISAVE	SECT.	2A5E
IGETCH	SECT.	2A62
GETCH	SECT.	2A62
IPACK	SECT.	2A67
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DECPL	SECT.	2A71
INTGR	SECT.	2A76
SPACE X	SECT.	2A7B
HOLRTH	SECT.	2A80
QUOTE	SECT.	2A80
OCHX	SECT.	2A88
HXASC	SECT.	2A90
AFRMOT	SECT.	2A96
RFRMOT	SECT.	2A9B
AFRMIN	SECT.	2AA0
RFRMIN	SECT.	2AA6
ASCHX	SECT.	2AAB
HXDC	SECT.	2AB1
FLOTIN	SECT.	2AB9
FOUT	SECT.	2ABF
EOUT	SECT.	2AC7
EWRITE	SECT.	2AD1
INITL1	SECT.	2AD6
RESTRE	SECT.	2AD6
FORMTR	SECT.	2ADB
CHCNT	SECT.	2ADB
QBQFI	SECT.	2AED
QBQFL	SECT.	2AF2
QBQFX	SECT.	2AF6
HEXASC	SECT.	2AFC
HEXDEC	SECT.	2B01
ASCII	SECT.	2B06
DECHEX	SECT.	2B0B
AFORM	SECT.	2B10
RFORM	SECT.	2B15
FLOATG	SECT.	2B1A
FLOT	SECT.	2B1F
HFLOT	SECT.	2B1F
IFALT	SECT.	2B31
SFALT	SECT.	2B31
OPERND	SECT.	2B31
NXTOP	SECT.	2B31
FPEROR	SECT.	2B31
PRUCHK	SECT.	2B31
SPECOP	SECT.	2B31
FLOFOP	SECT.	2B31
FIXFOP	SECT.	2B31
QBWD2I	SECT.	2B3D

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SNGL	SECT.	2B45	
DBLE	SECT.	2B45	
Q8SNGL	SECT.	2B45	
Q8DBLE	SECT.	2B45	
DABS	SECT.	2B4A	
Q8DAB	SECT.	2B4A	
DSQRT	SECT.	2B4F	
Q8DSG	SECT.	2B57	
DSIGN	SECT.	2B57	
DEXP	SECT.	2B5C	
DLUG	SECT.	2B65	
DSIN	SECT.	2B6D	
DCOS	SECT.	2B6D	
DATAN	SECT.	2B78	
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Q8DXPT	SECT.	2B8A	
Q8DXP2	SECT.	2B8A	
Q8QDFI	SECT.	2B95	
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HDFLOT	SECT.	2BA5	
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RSTOR1	SECT.	2BC4	
DSTOR2	SECT.	2BC4	
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KPGSM1	SECT.	2BF4	FILE
RPGSM2	SECT.	2BFC	FILE
RPGSM3	SECT.	2C2A	FILE
RPGSM4	SECT.	2C30	FILE
KPGSM5	SECT.	2C33	FILE
KPGSM6	SECT.	2C48	FILE
KPGSM7	SECT.	2C61	FILE
KPGSM8	SECT.	2C6F	FILE
KPGSM9	SECT.	2C7F	FILE
RPGII	SECT.	2C87	
KPGXX	SECT.	2C87	
RPGYY	SECT.	2C87	
KPGZZ	SECT.	2C87	
CATLOG	SECT.	2C8B	
CATSEG	SECT.	2C8B	
RPGFIL	SECT.	2C8F	
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K9JUMP	SECT.	2C8F	
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R9SGIX	SECT.	2C8F	
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R9MUNO	SECT.	2C8F	
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Y9FPTR	SECT.	2C99
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R9ERTN	SECT.	2C99

Y9LABL	SECT.	2C99
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H9EDT2	SECT.	2C99
H9EDT3	SECT.	2C99
R9EDT4	SECT.	2C99
R9HPRT	SECT.	2CAB
H9INTR	SECT.	2CAB
H9CLIN	SECT.	2CAB
H9HTIN	SECT.	2CAB
H9VIND	SECT.	2CAB
H9USND	SECT.	2CAB
R9MRIN	SECT.	2CAB
R9FCTH	SECT.	2CAB
R9STTS	SECT.	2CAB
H9HLFJ	SECT.	2CAB
H9REPT	SECT.	2CAB
R9RYST	SECT.	2CAB
H9ACC1	SECT.	2CAB
YACC1B	SECT.	2CAB
YACC10	SECT.	2CAB
H9AC1S	SECT.	2CAB
H9AC2S	SECT.	2CAB
R9AC3S	SECT.	2CAB
H9AC1N	SECT.	2CAB
H9AC2N	SECT.	2CAB
R9AC3N	SECT.	2CAB
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H9INRZ	SECT.	2CAB
R9INRP	SECT.	2CAB
H9INRM	SECT.	2CAB
H9PUNT	SECT.	2CAB
H9CNCL	SECT.	2CAB
YEKRSW	SECT.	2CAB
R9FTSW	SECT.	2CAB
R9VSWT	SECT.	2CAB
H9OVSW	SECT.	2CAB
H9FTIM	SECT.	2CAB
H9FFCR	SECT.	2CAB
H9CFIL	SECT.	2CAB
H9NFCB	SECT.	2CAB
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H9MRSW	SECT.	2CAB
H9MKPR	SECT.	2CAB
H9LRSW	SECT.	2CAB
H9BYPS	SECT.	2CAB
H9BLTR	SECT.	2CAB
H9FRMK	SECT.	2CAB
H9ACAX	SECT.	2CAB
H9ACX1	SECT.	2CAB
YACAXN	SECT.	2CAB
H9SAVE	SECT.	2CBA
H9REST	SECT.	2CBA
H9FLOW	SECT.	2CC1

B9FLOW	SECT.	2CC1	
N9FLOW	SECT.	2CC1	
STRACE	SECT.	2CC6	
R9EXIT	SECT.	2CC8	
R9FSTL	SECT.	2CD0	
R9ELOC	SECT.	2CD6	
R9THCE	SECT.	2CD9	
R9TROT	SECT.	2CEB	
R9INDM	SECT.	2CF0	
R9LEL	SECT.	2CF7	
R9GTL	SECT.	2CF7	
R9MIW	SECT.	2CFC	
R9SBYX	SECT.	2D00	
R9LHYX	SECT.	2D00	
R9MVBX	SECT.	2D00	
R9MI8X	SECT.	2D00	
R9MVB	SECT.	2D00	
R9MVB	SECT.	2D00	
R9LBY	SECT.	2D00	
R9SBY	SECT.	2D00	
R9MIP	SECT.	2D00	
R9LHYT	SECT.	2D00	
R9SBYT	SECT.	2D00	
R9MVW	SECT.	2D07	
R9FTNX	SECT.	2D08	
CVASER	SECT.	2D18	
R9FLDL	SECT.	2D1D	
R9999B	SECT.	2D23	
R9UPK1	SECT.	2D28	
R9UPK2	SECT.	2D28	
R9UPK3	SECT.	2D28	
SUBRFL	SECT.	2D2E	
SUBRED	SECT.	2D34	
SUBRMV	SECT.	2D3C	
SUBRLM	SECT.	2D3C	
SUBHML	SECT.	2D3C	
SUBRIN	SECT.	2D43	
SUBRAJ	SECT.	2D4A	
R9STH0	SECT.	2D52	
EKR046	SECT.	2D58	
EKRPRO	SECT.	2D58	
FMCALL	SECT.	2D5E	
CATFIL	SECT.	2D61	FILE
FTN3AA	SECT.	2D74	FILE
FTN3AB	SECT.	2DC8	FILE
FTN3AC	SECT.	2DED	FILE
FTN3AD	SECT.	2E11	FILE
FTN3AE	SECT.	2E35	FILE
FTN3AF	SECT.	2E5A	FILE
FTN3AG	SECT.	2E71	FILE
FTN3AH	SECT.	2E93	FILE
FTN3AI	SECT.	2EA6	FILE
FTN3BA	SECT.	2EBC	FILE
FTN3BB	SECT.	2F03	FILE
FTN3BC	SECT.	2F12	FILE
FTN3BD	SECT.	2F1E	FILE
FTN3BE	SECT.	2F2C	FILE
FTN3BF	SECT.	2F3A	FILE
FTN3CA	SECT.	2F46	FILE
FTN3CB	SECT.	2F8B	FILE

SAMPLE DM DIRECTORY

FTN3DA	SECT.	2F9B	FILE
FTN3DB	SECT.	2FC6	FILE
FTN3DC	SECT.	2FDE	FILE
FTN3EA	SECT.	2FE6	FILE
FTN3EH	SECT.	3014	FILE
FTN3EC	SECT.	3034	FILE
FTN3FA	SECT.	303C	FILE

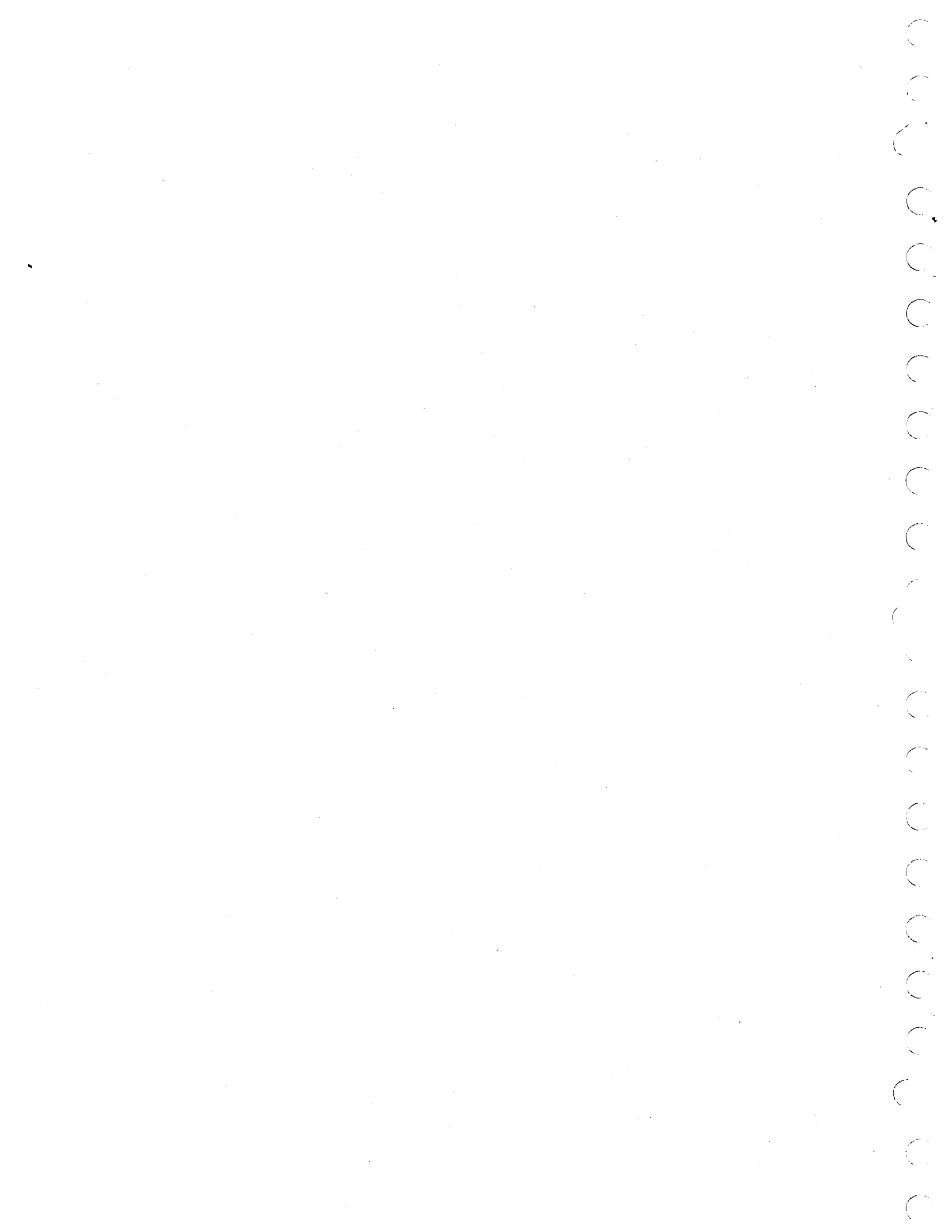
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3	0010	18B5	0000	053F	0367	0000	1762
4	0030	12AC	0000	000E	02C5	0000	176C
5	0030	12AC	0000	1725	0462	0000	1774
6	0020	1710	0000	0000	01A3	0000	1782
7	0040	125C	0000	0000	010B	0000	1787
8	0020	1710	0000	7000	018F	0000	178C
9	0020	1710	0000	0000	016E	0000	1791
10	0020	1710	0000	0003	00F2	0000	1795
11	0020	1710	0000	0000	0166	0000	1798
12	0030	12AC	0000	000E	02E1	0000	179C
13	0030	0000	0000	0000	0541	0000	17A4
14	0030	0000	0000	0000	0153	0000	17B3
15	0040	0000	0000	0000	00D3	0000	17B7
16	0030	0000	0000	0000	034D	0000	17BA
17	0030	0000	0000	0000	049B	0000	17C3
18	0040	0000	0000	0000	4500	0000	17D0
19	0040	0000	0000	0000	0192	0000	1888
20	0040	0000	0000	0000	1560	0000	188D
21	0047	125C	0000	053F	02DC	0000	18C6
22	0044	125C	0000	0001	0160	0000	18CE
23	0044	125C	0000	4195	019D	0000	18D2
24	0044	148A	0000	0000	00E8	0000	18D7
25	0046	153A	0000	0001	0487	0000	18DA
26	0045	176E	0000	8BED	00CA	0000	18E7

27	0040	0000	0000	0000	0081	0000	18EA
28	0040	0000	0000	0000	0184	0000	18EC
29	0040	0000	0000	0000	0000	0000	18F1
30	0040	0000	0000	0000	0000	0000	18F1

FINI

LU LISTING

MSOS 5.0 LOGICAL UNIT LISTING FOR SYSTEM DATE 10-03-78			09/21/78
LU.	EQUIPMENT DESCRIPTION	READ/WRITE CLASS CODE	EQ NO
01.	SOFTWARE CORE ALLOCATOR	READ/WRITE NO CLASS CODE	EQ 00
02.	SOFTWARE DUMMY ALTERNATE DEVICE	READ/WRITE NO CLASS CODE	EQ 00
03.	SOFTWARE DUMMY ALTERNATE DEVICE	READ/WRITE NO CLASS CODE	EQ 00
04.	1810-1 LIAT CRT/PRINTER	READ/WRITE TELETYPE	EQ 00
05.	1843-2 8 CHANNEL CLA	READ/WRITE TELETYPE	EQ 10
06.	1860-92 LCTT 9TK MAG TAPE	READ/WRITE MAGNETIC TAPE	EQ 12
07.	MAGNETIC TAPE SIMULATOR	READ/WRITE MAGNETIC TAPE	EQ 00
08.	1833-1 STORAGE MODULE DRIVE 50MB	READ/WRITE MASS STORAGE	EQ 14
09.	1827-30/60 LINE PRINTER	WRITE ONLY LINE PRINTER	EQ 04
10.	1829-30/60 CARD READER	READ ONLY CARD RDR/PUNCH	EQ 11
11.	501-12 TAB CARD PUNCH	WRITE ONLY CARD RDR/PUNCH	EQ 10
12.	1827-30/60 LINE PRINTER	WRITE ONLY LINE PRINTER	EQ 04
13.	SOFTWARE BUFFERING DEVICE	READ ONLY MAGNETIC TAPE	EQ 00
14.	SOFTWARE BUFFERING DEVICE	WRITE ONLY LINE PRINTER	EQ 00
15.	SPOOLED PRINTER DRIVER	WRITE ONLY TELETYPE	EQ 00
16.	1860-92 LCTT 9TK MAG TAPE	READ/WRITE MAGNETIC TAPE	EQ 12
17.	MAGNETIC TAPE SIMULATOR	READ/WRITE MAGNETIC TAPE	EQ 00
18.	1835-5 FLEXIBLE DISK	READ/WRITE MASS STORAGE	EQ 07
19.	PSEUDO TAPE UNIT	READ/WRITE MAGNETIC TAPE	EQ 00
20.	PSEUDO TAPE UNIT	READ/WRITE MAGNETIC TAPE	EQ 00
21.	501-12 TAB CARD PUNCH	WRITE ONLY CARD RDR/PUNCH	EQ 10
22.	1827-7 MATRIX PRINTER	WRITE ONLY LINE PRINTER	EQ 00
23.	1827-7 MATRIX PRINTER	WRITE ONLY LINE PRINTER	EQ 00
24.	1833-1 STORAGE MODULE DRIVE 50MB	READ/WRITE MASS STORAGE	EQ 14



INITIALIZING DISK PACKS

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The following procedures describe the formatting of disk packs for use on a CYBER 18 system.

STORAGE MODULE DRIVE (SMD)

The program used to format SMD disk packs is SMD2F. It has been extracted from ODS 2, level II, volume 5 at DPSR level 114. A brief description of the SMD2F sections run during the formatting procedure follows:

SMD2F Section 0001 - Format Write (Zero Track)

This section performs a format write request to all tracks specified in the run parameter list.

SMD2F Section 0002 - Write Address Tags (MSOS)

This section writes MSOS address tags onto all tracks specified in the run parameter list.

SMD2F Section 0004 - ECC Check

This section provides the checks necessary to determine that the ECC hardware is operational.

SMD2F Section 0005 - Write Data

This section writes data on all sectors specified by the run parameter list.

SMD2F Section 0006 - Read Data

This section is used with the write data section. It reads data on all sectors specified by the run parameter list.

SMD2F Section 000A - Disk Pack Error Sector Replacement Utility

This section is a utility program that prepares a disk for system use and maps all bad sectors out of the pack.

A formatting deadstart diskette is supplied to the user along with the installation materials. This diskette is used in the following procedure:

1. Mount the disk pack on drive unit 0 and ready the unit. Make sure the write protect button on the drive is in the OFF position.
2. MASTER CLEAR
3. Place the formatting deadstart diskette in the drive and close the door.
4. DEADSTART
5. The formatting program is read into memory and the following is displayed:

123456 DPSR LEVEL XX RELEASED mm-dd-yy
ODS 2.0 VOL 5

6. Perform a manual interrupt.

CONTROL G

7. The systems responds:

MI
>

8. Enter:

LOAD,SMD2F (cr)

9. The system responds:

SMD2F SUSPENDED LOAD

10. Perform a manual interrupt.

CONTROL G

11. The system responds:

MI
>

12. Enter the following based on type of disk pack to be initialized:

CPAR,,B,0 (cr)
and CPAR,,10,19A (cr) - 25M byte pack

or CPAR,,B,1 (cr) - 50M byte pack

or CPAR,,B,3 (cr) - 180M byte pack

13. Perform a manual interrupt.

CONTROL G

14. The system responds:

MI
>

15. Enter:

DPAR,, (cr)

16. The system responds:

SMD2F RUN PARAMETERS

TESTID	PASCNT	ERRCNT	0001	0002	0003	0004	0005
0032	0000	0000	044C	0001	1245	6A00	0000
0006	0007	0008	0003	000A	000B	000C	000D
0000	0700	000E	001E	0000	000N†	5110	8000
000E	000F	0010	0011	0012	0013	0014	0015
0000	0000	0336	8000	EB6D	B6DB	0NNN†	0000

†Value changes based on disk pack type (25, 50 or 180 M byte).

17. Perform a manual interrupt.

CONTROL G

18. The system responds:

MI

>

19. Enter:

GO (cr)

20. The system responds:

SMD2F EXECUTING
SMD2F SUSPENDE BOT

21. Perform a manual interrupt.

CONTROL G

22. The system responds:

MI

>

23. Enter:

GO (cr)

24. The system responds:

DRIVE AS CONFIGURED 64 SECTORS PER TRACK
SET MULTI-INDIRECT SWITCH OFF (ESC J40@ MI
ODS, GO)
SMD2F SUSPENDE SELF

25. Enter:

ESC J40@

26. Perform a manual interrupt.

CONTROL G

27. The system responds:

MI

>

28. Enter:

GO (cr)

29. The system responds:

<u>System Message</u>	<u>Comment</u>
SMD2F SECTION 0001	Format Write
SMD2F SECTION 0002	Write Address Tags
SMD2F SECTION 0004	ECC Check
SMD2F SECTION 0005	Write Data
SMD2F SECTION 0006	Read Data
SMD2F SECTION 000A	Disk Pack Error Sector Replacement Utility
BAD SPOT MAPPING COMPLETED†	
LAST AVAILABLE SECTOR ADDRESS = 000804BF	
SMD2F COMPLETED 0001 PASSES	
SMD2F SUSPENDE ENDP	

To format additional packs of the same type, ready each additional pack on drive unit 0 and go back to step 26. Formatting additional packs using this procedure will work as long as SMD2F runs to completion and the last three system messages indicated above appear on the CRT screen. If errors occur, it will be necessary to repeat the entire procedure.

NOTE

The last three messages should be displayed to insure that formatting procedures have run to completion, without error.

SPECIAL NOTES

1. It takes approximately 10 minutes to format a 50M byte disk pack and approximately 30 minutes to format a 180M Byte pack.
2. If an ODS error occurs during the formatting procedure, it is possible to continue by re-entering the last line that was input.
3. If any other error occurs during formatting, start the entire procedure over again (beginning with instruction 2) and if the error persists, obtain technical support.

1866-12 OR 1866-14 CARTRIDGE DISK DRIVE (CDD)

A formatting deadstart diskette is supplied to the user along with the release materials. This diskette is used in the following procedure.

1. Mount the pack, and ready the drive.
2. MASTER CLEAR.
3. Place the formatting deadstart diskette in the drive, and close the door.
4. DEADSTART.
5. The formatting program is read into memory, and the following is displayed:

CAUTION, MOUNT SCRATCH PACK BEFORE
PROCEEDING

EQUIPMENT CODE FOR DISK

6. Enter 0700 (cr)

7. The message

FORMAT BOTH PLATTERS Y/N

is output.

†This message is only displayed for 180M byte disk packs.

8. Enter Y **cr** to format removable and fixed platters
or N **cr** to format removable platter only.
9. The message

INITIALIZE WHICH DRIVE (0-3)

is output

10. Enter drive unit number (0-3).

The unit selected becomes active.

NOTE

Initialization takes from one to four minutes.

11. At completion, the following message occurs:

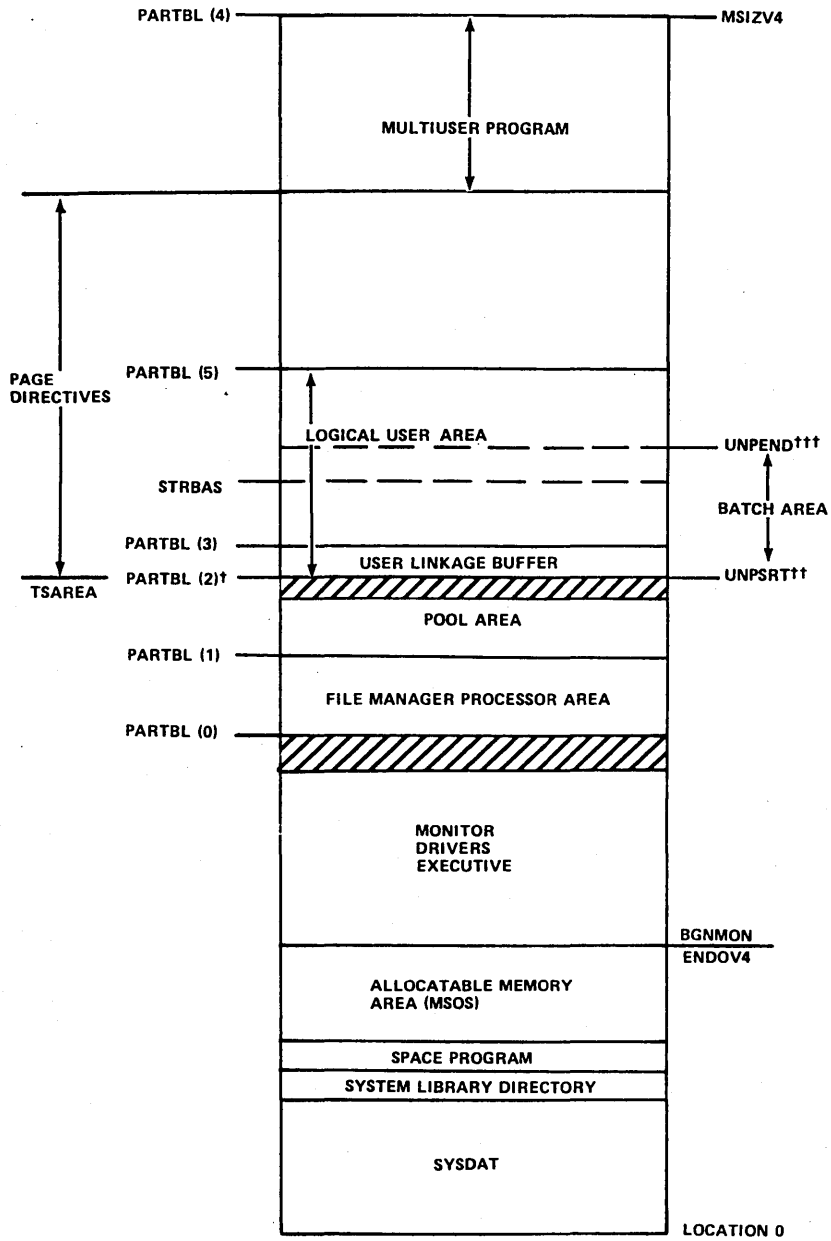
INITIALIZATION COMPLETE

If during initialization the error message "ERROR IN INITIALIZATION" occurs, retry the operation or obtain engineering support help.

MAIN MEMORY ARRANGEMENT

M

Figure M-1 shows the arrangement of the main-memory-resident programs for an ITOS system. The mnemonics indicated on the figure are defined in the glossary.



† MUST BE A MEMORY PAGE BOUNDARY
 †† B SYSTEM BOUNDARY IS CONTENT OF LOCATION \$F7 PLUS 1.
 ††† B SYSTEM BOUNDARY IS CONTENT OF LOCATION \$F6 MINUS 1.

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Figure M-1. Memory Arrangement



Two terminals are available for use with ITOS. These are the 752 and the 722 terminals. The operating characteristics of each are described below.

NOTE

The ESC key should not be used at the master terminal at any other time.

Uppercase control symbols in rows 2, 3, and 4 are ignored by the system. All other symbols are legal.

The carriage return is the standard entry key; its use is described in the ITOS version 2 reference manual.

↑ moves the cursor up one line each time it is pressed. The cursor wraps around to the bottom line of the same display if it is on the top line of the display when ↑ is pressed.

LINE FEED normally moves the cursor down one line. Its use is described in the ITOS Version 2 reference manual.

← is the backspace key. It moves the cursor back one space each time it is pressed. The character that the cursor previously marked remains unchanged. The cursor wraps around to the end of the previous line if ← is pressed when the cursor is in the first character position.

REPEAT causes any other character that is pressed at the same time to be repeated in successive character positions.

→ is the space forward key. It moves the cursor forward one position each time it is pressed. The character that the cursor previously marked remains unchanged. The cursor wraps around to the start of the following line if → is pressed when the cursor is in the last character position. The use of this key is described in the ITOS version 2 reference manual.

CONTROL is used with one of three other keys. It must be pressed simultaneously with the other key being used:

1. CONTROL G places the terminal in read mode so MSOS instructions can be entered (master terminal only).
2. CONTROL A causes the running program to be aborted.
3. CONTROL D is a program interrupt for ITOS.

752 KEYBOARD

The keyboard format is shown in figure N-1.

The use of the special keys is discussed below. Other keys are used as normal typewriter keys are used.

MAIN KEYBOARD

CLEAR should never be needed since the ITOS programs clear the screen automatically before displaying the next screen of data.

BREAK, CO, and ETX are ignored by the system.

When logging onto the system, 96/64 and PAGE are initially pressed. They remain in the down position and should never be deactivated (pressed again).

The switches in the top row should be set to the following positions:

- EVEN PAR
- FULL DUP
- ON LINE
- HIGH RATE

The use of RUBOUT and RESET is described in the ITOS version 2 reference manual.

ESC is used only at the master terminal to protect the system. The key is used to respond to the protect request, which occurs during system autoloading. The protect is accomplished by pressing ESC and typing J28@. No carriage return is needed.

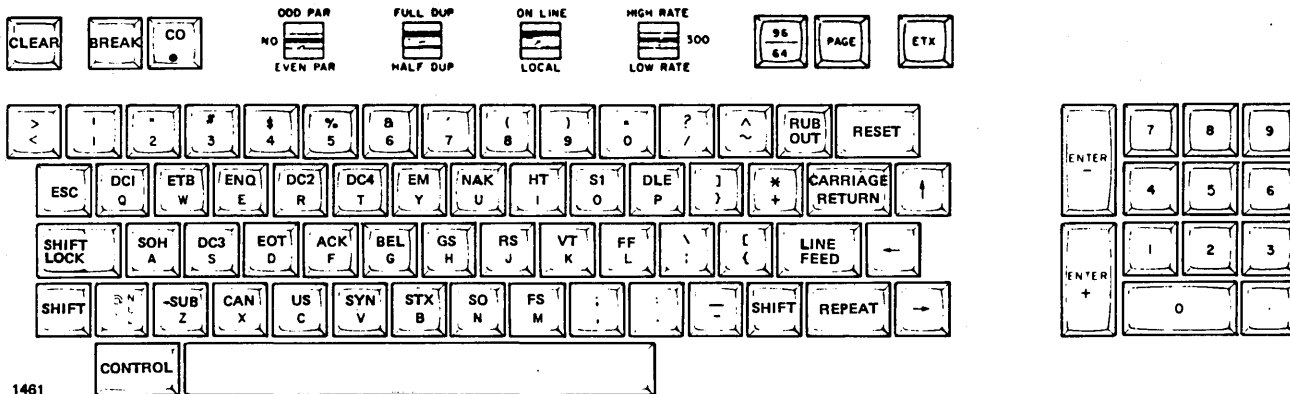


Figure N-1. 752 ITOS Terminal Keyboard

ARITHMETIC KEYBOARD

ENTER- is ignored by ITOS. The remaining keys (numerals and period) may be used interchangeably with the same keys on the main keyboard. ENTER+ is used as a normal terminator for fields with brackets [] for the applications programs.

ECHOING

All operator characters entered on the keyboard are echoed immediately on the screen except for replies to PASSWORD => and USER ID =>.

In these cases, nothing is echoed except at the master terminal, where full echoing occurs. The cursor and prompting mark remain unaltered at other terminals despite the keyboard entry of characters.

CURSOR AND PROMPTING MARK

The cursor underlines the character on the screen that can currently be altered. If the prompting mark, , is displayed, the cursor is positioned beneath this mark. The operator should type in the character for that cursor position, overwriting the prompting mark. For examples are as follows:

REQUEST= > The system requests another task.

REQUEST= UTIL (cr) The operator enters the requested task, overwriting the prompting mark. Entry of a carriage return only does not move the cursor.

BIAS VALUE

The bias value added for inline cursor positioning on the 752 terminal is hexadecimal 20 (20₁₆).

752 TERMINAL SETUP

The terminal must be set up as follows:

- Internal Switches

-Upper Set Switches 2, 4, 5, and 7 are on. Switch 3 should also be on if the system is powered by a 50 Hz power source. All other switches are off.

-Lower Set Switches 1 and 4 are on, switches 2 and 3 are off. Switches 5 through 8 are not used.†

NOTE

A switch is on if the lower side of the switch rocker arm is depressed.

- External Switches

The switches above the keyboard must be set as follows (from left to right):

EVEN PAR
FULL DUP
ON LINE
HIGH RATE

In addition, the 96/64 and PAGE keys must be depressed.

722-10 KEYBOARD

The 722-10 keyboard format is shown in figure N-2.

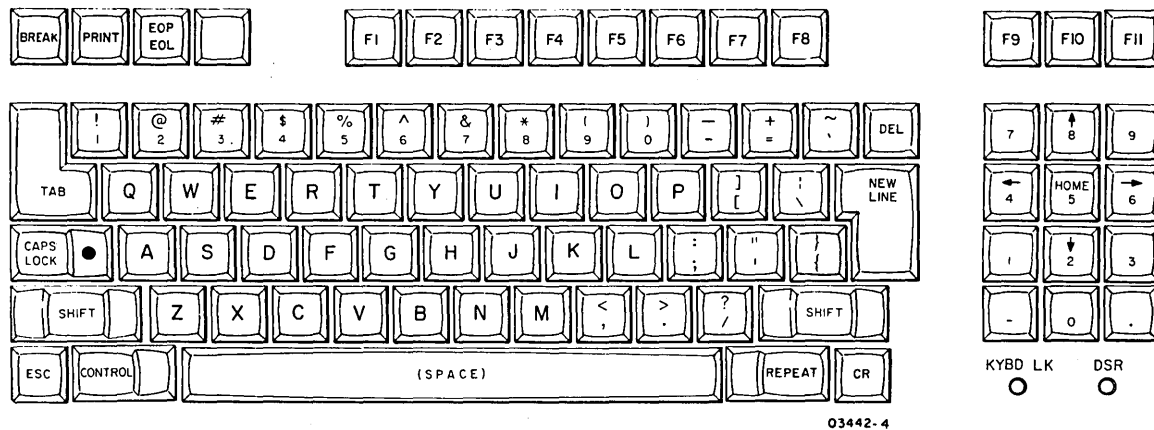


Figure N-2. 722-10 Keyboard Layout

† For terminal 0 only, these switches must match the baud rate selected on the CPU's I/O-TTY board.

Most 722-10 keycodes are identical to those of the 752 keyboard. Table N-1 lists 752 keycodes which are not found on the 722-10 and provides instructions for producing equivalent keycodes on the 722-10 terminal.

Other functions, such as the arithmetic keyboard, echoing, cursor and prompting mark, and bias value are the same for both terminals.

The terminal control switches located behind an access door to the right of the CRT must be set as follows:

Toggle Switches

DATA RATE: Between 2,400 and 9,600 bps
 PAR EVEN/PAR ODD: PAR EVEN
 ROLL/PAGE: PAGE
 FULL DUP/HALF DUP: FULL DUP
 ONLINE/LOCAL: Operator choice

Mode Select Switches

- 1 Normal
- 2 Normal
- 3 Parity enable
- 4 1 stop bit
- 5 752
- 6 Normal
- 7 Disable bell
- 8 RTS switched
- 9 DTR switched
- 10 60 Hz (or 50 Hz, depending on site power)

If a switch is reset, the terminal must be reinitialized by powering the terminal off and on or by pressing the MANUAL RELEASE button.

TABLE N-1. 722-10 KEYBOARD SPECIAL CONTROL CODES

1811-2/ 752 Code	722-10 Code Press Control and †	1811-2/752 Function
ACK	F	
BEL	G	Bell
BS	H	Backspace
CAN	X	Clear screen
CR	M	Carriage return ††
DC1	Q	
DC2	R	
DC3	S	
DC4	T	
DEL	DEL	Rubout
DLE	P	
EM	Y	Reset
ENQ	E	
EOT	D	
ETB	W	
ETX	C	Send
FF	L	
FS	/	Enter -
GS	[Enter +
HT	I	Tab
NAK	U	
NL	J	Line feed ††
NUL	2 (±/2)	
RS	=	
SI	O	
SO	N	
SOH	A	
STX	B	
SUB	Z	
SYN	V	
US	-	
VT	K	

†Special keys are used for the CR (carriage return), ESC (escape), and HT (tab) functions. If the special keys are used, do not use the control key.

††The NEW LINE and CR keys of the 722-10 are functionally the same; both cause the cursor to return to the beginning of the line. The line feed is generated by CYBER 18 software. Line feeds may be generated by pressing shift and ↓.

1843-2 1 X 8 CLA BOARD SETUP

First, orient the 1843-2 board in front of you as follows:

Component side up
Edge connector to the left

With the board oriented in this manner, the switch is off if the left side is depressed and on if the right (+) side is depressed.

Set all switches to their off positions; then set each of the switches marked + in the table below to on.

	1	2	3	4	5	6	7	8
S1		+		+				
S2	+			+				
S3								
S4								
S5								
S6	+							
S7	+							
S8-S15		+		+				

Note that if two 1843-2 boards are installed, the second board (terminals 9-16) must have S2 set as follows.

	1	2	3	4	5	6	7	8
S2		+		+				

NOTE

If the 1827-7 matrix printer or 501-10 TAB Card Punch is on the system, the switch from S8-S15 that corresponds to each device must be set as follows:

	1	2	3	4	5	6	7	8
Sx	+							

(x is found by adding 7 to the number of the CLA port attached to the printer.)

NOTE

If a matrix printer is the standard list device in the system, it must be located on channel 8 of the first CLA board.

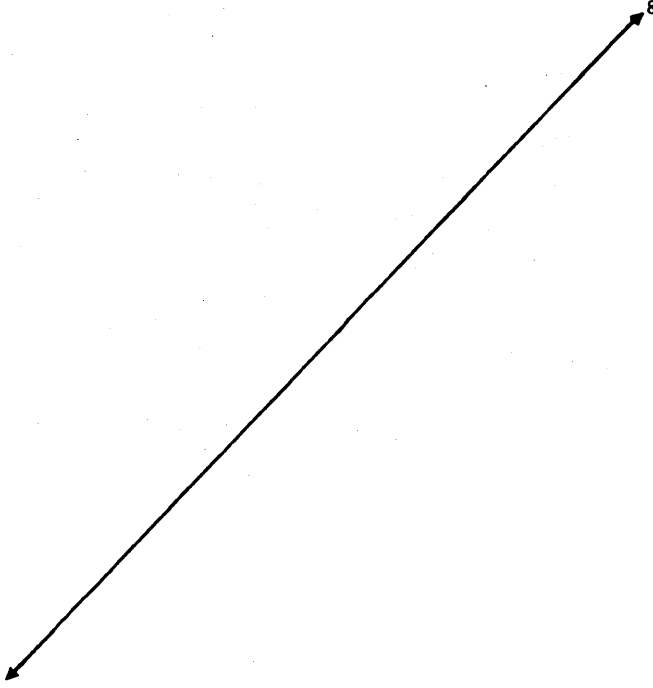
STANDARD DEFAULT ASSIGNMENTS FOR CLA CHANNELS

CONFIG allows the user to default all requests for assignment of CLA channel numbers. The channel assignments under default may be determined before running CONFIG by proceeding sequentially down the device column in table O-1. If a particular device is configured into the

system B, it is assigned to the next available channel number in the channel column, starting from the top. The exception to this assignment scheme is that if a system matrix printer is requested, it is assigned to channel 8.

TABLE O-1. CHANNEL DEFAULT TABLE

Device	Channel No.
Terminal 1	1
Terminal 2	2
Terminal 3	3
Terminal 4	4
Terminal 5	5
Terminal 6	6
Terminal 7	7
Terminal 8	9
Terminal 9	10
Terminal 10	11
Terminal 11	12
Terminal 12	13
Terminal 13	14
Terminal 14	15
Terminal 15	16
Terminal 16	8
System card punch	
Punch work station 1	
Punch work station 2	
Punch work station 3	
Punch work station 4	
Punch work station 5	
Punch work station 6	
Punch work station 7	
Punch work station 1	
Punch work station 2	
Punch work station 3	
Punch work station 4	
Punch work station 5	
Punch work station 6	
Punch work station 7	
System matrix printer	



CONFIGURE WORKSHEET

Table P-1 is a sample configure worksheet that should be filled out before interactively operating the ITOS configure utility (CONFIG). Read the following information before completing the worksheet.

If concurrent background and ITOS user program operation are not required, the maximum user program size of up to 64K bytes is determined by the memory available after the system requirements are met. The system requirements vary with the peripheral configuration selected. The nonconcurrent option is identified in the memory-sizing matrix by an N in the attribute row. This option is the memory-sizing default.

If concurrent background and ITOS user program operation are required, the maximum executable user program size is determined from the values displayed in the memory-sizing matrix, maximum user size row. (A user program size of 64K bytes is the maximum supported.)

A matrix of the memory-sizing options is output by the CONFIG utility program, which shows the options a user has for the memory size and peripheral configuration selected. Two of these options (numbered 5 and 6), if allowed in the specific configuration, are supplied for smaller memory systems that require concurrent background operation or are supplied for larger-sized memory systems that require the

largest possible contiguous user space. These selections allow the user to move the start of the background so that the ITOS user area is not segmented into two pieces and may increase the size of the ITOS user program that can execute concurrently.

Any memory-sizing option selected that has a corresponding R in the attribute row indicates that selection of this option requires that the user reload all background files before executing them. The background files are reloaded by the following procedure.

Load the program library file diskette supplied with the release materials into the drive, and close the door. At the master terminal, enter the following command sequence:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Perform manual interrupt.
MI >	System responds.
*BATCH ,17	Initiate load of files from diskette.

A completion message is displayed when all files are loaded.

TABLE P-1. CONFIGURE WORKSHEET

1. Will COBOL be loaded onto the system?	Yes _____ No _____
2. List the system identification that is to appear on each autoloading of system B.	_____
3. Is the 1829-30/60 card reader to be on the system?	Yes _____ No _____
If yes, list the card punch format that is to be the standard (026 or 029).	_____
4. Are magnetic tapes on the system?	Yes _____ No _____
If yes, list the type (NRZI or dual mode).	_____
If tapes are selected, list the unit number (1 through 4).	_____
List the 9-track units.	_____
List the 7-track units.	_____
5. List the number of ITOS terminals (1 through 17).	_____
List the CLA channel for each terminal. †	_____ _____ _____ _____

TABLE P-1. CONFIGURE WORKSHEET (Contd)

6.	Is a line printer on the system?	Yes _____ No _____
	If yes, list the type (300 line per minute, 600 line per minute or matrix).	_____
7.	Is a TAB card punch required as the system punch device?	Yes _____ No _____
	If yes, list its CLA channel number.	_____
8.	Are matrix printers or TAB punches to be associated with terminals as work stations?	Yes _____ No _____
	If yes, list the device associated with each terminal.	_____ _____ _____
	List the CLA channel number for each device.	_____ _____ _____
9.	List the number of mass memory units on the system (for SMDs, 1 through 8; for CDDs, 1 through 4).	_____
	Are additional units beyond the first single- or double-density device required?	Yes _____ No _____
	If yes, list the following:	
	High-density units	_____
	Low-density units	_____
10.	Will the system use scientific and/or commercial firmware? (List scientific, commercial, scientific and commercial, or none.)	_____
11.	List the system memory size (96K, 128K, 160K, 192K, 224K, or 256K).	_____
12.	Does the system have COMM 18?	Yes _____ No _____
	If yes, list the COMM 18 variant desired (one HASP, one 200UT, two HASPs, two 200UTs, or one HASP and one 200UT). † †	_____
	List the COMM 18 system functions that must run concurrently (ITOS/COMM 18/background, ITOS/COMM 18, ITOS/background, COMM 18/background, or none). † † †	_____

† See appendix O for the standard default configuration.

† † See appendix X for memory requirements.

† † † If concurrent ITOS/COMM 18/background or concurrent ITOS/background is selected and system memory size is sufficient, the operator must select the desired system background size per item 14.

TABLE P-1. CONFIGURE WORKSHEET (Contd)

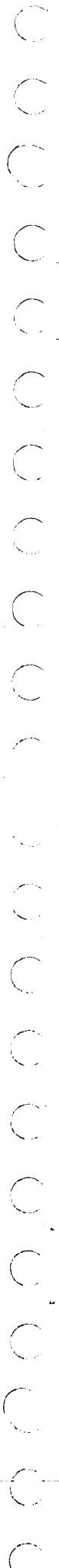
13. If the system does not have COMM 18, list the system background size desired (20K, 32K, or 64K). † _____

If the system does not have COMM 18, is concurrent execution of ITOS programs and background desired?

Yes _____

No _____

† The memory option selected depends on the background size and mode of operation required for the system. See appendix X for memory-size guidelines.



CONFIG ERROR MESSAGES

Q

Table Q-1 lists the CONFIG error messages and their corresponding meanings and/or actions.

TABLE Q-1. CONFIG ERROR MESSAGES

Message	Meaning/Action
CONFIG CANNOT BE RUN FROM THIS TERMINAL/USER	CONFIG may be run only at master terminal with \$\$ user ID.
ERROR IN OPENING SYSTEM A FILE - \$\$\$\$	File manager could not open the file \$\$SYSA. \$\$\$\$ is the file manager status for OPENFL.
ERROR IN CLEARING SYSTEM B FILE - \$\$\$\$	File manager could not clear the file \$\$SYSB. \$\$\$\$ is the file manager status for CLEAR.
ERROR IN OPENING SYSTEM B FILE - \$\$\$\$	File manager could not open the file \$\$SYSB. \$\$\$\$ is the file manager status for OPENFL.
ERROR IN RETRIEVING SYSTEM A RECORDS - \$\$\$\$	File manager could not read (GETS) the file \$\$SYSB. \$\$\$\$ is the file manager status for GETS.
ERROR IN STORING SYSTEM B RECORDS - \$\$\$\$	File manager could not store (PUTS) into the file \$\$SYSA. \$\$\$\$ is the file manager status for PUTS.
ERROR IN OPENING CONFIG DATA FILE - \$\$\$\$	File manager could not open the configuration data file. \$\$\$\$ is the file manager status for OPENFL.
ERROR IN CREATING POOL AREA LIST FILE - \$\$\$\$	File manager could not create the file \$\$POOLST. \$\$\$\$ is the file manager status for CREATE.
ERROR IN CLEARING POOL AREA LIST FILE - \$\$\$\$	File manager could not clear the file \$\$POOLST. \$\$\$\$ is the file manager status for CLEAR.
ERROR - OVERFLOW OF COM CHANNEL ASSIGNMENTS	All the communication channels have been taken; there is no channel for the selection.
ERROR - DIAGNOSTIC TIMER TABLE OVERFLOW	Diagnostic timer table in SYSDAT cannot accommodate the additional required entries.
ERROR - LOGICAL UNIT OVERFLOW	LU tables in SYSDAT require additional spare entries at the end of each table.
ERROR - ONLY 7 WORKSTATIONS ALLOWED	Number of work stations allowed has been exceeded. The system allows only seven work stations.
ERROR - 1827-7 LINE PRINTER UNABLE TO USE COM CHANNEL 8	Communication channel 8 has already been assigned. If the matrix printer is assigned as the system print device, it must be assigned to channel 8 of the CLA.
ERROR - COMMUNICATION CHANNEL ALREADY ALLOCATED	Operator tried assigning a previously allocated communication channel.
ERROR IN CLOSING POOL AREA LIST FILE - \$\$\$\$	File manager could not close the file \$\$POOLST. \$\$\$\$ is the file manager status for CLOSEFL.
ERROR IN OPENING POOL AREA LIST FILE - \$\$\$\$	File manager could not open the file \$\$POOLST. \$\$\$\$ is the file manager status for the OPENFL.

TABLE Q-1. CONFIG ERROR MESSAGES (Contd)

Message	Meaning/Action
ERROR - OVERFLOW OF POOL PARTITION, \$\$\$\$ ADDITIONAL WORDS ARE REQUIRED TO SUPPORT THE REQUESTED CONFIGURATION.	The current configuration has exceeded the allocated pool partition. \$\$\$\$ is the additional amount of space needed to complete the configuration.
ERROR - BANK O OVERFLOW OF ADT BUFFER	The last work address of the autodata transfer (ADT) table for the current CONFIG device selection has exceeded \$7FFF.
ERROR - MISSING SYSTEM ENTRY POINT @@@@	The entry point, @@@@, cannot be found in the CREP or CREP1 tables.
ERROR IN READING SPECIFIC SYSTEM B RECORD - \$\$\$\$	File manager could not read a specified record from the file \$\$SYSB. \$\$\$\$ is the file manager status for READR.
ERROR IN UPDATING SYSTEM B RECORD - \$\$\$\$	File manager could not write a specific record to the file \$\$SYSB. \$\$\$\$ is the file manager status for PUTS.
ILLEGAL RESPONSE	The operator did not enter a correct value to a query.
ERROR IN RETRIEVING NEXT POOL RECORD - \$\$\$\$	File manager could not retrieve the next \$\$POOL data record for the requested secondary key. \$\$\$\$ is the file manager status for GETS.
ERROR IN READING SPECIFIC POOL RECORD - \$\$\$\$	File manager could not read a specific record from the \$\$POOL. \$\$\$\$ is the file manager status for READR.
ERROR - UNEXPECTED END OF SECONDARY KEY DATA - @@@@	CONFIG found a change of key when it expected more records of the specified key. @@@@ is the key specified.
ERROR IN STORING SEQUENTIAL POOLST RECORD - \$\$\$\$	File manager could not store data into the file \$\$POOLST. \$\$\$\$ is the file manager status for PUTS.
ERROR - SYMBOL TABLE OVERFLOW	CONFIG does not have enough room in its symbol table to accommodate the current symbol.
ERROR - PATCH TABLE OVERFLOW	CONFIG does not have enough room in its un-patched entry table to accommodate the current entry.
ERROR - ILLEGAL CONTROL RECORD INDEX	There is a mismatch between the \$\$POOL data and the routine addressing the data set. \$\$POOL has a control record of which the routine has no knowledge.
ERROR IN READING SPECIFIC SYSTEM A RECORD - \$\$\$\$	File manager could not read a specified record from file \$\$SYSA. \$\$\$\$ is the file manager status for READR.
ERROR IN CLOSING SYSTEM A FILE - \$\$\$\$	File manager could not close the file \$\$SYSA. \$\$\$\$ is the file manager status for CLOSFL.
ERROR - MISSING DATA WITH SECONDARY KEY @@@@	The key specified by @@@@ does not exist in the \$\$POOL data file.
CONFIG CANNOT BE RUN FROM THE 'B' SYSTEM	An attempt was made to execute CONFIG from a previously configured system B.
ERROR MEMORY SIZE CANNOT SUPPORT THE REQUESTED COMM-18 VARIANT OR CONCURRENCY.	Insufficient physical or logic memory exists to accommodate the requested COMM 18 variant or system concurrency requirements.

WARNINGS AND CAUTIONS

R

The following warnings and cautions apply to the installation of ITOS 2:

- The assembler must be reinstalled in the system if the size of background is changed or if the start location of background is changed as a result of reconfiguration.
- If a multiuser file is moved to a different volume, a START must be performed to reinitialize the system to use the multiuser files.
- A CDD-based system has limited file space available on the system volume; this space is taken up by basic system and product files.
- A CDD-based system has limited mass memory scratch available in the system. Scratch space may be as few as 6000 sectors. The mass memory scratch area used by the assembler, compiler, and utility programs may limit certain functions of the system. For example, the size of programs that may be assembled may be limited.
- When running CONFIG on a cartridge disk system that increases the number of terminals to more than one, the user must make sure that enough file space is available on SYSVOL to define the \$\$\$WPBUF file. This is determined by the equation:

$$\text{no. of sectors required} = \frac{(\text{no. of terminals})(\text{user area size})}{96}$$

If enough file space is not available on SYSVOL, the following error message is displayed at the START of system B:

**ERROR STATUS \$9000 DURING CREATE OF
FILE \$\$\$WPBUF SYSVOL**

If the error occurs, the FILOAD flag in SYSDAT (see appendix U) must be reset to 0 on system A before a START may be performed on system A.

- Use of the online debug (ODEBUG) package to update the system image does not update both the system A and system B images. Therefore, a patch into the system B image goes away when the next CONFIG operation is performed unless the patch is also put into system A.
- Certain configurations of COMM 18 with concurrent batch and ITOS cannot support execution of all ITOS modules, such as UTIL functions, due to lack of sufficient memory.
- When using system A, the batch initiation command should always be of the form
***BATCH,lu**
where lu must be supplied.
- CONFIG makes use of information contained in the previous B system when specifying the R memory selection attribute. For this reason, CONFIG may fail to warn the operator that a reload of program library files is required if a reconfigure option is selected or if CONFIG has been terminated previously. It is usually advisable to reinstall all products and program library files following a configuration change.
- The selection of COBOL under CONFIG does not automatically result in a memory configuration or a firmware selection. It is the users responsibility to specify the proper firmware and memory options. Refer to appendix X for memory-size guidelines.

On ITOS, the flexible disk (diskette) may be used in several modes; as a deadstart input medium, as an ITOS device accessible by device name, and as an MSOS device accessible by logical unit (lu).

The flexible disk is supported by the system as a magnetic tape compatible device via the magnetic tape simulator.

DEADSTART MEDIA

The following procedure loads deadstart media into the system:

1. Insert the diskette in the flexible disk drive, and close the door.
2. MASTER CLEAR.
3. DEADSTART.

ITOS DEVICE

The flexible disk may be accessed from the ITOS master terminal as a type of magnetic tape device. This is accessed by the device name FLEXTAPE.

The following procedure must be followed to allow writing on the diskette:

1. Insert the diskette in the flexible disk drive, and close the door.

2. To write on the diskette, the control panel WRITE ENABLE switch for the flexible disk drive must be on; the write ring for the magnetic tape simulator must be enabled. The write ring is enabled at the master console by entering the following commands:

CONTROL G	Manual interrupt
MI	Manual interrupt is enabled.
>	
WRON,lu	lu is the logical unit of the magnetic tape simulator. The standard is 17.

3. The magnetic tape simulator may then be read or written on as a normal magnetic tape. It is not necessary to enable the write ring if the magnetic tape simulator is to be read only and not written to.

MSOS DEVICE

The diskette may be accessed from MSOS functions as a standard system logical unit. To write onto the diskette, follow the procedure described above under ITOS Device.

INSTALLATION OF A CDD-BASED SYSTEM

T

A CDD-based system requires that certain files be moved to the fixed disk before system B is configured. The procedure described below moves the \$\$POOL file used by the CONFIG utility from SYSVOL to the fixed disk and deletes the \$\$POOL file from SYSVOL. It also defines the output file used by CONFIG (\$\$POOLST) on the fixed disk. This procedure is required only when the first configuration from a basic system A pack is run. If the user dumps the \$\$POOL file and/or deletes the \$\$POOLST file from the system, he must reload the \$\$POOL file and redefine \$\$POOLST before running subsequent configurations. The procedure is as follows.

Mount the system pack containing ITOS 2 system A on drive 0, and autoload system A as described in appendix J. To start ITOS, perform the following:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Perform manual interrupt.
MI >	System confirms manual interrupt is active.
START (cr)	Start ITOS.
BUILDING SYSTEM FILES	System displays message only if a START has never been performed on this system.
ITOS ACTIVE AT h:mm	System confirms that ITOS is active.
+ (cr)	Log on.
.	Screen displays system ID information.
.	
.	
USER ID =	System requests ID information.
\$\$ (cr)	Use system access \$\$.
PRINTFILE = >	System requests print file name.
(cr)	Respond that none is needed.
REQUEST =	System requests that operator select operation.
UTIL or UT (cr)	Select UTIL.
UTIL IN READY >	System confirms that UTIL is in request operation.
DISMOUNT (cr)	Select dismount utility.
MM UNIT NO =	UTIL requests unit number to dismount.

1 (cr)	Request unit 1 to dismount.
READY >	UTIL requests next operation.
INIT (cr)	Select initialize.
VOLUME NAME =	UTIL requests volume.
CDD01 (cr)	Define volume to be CDD01.
NUMBER OF FILES = >	UTIL requests number of files.
(cr)	Accept default number of files, which is 256.
DISK UNIT = >	UTIL requests disk unit number.
1 (cr)	Specify unit 1.

If no volume label exists on the fixed disk, the volume is displayed as specified. When READY > is displayed, skip to the instruction that exits UTIL.

If a volume label does exist, the display is

```
CURRENT VOLUME NAME = nnnnnnnn CHANGE
NAME VERIFY
```

and the procedure is as follows:

OK (cr)	Verify name change.
VOLUME NAME CHANGE ONLY? VERIFY	UTIL requests verification of operation to be performed.
(cr)	Accept default operation, which is initialization of files.
PURGE ALL FILES? VERIFY	UTIL requests verification that the purge operation is to be performed.
OK (cr)	Request initialization of files.

Exit from UTIL is accomplished as follows:

READY >	UTIL requests next operation.
EX (cr)	Exit from UTIL.
REQUEST = >	System requests operation to be selected.

Display/Keyboard

Comments

\$\$MOVFIL (cr)

Request execution of a procedure to move files to volume CDD01.

REQUEST = >

System requests that operator select operation.

At this point, re-enter UTIL and use the STATUS command to display any file on SYSVOL and obtain the available sector space. Then verify that enough sectors are contiguously available on SYSVOL for the \$\$SWPBUF file, as defined in appendix R.

If file space is insufficient, move additional files to the fixed disk (volume CDD01) by performing the appropriate DEFINE on CDD01, a COPY from SYSVOL to CDD01, and a DELETE from SYSVOL until there is enough space available. The only files that must remain on SYSVOL are the following.

- \$\$SYSA
- \$\$SYSB
- \$\$SWPBUF
- \$\$CREP
- \$\$MOUNTS
- \$\$HOST
- \$\$PRINT
- UTIL
- UTSAVE
- UTMOUN

Continue with the configuration process as defined in section 3, step 1, under Configuring the System.

The following labels, which are defined in the miscellaneous ITOS data section of SYSDAT, may be changed to customize the system. These values should be patched on system A using the online debug package. CONFIG carries over the values into the user's system B. The user must be aware that changing some of these values affects the system table sizes and, therefore, may either increase or reduce the available configurable user space and selections.

- SCUNIT - This defines the work space logical unit (disk volume) used by some system utilities and compilers. The value to be changed is entry 1 of the GTADTB sector table (labeled WKSPLU) (1 = SYSVOL, 2 = VOL1, and so forth).
- DATFMT - This parameter defines the date format used. The value is word 6 of the GTADTB table.
 - 0 mmdyy format
 - 1 ddmmyy format
 - 2 yymmdd format
- DATSEP - This value defines the date separation code; it is word 7 of the GTADTB table. The standard system is set to use / (ASCII 2F₁₆) as the separator.
- NUMRC - A memory location that defines the number of records allocated for the batch output scratch file. The standard system is set to 10,000 (2710₁₆) for the SMD disk and 5000 (1388₁₆) for the CDD disk.
- PSPREC - A parameter that defines the number of records assigned to a print spool scratch file. The value is contained in word 8 of the GTADTB table.

The standard system comes with a value of 2000 (7D0₁₆).

Terminal Buffer Size

- TOBFSZ - A memory location that is set to the value 288 (120₁₆) on the standard system and defines the size of the master terminal buffer size if magnetic tape is selected
- FILOAD - A memory location that defines the system file load indicator. It is initially set to the value 0, and is changed to 1 when the first ITOS START function is performed and the system files defined by START are initialized. If problems occur with the files defined by START (see section 5 of the ITOS reference manual), FILOAD may be set to 0 and the system files rebuilt by START.
- SAVOPT - A memory location normally set to 0. If set to 1 causes the UTIL SAVE function to do a compare operation while doing the disk copy.

TERMINAL BATCH FLAG

On ITOS, the UTIL BATCH command allows submission of batch jobs; all job control statements are supplied by the user. For protection, this option is allowed only at the master terminal on standard systems. To allow this option from all terminals, set word 20 of the GTADTB to a value other than 0.

FILE MANAGER TABLE SIZING

The file manager tables may be sized and customized if desired by adjusting values in the file manager vector table, which is defined in appendix D of the file manager reference manual.

8AΦ

*change A system
Config*



SYSTEM-LEVEL REQUIREMENTS

V

The following system levels are required for ITOS 2 and its product set numbers to operate properly:

- STO 10428 - 1700 transform with binary-loaded decimal arithmetic (BCD)
- FCO 14958 - Modification of 1843-2 Eight-Channel Communication Line Adapter

- FCO 21027 - Correction of SMD cylinder address checking by the SMD interface board

The following special option is required if the ITOS 2 system contains COMM-18 on a CYBER 18-20 below serial number 3102.

- SPO 10442-1 Character Mode ADT/Page Memory

DEFICIENCIES

W

The following system deficiencies have been identified at system release:

- If an indexed file is being loaded by a terminal user program, the use of the UTIL STATUS command to examine the file status from another user terminal occasionally produces an erroneous record number status.
- The utility functions DUMP and RELOAD do not work properly on seven-track magnetic tapes.
- If CREATE under FILE MANAGER defines a file with zero file name, DELETE cannot remove file.

The memory sizes in the following tables may be used as a guide in specifying the memory options under CONFIG.

The user area size is intended to be the minimum size for each of the languages indicated, which allows a program of reasonable capability to execute. The concurrent batch and COMM-18 Subsystems require user memory space only when active, but reduce the maximum allowed size of the user programs.

User Area Sizes[†]

- Macro Assembler – 4KB
- FORTRAN 3A/3B without double precision – 20KB
- FORTRAN 3A/3B with double precision – 28K
- RPG II Version 2 without commercial option, all features – 60KB
- RPG II Version 2 with commercial option, all features – 56KB
- RPG II Version 2 with commercial option, limited features – 48KB

- COBOL 1 – 44KB

Batch Area Sizes

- Concurrent batch for Macro Assembler, FORTRAN 3A, and RPG II – 20KB
- Concurrent batch for Macro Assembler, FORTRAN 3B, and RPG II – 32KB
- Noncurrent batch for Macro Assembler, FORTRAN 3A/B, RPG II, and COBOL – 64KB

COMM-18 Area Sizes

- 1 - HASP – 20KB
- 1 - 200UT – 12KB
- 2 - HASP – 24KB
- 2 - 200UT – 16KB
- 1 - HASP and 1 - 200UT – 28KB

[†] These are estimates of typical user program sizes. The user must determine the typical program size for his usage.



MACRO ASSEMBLER

JLB
*7CO MASS STORAGE OPERATING SYSTEM VERSION 3.0 DATE OF RUN: 12/01/78 SYSTEM ID: ITOS V2.0 OLMC CENTER PRERELEASE (11/06/78)
*CTC, MACRO ASSEMBLER V 3.0 VERIFICATION TESTS
*CTC, START ASSEMBLY OF TEST PROGRAM
*K.117
*ASSEM

```

0001          NAM TEST
0002          *
0003          * MACRO ASSEMBLER V 3.0 VERIFICATION TESTS
0004          * SMALL COMPUTER DEVELOPMENT DIVISION, LA JOLLA, CALIFORNIA
0005          * COPYRIGHT CONTROL DATA CORPORATION 1978
0006          *
0007          *
0008          * THIS PROGRAM IS DESIGNED TO EXERCISE THE MACRO ASSEMBLER
0009          *          LOAD AND EXECUTE
0010          *          IF SUCCESSFUL PROGRAM EXECUTES AND TYPES
0011          *          MACRO ASSEM TST OK
0012          *          TWO ERRORS ARE GENERATED INTENTIONALLY
0013          ENT START
0014          EQU AHCNI(5F4)   ADR CF MONITOR ENTRY
0015          P0000 000A      BZS A(10)      STORAGE AREA- ZEROES IN AREA
0016          P000A 1234      C          NUM $1234,5768,93BCD,94FFE HEX + DEC NUM CONS
          P000B 1688
          P000C 3BCD
          P000D 4FFE
0017          P000E 000A P D   ADC C
0018          *
0019          P000F 0A00      START ENA 0
0020          P0010 60FF      STA- 5FF          SET I INDEX REG
0021          P0011 C900      P1   LDA C,1          TWO WORD RELATIVE
          P0012 FFF7
0022          P0013 6500      STA+ A,1          TWO WORD ABSOLUTE
          P0014 0000 P
0023          P0015 D0FF      RAO- 5FF          ADD ONE TO INDEX
0024          P0016 C0FF      LDA- 1           INDEX I IS LOCN 5FF
0025          P0017 09FB      INA -4
0026          P0018 0101      SAZ 1           DCNE WITH LOOP
0027          P0019 18F7      JMP+ P1          ONE WORD RELATIVE
0028          P001A 40FF      STA- 5FF          ZERO INDEX
0029          P001B 1800      JMP P2          TWO WORD RELATIVE
          P001C 00C9
0030          P001D 00C8      BZS AA(200)
0031          P00E5 C800      P2   LDA 0           ADDR OF C IN A REG
          P00E6 FF27
0032          P00E7 6400      STA COM1          TWO WORD RELATIVE
          P00E8 0000 C
0033          P00E9 CC00      LDA (D)          $1234 IN A REGISTER
          P00EA FF23
0034          P00EB 6400      STA+ COM2          THIS WORKS TOO
          P00EC 0001 C
0035          P00ED CC00      LDA (D)          $1234 IN A REGISTER
          P00EE FF1F
0036          P00EF 6800      STA A+6
          P00F0 FF15
0037          P0000 0000 C    COM COM1,COM2
          P0001 0001 C
0038          P00F1 C800      LDA AA          LET S STGP
          P00F2 FF2A
0039          P00F3 0124      SAP P4-0-1      IF A POS GO TO P4

```



```

0040 P00F4 54F4 EXIT RTJ- ($F4) EXIT REQUEST
0041 P00F5 0A00 NUM $A00
*****RL*****
0042 P00F6 C00D LDA- C+3 ERROR-ILLEGAL RELOCATION
*****EX*****
0043 PCCF7 C015 LDA* C+3 ERROR C+3 IS TOO FAR
0044 P00F8 C800 P4 LDA C+3 THIS WORKS
P00F9 FF13
0045 POCFA C400 LDA+ C+3 SD DGES THIS
P00FB 0000 P
0046 POCFC 6400 STA CGM2
P00FD 0001 C
0047 P00FE E000 LDQ =ADK *OK* IN Q REG
P00FF 4F4B
0048 P0100 4818 STO* P5 STORE IN BSS FGR MESSAGE
0049 P0101 54F4 RTJ- (AMONI) MONITOR CALL - FWRITE TO TTY
0050 P0102 4C00 R ADC $4C00,,, $1004, LMSG, AMSC
P0103 0000
P0104 0000
P0105 1004
P0106 000B
P0107 0113 P
0051 P0108 C8FB LDA* R+2 WAIT FOR COMPLETION
0052 P0109 0101 SAZ 1 SKIP IF THREAD NOT BUSY
0053 PC10A 18FD JMP* *-2 WAIT
0054 WRITE 4, NEXT, AMSC, LMSG, 1, , , , 1
0054 P010B 54F4 RTJ- ($F4)
0054 IFC ,EQ,
0054 P010C 4400 VFD N1/0,X1/1,N5/2,N1/0,X4/,X4/
0054 EIF
0054 I3 IFC ,NE,
0054 IFC ,EQ,0
0054 VFD N1/0,X1/1,N5/2,N1/0,X4/,X4/
0054 EIF
0054 I3 IFC ,NE,0
0054 VFD N1/0,X1/1,N5/2,N1/1,X4/,X4/
0054 EIF I3
0054 ADC NEXT,0
0054 P010D 0112 P
P010E 0000
0054 I1 IFC 1,NE,B
0054 IFC ,EQ,R
0054 VFD N3/0,N1/1,N2/1,X10/4
0054 EIF
0054 I1 IFC ,NE,R
0054 IFC ,EQ,I
0054 VFD N3/0,N1/1,N2/2,X10/4
0054 EIF
0054 I1 IFC ,NE,I
0054 P010F 1004 VFD N3/0,N1/1,N2/0,X10/4
0054 EIF I1
0054 I2 IFC 1,EQ,B
0054 IFC ,EC,R
0054 VFD N3/0,N1/0,N2/1,X10/4

```

```

0054      EIF
0054      12      IFC  ,NE,R
0054      IFC  ,EG,I
0054      VFD  N3/0,N1/0,N2/2,X10/4
0054      EIF
0054      12      IFC  ,NE,I
0054      VFD  N3/0,N1/0,N2/0,X10/4
0054      EIF  I2
0054      ADC  LMSG,AMSG
0054 P0110 000B
0054 P0111 0113 P
0055      0112 P NEXT EQU  NEXT(*)
0056 P0112 18E1      JMP*  EXIT      EXIT
0057 P0113 4041      AMSG ALF  8,MACRG ASSEM TST
0057 P0114 4352
0057 P0115 4F20
0057 P0116 4153
0057 P0117 5345
0057 P0118 4D20
0057 P0119 5453
0057 P011A 5420
0058 P011B 0001      P5      BSS  P5(1)      OK
0059 P011C 2G20      ALF  2,
0059 P011D 2020
0060      000B      LHSC  EQU  LMSG(+AMSG)
0061      END      START

```

PGM= 011E (286) CCM = 0002 (2) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT	LINE NUMBER
0000	I	00FF	(000255)	0C24
0014	AMONI	00F4	(000244)	0C49
0060	LHSG	000B	(000011)	0050, 0054

S Y M B O L S

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0013	START	000F	0013
0015	A	0000	0022, 0036
0016	C	000A	0017, 0021, 0042, 0043, 0044, 0045
0017	D	000E	0031, 0033, 0035
0021	P1	0011	0027
0030	AA	0010	0038
0031	P2	00E5	0029
0037	COM1	0000	0032
0037	COM2	0001	0034, 0046
0040	EXIT	00F4	0056
0044	P4	00F8	0039
0050	R	0102	0051
0055	NEXT	0112	0054
0057	AMSC	0113	0050, 0054, 0060
0058	P5	0118	0048

*** ALPHABETICAL SORT OF SYMBOLS ***

A	0015	AA	0030	AMGN1	0014	AMSG	0057	C	0016	COM1	0037	COM2	0037	D	0017	EXIT	0040
I	000C	LMSG	0060	NEXT	0055	P1	0021	P2	0031	P4	0044	P5	0058	R	0050	START	0013

0002 ERRGRS

*CTC, ASSEMBLY COMPLETE
*CTO, TWO ASSEMBLY ERRORS ARE INTENTIONALLY
*CTO, INCLUDED IN TEST PROGRAM
*K.110
*CTO, START EXECUTION
*CTO, SUCCESSFUL EXECUTION TERMINATES WITH
*CTO, MACRG ASSEM TST OK
*CTO, WRITTEN TWICE ON THE SYSTEM COMMENT DEVICE
*LGO
TEST 8000

ENTRY POINT TABLE -
***COM FFFC
STAKT 800F

*CTD, EXECUTION COMPLETE
*CTC, END OF MACRO ASSEMBLY TEST
*Z

FORTRAN

JCB
1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0 DATE OF RUN: 12/01/78 SYSTEM ID: ITOS V2.0 DEMO CENTER PRERELEASE (11/06/78)
*K.117
*FTN

```

1      PROGRAM FTNHAY
      C      FORTRAN V 3.3 VERIFICATION TESTS
      C      SMALL COMPUTER DEVELOPMENT DIVISION, LA JOLLA, CALIFORNIA
      C      COPYRIGHT CONTROL DATA CORPORATION 1978
      C
      C      THIS PROGRAM IS DESIGNED TO EXERCISE
      C      THE FORTRAN COMPILER AND IS NON-EXECUTABLE
      C      FTNST VERIFIES LIST AND BINARY OUTPUT OF FTNHAY COMPILATION
      C
      C      EXTERNAL STATEMENT
2      C      EXTERNAL FTNSUB,FTNFCN
      C
      C      RELATIVE STATEMENT
3      C      RELATIVE REL1,REL2,REL3,BLKDAT
      C
      C      TYPE STATEMENT
4      C      INTEGER AINT1,BINT2,CINT3,GINT7(5),HINT8,
4      C      IINT9,JINT10,FINT6
5      C      REAL AREAL1,BREAL2,CREAL3(3,3),IREAL1,JREAL2,
5      C      IKREAL3(9)
6      C      DOUBLE PRECISION MDBL1,NDBL2,ODBL3,PDBL4(3,5),
6      C      IODBL5,RDBL6,SDBL7,TCBL8(2,4),UDBL9,VDBL10,WDBL11
7      C      SINGLE DINT4,EINT5,KINT11
      C
      C      DIMENSION STATEMENT
8      C      DIMENSION LINT12(5),ODBL5(2,3,4),AINT1(10),
8      C      IAREAL1(3,4),FINT6(5)
      C
      C      BYTE AND SIGNED BYTE STATEMENT
9      C      BYTE (FINT6,LINT12(1))(13=6)
10     C      SIGNED BYTE (HINT8,GINT7(3))(7=0)
      C
      C      COMMON STATEMENT
11     C      COMMON /LABEL/AREAL1,EINT5,MINT13(12),PDBL4
12     C      COMMON /LABEL/HREAL8,MDBL11
13     C      COMMON /BREAL2(2,2),BINT2,ODBL5
14     C      COMMON AINT1,VDBL10(10),EREAL5
      C
      C      DATA STATEMENT
15     C      DATA (GINT7(J),J=1,5)/SFDB9,$U697,$B975,$9753,$7531/
16     C      DATA ((CREAL3(I,J),I=1,3),J=1,3)/3567.508,1.2,
16     C      15286.3254,96.6,110.9,0.000050,-1,1056.3219,36500000.0/
17     C      DATA MDBL1/345.67D-03/,NDBL2/.34567D+5/,
17     C      10DBL3/34567.0-05/
      C
      C      EQUIVALENCE STATEMENT

```

```

      C
18      EQUIVALENCE (DREAL4,KREAL3(8))
19      EQUIVALENCE (AINT1(6),LINT12(1)),(MDBL1,NDBL2)
      C
      C
      C
      C
20      MYFUNC (I,J,DREAL4,EREAL5,RDBL6) =
20      1DFLT(ABS(I))*RDBL6/(SIN(EREAL5))*2
20      2*ALOG(DREAL4)-SORT(J)+FTNFCN(DREAL4,EREAL5,FREAL6,BINT2,CINT3,
20      3AINT1(5))
      C
      C
      C
      C
21      10      I = LINT12(1)+LINT12(2)-LINT12(3)*BREAL2(1,2,1)/.005
21      1**2
22      20      MDBL11 = (TDBL8(2,2)*(1/5)+365.568)/LINT12(3)**2+MYFUNC(1,
22      1J,DREAL4,EREAL5,RDBL6)
      C
      C
      C
      C
      C
23      30      IF (1.EQ.LINT12(4)) GO TO 40
24      40      IF (1.NE.LINT12(4)) J = I+1
25      50      IF (LINT12(5).GT.J) ASSIGN 800 TO IFORM
26      60      IF (J.GE.1) CALL FTNSUB(25,AREAL1,MCBL1)
27      70      IF (J.LT.1) WRITE (4,600)
28      80      IF (3.LE.AREAL1) STOP 6
29      90      IF (.NOT.(1.EQ.LINT12(4)).AND.(LINT12(5).GT.J)).OR.
29      1(J.LT.3)) PAUSE 7
      C
      C
      C
      C
30      500      FORMAT (//5F10.5,E10.2/15D11.7,3(I10,S4),2Z3,2A2,R1/)
31      600      FORMAT (1H0,2HREPLACE THIS STATEMENT,5X,
31      1*COMMENT *1**,*COMMENT *2**)
32      700      FORMAT (I8)
33      800      FORMAT (1H1,F6.4)
34      900      FORMAT (/D17.10)
      C
      C
      C
      C
35      CALL RELESE (FTNHAY)
      C
      C
      C
      C
36      END

```

COMMON

LABEL 30057 (87) BLANK 30083 (131)

PROGRAM LENGTH 301A0 (416)

EXTERNALS

Q8CFIX HFL0T Q8CF2I Q8G12F Q8STP Q8STPN Q8PSEM
C8PKUP Q8PREP Q8QINI H8FL0T FLOAT DFLY DBLE
FTNSUB FTNFCM ABS SIN ALOG SORT RELEASE

```

1      SUBROUTINE FTNSUB (I,LREAL4,XDBL12)
      C      FORTRAN V 3.3 VERIFICATION TESTS
      C      SMALL COMPUTER DEVELOPMENT DIVISION, LA JOLLA, CALIFORNIA
      C      COPYRIGHT CONTROL DATA CORPORATION 1978
      C
      C      THIS NONEXECUTABLE SUBPGM. IS DESIGNED TO EXERCISE THE COMPILER
      C      FINTST VERIFIES LIST AND BINARY OUTPUT OF FTNSUB COMPILATION
2      REAL IREAL4
3      DOUBLE PRECISION XDBL12
4      SINGLE I,IBUF(56),IDAT(3),INUM,ITEMP(8)
5      DATA (IDAT(1),I =1,3)/%G023,%FFFE,%C01A/,INUM/5/
      C
      C      SETBFR,FORMATTED WRITE,IOERR,IRHERR
      C
6      CALL SETBFR (IBUF,58)
7      WRITE (I,100)(IDAT(I),I=1,3),INUM
8      IF (IGERR(0).EQ.-1) GO TO 50
9      JERRCR = IRHERR(0)
      C
      C      CHARACTER CONVERSION
      C
10     CALL HEXASC(I,IBUF(1))
11     CALL HEXDEC(I,IBUF(1))
12     CALL ASCII(IBUF(1),I)
13     CALL DECHEX(IBUF(1),I)
14     CALL AFORM(IBUF(1),IDAT)
15     CALL RFORM(IBUF(1),IDAT)
16     CALL FLDATG(LREAL4,IBUF(1))
      C
      C      INPUT/OUTPUT
      C
17     CALL OUTINS(IDAT)
18     CALL INPINS(IDAT)
19     CALL ICONCT(IDAT)
20     CALL GCONCT(IDAT)
      C
      C      FORTRAN/MONITOR INTERFACE
      C
21     IFLAG = %0011
22     ASSIGN 75 TO ICOMP
23     CALL FWRITE (%S18FB,IBUF(1),40,ICOMP,IFLAG,ITEMP(1))
24     CALL DISPAT
25     CALL SCHEDL (80,%I,I,ITEMP)
26     CALL DISPAT
27     CALL TIMER (1,%I21,5,ITEMP)
28     CALL DISPAT
29     N = LINK(0)
30     K = ICLCK(0)
      C
      C      ENCODE/DECODE
      C
31     ASSIGN 99 TO IFORM
32     CALL ENCODE (IEUF,IFORM,3,IDAT)
33     IFLAG = DECODE (IBUF,IFORM,3,IDAT)

```

34 RETURN
35 99 FORMAT (13)
36 100 FORMAT (/312,10H TERMINAL ,12,11H TERMINATED)
37 END

			NAH	FTNSUB	
	0000	0060	.00001		
	0000	0001	0001%	NUM	1
	0001	0000	0000%	NUM	0
	0002	003A	IEUF	BSS	58
	003C	0003	IDAT	BSS	3
	003F	0001	INUM	BSS	1
	0040	0006	ITEMP	BSS	8
	0048	003A	OU3AS	NUM	58
	0049	0003	0003%	NUM	3
	004A	0001	JERRDR	BSS	1
	0048	0001	IFLAG	BSS	1
	004C	0001	ICOMP	BSS	1
	004D	18FB	18FB%	NUM	6395
	004E	0028	OC28%	NUM	40
	004F	0050	OC50%	NUM	80
	0050	0021	UC21%	NUM	33
	0051	0005	OC05%	NUM	5
	0052	0001	N	BSS	1
	0053	0001	K	BSS	1
	0054	0001	IFORM	BSS	1
	0055	5802	.00002	KTJ*	.00005
	0056	FFA9		ALC	.00001
	0057	0001	.00005	BSS	1
	0058	C8FE		LDA*	.00005
	0059	88FC		ADU*	.00005
	005A	68FC		STA*	.00005
5	003C	003C		CRG	ICAT
	003C	0023		NUM	35
	003D	FFFE		NUM	-1
	003E	001A		NUM	26
	003F	0005		NUM	5
6	0056	5400	1	RTJ*	SETBFR
	005C	7FFF			
	005D	FFA4		ADC	IEUF
	005E	FFE9		ADC	003A1
7	005F	5400		RTJ*	C80INI
	0060	7FFF			
	0061	5400		NUM	2304C
	0062	0007		NUM	7
	0063	0000	.00006	ACC	.00006
	0064	8083		ALC	100
7	0065	0A01		ENA	1
	0066	6CFC		STA*	(.00006)
7	0067	CCFB	.00007	LCA*	(.00006)
	0068	8000		ALD	ICAT
	0069	003B			
	006A	86EC		ADU*	.00005
	006B	6803		STA*	.00008
	006C	5400		RTJ*	C80X
	006D	7FFF			
	006E	0001	.00008	BSS	1
7	006F	DCF3		RAU*	(.00006)
	0070	0A03		ENA	3

	0071	9CF1		SLB*	(.00G06)
	0072	0131		SAH	1
	0073	18F3		JHP*	.00007
7	0074	5CF8		RTJ*	(C80X)
	0075	FFC9		AGC	1NUM
7	0076	5400		RTJ*	08QEND
	0077	7FFF			
8	0078	5400		RTJ*	10ERR
	0079	7FFF			
	007A	FF86		ADC	G0003
	007B	0901		INA	1
	007C	0104		SAZ	4
9	007D	5400	.00009	RTJ*	1RWERR
	007E	7FFF			
	007F	FF81		ADC	0C003
	0080	68C9		STA*	JERRGR
10	0081	5400	50	RTJ*	HEXASC
	0082	7FFF			
	0083	00G0		AGC	.G0006
	0084	FF7C		ALC	18UF
11	0085	5400	55	RTJ*	HEXDEC
	0086	7FFF			
	0087	00G0		ADC	.00006
	0088	FF79		ALC	18UF
12	0089	5400	60	RTJ*	ASCII
	008A	7FFF			
	008B	FF76		ADC	18UF
	008C	00G0		ALC	.G0006
13	008D	5400	65	RTJ*	DECHEX
	008E	7FFF			
	008F	FF72		ADC	18UF
	0090	00G0		ALC	.G0006
14	0091	5400	70	RTJ*	AFORM
	0092	7FFF			
	0093	FF6E		ADC	18UF
	0094	FFA7		ADC	1CAT
15	0095	5400		RTJ*	RFCRM
	0096	7FFF			
	0097	FF6A		ADC	18UF
	0098	FFA3		ADC	1DAT
16	0099	5400		RTJ*	FLOATG
	009A	7FFF			
	009B	0000	.0000A	ADC	.0000A
	009C	FF65		ADC	18UF
17	009D	5400		RTJ*	CUTINS
	009E	7FFF			
	009F	FF9C		ADC	1CAT
18	00A0	5400		RTJ*	INPINS
	00A1	7FFF			
	00A2	FF99		ADC	1DAT
19	00A3	5400		RTJ*	1CONCT
	00A4	7FFF			
	00A5	FF96		ADC	1CAT
20	00A6	5400		RTJ*	1CONCT

	00A7	7FFF			
	00A8	FF93	ADC	IDAT	
21	00A9	0A11	ENA	17	
	00AA	68A0	STA*	IFLAG	
22	00AB	C000	LDA	75	
	00AC	00B9			
	00AD	88A9	ADD*	.C0005	
	00AE	689D	STA*	ICOMP	
23	00AF	5400	RTJ*	FWRITE	
	00B0	7FFF			
	00B1	FF9B	ADC	16FB1	
	00B2	FF4F	ADC	18UF	
	00B3	FF9A	ADC	00281	
	00B4	FF97	ADC	ICOMP	
	00B5	FF95	ADC	IFLAG	
	00B6	FF89	ADC	ITEMP	
24	00B7	5400	RTJ*	DISPAT	
	00B8	7FFF			
25	00B9	5400	75	RTJ*	SCHEDL
	00BA	7FFF			
	00BB	FF93	ALC	G0501	
	00BC	FF43	ALC	0C011	
	00BD	0000	ADC	.G0006	
	00BE	FF81	ADC	ITEMP	
26	00BF	5CF8	RTJ*	(DISPAT)	
27	00C0	5400	RTJ*	TIMER	
	00C1	7FFF			
	00C2	FF3D	ADC	G0011	
	00C3	FF8C	ADC	0C211	
	00C4	FF8C	ADC	CG051	
	00C5	FF7A	ADC	ITEMP	
28	00C6	5CF1	RTJ*	(DISPAT)	
29	00C7	5400	80	RTJ*	LINK
	00C8	7FFF			
	00C9	FF37	ALC	C0001	
	00CA	6887	STA*	M	
30	00CB	5400	RTJ*	ICLOCK	
	00CC	7FFF			
	00CD	FF33	ADC	G0001	
	00CE	6884	STA*	K	
31	00CF	C000	LDA	99	
	00D0	00E5			
	00D1	8885	ADD*	.00005	
	00D2	6800	STA	IFORM	
	00D3	FF80			
32	00D4	5400	RTJ*	ENCODE	
	00D5	7FFF			
	00D6	FF2B	ALC	18UF	
	00D7	FF7C	ACC	IFORM	
	00D8	FF70	ADC	G0031	
	00D9	FF62	ADC	IDAT	
33	00DA	5400	RTJ*	DECCDE	
	00DB	7FFF			
	00DC	FF25	ADC	18UF	

	000D	FF76		ADC	IFORM
	000E	FF6A		ADC	00033
	000F	FF5C		ADC	ICAT
	00E0	5400		RTJ+	HFLDT
	00E1	7FFF			
34	00E2	5140		NUM	20800
	00E3	FF67		ADC	IFLAC
	00E4	1816		JMP+	-C0000
35	00E5	00G2	99	BSS	2
	00E5	00E5		ORG	99
	00E5	2849		NUM	10313
	00E6	3329		NUM	13097
36	00E7	0013	100	BSS	19
	00E7	00E7		ORG	100
	00E7	282F		NUM	10287
	00E8	3349		NUM	13129
	00E9	322C		NUM	12844
	00EA	3130		NUM	12592
	00EB	4820		NUM	16464
	00EC	5445		NUM	21573
	00ED	524D		NUM	21069
	00EE	494E		NUM	18766
	00EF	414C		NUM	16716
	00F0	202C		NUM	8236
	00F1	4932		NUM	18738
	00F2	2C31		NUM	11313
	00F3	3148		NUM	12616
	00F4	2054		NUM	8276
	00F5	4552		NUM	17746
	00F6	4D49		NUM	19785
	00F7	4E41		NUM	20033
	00F8	5445		NUM	21573
	00F9	4429		NUM	17449
37	00FA	E619	.00000	LDQ+	-C00C3
	00FB	1C01		JMP+	(FTNSUB)
	00FC	C000	FTNSUB	NUM	0
	00FD	4816		STQ+	-C0003
	00FE	54C0		RTJ+	Q8PREP
	00FF	7FFF			
	0100	FFF6		ADC	FTNSUB
	0101	5400		RTJ+	C8PKUP
	0102	7FFF			
	0103	6800		STA	-00006
	0104	FF5E			
	0105	6800		STA	-00006
	0106	FF7C			
	0107	6600		STA	-00006
	0108	FF7E			
	0109	6800		STA	-00006
	010A	FF81			
	010B	6800		STA	-00006
	010C	FF83			
	010D	68AF		STA+	-C0006
	010E	5CF3		RTJ+	(C8PKUP)

```
010F 6686      STA*  .0006A
0110 5CF1      RTJ*  (Q8PKUP)
0111 1800      JMP   .00002
0112 FF42
          .00004
0113 0001     .00003 BSS      1
0000 0000      END      0
```

PROGRAM LENGTH 30114 (276)

EXTERNALS

```
MFLOT Q8PKUP Q8PREP Q8QINI Q8OX Q8CEND SETBFR
ICERR IRWERR HEXASC HEXDEC ASCII DECPEX AFORN
RFCRM FLOATC OUTINS INPINS ICONCT GCNCT FWRITE
DISPAT SCHEDL TIMER LINK ICLLCK ENCCDE DECODE
```

```

1      REAL FUNCTION FTNFCN (A1,A2,A3,I1,I2,I3)
      C      FORTRAN V 3.3 VERIFICATION TESTS
      C      SMALL COMPUTER DEVELOPMENT DIVISION, LA JOLLA, CALIFORNIA
      C      COPYRIGHT CONTROL DATA CORPORATION 1978
      C
      C      THIS NONEXECUTABLE SUBPGM. IS DESIGNED TO EXERCISE THE COMPILER
      C      FTNFCN VERIFIES LIST AND BINARY OUTPUT OF FTNFCN COMPILATION
2      C      SINGLE LENGTH,BUFFER(50),ITEMP
      C
      C      ASSEMBLY CODE,CONTINUE STATEMENT
      C
3      C      ASSEM .15,$C8FE,$6400,*I1,$6400,ITEMP
4      C      ASSEM .16,$54F4,*,$0901,*17,$0,$08F9,*I(LENGTH),*BUFFER(1)
5      C      CONTINUE
      C
      C      ASSIGNED GO TO,COMPUTED GO TO
      C
6      C      GO TO 13,(20,30,40,50,60)
7      C      GO TO (20,30,40,50,60),I2
      C
      C      ARITHMETIC IF
      C
8      C      IF (A1/A2) 30,40,50
      C
      C      PAUSE STATEMENT
      C
9      C      PAUSE 30
      C
      C      DD LOCP,UNFORMATTED READ,UNFORMATTED WRITE
      C
10     C      DD 45 J =1,50,1
11     C      READ (1) (BUFFER(I), I =1,50)
12     C      WRITE (3) (BUFFER(I), I =1,50,1)
13     C      CONTINUE
14     C      DD 54 M =I2,1,-1
15     C      DD 58 N =1,20,5
16     C      A3 = FLOAT(M*N)+A3
17     C      CONTINUE
18     C      CONTINUE
      C
      C      OPEN MASS STORAGE FILE
      C
19     C      OPEN 2,1,200,8,1
      C
      C      FORMATTED READ AND WRITE STATEMENTS
      C
20     C      READ (6,200) (BUFFER(I),I=1,50)
21     C      WRITE (8,200) (BUFFER(I),I=1,50)
      C
      C      TAPE CONTROL,BACKSPACE,ENDFILE,REWIND
      C
22     C      BACKSPACE 6
23     C      ENDFILE 6
24     C      REWIND 6

```

```
      C
      C   FUNCTION VALUE RETURN
      C
25     FTNFCN = A3+A1/FLOAT(BUFFER(20))
26     RETURN
      C
27     200  FORMAT (50(1X,12))
28     END
```

3			.00001		
4	0044	54F4	16	NUM	21748
6	0048	CC04	17	LDA*	(.00007)
7	0050	CC0E		LDA*	(.00008)
8	0060	5400	20	RTJ*	HFL0T
9	006C	5400	30	RTJ*	C8PSEN
10	006F	0A01	40	ENA	1
11	0071	5400	.0000F	RTJ*	Q8QINI
11	0076	0A01		ENA	1
11	0078	C88F	.0000G	LDA*	I
11	007F	D888		RAO*	I
11	0084	5400		RTJ*	Q8QEND
12	0086	5CEB		RTJ*	(Q8QINI)
12	008A	0A01		ENA	1
12	008C	CEA6	.0000I	LDA*	I
12	0092	D8A5		RAO*	I
12	0097	5CED		RTJ*	(C8QEND)
13	0098	D89E	45	RAO*	J
14	009D	CCCC	50	LDA*	(.0000B)
15	00A2	0A01		ENA	1
16	00A5	C400	.0000H	LDA*	H
17	00B0	CCF3	58	LDA*	(100A4)
18	00B7	CCEE	59	LCA*	(10CA6)
19	00BA	5400	60	RTJ*	C8DFNF
20	00C2	5CAF	70	RTJ*	(C8QINI)
20	00C7	0A01		ENA	1
20	00CA	CCFE	.00000	LDA*	(100C9)
20	00D0	DCF8		RAO*	(100C9)
20	00D5	5CAF		RTJ*	(C8QEND)
21	00D6	5C96		RTJ*	(C8QINI)
21	00DB	0A01		ENA	1
21	00DD	CCEB	.00000	LDA*	(100C9)
21	00E3	DCE5		RAO*	(100C9)
21	00E8	5C9C		RTJ*	(C8QEND)
22	00E9	5400		RTJ*	Q8QBCK
23	00ED	5400		RTJ*	Q8CFLE
24	00F1	5400		RTJ*	Q8QHND
25	00F5	5CB4		RTJ*	(FLOAT)
26	00FE	D400		NUM	-11263
27	0101	0006	200	BSS	6
28	0107	E821	.00000	LDQ*	.C0002

PRGGRAM LENGTH 10129 (297)

EXTERNALS

HFL0T Q8PSEN Q8PKUP Q8PREP Q8CFLE Q8QHND Q8QBCK
 Q8QINI Q8QX Q8QEND Q8DFNF FLOAT

```
1      BLOCK DATA
      C      FORTRAN V 3.3 VERIFICATION TESTS
      C      SMALL COMPUTER DEVELOPMENT DIVISION, LA JOLLA, CALIFORNIA
      C      COPYRIGHT CONTROL DATA CORPORATION 1978
      C
      C      FTNTST VERIFIES LIST AND BINARY OUTPUT OF BLOCK DATA COMPILATION
      C      THIS NONEXECUTABLE SUBPGM. IS DESIGNED TO EXERCISE THE COMPILER
2      COMMON /ENTER/A,C,I,K
3      DIMENSION A(4),B(4),C(5),D(2),I(3),J(3),K(2)
4      EQUIVALENCE (A,B),(I,J)
5      DATA A(1),A(2),A(3),A(4)/1.1,2.2,3.3,4.4/,C(1),C(2),C(3),C(4),C(5)
5      */1.1,2.2,3.3,4.4,5.5/,D(1),D(2)/10.1,10.2/,I(1),I(2),I(3),K(1),
5      *K(2)/1,2,3,4,5/
6      END
```

COMMON
LABEL \$0020 (32)

PROGRAM LENGTH \$0000 (0)

RPG VERSION 2.1 :

PROGRAM VTIMES

PROGRAM VTIMES

CURRENT DATE 041879 AND TIME 09:20:21

PROGRAM VTEST1 4/18/79

CARD10	KEY01	UPDATED	041879
CARD09	KEY02	UPDATED	041879
CARD08	KEY03	UPDATED	041879
CARD07	KEY04	UPDATED	041879
CARD06	KEY05	UPDATED	041879
CARD05	KEY06	UPDATED	041879
CARD04	KEY07	UPDATED	041879
CARD03	KEY08	UPDATED	041879
CARD02	KEY09	UPDATED	041879
CARD01	KEY10	UPDATED	041879

PROGRAM VTEST2 4/18/79

CARD10	KEY01	UPDATED	041879
CARD09	KEY02	UPDATED	041879
CARD08	KEY03	UPDATED	041879
CARD07	KEY04	UPDATED	041879
CARD06	KEY05	UPDATED	041879
CARD05	KEY06	UPDATED	041879
CARD04	KEY07	UPDATED	041879
CARD03	KEY08	UPDATED	041879
CARD02	KEY09	UPDATED	041879
CARD01	KEY10	UPDATED	041879
RESULT		VERIFIED UPDATE OK	

COMPUTER CONTROL SERVICE LTD 5/31/77 - COMPUTER USAGE BY DATE

DATE	USER NO.	DESCRIPTION	START CLOCK	STOP CLOCK	CLOCK USAGE	START METER	STOP METFR	METER USAGE
5/02/77	342	CHA	7.40	9.20	1.66	3329.81	3331.29	1.48
5/02/77	592	T-RIRD	.00	.00	.00	3331.29	3331.34	.05
5/02/77	503	OLIVER REALTY	.00	.00	.00	3331.34	3331.60	.26
5/02/77	360	DIV NATL	.00	.00	.00	3331.60	3331.63	.03
5/02/77	512	OVLD DAIRY	.00	.00	.00	3331.63	3331.75	.12
5/02/77	590	THOMPSON	.00	.00	.00	3331.75	3331.90	.15
5/02/77	432	IRP	.00	.00	.00	3331.90	3331.94	.04
5/02/77	435	INS CENTER	.00	.00	.00	3331.94	3332.06	.12
5/02/77	565	SCHERMER	.00	.00	.00	3332.06	3332.21	.15
5/02/77	512	OVLD DAIRY	.00	.00	.00	3332.21	3332.37	.16
5/02/77	592	T-RIRD	.00	.00	.00	3332.37	3332.42	.05
5/02/77	445	JC+G	.00	.00	.00	3332.42	3332.51	.09
5/02/77	503	OLIVER REALTY	.00	.00	.00	3332.51	3332.65	.14
5/02/77	999	CCL	.00	.00	.00	3332.65	3333.42	.77
5/02/77	565	SCHERMER	.00	.00	.00	3333.42	3333.65	.23
5/02/77	435	INS CENTER	.00	.00	.00	3333.65	3333.69	.04
5/02/77	430	IND FOODS	.00	.00	.00	3333.69	3333.73	.04
5/02/77	432	IRP	.00	.00	.00	3333.73	3333.79	.06
5/02/77	999	CCL	.00	.00	.00	3333.79	3334.36	.56
5/02/77	585	STONE+CARLIE	.00	.00	.00	3334.36	3335.04	.68
5/02/77	565	SCHERMER	.00	.00	.00	3335.04	3335.17	.13
5/02/77	450	KANDEL	.00	.00	.00	3335.17	3335.23	.06
5/02/77	432	IRP	.00	.00	.00	3335.23	3335.26	.03
5/02/77	475	MIDWEST	.00	.00	.00	3335.26	3335.49	.23
5/02/77	999	MED SHOPS-TFST	.00	.00	.00	3335.49	3335.62	.13
5/02/77	354	DIV GRAPHICS	.00	.00	.00	3335.62	3335.84	.22
5/02/77	999	CLOCK TIME	9.20	18.00	8.67	.00	.00	.00
					10.33			6.02
TOTAL CLOCK USAGE					10.33	TOTAL METER USAGE		6.02

PROGRAM VTEST7 4/18/79

TIME FOR NUMERIC FIELDS

START	STOP	COMMAND	COUNT	TOT TIME	TIME/INSTR
08:20:46	08:20:46	START	0	0 **	.000 MSECS
08:20:46	08:20:55	OVHFD	10000	9 **	.900 MSECS
08:20:55	08:21:38	MOVE	10000	43 **	3.400 MSECS
08:21:38	08:22:37	COMP	10000	59 **	5.000 MSECS
08:22:37	08:23:21	MOVEL	10000	44 **	3.500 MSECS
08:23:21	08:24:04	ADD	10000	43 **	3.400 MSECS
08:24:04	08:24:44	SUB	10000	40 **	3.100 MSECS
08:24:44	08:25:12	DIV	5000	28 **	4.700 MSECS
08:25:12	08:25:34	MULT	5000	22 **	3.500 MSECS
08:25:34	08:26:02	XFOOT	5000	28 **	4.700 MSECS
08:26:02	08:26:55	LOKUP-A	5000	53 **	9.700 MSECS
08:26:55	08:27:23	LOKUP-T	5000	28 **	4.700 MSECS
08:27:23	08:27:54	LOKUP-RT	5000	31 **	5.300 MSECS

PROGRAM VTESTA 4/1A/79

TIME FOR ALPHA FIELDS

START	STOP	COMMAND	COUNT	TOT TIME	TIME/INSTR
0A:27:57	0A:27:57	START	0	0 **	.000 MSECS
0A:27:57	0A:2A:0A	OVHED	10000	9 **	.900 MSECS
0A:2A:0A	0A:2A:40	MOVE	10000	34 **	2.500 MSECS
0A:2A:40	0A:2A:20	COMP	10000	40 **	3.100 MSECS
0A:2A:20	0A:30:01	MOVEL	10000	41 **	3.200 MSECS
0A:30:01	0A:30:16	MOVEA	5000	15 **	2.100 MSECS
0A:30:16	0A:31:09	LOKUP-A	5000	50 **	9.100 MSECS
0A:31:09	0A:31:37	LOKUP-T	5000	28 **	4.700 MSECS
0A:31:37	0A:32:05	LOKUP-RT	5000	2A **	4.700 MSECS

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FEATURE TESTED	PASS FAIL	PARAGRAPH NAME	COMPUTED DATA	CORRECT DATA	REMARKS
CREATE FILE SQ-FS1		SEQ-TEST-001	FILE CREATED, RECS =	000000000000000750	
VERIFY FILE SQ-FS1	PASS	SEQ-TEST-002	FILE VERIFIED RECS =	000000000000000750	
LEV 1 READ STATEMENT	PASS	READ-TEST-01			READ...RECORD AT END ...
LEV 1 READ STATEMENT	PASS	READ-TEST-02			READ...AT END...
LEV 1 READ STATEMENT	PASS	READ-TEST-03			READ...RECORD END...
LEV 1 READ STATEMENT	PASS	READ-TEST-04			READ...END...
READ FILE SQ-FS1	PASS	SEQ-TEST-003			

END OF TEST- SQ102 NTIS DISTRIBUTION COBOL 74

NO ERRORS ENCOUNTERED
NO TESTS DELETED

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FEATURE TESTED	PASS FAIL	PARAGRAPH NAME	COMPUTED DATA	CORRECT DATA	REMARKS
SET OPT 1	PASS	TEST-1			
SET OPT 2	PASS	TEST-2			
SET OPT 3	PASS	TEST-3			
SET OPT 4	PASS	TEST-4			
SET OPT 5	PASS	TEST-5			
SET OPT 6	PASS	TEST-6			

ASCENDING NUMBER LIST

- 01
- 02
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END OF TABLE LIST

END OF TEST- TH101 NTIS DISTRIBUTION CG80L 74

NO ERRORS ENCOUNTERED
NO TESTS DELETED

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FEATURE TESTED	PASS FAIL	PARAGRAPH NAME	COMPUTED DATA	CORRECT DATA	REMARKS
COMMENT TEST	PASS	COMM-TEST-1			
COMMENT TEST	PASS	COMM-TEST-2			
COMMENT TEST	PASS	COMM-TEST-3			
NOTE SPECIAL CHARS	PASS	COMM-TEST-4			
NOTE NON-COBOL CHAR	PASS	COMM-TEST-5			
NOTE RESERVED WORDS	PASS	COMM-TEST-6			
GO TO	PASS	GO--TEST-1			
GO TO DEPENDING		GO--TEST-2			
	PASS	GO--A			
	PASS	GO--B			
	PASS	GO--C			
	PASS	GO--D			
	PASS	GO--E			
GO TO	PASS	GO--TEST-3			
GO TO DEPENDING	PASS	GO--TEST-4			
GO TO DEPENDING	PASS	GO--TEST-5			
GO TO DEPENDING	PASS	GO--TEST-6			
GO TO DEPENDING	PASS	GO--TEST-7			
ALTER	PASS	ALTER-TEST-1			
ALTER	PASS	ALTER-TEST-2			
ALTER	PASS	ALTER-TEST-3			
EXIT	PASS	EXIT-TEST-1			
PERFORM	PASS	PFH-TEST-1			
PERFORM	PASS	PFH-TEST-2			
PERFORM TIMES	PASS	PFH-TEST-3			
NESTED PERFORM THRU	PASS	PFH-TEST-4			
NESTED PERFORM	PASS	PFH-TEST-5			
PERFORM SECTION-NAME	PASS	PFH-TEST-6			
PERFORM EXIT PARAS	PASS	PFH-TEST-7			
PERFORM	PASS	PFH-TEST-08			
PERFORM TIMES	PASS	PFH-TEST-09			
PERFORM THRU	PASS	PFH-TEST-10			
PERFORM THRU, TIMES	PASS	PFH-TEST-11			
NESTED PERFORM	PASS	PFH-TEST-12			

NESTED PERFORM PASS PFM-TEST-13
NESTED PERFORM PASS PFM-TEST-14
PERFORM GO TO PARAS PASS PFM-TEST-15
PERFORM ... TIMES PASS PFM-TEST-LAST

END OF TEST- NC102 NTIS DISTRIBUTION COBOL 74

NO ERRORS ENCOUNTERED
NO TESTS DELETED

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If ITOS is delivered on magnetic tape, it must be loaded onto a disk pack before it becomes operational. If the disk pack has not previously been used, initialize it before loading the system onto it.

The following are needed to perform the above task:

- A disk formatter diskette (used for initializing the disk pack)
- A disk pack
- Magnetic tape containing the ITOS operating system
- A DTLP diskette

For a storage module drive (SMD) system, the formatter does not inform the operator of any errors that may have occurred during initialization. To guarantee that the disk has been properly initialized, clear the CHECK END light before starting initialization. If the CHECK END light is on after initialization is complete, clear it and reinitialize.

The CHECK END light is positioned on the CE display panel on the left-hand side of the disk controller. The light is cleared by pressing the CLEAR switch on this panel.

INITIALIZE

To initialize the disk pack perform the following steps:

1. Load the disk pack on disk drive unit 0.
2. Load the disk formatter diskette on the flexible disk drive unit 0.
3. Deadstart:
 - Press MASTER CLEAR
 - Press DEADSTART
4. The following messages appear on the console:
 - CAUTION, MOUNT SCRATCH PACK BEFORE PROCEEDING
 - EQUIPMENT CODE FOR DISK
5. Enter 0700 (cr). If the pack being initialized is an SMD, go to step 10.
6. On a CDD system, the message
 - FORMAT BOTH PLATTERS Y/N
 is output.
7. The operator enters Y (cr).

8. The message
 - INITIALIZE WHICH DRIVE (0-3)
 appears on the console.
9. The operator enters 0 (cr) and proceeds to step 12.
10. On a SMD system, the message
 - INITIALIZE WHICH DRIVE (0-7)
 appears on the console.
11. The operator enters 0 (cr).
12. The disk initialization requires approximately four minutes for a CDD and eight minutes for a SMD. The task is complete when the message
 - INITIALIZATION COMPLETE
 is output.

LOAD

To load the ITOS operating system from magnetic tape onto a disk pack complete the following steps:

1. Load the disk pack on disk drive unit 0.
2. Load the DTLP diskette on the flexible disk drive unit 0.
3. Load the magnetic tape on the magnetic tape drive unit 0 and ready the device.
4. Deadstart:
 - Press MASTER CLEAR
 - Press DEADSTART
5. The message
 - TYPE LOAD FOR TAPE-TO-DISK, SAVE FOR DISK-TO-TAPE OR A CARRIAGE RETURN
 is output.
6. The operator responds with
 - LOAD (cr)
7. The message
 - INPUT TAPE ON UNIT 0. READY ? >
 appears on the screen.

8. The operator presses (cr) when ready. The load requires approximately 15 minutes. (The time required varies with the system used.)

9. When the load is complete, the following message is output:

```
xxxxxxx SECTORS LOADED  
TYPE V FOR VERIFY OR CARRIAGE RETURN  
TO RESTART
```

where xxxxxxx is the number of sectors loaded.

10. The operator types V (cr) to verify the tape against mass memory.

11. The message

```
VERIFY TAPE ON UNIT 0. READY? >
```

is displayed on the screen.

12. The operator types (cr) after the tape has rewound and has been readied. The time required to verify is approximately the same as the load time.

13. When verification is complete, the following message is output:

```
xxxxxxx SECTORS VERIFIED
```

where xxxxxxx is the number of sectors verified. (This should be the same as the number of sectors loaded.)

14. The last message output is:

```
TYPE V FOR VERIFY OR A CARRIAGE RETURN  
TO RESTART
```

15. The ITOS operating system may now be autoloading and configured following the instructions in section 3.

When the R attribute occurs while configuring the system, the program library files and all products must be reloaded. Section 4 gives the procedures for loading the various products.

The program library files are contained on one diskette. Installation procedures are given below.

Load the standard program library diskette on the flexible disk drive unit 0 and proceed as follows:

<u>Display/Keyboard</u>	<u>Comments</u>
CONTROL G	Manual interrupt is performed.
MI >	Manual interrupt is active.
SPHT (cr)	The operator halts the print spooler.
MI COMPLETE	Manual interrupt is complete.

CONTROL G

Manual interrupt is performed.

MI
>

Manual interrupt is active.

*BATCH,17 (cr)

The operator enters a command to start installation. Installation requires approximately three minutes.

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LIBRARY FILES INSTALL
*CTO, COPYRIGHT CONTROL
DATA CORPORATION 1978

*CTO, STANDARD PROGRAM
LIBRARY FILES INSTALL
COMPLETE

Installation is complete. An install listing should be listed on the printer. A sample install listing is contained in appendix EE.

SAVING AND RESTORING A SYSTEM USING MAGNETIC TAPE (DTLP)

CC

The disk-to-tape utility program is used to save the contents of a system disk to magnetic tape and, subsequently, to restore the contents to a disk from the magnetic tape. The disk-to-tape program is a stand-alone, off-line program provided as deadstart media.

SAVE

To save the contents of the disk on magnetic tape, complete the following steps:

1. Load the disk pack on disk drive unit 0.
2. Load the disk-to-tape (DTLP) diskette on the flexible disk drive unit 0.
3. Load the magnetic tape on the magnetic tape drive unit 0 and ready the device.
4. Deadstart the DTLP diskette. (Appendix S gives the deadstart procedure.)
5. The message

TYPE LOAD FOR TAPE-TO-DISK, SAVE FOR
DISK-TO-TAPE OR A CARRIAGE RETURN

is output.

6. The operator responds with

SAVE (cr)

7. The message

OUTPUT TAPE ON UNIT 0. READY?>

appears on the screen.

8. The operator responds with (cr) after the output tape is readied. If the disk pack being saved is an SMD, go to step 11.
9. If the system being saved is a CDD system and the second volume (fixed platter) has been initialized, the following message is displayed:

CDD SYSTEM, TYPE BOTH TO SAVE BOTH
PLATTERS, TYPE CARRIAGE RETURN TO SAVE
ONLY REMOVABLE PLATTER (SYSTEM
VOLUME)

10. The operator responds with

BOTH (cr)

or

(cr)

to select the option desired.

11. If the end of tape is reached on a SAVE operation the message

MOUNT NEXT OUTPUT REEL ON UNIT 0.
READY?>

is displayed on the console. The operator responds to this message with

(cr)

after the next output tape is loaded and readied.

12. When the SAVE operation is complete, the following message is printed:

TYPE V FOR VERIFY OR CARRIAGE RETURN
TO RESTART

13. If the operator wishes to verify the tape against mass memory, refer to the Verify section below. Otherwise, the operator may now autoload the system.

LOAD

To transfer the ITOS operating system from magnetic tape to a disk pack, complete the following loading procedure:

1. Load the disk pack on disk drive unit 0.
2. Load the disk-to-tape (DTLP) diskette on the flexible disk drive unit 0.
3. Load the magnetic tape on the magnetic tape unit 0 and ready the device.
4. Deadstart the DTLP diskette. (Appendix S gives the deadstart procedure.)
5. The message

TYPE LOAD FOR TAPE-TO-DISK, SAVE FOR
DISK-TO-TAPE OR A CARRIAGE RETURN

is output

6. The operator responds with

LOAD (cr)

7. The message

INPUT TAPE ON UNIT 0. READY?>

appears on the screen.

8. The operator presses (cr) when ready.
9. If the end of tape is reached on a LOAD operation, the following message is displayed:

MOUNT NEXT INPUT REEL ON UNIT 0. READY?>

The operator responds with a (cr) when the next tape is mounted and readied.

10. When the load is complete, the following message is output:

xxxxxxx SECTORS LOADED
TYPE V FOR VERIFY OR A CARRIAGE RETURN
TO RESTART

where xxxxxxxx is the number of sectors loaded.

11. If the operator wishes to verify the tape against mass memory, refer to the Verify section below. Otherwise, the operator may now autoloading the system.

VERIFY

To verify the tape against mass memory, complete the following steps:

1. The operator responds to the message

TYPE V FOR VERIFY OR A CARRIAGE RETURN
TO RESTART

with

V (cr)

2. The following message appears on the console:

VERIFY TAPE ON UNIT 0. READY?>

3. After the tape has been readied, the operator responds with (cr).
4. If an error occurs during verification, go to step 8.
5. When the verification is complete, the following message is output:

xxxxxxx SECTORS VERIFIED

where xxxxxxxx is the number of sectors verified.

6. The following message is output:

TYPE V FOR VERIFY OR A CARRIAGE RETURN
TO RESTART

7. The operator may now autoloading the system.

8. Only the first verify error in a block of sectors is logged. Verify errors cause the following message to display:

SECTOR XXXXXXXX WORD—WWW—DOES
NOT COMPARE, TYPE C TO CONTINUE, OR A
CARRIAGE RETURN TO ABORT.

Where XXXXXXXX is the sector.

WWW is the word within the sector.

9. If the operator responds with a C when a verification error occurs, an attempt is made to verify the remaining sectors. If another error is encountered, control passes to step 8. Otherwise, control passes to step 5.

10. To abort the verification procedure, the operator presses (cr).

11. The following message is output:

xxxxxxx SECTORS VERIFIED

where xxxxxxxx is the number of sectors verified.

12. The following message is displayed:

TYPE V FOR VERIFY OR A CARRIAGE RETURN
TO RESTART

13. The operator may again try to verify (go to step 1) or redo the SAVE or LOAD operation.

DOUBLE-PRECISION RUNTIME

JOB: INSTALL.FDPC44

1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0

DATE OF RUN: 04/18/79

SYSTEM ID: TEST

(04/11/79)

IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
III	NNNN	NNN	SS\$	TTT	AAA	AAA
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLLLLLLLLLLL

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*K.I17

*LIPEDT

LIP

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*K.I17

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*L.RFAD

IN

*L.ORDREF

IN

*L.ORDF2I

IN

*L.ABS

IN

*L.SORT

IN

*L.SIGN

IN

*L.FLOAT

IN

*L.FXP

IN

*L.ALGG

IN

*L.TANH

IN

*L.SIN

IN

*L.ATAN

IN

*L.PAPARS

IN

*L.OSTERM

IN

*L.ONES

IN

*L.COTRAN

IN

*L.GRDTNI
IN

*L.GRQEND
IN

*L.GRCMPO
IN

*L.GRRWRU
IN

*L.GREFRM
IN

*L.GRQFNF
IN

*L.GROX
IN

*L.GRQUNI
IN

*L.GRQFET
IN

*L.GRMACT
IN

*L.ENF
IN

*L.INCK
IN

*L.GRQSE
IN

*L.GRQAND
IN

*L.GRFXP1
IN

*L.GRFXP0
IN

*L.SFTRP
IN

*L.ENCODE
IN

*L.COMMON
IN

*L.IGETCH
IN

*L.IPACK
IN

*L.UPDATE
IN

*L.DFCPL
IN

*L.INTGR
IN

*L.SPACFX
IN

*L.FOLRTH
IN

*L.DCHX
IN

*L.HXASC
IN

*L.AFORMOT
IN

*L.RFORMOT
IN

*L.AFRMIN
IN

*L.RFRMIN
IN

*L.ASCHX
IN

*L.HXDC
IN

*L.FLOTIN
IN

*L.FOIT
IN

*L.EOUT
IN

*L.EWRITE
IN

*L.INTLJ
IN

*L.FORMTR
IN

*L.QAQFI
IN

*L.QAQFL
IN

*L.QAQFX
IN

*L.HEXASC
IN

*L.HEXDEC
IN

*L.ASCII
IN

*L.DFCHEX
IN

*L.AFORM
IN

*L.RFORM
IN

*L.FLOATG
IN

*L.FLOT
IN

*L.OPERND
IN

*L.QAQD2I
IN

*L.SNGL
IN

*L.DARS
IN

*L.DSQRT
IN

*L.DSIGN
IN

*L.DEXP
IN

*L.DLOG
IN

*L.DSIN
IN

*L.DATAN
IN

*L.QRDXP1
IN

*L.QRDXP9
IN

*L.QRQDFI
IN

*L.DOUT
IN

*L.DFLOT
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*L.DSTOR1
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*Z
*CTO. FORTRAN D. P. PUNTIME INSTALL COMPLETE
*K.I10.P11.L9
*Z

SINGLE-PRECISION RUNTIME

JOB: INSTAL.F5PSWR
1700 MASS STGRAGE OPERATING SYSTEM VERSION 5.0

DATE OF RUN: 04/10/79 SYSTEM ID: TEST

(04/11/79)

IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAAAA	LLL
III	NNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNN NNN	NNN	SSSSSSSSSSSS	TTT	AAAAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSSSS	TTT	AAAAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSSSS	TTT	AAAAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSSSS	TTT	AAAAAAAAAAAA	LLL
III	NNN NNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNN NNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNN NNN	NNN	SSS SSS	TTT	AAA AAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL

*CTO. FORTRAN S. P. S/W RUNTIME INSTALL
*CTO. COPYRIGHT CONTROL DATA CORPORATION 1978

*K.117

*LIBERT

LIR

IN

*K.117

IN

*L.HEAD

IN

*L.DDDWEP

IN

*L.GADP2I

IN

*L.ABS

IN

*L.SORT

IN

*L.SIGN

IN

*L.FLOAT

IN

*L.EYP

IN

*L.ALOG

IN

*L.TANH

IN

*L.SIN

IN

*L.ATAN

IN

*L.PARARS

IN

*L.ORTERM

IN

*L.GRES

IN

*L.ORTHAN

IN

*L.ORGINI
IN

*L.ORGEND
IN

*L.ORGMP0
IN

*L.ORGWRU
IN

*L.ORGPRM
IN

*L.ORGDFE
IN

*L.ORGX
IN

*L.ORGUNI
IN

*L.ORGGET
IN

*L.ORMAGT
IN

*L.FUF
IN

*L.IOCK
IN

*L.ORGPF
IN

*L.ORGAND
IN

*L.ORGXP1
IN

*L.ORGXP9
IN

*L.SETHER
IN

*L.ENCODE
IN

*L.COMMON
IN

*L.IGETCH
IN

*L. IPACK
IN

*L. UPDATE
IN

*L. DECP
IN

*L. INTGP
IN

*L. SPACEX
IN

*L. HOURTH
IN

*L. DCHX
IN

*L. HXASC
IN

*L. AFERMOT
IN

*L. RERMOT
IN

*L. AFERMIN
IN

*L. RERMIN
IN

*L. ASCHX
IN

*L. HXDC
IN

*L. FLOTIN
IN

*L. FOUT
IN

*L. EOUT
IN

*L. FWPITE
IN

*L. INITL1
IN

*L. FOPMTR
IN

*L.QRQFI
IN

*L.QRQFL
IN

*L.QRQFX
IN

*L.HFXASC
IN

*L.HFXDEC
IN

*L.ASCII
IN

*L.DFCHEX
IN

*L.AFORM
IN

*L.RFORM
IN

*L.FLOATG
IN

*L.PILOT
IN

*L.OPFRND
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*L.QRQXP1
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*Z

*CTO. FORTRAN S. P. RUNTIME INSTALL COMPLETE

*K.I10.P11.L9

*Z

Handwritten text, possibly a list or index, written vertically along the right edge of the page. The text is faint and difficult to read, but appears to consist of several lines of characters, possibly including numbers and letters.

*CTD. STANDARD PROGRAM LIBRARY FILES INSTALL
*CTD. COPYRIGHT CONTROL DATA CORPORATION 1978

*K.117

*LJHEDT

LIH

IN

*K.117

IN

*L.JOHP

IN

*K.PH

IN

*P.F

JOHP	8000	DECK-ID N82	MSOS 5.0
JOHPV4	8012	DECK-ID N83	MSOS 5.0
NXTLOC	8A85	NEXT AVAILABLE LOCATION	

SUMMARY-110
SUMMARY-136

IN

*K.IA

IN

*N.JOHPV4...R

IN

*K.117

IN

*L.LTHLD

IN

*K.PH

IN

*P.F

LTHLD	8000	DECK-ID 030	MSOS 5.0
CONVRS	8010	DECK-ID 038	MSOS 5.0
WESSY	8292	DECK-ID 031	MSOS 5.0
LJ2PH	8308	DECK-ID 037	MSOS 5.0
MOVECH	8358	DECK-ID 032	MSOS 5.0
PICKUP	83AC	DECK-ID 033	MSOS 5.0
IOSUR	83C5	DECK-ID 034	MSOS 5.0
NXTLOC	83E9	NEXT AVAILABLE LOCATION	

SUMMARY-110
SUMMARY-110
SUMMARY-110
SUMMARY-110
SUMMARY-132
SUMMARY-110
SUMMARY-110

IN

*K.IA

IN

*N.LTHLD...R

IN

*K.117

IN

*K.PP
IN

*P.F

HFLPER	R000	DECK-ID 035	MSOS 5.0	SUMMARY-110
MOVFCB	F2EA	DECK-ID 032	MSOS 5.0	SUMMARY-132
HFLP0	R33F	DECK-ID 039	MSOS 5.0	SUMMARY-136
HFLP1	R466	DECK-ID 040	MSOS 5.0	SUMMARY-110
HFLP2	R0R9	DECK-ID 041	MSOS 5.0	SUMMARY-110
HFLP3	RA00	DECK-ID 042	MSOS 5.0	SUMMARY-110
HFLP4	RA5C	DECK-ID 043	MSOS 5.0	SUMMARY-110
HFLP5	RCF3	DECK-ID 044	MSOS 5.0	SUMMARY-110
HFLP8	RFR0	DECK-ID 045	MSOS 5.0	SUMMARY-110
HFLP9	RF96	DECK-ID 046	MSOS 5.0	SUMMARY-110
HFLP10	9055	DECK-ID 047	MSOS 5.0	SUMMARY-117
HFLP11	40CR	DECK-ID 048	MSOS 5.0	SUMMARY-110
HFLP12	911R	DECK-ID 049	MSOS 5.0	SUMMARY-136
HFLP13	931R	DECK-ID 050	MSOS 5.0	SUMMARY-110
HFLP14	937A	DECK-ID 036	MSOS 5.0	SUMMARY-132
NXTLOC	93R6	NEXT AVAILABLE LOCATION		

IN

*K.IP
IN

*N.HFLPER...R
IN

*V INSTALL SKELETON EDITOR
IN

*K.I17
IN

*L.SKED
IN

*K.PP
IN

SKFILE	R000	DECK-ID 052	MSOS 5.0	SUMMARY-136
NXTLOC	90R6	NEXT AVAILABLE LOCATION		

*K.IP
IN

*N.SKFILE...R
IN

*V DEBUGGING AND CHECKOUT
IN

*K.I17
IN

*L.TRACE
IN

*K.I17
IN

*K.PA
IN

*P.F
SETRR1 8000 DECK-ID M91 MSOS 5.0

SUMMARY-110

*K.IA
IN

*N.RPST...R
IN

*K.I17
IN

*K.PA
IN

*P.F
TERP11 8000 DECK-ID M92 MSOS 5.0

SUMMARY-110

*K.IA
IN

*N.RPCLR...R
IN

*K.I17
IN

*K.PA
IN

*P.F
FNTC01 8000 DECK-ID M93 MSOS 5.0

SUMMARY-110

*K.IA
IN

*N.RPIGAD...R
IN

*K.I17
IN

*K.PA
IN

*P.F
RESUM1 8000 DECK-ID M94 MSOS 5.0

SUMMARY-110

*K.IA
IN

*N.HPFD...R
IN

*K.I17
IN

*K.PA
IN

*P.F
PRTAF1 8000 DECK-ID M95 MSOS 5.0 SUMMARY-110
IN

*K.I9
IN

*N.HPDLST...R
IN

*K.I17
IN

*K.PA
IN

*P.F
SFTAD1 8000 DECK-ID M96 MSOS 5.0 SUMMARY-110
IN

*K.I9
IN

*N.HPSET...R
IN

*K.I17
IN

*K.PA
IN

*P.F
COMDM1 8000 DECK-ID M97 MSOS 5.0 SUMMARY-110
IN

*K.I9
IN

*N.HPDMPC...R
IN

*K.I17
IN

*K.PA
IN

*P.F
JUMPR1 8000 DECK-ID M98 MSOS 5.0 SUMMARY-110

IN

*K.IA
IN

*N.HPJMP...P
IN

*K.I17
IN

*K.PA
IN

*P.F
LUCHG1 8000 DECK-ID M99 MSOS 5.0 SUMMARY-110
IN

*K.IA
IN

*N.HPPPLU...R
IN

*K.I17
IN

*K.PA
IN

*P.F
PPTAP1 8000 DECK-ID N02 MSOS 5.0 SUMMARY-110
IN

*K.IA
IN

*N.PPTAPC...B
IN

*K.I17
IN

*K.PA
IN

*P.F
MASDM1 8000 DECK-ID N03 MSOS 5.0 SUMMARY-110
IN

*K.IA
IN

*N.HPPASS...B
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*CT0. STANDARD PROGRAM LIBRARY FILES INSTALL COMPLETE

*K.I10.P11.L9

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BAM 18 CONSTRAINTS

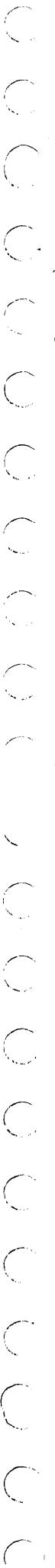
FF

BAM 18 constraints are as follows:

- The BAM 18 software includes COMM 18 and the FORTRAN runtime package with BAM 18.
- The maximum peripheral support is as follows:
 - 1 card reader, 1 line printer, 2 magnetic tapes, 1 50-megabyte SMD, and 10 terminals
 - or
 - 1 card reader, 1 line printer, 2 magnetic tapes, 2 50-megabyte SMDs, and 8 terminals
- The minimum memory size which can support BAM 18 is 192 kilobytes.
- BAM 18 supports any one of the following port configurations:
 - One BAM 18 port and one COMM 18 port and nonconcurrent batch. Specify concurrency requirement item 2 in CONFIG.
 - Two BAM 18 ports and nonconcurrent batch. Specify concurrency requirement item 2 in CONFIG.
 - Two COMM 18 ports and nonconcurrent batch. Specify concurrency requirement item 2 in CONFIG.
 - One BAM 18 port and concurrent batch. Specify concurrency requirement item 3 in CONFIG.
- Refer to table FF-1 for a list of the restrictions applicable when running CONFIG with BAM 18 specified.

TABLE FF-1. RUNNING CONFIG WITH BAM 18 SPECIFIED

Step	Display/Keyboard	Comments
6	ENTER NUMBER OF TAPE UNITS (1-4) >	BAM 18 can have a maximum of two tape units. Operator enters a 1 or 2.
11	SPECIFY MASS MEMORY ENTER NUMBER OF MASS MEMORY UNITS (1-8) >	BAM 18 can have 1 mass memory unit with 10 terminals or 2 mass memory units with 8 terminals. Operator enters 1 or 2.
13	SPECIFY SYSTEM MEMORY SIZE IN BYTES ENTER 1 FOR 96K 2 FOR 128K 3 FOR 160K 4 FOR 192K 5 FOR 224K 6 FOR 256K >	BAM 18 requires a minimum of 192 kilobytes. Operator enters a 4, 5, or 6.
14	SPECIFY CONCURRENCY REQUIREMENTS ENTER 1 FOR CONCURRENT ITOS/COMM18 BACKGROUND 2 FOR NONCONCURRENT ITOS/COMM18 3 FOR CONCURRENT ITOS/BACKGROUND 4 FOR CONCURRENT COMM18/ BACKGROUND OR 5 FOR NON-CONCURRENT	Only two options are allowed in BAM 18 systems. Entry 2 supports nonconcurrent batch and one of the following three configurations: one BAM 18 port and one COMM 18 port; or two BAM 18 ports; or two COMM 18 ports. Entry 3 supports concurrent batch and one BAM 18 port.



BAM 18 ACCEPTANCE TEST

GG

The purpose of the acceptance test software is to demonstrate that the hardware (communication line adapter (CLA) printed wiring assembly, modem, data set, and connectors) and software (system tables and BAM 18 software modules) have been installed properly. This can be accomplished by using a known user level software package which can be operated very easily in an interactive manner to transmit and receive messages to and from a remote station (data terminal or processor). The objective is a package that is simple to operate and explicit in dealing with errors so that any problems can be resolved quickly.

The software package provides a simple operational procedure for performing the desired level of testing. It is compatible with a 3780 network. Thus, the user can use the package to transmit and receive data from a remote 3780; or, if the facility has a dedicated line, to a system that supports 3780. Three sources of data may be used to transmit: the card reader, internal test data, or console input. The data received is output to the line printer.

The program operates in an interactive manner with the user selecting the desired function to be executed from a menu that lists the selections. When the user starts the program BAMATS as a task from a terminal, the following is displayed:

```
START OF BAMATS
THIS IS THE ACCEPTANCE TEST FOR
THE BSYNCHRONOUS ACCESS METHOD 'BAM18'
THE USER CONTROLS THE EXECUTION OF THE TEST
WHICH CONSISTS OF TRANSMISSION OF A
MESSAGE TO A REMOTE STATION AND
RECEPTION OF A MESSAGE FROM THE REMOTE STATION
THIS TEST PACKAGE IS IBM 3780 COMPATIBLE
SELECT SOURCE OF TEST MESSAGE
1 INTERNAL TEST DATA
2 USED DEFINED INTERNAL TEST DATA(CONSOLE INPUT)
3 CARD READER INPUT TEST DATA
```

The user must select one of the three sources of data from which the test message is to be transmitted:

- Internal test data, which is contained within the program and consists of the following message, of which 100 records are blocked and transmitted:

```
THE QUICK BROWN FOX JUMPS OVER A LAZY DOG 0123456789
```

- User-defined internal test data (console input), which enables a user to enter a job stream if a card reader is not present. There are up to 100 records of 80 characters each. To terminate

entering data, the user enters a record with /EOT in the first four columns of the record. The display is as follows:

```
>2
ENTER UP TO 100 RECORDS UP TO 80 CHARACTERS IN LENGTH
ENTER '/EOT' AFTER THE LAST RECORD
>DATA ABCDEFGHIJKLMNOPQRSTUVWXYZ
>/EOT
```

- Card reader input test data, which enables systems with card readers to transmit any messages necessary to use the remote station

After the source is selected, the CLA is initialized enabling the communication link to be established (in particular, the telephone connection for those installations without a dedicated communication line). The following message is displayed:

```
COMMUNICATION ADAPTER IS OPEN
ESTABLISH COMMUNICATION LINK THEN CONTINUE
```

The master menu is displayed after normal completion of any operation. The operations are as follows:

- Transmitting a message consisting of one record entered from the console. This enables the transmission of sign-on/sign-off records.
- Transmitting a test message from the source selected previously: internal data, user internal data, or the card reader
- Receiving a test message that is output-spoiled to the printer
- Terminating a test message by closing the communication port and exiting the program

Examples:

The following is an example of transmitting a message or test message.

```
SELECT OPERATION
1 - TRANSMIT CONSOLE TEST MESSAGE
2 - TRANSMIT TEST MESSAGE
3 - RECEIVE TEST MESSAGE
4 - TERMINATE TEST PROCEDURE

2 (CR)

MESSAGE IS BEING SENT
BLOCK 1 STATUS xxxx xxxx
.
.
BLOCK n STATUS xxxx xxxx
MESSAGE COMPLETE
```

The following is an example of receiving a test message that is output - spooled to the printer.

```

SELECT OPERATION
1 - TRANSMIT CONSOLE TEST MESSAGE
2 - TRANSMIT TEST MESSAGE
3 - RECEIVE TEST MESSAGE
4 - TERMINATE TEST PROCEDURE
3(CR)
MESSAGE IS BEING RECEIVED
BLOCK 1 STATUS xxxxx xxxxx
.
.
.
BLOCK n STATUS xxxxx xxxxx
MESSAGE COMPLETE

```

The following is an example of terminating a test message by closing the communication port and exiting the program.

```

SELECT OPERATION
1 - TRANSMIT CONSOLE TEST MESSAGE
2 - TRANSMIT TEST MESSAGE
3 - RECEIVE TEST MESSAGE
4 - TERMINATE TEST PROCEDURE
4(CR)
TEST COMPLETE
LINE STATISTICS ARE
RNBK RWAK RTTD RCRC TNAK TWAK TTDD TTOT RTOT RNBK XERR
XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX
THE LINE ACTIVITY HAS BEEN TRACED
TO DUMP THE TRACE DATA EXECUTE THE PROGRAM 'RTRC,FF'
UNDER MANUAL INTERRUPT MODE AND 'CTRC' TO CLEAR THE DATA
END BAMATS

```

The above messages reflect the normal operational sequence without errors; refer to the appropriate section for open errors, transmission errors, or reception errors. Also note that if transmitting to a service bureau, a

sign-on message and a sign-off message must be sent along with the normal data messages.

A time limit internal to BAM 18 closes down the port if no activity takes place within any 10-minute interval. This limit should be considered when operating the system between transmission and reception requests.

OPEN ERRORS

When the program is entered for execution and after the initial message is displayed, the communication port is physically and logically opened with a BAM 18 OPENPT request. The status returned by the request is analyzed for errors. If an error status is detected, it is displayed along with suggested actions as shown in table GG-1.

When any of the above errors occur, the program is terminated. It must be restarted to continue after corrective action has been taken.

TRANSMIT ERRORS

If an error occurs during transmission of data, the status is displayed along with a message describing the error and suggested corrective actions (table GG-2). Occasionally more than one error occurs.

RECEIVE ERRORS

When receiving data, the following errors can occur with the status being displayed from the last GETPT request (table GG-3).

TABLE GG-1. OPEN ERRORS

Message	Status or Corrective Action
OPENPT ERROR STATUS \$8020 UNABLE TO ALLOCATE FORGROUND CHECK ALLOCATABLE STORAGE/SHUT DOWN OTHER STATIONS	The BAM 18 system requires a certain amount of allocatable memory for tables and buffers. The available allocatable area can be enlarged when the load on the system is reduced. This error may also occur if insufficient paged memory is available.
OPENPT ERROR STATUS \$8010 INVALID PORT SPECIFICATION SYSTEM TABLES ARE NOT SET UP FOR CLA PORT 0	The device code or the required BAM 18 table is not set up for the CLA, and port 0 is not enabled. Check tables.
OPENPT ERROR STATUS \$8008 ERROR IN RSR PARAMETERS CHECK PROGRAM DUMP/BAD INSTALL	There is a software problem (either the application or BAM 18 modules).
OPENPT ERROR STATUS \$8004 HARDWARE ERROR THE SETTINGS ON THE CLA ARE IMPROPER	The communication line adapter board has a problem (probably an improper setting of the switches on the board).
OPENPT ERROR STATUS \$8002 PORT IN USE BY OTHER USER CHECK OTHER USERS ACTIVITY	The BAM 18 system may be using port 0 for another user.
OPENPT ERROR STATUS \$8001 PORT IN USE BY THIS USER TERMINAT PROGRAM AND START OVER	This situation occurs if the program is aborted before the test routine is closed. Exit from the program and then re-enter it.

TABLE GG-2. TRANSMIT ERRORS

Message	Status or Corrective Action
<p>TRANSMIT ERROR \$8000 HARDWARE ERROR MAKE DATA SET READY</p>	<p>The communication line is not connected or there is a problem with the adapter.</p>
<p>TRANSMIT ERROR \$4000 COMM LINE NOT OPEN TERMINATE PROGRAM AND RESTART</p>	<p>Apparently the BAM 18 system has timed out. BAMATS should be terminated and restarted.</p>
<p>TRANSMIT ERROR \$2000 LINE INITIALIZATION ERROR OPERATION CAN BE RETRIED</p>	<p>There was no response in the bid sequence, and the bid retry was exhausted. Check the functionality of the remote station.</p>
<p>TRANSMIT ERROR \$100 TTD LIMIT EXPIRED READY CARD READER WITH EOF CARD</p>	<p>The card reader is not ready or empty and no end-of-file (EOF) card was read.</p>
<p>TRANSMIT ERROR \$20 RETRIES EXHAUSTED CHECK COMMUNICATIONS LINE. RETRY OPERATION</p>	<p>The data block has been retransmitted 15 times and has been rejected by the remote station. There is a problem with the communication line, the hardware, or the remote station.</p>
<p>TRANSMIT ERROR \$10 INVALID RESPONSE TO DATA RETRY OPERATION</p>	<p>An invalid response has been received for a block of data. Retry the operation.</p>
<p>TRANSMIT ERROR \$4 BAD REMOTE CODE RELOAD AND RETRY</p>	<p>These errors should never occur. If they do, it may indicate that the software has been altered from the released version. If the retry does not work, call support personnel.</p>
<p>TRANSMIT ERROR \$2 MODE INPUT INVALID RELOAD AND RETRY</p>	
<p>TRANSMIT ERROR \$1 ENVELOPE SPECIFIED ILLEGAL RELOAD AND RETRY</p>	
<p>TRANSMIT ERROR \$xxxx \$8000 BELL CODE RECEIVED CONTACT OPERATOR AT REMOTE STATION</p>	<p>A bell code has been received from the remote station. Contact the operator at the remote station.</p>
<p>TRANSMIT ERROR \$xxxx \$4000 MESSAGE TERMINATED BY REMOTE STATION DLE EOT OR \$xxxx \$2000 MESSAGE TERMINATED BY REMOTE STATION EOT CHECK SIGN-ON RECORD IF USING ONE CONTACT REMOTE STATION FOR MORE INFORMATION</p>	<p>A termination sequence has been received from the remote station. If it occurred when trying to transmit the first block of data and the remote station is a service bureau, the sign-on record is probably invalid. For other situations, there is a remote station problem. Contact the remote station, or retry the operation at this time.</p>
<p>TRANSMIT ERROR \$xxxx \$0200 ILLEGAL CHARACTER IN DATA EXAMINE DATA FOR CONTROL CHARACTERS</p>	<p>An illegal character was detected in the data. Check the data for control characters (for example, DLE,SYN,EOT,ENQ,).</p>

TABLE GG-3. RECEIVE ERRORS

Message	Status or Corrective Action
<p>RECEIVE ERROR \$8000 \$0000 HARDWARE ERROR CHECK CLA/MODEM/DATASET CONNECTIONS/STATUS</p>	<p>A hardware error has occurred. The problem may be with the communication line adapter (CLA), cables, or data set.</p>
<p>RECEIVE ERROR \$4000 \$0000 NOT OPEN TERMINATE PROGRAM AND RESTART</p>	<p>Either too much time has transpired between the initial execution of the program and the request to receive data, causing the BAM 18 system to time-out, or there is a software problem.</p>
<p>RECEIVE ERROR \$2000 \$0000 LINE INITIALIZATION FAILED TRY AGAIN OR CONTACT REMOTE STATION</p>	<p>No line initialization attempt has been received from the remote station. Retry the operation, or contact the remote station to determine the problem.</p>
<p>RECEIVE ERROR \$1000 \$0000 LINE IN TRANSMIT MODE TERMINATE AND RETRY OPERATION</p>	<p>This is a software problem. The test software (BAMATS) should be reloaded and the test repeated. If the failure persists, the BAM 18 software is defective.</p>
<p>RECEIVE ERROR \$0400 \$0000 RECEIVE TIMEOUT CHECK COMM LINE AND REMOTE STATION STATUS</p>	<p>Apparently there is a malfunction in the communication line, or the remote station stops transmitting. The station has not received data for a period of 20 seconds after acknowledging the last block.</p>
<p>RECEIVE ERROR \$0800 \$0000 BUFFER OVERFLO CHECK WITH THE REMOTE STATION FOR DATA BLOCK SIZE</p>	<p>The data block received is missing a terminating character, or the block is larger than 512 data character. If not the first block of data, an intermittent problem may exist on the line.</p>
<p>RECEIVE ERROR \$0100 \$0000 WACKS EXCEEDED CHECK INPUT DEVICE</p>	<p>The input device has stopped or a software problem exists.</p>
<p>RECEIVE ERROR \$0020 \$0000 RETRY FAILURE RETRY THE OPERATION CHECK REMOTE STATION</p>	<p>The retry count has expired.</p>
<p>RECEIVE ERROR \$0010 \$0000 UNRECOGNIZABLE BLOCK CHECK COMM LINE AND REMOTE</p>	<p>The leading character of a block was garbled or missing. Retry the operation.</p>
<p>RECEIVE ERROR \$0000 \$8000 BELL CODE RECEIVED CONTACT REMOTE OPERATOR</p>	<p>A bell code was received indicating that the operator at the remote station needs to talk to the local operator.</p>
<p>RECEIVE ERROR \$0000 \$4000 DLE-EOT RECEIVED OR \$0000 \$2000 EOT RECEIVED ABNORMAL TERMINATION OF MESSAGE</p>	<p>The message was not properly terminated. Check with the remote station.</p>

X780 INSTALL

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JOB, INSTAL, X780
1700 MASS STORAGE OPERATING SYSTEM VERSION 5.0 DATE OF RUN: 11/12/79 SYSTEM ID: 11052-0/COMB14/RAK18 SL191 (11/11/79)

IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTTTTTTTTTTT	AAAAAAAAAA	LLL
III	NNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNNNN	NNN	SSS	TTT	AAA AAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNN	NNN	SSSSSSSSSS	TTT	AAAAAAAAAA	LLL
III	NNN NNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNN NNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
III	NNN NNNNN	NNN	SSS SSS	TTT	AAA AAA	LLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL
IIIIIIIIIIII	NNN	NNN	SSSSSSSSSS	TTT	AAA AAA	LLLLLLLLLLLL

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HAMPJE	8200	DECK-ID H50	X780 1.0	SUMMARY-140
FHFNTP	9348	DECK-ID F54	ITOS 2.0	SUMMARY-132
FXFNTP	9349	DECK-ID A34	ITOS 2.0	SUMMARY-132
HAMPAP	9301	DECK-ID H51	X780 1.0	SUMMARY-140
HAMWAP	9FR4	DECK-ID H41	HAM18 1.0	SUMMARY-140
HAMCHP	A0A1	DECK-ID H42	HAM18 1.0	SUMMARY-140
HAMCHG	A0F4	DECK-ID H43	HAM18 1.0	SUMMARY-140
FORPTN	A112	DECK-ID F01	FTN 3.3 RUNTIME	SUMMARY-126
QAPRMS	A22F	DECK-ID G01	FTN 3.3 RUNTIME	SUMMARY-116
PARAHN	A253	DECK-ID G12	FTN 3.3 RUNTIME	SUMMARY-111
QHQINI	A265	DECK-ID H04	FTN 3.3 RUNTIME	SUMMARY-117
OROFMD	A33R	DECK-ID H05	FTN 3.3 RUNTIME	SUMMARY-102
ORCHP	A35C	DECK-ID H06	FTN 3.3 RUNTIME	SUMMARY-137
ORQWU	A43F	DECK-ID H07	FTN 3.3 RUNTIME	SUMMARY-102
QHERPA	A557	DECK-ID H08	FTN 3.3 RUNTIME	SUMMARY-102
QADFID	A62F	DECK-ID H09	FTN 3.3 RUNTIME	SUMMARY-116
OROX	A5F1	DECK-ID H10	FTN 3.3 RUNTIME	SUMMARY-116
ORQINI	A756	DECK-ID H11	FTN 3.3 RUNTIME	SUMMARY-102
ORFGET	A7DF	DECK-ID H12	FTN 3.3 RUNTIME	SUMMARY-116
QRMAGT	A841	DECK-ID H13	FTN 3.3 RUNTIME	SUMMARY-134
TAPCON	ARC5	DECK-ID H14	FTN 3.3 RUNTIME	SUMMARY-117
PSSTOP	A962	DECK-ID H16	FTN 3.3 RUNTIME	SUMMARY-126
QRPAND	A9A1	DECK-ID H17	FTN 3.3 RUNTIME	SUMMARY-141
IOCODE	AA0F	DECK-ID J01	FTN 3.3 RUNTIME	SUMMARY-116
PSIFDD	AA4R	DECK-ID J02	FTN 3.3 RUNTIME	SUMMARY-102
FORMTN	AA6D	DECK-ID J23	FTN 3.3 RUNTIME	SUMMARY-115
DHLDWY	AC75	DECK-ID K19	FTN 3.3 RUNTIME	SUMMARY-102
HAMOPN	AC77	DECK-ID H26	HAM18 1.0	SUMMARY-140

HAMCLO	A0C4	DECK-ID R27	HAM18	1.0	SUMMARY-140	
HAMSTA	AE0R	DECK-ID R28	HAM18	1.0	SUMMARY-140	
HAMPUT	AE6F	DECK-ID R29	HAM18	1.0	SUMMARY-140	
HAMGET	AF9H	DECK-ID R30	HAM18	1.0	SUMMARY-140	
HAMCMP	H076	DECK-ID R32	HAM18	1.0	SUMMARY-140	
HAMKAT	H090	DECK-ID R31	HAM18	1.0	SUMMARY-140	
HAMFPT	H0E0	DECK-ID R33	HAM18	1.0	SUMMARY-140	
QHTERM	H111	DECK-ID H01	FTN	3.3	RUNTIME	SUMMARY-106
QKFS	H150	DECK-ID H02	FTN	3.3	RUNTIME	SUMMARY-106
QHTRAN	H3H5	DECK-ID H03	FTN	3.3	RUNTIME	SUMMARY-115
QREXF1	H8C6	DECK-ID H1R	FTN	3.3	RUNTIME	SUMMARY-102
QREXF9	HC41	DECK-ID H19	FTN	3.3	RUNTIME	SUMMARY-102
QHGGTZ	HCF0	DECK-ID H20	FTN	3.3	RUNTIME	SUMMARY-102
IGFTCH	H005	DECK-ID J03	FTN	3.3	RUNTIME	SUMMARY-102
IPACK	H01C	DECK-ID J04	FTN	3.3	RUNTIME	SUMMARY-102
UPDATL	H05F	DECK-ID J05	FTN	3.3	RUNTIME	SUMMARY-102
DECP1	H06R	DECK-ID J06	FTN	3.3	RUNTIME	SUMMARY-102
INTGR	H085	DECK-ID J07	FTN	3.3	RUNTIME	SUMMARY-102
SPACEH	H0A4	DECK-ID J08	FTN	3.3	RUNTIME	SUMMARY-102
H0LQTH	H0R5	DECK-ID J09	FTN	3.3	RUNTIME	SUMMARY-102
QCHX	HE41	DECK-ID J10	FTN	3.3	RUNTIME	SUMMARY-102
HXASC	HE81	DECK-ID J11	FTN	3.3	RUNTIME	SUMMARY-102
AFRMT	HEFD	DECK-ID J12	FTN	3.3	RUNTIME	SUMMARY-102
DEFMOT	HF20	DECK-ID J13	FTN	3.3	RUNTIME	SUMMARY-102
AFDMIN	HF34	DECK-ID J14	FTN	3.3	RUNTIME	SUMMARY-102
DEFMIN	HF60	DECK-ID J15	FTN	3.3	RUNTIME	SUMMARY-102
ASCHX	HF72	DECK-ID J16	FTN	3.3	RUNTIME	SUMMARY-102
HKNC	HFA6	DECK-ID J17	FTN	3.3	RUNTIME	SUMMARY-102
FLQTH	C02F	DECK-ID J18	FTN	3.3	RUNTIME	SUMMARY-102
FOHT	C075	DECK-ID J19	FTN	3.3	RUNTIME	SUMMARY-102
FOHT	C0FC	DECK-ID J20	FTN	3.3	RUNTIME	SUMMARY-102
F4WTF	C1F5	DECK-ID J21	FTN	3.3	RUNTIME	SUMMARY-102
QROFI	C1F4	DECK-ID J24	FTN	3.3	RUNTIME	SUMMARY-102
QROFL	C20A	DECK-ID J25	FTN	3.3	RUNTIME	SUMMARY-102
QROFX	C235	DECK-ID J26	FTN	3.3	RUNTIME	SUMMARY-102
FLQTH	C265	DECK-ID G14	FTN	3.3	RUNTIME	SUMMARY-112
COUJEP	C4A3	DECK-ID G15	FTN	3.3	RUNTIME	SUMMARY-136

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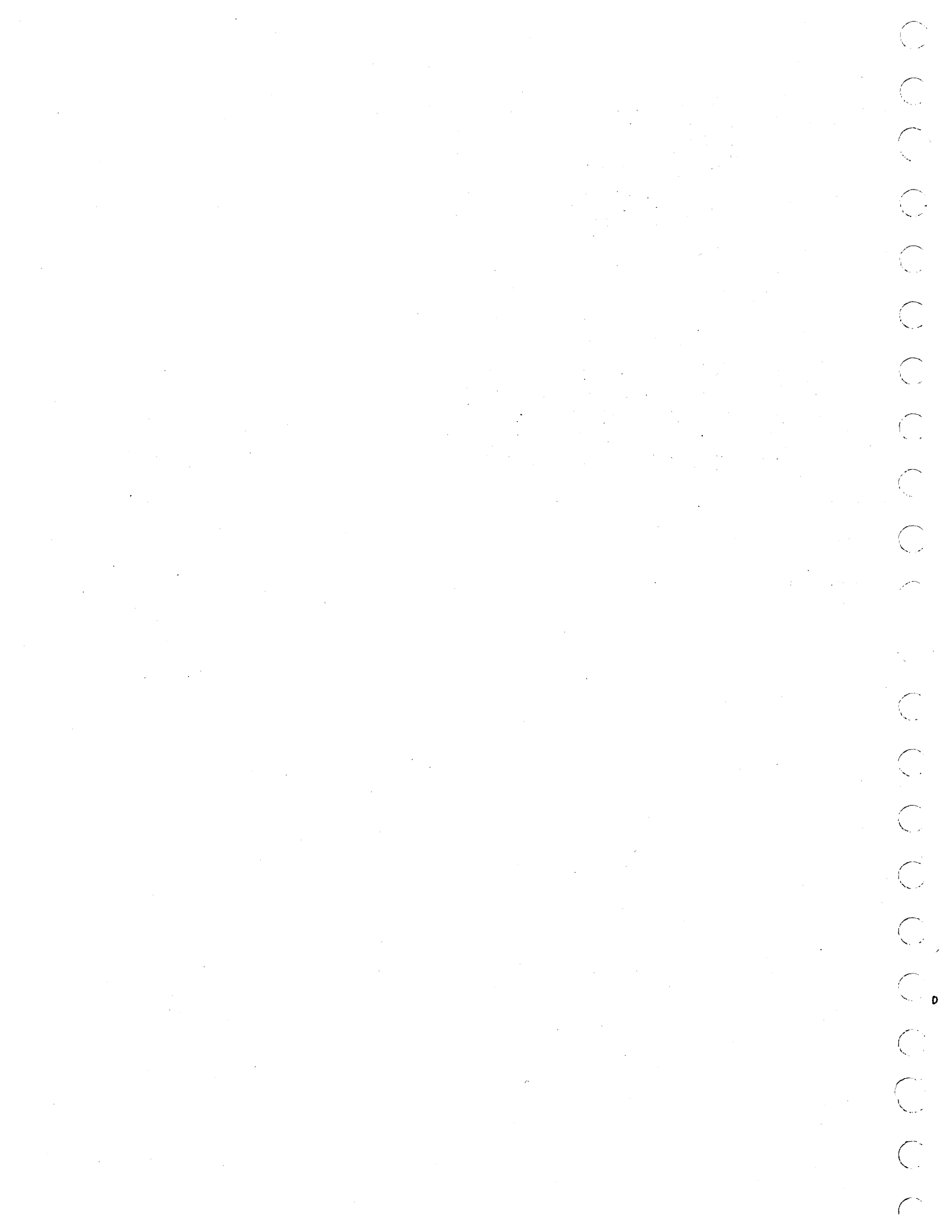
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COMMENT SHEET

MANUAL TITLE Interactive Terminal-Oriented System (ITOS) Version 2 Installation Handbook

PUBLICATION NO. 60475200 REVISION F

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