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### PRODUCT SPECIFICATION

REV LTR	REVISION ISSUE DATE	APPROVED BY	REVISIONS
H	2/9/82	<i>A. G. White</i>	Changes for MARK 11.0 Release 2-3 Updated "Switch values" for Dmpall 3-2 Updated "Table 3.1 Print Specification String". 3-7 Updated "<num-to-return>" parameter. 4-2 Updated "Table 4.1 Reproduction Specification String". 4-3 Updated "Table 4.2 Concatenation Option". 4-10 Updated "<num-to-return>" parameter.

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REV LTR	REVISION ISSUE DATE	APPROVED BY	REVISIONS
D	9/28/76	<i>J. Hale</i>	Updated to Mark 6.1 Release level software 3-4 Added paragraph explaining how to change parity 3-5 Added paragraph explaining how to change parity 3-6 Added explanation of integer value of 0 for INCL option
E	10/31/77	<i>J. Hale</i>	MARK VII.0 RELEASE 1-1 Default mode and Program Switch discussion added to GENERAL DESCRIPTION 2-1 to 2-2 OPERATING INSTRUCTIONS made into a separate section. Added: SWITCH SETTINGS section. Deleted: Note on input errors and interpreting card files. (Now handled in Switch Settings). 2-3 CARD Execution modified. Note on input errors and interpreting card files deleted. 3-2 Table 3.1 updated: TAG, Key-Length, and Key-Operator options added. 3-3 Maximum record lengths specified. TAG option discussed. 3-4 to 3-6 Revised or added discussion of SEARCH, SELECT, EXCLUDE, and KEY. 4-2 Table 4-1 updated: TAG, Key-Length, and Key-Operator options added. 4-4 Maximum record lengths specified. TAG option discussed. 4-6 to 4-8 Revised or added discussion of SEARCH, SELECT, EXCLUDE, and KEY. 5-2 ERROR MESSAGES: Revised: #16, #17 Added: #18 through #23 6-1 to 6-3 Revised Example 1; added Examples 2 through 6.
F	11/20/78	<i>J. Hale</i>	MARK VIII.0 RELEASE 2-2 Added SWITCH 2 to SWITCH SETTINGS. 4-1 Added CAT to REPRODUCTION SPECIFICATIONS. 4-3 Added CONCATENATION OPTION section and syntax. 5-1 Rewrote #'s 8-13 ERROR MESSAGES. 5-2 Rewrote #14 ERROR MESSAGES. Added #'s 25-26 ERROR MESSAGES. 5-3 Added #'s 27-28 ERROR MESSAGES.
G	2/23/81	<i>J. Hale</i>	Changes for MARK 10.0 Release Changed "SPO" to "ODT" throughout. 3-2 Updated "Table 3.1 Print Specification String". 3-3 Added "<file-id> can consist of the following" paragraph. Added "Use of the "=" following" paragraph.

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REV LTR	REVISION ISSUE DATE	APPROVED BY	REVISIONS
G			<p>Changes for MARK 10.0 Release cont.</p> <p>3-3 Updated "An optional hostname may be included" paragraph.</p> <p>3-4 Added "The HOST entry refers to a file" paragraph. Specified "COBOL" as "COBOL68".</p> <p>3-5 Updated the "&lt;start-posn&gt;" option.</p> <p>4-2 Updated "Table 4.1 Reproduction Specification String".</p> <p>4-3 Updated "Table 4.2 Concatenation Option".</p> <p>4-6 Added "A hostname may be specified" paragraph. Added "For the concatenation option" paragraph.</p> <p>4-9 Updated "&lt;start-posn&gt;" option.</p> <p>4-10 Changed the name from "LIBRARY TAPE" to "SYSTEM/LOAD.DUMP" section.</p> <p>5-3 Added Error Messages "29-37".</p>

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REV LTR	REVISION ISSUE DATE	PAGES REVISED ADDED DELETED OR CHANGE OF CLASSIFICATION	PREPARED BY	APPROVED BY
A	1/30/75	Original Issue	JLC	<i>John Hale</i> 1-30-75
B	12/10/75	<p>Changes for V.1 release</p> <p>Page 1-2: Note added.</p> <p>1-3: Note added.</p> <p>2-1: Table 2.1 reformatted and expanded to include INPUT-FILE-ACCESS MODE.</p> <p>2-2: INPUT-FILE-ACCESS MODE added.</p> <p>2-2: HARDWARE TYPE expanded to include Cassette and Binary Card files.</p> <p>2-3: Hex search added.</p> <p>3-1: Table 3.1 reformatted and expanded to include ACCESS MODES (INPUT and OUTPUT).</p> <p>3-2: CASS, BINARY, and LIST added.</p> <p>3-3: Table 3.2 reformatted and expanded to include CAS,BIN, and LST.</p> <p>3-3: Note revised.</p> <p>3-3: Unlabeled tape files--added.</p> <p>3-4: INPUT-FILE-ACCESS MODE added.</p> <p>3-5: OUTPUT-FILE-ACCESS MODE added.</p> <p>4-2: Error messages 15-17 added.</p>	JLC	<i>John Hale</i> 12-11-75
C	4/21/76	<p>2-1: Added SELECT, SEL, EXCLUDE, EXC to Table 2.1.</p> <p>2-2: Added Multi-pack disk file Hardware type</p> <p>2-3: Added explanations for SELECT, SEL, EXCLUDE, and EXC.</p> <p>3-1: Added SELECT, SEL, EXCLUDE, EXC to Table 3.1.</p> <p>3-2: Added Multi-pack disk file longhand form</p> <p>3-3: Added Multi-pack disk file abbreviation</p> <p>3-4: Paragraph 4-deleted reference to disk files Paragraph 5-added instructions for unlabeled tape files</p> <p>3-6: Added explanations for SELECT, SEL, EXCLUDE, and EXC</p> <p>5-1: Added Section 5 - EXAMPLES</p>	K. M. K.	<i>John Hale</i>

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### GENERAL DESCRIPTION

DMPALL is a general media conversion program used to transfer files from one hardware medium to another. It also can list files from any medium with a byte, digit, or combined form. Along with these abilities it can start or stop reading files at a specified record. Specifications may be passed to DMPALL from either a console keyboard or a card reader, with the default mode as console keyboard (ODT) input. Various program switches (see SWITCH SETTINGS) can also be used to control the type of execution that the user desires.

### RELATED DOCUMENTATION

B1800/B1700 Systems Software Operational Guide

#1068731

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## OPERATING INSTRUCTIONS

### CONSOLE KEYBOARD INPUT

DMPALL is normally executed from the console keyboard. It is executed with an MCP execute string (EX DMPALL) and responds with the following:

DMPALL = <job-number>ENTER SPECS  
DMPALL = <job-number>ACCEPT

The operator replies to the accept message by entering a <job-number>AX <specification string> where <specification string> contains the specifications needed to perform the DMPALL operation, and <job-number> refers to the unique job number assigned by the MCP. A specification string is defined as the sequence of valid DMPALL commands, and their required parameters, that produces the type of data transfer the user desires.

Entries are optional when DMPALL can find the required information from another source (e.g., disk file header of a disk file) or when the input itself indicates the type of processing (e.g., CARD or CRD presumes an unblocked file). Illegal specifications are reported as errors and an appropriate error message is displayed on the ODT.



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### Examples of Console Keyboard Input

A response of

<job-number>AX LIST PACKA/PAYROLL/ A SKIP 50

causes a disk file identified as "PAYROLL" and located on the disk "PACKA" to be printed beginning with the fifty-first record.

A response of

<job-number>AX COPY CRDDSK CARD SOURCE 80 2

causes a card file with the file-identifier "CARD" to be written to a disk file, 80-character records, blocked 2, with the file-identifier "SOURCE".

A response of

<job-number>AX COPY PROGRAM/B CCC/PROGRAM/B

causes a disk file "PROGRAM/B" located on a system disk to be copied to the disk "CCC" with the identifier "PROGRAM/B".

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### SWITCH SETTINGS

Modifications of the switch settings change the zero value (default) of the switch and alter the way DMPALL executes. These switches can be permanently set (modified), changed during program execution or specified at execution time before the specification string(s) are accepted. (See Software Operational Guide).

The default values of DMPALL's program switches are:

SWITCH	VALUE	RESULT
-----	-----	-----
0, 3	0	Specifications accepted only from the ODT
1	0	Continue process until the end
2	0	Number of syntax errors encountered are not displayed at any time
7	0	Continue with next specification
8	0	Interpret card decks (hardware permitting)
6, 9	0	Stop if an error is encountered on input files

These switches can be set with the following values to produce the results described:

SWITCH	VALUE	RESULT
-----	-----	-----
0	1	Specifications accepted only from CARDS
1	1	Terminate processing of current specification; proceed to next specification
2	1	Number of syntax errors encountered displayed at EOJ time
3	1	Specifications accepted only from CARDS
6	1	Ignore input file errors
7	1	Stop DMPALL after completion of the next executed specification
8	1	No interpretation of card decks desired
9	1	Ignore input file errors

NOTE: Switches 0 and 3 represent the same switch. If either switch (0 or 3) has a value of 1, then both switches are considered to be set. Switches 6 and 9 represent the same switch. If either switch (6 or 9) has a value of 1, then both switches are considered to be set. (Switches 3 and 6 have been implemented for use with Work Flow Language.)

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### CARD INPUT

When executed through a card reader (EX DMPALL) with SW0=1, DMPALL expects all specifications to be entered from the card reader.

The DMPALL execute control deck has the following format:

```
? EX DMPALL SW0=1;
? FI SPEC NAME <SPEC_FILE_IDENTIFIER>; (Optional Card)
? DATA <SPEC_FILE_IDENTIFIER>
  (Specification cards)
? END
```

A specification string may span more than one card by using a hyphen with blanks around it. This means you have to look for the rest of the string on the next card.

A semicolon will terminate the specification string, after which comments may be entered. There may be more than one card in a specification card file.

All specification entries are free form in up to 96 columns of a card, and may be separated by either a space or a comma, or a combination thereof. The card file containing the specifications is loaded to disk, and each specification is executed in turn.

### Example of Card Input

```
? EX DMPALL SW0=1;
? DATA SPEC
  COPY CRDDSK XXX 72 1 DSKFIL 80 4
  LIST DSKFIL A
? DATA XXX
  (Card data deck)
? END
```

The specifications will cause the card file "XXX" to be loaded to disk, then listed in alpha format.

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### PRINI SPECIFICATIONS

The specification string for printing a file is shown in the syntax diagram table 3.1 and explained in the pages that follow. A valid DMPALL command is developed from following the main line of syntax from its beginning to its termination point (#). Where optional entries are concerned, the direction of flow proceeds down on the left-hand line and up on the right. Unless otherwise noted, optional entries are expected by the program in the order (top to bottom) in which they are presented. A line that may only be crossed once is shown by "/1\".

Required entries occur on the main line of development; optional ones below that line. Required keywords appear in upper-case letters; variables in lower-case letters. Underlined portions of required keywords are acceptable abbreviations for the keywords. Abbreviations of variables that occur in table 3.1 are as follows:

<u>Variable</u> -----	<u>Abbreviation</u> -----
identifier	id
record	rec
number	num
position	posn
length	leng
argument	arg
operator	op

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```

----- LIST ----- <file-id> ----->>
|  --  |
|-- LIST1 -->|
|  --  |
|-- LIST2 -->|
|  --  |

>> ----->
|<-----|
|-/1\-- <input-rec-leng> ----->|
|                                     |-- <blocking-factor> ----->|
|                                     |
|-/1\-- TAG: <tag-file-id> ----->|
|-/1\-- <input-file-access-mode> ----->|
|-/1\-- <output-format> ----->|
|-/1\-- <hardware-type> ----->|
|-/1\-- SKIP <integer> ----->|
|                                     |
|-/1\-- INCLUDE <integer> ----->|
|                                     ----|
|-/1\-- VARIABLE ----->|
|   |-- VARY ----->|
|                                     |
|-/1\-- SEARCH -- <start-posn> ---- <search-arg> ----->|
|   |--  |
|-- SELECT --|
|   |--  |
|-- EXCLUDE->|
|   |--  |
|-- KEY-- <start-posn> -----<key-op>-|
|                                     |--<key-leng>->|
|                                     |
|<-----|
|
|-- <search-arg> ----->|
|                                     |-- <num-to-return> -->|

```

Table 3.1 Print Specification String

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The LIST, LST, LIST1 or LST1 entry indicates a single-spaced listing will be printed; LIST2 or LST2 specifies double-spaced.

The <file-id> entry must immediately follow the LIST entry and is required for all files. The format of the <file-id> entry is the same as used in MCP control instructions: from one to three identifiers separated by slashes. A file-identifier that is entirely numeric or which contains special characters must be surrounded by quotes. (See B1800/B1700 Software Operational Guide for more details.)

<file-id> can consist of the following forms:

```
<pack-id>/<multi-file-id>/  
<pack-id>/<multi-file-id>/<file-id>  
<pack-id>/<family-name>/=  
<multi-file-id>/  
<multi-file-id>/<file-id>  
<family-name>/=
```

Use of the "=" following <multi-file-id> will cause a list of all files with the specified <family-name>.

An optional hostname may be included with the file-name, but may not be used when specifying "=" as file-identifier.

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The Host entry specifies that the file resides on another system and Host services must be present to access the file.

The first numeric entry following the <file-id> must be the <input-rec-leng> in bytes (maximum length: 4,000 bytes for ASCII conversion or TAG: options and 8,000 bytes for all other lists). If omitted, an <input-rec-leng> of 80 and a <blocking-factor> of one is assumed for all files except disk and labeled tape files which use the <input-rec-leng> and <blocking-factor> of the file when created. The second numeric entry following the <file-id> must be the <blocking-factor>. If omitted and an <input-rec-leng> entry is present, then an unblocked file is assumed.

The TAG: <tag-file-id> entry may be used to specify the use of a tag file for indexing into the input file. The tag file must be created with the COBOL68 or RPG naming conventions (see the COBOL68 or RPG reference manuals).

The <input-file-access-mode> entry may be one of the following (including quotation marks):

1. ASCII files: "ASCII"
2. BCL files: "BCL"
3. BINARY files: "BINARY"
4. EBCDIC files: "EBCDIC" (If this entry is omitted, "EBCDIC" is assumed as the default.)

If the input file is a labeled tape, the access mode will be that with which the file was created.

The <output-format> entry may be specified as:

1. Alphanumeric: A or ALFA.
2. Numeric: N, NUM, H, or HEX.  
(If this entry is omitted, alphanumeric is assumed as the default)

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The <hardware-type> entry may be one of the following:

1. Card files: CRD or CARD
2. 96-col. Card files: C96 or CARD96
3. Magnetic Tape files: MTP or TAPE
4. Paper Tape files: PPT or PAPER
5. Disk files: DSK or DISK (Assumed if <hardware-type> omitted)
6. 7-Track Tape files: MT7 or TAPE7
7. 9-Track Tape files: MT9 or TAPE9
8. Cassette Tape files: CAS or CASS
9. Binary Card file: BIN or BINARY
10. Multi-pack Disk files: MPF or MULTI

The SKIP <integer> entry may be entered to begin printing after a specified number of records as denoted by the <integer>.

The INCLUDE (or INCL) <integer> entry may be used to specify how many records of the input file should be read.

The VARIABLE or VARY entry may be used to specify tape or disk files having variable-length records.

Selective printing of records can be accomplished by the following options:

OPTION	EFFECT
-----	-----
SEARCH	Starts printing at the first occurrence
SELECT	Prints only records that are equal
EXCLUDE	Prints only records that are not equal
KEY	Key-operator condition

NOTE: Only one option per specification allowed.

These options are further described by the following parameters:

<start-posn>                    <start-position> denotes the starting position of the field where the first position in the record is relative position one. This numeric entry will specify the byte (for alpha or hex), the digit (for 4-bit), or the bit in which the field begins, according to the



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search-argument position type.

<key-leng>

<key-length> is used only with KEY option to specify the length of the field to be tested. The maximum length is 20 (bits, digits, or bytes). If this option is omitted, then the default will be equal to the length of the <search-argument> up to 20 (bits, digits, or bytes).

<key-op>

<key-operator> is used only with KEY option to denote the type of comparison to be performed by the KEY option and may be one of the following:

Operator	Meaning
-----	-----
GTR or >	Greater
GEQ or >=	Greater than or equal
EQL or =	Equal
LEQ or <=	Less than or equal
LSS or <	Less than
NEQ	Not equal

<search-arg>

<search-argument> presents the data against which the specified field in the record will be compared. The type of field is indicated by the field-type specifier of the <search-argument>:

FIELD TYPE SPECIFIER	POSITION TYPE	DATA TYPE
-----	-----	-----
" or blank	byte	alphanumeric
2	byte	hexadecimal
2(4)	digit	hexadecimal
2(1)	bit	binary

The ending field-type specifier should be the same as the beginning specifier, except for digit and bit where "2" is sufficient.

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<num-to-return>      <number-to-return> is an integer used to stop the selective process after the number of records that the option specified has been reached. Care should be taken when using both the INCLUDE and <number-to-return> options together, as the list will terminate when either of the two options is satisfied.

The heading for the output listing contains the file identifier, record length, blocking factor, current date, and time. In addition, a printout of a disk file will have the value of the end-of-file pointer in the heading. A running record count which indicates the record number of the input file is printed in the left-hand margin.

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### REPRODUCTION SPECIFICATIONS

The reproduction string consists of the specifications shown in table 4.1 and explained in the pages that follow. A valid DMPALL command is developed from following the main line of syntax from its beginning to its termination point (#). Where optional entries are concerned, the direction of flow proceeds down on the left line and up on the right. The conventions and abbreviations used in this table are the same as those used in table 3.1, Print Specification String.

PERFORM, PFM, COPY, or CAT informs DMPALL that media conversion is desired.

```

----- PERFORM ----->>
| - - - | | |
|-- COPY -->| |--<routine-type> -->|

>>----- <input-file-id> ----->>
|
|----- HOST ---- <hostname> ---->|

>>-----#
|<-----|
|-/1\-- <input-rec-leng> ----->|
|
|----- <blocking-factor> ---->|
|
|-/1\-- VARIABLE ----->|
|   |-- VARY ----->|
|
|-/1\-- TAG: <tag-file-id> ----->|
|-/1\-- <input-file-access-mode> ----->|
|-/1\-- <output-file-id> ----->|
|
|----- HOST -- <hostname> ----->|
|
|-/1\-- <output-rec-leng> ----->|
|
|----- <blocking-factor> ----->|
|
|   |
|   |<-----|
|   |-- <blocks-per-area> ----->|
|
|   |----- <number-of-areas> ----->|
|-/1\-- <output-file-access-mode> ----->|
|-/1\-- VARIABLE ----->|
|   |-- VARY ----->|
|
|-/1\-- SKIP <integer> ----->|
|-/1\-- INCLUDE <integer> ----->|
|   ----->|
|
|-/1\-- SEARCH -- <start-posn> ---- <search-arg> ----->|
|   --- | | | | |
|-- SELECT --| | |
|   --- | |<-----| | |
|-- EXCLUDE -| |----- <num-to-return> ->| |
|   --- |
|-- KEY-- <start-posn> -----<key-op>-| |
|
|----- <key-leng>-->| |
|
|<-----|
|
|<----- <search-arg> ----->|
|
|----- <num-to-return> -->|

```

Table 4.1 Reproduction Specification String

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### CONCATENATION OPTION

The concatenation option copies the concatenation file on the end of the base file. The <routine-type> is assumed to be disk to disk copy; however, when stated, the <routine-type> must be disk as the base file (see Table 2.1).

```

I-- CAT ----->
      |
      |-- <routine-type > --|

>> ---- <concatenation-file-id> ----->>
      |
      |-- HOST -- <hostname> ---->|

>> -----#
|<-----|
|-/1\-- <concatenation-rec-leng> ----->|
|      |      |-- <blocking-factor> -->|
|-/1\--- VARIABLE ----->|
|      |-- VARY -->|
|-/1\-- TAG: <tag-file-id> ----->|
|-/1\-- <concatenation-file-access-mode> ----->|
|-/1\-- <base-file-id> ----->|
|-/1\-- <base-file-access-mode> ----->|
|-/1\-- VARIABLE ----->|
|      |-- VARY -->|
|-/1\-- SKIP <integer> ----->|
|-/1\-- INCLUDE <integer> ----->|
|      |-----|
|-/1\--- SEARCH -- <start-posn> ---- <search-arg> ----->|
|      |-----|      |      |
|-- SELECT --|      |      |
|      |-----|      |
|-- EXCLUDE -|      |-- <number-to-return> -----|
|      |-----|
|-- KEY -- <start-posn> ----- <key-op>--|
|      |-----|      |
|      |-----|
|      |-----|
|-- <search-arg> ----->|
|      |-----|
|      |-- <number-to-return> -->|
  
```

Table 4.2 Concatenation Option

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The <routine-type> entry may be either in longhand or shorthand form. The longhand form utilizes the names of two of the following media:

1. Card files: CARD
2. 96-col. Card: CARD96
3. Magnetic Tape files: TAPE
4. Paper Tape files: PAPER
5. Disk files: DSK or DISK (Assumed if <routine-type> omitted)
6. 7-Track Tape files: TAPE7
7. 9-Track Tape files: TAPE9
8. Cassette Tape files: CASS
9. Binary Card files: BINARY
10. Printer output files: LIST
11. Multi-pack Disk files: MULTI

The shorthand form concatenates two of the following media abbreviations:

MEDIUM	ABBREVIATION
CARD	CRD
96-COL CARD	C96
PAPER TAPE	PPT
MAGNETIC TAPE	MTP
DISK	DSK
7-TRACK TAPE	MT7
9-TRACK TAPE	MT9
CASSETTE	CAS
BINARY CARD FILE	BIN
PRINTER OUTPUT	LST
MULTI-PACK DISK	MPF

Table 4.2 Media Abbreviation Table

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- Note: a. If <routine-type> is omitted, default is disk-to-disk.  
b. If BIN or BINARY is used, the last card in the file should have "END-OF-DECK" starting in column one.

Example: To go from card to magnetic tape the shorthand form <routine-type> would be "CRDMTP". The longhand form would be "CARD TO TAPE" with "TO" being optional.

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The format of the `<input-file-id>` is the same as used in MCP control instructions. Unlabeled tape files for which the user desires to use default values must have an `<input-file-id>` of "NONE" (including the quotation marks).

A hostname may be specified for either the input or output file or both, and indicates the direction in which files are to be transferred between remote and local hosts.

For the concatenation option, only the concatenation file will allow hostname. If the hostname is specified, the concatenation file on the remote host will be appended to the base file on the local host.

The `<input-rec-len>` in bytes (maximum length: 4,000 bytes for ASCII conversion and TAG files and 8,000 bytes for all other copies) must be the first numeric entry following the `<input-file-id>`. If omitted, a record length of 80 and a blocking factor of one is assumed for all files except disk and labeled tape files which will use the record length of the file when created. The `<input-blocking-factor>` must be the second numeric entry following the `<input-file-id>`. If omitted and a `<rec-len>` entry is present, then an unblocked file is assumed.

The VARIABLE or VARY entry may be used after the `<input-file-id>` entry to indicate that the input file will have variable-length records, but not variable-length output.

The TAG: `<tag-file-id>` entry may be used to specify the use of a tag file for indexing into the input file. The tag file must be created with the COBOL or RPG naming conventions and never modified. (See the COBOL or RPG reference manual.) The user should be aware that the output file will be a sequential file ordered by the TAG file keys and will not match the TAG file or the input file.

The `<input-file-access-mode>` entry may be one of the following (including quotation marks):

1. ASCII files: "ASCII"
2. BCL files: "BCL"
3. BINARY files: "BINARY"
4. EBCDIC files: "EBCDIC" (If this entry is omitted, EBCDIC is assumed as the default)



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If the input file is a labeled tape, the access mode will be that with which the file was created.

To change the parity of tape files from odd to even, use the MCP's FILE, or DYNAMIC or MODIFY statement.

Example:

```
?FILE INP.FILE EVEN
or: ?DYNAMIC <job-number> FILE INP.FILE EVEN
```

The format of the <output-file-id> is the same as that of the <input-file-id>. If an unlabeled tape file is desired, the <output-file-id> must be "NONE" (including the quotation marks). Default values for the four numeric <output-file-id> entries are the following:

<output-rec-len>	80
<blocking-factor>	1
<blocks-per-area>	100
<number-of-areas>	25

For disk or labeled tape, default <output-record-length> (abbr. <output-rec-len>) and <blocking-factor> is the same as those of the input file; for disk, default <blocks-per-area> and <number-of-areas> will be those of the input file.

If the user wishes to override the default <output-record-length>, he must enter the desired <output-record-length>. The same is true for <blocking-factor>, <blocks-per-area>, and <number-of-areas>.

Entries must follow in sequence. Succeeding entries presume all the necessary previous ones. For example, a <blocks-per-area> entry cannot be made without both <output-record-length> and <blocking-factor> entries. One can, however, stop at any point in the sequence and the appropriate default values will be assumed.

The <output-file-access-mode> entry may be one of the following (including quotation marks):

1. ASCII files: "ASCII"
2. BCL files: "BCL"
3. BINARY files: "BINARY"
4. EBCDIC files: "EBCDIC"

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If this entry is omitted, EBCDIC is assumed.

To change the parity from odd to even, use the MCP's FILE, DYNAMIC, or MODIFY statement.

Example:

```
?FILE OUTP.FILE EVEN
or: ?DYNAMIC <job number> FILE OUTP.FILE EVEN
```

The VARIABLE or VARY entry, in this position (i.e., after the <output-file-id>), indicates that both input and output records are variable-length.

The SKIP <integer> entry may be used to SKIP a specified number of records prior to creating the output file.

The INCLUDE (or INCL) <integer> entry may be used to specify how many records should be read from the input file. If the integer value equals zero, an empty file will be created.

Selective copying of records can be accomplished by the following options:

OPTION	EFFECT
-----	-----
SEARCH	Starts printing at the first occurrence
SELECT	Prints only records that are equal
EXCLUDE	Prints only records that are not equal
KEY	Key-operator condition

NOTE: Only one option per specification allowed.

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These options are further described by the following parameters:

**<start-posn>**      **<start-position>** denotes the starting position of the field in the record where the first position in the record is relative position one. This numeric entry will specify the byte (for alpha or hex), the digit (for 4-bit), or the bit in which the field begins, according to the search-argument position type.

**<key-leng>**      **<key-length>** is used only with KEY option to specify the length of the field to be tested. The maximum length is 20 (bits, digits, or bytes). If this option is omitted, then the default will be equal to the length of the **<search-argument>** up to 20 (bits, digits, or bytes).

**<key-op>**      **<key-operator>** is used only with KEY option to denote the type of comparison to be performed by the KEY option and may be one of the following:

Operator -----	Meaning -----
GTR or >	Greater
GEQ or >=	Greater than or equal
EQL or =	Equal
LEQ or <=	Less than or equal
LSS or <	Less than
NEQ	Not equal

**<search-arg>**      **<search-argument>** presents the data against which the specified field in the record will be compared. The type of field is indicated by the first character(s) of the **<search-argument>**:

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FIELD TYPE SPECIFIER	POSITION TYPE	DATA TYPE
" or blank	byte	alphanumeric
2	byte	hexadecimal
2(4)	digit	hexadecimal
2(1)	bit	binary

The ending field-type specifier should be the same as the beginning specifier, except for digit and bit where "2" is sufficient.

<num-to-return> <number-to-return> is an integer used to stop the selective process after the number of records that the option specified has been reached. Care should be taken when using both the INCLUDE and <number-to-return> options together, as the list will terminate when either of the two options is satisfied.

#### SYSTEM/LOAD.DUMP TAPE DIRECTORIES

System/Load.dump directories can be listed or punched with the following parameters:

```

-----
|                                     |
| <job-number>AX PD [PUNCH] <file-identifier> |
|                                     |
-----

```

If a System/Load.Dump directory is to be punched then the entry immediately following the PD entry must be PUNCH. If this entry is omitted, then a listing is assumed. The <file-identifier> entry is the System/Load.Dump name.

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### ERROR MESSAGES

The following error messages are printed on the console printer (ODT) if erroneous specifications are entered. Variables and comments are indicated below in lower-case.

1. <Input-file-identifier> file NOT ON DISK
2. MF.ID OR PACK.ID NUMERIC  
(The first name found is numeric and is not surrounded by quotation marks.)
3. INVALID HARDWARE TYPE OR OUTPUT FORMAT
4. NUMERIC VALUE MUST FOLLOW <SKIP, INCLUDE, or SEARCH>
5. <Users-input> ITEM SHOULD NOT APPEAR BEFORE LIST OR PERFORM
6. <Users-input> AREAS EXCEEDS 105 MAXIMUM
7. SEARCH FIELD OUTSIDE RECORD AREA  
(SEARCH starting position plus length is greater than the input record length.)
8. ILLEGAL HDW.NAME
9. MISSING OR INVALID SECOND HDW.NAME <input item>  
(The first hardware name was found, but the second hardware name was invalid.)
10. <user's input> IS NOT VALID AFTER OUTPUT <file name>  
(Hardware type could have been invalid or treated as an input-file-id or an invalid entry was found after the second file name.)
11. NO SPECS
12. <output file> A SYSTEM DRIVE AND CANNOT BE A MULTI-PACK FILE.
13. <input-file-identifier> IS A SYSTEM LOG AND CANNOT BE COPIED OR LISTED.

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14. INVALID RECORD LENGTH <record-length>

(The record length for the input or output file has exceeded 8,000 bytes, or 4,000 bytes with TAG: option or ASCII conversion, or is equal to zero.)

15. NO RECORDS PROCESSED--END OF FILE REACHED

(Input file is empty or has been skipped to END.)

16. EQUAL SIGN IS NOT A VALID FILE-ID

17. <Search Argument> IS NOT A VALID KEY ARGUMENT

(The <search-argument> has hex, digit or bit data type specified and the data contains invalid characters for that type or the <search-argument> is not terminated with an "a")

18. PARITY ERROR - REC.NUM: <record-number>

19. <Tag-file-name> I/O ERROR <record-number>

20. INVALID KEY LENGTH <key-length>

(Key-length given is less than 1 or greater than 20.)

21. INVALID KEY OPERATOR <key-operator>

(<key-operator> is not a valid entry. See valid list.)

22. INVALID TAG FILE <tag-file-name>

(Tag-file-name was not created with COBOL or RPG naming conventions)

23. INVALID INDEX FILE <input-file-name>

(The index file is not a disk file.)

24. WARNING - <output-file-name> IS NOT AN IAD FILE

(The input file being copied is an Installation Allocated Disk (IAD) file, but the output file is not.)

25. INPUT ERROR: BASE FILE IS NOT A DISK FILE.

26. INVALID PARAMETERS SPECIFIED FOR OUTPUT FILE.

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27. SIZE OF INPUT WILL EXCEED OUTPUT, -CONCAT NOT POSSIBLE WITHOUT INCREASING SIZE OF BASE FILE.
28. CONCATENATION ONLY ON DATA FILES ALLOWED, <output-file-name> IS NOT A DATA FILE.
29. <input-file-name> IS NOT A VARIABLE LENGTH DATA FILE.
30. <output-file-name> FILE NOT ON DISK.
31. <file-name> IS TOO LONG FOR FILE-NAME.
32. PACK: <Input-Pack-name> NOT FOUND.
33. DISK DIRECTORY READ PROBLEMS.
34. MISSING HOSTNAME.
35. <hostname> : TOO LONG FOR HOST\_NAME.  
(Hostname specified is greater than 17 characters).
36. EQUAL SIGN NOT ALLOWED IN FILE-ID FOR HOST FILES.  
(File names with "=" not allowed on host files for print specification).
37. HOSTNAME NOT ALLOWED ON OUT-FILE FOR "CAT" OPTION.

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### EXAMPLES

The input for all the following examples is a disk file, labeled DSK1 and containing the following records:

RECORD -----	COLUMN 1 -----	COLUMN 2-3 -----
1	A	01
2	A	02
3	B	03
4	B	04
5	A	05
6	A	06
7	A	07
8	B	08
9	A	09
10	B	10
11	B	11
12	B	12
13	A	13
14	B	14
15	A	15

#### EXAMPLE 1

```
-----
COPY DSK1 DISK1 SKIP 5 INCL 5 SELECT 1 A
```

The first 5 records of the disk file DSK1 will be skipped and only the next 5 will be scanned. File DISK1 will contain:

Output Record # -----	Image -----	Input Record # -----
1	A06	6
2	A07	7
3	A09	9

In the SELECT statement, note that the field could also have been specified as "A" or 2C12 or 2(4)C12 or 2110000012, depending on the type of search argument the user desires. These variations are also true for the remaining examples 2 - 6.



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EXAMPLE 2  
 -----

COPY DSK1 DISK2 SKIP 5 INCL 5 EXCLUDE 1 B 4

The first 5 records of the disk file DSK1 will be skipped. A maximum of 5 records will be scanned and a maximum of 4 records will be copied. File DISK2 will contain:

Output Record #	Image	Input Record #
-----	-----	-----
1	A06	6
2	A07	7
3	A09	9

Note: The INCLUDE option was exhausted first in this case.

EXAMPLE 3  
 -----

COPY DSK1 DISK3 SKIP 5 INCL 5 KEY 1 1 = A

The first 5 records of the disk file DSK1 will be skipped, and only the next 5 will be scanned. File DISK3 will contain:

Output Record #	Image	Input Record #
-----	-----	-----
1	A06	6
2	A07	7
3	A09	9

EXAMPLE 4  
 -----

LIST DSK1 SKIP 5 INCL 5 SELECT 1 A

The first 5 records of the disk file DSK1 will be skipped, and only the next 5 will be scanned. The listing will contain:

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Output Record #	Image	Input Record #
-----	-----	-----
1	A06	6
2	A07	7
3	A09	9

Example 5

-----

LIST DSK1 SKIP 5 INCL 5 EXCLUDE 1 B 4

The first 5 records of the disk file DSK1 will be skipped. A maximum of 5 records will be scanned and a maximum of 4 records will be copied. The listing will contain:

Output Record #	Image	Input Record #
-----	-----	-----
6	A06	6
7	A07	7
9	A09	9

Note: The INCLUDE option was exhausted first in this case.

Example 6

-----

LIST DSK1 SKIP 5 INCL 5 KEY 1 1 = A

The first 5 records of the disk file DSK1 will be skipped, and only the next 5 will be scanned. The listing will contain:

Output Record #	Image	Input Record #
-----	-----	-----
6	A06	6
7	A07	7
9	A09	9

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