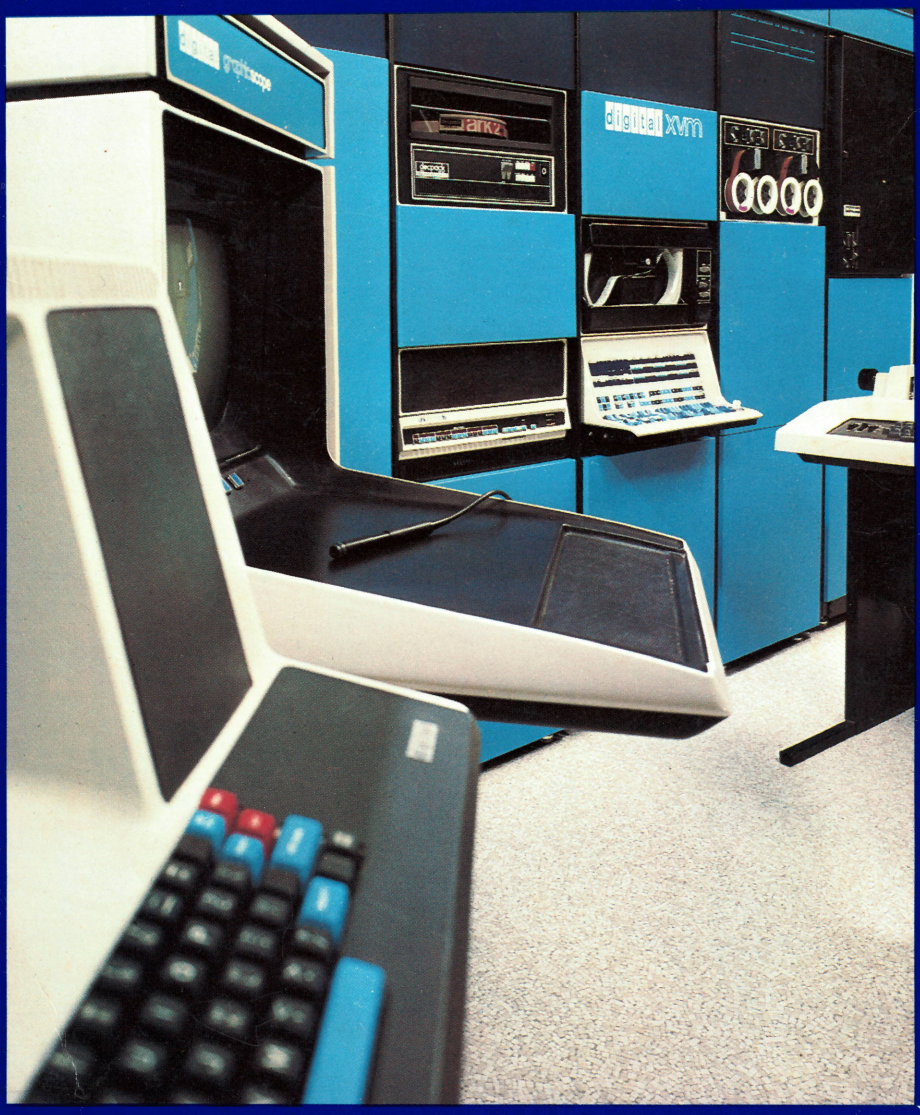
MTDUMP XVM UTILITY MANUAL

DEC-XV-UMTUA-A-D



XVM Systems

digital

MTDUMP XVM
UTILITY MANUAL

DEC-XV-UMTUA-A-D

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The postage prepaid READER'S COMMENTS form on the last page of this document requests the user's critical evaluation to assist us in preparing future documentation.

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CONTENTS (Cont.)

LIST OF ALL XVM MANUALS

The following is a list of all XVM manuals and their DEC numbers, including the latest version available. Within this manual, other XVM manuals are referenced by title only. Refer to this list for the DEC numbers of these referenced manuals.

BOSS XVM USER'S MANUAL	DEC-XV-OBUAA-A-D
CHAIN XVM/EXECUTE XVM UTILITY MANUAL	DEC-XV-UCHNA-A-D
DDT XVM UTILITY MANUAL	DEC-XV-UDDTA-A-D
EDIT/EDITVP/EDITVT XVM UTILITY MANUAL	DEC-XV-UETUA-A-D
8TRAN XVM UTILITY MANUAL	DEC-XV-UTRNA-A-D
FOCAL XVM LANGUAGE MANUAL	DEC-XV-LFLGA-A-D
FORTRAN IV XVM LANGUAGE MANUAL	DEC-XV-LF4MA-A-D
FORTRAN IV XVM OPERATING ENVIRONMENT MANUAL	DEC-XV-LF4EA-A-D
LINKING LOADER XVM UTILITY MANUAL	DEC-XV-ULLUA-A-D
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XVM/DOS V1A SYSTEM INSTALLATION GUIDE	DEC-XV-ODSIA-A-D
XVM/RSX SYSTEM MANUAL	DEC-XV-IRSMA-A-D
XVM UNICHANNEL SOFTWARE MANUAL	DEC-XV-XUSMA-A-D

PREFACE

The operation and use of the Magnetic Tape DUMP utility program (MTDUMP) within the DOS/XVM environment is described in this manual. In the preparation of this document, it was assumed that the reader is familiar with the XVM/DOS User's Manual.

The following symbols are used throughout this manual:

Symbol	Represents
	Carriage Return (non-printing)
	Space (non-printing)
↑	Echo for Teletype Keyboard CTRL Function
	ALT MODE

CHAPTER 1
INTRODUCTION

The Magnetic Tape Dump (MTDUMP) Program is a utility program of the XVM/DOS Operating System which provides users of industry-compatible magnetic tape with functions which are specific to magnetic tape. In general, the program provides magnetic tape users with functions similar to those found in PATCH and DUMP. MTDUMP complements PIP with regard to magnetic tape functions; i.e., allows creation of directories, block for block copying, etc.; and few functions performed by PIP are duplicated.

The program MTDUMP is device dependent and accomplishes all magnetic tape I/O with .TRAN and .MTAPE System Macro instructions. It cannot be used with other I/O devices.

1.1 FUNCTIONS

The following paragraphs briefly explain the basic functions of MTDUMP. A summary of commands is provided in Appendix A.

1.1.1 Dump File

One of the most common requirements of the magnetic tape user is the ability to examine portions of a tape. The Dump File facility in MTDUMP is intended to meet that need in a general and useful way. Simply stated, the Dump File consists of (1) images of command lines received from the keyboard and (2) groups of ASCII lines representing the contents of the tape being examined. The contents and format of the Dump File are subject to considerable variation. In fact, the destination of the file may itself be changed during the run.

1.1.2 File Modification

This feature provides a convenient means for file updating or patching. Individual records may be accessed, allowing each word in the record to become available for examination and modification. Words and entire

records may be inserted or deleted from the file and new files may thus be created.

1.1.3 Tape Duplication

This function permits copying magnetic tape on a record-for-record basis.

1.1.4 Directory Manipulation

These commands permit listing and clearing of magnetic tape directories.

1.2 I/O DEVICES

MTDUMP accesses a maximum of three devices: the teleprinter, used for command string input and error reports; the magnetic tape transports (via MTA. or MTF.) for all input and output to all magnetic tape units; and an optional third device which is the destination device for what is termed the "Dump Output File". This file contains records of commands typed to the program and any hard-copy response to these commands (normally record-by-record dumps). Dump output may be directed to any device, including a magnetic tape. If magnetic tape is used for this purpose, however, the unit assigned may not also be manipulated by commands to MTDUMP. If no Dump Output file is desired, the teleprinter should be assigned as the Dump Output device.

CHAPTER 2
OPERATING PROCEDURE

2.1 DEVICE ASSIGNMENTS

MTDUMP is supplied as an XVM/DOS system program. The following .DAT slot assignments:

.DAT slot 1	MTAØ or MTFØ
.DAT slot 3	The Dump Output device, if required; or TTA if no Dump Output File is wanted.

2.2 PROGRAM STARTUP

After loading, the program types on the teleprinter:

```
MTDUMP XVM Vnxnnn
BUFSIZ m
>
```

where: Vnxnnn is the current version and "m" is the total number (in decimal) of registers available for I/O buffers.

Each time the program is ready to accept a keyboard command, a right angle bracket (>) is typed.

At start (or restart) time, all magnetic tape units are automatically set to transfer in odd parity at 8ØØ BPI and at the channel count given by .SCOM+4, bit 6 (Ø means 7-channel, 1 means 9-channel). SGEN or the XVM/DOS "CHANNEL" command may be used to alter the default .SCOM setting. The user must issue a new FORMAT request (see paragraph 3.2.1) to effect transfer in another (non-standard) mode.

2.3 PROGRAM RESTART

To restart MTDUMP, type CTRL P. Then repeat the program startup procedure.

CHAPTER 3
COMMANDS

3.1 COMMAND STRING

MTDUMP accepts commands from the console terminal in the general format shown below. Formats for specific commands may vary significantly from this and are shown in the descriptions of the individual commands.

MTDUMP command formats are variations of the following:

c␣u_1,u_2,t↵

where:

- c is the name of the function wanted.
- u_1 is a digit specifying the source unit for two-unit operations (e.g., COPY) or the one object unit for single-unit operations.
- u_2 is a digit specifying the destination unit for two-unit operations or is absent for single-unit operations.
- t specifies a condition (either count overflow or transport status) which, when encountered, causes termination of the function whose name is "c". "t" may be absent and, if not given, is assigned the implicit integer value 1. Explicit values of "t" may include:
  a. An integer in absolute value less than $262,144_{10}$ and greater than zero
  b. The character string "EOT" (END OF TAPE)
  c. The character string "BOT" (BEGINNING OF TAPE)
  d. The character string "EOF" (END OF FILE)

Parameters are separated from the command by a space (␣) and from each other by commas. The command line is terminated by a carriage return (↵) or altmode, (ALT).

Some commands require only a single argument, while others require all three.

Example:

REWIND␣1↵

Only the single object unit need be specified; further, the terminating condition "BOT" is implicit in the command and need not be given. Copying an entire logical tape from Unit 1 to Unit 2, however, requires all three parameters.

Example:

```
COPY␣1,2,EOT↵
```

3.1.1 Terminating Conditions

As indicated above, the "t" specification in the command line may be either an integer or a character string or absent. If "t" is an integer, it represents the number of physical records to be processed during the operation requested.

Example:

```
SPACE␣1,8Ø↵
```

This command string means: Evaluate the string "8Ø" according to the radix currently in effect, then forward space the tape on drive 1 that number of blocks. In the example, if tape 1 was at loadpoint and a decimal radix is operative, upon completion of the operation the next record read or written is the 81st physical block.

Example:

```
COPY␣1,2,8Ø↵
```

The above example causes a transfer of 8Ø blocks from drive 1 to drive 2, leaving the read/write head on each drive positioned immediately following the last record transferred.

If "t" is a non-numeric string (EOT, BOT, EOF), then the operation requested is deemed complete when one of the following conditions is observed:

a. EOT — Two consecutive EOF markers have been passed in either reverse or forward direction.

b. BOT — The loadpoint marker has been reached (but not passed) in the reverse direction.

c. EOF A single EOF marker has been passed in either direction.

If "t" is the string "EOF" or "EOT", the position of the read/write head relative to the EOF marker causing termination depends upon the direction of tape motion when the condition is encountered.

Example:

```
BACKSPACE␣1,EOF↵
```

The read/write head will be positioned just before the marker. The next record read in the forward direction will be the EOF marker just passed in backspacing.

If "t" is the string "BOT", the head is left positioned just after the loadpoint; the program will not backspace over BOT.

If "t" is absent from a command string in which it is required, then the value 1 is assumed. Thus the commands in the following example are equivalent.

Example:

```
SPACE␣1,1↵
SPACE␣1↵
```

3.1.2 Command Abbreviations

Most commands in MTDUMP may be abbreviated to a single letter (the initial character). In the command descriptions which follow, legal abbreviations are shown immediately following the command and enclosed in parentheses.

Example:

```
REWIND(R)␣u,t↵
REWIND(R)␣u↵
```

3.2 SETUP COMMANDS

This is a group of commands which generally apply to most major functions of MTDUMP. These commands are usually given prior to the execution of a function (e.g., DUMP, COPY).

3.2.1 Set Non-Standard Tape Format

The initial setup for input and output tapes is odd parity at 8ØØ BPI (the channel count, which can be set for seven- or nine-track operation by the monitor's CHANNEL command, is given by .SCOM+4, bit 6). The FORMAT command allows the user to change the parity, density, and/or channel count.

Usage:

```
FORMAT(F) u,pdc
```

where: "u" is the tape unit whose format is being set and "pdc" is a group of three single-character parity, density, and channel-count indicators, as follows:

```
p (parity) is "E" (even) or "O" (odd)
d (density) is "2" (2ØØ BPI), "5" (556 BPI), or
               "8" (8ØØ BPI)
c (channel) is "9" (9-channel) or "7" (7-channel)
```

The three descriptors may appear in any order, and any may be absent, in which case the relevant status for the tape remains unchanged. If nine-channel format is used, the density parameter is overridden and set to 8ØØ BPI independent of any occurrence or absence of a density parameter.

Example:

```
FORMAT 2,E57
     or
FORMAT 2,5E7
     or
FORMAT 2,75E
```

All of the above examples set up tape unit 2 for even parity, 556 BPI, 7-channel operation.

Example:

```
FORMAT␣2,O↵
     or
F␣2,O↵
```

These commands change the parity of tape unit 2 without disturbing the current density or channel count.

FORMAT commands are effective until MTDUMP is restarted via the CTRL P function.

3.2.2 Set Standard Tape Format

Standard System Format may be requested for any unit. A special case of the FORMAT command is employed to unconditionally reset tape format to odd parity, 8ØØ BPI, and 7- or 9-channel (according to .SCOM+4, bit 6).

Usage:

```
FORMAT(F)␣u,D↵
```

where: "u" is the unit whose format is to be set and the character "D" means "default".

3.2.3 Specify Global Radix

The program always treats certain numeric strings (e.g., unit specification) as octal. Others, however, may be specified as either octal or decimal by the NUMBER command. The following numeric groups are interpreted (on input) or printed as octal or decimal strings according to the argument given in the latest NUMBER request:

a. The "t" specification in command lines (where applicable) when "t" is an integer. If the current radix is octal, then the command:

```
SPACE␣1,2Ø↵
```

causes the tape on unit 1 to be spaced forward 16_{10} records.

b. The word sequence numbers of dumped data.
c. The word sequence numbers of EXAMINE requests. (See below.)
d. The record-length argument of the SIZF request. (See below.)

The radix specified remains in effect until another NUMBER command is encountered or the program is restarted. The default radix is octal.

Usage:

NUMBER(N)␣ {OCTAL / DECIMAL}

3.2.4 Specify Local Radix

The radix of a number string in a single command line may be specified by a one-character suffix, D for decimal, K for octal. Such specification overrides the current global radix, but is in effect only during the processing of the command line in which the suffix appears. Local radix control may be used following:

a. The "t" specification in command lines (where applicable) when "t" is an integer.
b. The word sequence numbers of EXAMINE requests.
c. The record-length argument of the SIZF request.

Example:

SPACE␣1,2ØD↵

The command above causes tape unit 1 to space forward 20_{10} records regardless of the current global radix.

Example:

SPACE␣1,2ØK↵

Similarly, this command spaces the tape forward 20_8 (16_{10}) records.

3.2.5 Command-line Echo

Legal keyboard requests are placed in the Dump Output File, exactly as typed, to allow the user to correlate the progress of the run, relative tape position, and the record contents during later examination of the hard-copy dump. Command-Line echo can be bypassed, however, by use of the VERIFY command.

Usage:

VERIFY(V)␣ {ON / OFF}

If ON or OFF is not specified, ON is assumed.

Example:

```
V)
```

When MTDUMP is first loaded or is restarted, VERIFY mode is set ON. If the teleprinter is the assigned dump output device (.DAT slot 3), command-line echo is not performed. Illegal commands are not echoed.

3.2.6 Dump File Display Format

The input tape is output to the Dump File as individual physical records. Each record is represented as a number which indicates record length in ASCII lines. Each line, in turn, contains:

1. A sequence number which reflects the position in the record of the first data word in the line displayed.
2. A string of data words or data-word pairs.

Sequence numbers are in either octal or decimal notation; the radix is chosen in response to the last previous NUMBER command.

Display format is set by the MODE request followed by the appropriate argument.

Usage:

```
MODE ␣ { OCTAL     }
       { SYMBOLIC  }
       { TRIMMED   }
       { ASCII     }
```

Where:

OCTAL	Displays single words as six octal digits.
SYMBOLIC	Displays single words as a three-character operation-code mnemonic, an "indirection" indicator (*), if present, and a 13-bit (5-digit) address.
TRIMMED	Displays single words as three six-bit alphanumeric characters.
ASCII	Displays pairs of words as five seven-bit ASCII characters. A blank is printed for each character outside the range 40_8 - 137_8.

The default assumption is OCTAL and implicit in the request:

```
MODE )
```

The table below shows examples of data-word treatment in each of the four modes.

OCTAL	SYMBOLIC	TRIMMED	ASCII
512132	AND 12132	)QZ	REWIN
744634	OPR Ø4634	<&	
42Ø32Ø	XCT*ØØ32Ø	#CP	D
ØØØØØØ	CAL ØØØØØ	@@@	
777777	LAW 17777	???	A
Ø1Ø2Ø3	CAL 1Ø2Ø3	ABC	

3.2.7 Inserting Comments in the Dump File

Explanatory notes may be placed in the output file by use of the LOG command. When the LOG request is encountered, subsequent typed input is taken as commentary and is added, exactly as it appears, to the Dump Output File. Carriage returns may be included, and multiple lines may be inserted with a single LOG request. An ALT MODE terminates each comment and causes the program to accept a new request.

Usage:

```
LOG␣comments )
comments..... )
(ALT MODE)    )
```

3.2.8 Return Control to Monitor

An EXIT request causes the program to close the Dump Output File (if one is open) on .DAT slot 3, then perform an .EXIT return to the Monitor.

Usage:

```
EXIT )
```

3.3 MANIPULATIVE FUNCTIONS

The following commands position the tape and write EOF markers on the tape drive specified.

3.3.1 Rewind Tape

This command initiates a rewind on tape unit "u".

Usage:

```
REWIND(R) u)
```

3.3.2 Backspace Tape

This command backspaces the tape on unit "u" until the "t" condition is satisfied.

Usage:

```
BACKSPACE(B) u,t)
```

where: "t" is an integer (number of records), "EOF", "EOT", or "BOT".

3.3.3 Space Tape

This command spaces the tape on unit "u" forward until the "t" condition is satisfied.

Usage:

```
SPACE(S) u,t)
```

where: "t" is an integer (number of records), "EOF", or "EOT".

3.3.4 Write End-of-File Marker

This command writes a single "EOF" marker on tape unit "u".

Usage:

```
TAPEMARK(T) u)
```

3.4 DUMP FILE OPERATIONS

3.4.1 Dump File Management

The Dump Output File may be written on any physical device. If the device chosen has a directory, however, the user must specify a name to be given the Dump File and must explicitly request that the file be closed (unless the EXIT command is used). Furthermore, the file name must be given before any other requests are issued.

Usage:

```
OPEN␣filename␣ext↵
```

where:

filename is the name of the file to be created.

ext is the filename extension. If omitted, "LST" is the default assumption.

If an OPEN request is not given, the program types

```
NO DUMP FILE OPEN
>
```

on the terminal and waits for another command.

NOTE

The comment is actually printed when an attempt is made to write into the Dump File, i.e., at command-line echo if VERIFY is ON or at Dump-Record Output if VERIFY is OFF.

A check is made to ensure that the filename given is unique. If a file of the name specified already exists on the Dump Output device, the program types:

```
FILE FOUND ON DUMP DEVICE:      filenam ext
DO YOU WISH TO DELETE IT?
>
```

The program then waits for the user to type a response to the query. Typing

↵
or
Y↵
or
YES↵

indicates the affirmative, and the already-existing file is overlaid (i.e., deleted when the new file is .CLOSEd). Any other response is negative and the program returns to accept a new keyboard command.

The Dump Output File is closed upon receipt of the CLOSE command from the keyboard.

Usage:

CLOSE↵

3.4.2 Dump Tape Records

This command dumps records from unit "u" into the named file open on .DAT slot 3. The sequencing of data words and the format in which they are written are controlled by the most recent NUMBER and MODE requests.

Usage:

DUMP(D)␣u,t↵

where:

"u" is the tape unit number
"t" is an integer (number of records), "EOF", or "EOT".

3.4.3 Dump Tape Records on the Teleprinter

This command performs the same function as the DUMP command, except that the records are unconditionally dumped on the teleprinter.

Usage:

LIST(L)␣u,t↵

3.4.4 Tape Status

In addition to data input from magnetic tape and the console keyboard, the Dump Output File contains indicators of status encountered on the tape being read. Comments are added to the file (and typed on the teleprinter) in response to the following observed conditions on the tape.

Message	Meaning
*END OF FILE ENCOUNTERED	An unexpected end-of-file marker was read.
*PHYSICAL EOT ENCOUNTERED	The end-of-tape reflective spot was reached on input or output.
*BUFFER OVERFLOW	The tape record read is too long to be accommodated in the available buffer space.
*BOT ENCOUNTERED	The loadpoint reflective spot was unexpectedly reached during a backspace operation.
*PERMANENT READ ERROR ENCOUNTERED	After 64_{10} read attempts, the input record still has not been transferred correctly. The read/write head is positioned immediately before the record.

3.4.5 Example of Dump Operation

The following example shows the instructions required to dump the file directory of magnetic tape unit Ø in octal format (to allow the accessibility map to be examined) and then in trimmed ASCII format (to allow reading of the file name entries).

3.5 TRANSFER FUNCTION

The COPY command allows the user to perform record-for-record copying of tapes.

Usage:

COPY(C)␣u_1,u_2,t)

Examples:

```
REWIND 0
SPACE 0,1
MODE OCTAL
DUMP 0,1
     1  747377 000000 747750 777777 750000 000000 000000 000000 000000
    10  000000 000000 000000 000000 000000 000000 000000 000000 131571
    19  000000 233123 231320 021413 233123 111702 141300 233123 562331
    28  231404 233123 561411 022200 021116 561417 010400 021116 040424
    37  710000 021116 031001 111600 021116 302205 060000 021116 050105
    46  061114 021116 161716 061114 021116 252004 012405 233123 053005
    55  032524 233123 050411 240000 233123 201120 000000 233123 066400
    64  000000 233123 150103 221700 233123 066401 000000 233123 150103
    73  221701 233123 152423 070516 233123 031716 260000 233123 152402
    82  171724 232203 152404 251520 021116 000000 000000 000000 000000
    91  000000 000000 000000 000000 000000 000000 000000 000000 000000
   100  000000 000000 000000 000000 000000 000000 000000 000000 000000
   109  000000 000000 000000 000000 000000 000000 000000 000000 000000
   118  000000 000000 000000 000000 000000 000000 000000 000000 000000
   127  000000 000000 000000 000000 000000 000000 000000 000000 000000
   136  000000 000000 000000 000000 000000 000000 000000 000000 000000
   145  000000 000000 000000 000000 000000 000000 000000 000000 000000
   154  000000 000000 000000 000000 000000 000000 000000 000000 000000
   163  000000 000000 000000 000000 000000 000000 000000 000000 000000
   172  000000 000000 000000 000000 000000 000000 000000 000000 000000
   181  000000 000000 000000 000000 000000 000000 000000 000000 000000
   190  000000 000000 000000 000000 000000 000000 000000 000000 000000
   199  000000 000000 000000 000000 000000 000000 000000 000000 000000
   208  000000 000000 000000 000000 000000 000000 000000 000000 000000
   217  000000 000000 000000 000000 000000 000000 000000 000000 000000
   226  000000 000000 000000 000000 000000 000000 000000 000000 000000
   235  000000 000000 000000 000000 000000 000000 000000 000000 000000
   244  000000 000000 000000 000000 000000 000000 000000 000000 000000
   253  000000 000000 000000 000000 000000
```

```
BACKSPACE 0,1
MODE TRIMMED
DUMP 0,1
     1  <;? @@@ <?( ??? =@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
    17  @@@ KM9 @@@ SYS SKP BLK SYS IOB LK@ SYS .SY SLD SYS .LI BR@ BIN
    33  .LO AD@ BIN DDT 9@@ BIN CHA IN@ BIN XRE F@@ BIN EAE FIL BIN NON
    49  FIL BIN UPD ATE SYS EXE CUT SYS FDI T@@ SYS PIP @@@ SYS F4@ @@@
    65  SYS MAC RO@ SYS F4A @@@ SYS MAC ROA SYS MTS GEN SYS CON V@@ SYS
    81  MTB OOT SRC MTD UMP BIN @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
    97  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   113  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   129  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   145  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   161  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   177  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   193  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   209  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   225  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   241  @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@ @@@
   257  @@@
```

where:

"u_1" is the source drive

"u_2" is the destination drive

"t" may be an integer (number of records), "EOF", or "EOT"

Standard parity and density (odd parity, 8ØØ BPI) prevail, unless they have been changed by a FORMAT request.

To copy an entire tape from unit 1 to unit 2, for example:

```
REWIND␣1
REWIND␣2
COPY␣1,2,EOT
```

To replace the last data record on unit 2 with the first data record on unit 1:

```
REWIND␣1          /find first record on 1.
SPACE␣2,EOT       /find last record on 2.
BACKSPACE␣2,3     /backspace over two EOF's plus one data record.
COPY␣1,2,1        /copy 1 record from 1 to 2.
TAPEMARK␣2        /make a new EOT
TAPEMARK␣2        /   indicator on 2.
```

3.6 FILE MODIFICATION

The file modification feature of MTDUMP allows the user to access single records, modify or delete words in a record, delete entire records, or add new records to his file.

3.6.1 Read a Single Record

The next sequential physical record is read from tape unit "u" and is stored in core. Its length is saved in anticipation of a subsequent PUT request (see Paragraph 3.6.4).

Usage:

```
GET(G)␣u
```

At the completion of input, the following message is printed indicating the length, in words, of the record just read.

```
RECSIZE:nn
```

3.6.2 Examine and Modify Data Words

Designed for use in conjunction with the GET and PUT commands, the EXAMINE request allows the user to access and update individual data words in the program buffer. Any number of contiguous registers may be examined and modified with a single command.

Usage:

EXAMINE(E)␣n↵

where: "n" is the relative position in the buffer (record) of the first word to be displayed. If a "D" or "K" suffix (see section 3.2.4) is present, the argument is interpreted appropriately. If no suffix is present, "n" is interpreted according to the current global radix. The argument specifies the position of a word relative to word Ø in the buffer.

Example:

EXAMINE␣1↵

The above command accesses the first data word in the buffer. The program responds to the command by displaying on the teleprinter the contents of the register specified in the mode (octal, symbolic, trimmed, ASCII) currently in effect. No carriage return is executed, however, after the displayed data word typeout. The user has several options.

a. If a carriage-return is typed, the program responds by displaying the contents of the next higher register.

b. If an ALT MODE is typed, buffer examination is deemed complete and the program returns to read a new command.

c. A six-digit numeric string (octal notation) may be typed to replace the contents of the register being examined. The terminator of the line typed by the user may be either a carriage return or an ALT MODE. The terminator directs the program's activity after the desired modification has been performed. A carriage return opens the next sequential register; an ALT MODE returns control to the command processor.

3.6.3 Specify Output Record Length

The SIZE command specifies, in words, the length of the record to be written in response to a subsequent PUT request (see paragraph 3.6.4).

Usage:

SIZE␣n↵

where: the parameter "n" is the total words in the output record. If a suffix "D" or "K" (see section 3.2.4) is present, the argument is evaluated appropriately. If no suffix is present, the numeric string is interpreted in the current radix.

Output record size is implicitly set during "GET" processing. The SIZE facility offers a means of overriding the implicit setting.

3.6.4 Write Single Record

The PUT command writes data residing in the program's buffer as the next block on tape unit "u". The length of the block written is either the length of the block read in response to the latest GET request or the length specified in a SIZE request which occurred after the latest GET request.

Usage:

PUT(P)␣u↵

3.7 DIRECTORY LISTING

This group of commands is available for dealing with the Magnetic Tape File Directory. The contents of the Directory on unit "u" may be printed on the teleprinter or written into the Dump File; and the Directory may be cleared. None of these commands may be abbreviated.

3.7.1 Write File Directory in Dump Output File

The contents of the File Directory of the tape specified are written in the Dump File.

Usage:

DDUMP␣u↵

3.7.2 Print File Directory on Teleprinter

The contents of the File Directory of the tape specified are printed on the teleprinter.

Usage:

DLIST␣u↵

3.7.3 Clear Tape File Directory

Write a new (empty) File Directory on the tape specified.

Usage:

NEWDIR␣u↵

3.8 TAPE COMPARISON

The COMPARE command allows the user to perform a block-for-block comparison of all or any part of two tapes.

Usage:

COMPARE␣u_1,u_2,t↵

where:

"u_1" is the drive upon which the old master (O.M.) tape is mounted.
"u_2" is the drive upon which the new master (N.M.) tape is mounted.
"t" is the terminal condition (number of blocks, "EOF", or "EOT").

Standard parity and density (odd parity, 8ØØ BPI) prevail unless they have been changed by a FORMAT command.

To copy and compare a tape mounted on units 1 and 2, use the following example:

```
REWIND␣1↵
REWIND␣2↵
COPY␣1,2,EOT↵
REWIND␣1↵
REWIND␣2↵
COMPARE␣1,2,EOT↵
```

If the tapes compare, the message

TAPES ARE IDENTICAL

is displayed upon the teleprinter. See Appendix B for a complete description of the COMPARE command messages.

APPENDIX A
SUMMARY OF COMMANDS

COMMAND	MEANING	SECTION NO.
	SETUP COMMANDS	
EXIT↵	Return Control to Monitor	3.2.8
FORMAT(F)␣u,pdc↵	Set Non-Standard Tape	3.2.1
FORMAT(F)␣u,D↵	Set Standard Tape	3.2.2
LOG␣comments↵ comments.....↵ (ALT MODE)	Insert one or more lines of comments	3.2.7
MODE␣{OCTAL / SYMBOLIC / TRIMMED / ASCII}↵	Dump File Display	3.2.6
NUMBER␣{OCTAL / DECIMAL}↵	Specify Global Radix	3.2.3

NOTE

D (decimal) or K (octal) specifies Local Radix which overrides Global Radix during processing of a single command line.

VERIFY(V)␣{ON / OFF}↵	Bypass Command-Line	3.2.5
	MANIPULATIVE COMMANDS	
BACKSPACE(B)␣u,t↵	Backspace Tape	3.3.2
REWIND(R)␣u↵	Rewind Tape	3.3.1
SPACE(S)␣u,t↵	Space Tape	3.3.3
TAPEMARK(T)␣u↵	Write End-of-File Marker	3.3.4
	DUMP FILE COMMANDS	
CLOSE↵	Close Dump Output File	3.4.1
DUMP(D)␣u,t↵	Dump Records into Named File	3.4.2
LIST(L)␣u,t↵	Dump Records onto teleprinter	3.4.3
OPEN␣filename␣ext↵	Open Named File	3.4.1

Summary of Commands

COMMAND	MEANING	SECTION NO.
	TRANSFER COMMAND	
COPY(C)␣u_1,u_2,t)	Copy Tape Specified	3.5
	FILE MODIFICATION COMMANDS	
EXAMINE(E)␣n)	Examine and Modify Data Words	3.6.2
GET(G)␣u)	Read Single Record	3.6.1
PUT(P)␣u)	Write Single Record	3.6.4
SIZE␣n)	Specify Output Record Length	3.6.3
	DIRECTORY COMMANDS	
DDUMP␣u)	Write File Directory in Dump Output File	3.7.1
DLIST␣u)	Print File Directory on Teleprinter	3.7.2
NEWDIR␣u)	Clear Tape File Directory	3.7.3
	COMPARISON COMMANDS	
COMPARE␣u_1,u_2,t)	Compare tape on drive u_2 against tape on drive u_1	3.8

APPENDIX B

GENERAL ERROR MESSAGES

?
The command input to MTDUMP was not understood, reenter a correct MTDUMP command.

NO DUMP FILE OPEN
.DAT slot 3 is assigned to a device with a directory but no OPEN command has been issued.

*ILLEGAL TERMINATOR
The "t" condition specified in the command string is not recognized by the command.

LONG RECORD ENCOUNTERED, UNIT n
Insufficient memory was available to contain the record just read on unit n.

DUMP FILE MESSAGES

FILE FOUND ON DUMP DEVICE filename ext
DO YOU WISH TO DELETE IT?
The Dump File given in the OPEN command already exists. To delete it, enter "Y", "YES", or). To ignore the command, type anything else.

TRANSFER COMMAND

*PHYSICAL EOT ENCOUNTERED, UNIT n
The terminal condition given in the COPY command has not been met prior to the finding of the EOT.

DIRECTORY COMMAND

*DIRECTORY FORMAT ERROR
The block read in response to a directory command did not meet the specifications of a magtape directory.

COMPARISON COMMAND

The following messages appear on the teleprinter and in the Dump File.

TAPES ARE IDENTICAL
Comparison is over and the portions of the tapes compared are the same.

ERRORS DETECTED DURING COMPARISON
Comparison is over and the portions of the tapes compared are not the same.

General Error Messages

The following messages are placed in the Dump File.

NOT ENOUGH CORE FOR COMPARISON
: Both blocks from old and new masters could not fit in core. The comparison terminates and the old and new masters are left positioned after the records which would not fit in core.

UNEXPECTED END OF FILE ENCOUNTERED ON NEW MASTER
UNEXPECTED END OF TAPE ENCOUNTFRED ON NEW MASTER
: An EOF or physical EOT was detected on the new master with no corresponding EOF/EOT on the old master. The comparison terminates.

EXPECTED END OF FILE NOT ENCOUNTERED ON NEW MASTER
EXPECTED END OF TAPE NOT ENCOUNTERED ON NEW MASTER
: An EOF or physical EOT was encountered on the old master with no corresponding EOF/EOT on the new master. The comparison terminates.

BLOCK #n LENGTHS NOT EQUAL
: The block number n (n is controlled by the current radix and is the number of blocks to <u>skip</u> from the beginning of the COMPARE operation on the old and new master) did not have the same number of words. The shortest block length is used for the comparison and comparison proceeds.

BLOCK #n WORD #m O.M.WORD-xxxxxx N.M.WORD-yyyyyy
: The word m in the block n is not the same on the old and new master. The block and word numbers are displayed in the current radix (the word number, m, corresponds to the word number seen in DUMP output). The differing words are displayed in <u>octal</u> format, independent of the MODE switch. The comparison process continues.

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NOTE: This form is for document comments only. Problems with software should be reported on a Software Problem Report (SPR) form.

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