DTC
DATA TERMINALS AND COMMUNICATIONS

Micro-File

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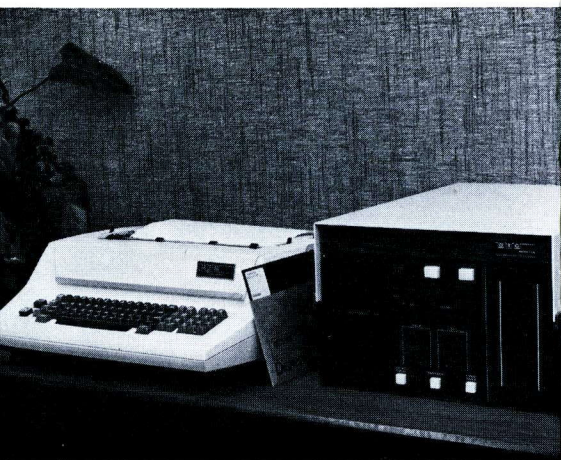## START UP PROCEDURE

1. Set up the MICRO FILE per unpacking instructions.
2. Connect the terminal to MICRO FILE's DTE plug.
3. Plug MICRO FILE and terminal into electrical outlets.
4. Check the MICRO FILE back panel to make sure:
   (a) The MODE switch is at ASYN.
   (b) The baud, parity, duplex and delay settings are consistent with the terminal being used.
5. Turn on the terminal and MICRO FILE.

   SYSTEM READY   appears on the front of the MICRO FILE.

   DTC MICRO FILE   prints on the terminal if terminal is on line. * is the prompt for a system command.
   *
6. The HOST button on MICRO FILE's front panel should be OFF (unlit).
7. Press MICRO FILE's RESET button. This again causes DTC MICRO FILE to print.
8. Insert the SYSTEMS DISK (D0) in the D0 (left) slot.
9. Insert a working storage disk (D1) containing user files in the D1 (right) slot.

When steps 8 and 9 have been completed READY appears in lights under DISK 0 and DISK 1 on the front panel. The MICRO FILE is now ready to execute System Commands.

TERMINAL INPUT EDITING CONVENTIONS

This type of editing takes place on all lines being input from the terminal. Default characters are shown. These are the ones used for the indicated functions unless other characters have been operator specified (see System Command CWL).

NOTATION
BS = backspace
CR = carriage return
LF = line feed
SUPERSCRIPT C means the control key is depressed while typing the character. Example X^C is read control X and means the control key is held down while typing X.

BS   — Deletes the preceding CHARACTER from the line.
DEL — Deletes preceding WORD from the line. A WORD is the string of characters following a space or a punctuation mark or nonalphanumeric character (e.g., $, #).
X^C — Deletes the whole LINE.
CRLF — TERMINATES a line. If the TRANSPARENT switch is OFF, only a CR is needed (LF is automatic).

SYSTEM COMMANDS

NOTATION
FNAME = File name of 1 to 5 characters given to file by user.
FT   = FileType. FT is one of four types, indicated by
        T (Text)   P (Program)
        B (BASIC)   R (Random access)
Dn   = Disk number. n is either 0 or 1 on the Mark II. On the Mark IV, 2 and 3 are also valid. When Dn is an optional entry, default is to D0.
( )   = Parentheses indicate an optional entry. Where Dn is optional, default is D0 unless otherwise noted.

Hexadecimal parameters may contain up to four characters (range of 0 0 0 0 to FFFF). Only the first two letters (underlined) of the command name need to be typed unless otherwise noted.

NAME	SYNTAX	FUNCTION
COPY COU	CO FNAME FT Dn FNAME2 (FT(Dn2))	Copies file FNAME FT on Dn to Dn2 and names it FNAME2. If Dn2 is not specified new file is created on same disk as old file. When U is third character, existing file FNAME2 FT Dn2 is ERASED and replaced by new file FNAME2.
CWL	CW CWL = $A^C B^C C^C$	Changes character, word and line . Delete characters to $A^C B^C C^C$ or your choice of non-printing characters. To change only one or two enter the default character for those not changed.
DDUMP	DD HEXFROM (HEXTO) (Dn)	Dumps disk sectors bounded by HEXFROM and HEXTO (hexadecimal representation) to the terminal.
EDIT	ED FNAME (Dn)	Calls the Micro File Text Editor.
ERASE	ER FNAME FT (Dn)	Erases file FNAME type FT.
EXEC EXP	EX FNAME (Dn(ARG1 ... ARG4))	Causes subsequent command statements to be retrieved from file FNAME T. If third character is a P, commands will be typed before execution.

NAME	SYNTAX	FUNCTION
FDUMP FDX	FD FNAME FT (Dn)	Dumps hex form of file FNAME FT. If FT is R, the third character X will dump sectors containing the index structure (if third character is other than X, will dump sectors containing records).
FILES	FI (Dn)	Lists files and file types on disk n.
FL	FL (Dn)	Lists files and file types across page (8 per line) on disk n.
FORMAT	F0 (Dn)	Writes to all sectors of disk. This process prompts operator for information or actions.
GO	GO	Program control transferred to just loaded program.
	GO HEXLOC	Transfers program control to location HEXLOC.
	GO PARM1 PARM2 . . .	Program executes and uses PARM1 PARM2 etc. as its parameters.
HLLOAD	HL (HEXBIAS)	Retrieves a program from a HOST system, loading it into RAM.
HTLOAD	HT (HEXBIAS)	Causes a hex paper tape to be read at terminal and loaded into RAM memory. Stores at its origin address + HEXBIAS.
LABEL	LA (Dn) LABEL = XXX . . . NEW LABEL =	Reads label of disk. If new label not required, type a CR following the = .
LOAD	LO FNAME (Dn(HEXBIAS))	FNAME loaded into RAM but not executed HEXBIAS parameter used as in HTLOAD.
MDUMP	MD HEXFROM (HEXTO)	Dumps memory starting at HEXFROM (16 bytes/line).
PATCH	PA HEXFROM HEXBYTE . . .	Patches data into RAM starting at HEXFROM.
PRINT PX	PR FNAME (Dn) PX FNAME Dn	File FNAME will be printed at terminal. Prints files with X-on, X-off control from the terminal or file data (X-off).
RAL	RAL RATE	Allows setting LINE baud rate by terminal command.
RAT	RAT RATE	Allows setting TERMINAL baud rate by terminal command.
RCEIVE RCP	RC FNAME FT (Dn) RCP	Retrieves a text file from a HOST system, storing it as a local file. P option prints as it receives.
RNAME	RN FNAME FT FNAME (FT2(Dn))	Renames FNAME to FNAME2.
RUN	RU FNAME (PARM1 PARM2 . . .)	FNAME loaded into RAM and executed against parameters PARM1 PARM2 etc.
RX RXP	RX FNAME Dn RXP	Receives files from the communications line with X-on, X-off control from the MICRO FILE. P option prints as it receives.
SAVE	SA FNAME HEXFROM HEXTO HEXLOAD (Dn)	Causes file FNAME to be created. (Used for file type P.)
SEND SEP	SE FNAME (Dn) SEP	Transmits the file FNAME (must be type T) to the HOST system. P option permits printing at terminal.
SIZE	SI FNAME FT (Dn)	Prints size of file in sectors and bytes if FT = P. In sectors and characters if FT = T.
SND SNP	SN FNAME (Dn) SNP	Same as SEND except X-on and X-off protocol is observed. P option prints at terminal.
SPACE	SP (Dn)	Shows amount of free space in sectors and percent.
SX SXP	SX FNAME (Dn) SXP	Sends files to communications line with X-on, X-off control from the remote equipment (computer). P option prints at terminal.

UTILITIES

Most utility functions are simply system commands: DDUMP, MDUMP, FDUMP, PATCH, COPY, and FORMAT.

There is just one utility program. It is called by the command

RUN FCOPY (U)

FCOPY copies all files on D0 onto D1. The update parameter (U) causes existing files on D1 to be replaced.

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FDUMP FDX	FD FNAME FT (Dn)	Dumps hex form of file FNAME FT. If FT is R, the third character X will dump sectors containing the index structure (if third character is other than X, will dump sectors containing records).
FILES	FI (Dn)	Lists files and file types on disk n.
FL	FL (Dn)	Lists files and file types across page (8 per line) on disk n.
FORMAT	F0 (Dn)	Writes to all sectors of disk. This process prompts operator for information or actions.
GO	GO	Program control transferred to just loaded program.
	GO HEXLOC	Transfers program control to location HEXLOC.
	GO PARM1 PARM2 . . .	Program executes and uses PARM1 PARM2 etc. as its parameters.
HLLOAD	HL (HEXBIAS)	Retrieves a program from a HOST system, loading it into RAM.
HTLOAD	HT (HEXBIAS)	Causes a hex paper tape to be read at terminal and loaded into RAM memory. Stores at its origin address + HEXBIAS.
LABEL	LA (Dn) LABEL = XXX . . . NEW LABEL =	Reads label of disk. If new label not required, type a CR following the = .
LOAD	LO FNAME (Dn(HEXBIAS))	FNAME loaded into RAM but not executed HEXBIAS parameter used as in HTLOAD.
MDUMP	MD HEXFROM (HEXTO)	Dumps memory starting at HEXFROM (16 bytes/line).
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PRINT	PR FNAME (Dn)	File FNAME will be printed at terminal.
PX	PX FNAME Dn	Prints files with X-on, X-off control from the terminal or file data (X-off).
RAL	RAL RATE	Allows setting LINE baud rate by terminal command.
RAT	RAT RATE	Allows setting TERMINAL baud rate by terminal command.
RCEIVE RCP	RC FNAME FT (Dn) RCP	Retrieves a text file from a HOST system, storing it as a local file. P option prints as it receives.
RNAME	RN FNAME FT FNAME (FT2(Dn))	Renames FNAME to FNAME2.
RUN	RU FNAME (PARM1 PARM2 . . .)	FNAME loaded into RAM and executed against parameters PARM1 PARM2 etc.
RX RXP	RX FNAME Dn RXP	Receives files from the communications line with X-on, X-off control from the MICRO FILE. P option prints as it receives.
SAVE	SA FNAME HEXFROM HEXTO HEXLOAD (Dn)	Causes file FNAME to be created. (Used for file type P).
SEND SEP	SE FNAME (Dn) SEP	Transmits the file FNAME (must be type T) to the HOST system. P option permits printing at terminal.
SIZE	SI FNAME FT (Dn)	Prints size of file in sectors and bytes if FT = P. In sectors and characters if FT = T.
SND SNP	SN FNAME (Dn) SNP	Same as SEND except X-on and X-off protocol is observed. P option prints at terminal.
SPACE	SP (Dn)	Shows amount of free space in sectors and percent.
SX SXP	SX FNAME (Dn) SXP	Sends files to communications line with X-on, X-off control from the remote equipment (computer). P option prints at terminal.

UTILITIES

Most utility functions are simply system commands: DDUMP, MDUMP, FDUMP, PATCH, COPY, and FORMAT.

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ERROR MESSAGES

MESSAGE	MEANING
?	Command statement is not a recognizable command.
CMDERR	An error in content of command statement.
DSKERR N AT XXXX	An unrecoverable error code N has been detected by the disk I/O driver at location XXXX (a hexadecimal address).
	N is one of the following codes:
	1 = No drive present
	2 = File inoperable
	3 = Busy
	4 = Not ready
	5 = Write-Protected
	6 = Sector error
	7 = CRC error
	8 = Positioning error
	9 = Disk I/O Command error
	: = Data error after write
SYSERR AT XXXX	A system error has been detected at program location XXXX. SHOULD NEVER OCCUR. Save all pertinent data and NOTIFY YOUR SUPERVISOR.

TEXT EDITOR COMMANDS

The text Editor is called by typing: EDIT FNAME (Dn).
When ready to accept commands, the editor responds with a prompt of − (a hyphen). Any valid editor command may be given at this time.

NAME	COMMAND	FUNCTION
Again	A	Repeats the last previous command or line of commands.
	Ann	Repeats the last command line nn times (or to end of file).
	A*	Repeats the last command line until end of file is reached. NOTE: A command will not be repeated if it contains an Again command.
Bottom	B	Positions to last line of file.
Delete	D	Deletes current line.
	Dnn	Deletes nn lines starting with current line.
	D*	Deletes all lines from current through end of file.
Exit	E	Exits editor and completes updating of file.
Get	G FNAME (Dn) (LFROM(n))	Gets lines from file FNAME and inserts into file being edited from line L continuing for n lines.
Insert	I CR	Enters text insertion mode following the current line. Exit insertion mode by pressing ATTN (break).
	I text	Inserts one line of text following the current line.
Line nn	nn	Positions to line nn of file.
Next	N	Positions to next line down in file.
	Nnn	Positions to nn lines down in file.
Print	P	Print current line.
	Pnn	Print nn lines starting with current line.
	P*	Print all lines from current line through end of file.
Print Numbered	PN	Prints current line with prefixed line number.
	PNnn	Prints nn lines starting with current line with prefixed line number.
	PN*	Prints all lines starting with current line to end of file with prefixed line number.
Print Controlled	PX	Prints current line under control of X-on and X-off characters.
	PXnn	Prints nn lines starting with current line under control of X-on and X-off characters.
	PX*	Prints all lines starting with current line under control of X-on and X-off characters.
	R	Deletes one line then enters block insertion mode. Inserted text replaces the deleted line. Exit by pressing BRK.
	Rnn	Deletes nn lines then enters block insertion mode. Inserted text replaces the deleted lines.
	R*	Deletes remainder of file then enters block insertion mode. Inserted text replaces the deleted text.

NAME	COMMAND	FUNCTION
Replace	R text	Deletes current line and inserts text in its place.
	Rnn text	Deletes nn lines and inserts text in their place.
	R* text	Deletes remainder of file and inserts text as the end.
String Search	"string" or 'string'	Searches downward in file for a matching string.
String Replace	"string1"="string2" or 'string1'='string2'	Replaces string 1 with string 2. The quotes are part of the command.
Top	T	Positions file to top.
Up	U	Positions upward in file one line.
	Unn	Positions upward in file nn lines.

Special commands for modification of lines are included in the Text Editor. This intraline editing mode is entered via the Modify command.

NAME	COMMAND	FUNCTION
Modify	M	Modify lines. For each line to be modified, the editor prints a special prompt character (= an equal sign) and then enters a special intraline editing mode with its own commands which follow.
	Mnn	

In the examples below, 'n' refers to an optional repeat count and 'c' refers to any character.

NAME	COMMAND	FUNCTION
again	A	Restarts line editing with fresh copy of the line.
back	n (character delete symbol)	Moves the pointer to left n characters.
change	nC	Changes next n characters in a line.
delete	nD	Deletes next n characters in a line.
end	E	Terminates modification of a line but does not print remainder of line.
extend	X	Prints remainder of line then enters Insert mode.
finish	(CR)	Terminates modification of a line and prints remainder of line.
half-extended	H	Deletes remainder of line, then enters Insert mode.
insert	I	Insert text until ATTN (break) or CR.
justify	J	Divides a line into two lines at the point inserted.
kill	Kc	Skips and deletes all characters until c is encountered (c is any character).
line	L	Prints remainder of line and goes back to beginning of line.
next	n(space)	Moves pointer to the right n spaces.
print	P	Prints remainder of line and repositions to current character for review of changes already made.
quit	Q	Terminates modification and exits to editor command level.
replace	nR text	Replaces next n characters with text.
skip	nSc	Skips to right until nth occurrence of the character, c.
word	n (word delete symbol)	Moves pointer left by n words.

LETTER-WRITER PROGRAM

OPERATING PROCEDURE

1. The program is activated with the command:

   RUN LET LNAME (Dn(C)(L))

   LNAME is the file name of the letter to be typed (this file is created with the EDIT command). The 'C' option causes letters to be typed continuously. The 'L' option causes letters to be typed on a terminal attached to the line side of the MICRO FILE. Otherwise, letters are typed at the console.

2. Letter-Writer prompts for the names-list file name:

   ENTER NAMES-LIST FILE NAME—

3. The operator responds by entering the file's name:

   FNAME (Dn)

4. Next the Letter-Writer prompts for search keys:

   ENTER SEARCH KEYS . . .

5. The operator responds with an appropriate combination of search keys described below. If letters are to go to the entire file, the response is simply a lone CR. When all search keys have been entered, the operator depresses CR twice.

6. The Letter-Writer scans the names-list file for a member satisfying the search key requirements. On finding one, it types the page insertion and positioning instructions and waits for a CR response.

7. Letters are typed one after the other as long as members of the names-list file satisfy search requirements.

8. The Letter-Writer may be interrupted by typing any character at the console. The Letter-Writer responds by again typing page insertion and positioning instructions. When typing is resumed, the letter being typed at interruption will be started from the beginning again.

SEARCH KEYS

SEARCH KEY	EXAMPLE	FUNCTION
CITY	Keokuk GA	Causes a letter to be typed for all members whose address is Keokuk in state GA.
CODE	101476	Letter typed for all members with code number 101476.
COMP	KKK	Letters typed for all members with this company listing.
FRST	Mr. John	Letters typed for all members with first name of John. Personal signature (Mr., etc.).
LAST	Jones	Letters typed for all members with last name of Jones.
PHON	408 555 1212	Letters typed for all members with phone number 408 555 1212.
TITL	President	Letters typed for all members with the title of President.
ZIPC	95066	Letters typed for all members with zip code 95066.

1. Note: A colon may be imbedded in the character string in examples above. For example:

   LAST J:L

   would type letters to all members whose last name began with J, K, or L.

2. Note: Search keys may be linked with operatives AND and OR such as:

LAST SMITH	This would create letters for all members with the last
AND ZIPC 94	name Smith and whose zip code began with 94 or 95.
OR ZIPC 95	Each linked SEARCH key is typed on a separate line. Lone CR ends list.

LETTER FORMAT CONTROL

The format of the letter is controlled primarily by directives imbedded in the text of the letter file. Directives may appear in upper or lower case.

NAME	FUNCTION
&ADDRESS	Substitutes the member's address into the text of letter being typed in place of directive.
&CITY	Substitutes the member's city and state into letter.
&COMPANY	Substitutes the Member's company name into letter.
&FRST	Substitutes the member's first name and Personal Signature (Mr., Ms., etc.) into letter.
&FL	(Fill) causes words to be borrowed from succeeding lines to fill the current line until the line capacity is achieved.
&HEADING	Types the letter heading.
&INXX	Indents from the left margin by XX character positions.
&JR	(Justified right) causes blanks to be inserted between words of line to align words on right hand margin.
&LAST	Substitutes the member's last name into letter.
&NAME	Substitutes the member's full name into letter.
&NF	(No fill) causes a delete of &FL effectiveness.
&NJ	(No justification) deletes &JR or &RR effectiveness.
&PAGE	Signals end of current page of letter (for multiple page letters).
&PS	Substitutes the member's personal title (Mr., Mrs., Dr., etc.) into the letter.
&RR	(Ragged right) causes blanks to be inserted between words of line.
&TITLE	Types professional title (eg., Director Engineering).
&TYPE	Indicates to Letter-Writer that text is to be introduced at the terminal by the operator at the current position in the letter.

NAMES FILE MAINTENANCE

This program is used to manipulate or create a file containing a list of names and addresses. The file thus created is used as one of the inputs to the Letter-Writer Program. The program is activated with the command:

   RUN NAMES NLIST (Dn)

The program will immediately type a single hyphen. This indicates it is ready to accept one of the following commands.

NAME	FUNCTION
BOT	Positions to the final last name in the file and types the entry contents.
DEL (n)	Deletes n entries from the file beginning at the current position. Default value for n is 1.
DOW (n)	Positions downward in the file by n entries and types the entry contents at that position. Default value for n is 1.
END	Restores control to the next outer program level, typically the monitor.
FIN JONES (, MR. JOHN J.)	Positions to the specified entry in the file and types the entry contents.
INS	Initiates an interactive sequence whereby an entry is added to the file immediately beyond the current position. The series of Prompts continues until the only response to LAST is a CR.

PROMPT	INFORMATION ENTERED BY OPERATOR
LAST	Individual's last name.
FRST	Individual's first name and middle initial preceded by the appropriate designator (Mr., Mrs., etc.). A designator must be entered.
TITL	Individual's professional job title.
COMP	Name of individual's company.
ADDR	Street address, etc. This prompt repeats until the only response is a CR.
CITY	City AND State.
ZIPC	Zip Code.
PHON	Phone number.
CODE	The individual's category code.

NOTE: To change any of the information entered for any prompt the prompts may be used as commands OUTSIDE the INS sequence. When positioned at the member to be changed, type the prompt followed by the new data, which replaces the data that was there.

PRI (n)	Types the entry contents of n entries beginning at current position. Default value of n is 1.
TOP	Positions to a "dummy" entry immediately proceding the first name entry in the file.
UP (n)	Positions upward in the file by n names and types the entry contents at that position. Default value for n is 1.

NOTES