

THE ELECTRIC PENCIL WORD PROCESSOR

Operator' s Manual

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INTRODUCTION

The Electric Pencil is a Character Oriented Word Processing System. This means that text is entered as a continuous string of characters and is manipulated as such. This allows the user enormous freedom and ease in the movement and handling of text. Since lines are not delineated, any number of characters, words, lines or paragraphs may be inserted or deleted anywhere in the text. The entirety of the text shifts and opens up or closes as needed in full view of the user. The typing of carriage returns as well as word hyphenation is not required since each line of text is formatted automatically. As text is typed in and the end of a screen line is reached, a partially completed word is shifted to the beginning of the following line. Whenever text is inserted or deleted, existing text is pushed down or pulled up in a wrap around fashion. Everything appears on the video display screen as it occurs thereby eliminating any guesswork. Text may be reviewed at will by variable speed scrolling both in the forward and reverse directions.

By using the search or the search and replace function, any string of characters may be located and/or replaced with any other string of characters as desired. Specific sets of characters within encoded strings may also be located and used in creating selective mailing lists.

When text is printed, The Electric Pencil automatically inserts carriage returns where they are needed. Numerous combinations of Line Length, Page Length, Character Spacing, Line Spacing and Page Spacing allow for any form to be handled. Right Justification gives right-hand margins that are even. Camera ready copy is produced when a printer such as the Diablo Hy-Type with variable horizontal spacing is used. Pages may be numbered as well as titled.

This manual was prepared using The Electric Pencil. Printing was done on a Diablo 1620 using a OCR-B printwheel and a carbon film ribbon. Line length was set to 75 characters across and page length was set to a maximum of 54 lines per page.

SYSTEM HARDWARE REQUIREMENTS

The following is a List of the minimum equipment that is required to operate The Electric Pencil Word Processing System

8080 or Z-80 Based Microcomputer
 8K of memory starting at Location 0000 (minimum)
 Printer (Diablo Hy-Type II, Selectric, TTY, etc.)
 Printer to Computer Interface
 Video Display Interface (VDM-1, SOL-20 or Polymorphic)
 Video Display Monitor
 Cassette Interface (Tarbell, SOL-20/SOLOS or CUTER)
 Cassette Recorder

The Electric Pencil Software is available in four versions. The version selected depends on the hardware that is to be used with it. The combinations are as follows:

<u>Version</u>	<u>Printer</u>	<u>Video/Cassette Interface</u>
SP	TTY, Selectric, etc.	Polymorphic/Tarbell
SS	TTY, Selectric, etc.	SOL-20 or VDM-1 /CUTS
SV	TTY, Selectric, etc.	VDM-1/Tarbell
DV	Diablo Hy-Type II	VDM-1/Tarbell

USING THIS MANUAL

Knowing full well that instruction manuals can be rather tedious, this one was assembled with ease of application as its main criteria. This text is not intended to be a course but rather a guide to the proper operation of The Electric Pencil Word Processing System. Within a few hours, anyone can certainly start using The Electric Pencil and in less than a few days can be expert at it. It is assumed that the reader is familiar with a standard electric typewriter keyboard.

THE BEST WAY TO LEARN TO OPERATE THIS SYSTEM IS TO USE IT !!!

Trying all the commands and experimenting with different combinations as well as discovering the most efficient ways to do things will really pay off. Speed will be directly proportional to previous typing ability.

=====
GLOSSARY
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Any words that may be new to the reader are included in this glossary. Commonly used words that may have a special meaning in the context of word processing are also included. Words that appear within definitions that are also defined in the glossary are capitalized. If any of the text seems vague while reading this manual, simply go back to the last point in the text that was fully understood, read forward to the word that was not fully understood, and look it up. Try it, it works!

BLOCK

Any amount of text as small as one CHARACTER or as large as an entire FILE. A BLOCK may be a WORD or a sentence or a paragraph or a group of paragraphs.

CHARACTER

Any letter, number, punctuation or symbol appearing on the VIDEO DISPLAY SCREEN or keyboard.

CLEAR

The action of erasing or wiping out or deleting text from the face of the VIDEO DISPLAY SCREEN or from the FILE AREA.

COMMAND

A CONTROL CHARACTER or normal letter CHARACTER that is used to tell The Electric Pencil what to do.

CONTROL

A keyboard key that is used together with any letter key to create a CONTROL CHARACTER.

CONTROL CHARACTER

A keyboard key used with the CONTROL key to tell The Electric Pencil what to do.

CURSOR

A solid white block which appears on the VIDEO DISPLAY SCREEN and is used to indicate the CHARACTER or space about to be typed, moved, inserted or deleted.

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GLOSSARY
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DEFAULT VALUE

A PRINT VALUE assumed by The Electric Pencil whenever no value is specified by the user.

DELETE

The process of removing a CHARACTER, a space, a line or a BLOCK of text from the VIDEO DISPLAY SCREEN.

FILE

The entirety of text that has been entered onto the VIDEO DISPLAY SCREEN and subsequently into the memory of The Electric Pencil. All the text resident within the system at any given time is called a FILE.

FILE AREA

The area in memory that has been reserved for the FILE. When The Electric Pencil is first turned on, this area is automatically determined by the system by examining all available contiguous (adjoining) memory and claiming it. Whenever the FILE AREA is full, the message "FILE AREA FULL" will appear on the screen.

JUSTIFICATION

The process of adjusting spaces within a line of text in order to create an even right-hand margin.

PAGE

Sixteen lines of text appearing on the VIDEO DISPLAY SCREEN. May be any number of lines of text when referring to a printed PAGE.

PAGENATION

The process of automatically numbering pages.

PRINTER

An electric typewriter that prints text from The Electric Pencil FILE AREA onto paper.

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GLOSSARY
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PRINT VALUE

A value assigned to a printing function by the user or by the system. This value will determine Line Length, PAGE Length, Line Spacing, etc.

READ

The action of moving a FILE from a cassette tape and inserting it into the FILE AREA. ("Playing" a tape into the computer)

RECORD

Any BLOCK of text that is terminated by a LINE FEED or a FORM FEED. A RECORD may be as short as one CHARACTER or as long as the entire FILE. A RECORD is most nearly like a paragraph.

SCROLL

The action of the text moving up or down the VIDEO DISPLAY SCREEN. More than 16 lines of text (one PAGE) must exist in the FILE for this action to occur.

STRING

Any consecutive grouping of Letters, spaces, numbers, punctuation or symbols. In this system, a STRING may be anywhere from 1 to 40 characters long.

VIDEO DISPLAY SCREEN

The electronic display unit of The Electric Pencil. Also called a CRT (Cathode Ray Tube) or monitor or simply screen. It may also be the face of a television set.

WORD

Any amount of characters with at least one space at either end. A WORD may be as short as one CHARACTER or as long as one line.

WRITE

The action of moving text from the FILE AREA and recording it onto cassette tape. ("Recording" a tape from the computer)

GETTING STARTED

Whenever The Electric Pencil is entered for the first time or the system is cleared, the video display screen will display:

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Depressing any key on the keyboard will clear the screen and the character that was typed will appear in the HOME or upper left-hand corner of the screen. A file may now be started by typing in whatever text is desired. Note that RETURN is not used at the end of a line and that any partially completed word that doesn't fit on the line will be brought down to the next line. Typing can proceed normally until the end of a paragraph is reached. At this point a LINE FEED should be typed to terminate the paragraph or record. Any additional LINE FEEDS will insert blank lines after the record. If this is to be the end of a page, a FORM FEED is typed. Before continuing with this manual, the user is advised to try this in order to get a "feel" of how text is entered into The Electric Pencil file area.

It is recommended that sentences begin at the extreme left margin since indentation can not be guaranteed unless a line is terminated by a LINE FEED. Whenever a specific number of spaces within a line are essential, the line must be terminated by a LINE FEED. This is because lines are not delineated and may be broken up at any point during printing. Exactly where a line will end is determined by the line length that is selected by the user just prior to printing. However, by assuming manual control of The Electric Pencil during printing, indentation is possible. Experimentation and imagination will bring about almost any desired results in the final printing of text.

COMMANDS AND FUNCTIONS

NOTE: Control Character Commands require that the CONTROL key and the specified alphabetic character key be depressed simultaneously. Control Character Commands (with the exception of LINE FEED and FORM FEED) will not appear on the video display screen. In this text, all references to Control Character Commands shall be designated by enclosing them in parenthesis, e.g. (A), (B). Standard keyboard characters when referenced shall be enclosed in brackets, e.g. [A], [B], [5], etc.

<u>COMMAND</u>	<u>FUNCTION</u>	<u>VERSION SS NOTES</u>
(A)	CURSOR LEFT	Left arrow may also be used
(S)	CURSOR RIGHT	Right arrow may also be used
(W)	CURSOR UP	Up arrow may also be used
(Z)	CURSOR DOWN	Down arrow may also be used
(N)	CURSOR HOME	Use (N) or HOME
(Q)	CURSOR to END of FILE	Use (Q)
(B)	CURSOR TO BEGINNING of FILE	
(E)	SCROLL UP (Forward)	
(X)	SCROLL DOWN (Backwards)	
(D)	DELETE CHARACTER	
(F)	INSERT CHARACTER	
(Y)	DELETE LINE	
(G)	INSERT LINE	
(T)	ERASE to END of LINE	
(U)	DELETE BLOCK	
(H)	INSERT BLOCK	
(J)	Same as LINE FEED	
(L)	Same as FORM FEED	
(I)	Same as TAB	
(M)	Same as RETURN	
(V)	STRING SEARCH	
(C)	CONTINUE SEARCH	
(R)	REPEAT FUNCTION	
(K)	SUB-SYSTEM COMMAND TABLE	
(P)	PRINT,	
(O)	EXIT SYSTEM	Jumps to SOLOS or CUTER
CONTROL	CREATE CONTROL CHARACTER	
DELETE	BACKSPACE and ERASE CHARACTER	
ESCAPE	RETURN to MAIN SYSTEM	
FORM FEED	TERMINATE a PAGE	
LINE FEED	TERMINATE a RECORD	
RETURN	CURSOR to BEGINNING of LINE	
TAB	CURSOR 8 SPACES to the RIGHT	

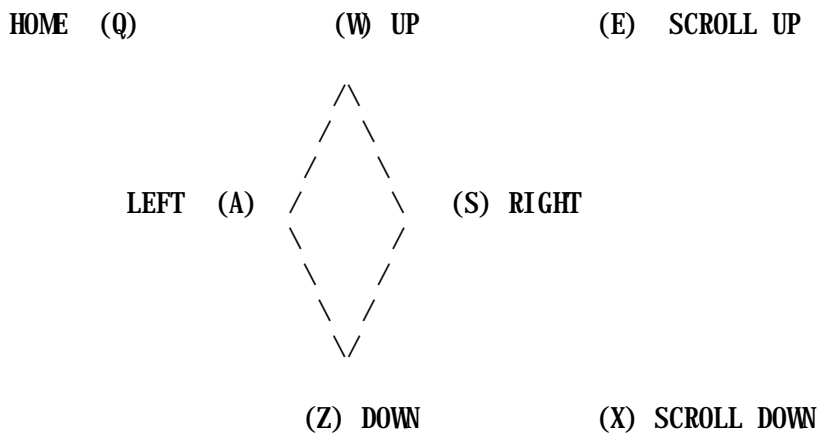
CONTROL CHARACTERS were selected for location and convenience rather than significance as shall be discussed.

CURSOR MOTION COMMANDS

Notice that the most often used Cursor Motion Command keys are clustered at the left of the keyboard. The keys that move the cursor UP and DOWN, and to the LEFT and RIGHT form a diamond that conveniently points in these directions. The (Q) in the upper left hand corner represents HOME, which is also the upper left corner of the video display screen.

MOVING THE CURSOR TO THE BEGINNING AND END OF FILE

The (B) and (N) are not as heavily used as the above cursor commands and therefore are not located in the same area. (B) returns the cursor to the beginning of the file and (N) moves the cursor to the end of the file.

SCROLLING AND DISPLAY CONTROL

SCROLLING is the action of the text moving up or down the video display screen. More than 16 lines of text (one page) must exist in the file for this action to occur. The (E) and (X) keys scroll the screen up and down respectively. The cursor will disappear from the screen during a scroll. Scrolling speed may be controlled by typing the numerals [1] through [5] while scrolling. [1] is the fastest speed, and [5] is the slowest. Further control is provided by the SPACE BAR, which temporarily halts the scroll. Continued depressions of the SPACE BAR will scroll one line at a time in the direction previously selected. The RETURN key will continue the scroll after it has been halted by the SPACE BAR. Whenever the end of the file is reached or when ESCAPE is used, the scroll will stop completely; the cursor will re-appear on the screen, and total system control will return to the user.

DELETE CHARACTER

(D) is used to delete a character that exists in a body of text. The cursor is simply placed over the character to be deleted, and (D) is typed. The entire text then moves towards the cursor one position. Multiple deletions are also possible from any location by deleting one character or space at a time.

INSERT CHARACTER

The Electric Pencil is normally in an over-write mode. This means that any character typed will appear wherever the cursor is located. If there is already a character at the current cursor position, the new character typed will replace the existing one. By typing (F), the Insert Mode is entered. The cursor itself will change in its appearance to warn the user that the system is now in Insert Mode. The manner of change will depend upon the equipment that is used with The Electric Pencil. While in the Insert Mode any character typed will automatically shift the entire text to the right and insert the new character into the cursor position. Typing (F) or leaving the current line will exit the Insert Mode and the cursor will assume its normal form. When the end of a line is reached, while in the Insert Mode (or even while in the normal over-write mode), an entire line will be opened up to allow for additional character insertion. If a line is only partially filled, (D) will pull up the rest of the text to the cursor. Doing the above actions will demonstrate more clearly what actually happens far better than this manual can.

DELETE LINE

(Y) will delete whatever line the cursor is currently on.

INSERT LINE

(G) will move the line that the cursor is currently on down one and the cursor will assume a position at the beginning of that line. Text may now be typed in as needed and when the end of the line is reached, another (G) will automatically be entered by the system allowing the user to continue entering text without interruption.

ERASE TO END OF LINE

(T) erases all text from the current cursor position to the end of the current line.

BLOCK MOVEMENT

A block is defined as any amount of text as small as one character or as large as an entire file. It may be a word or a sentence or a paragraph or a group of paragraphs. In order to move a block of text to another part of the file or to delete a block of text, it must first be marked. The character used to mark the boundaries of a block is [\]. This character is also called a "marker". To mark the boundaries of a block, the cursor is placed over the first character of the text desired and then the [\] key is depressed. The action will be the same as if the Insert Mode was entered. The text will shift right and the "marker" will be placed. The cursor should now be moved to one character beyond the end of the block of text desired and similarly marked. Exactly two markers must be used; otherwise, a MARKER ERROR message will appear on the video display screen when a move is attempted. ESCAPE is used when this occurs to return to the system so that the user can place the markers correctly. Markers may be deleted using the search function. Markers are automatically deleted during a block delete. Markers should not be placed after a LF character on the screen. Instead, place the marker at the beginning of the following line. This will prevent the appearance of two markers on the screen.

DELETE BLOCK

(U) will delete a block that has been correctly marked as stated above. The block markers are also deleted during this action. If a block is incorrectly marked or not marked at all, "MARKER ERROR" will appear on the video display screen.

INSERT BLOCK

(H) is used to insert a correctly marked block at any selected cursor position and may be repeated as often as desired. "MARKER ERROR" will appear on the video display screen if an attempt is made to move a block into itself or if more or less than two markers exist in the file.

LF, FF, TAB and RETURN

LF [LINE FEED] is used to terminate a record or to place an empty line between records. FF [FORM FEED] is also used to terminate a record, but when it is encountered during printing, the printer will advance the paper to the top of the next page. TAB may be used as an "express" key to quickly move across the screen as well as its normal function of tabbing 8 spaces to the right. RETURN moves the cursor to the beginning of the current line and also terminates commands in the sub-system command table.

STRING SEARCH

The search function is used to locate any string of characters that may exist in the file from the current cursor position to the end of the file. (V) clears the video display screen and then displays:

SEARCH STRING?

The character string desired followed by a RETURN is then typed in by the user. The maximum string length is 40 characters. The first occurrence of the string from the cursor position forward will appear as the top line on the video display screen. The search may be continued by typing control character (C). Each subsequent "find" will also appear as the top line on the screen. When the end of the file is reached or the string no longer exists in the file,

CAN NOT LOCATE "String"

will appear on the video display screen. This function is used to quickly locate selected areas within a file.

SEARCH and REPLACE

This function is used to locate a string and replace it with another string. The old and new strings may be of different lengths. The way this is handled is as follows:

SEARCH STRING? Old string/New string/12

followed by a RETURN. 12 represents the number of times that the replacement is to occur and may be any decimal number. In the event that "Old string" only appears 8 times in the text (from the current cursor position), the screen will clear and display:

LOCATED "Old string" 8 TIMES

The actual replacement will have been made 8 times. If "Old string" occurs 12 or more times in the text, 12 replacements will be made and the cursor will return to the file. All occurrences of "Old string" can be replaced by typing a number greater than the possible occurrences of "Old string" at the end of the reply to the SEARCH STRING? question. For example:

SEARCH STRING? Mr. Jones/Mr. Smith/9999

The system will respond with:

LOCATED "Mr. Jones" 14 TIMES

Assuming "Mr. Jones" appears only 14 times in the text.

CODED STRING SEARCHES

Strings may be also located where only a certain pattern is required. Assuming a file consists of names and addresses of clients with a code prefix as follows:

WS1234HP

Tom Jones

15 E. 94th St.

New York, N.Y. 10028

WP1235LP

Bill Smith

3800 Wilshire Blvd.

Los Angeles, CA. 90016

WS6784HL

Elmer Brown

300 N. Vermont

Los Angeles, CA. 90028

SEARCH STRING? WS###4H

will locate Tom Jones. Typing a control character (C) will then locate Elmer Brown. Note that [#] is a "don't care" character. Using this function, a selected mailing list can be produced. Other uses might include lists of sales prospects with action dates to represent appointments, expirations, service dates, etc. Data can be selectively extracted from a file automatically using the coded string search function.

REPEAT FUNCTION

Most functions may be repeated any number of times as per the following examples:

(R)[5](D) will delete 5 characters.

(R)[22][.] will type 22 periods.

(R)[3](P) will print 3 times.

The cursor will disappear whenever (R) is typed and will return after the number of repeats are performed. In the event of a typing error, the cursor will return and nothing else will happen. This three part command is not visible on the screen.

SUB-SYSTEM COMMAND TABLE

Within The Electric Pencil is a Sub-System Command Table that permits implementation of additional commands as well as the setting up of Print Values. (K) clears the video display screen and displays the Sub-System Command Table as follows:

	TAPE READER	R
	TAPE WRITER	W
(Not in Version SS)	TAPE VERIFY	V
	WORD NUMBER	X
	RCRD NUMBER	Y
	CLER AA CUR	CAA
	CLER AB CUR	CAB
	CLER SYSTEM	CLR
	RGHT JUSTFY	J0-1
	LINE SPACNG	S1-5
(DV Version only)	CHAR SPACNG	H8-50
(SV and SP Versions only)	PAGE SPACNG	A2-20
	PAGE LENGTH	G1-72
(SS Version only)	LEFT MARGIN	M0-100
	PAGE NUMBER	N1-255
	PRNT LENGTH	P0-255
	LINE LENGTH	L25-125

While in this mode, the standard keyboard keys are used alone without the CONTROL key. The above commands are NOT Control Character Commands.

When these commands are referenced in this text, they shall be enclosed in brackets, e.g. [A], [B], [5]. All commands must be terminated with RETURN. The DELETE key is used to backspace, and the ESCAPE key is used to leave the sub-system. Command entry errors are indicated with a question mark "?" on the video display screen. Note that some of the functions are abbreviated on the screen.

[R] TAPE READER

To enter a file that is on cassette tape into the file area of The Electric Pencil, first depress the Tape Reader command [R], then run the cassette recorder to a little before the file starts on the tape, press the cassette recorder play button, and then hit RETURN. The cursor will disappear from the screen and reading will begin. When the file has been correctly read into memory, "READY" will appear on the screen. If there is an error in the tape, "TAPE ERROR" will appear. When a file is read into The Electric Pencil, it is normally placed at the end of any material that may already exist in the file area. If this is to be a new file, the file area should be cleared. See [CLR], [CAA] and [CAB]. If the incoming file is too long for the existing memory, "FILE AREA FULL" will appear on the screen. The partially loaded file will then be removed from the file area with no

damage to the current file, if any. Version SS only: Files may be also called by name per the SOLOS/CUTER format. Typing R SAMPL/2 will start cassette unit 2, search for the file "SAMPL" and place the file into the file area when it is found. A file name may be up to 5 characters long and the default value of the tape unit is 1. Addresses are not used.

[W] TAPE WRITER

To write a file onto cassette tape, first place the cursor to the position in the file from which you wish to write. If the entire file is needed, then (B) should be used to place the cursor at the beginning of file. (K) will then bring up the Sub-System Command Table. Depress [W], start the cassette recorder in Record mode at a convenient location on the tape, let the tape run for 3-5 seconds and hit RETURN. The cursor will disappear and writing will begin. When the file has been recorded onto tape, "WRITTEN" will appear on the screen. Stop the recorder, rewind to a little before the location where the writing started and VERIFY. When working with lengthy text, it is advisable to periodically write the file onto tape as a precaution against power failures which can destroy all material in the file area as well as The Electric Pencil itself. Version SS only: Files may be named per the SOLOS/CUTER format. Typing W PENCIL/1 will start cassette unit 1 and the system will then proceed to write a standard file header followed by the file itself. The file will be a type D for Data file and not executable. File tapes may be scanned for content using the CA command in SOLOS.

[V] TAPE VERIFY

NOT AVAILABLE IN VERSION SS

[V] is basically the same as [R] except the file is not placed into the file area. It is, however, checked for correctness, and returns with "VERIFIED" if the tape is correct or with "TAPE ERROR" if it is not. A tape just written showing "TA ERROR" should be re-written with [W]. Continual tape errors indicate faulty tape or a faulty cassette recorder.

[X] WORD NUMBER

[X] will return the number of words that are in the file from the current cursor position. A word is defined as any amount of characters with at least one space at either end. A word may be as short as one character or as long as one line.

[Y] RECORD NUMBER

[Y] will return the number of records that are in the file from the current cursor position. A record is defined as any block of text that is terminated by a LINE FEED or a FORM FEED (L). A record may be as short as one character or as long as the entire file. A record is most nearly like a paragraph.

CLEARING COMMANDS

The following clearing commands require three characters to be entered by the user as a precaution against accidental destruction of the file area. These commands should be used with caution since any material in the file area cannot be retrieved once it has been erased. Back-up copies of text should always be made of files before text is cleared.

[CAA] CLEAR ALL AFTER CURSOR

[CAA] will clear all text in the file from the cursor position just prior to entering the Sub-System to the end of the file. Upon completion, the Sub-System is aborted and normal operation is resumed.

[CAB] CLEAR ALL BEFORE CURSOR

[CAB] will clear all text in the file from the cursor position just prior to entering the Sub-System to the beginning of the file. The character under the cursor will not be cleared. Upon completion, the Sub-System is aborted and normal operation is resumed.

[CLR] CLEAR SYSTEM

[CLR] will clear the entire file area as well as reset all PRINT VALUES to their DEFAULT VALUES. The video display screen will clear and display:

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[CLR] as well as [CAA] and [CAB] should be used with care.

SETTING UP PRINT VALUES

The following PRINT VALUES are automatically set to DEFAULT VALUES when The Electric Pencil is first entered or when [CLR] is used. Whenever a command is entered without a value and is followed by a RETURN, the system assumes the DEFAULT VALUE for that command.

[J] RIGHT JUSTIFYDEFAULT VALUE=0

[J0] (zero) sets the system to print as many characters on a line as will fit without justifying the right-hand margin of the text. [J1] tells the system to calculate the number of characters in a line and expand the text so that the right-hand margin is justified (even). The Selectric versions do this by inserting additional blank spaces between words, while the Diablo version actually spreads out the spaces between characters. Hyphenation is normally not required using [J1].

[S] LINE SPACING DEFAULT VALUE=1

[S1] through [S5] sets the amount of blank lines between text lines that will appear in printing (single spacing, double spacing, etc.).

[H] CHARACTER SPACING DEFAULT VALUE=10

Version DV only: [H8] through [H50] sets the amount of space between characters during printing. The values of [H] are what is called HMI (Horizontal Motion Index) in a Diablo Product Description Manual.

[A] PAGE SPACING DEFAULT VALUE=12

Version SV and SP only: [A2] through [A20] is the amount of spaces (empty lines) between pages during printing. This function is handled mechanically on the Diablo versions.

[G] PAGE LENGTH DEFAULT VALUE=54

[G1] through [G72] sets the amount of lines of text that will appear on a page during printing. An empty line also counts as a line of text.

[M] LEFT MARGIN DEFAULT VALUE=0 VER. SS ONLY

[M0] through [M100] sets the position of the left margin. This value added to LINE LENGTH must not exceed the carriage width of the printer.

[N] PAGE NUMBER DEFAULT VALUE=1

[N1] through [N255] sets the first page number to be used during printing. This assumes that pagination has been set up. The highest page number available is 255 and then the system resets to 0, 1, 2, etc.

[P] PRINT LENGTH DEFAULT VALUE=0

[P0] enables printing of all the text from the cursor position to the end of the file. [P1] through [P255] sets the number of records that will be printed from the cursor position onward.

[L] LINE LENGTHDEFAULT VALUE=62

[L25] through [L125] sets the number of characters per line of text that will be printed. Using justification, the number of actual characters per line will vary but the over-all character width of the line will be the value selected. At the DEFAULT VALUE, the line length will be the same as that which appears on the video display screen, and if justification is not selected, the text will be printed exactly as it appears on the screen.

PRINTING

(P) commands The Electric Pencil to start printing text from the current cursor position forward. The amount of text that will be printed is governed by the setting of Print Length [P] in the sub-system. The format that the printed page will assume is determined by the Print Values set up by the user prior to printing. Printing may be repeated in order to obtain multiple copies of text by using the Repeat Command (R). The print head of the printer will print forwards and backwards in the Diablo version while the Selectric versions will print forward only. Version SS only: The Electric Pencil uses the I/O ports selected by SOLOS/CUTER for its keyboard and printer. Output pseudo port 0 is ALWAYS the video display screen and if selected as the output device, PRINTING WILL NOT OCCUR!! Use SE 0=1, 2 or 3 to select the printer. I/O should be set just prior to entering The Electric Pencil.

PRINTING with a DIABLO

The Form length switch on the Diablo Hy-Type II should be set to the desired form size. The paper is then manually advanced to the top of form and the SET TOF switch then depressed. Additional information on how this is accomplished will be found in the Diablo Manual. The cursor is then placed over the first character of text text desired, and (P) is typed. Printing will begin. Printing may be controlled by using the SPACEBAR, RETURN and ESCAPE as in scrolling.

PRINTING with a SELECTRIC, TTY, ETC.

Page Spacing [A] in the sub-system will determine the number of lines between pages. The paper is manually advanced to the top of form desired. This position will be where printing will actually start on the paper. The cursor is then placed over the first character of text desired, and (P) is typed. Printing will begin. Printing may be controlled by using the SPACE BAR, RETURN and ESCAPE as in scrolling.

TITLING PAGES and PAGE NUMBERING

Pages may have title headings as in this manual by entering the following information at the beginning of the file onto the video display screen:

\$This is a Sample Title Heading [LF]

Note that in the above example a dollar sign [\$] MUST precede the title and a LINE FEED MUST be typed after the title text. In order for the title to appear in printing as a title, printing MUST start with the cursor directly over the dollar sign [\$]. Otherwise, the title will be printed as regular text. If the title length is greater than the Line Length [L] minus 10 selected in the sub-system, the title text will appear on the printed page as regular text. Whenever a title heading is used, pages will be automatically numbered at the extreme top right of each page as they appear in this manual. If only page numbering is desired without a page title, only the dollar sign [\$] immediately followed by a LINE FEED is used. Printing must also begin directly over the [\$]. In the course of printing, title headings may be changed by placing additional title headings (using the above form) into the text. The Electric Pencil will recognize these ONLY if they appear directly after a FORM FEED (L). The new title heading will then appear on all subsequent pages till the end of printing, unless still another title is inserted after a FORM FEED. Page numbering will remain sequential throughout. The starting page number will always be 1 unless set otherwise in the sub-system.

UNDERLINING

Words or phrases may be underlined ONLY in lines shorter than 62 characters and terminated by a LINE FEED. Underlining is not permissible within justified text. Text is underlined by entering the following onto the video display screen:

THIS IS A TEST [LF]
_____ [LF]

will print: THIS IS A TEST

This is a NEW test [LF]
___ [LF]

will print: This is a NEW test

The above examples apply to the Diablo versions ONLY. On a Selectric, TTY, etc., the above form is reversed. The underline goes on the top and the text goes directly below it.

EXIT SYSTEM

(0) is used to exit The Electric Pencil and go to a different location within the computer. This location is presently set at 0E000H, but may be patched to any location desired. See the patch locations section of this manual. If there isn't anything located at 0E000H, DO NOT use this command. It will destroy The Electric Pencil and its file area. Should this occur, re-loading the system will be required. Version SS only: (0) exits The Electric Pencil and returns system control to SOLOS/CUTER.

LOADING THE ELECTRIC PENCIL (VERSION SS)

Use the SOLOS/CUTER commands XE PENCL or GE PENCL to load The Electric Pencil. If GE PENCL is used, then EX 0 will start the program XE PENCL will automatically load and start the program. The screen will clear and The Electric Pencil will sign on. A good idea is to select the print device just prior to entering The Electric Pencil. The only patch locations that may be needed are 0B40H which is the number of printer nulls required (currently set to 0), and 0B3EH which is the null character (currently set to 0).

LOADING THE ELECTRIC PENCIL (TARBELL CASSETTE)

The cassette interface input routine supplied with the Tarbell Cassette Interface must be used. The starting address is 0000H and the block length is 1000H. A proper load is indicated by a 'G' appearing on the terminal. The computer is then reset, and The Electric Pencil will sign on. If this doesn't occur, some patches may be required to allow The Electric Pencil to operate with your system. Information as to specifically what patches to make for your system may be obtained from the source where you purchased your tape. The following pages contain the patch locations that may be required.

REGISTRATION

Please fill out the registration form that appears on the last page of this manual so that your name will be placed on a mailing list to receive information of any up-dates as well as improvements to The Electric Pencil. Happy Word Processing !!!

ADDR	B1	B2	B3	B4	B5	EROR	LINE	PATCH	LOCATIONS	VER.	DV	PAGE	20	
0000							0001 ;							
0000							0002 ;	THE	ELECTRIC	PENCIL	WORD	PROCESSOR		
0000							0003 ;		WITH					
0000							0004 ;	DIABLO	PRINT	PACKAGE				
0000							0005 ;							
0000							0006 ;	VER.	DV	REV	0	VDM-1	MAY	1977
0000							0007 ;	COPYRIGHT	(C)	1977	MICHAEL	SHRAYER		
0000							0008 ;	ALL	RIGHTS	RESERVED				
0000							0009 ;							
0000	00	00					0032	DW	0		RESERVED	FOR	USER	
0002	00	00					0033	DW	0		INITIALIZATION	OF		
0004	00	00					0034	DW	0		I/O	BOARD	SUCH	AS
0006	00	00					0035	DW	0		IMSAI	SIO-2,	ETC.	
0008	00	00					0036	DW	0					
000A	00	00					0037	DW	0					
0019							0046 ;							
0019	C8						0047	DB	CTRL		VDM	CONTROL	PORT	
0082							0098 ;							
0082	7F						0099	DB	RUB		DELETE	CHARACTER		
011D							0167 ;							
011D	00	E0					0168	DW	MONI		SYSTEM	MONITOR		
07C6							1055 ;							
07C6	7F						1056	DB	RUB		DELETE	CHARACTER		
0922							1241 ;							
0922	1B						1242	DB	ESC		ESCAPE	CHARACTER		
0927							1247 ;							
0927							1248 ;	KEYBOARD	INPUT	ROUTINE				
0927							1249 ;							
0927	DB	00					1250	STATS	IN	STAT	GET	KEYBOARD	STATUS	
0929	E6	01					1251	ANI	DAV		MASK	STATUS	BIT	
092B	C2	27	09				1252	JNZ	STATS		MAY	NEED	JZ	HERE
092E	C9						1253	RET						
0932	DB	01					1257	INP8	IN	DATA	GET	KEYBOARD	DATA	
0934	E6	7F					1258	ANI	127		STRIP	PARITY	BIT	
0936	C9						1259	RET						
095E							1282 ;							
095E							1283 ;	PRINTER	OUTPUT	ROUTINE				
095E							1284 ;							
095E	F5						1285	OUT8	PUSH	PSW				
0960	DB	00					1286	IN	STAT		GET	PRINTER	STATUS	
0962	E6	80					1287	ANI	TBE		MASK	STATUS	BIT	
0964	C2	60	09				1288	JNZ	OUT8+1		MAY	NEED	JZ	HERE
0967	F1						1289	POP	PSW					
0968	D3	01					1290	OUT	DATA		OUTPUT	TO	PRINTER	
096A	C9						1291	RET						
0A2C							1394 ;							
0A2C	1B						1395	DB	ESC		ESCAPE	CHARACTER		
OCAA	1B						1704	DB	ESC		ESCAPE	CHARACTER		
0CB9	1B						1715	DB	ESC		ESCAPE	CHARACTER		
0E7C							1817 ;							
0E7C	00	CC					1818	BASE	DW	0CC00H	VDM	MEMORY	ADDRESS	

ADDR	B1	B2	B3	B4	B5	EROR	LINE	PATCH	LOCATIONS	VER.SV	PAGE	21		
0000							0001 ;							
0000							0002 ;	THE	ELECTRIC	PENCIL	WORD	PROCESSOR		
0000							0003 ;			WITH				
0000							0004 ;			STANDARD	PRINT	PACKAGE		
0000							0005 ;							
0000							0006 ;	VER.	SV	REV	0	VDM-1	MAY	1977
0000							0007 ;	COPYRIGHT	(C)	1977	MICHAEL	SHRAYER		
0000							0008 ;			ALL	RIGHTS	RESERVED		
0000							0009 ;							
0000	00	00					0032	DW	0		RESERVED	FOR	USER	
0002	00	00					0033	DW	0		INITIALIZATION	OF		
0004	00	00					0034	DW	0		I/O	BOARD	SUCH	AS
0006	00	00					0035	DW	0		IMSAI	SIO-2,	ETC.	
0008	00	00					0036	DW	0					
000A	00	00					0037	DW	0					
0019							0046 ;							
0019	C8						0047	DB	CTRL		VDM	CONTROL	PORT	
0082							0098 ;							
0082	7F						0099	DB	RUB		DELETE	CHARACTER		
011D							0167 ;							
011D	00	E0					0168	DW	MONI		SYSTEM	MONITOR		
07C1							1054 ;							
07C1	7F						1055	DB	RUB		DELETE	CHARACTER		
091D							1240 ;							
091D	1B						1241	DB	ESC		ESCAPE	CHARACTER		
0922							1246 ;							
0922							1247 ;			KEYBOARD	INPUT	ROUTINE		
0922							1248 ;							
0922	DB	00					1249	STATS	IN	STAT	GET	KEYBOARD	STATUS	
0924	E6	01					1250	ANI	DAV		MASK	STATUS	BIT	
0926	C2	22	09				1251	JNZ	STATS		MAY	NEED	JZ	HERE
0929	C9						1252	RET						
092D	DB	01					1256	INP8	IN	DATA	GET	KEYBOARD	DATA	
092E	E6	7F					1257	ANI	127		STRIP	PARITY	BIT	
0931	C9						1258	RET						
0932							1259 ;							
0932							1260 ;			PRINTER	OUTPUT	ROLE		
0932							1261 ;							
0932	F5						1262	OUT8	PUSH	PSW				
0933	DB	00					1263	IN	STAT		GET	PRINTER	STATUS	
0935	E6	80					1264	ANI	TBE		MASK	STATUS	BIT	
0937	C2	33	09				1265	JNZ	OUT8+1		MAY	NEED	JZ	HERE
093A	F1						1266	POP	PSW					
093B	D3	01					1267	OUT	DATA		OUTPUT	70	PRINTER	
093D	C9						1268	RET						
09FF							1371 ;							
09FF	1B						1372	DB	ESC		ESCAPE	CHARACTER		
0B3B	00						1529	DB	0		NULL	CHARACTER		
0B3D	00						1533	DB	0		NUMBER	OF	NULLS	
0DEC	00	CC					1756	BASE	DW	0CC00H	VDM	MEMORY	ADDRESS	