

THE ELECTRIC PENCIL II
WORD PROCESSOR

OPERATOR'S MANUAL

Copyright (C) 1977, 1978 Michael Shroyer.
All Rights Reserved. The contents of this
publication may not be reproduced in any
form or by any means in whole or in part
without the prior written consent of the
copyright owner.

MICHAEL SHROYER SOFTWARE
3901 Los Feliz Boulevard
Los Angeles, CA 90027

213-665-7756

TABLE OF CONTENTS

Background	1
Introduction	2
System Hardware Requirements	3
Using This Manual	3
Glossary	4
Getting Started	8
Commands and Functions	9
Cursor Motion Commands	10
Scrolling and Display Control	11
Delete and Insert	12
Block Movement	13
LF, FF, TAB and RETURN	13
String Search	14
Search and Replace	14
Coded String Searches	15
Repeat Function	15
Disk Sub-System Command Table	16
Word Number, Record Number	16
Disk Directory	17
Save Disk File	18
Kill Disk File	18
Load Disk File	19
Important Note !!	19
Tape Reader	20
Tape Writer	20
Tape Verify	21
Clearing Commands	21
Print Sub-System Command Table	22
Dynamic Print Formatting	23
Text Commenting	23
Print Value Definitions	24
Centering, Underlining and Boldface	26
Multicolumn Printing	27
Titling Pages and Page Numbering	27
Printing with a Diablo	28
Printing with a TTY, Selectric, etc	28
Exit System	28
Loading The Electric Pencil	28
Registration	29

BACKGROUND

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.

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 1610/1620 HyTerm 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.

INTRODUCTION

The Electric Pencil II is the second generation of The Electric Pencil. Its many new features include a disk storage interface that is now CP/M compatible and can support up to four floppy disk drives. File management as well as text storage and retrieval is again extremely simple. Multispeed scrolling controls also permit page-at-a-time bidirectional scrolling. Dynamic printer formatting allows the text to change its own appearance on a page during printing. Print values are free form and may be entered in chains.

There are now two subsystem command tables. One controls disk and cassette text transfers and the other handles manual print formatting as well as print counting. Both tables display the current word and record count whenever they are entered. The number of copies left to be printed as well as all the current print values appear as a video scoreboard during printing. Printing may be halted at the end of a page to allow for paper or envelope change. There are full margin controls as well as line and character indentation. Text may also be commented, centered and underlined. The Diablo versions can print in **boldface** and also do negative line feeds which allows multicolumn printing in one pass.

The printing capabilities of the Diablo 1610/1620 are used to full advantage by the Diablo versions of The Electric Pencil II.

SYSTEM HARDWARE REQUIREMENTS

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

8080 or Z-80 Based Microcomputer.
 16K of memory starting at location 0000 (minimum).
 Digital Research CP/M, Imesai DOS-A, Cromemco C-DOS or similar software.
 Disk Drive(s) and Disk to Computer Interface.
 Printer (Diablo HyTerm 1610/20, Selectric, TTY, etc.).
 Printer to Computer Interface.
 Video Display Interface addressed at 0CC00H such as VDM-1, VTI, or SOL-20.
 Video Display Monitor.
 (Optional) Cassette Recorder and....
 Cassette Interface (Tarbell, SOL-20/SOLOS/CUTER).

The Electric Pencil II Software is available in many 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-II	TTY, Selectric, etc.	VTI/Tarbell
SV-II	TTY, Selectric, etc.	VDM-1/Tarbell
SS-II	TTY, Selectric, etc.	SOL-20 or VDM-1/CUTS
DP-II	Diablo HyTerm 1610/20	VTI/Tarbell
DV-II	Diablo Hyterm 1610/20	VDM-1/Tarbell
DS-II	Diablo HyTerm 1610/20	SOL-20 or VDM-1/CUTS

The above versions are available on standard IBM formatted 8" soft sectored floppy diskettes or 5" hard sectored floppy mini-diskettes.

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 II 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
=====

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.

CP/M

The Disk Operating System that The Electric Pencil II uses to interface to a disk, a keyboard and a printer. CP/M is a trademark of Digital Research and is not an integral part of The Electric Pencil software.

=====
GLOSSARY
=====

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.

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.

DISK DIRECTORY

A listing of all the current DISK FILES that exist on a disk. The directory itself also exists on the disk and may be displayed at any time using the disk sub-system.

DISK FILE

A FILE that has been removed from the FILE AREA and is now resident on a disk. The DISK DIRECTORY contains a list of all the DISK FILES that exist on a disk.

DYNAMIC PRINT FORMATTING

The process of controlling the format of a printed page by commands entered into the text itself. This action causes the appearance of a page to change during printing.

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.

=====
GLOSSARY
=====

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.

LOAD

The action of moving a DISK FILE from a disk and inserting it into the FILE AREA for subsequent editing or printing.

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.

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)

=====
GLOSSARY
=====

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.

SAVE

The action of moving text from the FILE AREA onto a disk for storage. The original text remains unharmed by this action.

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:

THE ELECTRIC PENCIL II (C) 1978 MICHAEL SHRAYER

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.

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 and line indent that is selected by the user just prior to printing.

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>SOL-20 NOTES</u>
(A)	CURSOR LEFT	Also: Left arrow
(S)	CURSOR RIGHT	Also: Right arrow
(W)	CURSOR UP	Also: Up arrow
(Z)	CURSOR DOWN	Also: Down arrow
(Q)	CURSOR HOME	Use (N) or HOME
(N)	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)	DISK SUB-SYSTEM	
(P)	PRINT SUB-SYSTEM	
(O)	EXIT TO CP/M	
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	

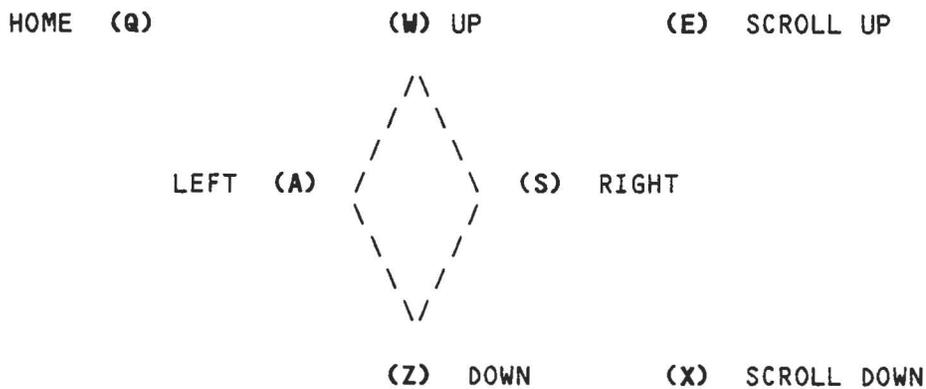
CONTROL CHARACTERS were selected for location and convenience rather than significance as shall be discussed.

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. SOL-20 NOTE: Use HOME or (N) for this function.

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. SOL-20 NOTE: Use (Q) to move 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 [9] while scrolling. [1] is the fastest speed, and [9] 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.

Scroll direction may be reversed during a scroll simply by re-typing the new direction desired, i.e. (E) or (X). Direction may also be reversed after scrolling has been halted by the SPACE BAR. Typing a [0] (numeral zero) will halt a scroll and switch to page-at-a-time scroll mode. Each subsequent depression of the SPACE BAR will now scroll the screen 16 lines in the direction selected. Direction, scrolling speed and scrolling mode may always be set while scrolling is stopped by the SPACE BAR, or, while actually scrolling. A RETURN will escape the page-at-a-time scrolling mode and will then scroll continuously at the speed previously selected. An ESCAPE will exit the scrolling mode entirely, but will still retain page-at-a-time scrolling as the selected mode.

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 will then move towards the cursor by 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" will be replaced if NO number of replacements is specified at the end of the reply to the SEARCH STRING? question. For example:

SEARCH STRING? Mr. Jones/Jack Smith

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.

DISK SUB-SYSTEM COMMAND TABLE

Within The Electric Pencil II is a Disk Sub-System Command Table that is used for all disk and cassette text transfers. This sub-system is also used for clearing selected portions of the file area. Typing (K) will clear the video display screen which will then display the Disk Sub-System Command Table as follows:

THE ELECTRIC PENCIL II (C) 1978 MICHAEL SHRAYER

WORD NUMBER	O	DISK DRCTRY	D	RCRD NUMBER	O
SAVE DSKFIL	S	LOAD DSKFIL	L	KILL DSKFIL	K
TAPE READER	R	TAPE VERIFY	V	TAPE WRITER	W
CLER AA CUR	CAA	CLER AB CUR	CAB	CLER SYSTEM	CLR

1:

NOTE: TAPE VERIFY does not exist in the SOL-20 versions.

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], [D NAME]. 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 an appropriate error message on the video display screen. Note that some of the functions are abbreviated on the screen.

WORD NUMBER, RECORD NUMBER

Whenever the Disk Sub-System or the Print Sub-System is entered, the Word Number count as well as the Record Number count from the current cursor position to the end of the text is automatically displayed on the screen. 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. 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.

[D] DISK DIRECTORY

[D] followed by a RETURN will list all the files on the currently selected diskette. [D1], [D2], [D3] or [D4] followed by a RETURN will list all the files on Disk 1, 2, 3 or 4 (whichever is selected) and make that disk current. The current disk number will always appear on the screen just before the cursor, e.g. 1:, 2:, 3: or 4:. Whenever the number of directory entries is greater than the space allowed for them on the screen, the screen will fill and wait for a SPACE BAR or a RETURN. Each depression of the SPACE BAR will then scroll up the remainder of the directory, a line at a time, until all the directory entries have been displayed. Conversely, a RETURN will scroll up all the remaining entries simultaneously. After all entries have been displayed, the prompt indicating the current disk drive will then re-appear.

There are several other ways of using the [D] instruction:

[DNAME] or [D NAME]

will list all occurrences of the file NAME from the current diskette. If NAME does not exist, error message "NOT FOUND" will appear on the screen. Spaces between the command and the file name are always ignored by the system.

[D N??E]

will list files such as NOME, NAME, NOTE, NIKE. The [?] is used as a don't care character following the CP/M conventions.

[D T??T 2]

will list files like TROT, TEST, TOOT on Disk 2 and make Disk 2 current.

Note that file types are not used by the sub-system. A file name may contain up to 8 characters, but may not begin with a number. All files created within the system are assigned a .PCL file type automatically. File types other than .PCL will be ignored by the system, although they will appear in the directory whenever it is displayed. Only .PCL files can be loaded into the file area or erased from a diskette.

[S] SAVE DISK FILE

To save a file that is in the file area, the cursor is first placed at the beginning of the text that is to be saved. (K) is used to bring up the Disk Sub-System, and [S FILENAME] followed by a RETURN will now transfer the text onto the currently selected diskette. In the case of [S TEST 3], the file TEST is saved on disk drive 3. A file name must be used or the system will return with "NEED FILE NAME". Any name up to 8 characters is acceptable as long as it doesn't start with a number. If there is no text after the cursor, the system will return with "NO TEXT AFTER CURSOR". After the text has been successfully recorded onto the diskette, the screen message "VERIFYING TEXT" will appear. The text on the diskette will now be loaded 127 characters at a time into a temporary area and compared character for character against the existing text in the file area. This additional testing insures that the file has been correctly preserved. When the text is safely on the diskette, the directory will appear on the screen and will now include the new file. If the new file name was the same as a file name that previously occupied the disk, the new file will replace it. Care must be exercised in the selection of a file name since two .PCL files by the same name cannot exist on the same disk. In the event that there is not enough room on the disk for the file to be saved "DISK FULL" will appear on the screen. A new disk may then be inserted into the current drive or a different drive may be selected. When working with lengthy text, it is advisable to periodically save the file onto disk as a precaution against power failures which can destroy all material in the file area as well as The Electric Pencil itself.

[K] KILL DISK FILE

[K] followed by a file name will delete a disk file from the disk directory. This command can only be used to delete .PCL files. The command [K ???????] will delete all .PCL files on the diskette while the command [K T??T] will delete only those files which satisfy the reference of the command. By placing a number after the command (1-4), the appropriate disk drive is also selected. It is obvious that this command should be used with care.

[L] LOAD DISK FILE

To load a file that is on a disk into the file area of The Electric Pencil, first insert the proper disk into the disk drive unit. Call up the Disk Sub-System Command Table with (K) and enter the command [L FILENAME] followed by RETURN. [L FILENAME 2] may also be used to select an alternate disk drive (in this case, drive 2). The cursor will disappear, the disk drive unit will start and the file will be loaded. When the file is correctly loaded into memory, "READY" will appear on the screen. The new WORD NUMBER and RECORD NUMBER totals will also appear at the top of the screen. Inability to properly load will invoke a "DISK ERROR" message. An improper command entry will return with "SYNTAX ERROR". When a file is loaded into The Electric Pencil, it is placed at the end of any text that may already exist in the file area. If this is not desired, the file area should be cleared before loading. If the file is too long for the existing memory, the error message "FILE AREA FULL" will appear on the screen.

IMPORTANT NOTE !!!

Unless CP/M Version 1.4 is implemented, the number of disk drives that The Electric Pencil will support is limited to 2. Selecting disk drives 3 or 4 when limited to 2 will invoke an error message and return control to CP/M. Under certain other disk error conditions, control of the system may also return to CP/M. If a file still remains in The Electric Pencil and needs to be saved, ALWAYS re-enter The Electric Pencil at address 185H ONLY !!! Entering at 100H will re-initialize the system and DESTROY all text files.

[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 at the current cursor position and WORD and RECORD NUMBER will update at the top of 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. SOL-20/CUTER versions only: Files may be also called by name per the SOLOS/CUTER format. The command [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. If a CUTS file invokes a "FILE AREA FULL" message, it is recommended that a return be made to CP/M and that CP/M is re-booted since a part of CP/M may have been damaged. The Electric Pencil must then be reloaded or re-entered at address 100H. This will re-initialize the entire system. This applies only to CUTS tapes.

[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 disk or tape as a precaution against power failures which can destroy all material in the file area as well as The Electric Pencil itself. SOL-20/CUTER versions only: Files may be named per the SOLOS/CUTER format. The command [W PENCL/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 VERIFYTARBELL VERSIONS ONLY

[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 "TAPE ERROR" should be re-written with [W]. Continual tape errors indicate faulty tape or a faulty cassette recorder.

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 current selected disk drive will remain the same. The video display screen will clear and display:

THE ELECTRIC PENCIL II (C) 1978 MICHAEL SHRYER

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

PRINT SUB-SYSTEM COMMAND TABLE

Typing (P) will transfer control to the Print Sub-System. The video screen will clear and display the Print Sub-System Command Table as follows:

THE ELECTRIC PENCIL II (C) 1978 MICHAEL SHRAYER

WORD NUMBER	O	PAGE NUMBER	N 1	RCRD NUMBER	O
LEFT MARGIN	M 0	LINE LENGTH	L 80	LINE INDENT	I 0
PAGE LENGTH	G 54	LINE SPACNG	S 1	PAGE SPACNG	A 12
RGHT JUSTFY	J 0	FORM PAGING	F 0	PRNT LENGTH	P 0

NOTE:

PAGE SPACNG is replaced with CHAR SPACNG H 10 in the Diablo versions.

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], [M10], [L 66]. The DELETE key is used to backspace and ESCAPE exits the sub-system. All commands are issued in strings and may be entered in any format. For example:

[L75 M12 S1 N12 640 J1]

[L75M12S1N12G40J1]

[L 7 5M 12S1 N 1 2 G 40J1]

A RETURN terminates the string, enters the new PRINT VALUES onto the above scoreboard and starts printing the text from the current cursor position. A RETURN that is issued without entering any new PRINT VALUES will print the text using the current PRINT VALUES as they appear in the scoreboard.

In the event of an entry error, a ? will appear on the screen and the value in error as well as all the values following it must be re-entered. A glance at the scoreboard will indicate which value was not accepted.

As soon as printing begins, all user entries are automatically cleared and replaced with:

PRINT COUNTER

1

Whenever the Print Sub-System is entered via the REPEAT command (R), the PRINT COUNTER will indicate the number of copies selected, and will automatically count down as each copy of the text has been printed.

DYNAMIC PRINT FORMATTING

PRINT VALUES may also be included in the text itself. This feature allows the user to change PRINT VALUES during printing. Whenever a LINE FEED is followed by a period [.] on the screen, The Electric Pencil will treat all subsequent text as PRINT VALUES. These values are not printed, but are then entered as new PRINT VALUES onto the scoreboard. Printing then continues using these new values. For example:

[.L75 m10 S1 g40 j1]

[.DL120I30]

Note that upper and lower case characters are acceptable here as well as in the Print Sub-System. The above example must be terminated by a LINE FEED, otherwise all subsequent text will appear as additional commands and create errors. Errors within the command line will cause the printer to stop. The line in error will then appear as the top line on the video display screen.

A period [.] used alone as above, followed by a LINE FEED may be used to stop the printer at specified locations within the text. This feature is useful when only selected portions of text need to be printed.

TEXT COMMENTING

Text may include non printing comments by entering a second period [.] within the command line. All text after the second period [.] up to a LINE FEED is then ignored and not printed. Examples:

[.L60 M10 G50. This is a test comment !!!!!]

[.....This is a SAMPLE COMMENT.....]

PRINT VALUE DEFINITIONS

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

[D] DEFAULT VALUE

[D] sets all PRINT VALUES to DEFAULT VALUES. It may be entered into a command string in text or directly into the Print Sub-System. It is recommended that it be used at the beginning of text prior to setting up other values.

[N] PAGE NUMBERDEFAULT 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 1, 2, etc.

[M] LEFT MARGINDEFAULT VALUE=0

[M0] through [M100] sets the position of the left margin. This value added to LINE LENGTH should not exceed the carriage width of the printer. The system will not accept values for LEFT MARGIN or LINE LENGTH that will allow the sum of these two values to exceed 125.

[L] LINE LENGTHDEFAULT VALUE=80

[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. The system will not accept values for LEFT MARGIN or LINE LENGTH that will allow the sum of these two values to exceed 125. The system will also not accept values for LINE INDENT or LINE LENGTH that will allow the remainder to be less than 25. In other words, LINE LENGTH may not be less than 25 or greater than 125 and any combination of values that will allow this to occur will be refused.

[I] LINE INDENTDEFAULT VALUE=0

[I0] through [I100] sets the number of characters that the following paragraph will be indented from the left margin. The system will not accept values for LINE INDENT or LINE LENGTH that will allow the remainder to be less than 25.

[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.

[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.).

[A] PAGE SPACING DEFAULT VALUE=12

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

[H] CHARACTER SPACING DEFAULT VALUE=10

Diablo versions 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 the Diablo Product Description Manual.

[J] RIGHT JUSTIFY DEFAULT VALUE=0

[J0] (zero) is used to expand the text in a line so that the right-hand margin is justified (even). [J1] sets the system to print as many characters on a line as will fit without justifying the right-hand margin of the text. The TTY, Selectric, etc. versions do this by inserting additional blank spaces between words, while the Diablo version actually spreads out the spaces between characters.

[F] FORM PAGING DEFAULT VALUE=0

[F1] sets the system to stop at the end of a printed page. The stop will occur following a FORM FEED or when the PAGE LENGTH value has been reached. This is to allow the user to manually remove the paper or envelope being printed and replace it. Printing may be resumed by typing a RETURN. [F0] disables this feature.

[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.

MULTICOLUMN PRINTING

By selecting small line lengths, several columns of text may be placed side by side on a printed page. This is extremely easy to do with all the Diablo versions of The Electric Pencil and is also possible to do even with a TTY. In all the Diablo versions, the character [^] will cause the printer to perform negative line feeds.

Any number placed after this character will determine how many it will do. Inserting [^10] in a command string after printing a record of 10 lines will return the paper to the top of the sheet again, and then by dynamically changing the margin in the same string, another column will then be printed next to the first one.

If the number of negative line feeds is greater than the amount of lines printed so far, the [^] command will be rejected. With a TTY or similar printer, the platen will have to be moved by hand, since negative line feeds are not possible. This text is an example of what can be done. More columns can be handled by using wider paper.

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. Boldface and underlining may be also included in a page title.

PRINTING with a DIABLO

The Form Length switch on the Diablo Hy-Term 1610/20 should be set to the desired form size. The paper is then manually advanced to the top of form and the SET TOF switch is 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 desired, and (P) is typed. PRINT VALUES may now be set if required. A RETURN will cause The Electric Pencil to start printing text from the current cursor position forward. The print head of the printer will print both forwards and backwards. Printing may be repeated in order to obtain multiple copies of text by using the Repeat Command (R). Printing may be controlled by using the SPACE BAR, RETURN and ESCAPE as in scrolling.

PRINTING with a TTY, SELECTRIC, ETC.

PAGE SPACING [A] in the Print 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. PRINT VALUES may now be set if required. A RETURN will cause The Electric Pencil to start printing text from the current cursor position forward. Printing may be controlled by using the SPACE BAR, RETURN and ESCAPE as in scrolling.

EXIT SYSTEM

(O) is used to exit The Electric Pencil and return to CP/M. Whenever (O) is typed, the screen will clear and the message "ALL TEXT SECURE?" will appear. If all files within the file area have been saved onto disk or tape, a [Y] reply will return the user to CP/M. Any other key will bring up the Disk Sub-System Command Table so that the current text may be recorded onto disk or cassette.

LOADING THE ELECTRIC PENCIL

THE ELECTRIC PENCIL II is brought up by simply inserting the diskette containing the program into a disk drive and typing PENCIL into the CP/M system. The video display screen will clear and The Electric Pencil will sign on. The screen address of the video display interface must be set to 0CC00H. If any other screen address is required, return the original diskette to MICHAEL SHRYER SOFTWARE with \$25.00 and the program will be re-assembled to whatever address is desired.

SPECIAL PRINTER NOTE (All Versions)

The Electric Pencil II software requires the Printer Device (Diablo, TTY, etc.) to be the LIST device in the BIOS of CP/M.

ADDITIONAL DIABLO PRINTER NOTE (Versions DV, DP, DS, DI only)

This note applies ONLY if the Diablo keyboard is NOT used as the console keyboard (CONIN) in the BIOS of CP/M.

The Diablo keyboard line coming from the Diablo 1620 as well as the Diablo 1610 MUST be connected to the computer through a convenient input port. When using a keyboard other than the Diablo keyboard, both keyboard input ports must be polled, and whenever data is available on either, this data must be accepted by the CONIN input driver. A sample driver routine appears below. Either keyboard may now be used. This MUST also be done on the Diablo 1610, even though it does not have a keyboard. The Diablo will NOT print at all if the above is not performed. Consult your dealer if you need assistance.

```

;
;   CONSOLE STATUS INPUT ROUTINE
;
CONST:  IN      CSTAT          ;INPUT CONSOL STATUS PORT
        ANI     CSTATBIT      ;MASK STATUS BIT
        MVI     A,OFFH        ;SET A=OFFH
        RNZ     ;RETURN IF READY (MAY NEED RZ HERE)
        IN      DSTAT          ;INPUT DIABLO STATUS PORT
        ANI     DSTATBIT      ;MASK STATUS BIT
        MVI     A,OFFH        ;SET A=OFFH
        RNZ     ;RETURN IF READY (MAY NEED RZ HERE)
        CMA
        RET

;
;   CONSOLE DATA INPUT ROUTINE
;
CONIN:  IN      CSTAT          ;INPUT CONSOL STATUS PORT
        ANI     CSTATBIT      ;MASK STATUS BIT
        JZ     DIABLO         ;IF NOT READY, POLL DIABLO (MAY NEED JNZ HERE)
        IN      CDATA         ;INPUT CONSOL DATA PORT
        ANI     7FH           ;STRIP PARITY BIT
        RET

DIABLO: IN      DSTAT          ;INPUT DIABLO STATUS PORT
        ANI     DSTATBIT      ;MASK STATUS BIT
        JZ     CONIN          ;LOOP IF NOT READY (MAY NEED JNZ HERE)
        IN      DDATA         ;INPUT DIABLO DATA PORT
        ANI     7FH           ;STRIP PARITY BIT
        RET

```

CROMEMCO C-DOS NOTES

Due to some differences between C-DOS as supplied by Cromemco, and CP/M as supplied by Digital Research, some minor software patches need to be made in The Electric Pencil as well as C-DOS.

PENCIL PATCHES

Address	Current Data	Change to:	New Data
018CH	06		03
0196H	09		06

C-DOS PATCHES

Locate the BIOS jump vector table by examining memory locations 0001 and 0002. These will give its address. (7C00H for 32K system, 0BC00H for 48K system and 0FC00H for 64K system.) In the following discussion, XX will represent the high address found in memory location 0002.

Location XX03H will be a Jump to CONST (Console status routine).

Location XX06H will be a Jump to CONIN (Console input routine).

Location XX09H will be a Jump to CONOT (Consol output routine).

Location XX0FH will be a Jump to LIST (List output routine).

Patch CONIN by examining the CONIN routine and placing a RET (C9) directly after the ANI 7FH instruction (E6 7F). Read over Appendix A to determine if any other patches are required.

The current LIST routine should now be examined to determine if it is correct for the print device being used. It may require modifications in port assignments, etc. With a printer other than a Diablo, perhaps the CONOT routine will be more appropriate to use since it has the capability of generating nulls. Be sure to check port assignments, etc. To use the CONOT routine as the LIST routine simply place a JMP XX09H at location XX0FH.

After the above patches have been made, make a new copy of The Electric Pencil as well as C-DOS by whatever means are familiar to you and store the original diskettes in a safe place. The above information assumes an understanding of the C-DOS operating system and is an outline of the principles only. Consult your dealer if assistance is needed in performing the above.

IMSAI VIO VIDEO BOARD NOTES

Versions DI-II, SI-II, DI-IIA and SI-IIA of The Electric Pencil II require Imsai VIO-A or VIO-C video boards. These video boards are capable of 80 X 24 character video displays. The VIO board being used must have its memory addressed at 0F000H. If any other screen address is required, return the original diskette to MICHAEL SHRAYER SOFTWARE with \$25.00 and the program will be re-assembled to whatever address is desired.

CHARACTER GENERATING PROMS U47 & U49

It is recommended that the character generating proms, U47 and U49 on the VIO board be reprogrammed for a more readable display. Only three characters need be changed. These are the CR, FF, and TAB characters. Below is a list of these changes.

U47:

Address	Old Data	New Data	Address	Old Data	New Data
0009	63	7F	000D	63	7F
0089	63	7F	008D	63	7F

U49:

Address	Old Data	New Data	Address	Old Data	New Data
0009	63	7F	000D	63	7F
0089	63	7B	008C	7F	5D
008D	63	6F	0109	63	77
010C	7F	6B	010D	63	77
0189	63	6F	018C	7F	77
018D	63	7B	0209	03	41
020C	00	7F	020D	63	41
0289	03	6F	028C	00	5D
028D	63	7B	0309	63	77
030C	7F	6B	030D	63	77
0389	63	7B	038C	7F	77
038D	63	6F			

Please fill out this registration form 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 II. Happy Word Processing !!!

REGISTRATION FORM: The Electric Pencil II Version

Mail to:

MICHAEL SHRAYER SOFTWARE
3901 Los Feliz Boulevard
Los Angeles, CA 90027

Name:

Address:

City: State: Zip:

Where Purchased:

Date Purchased:

Comments:

INDIVIDUAL SOFTWARE LICENSE AGREEMENT

Customer Sublicense Grant

MICHAEL SHRAYER SOFTWARE (hereinafter referred to as MSS) pursuant to a license agreement with Dealer _____ (hereinafter referred to as Dealer) does hereby grant to **Customer** a non-transferable and non-exclusive sublicense to use **THE ELECTRIC PENCIL II** (hereinafter referred to as "software") on the following terms and conditions.

Software is furnished to Customer for use on a single CPU only and may be modified, or copied (with the inclusion of Michael Shrayer's copyright notice) only for use on such CPU. The Customer shall not provide or otherwise make available the software or any portion thereof in any form to any third party without the prior written approval of MSS. Title to the ownership of the software shall at all times remain with MSS.

MSS and Dealer jointly and severally disclaim all implied warranties with regard to the software licensed hereunder, including all warranties of merchantability and fitness; and any stated express warranties are in lieu of all obligations or liability on the part of either MSS or Dealer for damages, including but not limited to special, indirect or consequential damages arising out of or in connection with the use or performance of the software licensed hereunder.

This Sublicense Grant, the licenses granted hereunder and the software may not be assigned by the Customer without prior written consent from MSS. No right to reprint or copy the software, in whole or in part, is granted hereby except as otherwise provided herein.

By: _____
MICHAEL SHRAYER SOFTWARE

By: _____
CUSTOMER

Date: _____

MICHAEL SHRAYER SOFTWARE, INC.
1253 Vista Superba Drive
Glendale, CA 91205
(213) 956-1593

HELIOS SOFTWARE !!! HELIOS SOFTWARE !!! HELIOS SOFTWARE !!!

Michael Shrayer is proud to announce the release of the HELIOS versions of **THE ELECTRIC PENCIL II**. This new product is completely compatible with PTDOS. For additional information, we have enclosed a more detailed flyer. The following HELIOS configurations are now available:

<u>Vers.</u>	<u>Video</u>	<u>Printer</u>	<u>Price</u>
SSH	SOL	TTY or similar	\$250.
SVH	VDM	TTY or similar	\$250.
SIH	VIO	TTY or similar	\$275.
DSH	SOL	Diablo 1610/20	\$300.
DVH	VDM	Diablo 1610/20	\$300.
DIH	VIO	Diablo 1610/20	\$325.

New dealers who have signed and returned the DEALERS NON-DISCLOSURE AGREEMENT get 30% discount with a minimum order of five shipped C.O.D. Established MSS dealers get 30% discount and terms are net 30. Orders are shipped from stock via UPS Blue Label wherever possible.

I'd be delighted to help if you have any questions about the Dealers Agreement or the software. I can be reached at (213) 956-1593.

Sincerely,



Phyllis Harris
Marketing

PH/tep

CONVERT is a conversion utility program which converts files created by The Electric Pencil II into CP/M compatible files. It also converts files created by the CP/M editor into Electric Pencil files. Files may be created in Assembly Language, Basic, Fortran, etc., using The Electric Pencil and then converted into CP/M files for further processing.

CONVERT is executed while in CP/M as follows:

CONVERT FILENAME.XXX T

where **FILENAME.XXX** is the name of the file to be converted. If **.XXX** is **.PCL**, the input file is assumed to be an Electric Pencil file. The file is then processed creating the ASCII file, **FILENAME.ASC**. If **.XXX** is not **.PCL**, it is assumed to be an ASCII file and is converted to an Electric Pencil file with the name **FILENAME.PCL**. In either case, the original file is left unharmed. When a **.PCL** file is converted into a **.ASC** file, the resultant **.ASC** file will be slightly longer than the original **.PCL** file. When a **.ASC** file is converted into a **.PCL** file, the **.PCL** file may be considerably longer depending on how many tab characters existed in the original text. Each tab character is expanded to eight spaces when generating a **.PCL** file.

The **T** at the end of the command line may be used for **.PCL** to **.ASC** conversions only. If **T** is entered, blank spaces between words are replaced with tab characters thereby compressing the size of the file. This feature is useful for assembly language files where tabs are frequently used. A word of caution here: Since CP/M and Pencil files are not inherently compatible, there is an instance where a tab character will be lost in the conversion. This will happen if a seven letter word after a tab stop is followed by a space followed by a tab. The last tab will be lost. However, this will not affect further processing of the text by an Assembler, Basic, Fortran, etc. The **T** should be used with this in mind.

Files being converted into **.PCL** files must not contain illegal (control) characters. Lines of unbroken characters greater than the video display screen width minus 2 are also not permitted. It is possible to create a **.PCL** file using the **CONVERT** program that could not have been created on The Electric Pencil itself. Such a file will usually be rejected by The Electric Pencil.

Pencil Mods

Old

New

13BC	CD BF 11	Call CONST	13BC: 3E 06	MVI A, ACK
13BF	B7	ORA A	13BE: B7	ORA A
13C0	C2 C2 11	ORA JNZ Condata	13BF: C9	RET
13C3	3C	INR A	} / No-Leave CONST. Call IN to control Printing	
13C4	CD 22 C0	Call AINP		
13C7	CA BC 13	JZ L13BC		
13CA	EG 7F	ANI 7FH		
13CC	C9	RET		

EFFECT: Suppress checking for 06H (Ack) when using
Diablo at 300 Baud

015E	21 B3 17	LXI H, L17B3	015E	21 B4 17	LXI H, L17B4
17B3	00	NOP	17B3	20	DB 20H

Effect: Bypass clearing of speed byte to fastest speed & Preset
it to 20 => speed 7

022E	FE 0B	CPI 'K'-40H	022E	FE 1D	CPI 'J'-40H
------	-------	-------------	------	-------	-------------

Effect: Change Disk I/O Scoreboard Entry char

Special keys still Read w/ custom keyboard

CURSOR to EOF: ^Q (OR ENTER)

CURSOR to BOF: ^B

Delete Block: ^U

Insert Block: ^H

STRING Search: ^V

Continue Search: ^C

Repeat Funct: ^R

Ret to CP/M: ^O

Scrolling:

Speed 1 = fast 9 = slow

Space Bar: Stops continuous Scrolling; then
ea space bar \Rightarrow 1 line or 1 page
in page mode Φ : Page mode scroll

C/R: Escape page or Line mode back to continuous

ESC: Escape Scrolling mode

The Electric Pencil II 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 lines of text are 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 which eliminates 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.

When text is printed, **The Electric Pencil II** automatically inserts carriage returns where they are needed. Numerous combinations of line length, page length, line spacing and page spacing allow for any form to be handled. Character spacing, **BOLD FACE**, multicolumn as well as bidirectional printing are included in the Diablo versions. Right justification gives right-hand margins that are even. Pages may be numbered as well as titled. This entire page (excepting the large titles and Logo) was printed by the Diablo version of **The Electric Pencil II** in one pass.

Now on CP/M

You've probably seen **The Electric Pencil** in action by now. It's the most powerful 8080/Z80 character oriented word processor on the market today. Michael Shroyer is now proud to present the new **Electric Pencil II**.

NEW FEATURES: * CP/M Compatible *** Disk Operating System Supports Two Disk Drives *** Simple File Management *** Quick and Easy Disk Storage and Retrieval *** Dynamic Print Formatting *** Multicolumn Printing *** Print Value Chaining *** Page-at-a-time Scrolling *** New Bidirectional Multispeed Scrolling Controls *** New Subsystem with Print Value Scoreboard *** Automatic Word and Record Number Tally *** Cassette Backup Capability *** Full Margin Control *** End-of-Page Control *** Non-Printing Text Commenting *** Line and Paragraph Indentation *****
Centering, Underlining and **BOLD FACE**

The Electric Pencil II is now available on CP/M. Standard printer versions **\$225.**
Diablo printer versions **\$275.**

System Hardware MUST include:

8080 or Z-80 Based Microcomputer
Printer (Diablo Hy-Term, TTY, etc.)
Video Display (VDM-1, VTI or SOL)
CP/M Supported Disk System or...
North Star Mini-Floppy Disk or...
Cassette Interface (Tarbell or SOL)



The Electric Pencil I is still available for non CP/M users as follows:

<u>Versions</u>	<u>Printer</u>	<u>Video Interface/Mass Storage</u>	<u>Price</u>
SS, SV, SP	TTY or similar	SOL/Cuter, VDM-1/Tarbell, VTI/Tarbell	\$100.
SSN, SVN, SPN	TTY or similar	SOL/NStar, VDM-1/NStar, VTI/NStar	\$125.
DS, DV, DP	Diablo Hy-Term	SOL/Cuter, VDM-1/Tarbell, VTI/Tarbell	\$150.
DSN, DVN, DPN	Diablo Hy-Term	SOL/NStar, VDM-1/NStar, VTI/NStar	\$175.

Demand a demo from your dealer!

the electric pencil II
 • 1978 Michael Shroyer
 TM

CURSOR CONTROLS

Cursor left, right, up, down, home
Cursor to beginning of line
Cursor to beginning of text
Cursor to end of text
Cursor tab

SCROLLING CONTROLS

Scroll up and down
Scroll speed control
Scroll stop, continue, abort
Scroll a page at a time

INSERTIONS and DELETIONS

Insert character, line, block
Delete character, line, block
Delete to end of line

SEARCH COMMANDS

Search for string (may be coded string)
Search and replace (may be coded string)

DISK COMMANDS

Directory, Save, Load, Kill

TAPE COMMANDS

Read, Write, Verify

SYSTEM COMMANDS

Repeat any command a given number of times
Line feed, form feed, carriage return
Go to sub-system command tables
Clear all after cursor
Clear all before cursor
Clear system
Exit to CP/M

PRINTER FORMATTING COMMANDS

Set justification
Set page stopping
Set page number 1 to 255
Set line spacing 1 to 5 lines
Set page length 1 to 72 lines
Set print length 1 to All records
Set line indent 1 to 100 characters
Set left margin 1 to 100 characters
Set line length 25 to 125 characters
Set char spacing HMI 8 to 50 (Diablo versions)
Set page spacing 2 to 20 lines (Standard versions)

the electric pencil II™

• 1978 Michael Shrayer

The Electric Pencil II is a Character Oriented Word Processing System. This means that text is entered as a string of continuous characters and is manipulated as such. This allows the user enormous freedom and ease in the movement and handling of text. Since line endings are never 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 lines of text are 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 which eliminates 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.

When text is printed, The Electric Pencil II automatically inserts carriage returns where they are needed. Numerous combinations of line length, page length, line spacing and page spacing allow for any form to be handled. Character spacing, **BOLD FACE**, multicolumn as well as bidirectional printing are included in the Diablo versions. Right justification gives right-hand margins that are even. Pages may be numbered as well as titled. This entire page (excepting the large titles and logo) was printed by the Diablo version of The Electric Pencil II in one pass.

Now on CP/M

You've probably seen The Electric Pencil in action by now. It's the most powerful 8080/Z80 character oriented word processor on the market today. Michael Shrayer is now proud to present the new Electric Pencil II.

NEW FEATURES: !!! CP/M Compatible !!! Disk Operating System Supports Four Disk Drives !!! Simple File Management !!! Quick and Easy Disk Storage and Retrieval !!! Dynamic Print Formatting !!! Multicolumn Printing !!! Print Value Chaining !!! Page-at-a-time Scrolling !!! New Bidirectional Multispeed Scrolling Controls !!! New Subsystem with Print Value Scoreboard !!! Automatic Word and Record Number Tally !!! Cassette Backup Capability !!! Full Margin Control !!! End-of-Page Control !!! Non-Printing Text Commenting !!! Line and Paragraph Indentation !!! Centering !!! Underlining !!! **BOLD FACE** !!!

W I D E S C R E E N V I D E O !!!
Available to Imsai VIO video users for a huge 80x24 character screen !!

HAVE WE GOT A VERSION FOR YOU ?

The Electric Pencil II operates with any 8080/Z80 based microcomputer that supports a CP/M disk system and uses a Imsai VIO, Processor Technology VDM-1, Polymorphic VTI, Solid State Music VB-1B, Vector Graphic Flashwriter or any similar memory mapped video interface. Specify when using CP/M that has been modified for Micropolis or North Star disk systems as follows: For North Star add suffix A to version number, for Micropolis add suffix B to version number, e.g. SS-IIA, DV-IIB.

<u>Vers.</u>	<u>Video</u>	<u>Printer</u>	<u>Price</u>
SS-II	SOL	TTY or similar	\$225.
SP-II	VTI	TTY or similar	\$225.
SV-II	VDM	TTY or similar	\$225.
SI-II	VIO	TTY or similar	\$250.
DS-II	SOL	Diablo 1610/20	\$275.
DP-II	VTI	Diablo 1610/20	\$275.
DV-II	VDM	Diablo 1610/20	\$275.
DI-II	VIO	Diablo 1610/20	\$300.

	MICHAEL SHRAYER SOFTWARE 1253 Vista Superba Drive Glendale, CA 91205 (213) 956-1593
---	---

The Electric Pencil I is still available for non CP/M users:

	<u>Vers.</u>	<u>Video</u>	<u>Printer</u>	<u>Cassette</u>	<u>Disk Drive</u>	<u>Price</u>
<p style="text-align: center;">coming attractions</p> <p>Sort & Merge Utility !!!</p> <p>The NEC printer package !!!</p> <p>The HELIOS Electric Pencil !!!</p> <p>Pencil to CP/M file conversion !!!</p> <p>CP/M to Pencil file conversion !!!</p>	SS	SOL	TTY or similar	CUTS	---	\$100.
	SP	VTI	TTY or similar	Tarbell	---	\$100.
	SV	VDM	TTY or similar	Tarbell	---	\$100.
	SSN	SOL	TTY or similar	CUTS	North Star	\$125.
	SPN	VTI	TTY or similar	Tarbell	North Star	\$125.
	SVN	VDM	TTY or similar	Tarbell	North Star	\$125.
	DS	SOL	Diablo 1610/20	CUTS	---	\$150.
	DP	VTI	Diablo 1610/20	Tarbell	---	\$150.
	DV	VDM	Diablo 1610/20	Tarbell	---	\$150.
	DSN	SOL	Diablo 1610/20	CUTS	North Star	\$175.
	DPN	VTI	Diablo 1610/20	Tarbell	North Star	\$175.
	DVN	VDM	Diablo 1610/20	Tarbell	North Star	\$175.

Demand a demo from your dealer!

CURSOR CONTROLS

Cursor left, right, up, down, home
Cursor to beginning of line
Cursor to beginning of text
Cursor to end of text
Cursor tab

SCROLLING CONTROLS

Scroll up and down
Scroll speed control
Scroll stop, continue, abort
Scroll a page at a time

INSERTIONS and DELETIONS

Insert character, line, block
Delete character, line, block
Delete to end of line

SEARCH COMMANDS

Search for string (may be coded string)
Search and replace (may be coded string)

DISK COMMANDS

Directory, Save, Load, Kill

TAPE COMMANDS

Read, Write, Verify

SYSTEM COMMANDS

Repeat any command a given number of times
Line feed, form feed, carriage return
Go to sub-system command tables
Clear all after cursor
Clear all before cursor
Clear system
Exit to CP/M

PRINTER FORMATTING COMMANDS

Set justification
Set page stopping
Set page number 1 to 255
Set line spacing 1 to 5 lines
Set page length 1 to 72 lines
Set print length 1 to All records
Set line indent 1 to 100 characters
Set left margin 1 to 100 characters
Set line length 25 to 125 characters
Set char spacing HMI 8 to 50 (Diablo versions)
Set page spacing 2 to 20 lines (Standard versions)

the electric pencil II™

© 1978 Michael Shrayer

The Electric Pencil II is a Character Oriented Word Processing System. This means that text is entered as a string of continuous characters and is manipulated as such. This allows the user enormous freedom and ease in the movement and handling of text. Since line endings are never 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 lines of text are 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 which eliminates 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.

When text is printed, The Electric Pencil II automatically inserts carriage returns where they are needed. Numerous combinations of line length, page length, line spacing and page spacing allow for any form to be handled. Character spacing, **BOLD FACE**, multicolumn as well as bidirectional printing are included in the Diablo versions. Right justification gives right-hand margins that are even. Pages may be numbered as well as titled. This entire page (excepting the large titles and logo) was printed by the Diablo version of The Electric Pencil II in one pass.

Now on CP/M

You've probably seen The Electric Pencil in action by now. It's the most powerful 8080/Z80 character oriented word processor on the market today. Michael Shrayer is now proud to present the new Electric Pencil II.

NEW FEATURES: !!! CP/M Compatible !!! Disk Operating System Supports Four Disk Drives !!! Simple File Management !!! Quick and Easy Disk Storage and Retrieval !!! Dynamic Print Formatting !!! Multicolumn Printing !!! Print Value Chaining !!! Page-at-a-time Scrolling !!! New Bidirectional Multispeed Scrolling Controls !!! New Subsystem with Print Value Scoreboard !!! Automatic Word and Record Number Tally !!! Cassette Backup Capability !!! Full Margin Control !!! End-of-Page Control !!! Non-Printing Text Commenting !!! Line and Paragraph Indentation !!! Centering !!! Underlining !!! **BOLD FACE** !!!

W I D E S C R E E N V I D E O !!!

Available to Imsai VIO video users for a huge 80x24 character screen !!

HAVE WE GOT A VERSION FOR YOU ?

The Electric Pencil II operates with any 8080/Z80 based microcomputer that supports a CP/M disk system and uses a Imsai VIO, Processor Technology VDM-1, Polymorphic VTI, Solid State Music VB-1B, Vector Graphic Flashwriter or any similar memory mapped video interface. Specify when using CP/M that has been modified for Micropolis or North Star disk systems as follows: For North Star add suffix A to version number, for Micropolis add suffix B to version number, e.g. SS-IIA, DV-IIB.

<u>Vers.</u>	<u>Video</u>	<u>Printer</u>	<u>Price</u>
SS-II	SOL	TTY or similar	\$225.
SP-II	VTI	TTY or similar	\$225.
SV-II	VDM	TTY or similar	\$225.
SI-II	VIO	TTY or similar	\$250.
DS-II	SOL	Diablo 1610/20	\$275.
DP-II	VTI	Diablo 1610/20	\$275.
DV-II	VDM	Diablo 1610/20	\$275.
DI-II	VIO	Diablo 1610/20	\$300.

	MICHAEL SHRAYER SOFTWARE 1253 Vista Superba Drive Glendale, CA 91205 (213) 956-1593
---	---

The Electric Pencil I is still available for non CP/M users:

coming attractions

Sort & Merge Utility !!!

The NEC printer package !!!

The HELIOS Electric Pencil !!!

Pencil to CP/M file conversion !!!

CP/M to Pencil file conversion !!!

<u>Vers.</u>	<u>Video</u>	<u>Printer</u>	<u>Cassette</u>	<u>Disk Drive</u>	<u>Price</u>
SS	SOL	TTY or similar	CUTS	---	\$100.
SP	VTI	TTY or similar	Tarbell	---	\$100.
SV	VDM	TTY or similar	Tarbell	---	\$100.
SSN	SOL	TTY or similar	CUTS	North Star	\$125.
SPN	VTI	TTY or similar	Tarbell	North Star	\$125.
SVN	VDM	TTY or similar	Tarbell	North Star	\$125.
DS	SOL	Diablo 1610/20	CUTS	---	\$150.
DP	VTI	Diablo 1610/20	Tarbell	---	\$150.
DV	VDM	Diablo 1610/20	Tarbell	---	\$150.
DSN	SOL	Diablo 1610/20	CUTS	North Star	\$175.
DPN	VTI	Diablo 1610/20	Tarbell	North Star	\$175.
DVN	VDM	Diablo 1610/20	Tarbell	North Star	\$175.

Demand a demo from your dealer!

CURSOR CONTROLS

Cursor left, right, up, down, home
Cursor to beginning of line
Cursor to beginning of text
Cursor to end of text
Cursor tab

SCROLLING CONTROLS

Scroll up and down
Scroll speed control
Scroll stop, continue, abort
Scroll a page at a time

INSERTIONS and DELETIONS

Insert character, line, block
Delete character, line, block
Delete to end of line

SEARCH COMMANDS

Search for string (may be coded string)
Search and replace (may be coded string)

DISK COMMANDS

Directory, Save, Load, Kill

TAPE COMMANDS

Read, Write, Verify

SYSTEM COMMANDS

Repeat any command a given number of times
Line feed, form feed, carriage return
Go to sub-system command tables
Clear all after cursor
Clear all before cursor
Clear system
Exit to CP/M

PRINTER FORMATTING COMMANDS

Set justification
Set page stopping
Set page number 1 to 255
Set line spacing 1 to 5 lines
Set page length 1 to 72 lines
Set print length 1 to All records
Set line indent 1 to 100 characters
Set left margin 1 to 100 characters
Set line length 25 to 125 characters
Set char spacing HMI 8 to 50 (Diablo versions)
Set page spacing 2 to 20 lines (Standard versions)

DEALERS NON-DISCLOSURE AGREEMENT

1. The following terms shall apply throughout this agreement:

A. "Licensor" and "MSS" shall refer to **MICHAEL SHRAYER SOFTWARE; 1253 Vista Superba Drive, Glendale, CA 91205.**

B. "Dealer" shall refer to:

Name of Company _____

Address _____

City _____ State _____

C. "Program" and "Software" or "Software Package" shall refer to: **THE ELECTRIC PENCIL II** in all versions available now and all versions that may be added hereto at subsequent dates. Software cost: Standard print package \$225.00, Diablo print package \$275.00 retail.

2. NON-DISCLOSURE

Dealer agrees to protect the program(s) as proprietary, with the same degree of care which Dealer uses to protect his own like property. Dealer shall not make copies or allow others to make copies or reproductions of the software in any form without the prior written consent of the Licensor, except for back-up purposes, and in so doing shall afford all such original or copied materials acquired from the Licensor the same degree of protection from disclosure which Dealer provides its own like information.

Dealer is obligated to make its employees and agents aware of the terms of the NON-DISCLOSURE AGREEMENT; and agree on behalf of everyone who will have access to the material that it is the Licensor's trade secret and proprietary in nature and to further agree to be responsible for and pay compensatory damages in case of unauthorized disclosure.

3. LIMITATION OF LIABILITY

No warranty is expressed or implied by the Licensor as to the fitness of any program(s) for any purpose or use. In no event shall the Licensor become liable to the Dealer or any other party for any loss including time, money or goodwill arising from the use, operation or modification of the software or program(s) by the Dealer.

4. SUBLICENSING

Dealer agrees that he may sublicense the exact number of copies of the program that he has ordered and been invoiced for by MSS. The Dealer further agrees that he may not otherwise assign, sell, license, franchise or otherwise convey the software to any third parties or to unauthorized personnel.

Dealer agrees that with each sublicense of a copy of the program to a customer, he will have that customer sign an Individual Software License Agreement and then forward that agreement to the Licensor at the Licensor's expense.

5. TERMS

Dealer agrees that all copies of THE ELECTRIC PENCIL II are owned by MICHAEL SHRAYER SOFTWARE, that all copies will display the Michael Shrayer copyright and that all copies of THE ELECTRIC PENCIL II shall be called THE ELECTRIC PENCIL II and that the name of the program shall be displayed when loaded into a computer system. Any exceptions to the above terms must be worked out in writing and receive written approval for said changes from MSS. Dealer agrees to file with MSS a copy of the program and manual with said changes after written approval has been received and before public release of said changed version.

Dealer further agrees that any modifications or changes made by the Dealer, or any agent of the Dealer, to the program will in no way constitute a transfer of ownership.

6. TIME FOR PAYMENT

Dealer agrees that after an initial minimum order of five sent COD, he will pay invoices on a net 30 basis.

7. VALIDITY OF AGREEMENT

This is to state that if any clause in this agreement is found in any court to be invalid, it will not affect the validity of any other clause in the agreement.

8. COMPLETE AGREEMENT

This agreement entered into this _____ day of _____, 1978 represents the complete and exclusive agreement between the parties and supercedes all prior agreements, proposals, representations, and other communications between them. This agreement is binding upon execution by the Dealer and acceptance by the Licensor at the address shown herein and shall be construed according to the Laws of the State of California.

DEALER _____

MICHAEL SHRAYER SOFTWARE

BY: _____
Authorized Signature

BY: _____
Owner

Title

Dealer's Mailing Address

THE ELECTRIC PENCIL II (C) 1978 MICHAEL SHRAYER

COMMANDS AND FUNCTIONS

COMMAND

FUNCTION

(A)	CURSOR LEFT
(S)	CURSOR RIGHT
(W)	CURSOR UP
(Z)	CURSOR DOWN
(Q)	CURSOR HOME
(N)	CURSOR to END of FILE
(B)	CURSOR TO BEG of FILE
(E)	SCROLL UP (Forward)
(X)	SCROLL DOWN (Backwards)
(D)	DELETE CHARACTER
(F)	INSERT CHARACTER
(Y)	DELETE LINE
(G)	INSERT LINE

COMMAND

FUNCTION

(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)	DISK SUB-SYSTEM
(P)	PRINT SUB-SYSTEM
(O)	EXIT TO CP/M