TAEG

TRAINING ANALYSIS AND EVALUATION GROUP

| TAEG REPORT NO. 59 | COMPUTER-AIDED AUTHORING SYSTEM (AUTHOR) USER'S GUIDE VOLUME I |

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TRAINING ANALYSIS AND EVALUATION GROUP

ORLANDO, FLORIDA 32813

TAEG Report No. 59

COMPUTER-AIDED AUTHORING SYSTEM (AUTHOR)
USER'S GUIDE

VOLUME I

Charles R. Guitard

Training Analysis and Evaluation Group

June 1978

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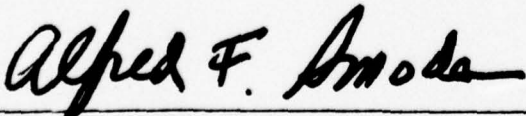| REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
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Publishing technical manuals and training handbooks for new Navy equipment is a high cost operation. In addition, current practices frequently result in the technical data being delivered late or in a form too complex for the reader to use. There are also problems in keeping technical data current and in distributing and storing the data where it is needed.

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20. Abstract (continued)

The Naval Technical Information Presentation Program (NTIPP) is a 5-year multimillion dollar program to improve the Navy's efficiency in carrying out this publishing effort. This effort is managed by the David W. Taylor Naval Ship Research and Development Center with participation by other Navy activities. The Training Analysis and Evaluation Group (TAEG) represents the Chief of Naval Education and Training (CNET) in this program. The program is of special interest to CNET because the technical manuals serve as textbooks in the CNET managed "C" schools, and the training handbooks serve as the student and instructor guides in these schools. Improved documents will result in improved training.

This report contains an operator's handbook (Volume I) and program listing (Volume II) describing AUTHOR, a computer program for the automated authoring of programmed texts designed to teach symbol recognition.

Under NTIPP sponsorship, TAEG is pioneering an approach to authoring instructional materials that utilizes general purpose computers to carry out certain operations that are now being laboriously performed by hand. The goal is a technique for authoring effective training materials at a low cost. To demonstrate this approach, TAEG has written a program to aid in authoring materials for teaching symbol recognition. The human author enters information on a set of symbols into a data base. The computer routine merges this with general information on learning symbols and automatically organizes a complete learning package, including a pretest, discrimination drills, symbol recognition exercises, criterion tests, suggestions for refresher training, and an index. The output can be formatted for paper, microfiche, or video display. Using this procedure, authoring consumes a small portion of the time usually required for such projects. Instructional materials developed in this manner by TAEG are being evaluated in the Signalman "A" School and the onboard training program of the Naval Weather Service. The results to date are encouraging and will be formally published in subsequent TAEG reports.

An overview of the AUTHOR system is provided in a companion report (TAEG Report No. 58). Items included in that report are a discussion of the learning strategies used, the equipment required, and sample documents produced using AUTHOR.

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LIST OF ILLUSTRATIONS (continued)

1.0 INTRODUCTION

AUTHOR is an automatic authoring system that will allow you, the author, to produce a programmed text for teaching symbol recognition. The AUTHOR Programming System is designed for execution on the WANG System 2200 (32K memory) or WANG System 2200VP. For an overview of the AUTHOR System see TAEG Report 58.

The programmed text is based on your input data describing a specific set of symbols. This user guide will help you construct and enter the information needed to create the programmed text, run the AUTHOR program, and edit the automatically composed pages.

2.0 PREPARING WORKBOOK

A workbook has been designed to record the information needed by the AUTHOR System. A copy of this workbook can be found in appendix A. The workbook contains six items of information to be recorded. Those items are:

- *Title Page Information

- Learning Objective

- General Background Information

- *Importance of this Program

- *Example of the Symbols

- Descriptions of the Symbols.

Items noted with an "*" may include special formatting commands within the text to modify the appearance of the text on a page. These commands and their functions are described in section 2.7.

2.1 TITLE PAGE INFORMATION

Certain information must be entered for use in creating a title page. This information is described in the following text. An example title page is shown in figure 2.1.

2.1.1 Title. The title can be a combination of characters up to 100 characters in length and contained on two lines.

2.1.2 Subtitle. The subtitle can be a combination of characters up to 100 characters in length and contained on two lines.

2.1.3 Author(s). The author(s) can be a combination of characters up to 200 characters in length and contained on four lines.

2.1.4 Date. The date can be a combination of characters up to 50 characters in length and contained on one line.

AUTHOR: An Automatic Authoring System   Version: 2.0

!   !
| |
___   ___

                                                        0001

          (Title)

          (Subtitle)

          (Author's Name)

          (Date of Publication)

          (Organization/Publisher)

                                                   Go to 0002

‾| |‾
| |
| |

               Figure 2.1. Title Page

2.1.5 Organization. This is the name of the organization producing the learning module. The name can be a combination of characters up to 100 characters and contained on two lines.

When the title page layout (see figure 2.1) is not adequate and the length of the above items is less than the maximum, format commands can be used to modify the layout. These commands are described in section 2.7.

2.2 LEARNING OBJECTIVE

The learning objective is a brief statement describing what the users of the module will be able to do when they have completed the learning module. The objective should be written in terms familiar to the user of the module. The learning objective can be a combination of characters up to 500 characters in length and contained on 14 lines. An example of a learning objective format is shown in figure 2.2.

2.3 IMPORTANCE OF THIS PROGRAM

The information recorded here should help convince the user that the need to recognize and recall the definitions of these symbols is important. An example of this page is shown in figure 2.3. The information for this item is entered in two parts.

2.3.1 Importance of Knowing the Symbols. This item can have a length of up to 500 characters and be contained on 14 lines.

2.3.2 How the Skill Will be Used. This item should be formatted in the form of a list. This item can have a length of up to 500 characters and be contained on 14 lines. The format commands described in section 2.7 can be used to indent and position this text.

2.4 GENERAL BACKGROUND INFORMATION

The information recorded here is used to complete several generic sentences in the learning module. There are three items of information needed.

2.4.1 Name of the Users of the Learning Package. The name (or rating) can have a length of up to 300 characters and be contained on eight lines. The context of this item is shown in figure 2.4.

2.4.2 Type of Symbol to be Used. The type of symbol can be a combination of characters up to 70 characters in length and be contained on two lines. The context of this item is shown in figure 2.5.

2.4.3 Source of Official Reference. The source of reference can be up to 100 characters in length and be contained on three lines. The context of this item is shown in figure 2.6.

13

AUTHOR: An Automatic Authoring System   Version: 2.0

INTRODUCTION _____ 0002

Learning

Objective

```
+------------------------------------------------+
|                                                |
|                                                |
|              (Learning Objective)              |
|                                                |
|                                                |
+------------------------------------------------+
```

This lesson will help you learn

easily and quickly.

FOR BEST RESULTS, FOLLOW THE DIRECTIONS.

_____

Index   When you need an index to

locate practice exercises for

refresher training...   Go to 0048

To continue Go to 0003

Figure 2.2. Learning Objective

AUTHOR: An Automatic Authoring System   Version: 2.0

IMPORTANCE OF THIS PROGRAM TO YOU   0003

Importance

of Symbols

(Reason for learning to recognize

symbols)

How Skill   This program will help you to:

Will be Used

(List of tasks requiring knowledge

of symbols)

Go to 0004

Figure 2.3. Importance and Usage of Symbols

AUTHOR: An Automatic Authoring System   Version: 2.0
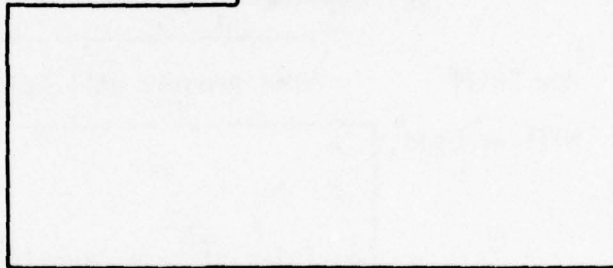
CONGRATULATIONS! _____   0045

You have shown that you know all

of the symbols in this program.

Knowing these symbols will make

you a better (Name of job/position).

Go to 0046

Figure 2.4. Type of User

AUTHOR: An Automatic Authoring System   Version: 2.0

SYMBOL PRETEST _____ 0005

Purpose   The pretest will help you

                 decide whether you should try the

                 criterion test at this time.

_____

Directions   1. You may already know some or all

                 of these (Name of symbol set).

                 2. Look through the list of symbols

                 below and see how many you can define.

_____

Symbols   (Symbol 1)   (Symbol 2)

                 (Symbol 3)   (Symbol 5)

                 (Symbol 4)   (Symbol 6)

                 (Symbol 7)

                                        Go to 0006

Figure 2.5. Type of Symbol

AUTHOR: An Automatic Authoring System   Version: 2.0

OPTIONAL CRITERION TEST _____   0007
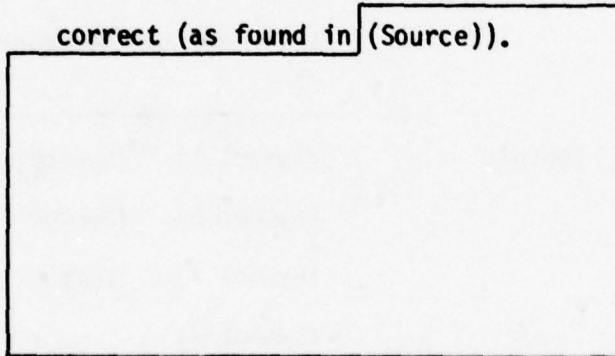
Directions   1. Recall the definition of each

                   symbol on the next frame(s).

                   2. Write each definition on a

                   piece of paper.

                   3. You must recall the official

                   definition of the symbol to be

                   correct (as found in (Source)).

                                                    Go to 0008

Figure 2.6. Official Source of Reference

18

2.5 EXAMPLE OF THE SYMBOLS

The example should be an actual example of the symbols as the user would most likely see them on-the-job. The example can contain an unlimited number of characters. This information will be displayed on pages that have 63 characters per line and 14 lines per page (see figure 2.7). The text used in the example can be formatted by using the formatting commands described in section 2.7.

2.6 DESCRIPTION OF THE SYMBOLS

When arranging the symbols into sets, the optimal number of symbols per set is between five and nine symbols and the maximum number of symbols in one set is 12. Symbols that are often confused for each other should be placed in the same set. If this set contains symbols to be described as similar, there must be a minimum of seven symbols in the set. To indicate the order in which the symbols will be learned, mark the first set to be learned Set #1, the second set to be learned Set #2, etc.

For each symbol the following items of information are needed:

2.6.1 Set Number. This number is used to indicate the order in which the symbol sets will be learned. The number may be in the range between 1 and 40.

2.6.2 Symbol Number. This number is used to distinguish symbols within a set; therefore, this number must be unique within a set. The number may be in the range between 1 and 255.

2.6.3 Name of the Symbol Set. If desired a name can be associated with the symbol set. If no name is desired the name "Symbol Set #___" will be assigned to the symbol set. The name can have a length of up to 40 characters.

2.6.4 Symbol. The symbol can be any combination of characters having length of up to 15 characters. A character is any one of the following:

Letters	A - Z, a - z
Numbers	0 - 9
Characters	! @ # $ % & * ( ) - + =
	" ' : ; , . ? /

An example of where symbols appear on one page is shown in figure 2.8.

AUTHOR: An Automatic Authoring System   Version: 2.0

EXAMPLE OF HOW THE SYMBOLS ARE USED _____   0004
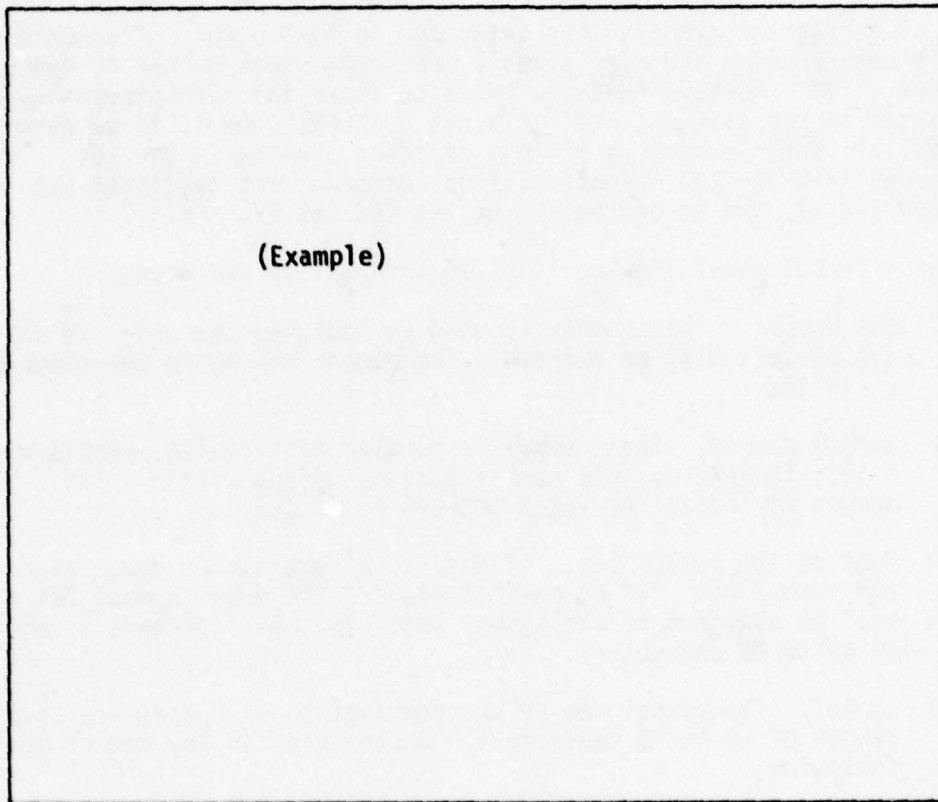
(Example)

Go to 0005

Figure 2.7. Example Page

AUTHOR: An Automatic Authoring System   Version: 2.0

SYMBOL SET #01: LEARN SYMBOL DEFINITIONS   0023

Definition	Symbol	Memory Aid
(Definition 1)	(Symbol 1)	(Memory aid 1)
(Definition 2)	(Symbol 2)	(Memory aid 2)
(Definition 3)	(Symbol 3)	(Memory aid 3)
(Definition 4)	(Symbol 4)	(Memory aid 4)
(Definition 5)	(Symbol 5)	(Memory aid 5)
(Definition 6)	(Symbol 6)	(Memory aid 6)

To Continue Go to 0024

Figure 2.8. Symbols, Definitions, Memory Aids

NOTE:

> The current version of AUTHOR is capable of
> processing only alphanumeric symbols. The
> next version of AUTHOR will be able to process
> graphic symbols. The process of creating a
> module using graphic symbols will be the same
> as described in this report except for the
> additional step to have the symbols digitized
> and the assignment of a reference number. A
> draft copy may be printed where the symbol is
> replaced by the reference number.

2.6.5   Definition of the Symbol. The definition should be as brief as
          possible. The length of the definition is unlimited, but the
          understandability of the definition fails when an excessive
          length is involved. The optimal length is between 1 and 28
          characters. An example of where symbol definitions appear on
          one page is shown in figure 2.8.

2.6.6   Mnemonic. The mnemonic (memory aid) can have an unlimited
          number of characters but, as with definition, the usefulness
          of the mnemonic decreases as the length increases. The optimal
          length is between 1 and 28 characters. An example of where
          symbol mnemonics appear on a page is shown in figure 2.8.

NOTE:

> When graphic symbols are used the mnemonic must
> also be a graphic (see note in section 2.6.4).

2.6.7   Similar Symbols. When describing a symbol that is often
          confused with other symbols in the same set, those other symbols
          are indicated here by their symbol number. Once a group of
          similar symbols are associated in this way they do not have
          to be noted when describing the other similar symbols.

2.7 PAGE FORMATTING

Several of the items described in this section will need to be formatted
so as to be effectively placed on a page. (Items that may require formatting
are noted in the introduction statement to section 2.0.) In order to perform
this formatting a few basic commands are available. These commands will be
described in the following text. A summary of these commands can be found
in appendix B.

     ALL COMMANDS MUST APPEAR IN LOWER CASE AND MUST BE PRECEDED
     AND FOLLOWED BY AT LEAST ONE SPACE.

2.7.1   Character Conversions. The following commands will allow you
          to specify whether a block of text is displayed in upper or
          lower case. (In a future version several other types of print
          will be available.) If this type of command is not specified,
          conversions will not be performed.

2.7.1.1 < word > - This will cause all the following text up to the next command, or to the end of the buffer, to have the first letter of every word capitalized.

2.7.1.2 <lower >- This will cause all the following text up to the next command, or to the end of the buffer, to be displayed in lower case.

2.7.1.3 < caps > - This will cause all the following text up to the next command, or to the end of the buffer, to be displayed in upper case.

2.7.2 Spacing. The following commands allow you to control the spacing before text is displayed.

2.7.2.1 < line > - This will cause a line pointer to increment to the next line.

NOTE:

(1) Two of these commands appearing in sequence will cause a blank line to be inserted (double space).

(2) If the line pointer is incremented beyond the bottom of the page, the current page is written onto the disk and pointer positioned to top of the next page.

2.7.2.2 < page >- This will cause the current page to be saved on disk and the pointer to be positioned to the top of the next page.

NOTE:

Two of these commands appearing in sequence will cause a blank page to be inserted.

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2.7.2.3 < space >   This will cause a specified number
of spaces to be inserted into the
text before the next word is written.
To specify the number to insert use
the < nn > command (described in section
2.7.2.4).

2.7.2.4 < nn >   -   This command must follow the space
command. The 'nn' is a two digit number
specifying the number of spaces to insert.
The value of this number must not be less
than zero and not greater than the differ-
ence between the currently selected left
and right margins (RM - LM : this value
cannot be greater than 63). Inserting
the space < nn > command will automatically
insert two spaces. If the value is less
than 10, the number must be left justi-
fied zero filled (i.e., Ø1,Ø2).

2.7.3   Formatted Text. The following commands allow you to format
a block of text within a given set of margins. If these
commands are omitted the text will be formatted according
to system default values. For most items the default left
margin is 24 and the default right margin is 61. The
minimum left margin is one and the maximum right margin is
64.

2.7.3.1 < text > -   This command indicates that the text
following the command is to be formatted
within the given margins. The selected
margins will stay in effect until the
next text command or the end of the buffer.
To specify the margins use the < nn,mm >
command (the < nn,mm > command is described
in section 2.7.3.2).

2.7.3.2 < nn,mm > -   This command must follow the text command.
The 'nn' is a two digit number specifying
the left margin. The 'mm' is a two digit
number specifying the right margin. If
either number is less than 1Ø, the number(s)
must be right justified zero filled i.e.,
Ø1,Ø2...).

2.7.3.3 < subtitle >-   This command is used to precede text which
is to be used as a side heading. This
command is equivalent to the command
sequence:

text < 06,21 >

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2.7.4   Table Formatting. The following commands allow you to enter
up to a 14 line table. When these commands are executed a
check will be made to determine if there is enough room
remaining on the current page to display the table. If there
is not enough room on the current page, the page is saved
on disk and the table is inserted at the top of the next
page.

2.7.4.1 < table > -   This command indicates that the following
text defines a table. The table must be
defined line by line. The table will be
formatted with respect to a specified
left margin. To specify the left margin
and the table length use the < nn,pp >
command. To define a line use the < $ >
command. (The < nn,pp > command is described
in section 2.7.4.2; the < $ > command is
described in section 2.7.4.3.)

2.7.4.2 < nn,pp > -   This command must follow the table
command. The 'nn' is a two digit number
specifying the left margin. The 'pp' is
a two digit number specifying the total
lines used by the table. The minimum
left margin is one and the maximum line
length is 63. The maximum number of lines
which can be specified is 14. If either
number is less than 10 they must be right
justified, zero filled (i.e., 01, 02,
03, ...).

2.7.4.3 < $ > - -   This command must be used to define each
line of the table. This command must
also be used to terminate the last line
of the table. The text which follows this
command is written character by character;
all spaces between characters are also
displayed. The maximum line length is 63.
Any characters found after the 63rd charac-
ter and before the next < $ > command, will
not be processed.

3.0 USING THE WANG

Once the data have been recorded in the workbook, the data can be entered into the AUTHOR System Phase 2 Data Base. Before you enter the data you must familiarize yourself with the WANG System equipment. The WANG equipment used to develop this version of the AUTHOR System was:

    (1) 2200 T CPU with 32K bytes of memory

    (2) 2200 VP CPU with 32K bytes of memory

    (3) 2270-3 Triple Floppy Disk Drive

    (4) 2260-B 10 Mega-Byte Fixed/Removable Disk Drive

    (5) 2221 Highspeed Line Printer

    (6) 2201 High Quality Output Writer

    (7) 2209 9-Track Tape Drive.

3.1 STORAGE MEDIUM

AUTHOR System programs and data are stored on rapid access disk devices. All AUTHOR System Data Bases are stored on diskettes; whereas the AUTHOR System programs can be stored on either a diskette or on a 5 mega-byte disk platter.

3.1.1   Preparing the Data Diskettes. The diskettes should be labeled to identify the contents of the disks and to aid in cataloging the disks. These diskettes must be write enabled and formatted. (For further instructions in handling the diskettes see WANG 2200 Disk Reference Manual, chapter 3.)

3.1.2   Preparing the Program Diskette or Platter. If the AUTHOR System programs are located on a 'diskette' the loading procedures can be found in the WANG 2200 Disk Reference Manual, chapter 3.

           If the AUTHOR System programs are located on the Fixed or Removable Disk Platter, then loading procedures can be found in the WANG 2200 Disk Reference Manual, chapter 2.

3.2 AUTHOR'S INTERFACE: THE KEYBOARD

The keyboard is the link between you and the AUTHOR System. The keyboard is divided into four zones. Zone 1 consists of Alpha characters, Zone 2 consists of Edit control keys, Zone 3 consists of Line Printer Initialization control keys, and Zone 4 consists of AUTHOR System program control keys. An illustration of the keyboard is shown in figure 3.1.
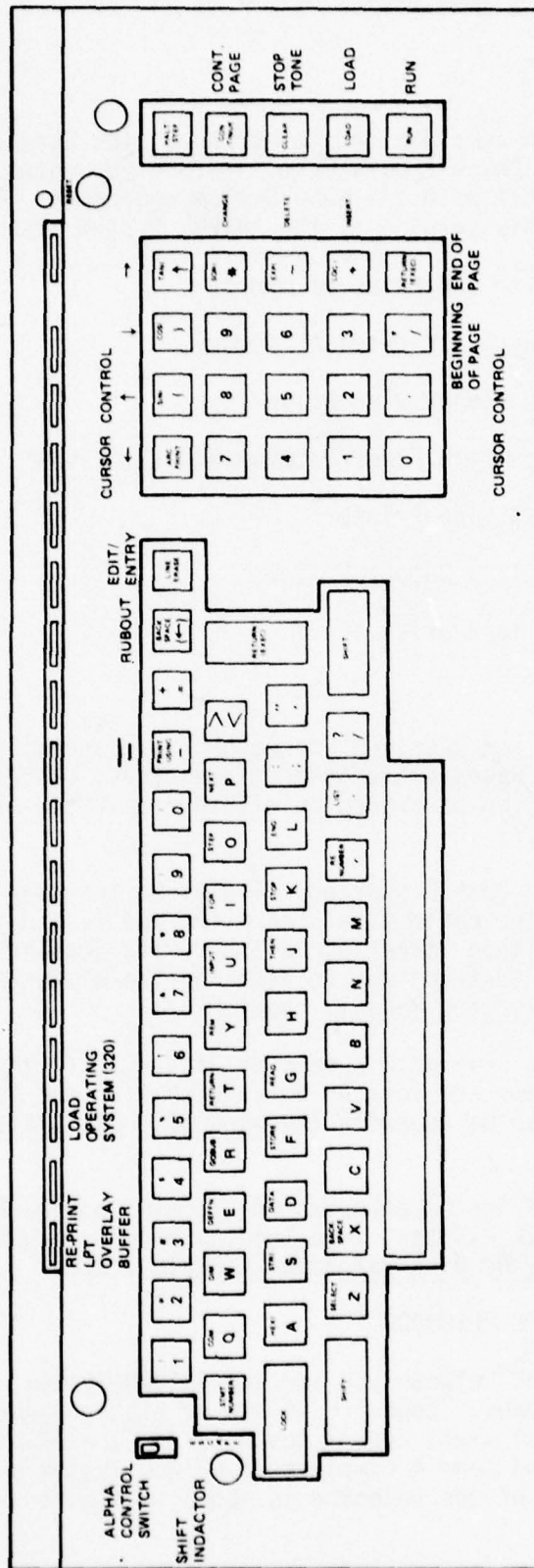
Figure 3.1. AUTHOR System Control Keys

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3.2.1   Keys in Zone 1 (alpha characters). The keys in this area are
similar to the keyboard on a typewriter. (Note: the Alpha
control switch should be in the 'A/a' position.) There are
five keys which do not enter characters: ESCAPE, RUBOUT,
EDIT/ENTRY, RETURN, and "_" (underscore). (Note: when using
the 2200 T system the "_" character will not be displayed;
when using the 2200 VP system the "_" character will be
displayed.) Each of these function keys will be described
more fully in the following text.

3.2.1.1   The ESCAPE key is used to terminate the entry of
either a multi-line text entry or a single line text
entry. This key may also be used to terminate
INSERT MODE and EDIT MODE.

3.2.1.2   The RUBOUT key is used to delete the last character
entered and will continue to delete characters each
time the key is depressed. Deletions will stop when
the end of the buffer is reached.

3.2.1.3   The EDIT/ENTRY key is used to enter and exit the
EDIT MODE when multi-line text is being entered. When
the EDIT/ENTRY key is first depressed, system enters
an EDIT MODE. This enables the edit control keys
(Zone 2). Depressing the EDIT/ENTRY key a second
time will terminate EDIT MODE and return to ENTRY MODE.
The EDIT/ENTRY key is also used to exit from several
submodes of edit operations. These features are
discussed later.

The ESCAPE key can also be used to terminate the
EDIT MODE.

NOTE:

Touching the ESCAPE key, once you have
returned to ENTRY MODE, will terminate ENTRY
MODE.

3.2.1.4   The "_" (underscore) key will cause the character
currently being 'blinked' to be underscored. The
"_" character is entered by holding the 'SHIFT' key
and depressing the "_" key. The character being
underscored will not be displayed as being under-
scored if the 2200 T CPU is used. The character
will appear to be underscored if the 2200 VP CPU is
used.

3.2.2   Keys in Zone 2 (Edit Functions). The keys in this area are
          used to perform special edit functions when in the EDIT MODE.
          Each of these keys will be described in the following text.
          A summary of edit functions can be found in appendix D.

          3.2.2.1   The CURSOR LEFT key will cause the cursor to move
                     to the left of the current position. By entering a
                     number before touching the CURSOR LEFT key the
                     cursor will move to the left the desired number of
                     spaces.

                                    NOTE:

                     (1) The number will not be displayed on the screen

                     (2) The value of the number must be between 0 and 64

                     (3) The cursor will go to the right margin of the
                          screen if you attempt to go past the left margin
                          of the screen

                     (4) Depressing the SHIFT key while at the same time
                          touching the CURSOR LEFT key will cause the
                          cursor to continuously move to the left until
                          another key is touched.

          3.2.2.2   The CURSOR UP key will cause the cursor to move up
                     one line from the current CURSOR position. By entering
                     a number before touching the CURSOR UP key the cursor
                     will move up to the desired number of lines.

                                    NOTE:

                     (1) The number will not be displayed on the screen

                     (2) The value of the number must be between 0 and 16

                     (3) The cursor will go to the bottom of the buffer
                          if you attempt to go above the first line of the
                          buffer

                     (4) Depressing the SHIFT key while at the same time
                          touching the CURSOR UP key will cause the
                          cursor to continuously move up the buffer until
                          another key is touched.

3.2.2.3   The CURSOR DOWN key will cause the cursor to move
down one line from the current cursor position. By
entering a number before touching the CURSOR DOWN key
the cursor will move down the desired number of lines.

NOTE:

(1)   The number will not be displayed on the screen

(2)   The value of the number must be between 0 and 16

(3)   The cursor will go to the top of the buffer if you
attempt to go beyond the last line of the buffer

(4)   Depressing the SHIFT key while at the same
time touching the CURSOR DOWN key will cause
the cursor to continuously move down the buffer
until another key is touched.

3.2.2.4   The CURSOR RIGHT key will cause the cursor to move
right one space from the current cursor position. By
entering a number before touching the CURSOR RIGHT
key the cursor will move right the desired number of
lines.

NOTE:

(1)   The number will not be displayed on the screen

(2)   The value of the number must be between 0 and 64

(3)   The cursor will go to the left margin of the
screen if you attempt to go beyond the right margin

(4)   Depressing the SHIFT key while at the same time
touching the CURSOR RIGHT key will cause the
cursor to continuously move right until another
key is touched.

3.2.2.5   The CHANGE key will allow you to change the
character indicated by the cursor. First touch the
CHANGE key then touch the new character key.

By entering a number before touching the CHANGE key
it will allow you to change the specified number of
characters from the cursor.

NOTE:

(1) The value of the number must be between 0 and 64

(2) Touching the RUBOUT, RETURN, ESCAPE, or EDIT/ENTRY key will discontinue the change process.

3.2.2.6 The INSERT key is used to insert a specified number of spaces into the buffer, shifitng all other text by the specified number of spaces. Once the spaces have been inserted the keyboard will remain in INSERT mode, and you will be able to enter the desired text. To exit the INSERT mode, touch any of the following keys:

> EDIT/ENTRY
> RETURN
> ESCAPE

3.2.2.7 The DELETE key will allow you to delete characters from the buffer. By entering a number before touching the DELETE key the specified number of characters will be deleted from the buffer, shifting all other characters the specified number of spaces to the left.

NOTE:

(1) The value of the number must be between 0 and 64

(2) The first character cannot be deleted using this function; however, it can be deleted by using the RUBOUT key. (RUBOUT only works while in the INSERT or ENTRY modes.)

3.2.2.8 The CURSOR BEGINNING key will position the page so that the first line of the page will appear at the top of the screen and the cursor will be at the beginning of the line.

3.2.2.9 The CURSOR ENDING key will position the page so that the last line of the page will appear at the top of the screen and the cursor will be at the beginning of the line.

3.2.3 Keys in Zone 3 (Printer Initialization). These keys are used to initialize the line printer before any data can be listed. The four function keys are:

3.2.3.1 CONTINUE ('Cont. Page'): This key is used when a copy of the alignment page is to be reprinted.

3.2.3.2 CLEAR ('Stop Tone'): This key is used to disengage the tone that is sounded at the end of an alignment page.

3.2.3.3 LOAD: This key can be used to indicate that the printer is aligned and that processing may continue. It may also be used to enter the key word LOAD when entering system initializing commands.

3.2.3.4 RUN: This key can be used to indicate that the printer is aligned and that processing may continue. It may also be used to enter the keyword RUN when entering system initializing commands.

NOTE:

If the HALT/STEP key is ever touched, touch the CONTINUE key then touch the RETURN key to recover.

3.2.4 Keys in Zone 4 (Error Recovery/System Loading). These keys are used to load and execute system routines and to recover from certain processing errors. Three keys are referenced in this manual and are described below.

3.2.4.1 Load 2200 VP System: This key is used to load the operating system from the disk into the control memory of the 2200 VP CPU. This key is only used when the CPU is first turned on. Before touching this key the shift lock indicator must be OFF.

3.2.4.2 Tape Restart: This key is used to reprint the line printer overlay buffer which has been stored on tape. Before touching this key the shift lock indicator must be ON. (For the exact procedures on how to use this function, refer to 5.6.3.)

3.2.4.3 The RESET key is used to reset all I/O devices to a ready state.

4.0 CREATING AND MAINTAINING A DATA BASE

Before you can create the subject matter data base (Phase 2 data base) you will need two disks. One of the disks must be a diskette. This one will store the data base. The second disk contains the AUTHOR System programs. These programs can be on a diskette or on a fixed/removable disk platter.

4.1 LOADING PROGRAM AND DATA DISKS

The data diskette must first be formatted before a data base can be stored on it. This must be done every time a new data base is to be created, even though the diskette has been previously formatted. (See WANG 2200 Disk Reference Manual, chapter 3 for instructions in formatting a diskette.) Formatting should only be done when a new data base is being created.

Note:

Formatting a diskette erases all information previously stored on it.

The data base diskette can be inserted into any available floppy disk drive. The AUTHOR System program disk should be mounted either in an available floppy disk drive or on the fixed/removable disk unit.

Once the disks are mounted you are ready to initialize the AUTHOR System.

Note:

Throughout the remainder of this report any text which appears on the computer's CRT console or other output device will be type set in the following type face:

COMPUTER OUTPUT

4.2 INITIALIZING THE AUTHOR SYSTEM

We must first load in the AUTHOR module menu. This is done by typing in the commands:

. *:CLEAR (RETURN (EXEC))*

. *:LOAD DCT/nnn, "AUTHOR" (RETURN (EXEC))*

. *:RUN (RETURN (EXEC))*

Note:

. When typing the 'LOAD' command replace 'nnn' with
the drive address of the disk unit containing the
AUTHOR System programs. The disk devices that are
supported by the AUTHOR System are listed below.

> 310 - Floppy Disk Drive #1
> B10 - Floppy Disk Drive #2
> 350 - Floppy Disk Drive #3
> 320 - Fixed Disk Platter
> B20 - Removable Disk Platter

The AUTHOR System will now display the following menu:

Enter code of the disk containing AUTHOR Programs:

Disk Menu	*1*	*-*	*Floppy Disk Drive #1*	*(310)*
	2	*-*	*Floppy Disk Drive #2*	*(B10)*
	3	*-*	*Floppy Disk Drive #3*	*(350)*
	4	*-*	*Fixed Disk Platter*	*(320)*
	5	*-*	*Removable Disk Platter*	*(B20)*

You now enter the code describing which disk drive contains the AUTHOR
System programs. End the entry by touching the RETURN key.

The AUTHOR System will now display the module loading menu:

Enter code of the function you wish to perform?

Loading menu   *1* *-* *Construct basic module formats (AUTHOR/1)*

          2 *-* *Create/maintain data base (AUTHOR/2)*

          3 *-* *Create/maintain learning module (AUTHOR/3)*

In order to select the Data Base maintenance option enter a 2 followed
by a RETURN.

The system will now load the Phase 2 data base routines into memory.

4.3 INITIALIZING DATA BASE ROUTINES

The system will then display program information describing the operation
of the program. When ready, touch the RETURN key to continue with pro-
gram execution.

The system will now display the Phase 2 command menu:

COMMAND SUMMARY

ASSIGN - Assign Disk devices

INITIAL - Initial Entry of Data Base

MAINTENANCE - Maintenance of Data Base

BACKUP - Backup of Data Base

HELP - Sequence of Commands.

Enter Command?

These commands will be used to initialize the Phase 2 program module. The commands are:

4.3.1   ASSIGN. This command must always be given and it must be the first command. When this command is executed the following menu will be displayed:

Command	Device Assigned	Function
PROGRAM	Disk -	Assign Program Disk
DATA	Disk -	Assign Data Base Disk
BACKUP	Disk -	Assign Backup Data Base Disk
EXIT		Return to Initialization Menu

This menu describes all the disk files which will be needed by the Phase 2 processing routines. The three files which may be assigned are:

4.3.1.1   PROGRAM. This command allows you to assign the disk drive containing AUTHOR System programs. This command must always be issued in order to assign location of Phase 2 overlay routines.

4.3.1.2   DATA. This command allows you to assign the disk device containing the diskette used to store the Phase 2 subject matter data base. This command must always be issued in order to assign the location of the data base.

4.3.1.3   BACKUP. This command allows you to assign the disk device containing the diskette to be used to back up the Phase 2 Data Base Diskette. This command is optional and should only be used when a backup copy of the data base is to be created.

The 'Exit' command is given when all necessary disk files have been assigned. This command will return the program to the Phase 2 command menu.

After each one of the above assignment commands, the following menu will appear:

> 1 - *Floppy Disk Drive #1*   (310)
> 2 - *Floppy Disk Drive #2*   (B10)
> 3 - *Floppy Disk Drive #3*   (350)
> 4 - *Fixed Disk Platter*   (320)
> 5 - *Removable Disk Platter*   (B20)

Enter Disk Device to be assigned?

Enter the appropriate code for each of the assignment commands executed.

4.3.2   INITIAL. This command is only used when the data base diskette is first used to store a Phase 2 data base. This command will verify that the disk is formatted and will assign a volume ID label and a password. It will also initialize the index lookup table.

4.3.2.1   Formatting Data Base Diskette. When the 'INITIAL' command has been executed the program will display the following:

The Phase 2 Data Base Disk must first be FORMATTED before continuing.

Once the disk is formatted touch the RETURN key.

If the disk is formatted touch the RETURN key. If the diskette is not formatted, format the diskette then touch RETURN. (For formatting procedures see WANG 2200 Disk Reference Manual, chapter 3.)

4.3.2.2   Entering the Disk Volume Label. The program will now display the following prompt:

Enter Disk Volume ID   ????????

This label may be from 1 to 16 characters in length and may be used to describe the contents of the data base.

When the label has been entered touch the RETURN key. If no label is required simply touch the RETURN key and the label will default to 'AUTHOR Data Base'.

4.3.2.3   Entering the Password. The program will now display the prompt:

Enter Password ???????

You may now enter an eight character password.
Note as you enter the password the characters will
not be displayed on the CRT.

Remember the password since it will be required
for any future processing of this data base.

When the password has been entered, touch the
RETURN key. The program will now ask you to
verify the password. Just type the password over
again. If the passwords do not match, the program
will go back to 'ENTER PASSWORD'.

4.3.2.4 Initializing the Index Lookup Table. The program
will then initialize the index lookup table.
There are 256 items per sector and 10 sectors
which must be initialized and the progress of this
initialization is displayed on the CRT.

4.3.3 MAINTENANCE. This command is used when you wish to edit or
list all or part of the Phase 2 Data Base. When this com-
mand is executed the program will check to see if the disk-
ette is in the proper format for a Phase 2 data base. Then
it will display the prompt:

Enter Password   ???????

You will now enter the eight character password entered when
initializing the disk.

Note:

As you enter the password the characters will not
be displayed on the CRT.

The Phase 2 initialization is now complete, and the program
will now load in the routines which will allow you to create
and maintain the Phase 2 data base.

4.3.4 BACKUP. This command is used when you wish to create a
backup copy of the Phase 2 Data Base Diskette. When this
command is executed the program will display the following
prompt on the CRT:

*Verify that Phase 2 data base diskette and the
Phase 2 backup disk are mounted in the proper
drives.*

Are Disks properly mounted (Y/N)?

If you enter an 'N' then the program will execute the routine
which assigns the disk devices to the system (see 4.3.1,
the ASSIGN command).

If you enter a 'Y' the program will display the prompt:

Do you wish to change PASSWORDS (Y/N)?

This option will allow you to have a different password on the new diskette.

If you respond with a 'Y' then the program will ask you to:

Enter Disk Volume ID   ?????????????

Enter Password   ?????????????

Verify Password   ?????????????

When the password has been entered or an 'N' given in response to the change Password prompt, the program will copy the data base onto the new diskette. When completed, the program will return to the DATA BASE MAINTENANCE INITIAL-IZATION MENU.

4.3.5   HELP. This command is used if you would like to see a page of text briefly describing the functions of the commands. When this command is executed the program will display a short description of the following commands:

      i.   ASSIGN
      ii. INITIAL
      iii. MAINTENANCE

When you are ready to return to the command menu, touch the RETURN key.

4.4 CREATING AND MAINTAINING PHASE 2 DATA BASE ITEMS

When you have completed initializing the Phase 2 AUTHOR System the program will display a menu of all the data items which are to be stored in the data base. By typing in the proper command, you will be able to create or update any item of the Data Base. The remainder of this section will describe how each item can be created and updated. The menu which is displayed shows all items, and when an item has been modified it is indi-cated by a "*" which will appear to the left of the command when the menu is next displayed. A summary of these commands can be found in appendix C. Figure 4.1 shows the data entry procedures menu.

```
┌─────────────────────────────────────────────────────────┐
│                    COMMAND SUMMARY                       │
│                                                          │
│         TITLE                    TYPE                    │
│         SUBTITLE                 NAME                    │
│         AUTHORS                  SOURCE                  │
│         DATE                     EXAMPLE                 │
│         ORGANIZATION             SYMBOL                  │
│         TRAINING                 HELP                    │
│         IMPORTANCE               LIST                    │
│         USAGE                    ESCAPE                  │
│                                                          │
└─────────────────────────────────────────────────────────┘
```

Figure 4.1. Data Entry Procedures Menu

Note:

When entering any of the AUTHOR System commands, you need
not enter the entire command string. You need only enter
as many characters as will make the command unique.

EXAMPLE:

To enter the 'TITLE' command, you need only type TI since this
will distinguish it from the TR (Training) and TY (Type) com-
mands.

These commands can be divided into three types. These types are: Text
Input, Symbol Input, and Special Processing.

4.4.1   Text Commands. The 'TITLE', 'SUBTITLE', 'AUTHORS', 'DATE',
          'ORGANIZATION', 'TRAINING', 'IMPORTANCE', 'USAGE', 'TYPE',
          'NAME', 'SOURCE', and 'EXAMPLE' commands are all entered
          in the same format. These text entry procedures are
          described in more detail in section 4.5, Text Entry Procedures.

4.4.2   Symbol Commands. The symbol command will allow you to
          create and maintain the descriptions of all the symbols.
          These procedures are described in more detail in section
          4.6, Symbol Entry Procedures.

4.4.3   Special Processing Commands. The 'HELP' command will dis-
          play the DATA ENTRY PROCEDURES MENU. The 'ESCAPE' command
          is used when Phase 2 processing is complete. When this
          command is executed the program will load the AUTHOR System
          Initializing Routine (AUTHOR).

          The 'LIST' command will allow you to list the contents of
          the Phase 2 Data Base on the line printer. Procedures for
          listing the Data Base are described in section 4.7, Data
          Base Listing Procedures.

Note:

Touching the RETURN key in response to 'ENTER COMMAND' prompt will cause the next default command to be executed. The default order of the commands is the same order as they appear in the menu.

4.5 TEXT ENTRY PROCEDURES

Upon execution of a text input command (i.e., 'TITLE', 'IMPORTANCE', 'EXAMPLE', etc.) the program will display the following:

```
?



                                                          |
                                                          |
                                                          |
                                                          |
_____ Entry Mode  |
```
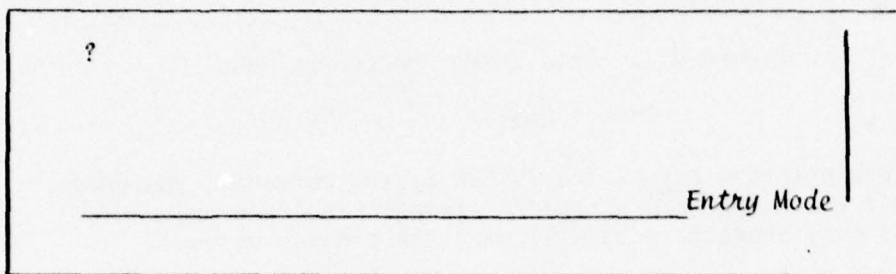
The CURSOR is positioned at the beginning of the page.

Note:

The CURSOR on the page always shows the LAST character entered. If the last character is a blank, the CURSOR will be displayed as a "?" character. In this manual any reference to the current character or current character position means the character or character position which is to the immediate right of the CURSOR. The current CURSOR position is always indicated by the blinking character.

Note:

The text entry buffer of the AUTHOR System is called a "page." Any data item entered in this way can contain an unlimited number of pages, but special precautions must be taken when editing a multi-page text item.

A page of text is 32 lines in length and each line is 63 characters long.

See sections 4.5.4 and 4.5.5 for more information in working with multi-page text items.

There are five procedures which will be covered in this section. These procedures are:

(1) Initial entry of a text item
(2) Editing of text on the current page
(3) Recalling text previously stored in the data base
(4) Creating multi-page text items
(5) Editing multi-page text items.

4.5.1   Initial Entry of a Text Item. If this is the initial entry of the text, you simply type in the text. When you have completed the entry of the text, touch the ESCAPE key. Touching the ESCAPE key causes the current page of text to be saved on disk. When saving is completed the program will return to the Data Entry Procedures Menu where you can select the next item to be entered.

Note:

When text is being entered and the program senses that you have reached the end of the page the program will display the message:

```
-----------------------
-----------------------
------ (data) ----------
------------?
                    LAST LINE
```

If more space is needed beyond this point follow procedures of section 4.5.4.

Note:

There are several special text entry modes which can be executed during text entry. The current mode of the text entering routines is shown in the lower right-hand corner of the CRT. While in the initial entry of the text item the text mode should be ENTRY MODE. If this is not the case, touch the EDIT/ENTRY key until this mode is displayed.

The ESCAPE function of saving the text page, can only be executed when in the ENTRY MODE.

4.5.2   Editing of Text on the Current Page. If you need to modify
any part of the text while it is still displayed on the
screen, touch the EDIT/ENTRY key until the text mode is
in EDIT MODE. (This message is displayed in the lower
right-hand corner of the CRT screen.)

```
-------------------------------------
-------------------------------------
----------------data-----------------
-------------------------------------
-----------------------------------?
                              EDIT MODE
```
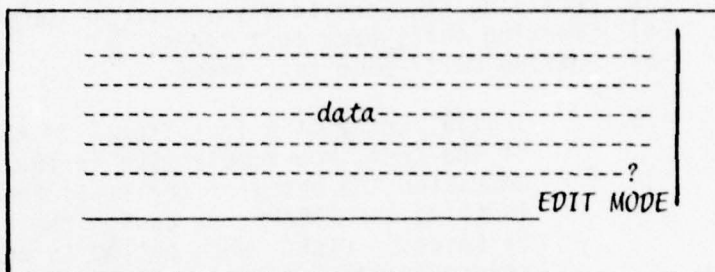
While in the EDIT mode you may position the CURSOR and
modify any text within the current page by using the Edit
features described in appendix D.

When editing is complete you may return to the ENTRY mode
by touching the EDIT/ENTRY key until the text mode is
ENTRY MODE.

Note:

The text page can only be saved while in the
ENTRY MODE. When in the ENTRY MODE, touch
the ESCAPE key to save the page.

4.5.3   Recalling Text Previously Stored in the Data Base.
To indicate which item is to be recalled enter the proper
command from the DATA ENTRY PROCEDURES MENU (see figure
4.1).

The program will first display the following:

```
    ?




                                        ENTRY MODE
```

44
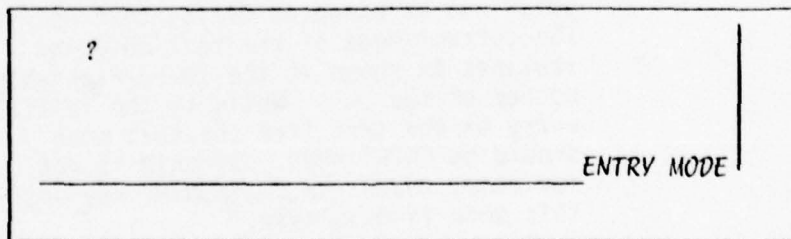
This indicates that you are in the INITIAL ENTRY mode. (If you wish to completely change the item, simply follow the procedure in section 4.5.1.)

Touch the EDIT/ENTRY key until the program is in the EDIT MODE.

The CURSOR must then be positioned to the beginning of the page. This is done by touching the CURSOR BEGINNING key.

The CRT screen looks like this:

```
 ?                                              |
                                                |
                                                |
                                                |
 _____ EDIT MODE |
                                                
```
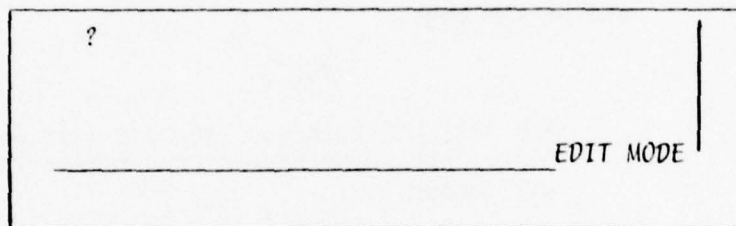
At this time touch the EDIT/ENTRY key once. The program will now begin to search for the data item and load it into the text buffer and display the contents on the screen.

If after touching the EDIT/ENTRY key the program returns to the ENTRY mode, this indicates that the requested data item does not exist on the disk. If this is the case, follow the procedure in section 4.5.1.

When the text has been displayed on the screen you may now edit according to the procedures in section 4.5.2.

If this is a multi-page data item, then follow procedures as described in section 4.5.5.

4.5.4   Creating Multi-Page Text Items. When the text of the data item is going to exceed the limits of one page, the current page will be saved and you may continue to enter the data item.

When the program senses that the end of page is near, the following message will be displayed:

```
     ------------------------------------|
     ------------------------------------|
     -----------------data---------------|
     ------------------------------------|
     ------------------------------------|
     ------------------------------------|
     --------------------?               |
                           LAST LINE      |
     _____    |
```

45
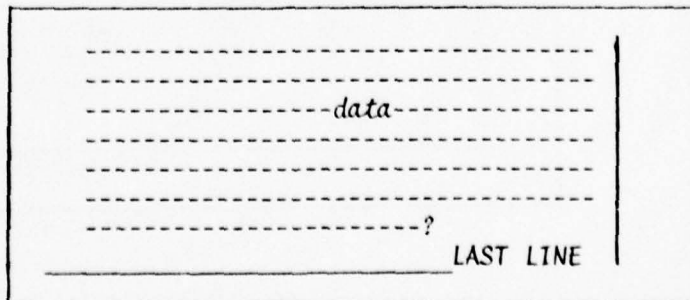
At this time you may wish to make any changes to the current
page before saving and continuing to the next page.

NOTE:

Text cannot be transferred from one page
to another. So consider any future editing
which may be needed. Allow room for any
text which you may later want to add to
this page.

Once changes have been completed, place the CURSOR at the
end of the page.

NOTE:

The last character on the page must be a
blank, otherwise unpredictable results
will occur.

To position the CURSOR at the end of the page place the
Program into the EDIT MODE and touch the following two keys:

"CURSOR END"
"CURSOR ←" (left)

Now place the program into the ENTRY MODE and touch the
SPACE BAR. The program will display the following:

```
------------------------------------------
------------------------------------------
-----------------data------------------
------------------------------------------
------------------------------------------
                              WORKING. . .
```
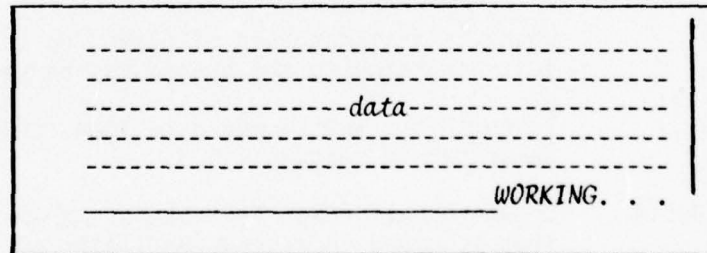
The program is now saving the current page and preparing for
entry of the next page. When program is ready for next
page the screen will look like this:

```
?


                                    ENTRY MODE
```
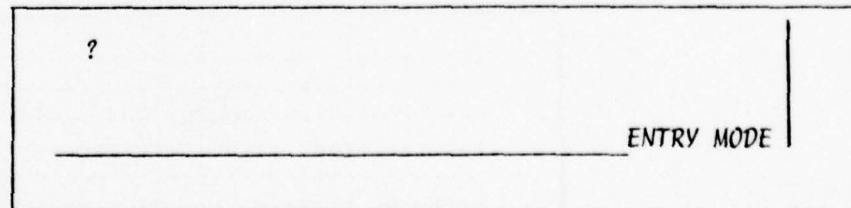
You are now ready to continue entering the text item.

You may create as many pages as necessary to describe the DATA ITEM.

When entry is complete, place the program into ENTRY MODE and touch the ESCAPE to save last page and return control to the DATA ENTRY PROCEDURES MENU.

4.5.5   Editing Multi-Page Text Items. Each page of the multi-page text item may be edited in much the same fashion as described in section 4.5.2 provided the page is currently displayed.

<div align="center">NOTE:</div>

Once a page has been saved and you have continued on the next page no previous pages can be edited at this time.

In order to recall a previous page you must complete the entry of the item and then recall the item by following the procedures in section 4.5.3.

Once the DATA ENTRY PROCEDURE MENU is displayed you can select the item to be recalled. Following the procedures as described in section 4.5.3 the program will load the first page of the multi-page text item.

You can now perform any corrections on this page by using the edit features described in appendix D.

In order to load the next page we must position the CURSOR at the end of the page. This is done by placing the program into EDIT MODE and touching the following keys:

"CURSOR END"
"CURSOR ←"

You now place the program into ENTRY MODE and touch the SPACE BAR key. The program will now save the current page and load the next page.

You must continue this procedure for all pages of the item.

When you have reached the last page and have completed any corrections to it, place the program into ENTRY MODE and touch the ESCAPE key. This will save the last page of the DATA item and return control to the DATA ENTRY PROCEDURES MENU.

NOTE:

You must be on the last page of the text
item before executing the ESCAPE function.
If this is not the case the program will
flag the current page as the last page and
all following pages will be lost.

4.6 SYMBOL ENTRY PROCEDURES

Upon execution of the SYMBOL command the program will display the following:

```
                        COMMAND SUMMARY

        SETNUMBER                   DEFINITION
        SBLNUMBER                   MNEMONIC
        SETNAME                     SIMILAR SYMBOLS
        REFERENCE NUMBER            NEXT
        SYMBOL                      DELETE
                                    EXIT
```

Each one of the above commands will allow you to enter a piece of information
concerning the description of one symbol.

NOTE:

Touching the RETURN key as the first response to the ENTER COM-
MAND? prompt will cause the program to execute the next default
command. The default order of the commands is the same as they
appear in the menu.

NOTE:

Each of the following commands MUST be executed at least once for
every symbol to be described. If this is not done a system error
will be detected when an attempt is made to use the data item.

        SETNUMBER   DEFINITION
        SBLNUMBER   MNEMONIC
        SETNAME   SIMILAR SYMBOLS
        REFERENCE NUMBER
        SYMBOL

The remainder of this section will describe each of the symbol entry commands.

4.6.1   The 'SETNUMBER' command will allow you to enter the set number
         of the set containing the symbol to be described.

         When this command is executed the system will display the
         prompt:

                        ENTER SET NUMBER?

         You may now enter the set number and then touch the RETURN
         key.

                              NOTE:

              Touching the RETURN key in response to the 'ENTER
              SET NUMBER' prompt will cause the set number of the
              previous set to be entered or if this is the first
              time this command is executed the set number will
              be 1.

4.6.2   The 'SBLNUMBER' command will allow you to enter the number of
         the symbol to be described.

         When this command is executed the system will display the
         prompt:

                        ENTER SYMBOL NUMBER?

         You may now enter the symbol number and then touch RETURN
         key.

                              NOTE:

              Touching the RETURN key as the first response to
              the 'ENTER SYMBOL NUMBER' prompt will cause the
              next sequential symbol number to be entered. If
              this is the first time the command was executed
              the symbol number will be 1. Also, if the current
              SETNUMBER is different from the previous SETNUMBER,
              the symbol number will be 1.

4.6.3   The 'SETNAME' command will allow you to enter the name of the
         symbol set. When this command is executed the system will
         display the prompt:

                        ENTER SETNAME?

         You may now enter the set name. When completed touch the
         RETURN key.

NOTE:

Touching the RETURN key as the first character
will cause the program to insert the default
set name of

Symbol Set #nnn

To have no set name at all, the first character must be a
blank and then touch the RETURN key.

NOTE:

The text input for the SETNAME will not be saved
on the disk until the 'REFERENCE NUMBER' command
is executed.

4.6.4   The 'REFERENCE NUMBER' command will allow you to enter the
type of symbol which will be processed. The two types of
symbols are (1) alphanumeric and (2) graphic. Currently,
version 2.0 of the AUTHOR System can only process alpha-
numeric symbols.

When this command is executed the sytem will display the
prompt:

ENTER GRAPHIC CODE (1-Alpha, 2-Graphic)?

At this time you must enter the code of 1 and a 'RETURN'.

NOTE:

Touching the RETURN key without entering a
graphic code will cause the program to auto-
matically enter a graphic code of '1'.

Once the graphic code has been entered the program will
construct the symbol reference number and store this in-
formation along with the symbol set name on the disk.

4.6.5   The 'SYMBOL' command will allow you to enter the symbol.
Since version 2.0 will only process alphanumeric symbols
the program will only prompt for a 15 character alpha-
numeric symbol.

When this command is executed the program will display the
following prompt:

ENTER SYMBOL??????????

At this time you may enter the symbol. When entry is complete touch the RETURN key.

NOTE:

Touching the RETURN key as the first character will cause the program to insert the symbol 'SYMBOL' into the text.

Once the symbol has been entered the program will save this information on the disk.

4.6.6   The 'DEFINITION' command will allow you to enter the symbol definition. This command when executed is similar to the text input commands. When this command is executed the program will display the following:

```
                                                            |
                                                            |
                                                            |
                                                            |
                                              ENTRY MODE |
  _____
```

You may now enter the definition by following the same procedures as described in section 4.5.

When the definition has been entered the program will save this information on the diskette.

4.6.7   The 'MNEMONIC' command will allow you to enter the symbol memory aid. The procedures for entering the memory aid are the same as those for entering the definition (section 4.6.6).

4.6.8   The 'SIMILAR SYMBOLS' command will allow you to enter the symbol numbers of any symbols to be used in symbol discrimination drills. When this command is executed the program will display the following:

ENTER SIMILAR SYMBOLS 01 - ????

You may now enter the symbol number of a symbol to be used in symbol discrimination drills. When completed, touch the RETURN key. The program will then display:

ENTER SIMILAR SYMBOLS 01 - 0002

02 - ????

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You may now enter a second similar symbol number. Enter
the number in the same way as the first. When all similar
symbol numbers have been entered type in the similar symbol
number 9999.

NOTE:

If there are no similar symbols for the current
symbol enter the similar symbol number of 9999
as the first number.

NOTE:

Touching the RETURN key or the ESCAPE key as
the first character of the similar symbol
number will cause the program to enter the
similar symbol number of 9999 thus ending the
entry of similar symbol numbers.

4.6.9   The 'NEXT' command will allow you to increment the current
symbol number and reinitialize for entry of next symbol.
When this command is executed the program will redisplay
the symbol entry menu. By touching the RETURN key the
program will automatically start over by executing the
'SETNUMBER' command.

4.6.10   The 'DELETE' command will allow you to delete a symbol from
the disk. When this command is executed the program will
display the following prompts:

ENTER SYMBOL SET NUMBER > ???

ENTER SYMBOL NUMBER > ????

After entering these numbers the program will erase the
symbol and all associated information from the disk.

NOTE:

If this command is executed while entering a
symbol description the program will not prompt
for the set and symbol number. Instead, the
program will delete the current symbol.

4.6.11   The 'EXIT' command will allow you to return to the DATA ENTRY
PROCEDURES MENU. When this command is executed the program
will return control to the DATA ENTRY PROCEDURES MENU where
you may enter your next command.

4.7 DATA BASE LISTING PROCEDURES

Upon execution of the 'LIST' command from DATA ENTRY PROCEDURES MENU, the program will display the Data Base Listing Procedures Menu (see figure 4.2.). These listing procedures will allow you to list, on the line printer, all or part of the Phase 2 Data Base.

```
        Command Summary; Listing Procedures Menu

                TITLE              TYPE
                SUBTITLE           NAME
                AUTHORS            SOURCE
                DATE               EXAMPLE
                ORGANIZATION       SYMBOL
                TRAINING           HELP
                IMPORTANCE         LIST
                USAGE              ESCAPE

        ENTER COMMAND      ????????????
```

Figure 4.2. Data Base Listing Procedures Menu

4.7.1 Listing Procedures Commands

4.7.1.1 TITLE - This command will cause the program to print the title text.

4.7.1.2 SUBTITLE - This command will cause the program to print the subtitle text.

4.7.1.3 AUTHORS - This command will cause the program to print the authors names.

4.7.1.4 DATE - This command will cause the program to print the creation date text.

4.7.1.5 ORGANIZATION - This command will cause the program to print the name of the organization text.

4.7.1.6 TRAINING - This command will cause the program to print the training objective text.

4.7.1.7 IMPORTANCE - This command will cause the program to print the text describing the importance of the symbols.

4.7.1.8 USAGE - This command will cause the program to print the text describing how the skill in recalling these symbols will be used.

4.7.1.9 TYPE - This command will cause the program to print the text describing the type of symbols.

4.7.1.10   NAME - This command will cause the program to print the text describing the name of the users of the learning module.

4.7.1.11   SOURCE - This command will cause the program to print the text describing the official source of reference for the symbol definitions.

4.7.1.12   EXAMPLE - This command will cause the program to print the text describing the symbol example.

4.7.1.13   SYMBOL - This command will cause the entire list of symbols to be printed. The following information is printed for each symbol:

> SYMBOL SET NUMBER
> SET NUMBER
> REFERENCE NUMBER
> SYMBOL
> DEFINITION
> MNEMONIC (Memory Aid)
> SIMILAR SYMBOLS

4.7.1.14   HELP - This command will display the following message:

This program allows the items of the Phase 2 Data Base to be listed on the line printer. Items may be listed individually or the entire Data Base may be listed.

To list items individually simply type the proper command. To list the entire Data Base simply type the 'LIST' command. Since this program constructs pages in memory, a page will not be printed until the page is full or the program is stopped by entering the 'ESCAPE' command.

4.7.1.15   LIST - This command will cause the program to print the entire Data Base. When execution of this command is completed you must execute the ESCAPE key. This will cause the program to print the last page from memory.

4.7.1.16   ESCAPE - This command will cause the program to print the last page from memory. Then to terminate the Data Listing program, the program will load the AUTHOR System overlay control routine (AUTHOR).

NOTE:

Due to the listing algorithm used to format the data, spaces may be inserted in the middle of words. These spaces will not appear in the text when generating the learning module.

4.7.2   Printer Initialization

Before the listing procedures menu is displayed, the printer will be initialized and a title page will be printed. There are two special character scan flags which must be set.

4.7.2.1   The function of the first optional scan is, that for every occurrence of a zero and zee a special code will be added so that when these characters are printed a zero will appear as "Ø" and a zee will appear as "Ƶ."

These options can be selected when the program displays the following:

Enter Scanning Code from below table

Special character scanning 1 - Scan for zero (0)

2 - Scan for zee (Z)

3 - Scan for both

4 - No Scanning

To select the desired scan simply touch the corresponding code (1-4).

Since the current WANG printer does not support an over-printing capability, these printing functions are accomplished by printing an entire page of text, then repositioning the paper and printing the overprint character.

There are two ways of doing this. The first is as indicated in the LPT underscore menu (see figure 4.3), the paper must be repositioned after every page. This option should be selected if there are only a few pages to be printed or if the 9-track tape unit is unavailable.

The second option of multi-page underscoring involves the storing of the overprint buffer on tape. Using this option the paper is only repositioned once when all the text pages have been printed.

This option is selected when the program displays the LPT underscore menu (figure 4.3).

To select the desired scan simply touch the corresponding code (1-3).

```
Enter code from LPT underscoring menu?

Enter underscoring menu   1 - Single-page underscoring

                          2 - Multi-page underscoring

                          3 - No underscoring
```

Figure 4.3. LPT Underscore Menu

NOTE:

Do not touch the RETURN key after entering
scan code. Doing so will cause unpredictable
results.

NOTE:

When displaying the data base, selecting
scans 1, 2, or 3 may produce undesirable
results.

NOTE:

If scans 1, 2, or 3 were selected then the
second scanning option (section 4.7.2.2)
MUST be selected to either 1 or 2.

4.7.2.2   The function of the second scanning option is to allow
those characters which are flagged as being underscored
or the special characters "∅" and "Z̄" to be printed as
such.

In order to create underscored characters, the original
character is printed, then the special overprint charac-
ter is printed.

NOTE:

Do not touch the RETURN key after entering
the scan code. Doing so will cause unpre-
dictable results.

4.7.2.3   Once the two scan flags have been set the program will
print an alignment page on the printer. At this point,
you will be instructed to use the printer initialization
keys located in Zone 3 of the keyboard. The three
functions which will be executed are:

CONT. PAGE - Touching this key will cause the alignment
page to be reprinted. This page may be printed as many
times as needed in order to align the paper.

STOP TONE - Touching this key will cause the warning tone to stop. (Since the AUTHOR System usually does not need constant supervision, a tone is sounded to inform the operator that his attention is needed.)

RUN - Touching this key (or any other key on the keyboard) will cause the program to continue the printing of the data base.

4.7.2.4 If either underscoring option was selected, the program will display the message

Device

$

Ready

$

Wait

on the CRT and a warning tone will begin. This is the signal that the paper should be repositioned so as to print the overprint buffer. Disable the tone and line printer by touching the SELECT switch or turning off the power switch.

If single page underscoring was selected, it may be more convenient to turn off the power switch and then rotate the paper down to two inches above the top edge of the page just printed, then turn the power back on and touch the SELECT switch.

If multi-page underscoring was selected you will want to first disable the printer by touching the SELECT switch, then remove the printer paper from the printer. Before remounting the paper, touch the TOP OF FORM key. Remount the paper so that the top edge of the paper is approximately 1 cm above the platen. Now position the paper to the last alignment page printed by touching the TOP OF FORM key. When this is done, select the PRINTER by touching the SELECT key.

NOTE:

When listing data base items, the program constructs output pages in memory. Therefore, a page is not printed until the page is full. To print the final page enter the ESCAPE command.

NOTE:

See section 5.6 for error recovery procedures in the event that the program detects an irrecoverable input error.

5.0 CREATION AND MAINTENANCE OF A LEARNING MODULE

The next step after creating the Phase 2 Data Base is to create the learning module. For this step you will need three disks. Those disks are:

(1) Floppy diskette containing the Phase 2 data base

(2) Floppy diskette or platter containing the AUTHOR System programs

(3) Floppy diskette on which to write the learning module.

5.1 LOADING PROGRAM AND DATA DISKS

The Phase 2 data base disk can be inserted into any available floppy disk drive. The AUTHOR System disk can be mounted in a floppy disk drive or fixed/removable disk drive.

The diskette used to output the learning module needs only be formatted if the diskette is new. More than one diskette may be necessary for storage if the learning module exceeds 250 frames. This diskette may be inserted into one of the remaining floppy disk drives.

Once the disks have been mounted, you are ready to initialize Phase 3 of the AUTHOR System.

5.2 LOADING AUTHOR SYSTEM OVERLAY CONTROL ROUTINE

This is done by typing the following commands:

:CLEAR (RETURN (EXEC))

:LOAD DCT/nnn, "AUTHOR" (RETURN (EXEC))

:RUN (RETURN (EXEC))

(See note section 4.2)

5.2.1 <u>Assign the Program Disk Drive</u>. The program will now display the following:

Enter Code of the Disk containing AUTHOR programs.

DISK MENU	*1 - Floppy Disk Drive #1*	*(310)*
	2 - Floppy Disk Drive #2	*(B10)*
	3 - Floppy Disk Drive #3	*(350)*
	4 - Fixed Disk Platter	*(320)*
	5 - Removable Disk Platter	*(B20)*

You now enter the code of the disk containing the AUTHOR System programs.

5.2.2   Selecting Program Operation. The program will now display the following:

> Enter code of the Function you wish to perform.
>
> Loading Menu 1 - Construct Basic Module Formats
>   (AUTHOR/1)
>
>   2 - Create/maintain Data Base
>   (AUTHOR/2)
>
>   3 - Create/maintain Learning Module
>   (AUTHOR/3).

You may now enter a "3" for learning module creation.

The system will then display program information. Touch the 'RETURN' key when ready to continue.

5.3 INITIALIZING LEARNING MODULE SUBSYSTEM

The program will now display the following Initialization menu:

> Command Summary:
>
> ASSIGN   - Assign program and Data Disk units to the program.
>
> FORMAT   - Select the formatting to be used in sequencing the learning module.
>
> SELECT   - Select the operation of the program (CREATE/LIST/EDIT)
>
> HELP   - Display text describing the order in which to execute the above commands.

The 'ASSIGN' command must always be executed. This command will allow you to assign all data and program disk units to the Phase 3 AUTHOR program.

The 'FORMAT' command is only used when the current session is to create a learning module. This command will allow you to enter certain formatting options.

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The 'SELECT' command must always be executed. This command will allow you to select the operational mode of the program.

Those commands will be described more fully in the following sections.

5.3.1 When the 'ASSIGN' command is executed the program will display the following menu.

Command Summary:

Command	Device Assigned	Function
PROGRAM	Disk	Assign the Program Disk
P2	Disk	Assign INPUT Data Base Disk
P3	Disk	Assign OUTPUT Data Base Disk
FORMAT	Disk	Assign Secondary OUTPUT Disk
Exit		RETURN to Command menu.

5.3.1.1 The 'PROGRAM' command must always be executed. This command allows you to assign the disk drive containing the AUTHOR System Program Disk.

5.3.1.2 The 'P2' command should only be executed when in this session you will create a learning module. This command allows you to assign the disk drive containing the Data Base diskette.

5.3.1.3 The 'P3' command must always be executed. This command allows you to assign the disk drive containing the Output Learning Module. This drive is referenced as the Primary Output Drive.

5.3.1.4 The 'FORMAT' command should only be executed when in this session you will create a learning module. This command allows you to assign a disk drive which will be used in the event there is an overflow of pages on the Learning Module diskette. This drive is referenced as the secondary output drive.

NOTE:

The disk drive assigned may be any floppy disk drive except the one designated primary output drive.

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After each one of the above assignment commands is executed the following menu will be displayed.

1 - *Floppy Disk Drive #1* (310)

2 - *Floppy Disk Drive #2* (B10)

3 - *Floppy Disk Drive #3* (350)

4 - *Fixed Disk Platter* (320)

5 - *Removable Disk Platter* (B20)

For each of the assignment commands enter the appropriate code indicating the location of the disk.

5.3.2 The 'FORMAT' command allows you to select certain formatting options available when a learning module is to be created. There are five options which may be selected at this time. These options are covered in the following sections.

5.3.2.1 <u>OPTION 1</u>: Page Number Format.

This option allows you to select the indexing format to be used when creating the learning module. This option is entered when the program displays the following message:

Command Summary:

LINEAR - *FORMAT OUTPUT in a linear format.*

24X - *FORMAT OUTPUT in a 24X fiche format.*

48X - *FORMAT OUTPUT in a 48X fiche format.*

5.3.2.2 <u>OPTION 2</u>: Starting Page Number.

This option allows you to select the starting page number (frame address). The default starting page number is 0001 (1A01 fiche frame address). This option allows you to select a different number. This is to allow you to insert introduction pages, etc. This option is entered when the program displays the following message:

Do you wish to override starting frame address

(Yes or No) ?

Entering "No" will return you to the next option.

Entering "Yes" will cause the program to display the following:

How is Frame Address to be entered

  (Linear or Fiche) ?????

Selecting to enter the starting page number in a linear format will cause the program to display the following:

Enter starting Frame Address ?????

Selecting to enter the starting page in a fiche format will cause the program to display the following:

Enter starting fiche Page number ?

Enter starting fiche Row number   ?

Enter starting fiche Col number   ?

NOTE:

The page number is converted to the format selected in section 5.3.2.1.

Example:

> Let us say we wish to start on the 6th page and we have chosen a 24X output index. We may enter the page number linearly and the program will automatically compute the address 01A06.

5.3.2.3   OPTION 3: Right Justification.

This option allows you to select a right justification option to allow single line definitions to be right justified. This option is entered when the program displays the following message:

Select Auto Right Justification Option

  (Yes or No) ???

See figures 5.1 and 5.2 for illustration of this option.

AUTHOR: An Automatic Authoring System   Version: 2.0

SYMBOL SET #01: LEARN SYMBOL DEFINITIONS   0018

Definition	Symbol	Memory Aid
Antimony	Sb	Shiney and brittle: Antimony
Gold	Au	Accepted universally: Gold
Iron	Fe	Forged easily: Iron
Lead	Pb	Pipe bends: Lead
Mercury	Hg	Hellenic god: Mercury

Go to 0019

Figure 5.1. Right Justification Turned Off

AUTHOR: An Automatic Authoring System   Version: 2.0

!   !
!   !
!   !

SYMBOL SET #01: LEARN SYMBOL DEFINITIONS   0018

Definition	Symbol	Memory Ai
Antimony	Sb	Shiney and brittle: Antimony
Gold	Au	Accepted universally: Gold
Iron	Fe	Forged easily: Iron
Lead	Pb	Pipe bends: Lead
Mercury	Hg	Hellenic god: Mercury

Go to 0019

!   !
!   !
!   !

Figure 5.2. Right Justification Turned On

5.3.2.4   OPTION 4: Left Indentation.

This option enables you to select a left indentation
option to allow multi-line definitions and memory
aids to have all lines following the first to be
indented a specified number of spaces. This option
is entered when the program displays the following:

Select Auto left indention option (0 - 9)

(0 - off) (1 - indent 1 space) (2 - indent 2 spaces)

See figures 5.3 and 5.4 for illustration.

5.3.2.5   OPTION 5: Number of Criterion Tests.

This option allows you to select the number of criterion
tests to be generated at the end of the learning module.
This option is entered when the program displays the
following message:

Select the number of criterion tests to generate ??

NOTE:

Entering a $\emptyset$ will cause the program to omit
the criterion test section completely.

5.3.3   The 'SELECT' command allows you to select the type of operation
to be performed during this session. When this command is
executed the program will display the following menu:

CREATE - *Begin creating the learning module.*

EDIT   - *Begin editing an existing module.*

LIST   - *Begin listing an existing module.*

5.3.3.1   The 'CREATE' command, when executed causes the program to
load in the automatic routines controlling the creation
of a learning module. From this point on, the processing
is automatic. The program should not stop until the
learning module diskette is completed. At that time
the program will display a menu requesting an output
device. For further information covering the creation
process, see section 5.4.

5.3.3.2   The 'EDIT' and 'LIST' commands, when executed cause the
program to load in the maintenance routines. For
procedures in editing and listing see section 5.5.

AUTHOR: An Automatic Authoring System   Version: 2.0

SYMBOL SET #01: LEARN SYMBOL DEFINITIONS   0018

Definition	Symbol	Memory Aid
Antimony	Sb	Shiney and brittle: Antimony ↑
Gold	Au	Accepted universally: Gold ↑
Iron	Fe	Forged easily: Iron
Lead	Pb	Pipe bends: Lead
Mercury	Hg	Hellenic god: Mercury ↑

Figure 5.3. Auto - Left Indentation Set to 0

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AUTHOR: An Automatic Authoring System   Version: 2.0

!   !
!   !
!   !
_| _|

SYMBOL SET #01: LEARN SYMBOL DEFINITIONS   0018

Definition	Symbol	Memory Aid
Antimony	Sb	<u>S</u>hiney and <u>b</u>rittle: Antimony
Gold	Au	<u>A</u>ccepted <u>u</u>niversally: Gold
Iron	Fe	<u>F</u>orged <u>e</u>asily: Iron
Lead	Pb	<u>P</u>ipe <u>b</u>ends: Lead
Mercury	Hg	<u>H</u>ellenic <u>g</u>od: Mercury

Go to 0019

Figure 5.4. Auto - Left Indentation Set to 4

5.4 CREATION OF LEARNING MODULE

Once the 'CREATE' option has been selected (section 5.3.3) the program will create the learning module with almost no user intervention. The only intervention is to insert a continuation diskette if the learning module exceeds 250 frames. The procedures for handling a continuation diskette are outlined in the following text.

When diskette overflow is detected the following message is displayed:

*** OUTPUT DISK OVERFLOW ***

Mount a FORMATTED Disk into secondary output drive.

The program will copy the contents of the output disk index onto the new disk. The new disk should be labeled and a volume ID number should be assigned. When the copy is complete, the program displays the following:

"Replace old output disk with new output disk."

Remove old output disk from primary output drive and replace it with the new output disk. (Replace any disk removed from the secondary output drive before continuing.)

When the learning module has been created the program will make a pass over each frame created and update any frame addressing flags.

If a multi-diskette module was created, before this pass can take place the program must update the disk lookup index on all diskettes, previous to the last one used. If this case is detected the program will display the following:

** UPDATING DISK INDEX **

Mount last disk used into the primary disk drive.

Mount Volume n into the secondary disk drive.

Touch RETURN to continue.....

The program will now wait for you to mount the last diskette used into the primary output drive. (This diskette should already be there if continuation procedures were followed correctly.) You must also mount the diskette volume specified in the message. This diskette should be mounted in the secondary output drive.

When the diskettes have been mounted, touch the RETURN key.

When the program has completed updating the disk index, the program will check to see if it is the last one (Volume 1). If it is not the last one the program will display the previous message. You will continue the process until all disk indexes have been updated.

When all disks have been updated the program will display the following:

Mount Volume 1 output disk into primary output disk drive.

Touch RETURN to continue...

When you have mounted the diskette into the appropriate drive, touch RETURN.

The program will now continue normal processing.

NOTE:

Whenever the program detects that the next page to be
loaded is on a new diskette, the program will display
the following message:

Mount Volume n Output Disk into primary output disk drive.

(n is the volume number of the diskette requested.)

5.5 MAINTENANCE OF LEARNING MODULE

The EDIT and LIST options are combined into the same routine. When the
EDIT or LIST option is selected the following menu is displayed.

Enter option from output selection menu

Output Selection	1	-	CRT	005
	2	-	TTY	011
	3	-	LPT	015
	1	-	EDIT	005

NOTE:

Selecting option 1 allows you to display any page
of the learning module and also to edit the page.

5.5.1 CRT/EDIT Option. Selecting Option 1 (CRT/EDIT) will cause the
program to display the following menu:

Instructions for Referencing pages:

- *After each page is displayed a prompt will appear
  in the lower left corner of SCREEN*

- *Once you have entered the next page number touch
  the RETURN key.*

- *To perform special functions you may enter:*

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START   -   *Begin displaying learning module.*

NEXT   -   *Go to next sequential page.*

STOP   -   *Stop listing.*

PRINT   -   *Print current page on another device.*

LIST   -   *List the entire learning module.*

EDIT   -   *Edit current page.*

HELP   -   *This text.*

In response to the prompt you may enter either the page number of the page you wish to have displayed or you may enter one of the commands listed above.

NOTE:

The page number may be entered in any one of the three formats (Linear, 24X, 48X). The program will convert the number to the appropriate number for page lookup.

When the first command is entered the program will ask you to initialize a scan and display option before it continues processing of the command. A description of each of the available commands follows the description of initialization procedures.

5.5.1.1   The scanning option is selected when the program displays the following:

Enter scanning code from table below ?

Special character scanning   1 - Scan for zero (0)

2 - Scan for zee (Z)

3 - Scan for both

4 - No scanning

The function of this scan is that for every occurrence of a "∅" and for "Z" that a special code will be added so that when those characters are displayed on the CRT they will blink.

When selecting scans 1, 2, or 3 the
display option (section 5.5.1.2)
should be selected to 2 (T system
display) otherwise the characters
will not be blinked.

NOTE:

Do not touch the RETURN key after
entering scan code. Doing so will
cause unpredictable results.

5.5.1.2   The display option is selected when the program displays
the following menu:

Enter type of CRT display to be used ?

CRT DISPLAY menu: 1   -   WANG 2200 VP System

2   -   WANG 2200 T System

The difference between the VP display and the T display
is that the VP display allows underscored characters
to be displayed directly on the CRT. The T display
does not have this feature so the program will display
underscored characters, along with the special characters
"0" and "Z" (if selected), as blinking characters.

NOTE:

Do not touch the RETURN key after entering
the display code. Doing so will cause
unpredictable results.

NOTE:

Either display option may be selected regard-
less of the display used. This will allow
you to have the special characters 'blinked'
on the VP display and to disable the blinking
feature on the T display.

5.5.1.3   The 'START' command allows you to go to the first page
of the learning module.

5.5.1.4   The 'NEXT' command allows you to go to the next
sequential page of the module. (The next sequential
page is not necessarily the page referenced within
the text of the page.)

5.5.1.5   The 'STOP' command tells the program that you are done
           processing.

5.5.1.6   The 'PRINT' command will allow you to print the current
           page on another output device (i.e., the line printer
           or typewriter.) When this command is executed the
           program will display the following in the lower left
           corner of the screen:

           Menu: 2 - TTY   011

                        3 - LPT   015

           Enter Device ?

           When entering the device number simply touch the
           appropriate number and <u>do</u> <u>not</u> touch the RETURN key.

           Entering a 2 (TTY) will tell the program to display
           this page on the typewriter. For instructions in
           initializing the TTY device see section 5.5.2.

           Entering a 3 (LPT) will tell the program to display
           this page on the line printer. For instructions
           in initializing the LPT device see section 4.7.2.

5.5.1.7   The 'LIST' command will allow you to list the entire
           module on an output device. When this command is
           executed the program will return to the menu shown
           at the beginning of section 5.5.

5.5.1.8   The 'EDIT' command will allow you to edit the page
           currently being displayed.

           Execution of the 'EDIT' command will cause the program
           to load in specialized editing routines which will
           allow you to edit the current page in much the same
           way as you edited the Data Base. The following
           modifications apply to this version of the editor:

           -    The page can be restored to its original
                structure at any time during the edit
                process (before the ESCAPE key is executed).
                This is done by entering EDIT mode and
                touching the CURSOR BEGINNING key and
                then touching the EDIT/ENTRY key.

           -    When saving the page the CURSOR <u>must</u> <u>not</u> be
                positioned in the home position (beginning of
                page). To save the page, the program must
                be in ENTRY mode and touch the ESCAPE key.

See appendix D for description of editing features.

5.5.2   TTY (Typewriter) Option. Selecting this option will cause the program to list the entire learning module on the TTY Device (2201 output writer).

Before the learning module is listed the program must first initialize the output device. The first step is to set the special character scanning flag. The program will display the following:

Enter scanning code from below table?

Special character scanning   1 - *Scan for zero (0)*

2 - *Scan for zee (Z)*

3 - *Scan for both (Z,0)*

4 - *No special scanning*

The function of this scan is that for every occurrence of a zero and for zee that a special code will be added so that when these characters are printed a zero will appear as "Ø" and a zee will appear as "Ƶ".

NOTE:

Selecting the TTY output device will automatically select the underscore scan.

The program will now display the following instructions for initializing the TTY device.

**   *Insert paper into typewriter* **

**   *Set left margin to left edge of paper* **

**   *Set spacing indicator to single spacing* **

When completing these steps touch the RETURN key. The program will first clear all tab stops and then set the stops for the learning module output. The following instructions will be printed on the output page.

After each page is printed the program will stop.

Check that the paper is properly aligned...

Make adjustments when necessary.

To continue...Switch the 'MANL/AUTO' switch to the 'MANL' position then switch to the 'AUTO' position.

.....Align top edge of paper to this position ... then continue ......

NOTE:

The top edge of the paper should be aligned to the
position indicated by the alignment arrows.
Top edge of form should align to the top edge
of the copy guide.

The program will now begin to output the learning module. At
the end of each page the following message will be displayed
on the CRT:

Device

   $

Ready

   $

Wait

This is the signal that a new page is to be printed. After
mounting the next page or adjusting the paper, continue by
selecting the MANL/AUTO switch to the MANL position. Wait
for the tone to stop then switch the MANL/AUTO switch to
the AUTO position.

5.5.3   LPT (Line Printer) Option. Selecting this option will cause
the program to list the entire learning module on the LPT
device (2221 high speed line printer.)

Follow the procedures described in section 4.7.2.

5.6 ERROR RECOVERY

5.6.1   Restart AUTHOR System.

The AUTHOR System contains extensive error recovery and error
checking routines. There are a few errors, however, from which
the program cannot recover. If an error should be detected use
the following procedure:

Touch RESET *then enter the commands*

: CLEARP   CR

: CLEARV   CR

: LOAD DCT #1, "AUTHOR"   CR

: RUN   CR

These procedures will return control to the AUTHOR System overlay control menu.

5.6.2   Restart LIST Subsystem.

When an error is detected while executing any of the LIST option routines use the following procedure:

Touch RESET then enter the command

: RUN 1500 (CR)

For some errors this will generate another error message

Simply re-execute the above procedures.

5.6.3   Restart Overlay Tape File.

When printing a learning module or Data Base using the multi-page underscoring option the paper must be remounted to precisely the right position. In the event that the paper is not properly adjusted, stop the printer and use the following steps:

-    Deselect the line printer

-    Touch the CLEAR key on the printer control panel

-    Touch the RESET key on the CRT keyboard

-    Depress and hold the shift key, and touch the key labeled TAPE RESTART

-    Position paper to the correct position. (Printing will begin with a 'TOP OF FORM' command.)

-    Select the line printer by touching the SELECT key on the printer control panel.

6.0 ENHANCING THE AUTHOR SYSTEM

There are several enhancements which can be made to the AUTHOR System by making a few minor program modifications.

The options described in this section are:

- the ability to modify the fixed formats of the learning module

- the ability to delete a page or a sequence of pages from automatic creation routines and still maintain an accurate page index.

NOTE:

The modifications described in this section should be implemented by someone fimiliar with the WANG System, the WANG BASIC operating system and BASIC programming language.

NOTE:

A listing of the AUTHOR System programs is available in Volume 2 of this report and is available upon request. Due to the size of the listing, stock is limited.

The AUTHOR System programs are also available on the following types of computer storage medium:

- floppy disks (9)
- 5-mega byte removable platter (1)
- 9-track tape (1).

For a copy of the programs or program listings, send your request along with the appropriate type of storage medium to:

> Department of the Navy
> Training Analysis & Evaluation Group (TAEG)
> Orlando, Florida 32813

NOTE:

Before any changes are made to the system
programs, it is advised that a backup copy
of the programs be made.

The AUTHOR programs are provided in two forms: (1) Source Programs
containing a large amount of internal program documentation and (2)
Compressed Programs where all necessary spaces, comments, and line
numbers have been deleted.

When changes to the programs are made, they should be made to the Compressed
Programs since these are the ones that are used when executing the AUTHOR
System. Should there be a large number of changes to be made to a
program, the changes should be made to the Source Programs then the
program should be compressed. (This can be done using WANG Laboratory's
ISS Utility Programs.)

The process of modifying the AUTHOR System will be shown through the use
of an example. The first option will describe a change to the formats
of a learning module page.

6.1 CHANGING THE FORMAT DESIGN

While generating learning modules during the testing of the AUTHOR
System, it was found that for some specialized symbols the word 'symbol'
was not appropriate for referencing them: these symbols were called
Prosigns. Instead of using the editing features of the learning module
maintenance program and changing all the occurrences of 'symbol' to
'prosign', the learning module formats were changed. The reason for
this was that many of the formats using the word 'symbol' are repeated
throughout the learning module.

The steps used for changing the formats are shown in the form of a flow
chart in figure 6.1. Each of the steps shown will be described briefly
below.

6.1.1   The first step was to go through the listing of formats (Volume
          2, section 7.0) and note all occurrences of 'symbol' that were
          to be changed to 'prosign'. A page showing this is presented
          as figure 6.2.

6.1.2   The next step was to locate and load the data subprogram which
          defines the page containing the modifications. A listing of
          these data subprograms is contained in section 6.0, Volume 2.
          Figure 6.3 shows the data subprogram which defines the page
          shown in figure 6.2.
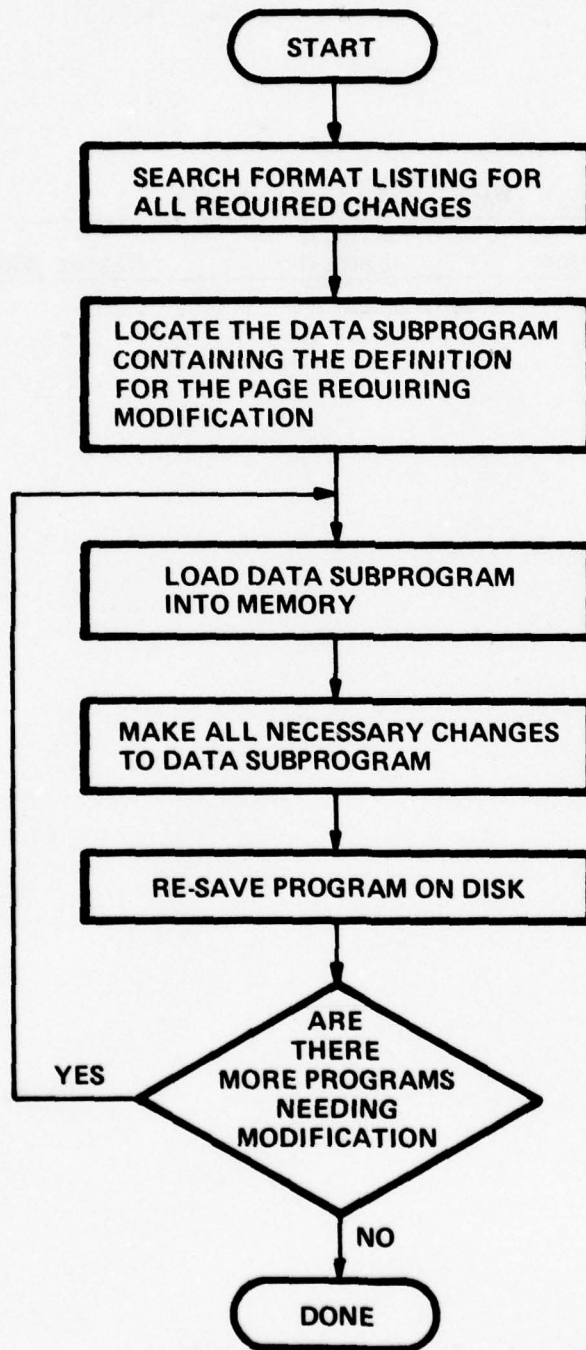
FIGURE 6.1. STEPS INVOLVED IN CHANGING THE FORMAT DESIGN

AUTHOR: An Automatic Authoring System   Version: 2.0

SYMBOL SET #zz: LEARN SYMBOL DEFINITIONS

Definition   Symbol   Memory Aid

Go to :nxt0

Figure 6.2.   The Format Before Changes

```
9000 %## Data Subprogram ] UTHOR/1 (ATH106.4)  Version ] 2.0 T/V   750517
9010 REM **  Data Subroutine  ****************************************  0 6 .4
9020 REM **
9030 REM **   TH106.4 contains format descriptions for
9040 REM **       - Symbol Set; Learn    ; Symbols    (/.3.3)
9050 REM **       - Symbol Set; Rest            (/.4.0)
9060 REM **
9070 REM ***********************************************************
 080 REM **
9090 GOSUB ' 205 (1)                              :REM LOAD FIRST PAGE
91 0 GOSUB ' 050                                 :REM RETURN JUMP
9110 REM **
9120 REM **                                      FORMAT DESCRIPTIONS
9130 REM **
9140 DATA 01,06,42,00,"SYMBOL SET #zz: LEARN SYMBOL DEFINITIONS"
9150 DATA 01,06,42,05," "
9160 DATA 01,48,08,04," "
9170 DATA 02,11,11,00,"Definition"
9180 DATA 02,31,08,00,"Symbol"
9190 DATA 02,48,11,00,"Memory Aid"
9200 DATA 02,04,22,05," "
9210 DATA 02,27,15,05," "
9220 DATA 02,43,20,05," "
9230 DATA 16,53,11,00,"Go to :nxt0"
9240 DATA 00,00,00,09," "
9250 DATA 01,06,21,00,"SYMBOL SET #zz: REST"
9260 DATA 01,06,21,05," "
9270 DATA 01,27,29,04," "
9280 DATA 03,06,15,00,"Directions"
9290 DATA 03,24,40,00,"-- Relax for a moment or two."
930  DATA 04,24,40,00,"Get your mind off your study."
9310 DATA 06,24,40,00,"-- Think of something relaxing."
9320 DATA 08,24,40,00,"-- You will learn more quickly"
9330 DATA 09,24,40,00,"when you go back to your study"
9340 DATA 10,24,40,00,"if you rest."
9350 DATA 16,53,11,00,"Go to :nxt0"
936  DATA 00,00,00,09," "
```

Figure 6.3. Data Subprogram Before Changes

NOTE:

The file name of the subprogram is located in line
9000 of the data subprogram. The file name of all
data subprograms is of the form ATH1nn.n where nn.n
is the format index number.

At this time a brief description of the format of each DATA
statement is in order.   Each DATA statement contains five
fields. They are as follows:

1 - line number

2 - beginning position on line

3 - length of string

4 - special function index

5 - text string.

6.1.2.1   The line number is the row number on the page where text
          is to be added. Range of this field is 1 to 16.

6.1.2.2   The beginning position is the column number where text
          will begin on the selected line. Range of this field
          is 1 to 64.

6.1.2.3   The length of string is a number representing the length
          of the text string to be added or modified. Range of this
          field is 1 to 64.

6.1.2.4   The special function index allows you to specify the
          following functions:

                    00 - enter text string as is

                    01 - enter text string in lower case

                    02 - enter text string in upper case

                    03 - no operation

                    04 - draw a line

                    05 - underscore text on page

                    09 - end of page.

6.1.2.5   The text string is a string of characters enclosed in quote marks.

NOTE:

When specifying functions 04, 05, and 09 this field must be a blank.

6.1.3   Once you have made the necessary modifications to the subprogram the next step is to re-save the program on disk.

Figure 6.4 shows the data subprogram after the modifications have been made. Figure 6.5 shows the format defined by the new program as it will appear in a learning module. (This format was generated using the format display program. This program will be covered in section 6.2.)

6.2   USING THE FORMAT DISPLAY PROGRAM

Provided with the AUTHOR System is a program which allows you to display a data subprogram definition so that you may see how it will appear in the learning module without creating the module.

6.2.1   Loading the Program

To load the format construction program you first must execute the following commands in order to initialize the AUTHOR System:

:   *LOAD DC T/nnn, "AUTHOR"*

:   *RUN*

Where nnn is the device address of the disk containing the AUTHOR programs.

The program will respond with the following menu:

Enter code of the disk containing AUTHOR programs?

Disk Menu   1 - Floppy Disk Drive #1   (310)

2 - Floppy Disk Drive #2   (B10)

3 - Floppy Disk Drive #3   (350)

4 - Fixed Disk Platter   (320)

5 - Removable Disk Platter (B20)

```
9000 %## Data Subprogram ] AUTHOR/1 (.TH106.4)  Version ] 2.0 T/VF  70.17
9010 REM **   Data Subroutine  ****************************************  0 0 .4
9020 REM **
9030 REM **     ATH106.4 contains format descriptions for
9040 REM **        - Symbol Set; Learn   ; Symbols   (7.3.3)
9050 REM **        - Symbol Set; Rest              (7.4.0)
9060 REM **
9070 RE .*******************************************************
9080 REM **
9090 GOSUB ' 205 (1)                              :REM LOAD FIRST PAGE
9100 GOSUB ' 050                                  :REM RETURN JUMP
9110 REM **
9120 REM **                                          FORMAT DESCRIPTIONS
9130 REM **
9140 DATA 01,06,42,00,"PROSIGN SET #zz: LEARN PROSIGN DEFINITIONS"
9150 DATA 01,06,42,05," "
9160 DATA 01,48,08,04," "
9170 DATA 02,11,11,00,"Definition"
9180 DATA 02,31,08,00,"Prosign"
9190 DATA 02,48,11,00,"Memory Aid"
9200 DATA 02,04,22,05," "
9210 DATA 02,27,15,05," "
9220 DATA 02,43,20,05," "
9230 DATA 16,53,11,00,"Go to :nxt0"
9240 DATA 00,00,00,09," "
9250 DATA 01,06,21,00,"SYMBOL SET #zz: REST"
9260 DATA 01,06,21,05," "
9270 DATA 01,27,29,04," "
9280 DATA 03,06,15,00,"Directions"
9290 DATA 03,24,40,00,"-- Relax for a moment or two."
9300 DATA 04,24,40,00,"Get your mind off your study."
9310 DATA 06,24,40,00,"-- Think of something relaxing."
9320 DATA 08,24,40,00,"-- You will learn more quickly"
9330 DATA 09,24,40,00,"when you go back to your study"
9340 DATA 10,24,40,00,"if you rest."
9350 DATA 16,53,11,00,"Go to :nxt0"
9360 DATA 00,00,00,09," "
```

Figure 6.4. Data Subprogram After Changes

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AUTHOR: An Automatic Authoring System   Version: 2.0

PROSIGN	SET #zz: LEARN	PROSIGN	DEFINITIONS
Definition		Prosign	Memory Aid

Go to :nxt0
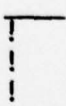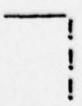
Figure 6.5.   The Format After Changes

You now enter the code (1-5) which describes the disk unit
containing the AUTHOR Programs.

The next menu to appear is:

Enter code of the function you wish to perform?

Loading Menu: 1 - Construct Module Formats

2 - Create Data Base

3 - Create Learning Module

You now enter a 1 to load the format display program.

6.2.2   Initializing the Format Display Program. The format con-
struction will now display the following menu:

Enter Storage Device Code?

Device Menu: 1 - Floppy Disk Drive #1   (310)

2 - Floppy Disk Drive #2   (B10)

3 - Floppy Disk Drive #3   (350)

4 - Fixed Disk Platter   (320)

5 - Removable Disk Platter (B20)

You now enter the code (1-5) which describes the disk unit con-
taining the data subprograms.

The program will now display:

Enter Output Device Code?

Device Menu: 1 - CRT (005)

2 - TTY (011)

3 - LPT (015)

You now enter the code which describes the output device on
which you wish to have the format displayed.

NOTE:

The procedures for initializing the various output devices are found in the following sections:

5.5.1.1-5.5.1.2: CRT Initialization

5.5.2: Typewriter Initialization

4.7.2: Line Printer Initialization.

6.2.3   Loading a Data Subprogram

In order to LOAD the proper data subprogram, the program will display the following prompt:

Format File Index Number ?

The format file index number is the 4-character ID number which suffixes all data subprogram filenames.

Example:

If the data subprogram is 'ATH106.3', the format index number is '06.3'.

After entering the number, the program will LOAD the subprogram from the disk and will begin to display the first page defined.

After the page has been displayed the program will display:

Move formats (Y/N)?

Entering a 'Y' will cause the program to display the next page.

Entering a 'N' will cause the program to return to the 'Enter File Index' prompt.

6.2.4   Special Program Recovery Options

If while displaying pages you wish to return to the 'Enter File Index' prompt, you may do so by touching RESET then touching Special Function key 02.

If you wish to reinitialize the program in order to select a new output device you may do so by touching RESET then touching Special Function key 01.

You may also redisplay the pages defined by the subprogram currently in memory by entering the ID 'SAME' in response to the 'Enter File Index' prompt, or by touching RESET then touching Special Function Key 03.

6.3 CHANGING LEARNING MODULE SEQUENCE

While creating a learning module used to teach the Morse Code, we used two separately generated learning modules. One of the learning modules was constructed for sending the code and the other was constructed for receiving the code. The two learning modules were then merged manually. To aid in this process we developed a procedure which enabled us to insert blank pages and delete pages from the learning module construction sequence in order to maintain a sequential page numbering in the final module.

The procedures developed are in the form of a modification to the learning module creation programs.

To illustrate this procedure let us look at an example.

Let us say we wish to delete the page shown in figure 6.6 and replace it by three blank pages. The steps to be followed are shown in flowchart form in figure 6.7.

The steps shown in figure 6.7 will be covered briefly in the following sections.

6.3.1   Our first step is to go through draft listing of the learning module and determine where pages should be added and deleted, then go through the listings of data subprograms (Volume 2, section 6.0) in order to find the proper format and to determine the format index number. Figure 6.8 shows the data subprogram for format shown in figure 6.6.

<div align="center">NOTE:</div>

The format index number is the last 4 characters which appear in the filename of the data subprogram (line 9000).

Example:

The data subprogram filename is 'ATH106.3'.
The format index is '06.3'.

6.3.2   Once we have determined the format index number we can load the appropriate construction program. The filename of the construction program is of the form:

ATH3nn.n

Where 'nn.n' is the format index number. Thus, the filename of the construction program which creates the page shown in figure 6.6 is 'ATH306.3'. Figure 6.9 shows a listing of the program.

AUTHOR: An Automatic Authoring System   Version: 2.0

!   !
!_!   !_!
 !   !

SYMBOL SET #zz: LEARN SYMBOL DEFINITIONS

```
    :dia2 _____No
!Note the    !  !!Learn      !!  !Practice!  !Test    !  Did
!Differences!  !!the         !!  !Defining!  !Yourself!  You
!Among the   !  !!symbol     !!  !the      !  !        !  Pass
!Symbols     !  !!Definitions!!  !Symbols !  !_____ !  ?
                      *

            You are here
```

                                                   Go to :nxt0

```
 _!                                                            _
!                                                            !
!                                                            !
```

Figure 6.6. The Format to be Deleted
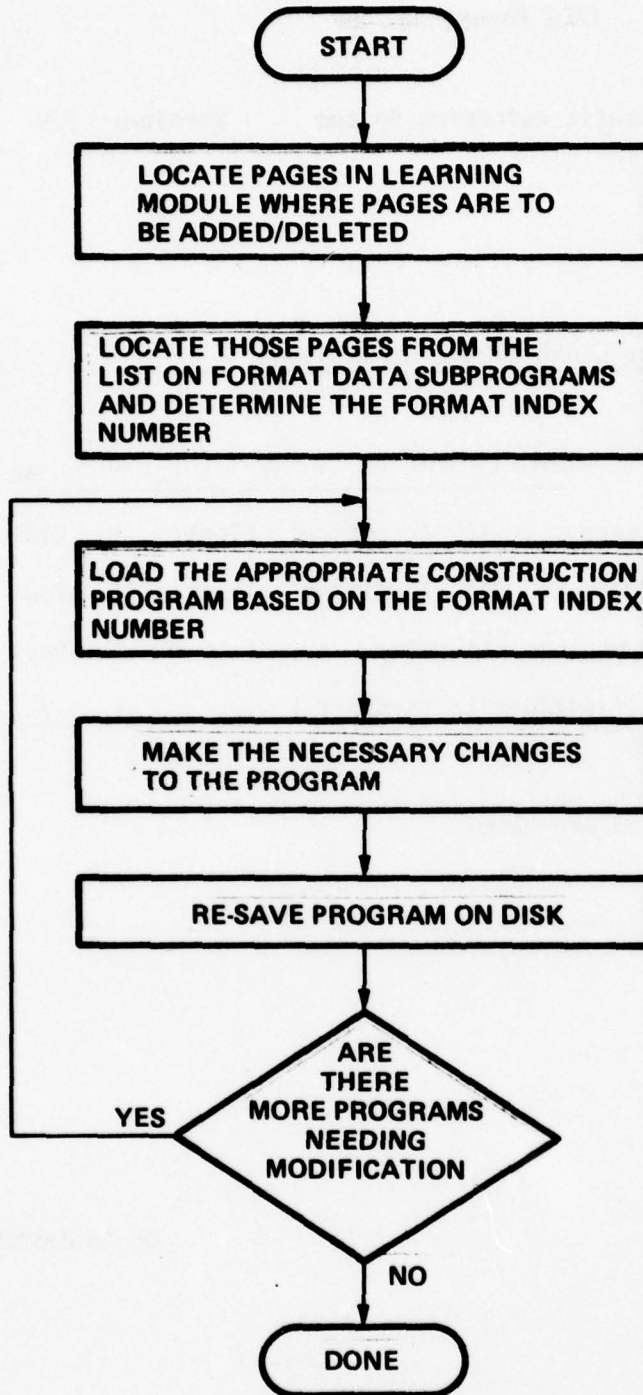
FIGURE 6.7. STEPS INVOLVED IN CHANGING MODULE SEQUENCE

```
9000 %## Data Subprogram ] AUTHOR/1 (ATH106.3)  Version ] 2.0 T/VP  780317
9010 RE' ** Data Subroutine  **************************************** 0 6 .3
9020 REM **
9030 REM **    ATH106.3 contains format descriptions for
9040 REM **        - Symbol Set; Learn    ; Diagram    (7.3.1)
9050 REM **        - Symbol Set; Learn    ; Directions (7.3.2)
9060 REM **
9070 REM ********** ***********************************************
9080 REM **
9090 GOSUB ' 205 (1)                              :REM LOAD FIRST PAGE
9100 GOSUB ' 050                                  :REM RETURN JUMP
9110 REM **
9120 REM **                                       FORMAT DESCRIPTIONS
9130 REM **
9140 DATA 01,06,42,00,"SYMBOL SET #zz: LEARN SYMBOL DEFINITIONS"
9150 DATA 01,06,42,05," "
9160 DATA 01,48,08,04," "
9170 DATA 03,06,05,00,":dia2"
9180 DATA 03,25,36,04," "
9190 DATA 03,61,02,00,"No"
9200 DATA 04,02,62,00,"!Note the   !  !!Learn       !! !Practice! !Test   !  Dia"
9210 DATA 05,02,62,00,"!Differences! !!the         !! !Defining! !Yourself! You"
9220 DATA 06,02,62,00,"!Among the  ! !!symbol      !! !the     ! !       ! Pass"
9230 DATA 07,02,62,00,"!Symbols    ! !!Definitions!! !Symbols ! !       !  ?"
9240 DATA 07,03,11,05," "
9250 DATA 07,18,13,05," "
9260 DATA 07,35,08,05," "
9270 DATA 07,47,08,04," "
9280 DATA 07,59,03,05," "
9290 DATA 08,24,14,00,"*"
9300 DATA 09,19,15,00,"You are here"
9310 DATA 16,53,11,00,"Go to :nxt0"
9320 DATA 00,00,00,09," "
9330 DATA 01,06,42,00,"SYMBOL SET #zz: LEARN SYMBOL DEFINITIONS"
9340 DATA 01,06,42,05," "
9350 DATA 01,48,08,04," "
9360 DATA 02,06,15,00,"Directions"
9370 DATA 02,24,40,00,"1. Look carefully on the next frame"
9380 DATA 03,24,40,00,"at each symbol and its definition."
9390 DATA 05,24,40,00,"2. Repeat the definition to y ourself"
9400 DATA 06,24,40,00,"as you look at the symbol."
9410 DATA 08,24,40,00,"3. Study the memory aid to help you"
9420 DATA 09,24,40,00,"remember the definition."
9430 DATA 11,24,40,00,"4. Study each symbol and its"
9440 DATA 12,24,40,00,"definition 2 or 3 times."
9450 DATA 16,53,11,00,"Go to :nxt0"
9460 DATA 00,00,00,09," "
```

Figure 6.8. Data Subprogram of Format to be Deleted

```
7000%## Program ] AUTHOR/3  (ATH306.3)   Version ] 2.0  2200 T/VP  780322
7010REM **   Abstract   ***********************************************************
7020REM **                                                          **
7030REM **     This program will create the introduction pages to    **
7040REM **     the 'Learning The Symbol Definitions'.                 **
7050REM **                                                          **
7060REM ***********************************************************************
7070REM **
7080REM **
7090 GOSUB ' 102 ("DATASUBPROGRAM","ATH106.3","9000"):REM LOAD DATA FORMATS
7100 DEFFN ' 050                                    :REM DEFINE ENTRY
7110              D3 = 32                           :REM CLR PAGE INDX
7120              Q4 = 00                           :REM CLR ADRS INDX
7130 GOSUB ' 210                                    :REM INSRT SBL SET #
7140 GOSUB ' 110 (D1,D2,D3,D4$,D5)                  :REM SAV PAG ON DISK
7150 GOSUB ' 205 (1)                                :REM LOAD NXT FORMAT
7160              D3 = 32                           :REM CLR PAGE INDX
7170              Q4 = 00                           :REM CLR ADRS INDX
7180 GOSUB ' 210                                    :REM INSRT SBL SET #
7190 GOSUB ' 110 (D1,D2,D3,D4$,D5)                  :REM SAVE PAG ON DISK
7200 GOSUB ' 010                                    :REM RTURN TO AUTO MODE
```

Figure 6.9. Construction Program Before Changes

6.3.3   The design of the construction programs is such that the logic used to create the sequence of pages will appear at the beginning of the program and that for each page generated a call must be made to subroutine 110 which allows the page to be saved. Therefore, by deleting and inserting calls to subroutine 110 we may insert and delete pages.

Once you have made the necessary changes to the program the next step is to re-save the program on disk.

Figure 6.10 shows the changes made to the program (lines 7140-7146) which will cause the page shown in figure 6.6 to be deleted and for three blank pages to be inserted.

```
7000%## Program ] AUTHOR/3 (AT 306.3)  Version ] 2.0  2200 T/VP  /80322
7010REM ** Abstract  ***********************************************************
7020REM **                                                                  **
7030REM **     This program will create the introduction pages to           **
7040REM **     the 'Learning The Symbol Definitions'.                        **
7050REM **                                                                  **
7060REM ****************************************************************************
7070REM **
7080REM **
7090 GOSUB ' 102 ("DATASUBPROGRAM","ATH106.3","9000"):REM LOAD DATA FORMATS
7100 DEFFN ' 050                                      :REM DEFINE ENTRY
7110            D3 = 32                               :REM CLR PAGE INDX
7120            Q4 = 00                               :REM CLR ADRS INDX
7130 GOSUB ' 210                                      :REM INSRT SBL SET
```

```
7140 REM GOSU  ' 110 (D1,D2,D3,D4$,D5)               :REM SAV PAG ON DISK
7141 INIT(20)   Q2$()                                :REM CLR PAGE BUFFER
7142            D3 = 32                               :REM CLR PAGE INDX
7143            Q4 = 00                               :REM CLR ADRS INDX
7144 GOSUB ' 110 (D1,D2,D3,D4$,D5)                    :REM SAVE BLANK PAG 1
7145 GOSUB ' 110 (D1,D2,D3,D4$,D5)                    :REM SAVE BLANK PAG 2
7146 GOSUB ' 110 (D1,D2,D3,D4$,D5)                    :REM SAVE BLANK PAG 3
```

```
7150 GOSUB ' 205 (1)                                 :REM LOAD NXT FORMAT
7160            D3 = 32                               :REM CLR PAGE INDX
7170            Q4 = 00                               :REM CLR ADRS INDX
7180 GOSUB ' 210                                      :REM INSRT SBL SET
7190 GOSUB ' 110 (D1,D2,D3,D4$,D5)                    :REM SAVE PAG ON DISK
7200 GOSUB ' 010                                      :REM RTURN TO AUTO MODE
```

Figure 6.10. Construction Program After Changes

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APPENDIX A

AUTHOR WORKBOOK

APPENDIX A

AUTHOR WORKBOOK

An Automatic Authoring System - Data Entry Workbook   Page 1

This workbook outlines the information that you, the author, must supply to create an instructional module for teaching symbol recognition. In providing this information, follow the directions carefully. Record your information in the spaces provided.

1.   Enter the following information for the title page:

    1.1 ** Title:_____

                 _____

                 Max: 2 lines, 45 characters per line.

    1.2 Subtitle:_____

                 Max: 2 lines, 50 characters per line.

    1.3 ** Author(s):_____

                 _____

                 _____

                 _____

                 Max: 4 lines, 50 characters per line.

    1.4 Date wanted on title page: _____

                 Max: 1 line, 50 characters per line.

    1.5 ** Organization producing the program: _____

                 _____

                 _____

                 Max: 2 lines, 50 characters per line.

2.   ** Record your learning objective(s): _____

_____

_____

_____

** See section 2.0 of this report for special formatting techniques.

An Automatic Authoring System - Data Entry Workbook   Page 2

_____

_____

_____

_____

_____

Max: 8 lines, 35 characters per line.

3.   General information:

3.1 Name of the group (or rating) that is the user of this learning module.

Complete this statement: Knowing those symbols will make you a better

_____

Max: 2 lines, 45 characters per line.

3.2 Type of symbols to be learned.

Complete this statement: You may already know some or all of these

_____

Max: 1 line, 60 characters per line.

3.3 Source of reference for definition of symbols.

Complete this statement: As found in _____

_____

_____

_____

Max: 3 lines, 45 characters per line.

4.   *Enter convincing reasons why the user will need to recognize and define these symbols:*

4.1 Importance of knowing the symbols:

_____

** See section 2.0 of this report for special formatting techniques.

An Automatic Authoring System - Data Entry Workbook   Page 3

_____

_____

_____

_____

_____

_____

Max: 8 lines, 40 characters per line.

4.2   ** Indicate how the skill will be used.

This program will help you to: _____

_____

_____

_____

_____

_____

_____

Max: 8 lines, 40 characters per line.

5. **Give realistic examples of on-the-job situations in which the trainees will use these symbols:

_____

EXAMPLES OF HOW SYMBOLS ARE USED _____

_____

_____

_____

_____

_____

** See section 2.0 of this report for special formatting techniques.

An Automatic Authoring System - Data Entry Workbook   Page 4

_____

_____

_____

_____

_____

_____

_____

_____

_____

NOTE: There is no limit to the number of example pages you may have.

6.   Arrange the symbols into sets (5 to 7 symbols in each set is recom-
        mended; the maximum is 12). You will need to indicate the order in
        which the symbols will be learned by marking the first set to be
        learned Set #1, the second set to be learned Set #2, etc. Fill in
        the following forms until all the symbols have been recorded. Symbols
        that are often confused for each other should be placed in the same
        set.

        Note: Each symbol is assigned a symbol reference number when entered
                into the AUTHOR System. This number will be displayed and
                should be recorded in the space provided.

AUTHOR: An Automatic Authoring System   Data Entry Workbook: Symbols

SET	SYMBOL #	SYMBOL	DEFINITION	MEMORY AID	SIMILAR SYMBOLS

APPENDIX B

SUMMARY OF TEXT FORMATTING COMMANDS

APPENDIX B

SUMMARY OF TEXT FORMATTING COMMANDS

This appendix provides a summary of text formatting commands which may be used to format items entered using procedures described in section 4.5, Text Entry Procedures.

TEXT FORMATTING

< text >	This command indicates that all the following text is to be formatted between the given margins. This command must be followed by the < nn,mm > command to specify the left and right margins.
< nn,mm >	This command is used to specify the left and right margins. nn is the left margin; mm the right margin.
< table >	This command is used to specify that the following text will be formatted in a table format. This command must be followed by a < nn,00 > command and a series of < $ > (table text) < $ > (table text) ... < $ >.
< nn,00 >	This command is used to specify the position and size of the table. nn is the left margin used to justify each line of table. 00 is the total number of lines of the table.
< $ >	This command is used to indicate the beginning of each new line in the table. This command must also be used to terminate the text used to define the table.
< sub-title >	This command is used to define text to be used as a subtitle. This command has the same effect as a text < 06,21 > command sequence.

CHARACTER FORMATTING

< word >	This command will cause all text appearing after it to have the first letter of every word capitalized.
< lower >	This command will cause all text appearing after it to be converted to lower case.
< caps >	This command will cause all text appearing after it to be converted to upper case.

PAGE FORMATTING

< page >	This command will cause the current page to be saved and the next pointer will be positioned at the top of the next page.
< line >	This command will cause the line pointer to be positioned to the beginning of the next line.

< space >   This command will cause the specified number of spaces to be inserted. This command must be followed by a < nn > command to specify the number of spaces.

< nn >   This command is used to indicate the number of spaces to insert. nn is the number of spaces to insert.

NOTE:

All text formatting commands have the format:

space < keyword > space

When entering these commands there must be a space preceding the command and a space after the command. The keyword must be in lower case.

NOTE:

All formatting commands containing a number parameter must have the following format:

- Each number must contain two digits

- If the value of the number is between 0 and 9 then a leading Zero must be inserted (i.e., 01,02..).

APPENDIX C

SUMMARY OF DATA ENTRY COMMANDS

APPENDIX C

SUMMARY OF DATA ENTRY COMMANDS

This appendix provides a brief summary of each data entry procedure command.

TITLE   This command will allow you to create and maintain the title text to be used on the title page of the learning module.

SUBTITLE   This command will allow you to create and maintain the subtitle text to be used on the title page of the learning module.

AUTHORS   This command will allow you to create and maintain the names of the authors to be used on the title page of the learning module.

DATE   This command will allow you to create and maintain the date of creation to be used on the title page of the learning module.

ORGANI-   This command will allow you to create and maintain the name of
ZATION   the organization responsible for authoring the learning module. This text will appear on the title page of the learning module.

TRAINING   This command will allow you to create and maintain the training objective text.

IMPOR-   This command will allow you to create and maintain the text
TANCE   describing the Importance of the Symbols to the user of the learning module.

USAGE   This command will allow you to create and maintain the text describing how the skill in recalling these symbols will be used.

TYPE   This command will allow you to create and maintain the text describing the type of symbols being used in the learning module.

NAME   This command will allow you to create and maintain the text describing the name of the user of the learning module.

SOURCE   This command will allow you to create and maintain the text describing the official source of reference used for defining the symbols used.

EXAMPLE   This command will allow you to create and maintain the text describing the example of how the symbols are used.

SYMBOL   This command will allow you to create and maintain the descriptions of all the symbols in the Data Base. When this command is executed the program will display the following menu:

APPENDIX C

SUMMARY OF DATA ENTRY COMMANDS

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SUBTITLE	This command will allow you to create and maintain the subtitle text to be used on the title page of the learning module.
AUTHORS	This command will allow you to create and maintain the names of the authors to be used on the title page of the learning module.
DATE	This command will allow you to create and maintain the date of creation to be used on the title page of the learning module.
ORGANI-ZATION	This command will allow you to create and maintain the name of the organization responsible for authoring the learning module. This text will appear on the title page of the learning module.
TRAINING	This command will allow you to create and maintain the training objective text.
IMPOR-TANCE	This command will allow you to create and maintain the text describing the Importance of the Symbols to the user of the learning module.
USAGE	This command will allow you to create and maintain the text describing how the skill in recalling these symbols will be used.
TYPE	This command will allow you to create and maintain the text describing the type of symbols being used in the learning module.
NAME	This command will allow you to create and maintain the text describing the name of the user of the learning module.
SOURCE	This command will allow you to create and maintain the text describing the official source of reference used for defining the symbols used.
EXAMPLE	This command will allow you to create and maintain the text describing the example of how the symbols are used.
SYMBOL	This command will allow you to create and maintain the descriptions of all the symbols in the Data Base. When this command is executed the program will display the following menu:

APPENDIX C

SUMMARY OF DATA ENTRY COMMANDS

APPENDIX C

SUMMARY OF DATA ENTRY COMMANDS

This appendix provides a brief summary of each data entry procedure command.

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TRAINING
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IMPOR-
TANCE
: This command will allow you to create and maintain the text describing the Importance of the Symbols to the user of the learning module.

USAGE
: This command will allow you to create and maintain the text describing how the skill in recalling these symbols will be used.

TYPE
: This command will allow you to create and maintain the text describing the type of symbols being used in the learning module.

NAME
: This command will allow you to create and maintain the text describing the name of the user of the learning module.

SOURCE
: This command will allow you to create and maintain the text describing the official source of reference used for defining the symbols used.

EXAMPLE
: This command will allow you to create and maintain the text describing the example of how the symbols are used.

SYMBOL
: This command will allow you to create and maintain the descriptions of all the symbols in the Data Base. When this command is executed the program will display the following menu:

COMMAND SUMMARY

SETNUMBER	DEFINITION
SBLNUMBER	MNEMONIC
SETNAME	SIMILAR SYMBOLS
REFERENCE NUMBER	NEXT
SYMBOL	DELETE
	EXIT

Enter Command   ????????????

These commands will allow you to create and maintain the entire list of symbols.

NOTE:

When describing the symbol for the first time you must use all of the following commands: SETNUMBER, SBLNUMBER, SETNAME, REFERENCE NUMBER, SYMBOL, DEFINITION, MNEMONIC, SIMILAR SYMBOLS. If there is no valid data for one of these items, then you must still execute the command and enter a blank.

A summary of the Symbol Entry Commands follows:

SETNUMBER   This command will allow you to enter the symbol set number of the symbol to be entered or modified.

SBLNUMBER   This command will allow you to enter the number of the symbol to be entered or modified.

The SETNUMBER and SBLNUMBER must always be used in order to initialize the symbol ID number so as to look up all the data for the symbol.

SETNAME   This command will allow you to enter and maintain the symbol setname for the symbol. Unlike other text items you may not recall the set name. So in order to change the set name you must re-enter the set name. NOTE: The set name will not be saved on disk until the 'REFERENCE NUMBER' command is executed.

REFERENCE   This command allows you to enter the symbol type code and to
NUMBER   create and save the symbol reference number. Since this version of the AUTHOR System can only process alphanumeric symbols the symbol type should always be entered as "1".

SYMBOL   This command will allow you to create and maintain the actual symbol to be described. Again like the set name the symbol cannot be recalled to be changed, the symbol must be re-entered to change it.

DEFINI-   This command will allow you to create and maintain the definition
TION   of the symbol.

MNEMONIC   This command will allow you to create and maintain the memory aid
           for the symbol.

SIMILAR   This command will allow you to enter the numbers of the symbols
SYMBOLS   to be used as similar symbols.

           Like the setname and the symbol data previously stored, this item
           cannot be recalled and must be re-entered to change any of the
           similar symbol numbers.

           If no similar symbols exist for a symbol enter the symbol number
           9999.

NEXT   This command will allow you to increment the internal symbol
           counter and will prompt you to enter the next symbol.

DELETE   This command will allow you to delete the description of a symbol
           and its associated data from the data base.

EXIT   This command will return you to the DATA ENTRY PROCEDURE MENU.

Additional Data Entry Commands:

HELP   This command will display the DATA ENTRY PROCEDURES MENU.

LIST   This command allows you to list the contents of the Data Base on
           the high speed line printer. When this command is executed the
           program will display the DATA LISTING PROCEDURES MENU.

ESCAPE   This command will cause termination of the DATA MAINTENANCE
           program and will load the AUTHOR System overlay control routine
           (AUTHOR).

APPENDIX D

EDITING PROCEDURES

APPENDIX D

EDITING PROCEDURES

The following data base items can be recalled and modified using the AUTHOR Editing Routine:

Title of Title Page
Subtitle of Title Page
Authors of Title Page
Date of Title Page
Organization Name of Title Page
Training Objective
Importance of Symbols
Usage of Symbols
Type of Symbols
Name of Users of Learning Module
Office Source of Reference
Example of Symbol Usage
The Symbol Mnemonic
The Symbol Definition

These items can be recalled by first executing the proper DATA ENTRY PROCEDURES MENU command.

The next step is to position the CURSOR at the beginning of the buffer. This is done by entering EDIT MODE and touching the EDIT/ENTRY key and then touching the CURSOR BEGINNING key.

The next step is to touch the EDIT/ENTRY key once again. This will cause the program to search the disk index for the data item. If the item is found, it is displayed on the CRT screen. If the item is not found, the program returns to ENTRY MODE.

NOTE:

Once the data item has been recalled it must be saved in its entirety. For single page data items this is done automatically when exiting using the ESCAPE key.

For multi-page data items this is done by positioning the CURSOR on the final page of the data, then exiting using the ESCAPE key (see section 4.5.5.)

While in the EDIT MODE the following functions may be performed:

CURSOR Positioning
Insertion of Character
Deletion of Character
Modification of Character

Following is a summary of the available commands.

CURSOR ← -   This function will position the CURSOR to the left of the current position. Entering a number before executing this function will cause the CURSOR to move the specified number of spaces to the left of the current position. Holding the SHIFT key while touching this key will cause the CURSOR to continuously move to the left. This motion can be stopped by touching any key.

CURSOR ↑ -   This function will position the CURSOR up one line from the current position. As with the 'CURSOR←' function the features of entering a step and repeat are available.

CURSOR ↓ -   This function will position the CURSOR down one line from the current position. As with the 'CURSOR←' function, the features of entering a step and repeat are available.

CURSOR → -   This function will position the CURSOR to the right of the current position. As with the 'CURSOR←' function, the features of entering a step and repeat are available.

CHANGE   -   This function will allow you to modify a single character or string of characters. Entering a number before executing this function will allow you to change the next "n" characters.

DELETE   -   This function will allow you to delete a single character or string of characters. Entering a number before executing this function will allow you to delete the next "n" characters. Characters remaining to the right of the deleted character are shifted to the left the appropriate number of spaces.

INSERT   -   This function will allow you to insert a single character or string of characters. Entering a number before executing this function will allow you to insert "n" characters. When this function is executed, the specified number of spaces will be inserted and the program will go into the INSERT mode. In this mode you are allowed to enter characters into the buffer. You may also type over text already existing, if desired.

NOTE:

Before you can execute any other EDIT command or save the current page, you must exit from the INSERT MODE. Exit INSERT MODE by touching any of the following keys: EDIT, ENTRY, ESCAPE, RETURN.

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NOTE:

When spaces are inserted into the buffer,
text to the right of the current position
is shifted to the right the appropriate
number of spaces. Text is never lost.
If you should choose a number that would
cause text to be shifted out of the buffer,
the number is scaled so that only the
number of spaces available are inserted.

CURSOR BEGINNING   -   This function will position the page so that the first
OF PAGE   line of the page will appear at the top of the screen
                           and the cursor will be at the beginning of the line.

CURSOR END   -   This function will position the page so that the last
OF PAGE   line of the page will appear at the top of the screen
                           and the cursor will be at the beginning of the line.

To position the cursor at the end of the line touch
the CURSOR   key.

NOTE:

In the EDIT MODE the RUBOUT key acts
like the 'CURSOR ←'. The SPACE BAR
acts like a 'CURSOR →'.

NOTE:

To exit the EDIT MODE and return to
the ENTRY MODE, touch the EDIT/ENTRY
key.

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