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ABSTRACT

This manual describes a text processing system developed to teach relatively inexperienced users how to enter and edit textual materials. Also provided is information on storage and system maintenance for the system manager. It contains nine sections and two appendices with sections two through nine arranged in a sequence which corresponds closely to the order in which they would be used. Contents include information about the system hardware, explanations of how to type a manuscript, procedures for making text revisions, ways in which to add a file and interpret special display functions, and a format for putting files together to create one large manuscript in one file. Graphic capabilities of the system are also described. Appendices include operator utility routines and installation and maintenance routines for the system manager. Four references are listed. (Author/MER)

TAEG Report No. 106

TEXT AND ILLUSTRATION PROCESSING SYSTEM (TIPS) USER'S MANUAL

VOLUME 1
Text Processing System

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Training Analysis and Evaluation Group

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FOREWORD

This report was produced without the aid of a typewriter. All text entry and editing was done using the Text and Illustration Processing System (TIPS) on the WANG 2200 MVP. The report was printed on a WANG 2281-W Printer Plotter.

Appreciation is expressed to the following Training Analysis and Evaluation Group personnel for their assistance and support of the project.

Dr. Richard Braby, Dr. Peter Kincaid, and Mr. William Parrish provided suggestions for design and improvement of the Text and Illustration Processing System (TIPS).

Mr. George Nichols wrote the first version of the Format Specifications program.

Ms. Margaret Roberts provided helpful suggestions as a user of the system and assisted in the preparation of this report.

In addition to co-authoring this report, Mr. Ray Cox designed and wrote the TIPS computer programs.

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SECTION I

INTRODUCTION

The use of computer-based text processing has enjoyed a steady and substantial growth rate since the early 1970s. Beginning with newspapers and newsmagazines, computer-based text processing has spread to a variety of different operations, ranging from book publishing to word processing centers in business offices. With the consistent and significant drops in the cost of minicomputers, text processing has become one of today's hottest growth industries. The range of applications continues to expand. As a part of this pervasive trend, U.S. Government agencies and contractors who prepare documents for the government are adopting text processing techniques in the production of published materials. Experience to date has shown that computer-based text processing often improves productivity without increasing operating costs.

While the rapid growth in text processing is apparent, other components of the publishing process are being computerized. Computer-based innovations in publishing include such diverse activities as processing illustrations, formatting page layouts automatically, analyzing readability, monitoring for conformity to a style guide, limiting vocabulary to those words in appropriate word lists, and inserting typesetting commands automatically. It is apparent that computer techniques are revolutionizing the way documents are prepared.

Leading the Navy's efforts to bring together a full range of useful computer-based publishing techniques is the Naval Technical Information Presentation Program (NTIPP). The goal of this program is to design a highly efficient publishing system for use in preparing the operator, maintenance, training, and logistic support documents for new equipment.

In support of NTIPP, the Training Analysis and Evaluation Group (TAEG) has been evaluating the feasibility of using computer aids in authoring instructional materials supporting the use of Navy equipment. The initial concepts and system design for this type of authoring were demonstrated by Braby, Parrish, Guitard and Aagard (1978). Additional concepts incorporated into the system design were provided by Braby and Kincaid (1981). At present the system is still under development with a number of components in place. When completed, it will enable designers of instructional material to carry on dialogue with the computer. The author responds to computer requests for verbal and pictorial information about the equipment being supported. Basic format decisions are achieved by author-computer interaction. Computer routines will automatically

compose the document (including the title page, table of contents, presentation of information, exercises, tests and answers to tests) and prepare camera-ready copy. Each of the components of the computer aided authoring system can be used independently of the total system.

A basic component of computer aided authoring is the text and illustration processing system (TIPS). The TAEG is developing TIPS. The system will be described in two volumes. The first volume, which is the present report, provides the procedures for text processing. It is intended to be a user's manual for teaching the relatively inexperienced user of the system (author or typist) how to enter and edit, in step sequence, textual material. Volume I also provides information on file storage and system maintenance for the system manager. Volume II, which will be published at a later date, will describe the illustration (graphics) processing system.

In addition to being an element of TAEG's computer aided authoring system, the TIPS also supports TAEG's Computer Readability Editing System (CRES), described by Kincaid, Aagard and O'Hara (1980) and by Kincaid, Cottrell, Aagard, and Risley (1981). CRES was developed to aid in improving the readability of Navy technical manuals and training materials. Users of CRES can analyze textual material by selecting any of several features of the system. It can flag uncommon words, suggest replacements for awkward words or phrases, flag long sentences, flag misspelled words, and provide a grade level of reading difficulty. TIPS augments CRES in two ways. It enables the user to create a text file to be analyzed by the CRES readability system and provides a means for the user to make quick revisions of the text based on CRES outputs.

TIPS is also useful for other types of text processing tasks. Many government agencies are using mini-computers for data processing. These computers generally can also be used for text processing if appropriate software is available. In some instances, text processing is a much needed secondary capability, but substantial initial and annual fees to lease appropriate software can be the cost of adding this function. However with the availability of the TIPS text processing software and handbook procedures, those agencies with a WANG 2200 computer system can obtain text processing software at no cost (1).

(1) Government agencies can obtain the TIPS text processor programs by sending a written request along with two WANG 2270A flexible disks to the Training Analysis and Evaluation Group, Naval Training Center, Orlando, FL 32813.

It should be noted that while TIPS is an efficient, inexpensive text processing system when an agency already has WANG hardware, there are faster, more efficient stand-alone text processing systems which should be used if an agency has the option and the resources to purchase text processing equipment and accompanying software.

ORGANIZATION OF THE REPORT

In addition to this introduction, the report contains eight sections and two appendices. Sections II through IX contain the body of the User's Manual and appendices A and B contain utility routines generally used by the system manager.

Sections II through IX are arranged in a sequence which corresponds closely to the order in which they would be used. Section II informs the user about the system hardware and explains how to type a manuscript using the system. Section III tells the user how to make revisions; section IV tells how to add to a file; and section V explains the special display functions. Section VI explains how to select formatting style; section VII describes how to get a printed output; section VIII tells the user how to put files together to create one large manuscript in one file; and section IX delineates the graphics capabilities of the system.

Appendices A and B, while basically designed for the system manager, explain how to recover from errors and how to maintain the system files and disks. It is anticipated that the user will become familiar with and use the utility routines in appendix A and seek help when the other routines in appendix B are needed.

SECTION II

USING THE SYSTEM

EQUIPMENT

To use TIPS you will need to understand the uses of the following pieces of equipment: keyboard, display screen and cursor, storage disks, and output device. Figure 1 illustrates a typical hardware configuration necessary to implement TIPS. Look at the illustrations and compare them to your own system. For a more detailed description of the minimum hardware for use with TIPS, see appendix B.

KEYBOARD. The WANG keyboard works much like an ordinary typewriter. To type in all caps, move the switch in the upper left hand corner to A/A; to type in capital and small letters, set switch to A/a. For 2200VP systems, this switch should be kept in the A/a position whenever using TIPS. The SHIFT key enters Function Keys 16-31, the upper character of number keys, and upper case letters. An important aspect of the keyboard is the presence of special function keys at the top of the keyboard. The keys are numbered from 0-31. Their functions are described throughout the manual.

DISPLAY SCREEN. The display screen above the keyboard is called a Cathode Ray Tube (CRT). It displays information as you key it in. A CURSOR is an underscore character on the screen which lets you know where the next character you type will appear.

STORAGE. Files are stored magnetically on either disks or diskettes. A HARD DISK is a large piece of equipment which stores a very large amount of information. A DISKETTE is a small flexible disk in a square envelope.

OUTPUT DEVICE. In most instances you will want a "hard copy" of your data file. You may obtain a print-out of your file on a line printer (WANG 2261), a daisy wheel printer (WANG 2281), typewriter, or other similar devices. (See section VII for procedures on choosing an output device.)

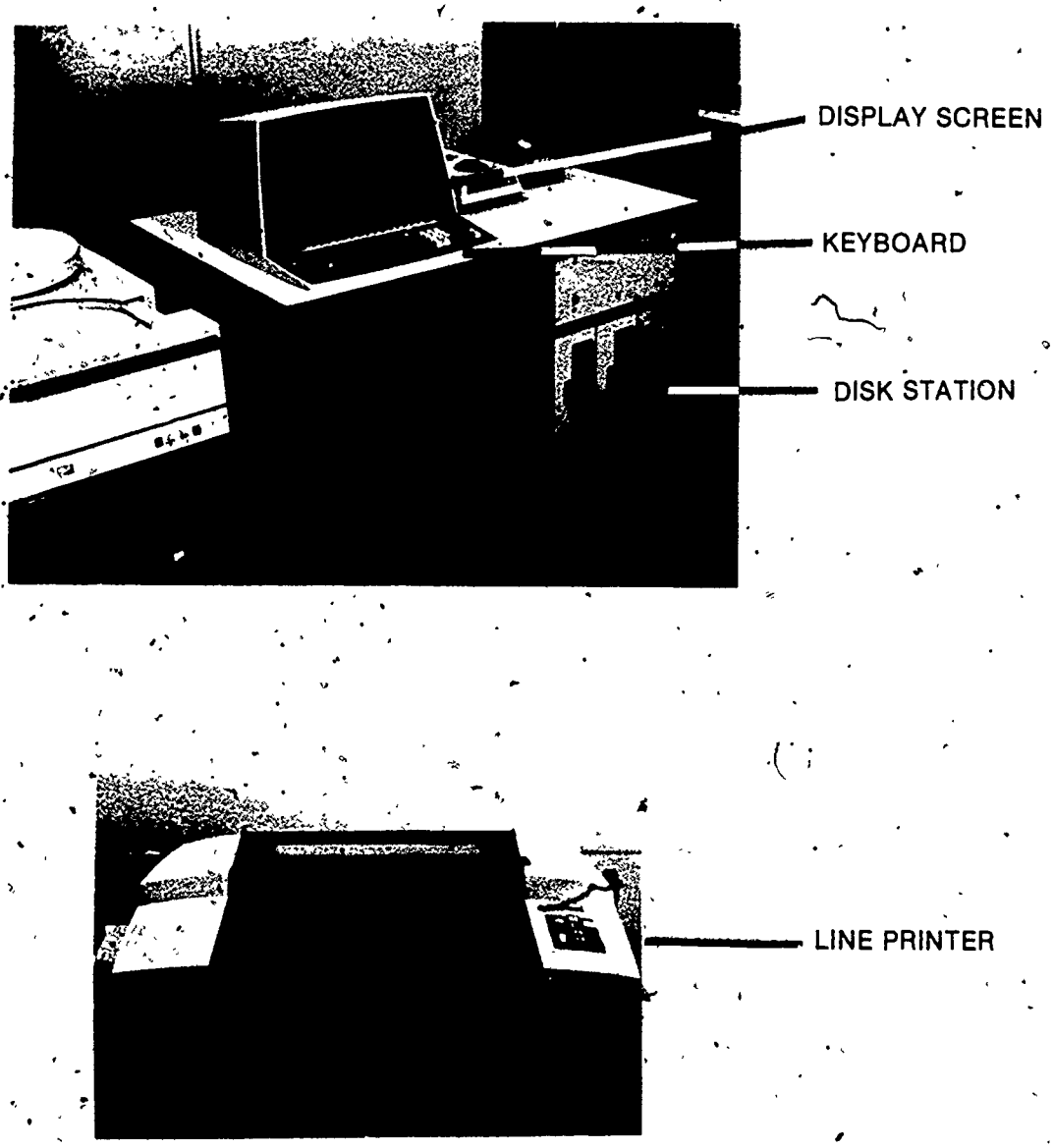

Figure 1. Equipment

START-UP PROCEDURES

Start-up procedures vary with each installation but, in most cases, to start up the system you must select the disk which contains the TIPS programs. TIPS may be stored in the computer on a hard disk or on a diskette. If TIPS is on a diskette, you should insert the diskette.

To use the system, you should:

TYPE: CLEAR

PRESS: RETURN

TYPE: SELECT DISK and the address of the system platter. Get the address number from the system manager. Then,

PRESS: RETURN

TYPE: LOAD RUN

PRESS: RETURN

On some systems you may have to select the word processing system option; otherwise, the TIPS Main Menu shown in figure 2 will appear and you may choose the function desired.

```
WORD PROCESSING SYSTEM
MAIN MENU
SELECT OPTION BY PRESSING NUMBER KEY
    0.  Quit

    1.  Create New File
    2.  Edit Existing File
    3.  Print Single File
    4.  Utilities
    5.  Build/Maintain Index
    6.  Print Using Index
    7.  Backup/Restore Files
```

Figure 2. Main Menu

HOW TO CREATE A FILE AND ENTER DATA

When the Main Menu appears on the screen you can begin to create a new file if you

PRESS: 1 - Create a New File

The following message will be displayed:

TYPE FILE NAME (1-20 CHAR'S) AND PRESS 'RETURN' -]
BLANK TO ESCAPE

The name can be any combination of letters and numbers and you will use it hereafter to refer to the file you are about to create. It may be from one to twenty characters long and must be unique.

If there is already a file by that name, the program will tell you that the file already exists in the catalog, so make up a new name and try again.

The program will now ask you on which disk the file is to reside by displaying the following message:

DISK ADDRESS FOR (file name) IS?

If a blank/space appears after the question,

TYPE the address of the disk on which the file is to be created, and

PRESS: RETURN

If a disk address appears after the question, leave as is or type the correct address over it, and

PRESS: RETURN

The program will now ask you if the indicated disk address is for a diskette, ~~i.e.:~~

IS (Disk) A DISKETTE DRIVE (Y or N)?

If it is a diskette drive,

PRESS: Y

If it is not a diskette drive,

PRESS: N

NOTE: If the file will be maintained on both hard disk and diskette, respond as for diskette.

efore you build the file, the editor needs to know how large the file will be. It will ask:

HOW MANY 800-WORD PAGES IN YOUR FILE?
(1 DISK SECTOR = .05 PAGE)
TYPE 0 TO ESCAPE

The editor will add a small pad to the amount of data which can be stored in case you should slightly underestimate. A standard 8 1/2" x 11" sheet of paper with 1 inch margins contains about 600-800 five-character words.

TYPE the number of pages in your new file, and

PRESS: RETURN

NOTE: File size is recorded in sectors (20 sectors = 1 page). If at a later time you wish to find out the number of sectors you assigned to a file, refer to the utility routine, option 7-LIST W-P FILE DISK SECTORS described in appendix B, or seek the aid of the system manager.

Should there not be enough room on the disk to build a file of the size you requested, the following error message will be displayed:

NOT ENOUGH ROOM FOR "X" PAGES ON (DISK)

---

and the file size query will be repeated. Call the system manager for aid in getting more disk space.

At this point, you have created a new file. The editor will be in Command mode, ready to accept further instructions. All tab stops have been cleared, the cursor will be positioned at the start of the screen. The line length will be set to 80 characters and the line start position will be set to 1.

See figure 3 for an example of an editor display (shown immediately after you have named the number of pages in your new file). The name of the file and its disk address are shown on Line 1. Line 22 (at the bottom of the screen) shows column position and tabs. Line 23 displays "LINE LENGTH" to the left, "LINE START" in the middle and the "MODE" of operation to the right. Notice that the prompt "MODE - COMMAND" will be on the screen at this time. Line 24 is used to give prompts to the user. The bottom area of the display screen is called the "scratch pad."

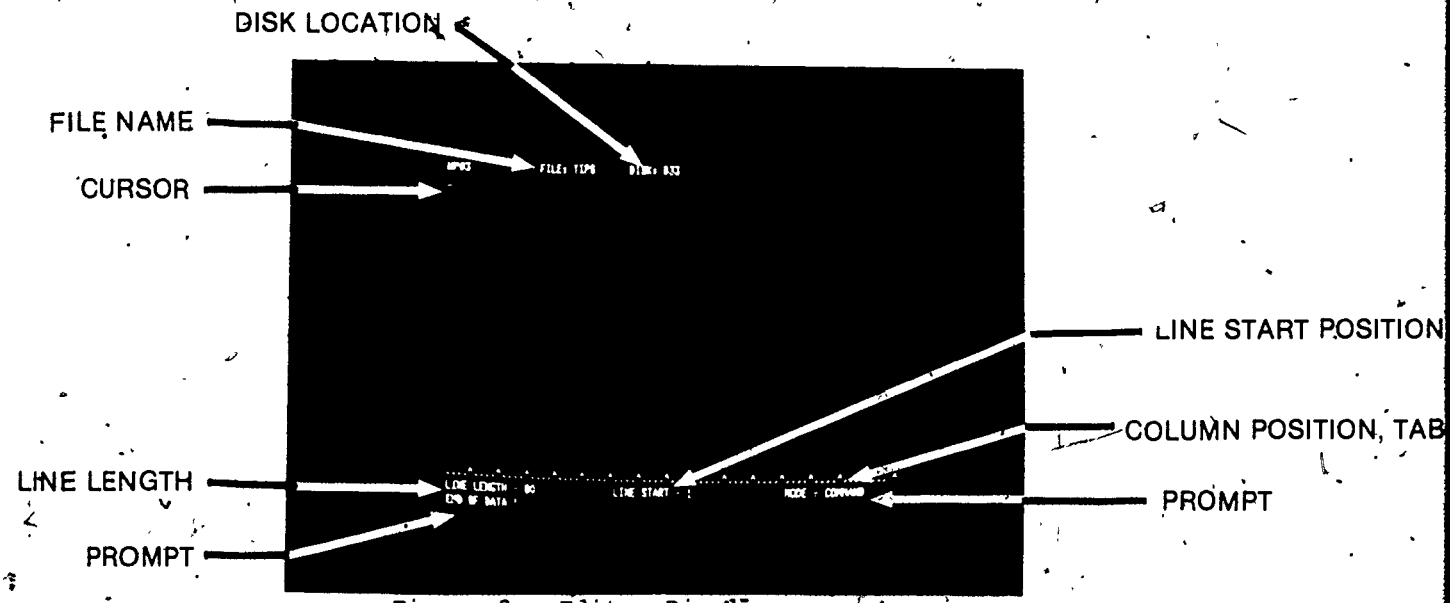

Figure 3. Editor Display

To ready the program for insertion of data into the file,

PRESS: FUNCTION KEY 10 - Insert

You are now in the Insert mode which will be identified as such at the bottom right of the screen. It will say "MODE - INSERT," and you may begin typing. You may wish to insert into the text file at this time certain format commands for output, such as margins, spacing, and line length. Refer to section VI on Format Commands for Output for further instructions. Note that, in the absence of format commands, the arrangement of data seen on the screen is essentially that which will be printed. To modify some of the attributes of the display screen, see the next subsection.

ATTRIBUTES OF DISPLAY SCREEN

If at any time during a session you wish to change the format of the screen display, there are a few options available. You can change line length, line start position and tab stops by using special function keys at the top of the keyboard.

CHANGE LINE LENGTH. The CRT line length is first set at 80 characters, but you can change it to any length between 1-200 characters. Lines that are too long to fit on the screen display will have only a part of the line on the screen. To view the entire line it would be necessary to use the special function key which shifts the display window. (See section V which explains how to perform the shift operation.) The current setting of line length is displayed in the bottom left of your screen.

To change line length,

PRESS: FUNCTION KEY 18 - Set Line Length

TYPE new line length

PRESS: RETURN

ESCAPES. None

SET/CLEAR TABS. Line 22 of the screen display is used to indicate character position and tab status. Tab stops are shown by an up arrow (!). The system will give you the option to set a tab, clear a tab, or clear all tabs.

To set or clear tabs,

PRESS: FUNCTION KEY 28 - Set/Clear Tabs

To clear all tabs,

PRESS: A

To set or clear a tab,

MOVE the cursor to desired position with the space bar and backspace key.

To set a tab,

PRESS: S

To clear a tab,

PRESS: C

NOTE: You may only set or clear a single tab within the window area of the CRT. To set or clear a tab on a long line, shift the display window first. Once the tab is set, it remains set until it is specifically cleared or until you end the session.

ERRORS. None

ESCAPES. To return to Command mode,

PRESS: X

USE OF TABS. The tabbing function will be effective in Insert mode, Replace mode or Command mode.

To move the cursor to the next tab stop:

On the MVP, PRESS: FN KEY - Tab Key

On the VP, PRESS: STMT NUMBER KEY - Tab Key

NOTE: In Replace or Command mode, an attempt to move to the next tab stop on a line by pressing the Tab Key when the line does not extend to the next tab stop automatically sends the cursor to the beginning of the next line, not to the next tab stop on the line. In Insert mode, spaces will be inserted and the cursor will move to the next tab stop on the line.

CORRECTIONS AND REVISIONS.

You can make some corrections while in the Insert mode by using two keys on the keyboard. These are "backspace" which deletes the character to the left of the cursor, and "erase" which deletes the entire line to the left of the cursor. (See illustration of keyboard in figure 4.)

For other corrections, such as to replace misspelled words and to delete sentences, you must use the function keys at the top of the keyboard.

For instance, it is easy to replace text with the REPLACE key and the function keys which move the cursor.

To replace text,

MOVE the cursor (with Function keys 5, 6, 11-14) to the position where a replacement is necessary,

PRESS: FUNCTION KEY 26 - Replace

TYPE the replacement text

Each key stroke types over and replaces the character presently occupying the space. For further information on how to make replacements and other corrections using the function keys at the top of the keyboard, see section III.

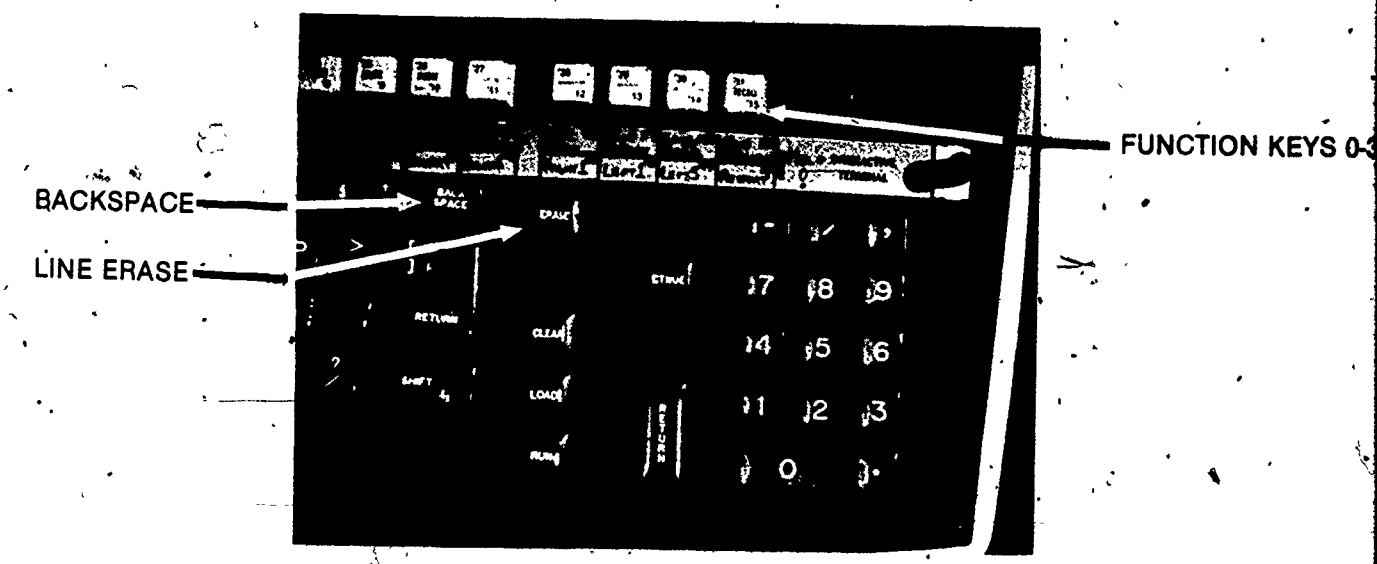

Figure 4. Correction Features of Keyboard

HOW TO END THE SESSION

When you have finished typing in a manuscript or when you have finished making changes and corrections, you will want to permanently store the information in the input file. To do this:

PRESS: FUNCTION KEY 31 - End Program

The following message will be displayed:

PRESS KEY TO SELECT OPTION
'RETURN' - NORMAL END; 'CLEAR' - PANIC STOP; X - ESCAPE

To avoid ending the session,

PRESS: X

This returns you to command mode.

After either of the other choices, the Main Menu will appear. To end the session,

PRESS: 0 - Quit

NOTE: Some caution should be exercised regarding emergency use of panic stop. You should not use this procedure routinely. It is not intended as a normal exit from multi-segment files.

ERRORS. The following error message may appear:

FATAL ERROR IN WP04.000

This means the original input file does not have sufficient free sectors to hold all data added to the file. Any excess data will be lost. The file size can be increased with the ADD/COPY function described in section IV.

WORKING WITH MULTI-SEGMENT DOCUMENTS

Memory is a temporary storage space used to hold a document as you are typing it or editing it. The contents of memory must be saved on disk in order to be permanently stored. When a manuscript contains more data than memory can hold at one time, you must enter it into the file or edit it in segments. A segment is the amount of text that fills memory. Long files are dumped in and out of memory, one segment at a time. A file can hold one or more segments, depending on its size.

If you are typing a long manuscript and try to enter more data than memory can hold, you will hear a beep, and a message "MEMORY IS FULL" will appear on the scratch pad at the bottom of your screen. The keyboard locks when memory is full so that no new data can be entered.

Similarly, if you are trying to read a file that has been stored in more than one segment, you will not be able to page past the display of the first segment.

SAVE EACH SEGMENT. Each segment of a file, whether it is newly created or edited, must be saved in a disk file. Segments are stored in the order in which they are created and can only be recalled in that order. Segments are not labelled. For example, to reach the third segment of a file, you must first recall the first and second segments.

After you have typed a segment, you will want to permanently store it in the file:

PRESS: FUNCTION KEY 30 - Read/Save, and then

PRESS: RETURN

You will now see an empty screen and you can enter Insert mode to continue to type the manuscript.

In another case, after you have read a segment of a long file and edited it, you will want to store the new version of the segment:

PRESS: FUNCTION KEY 30 - Read/Save, and then

PRESS: RETURN

You will now see the first page of the next segment of data on the display screen.

ERRORS. None

ESCAPES. To skip the save operation and return to Command mode,

PRESS: X

Sometimes you will want to store like information over and over again, for instance, a letter with only the name and address of the addressee changed. As another option of the READ/SAVE function, you may store the contents of memory in the file and at the same time keep the contents in memory. Then you can make changes and store that material in the file, and so on. To use this option, after you have typed in the material to be repeated,

PRESS: FUNCTION KEY 30 - Read/Save, and then

PRESS: S - Save

READ EACH SEGMENT. If you wish to scan a long file from beginning to end, but do not plan to edit the material, then use the READ function. To review the material in each segment of the file, you will call up the file and page through the first segment; but when the contents of memory have been displayed on the screen, you will not be able to page any further.

To display the next segment of the file,

PRESS: FUNCTION KEY 30 - Read/Save, and then

PRESS: R - Read

The next segment will be ready for paging. Continue to perform the above steps until each segment has been displayed.

NOTE: No editing is allowed when using the READ option.

After all segments have been reviewed, DO NOT end the session normally.

PRESS: FUNCTION KEY 31 - End Program, and then

PRESS: CLEAR (panic stop)

CLEAR EACH SEGMENT. If you would like to erase a whole segment from memory and replace it with new text, the READ/SAVE function allows you to do this. At the end of the segment,

PRESS: FUNCTION KEY 30 - Read/Store, and then

PRESS: CLEAR

NOTE: The CLEAR function is not intended as a means for erasing a segment of a file without replacement. It works best when it is used to replace a file segment with new data.

RESTART THE FILE. This command should be used ONLY when you are scanning a file. If the file is very long and you are reading one of the last segments and wish to go back to the first, RESTART allows you to go back to the beginning of the file.

To restart the file,

PRESS: FUNCTION KEY 15 -- Restart the File

The program will ask you if you really want to restart the file (just in case the key was pressed by mistake).

REALLY RESTART INPUT FILE (Y OR N)?

NOTE: If the data in the file was altered by any means during this editing session (i.e., since the last time you ended the editor), some data may be lost. File integrity under these conditions cannot be guaranteed.

ERRORS. None

ESCAPES. To return to normal processing,

PRESS: N

SECTION III

MAKING REVISIONS

If the text you are composing must go through many drafts before a final version is acceptable, this section will show you how to make those changes easily. The system is designed to enable you to make any revisions and add or delete as much information as you would like.

CALL UP AN EXISTING FILE

To use the editor, display the Main Menu as discussed in section II and select

OPTION 2 -- Edit an Existing File

The program will ask for the name of your file. This name is the same one you used when creating the file. The following message will be displayed:

```
-------------------------------------------------------------
      TYPE FILE NAME(1-20 CHAR'S) AND PRESS 'RETURN'-]
                  (BLANK TO ESCAPE)
-------------------------------------------------------------
```

If the file was created on a diskette, the program will display the last known address of the diskette to learn if it is still there.

```
-------------------------------------------------------------
          DISK ADDRESS FOR (file name) IS:  (disk)
-------------------------------------------------------------
```

If the disk address is still correct,

PRESS: RETURN

If the diskette is at another address now,

TYPE: The disk address for the diskette, and

PRESS: RETURN

If either the file name or the actual file can not be found, the edit program will display an error message and request a new file name. The following message will be displayed:

TYPE FILE NAME (1-20 CHAR'S) AND PRESS 'RETURN' -] (name)
FILE NAME NOT FOUND

If the cause of the error was a data entry, type the correct file name and try again.

NOTE: To escape and return to the Main Menu, the space reserved on the CRT for entry of the file name must be blank. To delete the file name and return to the Main Menu,

PRESS: ERASE, and then,

PRESS: RETURN

Once your file has been found, the first page of text will be displayed on the screen. The editor will be in Command mode, ready to accept further instructions. Note the prompt "MODE-COMMAND" at the bottom right of the screen.

There is a precaution to take against accidental destruction of data when working with a long file. As you are making changes in the file, it is wise to store the revised version at intervals. Then, if the computer malfunctions and memory is ill-affected or destroyed, whatever was saved in the original input file will not be lost.

To save data,

PRESS: FUNCTION KEY 31 - End Program

PRESS: RETURN

Then re-open the file again by choosing option 2 from the Main Menu - Edit an Existing File.

ERRORS. The following error messages may appear:

FILE STRUCTURE IS BEING ALTERED
NO ACCESS IS ALLOWED AT THIS TIME

Check with the system manager. Do not proceed.

```
FILE IS.IN USE BY (#) OTHER USERS
YOU MAY ONLY REVIEW THE DATA - NO OUTPUT ALLOWED!!
DO YOU WANT TO CONTINUE (Y OR N)?
```

If to your knowledge, the file is not in use, the in-use counter may be in error. After making sure the file is not being used by anyone else, reset the counter using the utility routine described in appendix A.

EDIT FUNCTIONS

All editor options are started by pressing one of the special function keys at the top of the keyboard. For your convenience, a screen display is available which shows the uses of the special function keys.

To view the help display,

PRESS: EDIT

The display shown in figure 5 will appear on your screen.

FN KEY	FUNCTION	FN KEY	FUNCTION
0	Format Delimiter	16	Insert Phrase
1	Append/Copy File	17	End Copy
2	Move/Copy/Delete	18	Set Line Length
3	Search/Replace	19	Continue Search
4	Move to End of Data	20	Redisplay Current Page
5	Move Down 1 Line	21	Display Next Page
6	Move Up 1 Line	22	Display Prior Page
7	Move to Start of Data	23	Save a Phrase
8	Erase a Sentence	24	Insert a Page Break
9	Erase a Word	25	Erase Character
10	Insert	26	Replace
11	Move Right 5 Spaces	27	Shift Display Screen
12	Move Right 1 Space	28	Set/Clear Tabs
13	Move Left 1 Space	29	Print the Screen
14	Move Left 5 Spaces	30	Read/Store
15	Restart the File	31	End Program
FN/St#	Tab Key	Edit	Help Display

PRESS ANY KEY TO CONTINUE

PRESS FN KEY 29 TO PRINT THIS DISPLAY

Figure 5. Function Key Summary Display

PAGING

The first step in making changes to your manuscript will be finding the place where the change is needed. Paging allows you to move rapidly backwards and forwards through all the pages of your manuscript that are in memory at any one time. A page consists of 21 lines of text displayed on the screen.

DISPLAY PAGE. The following three commands allow you to page through the manuscript a page at a time.

To display the next page,

PRESS: FUNCTION KEY 21 - Display Next Page

To display the previous page,

PRESS: FUNCTION KEY 22 - Display Prior Page

To redisplay the current page,

PRESS: FUNCTION KEY 20 - Redisplay Current Page

ERRORS. None

ESCAPES. None

NOTE: The paging functions described above display pages of memory. To scan pages in other segments of the file, see section II - Working with Multi-Segment Documents.

MOVE TO START OR END OF DATA. If you want to quickly move to either the first or last page of text in memory, the following two options are available:

To move cursor to start of text,

PRESS: FUNCTION KEY 7 - Move to Start of Data

To move cursor to end of text in memory,

PRESS: FUNCTION KEY 4 - Move to End of Data

NOTE: The screen will be blank and "End of Data" will appear as a prompt at the bottom left of the screen. This means you are at the point beyond the last character that was entered. If you wish to view the last page of data, display the previous page with function key 22.

NOTE: These functions search only the data in memory.

SEARCH THE SCREEN

Before you can make revisions you have to tell the system to move to the correct position on the screen. There are six cursor-moving options available.

MOVE RIGHT OR LEFT. To move the cursor right or left the following four commands are available:

1. To move right 5 characters

PRESS: FUNCTION KEY 11 - Move Right 5 Spaces

2. To move right 1 character,

PRESS: FUNCTION KEY 12 - Move Right 1 Space

3. To move left 5 characters,

PRESS: FUNCTION KEY 14 - Move Left 5 Spaces

4. To move left 1 character,

PRESS: FUNCTION KEY 13 - Move Left 1 Space

NOTE: The cursor can not be moved beyond either end of the line with the above keys.

MOVE UP OR DOWN. To move the cursor up or down on the screen, the following two commands are available:

5. To move up 1 line,

PRESS: FUNCTION KEY 6 - Move Up 1 Line

6. To move down 1 line,

PRESS: FUNCTION KEY 5 - Move Down 1 Line

NOTE: You can not move the cursor beyond the limits of the data in memory with the above keys.

NOTE: If the next line, up or down, is shorter than the current line, the cursor will be moved to the last character on the line.

If the next line is not in the display window, the display window will move as follows:

DOWN: It will begin with the next line.

UP: It will begin at the first paragraph above the window area.

SEARCH THE TEXT

When you want to quickly search for a word or sentence in your manuscript, you will want to use the Search mode. This function is especially valuable when you have a long file because the computer does the searching for you. Search mode works by looking for exactly the same characters that were originally typed. For instance, if you misspelled a word, you would tell the system to look for the word exactly as it was misspelled. The function is also very valuable when you wish to search through a very long manuscript for a particular chapter or section. The system will look for the heading and display the heading and what follows on the screen.

To search for a string,

PRESS: FUNCTION KEY 3 - Search/Replace

The following message will be displayed.

PRESS KEY TO SELECT OPTION
S- SEARCH ; R- SEARCH AND REPLACE; X TO ESCAPE

PRESS: S

The program will now ask you to press S to search memory or T to search the entire file.

To search only in memory,

PRESS: S

To search through the entire text file,

PRESS: T

After choosing an option, the following message will be displayed:

TYPE SEARCH STRING AND PRESS 'RETURN'

The text string may consist of 1-80 alphanumeric characters and the format delimiter character which is placed before and after text format commands. If the search string is to include the format delimiter character, that character may be inserted by pressing the "clear" key.

NOTE: You may use the backspace and line erase keys to aid in correcting mistakes.

The system will now ask for the number of such strings you wish to search for. Up to 1000 occurrences of a string may be located and displayed in one search. The default value is 1. The following message will appear in the scratch pad:

TYPE NUMBER OF OCCURRENCES (1-1000)?

The first occurrence of the string and any text that follows it will fill the screen. You may now perform any desired editing operations.

To resume searching for a specified string,

PRESS: FUNCTION KEY 19 - Continue Search

If there are more occurrences remaining, the system will continue searching from the current position of the cursor.

NOTE: If the cursor was moved during editing, after finding the previous string, a string may be missed or a previous string displayed as a new find.

ERRORS. The following message may appear while searching:

STRING NOT FOUND!!
PRESS ANY KEY TO CONTINUE

This message indicates that the string could not be found between the cursor and the end of the data, or it indicates that all the search strings have been located.

ESCAPES. To return to Command mode after initially entering a global search,

PRESS: X

DELETE MISTAKES:

Lines and characters can be erased quickly by using the backspace key or the line erase key when in Insert mode or the backspace key and space bar when in Replace mode. This is often the easiest way to erase data, but sometimes you will want to delete whole sentences at a time, or a series of words, or part of a word. Four delete functions will enable you to do these things:

DELETE A SENTENCE. This function allows you to delete data a sentence at a time.

MOVE the cursor to the first or last character of the sentence.

PRESS: FUNCTION KEY 8 - Erase a Sentence

The program will ask whether you want the previous sentence or the next sentence erased. The following message will be displayed:

PRESS KEY TO SELECT OPTION
P- PRIOR SENTENCE; N- NEXT SENTENCE; X- ESCAPE

To return to Command mode, and to escape the Delete condition,

PRESS: X

After choosing option N or P, the program will underscore the requested sentence and display it. (A sentence is recognized as a data string ending with a period, question mark, exclamation point, or carriage return.) This gives you an opportunity to review the data to be deleted.

To delete the sentence,

PRESS: RETURN

To prevent the deletion,

PRESS: X

DELETE A WORD. This function allows you to delete data a word at a time.

MOVE the cursor to the word to be erased.

PRESS: FUNCTION KEY 9 - Erase a Word

The program will ask you with a displayed message similar to that of 'DELETE A SENTENCE' whether you want to delete the previous word or the next word.

For the NEXT word,

PRESS: N

For the PREVIOUS word,

PRESS: P

To return to Command mode and escape the Delete condition,

PRESS: X

The program will underscore the requested word and display it.

To delete the word,

PRESS: RETURN

To prevent the deletion,

PRESS: X

DELETE A CHARACTER. This function allows you to choose as many characters as you wish to delete at one time.

MOVE the cursor to the first or last character to be erased.

PRESS FUNCTION KEY 25 - Erase Characters

The program will ask you with a displayed message similar to that of 'DELETE A SENTENCE' whether you wish to erase preceding characters or next characters.

To erase characters to the left of the cursor (preceding),

PRESS: P

To erase characters to the right of the cursor (next),

PRESS: N

After choosing P or N, the following message will be displayed:

HOW MANY CHARACTERS?

TYPE the number of characters you want to erase, and

PRESS: RETURN

To return to the Command mode, and to escape the Delete condition,

PRESS: X

The program will underscore the requested characters and display them.

To delete the characters,

PRESS: RETURN

To prevent the deletion,

PRESS: X

NOTE: You can not delete more characters than occur between the cursor and the beginning/end of the current CRT display at one time.

ERRORS. Typographical errors may be re-keyed.

ESCAPES. You may prevent deletion or return to the previous mode of operations as noted above.

DELETE A PARAGRAPH (LARGE BLOCK OF TEXT). Using this function you can delete one paragraph or more at one time.

PRESS: FUNCTION KEY 2 - Move/Copy/Delete.

The following message will be displayed:

MOVE CURSOR IN FRONT OF DATA TO BE MOVED/DELETED
PRESS E WHEN CURSOR IN POSITION; X TO ESCAPE

After you have moved the cursor and have pressed E, the following message will be displayed:

```
------------------------------------------------------------
      NOW MOVE CURSOR TO END OF DATA TO BE MOVED
      PRESS E WHEN CURSOR IN POSITION; X TO ESCAPE
------------------------------------------------------------
```

After you have moved the cursor and have pressed E, the following message will be displayed:

```
------------------------------------------------------------
                PRESS KEY TO SELECT OPTION
 C TO COPY DATA; M TO MOVE DATA; D TO DELETE DATA; X TO ESCAPE
------------------------------------------------------------
```

To delete data

PRESS: D

ESCAPES. To escape, press X.

REPLACE DATA

Use the REPLACE key to correct existing text by replacing it with new text. If the cursor is below an existing character or space, that character or space is replaced by a keystroke.

Replace mode operates much like Insert mode, but there are some significant restrictions:

- Line erase key is not active

- Tab keys operate as in Command mode.

To enter Replace mode,

PRESS: FUNCTION KEY 26 - Replace

The prompt "MODE - REPLACE" will appear in the scratch pad at the bottom of the screen.

MOVE the cursor to the desired location, and

TYPE replacement data.

ERRORS. None.

ESCAPES. To end Replace mode after all replacements have been made,

PRESS: FUNCTION KEY 26 to return to Command mode, or

PRESS: FUNCTION KEY 10 to return to Insert mode.

SEARCH AND REPLACE DATA

The Search/Replace function lets you search memory or the entire file for a string of characters (anything from a word to long phrase or sentence) and optionally replace it with a new string. Replacement may be Selective or Automatic. If SELECTIVE, the program will show you what it found and ask for permission to replace it, and if permission is denied, the search will continue without replacing the search string. If AUTOMATIC, every search string found will be replaced automatically with the second string.

To replace a string,

PRESS: FUNCTION KEY 3 - Search/Replace

The following message will be displayed:

```
------------------------------------------------------------
                    PRESS KEY TO SELECT OPTION
          S- SEARCH; R- SEARCH AND REPLACE; X- ESCAPE
-------+----------------------------------------------------
```

PRESS: R

The following message will then be displayed:

```
------------------------------------------------------------
                    PRESS KEY TO SELECT OPTION
                  Q- QUERY/REPLACE; R- REPLACE
------------------------------------------------------------
```

For selective replace,

PRESS: Q

For automatic replace,

PRESS: R

The program will ask you to type the text string you are searching for. It may consist of 1-80 characters and the formater delimiter character, which occurs before and after text format command. If the search string is to include the formater delimiter character, that character may be inserted by pressing the clear key. The following message will be displayed:.

```
------------------------------------------------------------
              TYPE SEARCH STRING AND PRESS 'RETURN'
------------------------------------------------------------
```

The program will now ask for the replacement text string. The replacement string may be 0-80 characters long and may contain the format delimiter character. If you do not type replacement text for this string, the search string will be effectively deleted. The following message will be displayed:

```
-------------------------------------------------------------
          TYPE REPLACEMENT STRING AND PRESS 'RETURN'
-------------------------------------------------------------
```

The system will now ask for the number of strings it should look for. The following message will be displayed. Up to 1000 occurrences of a string may be located and displayed in one search. The default value is 1.

```
-------------------------------------------------------------
          TYPE NUMBER OF OCCURRENCES (1-1000)
-------------------------------------------------------------
```

PRESS: RETURN

The program will now begin at the start of the text and will search for the string. If the string is found, it will automaticallly be replaced if you asked for AUTOMATIC REPLACE. If you asked for SELECTIVE REPLACE, the program will display the file beginning at the search string and ask for permission to replace it. The following message will be displayed:

```
-------------------------------------------------------------
                REPLACE STRING (Y OR N)?
-------------------------------------------------------------
```

Searching and replacing will continue until all occurrences have occurred or until you reach the end of the file.

ERRORS. The following error messages may appear:

```
-------------------------------------------------------------
                    STRING NOT FOUND!!
                PRESS ANY KEY TO CONTINUE
-------------------------------------------------------------
```

You reached the end of the data before the indicated number of strings had been found.

```
-------------------------------------------------------------
          NOT ENOUGH ROOM IN MEMORY TO REPLACE STRING
-------------------------------------------------------------
```

Memory storage space has been used up. To recover from this condition you must end the edit session and start over.

NO ROOM FOR DATA IN THE FILE

There is no more free space left in the original input file. Increase the file size (see section IV) or reorganize the file (see appendix B) and try again.

ESCAPES. To return to Command mode from the initial input request,

PRESS: X

REARRANGE TEXT

Sometimes you will want to move sentences or paragraphs from one spot in the text to another. If the moving takes place within memory, the MOVE/COPY/DELETE function can be used. If a move will involve taking material from a segment of text and putting it in one adjacent to it, the PAGE BREAK function, along with MOVE/COPY/DELETE, will accomplish the task. (See below.) To move text in a long file that is very distant from the point of insertion, it will be necessary to use other methods involving APPEND/COPY FILE.

Data may be moved from one spot to another, erasing it from its original position, or data may be copied from one spot to another, leaving it in its original position. Beware that to copy data, there must be sufficient room in memory to hold both the original data and the copied data. The MOVE/COPY/DELETE function can also be used to delete a large portion of data.

To move, copy, or delete data,

PRESS: FUNCTION KEY 2 - Move/Copy/Delete

The following message will be displayed:

MOVE CURSOR IN FRONT OF DATA TO BE MOVED/DELETED
PRESS E WHEN CURSOR IN POSITION; X TO ESCAPE

After you have moved the cursor and have pressed E, the following message will be displayed:

MOVE CURSOR TO END OF DATA TO BE MOVED
PRESS E WHEN CURSOR IN POSITION; X TO ESCAPE

After you have moved the cursor and have pressed E, the following message will be displayed:

PRESS KEY TO SELECT OPTION
C TO COPY DATA; M TO MOVE DATA; D TO DELETE DATA; X TO ESCAPE

If you choose MOVE or COPY, the program will ask you to move the cursor to the point of insertion (data will be inserted to the left of the cursor).

The following message will be displayed:

NOW MOVE CURSOR TO POINT OF INSERTION
PRESS E WHEN CURSOR IN POSITION; X TO ESCAPE

After you have performed the steps above, you must end the program to permanently store the text as you have rearranged it.

PRESS: FUNCTION KEY 31 - End Program

PRESS: RETURN

NOTE: If the material to be moved or copied is not in the same text segment as the point of insertion, use the PAGE BREAK command (Function Key 24) to rearrange the presentation of data in memory. When you need to move the data into the previous text segment, insert the PAGE BREAK control character before the point of insertion. When you need to move the data into the next text segment, insert PAGE BREAK before the data you are moving.

ERRORS. The following error messages may appear:

DATA POINTERS INVALID

The designated start of the data to be revised must come before the end of the data to be revised and the insertion point must not come between the start and stop of the data. Move the cursor and try again.

NOT ENOUGH ROOM FOR COPY

There is not enough room in memory to contain all of the data you wish to copy. Either copy less data or end the session and try again, or both.

ESCAPES. To return to Command mode,

PRESS: X

STORE PHRASES

Many users find that they use the same group of words quite often. TIPS permits you to store up to 10 70-character phrases for use during each editing session. (See NOTE below for information on how to store permanent phrases for general use.) You may store or alter phrases at any time during the editing session, but once the session ends they are erased from memory. You may insert any stored phrase in the text at any time you are in Insert or Replace mode.

To store or alter a phrase,

PRESS: FUNCTION KEY 23 - Save a Phrase

The program will ask you to type a single digit from 0-9 to identify the phrase. This digit will be used during the editing session to refer to its associated phrase. The following message will be displayed:

TYPE A SINGLE DIGIT (0-9) TO IDENTIFY PHRASE; X TO ESCAPE

PRESS: A number key

To return to Command mode,

PRESS: X

The following message will be displayed:

PHRASE FOR (#) ALREADY EXISTS. IT IS: (phrase)
DO YOU WANT TO CHANGE THE PHRASE (Y or N) ?

If you PRESS Y, or if there was no phrase associated with the number you keyed, the system will ask you to type in a phrase. The following message will be displayed:

TYPE NEW PHRASE AND PRESS 'RETURN'

ERRORS. Key stroke errors may be corrected by using the backspace key or line erase key.

ESCAPES. To return to Command mode from the initial query,

PRESS: X

NOTE: TIPS also permits you to store up to 26 70-character phrases labelled (A-Z) for common use through creation of a Phrase File. These phrases are stored, purged and saved by using a utility routine (see appendix A).

INSERT PHRASES

If you store a phrase (0-9) during a particular editing session, you may insert it only during that same editing session. Phrases (A-Z) from the Phrase File may be used at any time. The phrase may be inserted in the text string at any time you are in Insert mode or Replace mode.

To insert a phrase,

MOVE the cursor to the point of insertion. (The phrase will be inserted beginning at the cursor.)

PRESS: FUNCTION KEY 16 - Insert Phrase

The following message will be displayed:

PRESS KEY FOR DESIRED STRING OR FN KEY 16

PRESS: The number (0-9) or letter key (A-Z) that corresponds to the phrase you wish to insert.

ERRORS. The following error messages may appear:

PHRASE ENTRY (#) IS BLANK !!

There is no phrase that corresponds to the number or letter you have pressed. Try again, using a different number or letter.

NO ROOM FOR DATA IN FILE

There is no free space left in the original input file. End the edit session and enlarge the file (see section IV), or reorganize the file with the proper utilities program and with help from the system manager (see appendix B).

MEMORY IS FULL

There is no room left in memory. If you were inserting at the end of a text segment, store that segment of the text in the file and begin typing the insert at the beginning of the next segment. Otherwise, end the session and start over.

ESCAPES. To end the phrase insertion function,

PRESS: FUNCTION KEY 16

PAGE BREAK

If you know that a large amount of data is to be inserted at a given point in the text at a later time, you may use a PAGE BREAK command to reserve space for the insertion.

To insert a page break in Insert or Replace mode,

PRESS: FUNCTION KEY 24 - Page Break

NOTE: The Page Break command is helpful when moving data from one segment of the file to another. See description of Move/Copy/Delete function.

A Page Break character will appear on the screen, but will not be printed at output.

When the file is edited at a later session and data is inserted into the reserved space, the Page Break character should be removed, so as not to have continual space reservation.

SECTION IV

ADDITIONS TO A FILE

ADD TO AN EXISTING FILE

Sometimes you will save an unfinished manuscript in the input file. When ready to finish typing the document, simply recall it and continue typing where you left off.

To call up the old file, access the Main Menu, and

PRESS: 2 - Edit an Existing File

Then request your file by typing in the name you have given it. If the entire file can be contained in memory, you can reach the point in the text where typing ended if you:

PRESS: FUNCTION KEY 4 - Move to End of Data

The display screen will be blank and the cursor will be in the upper left corner. After selecting the Insert mode you can begin typing.

If the file contains more material than memory can hold at one time, i.e., more than one segment, the display screen will contain the last of the text in memory and you will have to save the data and read the next segment. You can call up the file, segment by segment, until you find the point where you left off, but you can reach the end of the manuscript most quickly by using the Search function.

PRESS: FUNCTION KEY 3 - Search/Replace

Search the entire file for some nonexistent word (i.e., ZZZ) and you will quickly reach the last segment of the file. The SEARCH function will report that the requested string could not be found and will position the cursor at the start of the last segment of the file. To reach the last page of the last segment,

PRESS: FUNCTION KEY 4 - Move to End of Data

After selecting the Insert mode you can begin typing.

ADD FILE TO ANOTHER FILE

You can add a file or a portion of a file to the end of another file by using the APPEND function. If you wish to add a file or a portion of a file in the middle of another file, use the COPY function referred to in the section COPY DATA FROM ONE FILE TO ANOTHER. The file being added must be in the TIPS file catalog. The original file must have enough free space to contain the new data.

To add a file to an original file, first call up the original file by accessing the Main Menu,

PRESS: 2 - Edit an Existing File

After you have named the file and displayed it,

PRESS: FUNCTION KEY 1 - Append/Copy File

The following message will be displayed:

PRESS KEY TO SELECT OPTION
C FOR COPY; 'A' FOR APPEND; X TO ESCAPE

PRESS: A

It will then ask for the name of the file you are adding.

TYPE: the file name, and

PRESS: RETURN

If the file resides on a diskette, the system will display the original disk address of the file and ask for any correction.

If the diskette is mounted in the device indicated,

PRESS: RETURN

Otherwise,

TYPE the disk address for the file and

PRESS: RETURN

NOTE: If the file resides on a fixed disk, the above question will not be asked.

The file you are appending will be ready for editing and the first page of data will be displayed. If you wish to append only a portion of the file, delete what you don't want to append.

To append the revised (or unrevised) file,

PRESS: FUNCTION KEY 31 - End Session

NOTE: If the file to be appended is contained in more than one segment, each segment (revised or unrevised) will be added to the original file each time you use Function Key 30 - Read/Save, followed by RETURN.

ERRORS. The following error messages may appear:

FATAL ERROR - CAN NOT FIND FILE CATALOG

The File Catalog is not on the word processing program disk. Reinstall the word processing system. If the problem persists, notify TAEG.

FATAL ERROR - CAN NOT FIND FILE FOR (file name)

The file indicated could not be located on the disk. Verify the location of the file and insure that you type the correct disk address in replying to program queries.

FILE NAME NOT FOUND

The file name you typed could not be located in the catalog. Check proper spelling. Retype the correct file name.

DISK DEVICE IS NOT AVAILABLE

Check for proper disk address, or some other person "hogging" the disk. Retype the correct disk address.

ESCAPES. If Function Key 1 was pressed by mistake,

PRESS: X

CREATE A DUPLICATE FILE (INCREASE FILE SIZE)

You can use the APPEND function to create a duplicate of an original file and, at the same time, increase the size of the file if you so wish. Begin by creating a new file (with a different file name) which will contain the duplicate copy. Access the Main Menu and,

PRESS: 1 - Create a New File

After you have named your file, you will be asked to name the size of your new file with the following display:

```
------------------------------------------------------------
          HOW MANY 800-WORD PAGES IN YOUR FILE?
                (1 DISK SECTOR = .05 PAGE)
                   TYPE 0 TO ESCAPE
------------------------------------------------------------
```

If you choose to enlarge the file size, simply assign a number (of pages) larger than what had been assigned to the original file. After the number of pages has been assigned, a blank screen will appear.

PRESS: FUNCTION KEY 1 - Append/Copy File

The program will ask you to press A if you are adding a file, or C if you are copying a file. The COPY function is explained in the next section and should not be confused with the duplicating capability of the APPEND function presently under discussion. The following message will be displayed:

```
------------------------------------------------------------
                PRESS KEY TO SELECT OPTION
          C FOR COPY; A FOR APPEND; X TO ESCAPE
------------------------------------------------------------
```

PRESS: A

It will then ask for the name of the file to be added (duplicated):

TYPE the file name, and

PRESS: RETURN

If the file resides on a diskette, the system will display the original disk address of the file and ask for any corrections.

If the diskette is mounted in the device indicated,

PRESS: RETURN

Otherwise,

TYPE the disk address for the new file and,

PRESS: RETURN

NOTE: If the file resides on a fixed disk, the above question will not be asked.

To duplicate the file,

PRESS: FUNCTION KEY 31 - End Session

ERRORS. See section, ADD FILE TO ANOTHER FILE.

ESCAPES. If Function Key 1 was pressed by mistake,

PRESS: X

NOTE: If you have duplicated a file in order to increase its size, you may have no further use for the original file. In that case, you may wish to destroy the original file by deleting it from the file catalog. Refer to appendix B or see the system manager.

COPY DATA FROM ONE FILE TO ANOTHER

If you wish to insert all or part of a file into the beginning or middle of another file, the COPY function allows you to make the insertion at the exact point you desire. The file to be inserted can be edited during the copying process. After copying the data, any of the original input file following the inserted data will be available for editing. The file to be copied must be a TIPS file and must be in the file catalog.

To copy a file, begin by calling up the file. Access the Main Menu and,

PRESS: 2 - Edit an Existing File

After you have displayed the original file,

MOVE the cursor to the point of data insertion. The program does not replace data; data is simply added at the point of insertion. The data will be inserted in front of this point. When the cursor is in position,

PRESS: FUNCTION KEY 1 - Append/Copy File

The following message will be displayed:

PRESS KEY TO SELECT OPTION
C FOR COPY; A FOR APPEND; X TO ESCAPE

PRESS: C

The program will ask for the name of the file to be copied.

TYPE the file name, and

PRESS: RETURN

If the file resides on a diskette, the system will display the original disk address of the file and ask for any correction.

If the diskette is mounted in the device indicated,

PRESS: RETURN

Otherwise,

TYPE the correct address for the file to be copied, and

PRESS: RETURN

If the file to be copied resides on a fixed disk, the above query will not appear.

The file being copied will be ready for editing and the first page of data will be displayed. If you wish to copy only a portion of the file, delete what you don't want to copy. When the data has been edited to your satisfaction, you must end the copy function,

PRESS: FUNCTION KEY 17 - End Copy

At this point, the original input file will be displayed at the point following the inserted data. You may edit the remainder of the original file.

To copy the data to the original file,

PRESS: FUNCTION KEY 31 - End Session

NOTE: Use the COPY function before any other data manipulation function.

NOTE: Do not try to restart the file following a copy operation as some data will be lost.

ERRORS. The following error messages may appear.

FATAL ERROR - CAN NOT FIND FILE CATALOG

The file ID catalog is not on the word processing program disk. Reinstall the word processing system. If the problem persists, notify TAEG.

FATAL ERROR - CAN NOT FIND FILE FOR (file name)

The file indicated could not be found on the disk. Verify the location of the file and be sure that you type the correct disk address in replying to program queries.

FILE NAME NOT FOUND

The file name you typed could not be found in the catalog. Check for proper spelling. Retype the correct file name.

DISK DEVICE IS NOT AVAILABLE

Check for proper disk address, or some other person hogging the disk. Retype the correct disk address.

ESCAPES. If function key 1 was pressed by mistake,

PRESS: X

Entering a blank file name will cause a return to the editor routine.

In response to the disk address query,

TYPE: END, and

PRESS: RETURN

SECTION V

SPECIAL DISPLAY FUNCTIONS

REFRESH THE DISPLAY

There may come a time when a particular series of edit operations leaves the display screen in a confusing state. If this should occur, and you are not certain as to the actual location of data or the cursor, the problem may be corrected by refreshing the display.

To obtain a corrected screen display,

PRESS: FUNCTION KEY 20 - Refresh the Display

ERRORS. None

ESCAPES. None

PRINT THE DISPLAY

You may print the screen at any time you are not engaged in executing another command. Printing may be done on any standard WANG compatible line printer. Certain control characters may not print, depending on the characteristics of your line printer. The printout has the same format as that seen on the display screen.

To obtain a printed copy of the screen display,

PRESS: FUNCTION KEY 29 - Print the Screen

The first time you print a page, the following message will be displayed:

```
------------------------------------------------------------
                  TYPE OUTPUT DEVICE NUMBER -]
------------------------------------------------------------
```

TYPE the printer address, and

PRESS: RETURN

ERRORS. An invalid device address could cause a fatal system error. Be careful when keying the printer address.

ESCAPES. To return to normal processing from the printer device request,

PRESS: ERASE

PRESS: RETURN

SHIFT THE DISPLAY WINDOW

Line length can vary up to 200 characters and the display screen allows only 80 characters per display line. You may view lines longer than 80 characters by shifting the screen display left or right as desired.

To shift the screen display,

PRESS: FUNCTION KEY 27 - Shift Display Screen

The program will then display, in the scratch pad area, the limits within which the window can be moved and ask you to type the position at which you wish the left edge of the display window to start. The following message will be displayed:

TYPE LINE START POSITION (1-#)?

TYPE the position for the left edge of the display window, and

PRESS: RETURN

The LINE START position will appear in the middle of the scratch pad.

NOTE: You should set line length before trying to shift the display window.

NOTE: When the display window is shifted to the right, lines which end before the start of the window area will not appear on the screen. When the cursor is moved vertically to a line which is not in the display window, the cursor will appear at the left edge of the screen. Data entry in this situation is not possible.

ERRORS. None

ESCAPES. None

SECTION VI

TEXT FORMAT COMMANDS FOR OUTPUT

INTRODUCTION

Format Commands are used to select the style of output. It is not necessary to use any format commands at all, as built-in defaults will produce quite readable text from most files. You will probably discover, however, that a few well-placed commands will greatly improve format and readability. In larger text files, format commands will usually reduce the amount of storage space required. TIPS gives you two ways to change format. You can incorporate format commands into the text file itself or you may choose to wait until output time when you are ready to print the file. You should familiarize yourself with the Format Specifications Program in section VII if you are thinking of waiting until output.

Although most commands can appear anywhere in the text stream, it is a good practice to place the commands logically; for example, those commands which affect a line of text should precede that line, not come in the middle of it. Refer to table 1 for a summary of format commands.

COMMAND SYNTAX

A delimiter character, indicated on the CRT screen by a diamond symbol, must immediately precede and follow each format command or command string. You can obtain the diamond symbol by pressing Function Key 0 when in Insert or Replace mode. More than one command may be grouped together as a command string. Commands in a command string must be separated by a single space. Spaces should not occur between commands and delimiters, unless the space is part of the command operand. Unless specified otherwise, you may place commands in any order in a command string.

See the list below for some correct and incorrect examples of format commands and command strings. In the following examples the @ character is used to represent the command delimiter:

CORRECT EXAMPLES	INCORRECT EXAMPLES
@TI5@	@TI5
@IN25 TI-5 SP2@	@IN 25 TI -5 SP 2@
@PG1,5 FO ##@	@FO ## PG1,5@
@IS @	@IS 3@

FORMAT COMMAND SUMMARY

The following table lists the available format commands in alphabetical order and in order of their appearance in this section of the manual. The command digraph (two-letter abbreviation) appears in the second column followed by a statement of default values in the next column. The default values are those format specifications that the system uses unless you specify other values in their place. The last column gives a brief description of what each format command will do.

TABLE 1. FORMAT COMMAND SUMMARY

NAME	DIGRAPH	DEFAULT	FUNCTION
Break Line	BR		Line ends as is and new line starts without a paragraph break.
Center	CEn	n=1	Center the next n lines of text.
Column Output	COm,n,o	m=1 n=RM-LM o=0	Changes the page format to m columns of n characters each with o spaces between columns.
Indent-Paragraph	PGm,n	m=1 n=0	Sets the line spacing following the end of a paragraph to m lines and indent of the next paragraph to n spaces.
Indent	INn	n=0	All following line will be indented from the left margin by n spaces.
Indent-Temporary	TIn	n=0	The next line to print will have an indent of n spaces added to the current indent and left margin values.
Insert Space	ISx	x=blank or charac.	A character x or space will be inserted into the current line in sufficient quantity to justify the line to both margins.
Line Length	LLn	n=80	Prints any portion of a page already structured, and sets the maximum line length to the value n.
Line Separation	LSn	n=1	Sets the line spacing after printing to n lines.

Line Space-Immediate	SPn	n=1	Causes an immediate space of n lines.
Margins-Fill Text	FI		Current line and all following lines will be justified to both margins.
Margin Left Justify	JL		All following lines will be left justified.
Margin Right Justify	JR		All following lines will be right justified.
Margin-Left	LMn	n=0	Sets the left margin to position n.
Margin-Right	RMn	n=80	Sets the right margin to position n.
Negate Fill	NF		All following text will be printed as-is with words broken at the end of a line.
Negate Justify	NJ		All following text will be printed as-is, but words will not be broken at the end of a line.
No Page Break	NB		Continues current page until the next BP command is given.
Number of Copies	CPn	n=1	Generates n copies of text.
Overstrike	OS		The command comes before and after the text to be overstruck.
Page-Break	BPn	n=1	Begin a new page numbered n.
Page Length	PLn	n=56	Sets the total page length to n lines.
Page Heading	HEx-x		Specified characters, to a maximum of 200, will appear as a heading on following pages.
Page Footing	FOx-x		Specified characters, to a maximum of 200, will appear as a footing on following pages.

Photo Insert	PHn	n=0	Causes an immediate break in the text of n+1 lines. The middle line will contain the phrase, 'SPACE FOR PHOTO'.
Underline	UL		The command comes before and after the text to be underlined.

BREAK LINE

Command Format. BR

The BR command causes the current line to terminate. Any following text will appear on the next line. A paragraph break will not occur; normal line spacing will take place.

Defaults. None

CENTER

Command Format. CEn

Where: n is the number of lines of text to center.

Data is centered between the effective left and right margins, including the current Indent values. Lines consisting only of a paragraph terminator character do not count as lines to be centered.

Defaults. Only one line is centered. (n=1)

COLUMN OUTPUT

Command Format. COm,n,o

Where: m is the number of columns
n is the width of a column
o is the space between columns.

Before using this command, be sure to set the right margin and line length sufficiently large to contain all columns and inter-column spacing.

For example, assume that the left margin is 10, the right margin is 70, and the line length is 60.

To change to 2 columns, here is one possible sequence of format commands:

@RM80 LL70 CO2,30,10@

To return to the original configuration,

@CO1,60,0 RM70@

Defaults. One column will be generated with a width equal to the current line length.

INDENTING

The INDENT commands indent the left argin with a positive number in the command digraph or move it back with a negative number. The following commands are available: PARAGRAPH INDENT for paragraph indentation, INDENT for a change in start position of the line for all lines to follow, and TEMPORARY INDENT for a change in the start position of the next line only.

PARAGRAPH INDENT. Command Format. PGm,n

Where: m is the number of lines to move down between paragraphs
n is the number of spaces to indent the first line of the next paragraph

The paragraph indent is added to the Indent command value in effect at the time the paragraph break occurs. The paragraph indent may be overridden by a Temporary Indent command prior to the first line of the new paragraph.

For example, to set the initial values to double space between paragraphs and an indent of 5 spaces, place the following prior to any text,

@PG2,5@

NOTE: To override the indent command at the start of a paragraph and, in doing so, remove the indent temporarily,

@TI0@

Defaults. Single spacing with no indent.

INDENT. Command Format: INn

Where: n is the number of spaces to indent, relative to the left margin.

The indent value will be added to the Left Margin value and to any Paragraph Indent value. When using Indent and Temporary Indent commands on the same line, the Indent command should come first. Once set, the Indent value remains in effect until it is changed by another Indent command. The effect of the IN command may be modified by a Temporary Indent command for one line.

For example, assume a left margin of 10.

To set the effective left margin to 20 by permanent indenting,

@IN10@

To set the effective left margin back to 0,

@IN-10@

To indent all but the first line of a text group:

@IN26 TI-6@

To remove the Indent command and return to the currently specified left margin position,

@IN0@

Defaults. The indent value initially is 0.

TEMPORARY INDENT. Command Format. TIn

Where: n is the number of spaces to add to the Left Margin/Indent value to determine the location of the first character of the current line.

The Temporary Indent value overrides and replaces the Paragraph Indent set for the current line. The indent value will be added to the current Left Margin and Indent values to determine the location of the first character of the current line. It is effective for only one line. This command must immediately precede the line to which it applies. If Indent and Temporary Indent values are being specified for the same line, the TI command must come last.

For example, to indent the first line of a group 5 spaces,

@TI5@

To indent the body of text 6 spaces more than the first line,

@IN26 TI-6@

To override a Paragraph Indent,

@TI0@

Defaults. The Temporary Indent is initially set to 0.

INSERT SPACE (OR CHARACTER)

Command Format. ISx

Where: x is any alphanumeric character.

This command is often used to format a table of contents page where you want to insert dots between the headings and the page numbers. The character or space following the command digraph will be inserted into the current line at the point of the command in sufficient quantity to justify the line to both margins.

If more than one Insert Space command occurs in a line, each command will produce about the same number of spaces (or characters). The IS command does not act as a tab function, so you cannot specify the number of characters or spaces desired between two data entries. You may put a maximum of 10 IS commands in one line.

For example, to insert dots between a title and page number in a table of contents, type the IS command between the two:

title@IS.@page number

NOTE: The IS command was designed for use in the NEGATE FILL mode.

The command will not be executed if the command is left-justified or if there is a blank space in front of the command.

HE, FO, and UL command cannot be used with the IS command.

LINE LENGTH

Command Format. LLn

Where: n is the new length of the line.

In many instances, line length is automatically set by the right and left margin commands, so it is necessary to use the LL command only when a meaningful change is desired.

The Line Length Command causes any data formatted for output to be printed now. If you change margins in the middle of the page, you must insert the LL command.

For instance, you may wish to set the line length shorter than that specified by RM - LM. Assume the left margin is at 10 and the right margin is at 80, which results in an available line length of 70.

To shorten the line length to 60,

@LL60@

Remember, the line will be left-justified unless you specify differently.

The LL command is frequently used to replace a previous LL command. For instance it would be necessary to use the command when right and left margin changes have increased the available line length. The LL command would have to be changed to lengthen the line accordingly.

For example, assume LL is set at 50. the left margin is set at 10 and the right margin is set at 70,

To change the margins and increase the line length to 80 characters,

@LM0 RM80 LL80@

NOTE: The line length cannot be greater than the difference between the right and left margins. If such is the case, the LL command will be ignored.

Defaults. If no line length is specified, it will be set to the difference between the right and left margins.

LINE SPACING

When page formatting for the entire text, you can easily specify spacing between lines (e.g., double space) with the Format Specifications Program at output time. (See section VII.) However, there will be times when you will want a command in the body of the text, maybe for temporary spacing requirements. When you would like to specify spacing for a portion of the text, LINE SEPARATION is available. For specifying an immediate space between the next two lines, IMMEDIATE SPACE is available.

LINE SEPARATION. Command Format. LSn

Where: n is the number of lines to move down after printing. A value of 1 indicates single spacing, a value of 2 indicates double spacing, etc.

For example, to begin double spacing after the current line,

@LS2@

Defaults. Single spacing.

IMMEDIATE SPACE. Command Format. SPn

Where: n is the number of lines to skip.

This command causes the current line, if any, to be printed followed by n blank lines. It is effective immediately and may occur anywhere on a line.

For example, to obtain a double space after the current line,

@SP1@

NOTE: Carriage Return also spaces down a line and is easier to use than the SP command, in many cases.

Defaults. Single spacing.

MARGINS

If you do not specify left and right margins, the default values are 0 and 80, respectively, with a line length of 80. Margins can be set with the Format Specifications Program at output time or they can be specified in the text itself with any of the following format commands.

FILL TEXT (JUSTIFY BOTH MARGINS). Command Format. FI

Beginning with the next line to be printed, text is justified to both margins, less indents. Words are not split between lines. Spaces are used between words to expand the line as necessary. Single words are centered in the line.

Defaults. None.

JUSTIFY LEFT. Command Format. JL

Beginning with the next line to be printed, all lines will be printed at the left margin, plus any indent. Words will not be split between lines. The right edge of the text will be ragged.

Defaults. This is the normal mode of operation.

JUSTIFY RIGHT. Command Format. JR

Beginning with the next line of text to be printed, all lines will end at the right margin. Words will not be split between lines. The left edge of the text will be ragged.

Defaults. None.

LEFT MARGIN. Command Format. LMn

Where: n is the position of the left margin.

The line length must be shorter than or equal to the difference between right and left margins. If it is not, it will be reset to the difference between right and left margins. If a shorter line length is desired, it must be set after setting the left margin.

To set the left margin at 10 and the line length at 60,

@LM10 LL60@

To reset the left margin back to 0,

@LM0@

Defaults. If no left margin position is specified, it will default to 0.

RIGHT MARGIN. Command Format. RMn

Where: n is the rightmost print position.

The right margin may be reset to allow for different line lengths. It should always be changed prior to increasing output line length and following a decrease in line length, although the latter is not absolutely necessary. Refer to Left Margin and Line Length examples above.

Defaults. The right margin is initially 80 for all output devices.

NOTE: Margin commands should not be placed in the middle of a page unless the LL command is also placed there.

NEGATIONS

The negation commands remove format default values and formatting commands specified earlier in the text and/or print text "as is." NEGATE FILL breaks words at the end of a line, and NEGATE JUSTIFICATION does not split a word between lines.

NEGATE FILL. Command Format. NF

When you wish to remove most format specifications, such as when you are typing tables and figures, use the NF command. Beginning at the next line to print, as many characters as possible will be placed on each line. A paragraph/line terminator character will cause a line to end left justified. Leading spaces will not be purged from a line. Words will be split between lines. This is essentially a "print as-is" command.

Defaults. None.

NEGATE JUSTIFICATION. Command Format. NJ

The Negate Justification command produces format style similar to Negate Fill except that words will not be split between lines. Beginning at the next line to print, as many words as possible will be placed on each line. A paragraph/line terminator character will cause a line to end left justified.

Defaults. None.

NO PAGE BREAK. Command Format. NB

Sometimes you will find that an automatic page break has produced unsightly copy. It may have separated one line from the rest of a paragraph or caused the last line of a table to be printed on the next page. To remedy the situation, use the No Page Break command.

Automatic page breaks at the end of a page are suppressed until the next BP command. The user must exercise reasonable care to avoid exceeding the memory capacity set at eighty 200-character lines, and must also consider the operation of the output device when using this feature. This command may occur anywhere in the text stream.

NOTE: A BP command must follow an NB command or the page will not be printed.

Defaults. None.

NUMBER OF COPIES

Command Format. CPn

Where: n is the number of copies of output desired.

Copies are produced sequentially on the same output device. The original output format specifications are reestablished before each copy is printed.

OVERSTRIKE

Command Format. OS

Overstrike is available for all output devices except the line printer. The command will be ignored if output is sent to the line printer. Use the OS command to produce boldface text. The first time the command appears, overstriking of the data will begin. It will continue until the OS command appears again.

For example,

@OS@Data for overstrike@OS@

NOTE: In NF,JL,JR, and FI modes, the program ignores spaces between an end delimiter and a beginning delimiter. If you want spaces, put them inside delimiters.

For example, to print a boldface word, END, followed by an underlined word, PAGE, with a space between the two words, type the following:

@OS@END @OS@@UL@PAGE@UL@

NOTE: Use caution when attempting to use the OVERSTRIKE and UNDERLINE commands together. The DE terminal may show an output that is different from what would appear on another output device.

PAGE FORMAT

You can specify most page format requirements, like top and bottom margins, by using the Format Specifications program at output time. (See section VII.) Other format requirements, such as where to break the text to start a new page and heading or footing specifications, use commands that must be placed in the text file.

BREAK PAGE (NUMBERING). Command Format. BP

The current page will be printed and any following text will appear on the next page. If n is defined, the next page will bear that number. This command should appear immediately prior to a line of text, between paragraphs, etc.

In order to print page numbers, the PAGE FOOTING or the PAGE HEADING command must be used in addition to the BP command.

For instance, to start printing page numbers on page 2, place the following command at the designated break,

@BP2 FO##@ or @ ##@

To print page numbers for consecutive pages, you need only insert the FO or HE command once.

If you choose to number pages without printing page numbers, use BPn to specify the first page number.

For example, to number the first page of a file page 10, place the following command before any data,

@BP10@

Consecutive pages will be numbered internally, but no numbers will be printed.

NOTE: You may specify page numbers with the Format Specifications program at output time, but you can not print numbers without an FO or HE command which includes the # character in the text.

NOTE: The BP command can not be used to print only a portion of a file, i.e., to print from a specified page to the end of the file. But there is such an option, called START PRINT (AT PAGE NUMBER), in the Format Specifications program described in section VII.

Defaults. If no page number is defined, the first page of the file is numbered 1 and later pages are numbered consecutively. Numbers are not printed.

PAGE LENGTH. Command Format. PLn

Where: n is the number of lines per page.

The page length includes the top and bottom margins. These margins are set at output time and include the page heading and footing. The actual number of lines of text in the body of the page is the page length less the margins.

For example, to set a page length of 45 lines,

@PL45@

Defaults. For CRT displays: 24 lines. For all other applications: 56 lines. Two lines each for top and bottom margins and two lines each for heading and footing leaves 48 lines for printed text.

PAGE FOOTING. Command Format. FOx---x

Where: x---x is the text string to appear in the footing.

This command must be the only command, or the last command, in the command string. All text between the command digraph and the delimiter character, to a maximum of the set line length, will be repeated at the bottom of each page. The location of the line is determined by the bottom margins selected at output time. More than one footing command is not allowed.

The line will be printed left justified. If pound sign symbols (#) appear in the designated text string, they will result in the printing of the current page number, one digit per pound sign, with leading zeroes suppressed. If there are not enough # signs to print the entire page number, then the # signs will be printed.

Defaults. If the command does not appear, the footing will consist of a blank line.

PAGE HEADING. Command Format. HEx---x

Where: x---x is the text string to appear in the heading.

This command must be the only command, or the last command in the command string. All text between the command digraph and the delimiter character, to a maximum of the set line length, will be repeated at the top of each page. The location of the line is determined by the top margins selected at output time. More than one heading command is not allowed.

The line will be printed left justified. If pound sign symbols (#) appear in the designated text string, they will result in the printing of the current page number, one digit per pound sign, with leading zeroes suppressed. If there are not enough # signs to print the entire page number, then the # signs will be printed.

Defaults. If the command does not appear, the heading will consist of a blank line.

PARAGRAPH BREAK

Command Format. PGm,n

Where: m is the number of lines to move down between paragraphs

n is the number of spaces to indent the first line of the next paragraph.

Once set, the paragraph break values remain in effect until changed by a succeeding PG command.

For example, to set the initial values to double space between paragraphs, i.e., to skip down two lines when a paragraph delimiter character appears,

@PG2,0@

NOTE: See PARAGRAPH INDENT for a complete description of the PG command.

Defaults. Single spacing with no indent.

PHOTO INSERT

Command Format. PHn

Where: n is the number of lines to skip per photo.

This command causes an immediate break in the text. Half the requested lines are skipped, the phrase 'SPACE FOR PHOTO' is printed, and the remainder of the requested lines are skipped. Normal printing of data resumes with the next data character and the indent settings in effect at the time the break occurred.

NOTE: A version of the Format Specifications Program exists which can merge text and graphics onto a graphic display terminal. At the present time, this program is device-specific and is designed to support the Genisco Programmable Graphic Processor and a Conrac Display Unit. An expanded version of this command is used to identify the graphic file and mark the point of insertion.

Defaults. If there are not enough lines left on the page for the photo area, the command will be ignored.

UNDERLINE

Command Format. UL

Underlining is available for all output devices except the line printer. The UL Command will be ignored if output is sent to the line printer. The first time the UL command occurs, underlining of data will begin. It will continue until the next occurrence of the UL command. Each pair of UL commands serves to bound the data which is to be underlined.

For example,

@UL@Text to be underlined.@UL@

NOTE: Use caution when attempting to use the UNDERLINE and OVERSTRIKE commands together. The DE terminal may show an output that is different from what would appear on another output device.

Defaults. No underlining.

SECTION VII

OUTPUT

INTRODUCTION

You can create a printed copy of any TIPS data file by direct output to any of several standard device types. Currently the format program supports line printers (WANG 2261), daisy wheel printers (WANG 2281), typewriters, the CRT display unit, and the PGP/CONRAC graphic display system. You may choose the output device and most format specifications at output time.

The standard defaults for formatting will produce printed output acceptable to any standard device and will represent the text close to what you see on the CRT. A summary of available format specifications and their default values are shown in figure 7. Format commands in the text stream override format specifications made at the time of output.

SELECT AN OUTPUT DEVICE

To begin the procedures for output, access the TIPS Main Menu and,

PRESS: 3 - Print Single File

You will then be asked to choose the input file you wish to print.

TYPE the name of the file, and

PRESS: RETURN

Available output devices will be displayed on the screen as shown below in figure 6.

```
SELECT OUTPUT DEVICE TYPE BY PRESSING NUMBER KEY
                0 - RETURN TO MAIN MENU
                1 - LINE PRINTER
                2 - CRT
                3 - DAISY WHEEL PRINTER
                4 - TYPEWRITER
                5 - TYPESETTER
                6 - GRAPHIC DISPLAY UNIT
                7 - DISK
```

Figure 6. Output Device Selection Menu

To select the output device you wish,

PRESS: the corresponding number key.

To return to the Main Menu,

PRESS: 0

For most choices, the system will then ask you for the address of the output device, the following message will be displayed:

```
TYPE ADDRESS FOR output device -]
    (BLANK FOR DEVICE MENU)
      AND PRESS 'RETURN'
```

Obtain the device address from the system manager. After you have typed in the address, you will be allowed to make format specifications according to the steps outlined in the next subsection.

ERRORS: The following error messages may appear:

(DEVICE) NOT SUPPORTED AT THIS TIME
PRESS ANY KEY TO SELECT ANOTHER DEVICE

This type of device is either not available at your installation or programs to handle it are not yet ready. Select another device type.

PRINT DEVICE SELECT ERROR
RE-ENTER DEVICE NUMBER

The address of the output device was not acceptable. Retype the address correctly. If the program does not accept a valid address, contact TAEG for assistance.

ESCAPES. A blank device address will cause the program to revert to the output device list.

FORMAT SPECIFICATIONS AT OUTPUT TIME (START PRINT)

Following selection of the output device, the program will give you the option to check the standard system defaults and make any changes you desire.

To check the system defaults, the following message will be displayed:

```
-------------------------------------------------------------
        DO YOU WISH TO VIEW AND/OR CHANGE DEFAULTS?  (Y/N)
-------------------------------------------------------------
```

The format program will print any file created by the word processing system editor. If your file has had formatting commands inserted, they will override corresponding system defaults.

If your file has not been formatted (or is only partially formatted), you may change the defaults at this time.

Choose Y for available format specifications and their default values. They will be displayed on the screen as shown in figure 7. If you choose N, printing will begin.

```
-------------------------------------------------------------
A. Total page length in lines (including margins)      56
B. Total line length (excluding margins)               80
C. Permanent left margin                                0
D. Right margin position                               80
E. Justify both margins                                NO
F. Print text as is                                    NO
G. Justify right margin                                NO
H. Line spacing                                         1
I. Top margin before and including heading              2
J. Top margin from heading to text                      2
K. Bottom margin from text to footing                   2
L. Bottom margin including footing                      2
M. Number of columns                                    1
N. Paragraph break          line spacing                1
                            indent                      0
O. Beginning page number                                1
P. Start print at page number                           1
Q. Number of copies                                     1

TO CHANGE A PARAMETER, PRESS THE CORRESPONDING LETTER KEY
TO PRINT THE DOCUMENT, PRESS FUNCTION KEY 0
TO RETURN TO DEVICE MENU, PRESS FUNCTION KEY 15
-------------------------------------------------------------
```

Figure 7. Format Specifications for Output

To change a default value,

PRESS: the corresponding letter key, and

TYPE the new value, and

PRESS: RETURN

NOTE: Some defaults require more than one response.

The display remains until all changes have been made.

Changes to some default values may cause automatic changes to other values. Always check ALL default values before continuing with output.

To start printing,

PRESS: FUNCTION KEY 0.

ERRORS. If an illegal value is entered, the console bell will ring and the value will be rejected. Type a correct value. The range of correct values is shown in table 2.

ESCAPES. As indicated above.

TABLE 2. OUTPUT SPECIFICATION RANGES

COMMAND	LOW VALUE	HIGH VALUE
BP	1	999,999
CE	1	999,999
GO(#cols)	1	Columns + spacing must
(col width)	1	fit on current line.
(spacing)	0	
CP	1	999,999
IN	0	Column width less 1
LL	1	Right margin
LM	0	Right margin less 1
LS	1	Page length less margins less 1
PG (spacing)	1	Page length less margins less 1
(indent)	0	Column width less 1
PH	1	Page length less margins less lines used.
PL	1	88
RM	Left margin + 1	200
SP	1	Page length less margins less 1
TI	0 less the left margin less indent	Line length less left margin less 1

FORMAT CHANGES AVAILABLE ONLY AT OUTPUT TIME

Some format changes cannot be made with format commands in the body of the text. The changes can only be made at output time with the Format Specifications program. Looking at figure 7, they are I,J,K,L and P. These specifications change top and bottom margins and give you an option to start printing your file at a specified page number. Details of the specifications are given below.

TOP MARGINS. Format default values result in four blank lines at the top of the page before the body of the text is printed. One of these lines is allocated to heading. If no heading has been specified, the line is blank.

To increase or decrease the number of lines from the top of the page to the heading,

PRESS: I, and

TYPE the new value.

To increase or decrease the number of lines between the heading and the body of the text,

PRESS: J, and

TYPE the new value.

BOTTOM MARGINS. Four lines are normally left at the bottom of each page and one of these is allocated to footing. If no footing is printed, this line is blank.

To increase or decrease the bottom margin from text to footing,

PRESS: K, and

TYPE the new value.

To increase or decrease the margin from the footing to the bottom of the page,

PRESS: L, and

TYPE the new value.

START PRINT (AT PAGE NUMBER). If you wish to start printing pages of your file from some point other than the first page, the start print command gives you that option.

To start printing at a specified page,

PRESS: P, and

TYPE the new page number.

NOTE: The specified page number must exist. The system does not start printing at the fifth page, it starts printing at the page numbered 5, which has been numbered either by the user or by the system.

PRINT OUTPUT

Only after selecting an output device, or after reviewing the format default values, can the data be printed. Printing begins when the user chooses not to review format system values and presses N or after the user reviews the values and presses Function Key 0. (See earlier subsection for a complete description.) Unless the CRT was chosen, the program will display a message indicating where the output will appear.

FORMATTING IN PROGRESS-OUTPUT WILL APPEAR ON (DEV #)
PRESS FUNCTION KEY 15 TO TERMINATE OUTPUT AT END OF CURRENT PAGE

NOTE: While you are printing the file, you may stop the printing at any time. Output will stop only at the end of the current page. A slight delay may occur before the terminate command is acknowledged.

If the CRT was selected, you will have the option of holding each displayed page or allowing the pages to display at a continuous rate. If you read rapidly, you may scan continuously displayed pages as they go past. If you wish to hold pages, a key must be pressed to release each page.

The following message will be displayed:

DO YOU WISH TO HOLD CRT DISPLAY (Y OR N)?

If you press Y, the following message will appear:

PRESS ANY KEY FOR NEXT CRT DISPLAY

If you press N, the text will be displayed at a steady pace. Do not attempt to halt the display.

After the output is finished, the program returns to the Main Menu.

SECTION VIII

USING THE INDEX FILE

INTRODUCTION

When creating lengthy documents it is often convenient to create them a chapter or section at a time. This will save time and energy while editing portions of a document. It will also permit more than one person to work on a document at once. The Index File allows you to produce the final document as a single entity, rather than in several pieces. The index file contains a list of all of the pieces of the document in the order in which they are to be printed. As the document takes shape, more pieces can be added, existing pieces eliminated from the index, or the pieces rearranged.

A separate set of utility routines allows you to create and manipulate an index file. You can reach these routines from the Main Menu by selecting options 5 or 6. Each of the functions is described in detail below.

BUILDING THE INDEX FILE

To build a new index file, select option 5 from the Main Menu.

PRESS: 5 - Build/Maintain Index

This will call up the Index File Menu, figure 8.

```
------------------------------------------------------------
          SELECT OPTION BY PRESSING NUMBER KEY

                0 - TERMINATE

                1 - BUILD INDEX FILE
                2 - MAINTAIN INDEX FILE
                3 - INDEX FILE
                4 - LIST INDEX CONTENTS
                5 - PRINT USING INDEX FILE
------------------------------------------------------------
```

Figure 8. Index File Menu

From the Index File Menu,

PRESS: 1 - Build Index File

The following message will be displayed:

```
------------------------------------------------------------
          TYPE INDEX FILE NAME -] --------
                AND PRESS 'RETURN'
------------------------------------------------------------
```

TYPE a unique 8-character file name.

Then the program will ask you for the disk device on which to save your index file. The following message will be displayed:

```
------------------------------------------------------------
          TYPE DISK ADDRESS FOR (name) -] ---
                AND PRESS RETURN
------------------------------------------------------------
```

The program will now ask you to type in the file names to be included in the index, one at a time. The following message will be displayed:

```
------------------------------------------------------------
     TYPE FILE NAME(1-20 CHAR'S) AND PRESS 'RETURN' -]
------------------------------------------------------------
```

Type in the names in the order in which you wish the files printed. Each name must be in the current TIPS file catalog on the system you are using. Standard TIPS 20-character file names are used. To type in each new file name, simply type over the previous file name.

If the name can not be found in the file catalog, a warning message will be printed. You will be allowed to change the name, or insert it into the index anyway. In the latter case, be sure that the file is added to the catalog that you will be using to print the file, before you print using this index file.

When you have entered all file names, you may save the index and return to the Index File Menu by entering a blank file name:

PRESS: LINE ERASE and,

PRESS: RETURN

MAINTAINING THE INDEX FILE

To change an entry in an existing Index File, select option 5 from the Main Menu.

PRESS: 5 - Build/Maintain Index

That will display the Index File Menu, figure 8.

Then to call up the index file maintenance routine,

PRESS: 2 - Maintain Index File

The Maintenance routine will ask for the name and disk address of the Index File you wish to change.

TYPE the 8-character index file name, and

PRESS: RETURN

Then,

TYPE the disk address for the device on which the file was originally saved, and

PRESS: RETURN

The first 20 entries in the file will now be displayed on the screen. A sample index file is shown in figure 9 below as it would be displayed on the screen:

```
WP82                                          FILE:  TIPSVOL1:  D10
     ENTRY          FILE ID
       1            INDEX II
       2            SECTION I
       3            SECTION II
       4            SECTION III
       5            SECTION IV
       6            SECTION V
       7            SECTION VI
       8            SECTION VII
       9            SECTION VIII
       10           SECTION IX
       11           APPENDIX A
       12           APPENDIX B
       13           ATTACHMENT I
       14           ATTACHMENT II
       15
       16
       17
       18
       19
       20

ENTRY TO CHANGE; INSERT; PRIOR PAGE; NEXT PAGE; LIST; END-]
```

Figure 9. Sample Index File

To view the next 20 entries,

PRESS: N

To view the previous 20 entries,

PRESS: P

To change an entry, or to add a new entry,

TYPE the number of the entry you wish to change or add (it must appear on the screen), and

PRESS: RETURN

The indicated entry will be underlined and you may type in a new value.

When the entry is the way you want it,

PRESS: RETURN

To delete the entry,

PRESS: LINE ERASE

To insert an entry between two existing non-blank entries,

TYPE the number of the entry which is to receive the new value, and

PRESS: RETURN

PRESS: I

A blank space will be created in the appropriate slot in which the desired name may be typed. When the correct name has been inserted,

PRESS: RETURN

To list the contents of the screen onto a printer,

PRESS: L

The first time you do this the program will ask you which printer you wish to use:

TYPE the address of the printer, and

PRESS: RETURN

To end the maintenance routine,

PRESS: E

WRITE FILE TO DISK (Y OR N)?

To save the index file you have created or changed,

PRESS: Y

If you press N, the Index File Menu will be returned to the screen.

LISTING THE FILE CONTENTS

The contents of the index file may be listed on the CRT screen or on a line printer using this routine. To list the file contents, select option 5 from the Main Menu.

PRESS: 5 - Build/Maintain Index

This will call up the Index File Menu, figure 8, then:

PRESS: 4 - List Index Contents

The program will ask you to type the name of the Index File and its disk address and the address of the output device on which you wish the contents of the file listed.

TYPE the 8-character index file name, and

PRESS: RETURN

Then,

TYPE the address of the disk on which the index file was originally saved, and

PRESS: RETURN

Then,

TYPE the address of the output device (CRT is '005'), and

PRESS: RETURN

If you selected a line printer for output, the entire contents of the file will be listed at 50 entries per page. If you selected the CRT for output, 20 entries at a time will be displayed. To see the next 20 entries,

PRESS: N

To see the previous 20 entries,

PRESS: P

To terminate the display of the file,

PRESS: E

To terminate the routine, when the program requests a file name,

PRESS: LINE ERASE, and

PRESS: RETURN

DELETING THE INDEX FILE

When an index file is no longer required, it should be removed from disk to allow room for future projects. To remove an existing index file, select option 5 fom the Main Menu.

PRESS: 5 - Build/Maintain Index

This will call up the Index File Menu, figure 8, then:

PRESS: 3 - Delete Index File

The program will ask you for the name and disk address of the file you wish to delete:

TYPE the 8-character index file name, and

PRESS: RETURN

Then,

TYPE the address of the disk on which the file was originally saved, and

PRESS: RETURN

The program will now give you a second chance to change your mind by displaying the following message:

REALLY SCRATCH (Y or N)?

If you still wish to delete the file,

PRESS: Y

If you have changed your mind and do NOT want to delete the file,

PRESS: N

PRINTING USING THE INDEX FILE

Printing using the index file is virtually the same procedure as printing a single text file. Refer to section VII for general output procedures and the operation of the Format Specifications Program. This section will deal only with those steps peculiar to the index file.

To start the printing process using an index file either select option 6 from the Main Menu,

PRESS: 6 - Print Using Index File,

or option 5 from the Index File Menu,

PRESS: 5 - Print Using Index File.

In both cases, the format program will ask for the desired output device and any format options. Refer to section VII for detailed displays and responses.

When all format and output options have been selected, the program will then ask for the name and disk address of the index file. To select an index file,

TYPE the 8-character name of the index file, and

PRESS: RETURN

Then,

TYPE the address of the disk unit on which the index file was saved, and

PRESS: RETURN

The files listed in the index will be sequentially printed on the selected output device. When the list of files is exhausted, the output routine will terminate normally. To get a proper termination, make sure there is a BP command inserted at the end of the last file in your index file.

Note that the files in the list are expected to be in the file catalog on the sytem you are using, and the files are expected to be at the disk address specified in the catalog. If either condition is not true, the file will be automatically skipped.

SECTION IX

GRAPHICS CAPABILITIES

INTRODUCTION

TIPS can merge text and digitized photographs and line drawings into a composite page for display on a graphic display device. At the present time this capability is limited to a specific display system as installed at TAEG. It would be fairly simple, however, to modify the programs to support virtually any type of graphics display system designed for digitized graphic data. The graphics processing system in use at TAEG is very basic and relatively inexpensive. It is intended primarily for use in developing computerized approaches to the use of digitized graphics. It is not a production or high volume system.

The digitizing system consists of a Hamamatsu C1000 video camera, M999-04 general purpose interface bus, and a M1004 video analog-to-digital converter. A Sony CMV-115 video monitor is used to record camera operation. The graphic data is stored on disk as a series of picture elements, or pixels. A graphic may be reduced to a set of 256, 512, or 1024 rasters. Each raster is a vertical slice of the graphic and contains 256, 512, or 1024 pixels. Each pixel is a binary number from 0 (black) to 255 (white).

The graphic display system at TAEG consists of a GENISCO GCT-3000 Programmable Graphic Processor (PGP) and a CONRAC ROB-17C display unit with a 640 by 512 pixel display screen. The CONRAC unit permits the display of black and white images with a maximum of 16 shades of gray.

Conversion of a photograph to a form usable by TIPS is a three-step process. Line drawings are converted in a similar way. First, the photograph must be digitized and stored on disk. Second, the stored photograph must be converted from 256 shades of gray to 16 shades. When dealing with line drawings, the gray scale is controlled to make the lines appear black. At this time, the digitized photograph may also be enhanced in a number of ways, depending on original photo quality and desired output result. Lastly, the photo command (PH) must be inserted at the appropriate point in the text file.

The following is a general overview of some of the capabilities which now exist which are relevant to TIPS. For a complete description of the graphics processing system, refer to Volume II of Text and Illustration Processing System (TIPS), soon to be published by TAEG.

DIGITIZING A GRAPHIC

Set up procedures include: turning on the video monitor, camera, and lights; attaching the correct lens to the camera; and adjusting the system to the graphic being digitized. The user should also ensure that sufficient disk space exists to store the data and that the graphic processing subsystem is available.

Graphics to be used only once can be digitized at their final output size. Graphics to be used in more than one size can be digitized at the most convenient size and then programmatically manipulated on disk.

ENHANCING A GRAPHIC

There are many different enhancement operations available at this time. Some are directly applicable to the use of graphics by TIPS, others are special purpose features which may be used as needed.

All digitized graphics to be displayed by TIPS must be reduced from the original 256 gray scales to 16 gray scales. This reduction may be done before or after other enhancements.

The output size of a graphic is usually of some concern. If it was digitized to size, the problem is mostly resolved. In other cases, the digitized graphic may be trimmed on any or all sides to eliminate excess data. The graphic may also be enlarged or reduced in overall size.

The appearance of an original graphic may be altered using the graphic enhancement program. This program will spread the gray scale values of any selected range toward the limits of that range. It allows the user the maximum flexibility in selecting the range, or ranges, of gray levels to be acted upon, the midpoint of any range, and the form of the curve to be used in reassigning gray level values. The original range of values may be retained or it may be expanded to the maximum allowable range.

THE PHOTO COMMAND

The Photo Command (PH) is used to merge graphics and text onto a single display. To set the command properly, the user must determine the location of the graphic on the page and the actual size of the graphic as it is stored on disk. As a minimum the graphic must fit within the allocated page size, exclusive of margins, and the graphic must have been scaled to 16 gray shades.

DISPLAY A GRAPHIC

It is helpful when enhancing graphics to be able to review the results prior to merging them with the text. The graphics processing subsystem permits you to review a graphic on the display screen at any time. If the graphic has not yet been scaled for the PGP, the display program will scale it automatically.

By proper selection of coordinates, several graphics may be displayed simultaneously for comparison. This is especially useful when testing various enhancement possibilities.

REFERENCES

Braby, R. and Kincaid, J. P. Computer Aided Authoring and Editing. TAEG Technical Note No. 1-81, 1981. Training Analysis and Evaluation Group, Orlando, FL 32813. (Paper presented at the meeting of the Society for Applied Learning Technology, Orlando, FL, February 11, 1981. (AD A096258)

Braby, R., Parrish, W. F., Guitard, C. R., and Aagard, J. A. Computer-Aided Authoring of Programmed Instruction for Teaching Symbol Recognition. TAEG Report No. 58, 1978. Training Analysis and Evaluation Group, Orlando, FL 32813. (AD A060143)

Kincaid, J. P., Aagard, J. A., and O'Hara, J. W. Development and Test of a Computer Readability Editing System (CRES). TAEG Technical Report No. 83, 1980. Training Analysis and Evaluation Group, Orlando, FL 32813. (AD A096873)

Kincaid, J. P., Cottrell, L. K., Aagard, J. A., and Risley, P. Implementing the Computer Readability Editing System (CRES). TAEG Technical Report No. 98, 1981. Training Analysis and Evaluation Group, Orlando, FL 32813. (AD A098530)

APPENDIX A

TEXT AND ILLUSTRATION PROCESSING SYSTEM

OPERATOR UTILITY ROUTINES

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

OPERATOR UTILITY ROUTINES

INTRODUCTION

Utility routines are generally used by the system manager to recover from errors and to maintain the system files and disks. It is up to the system manager to decide if the user should be allowed access to these programs.

TAEG recommends that the user become familiar with some elements of the utility routines because they are easy to use and could save the system manager time and effort. Figure A-1 shows the Utilities Menu as it appears on the screen. Options 3, 5, 6, and 8 are suggested for use by the general system user. The option 3, W-P FILE MAINTENANCE, allows the user to reset the file after a system breakdown. MODIFY PHRASE FILE, option 5, allows the user to store and change common phrases to be accessed by all users of TIPS. LIST THE FILE of 6-MAINTAIN FILE CATALOG lets the user review the files in the file catalog, and 8-CLEAR A TEXT FILE lets the user empty a file of its contents.

Only the above utility routines should be used by the general system user and, then, only with extreme care to avoid errors. All programs are accessed by pressing option 4-UTILITIES on the Main Menu. The following Utilities menu will be displayed:

```
SELECT OPTION BY PRESSING NUMBER KEY

        0 - RETURN TO MAIN MENU
        1 - REORGANIZE TEXT FILE
        2 - STRUCTURAL INTEGRITY
        3 - W-P FILE MAINTENANCE
        4 - INSTALL PHRASE FILE
        5 - MODIFY PHRASE FILE
        6 - MAINTAIN FILE CATALOG
        7 - LIST W-P FILE DISK SECTORS
        8 - CLEAR A TEXT FILE
        9 - PRINT AN OUTPUT DISK FILE
```

Figure A-1. Utilities Menu

RESET IN-USE FLAG

This procedure will correct an erroneous in-use count which can result when system failures preclude the normal closing of files. Unless the IN-USE counter is returned to 0, you will not be allowed to change data in the affected file.

To use the RESET option, access the Utilities Menu and

PRESS: 3-W-P File Maintenance

The routine will ask you to type the name of the file to be reset. The file must be a TIPS file and must be in the file catalog.

```
-----------------------------------------------------------------
     TYPE FILE NAME (1-20 CHAR'S) AND PRESS 'RETURN'-]
                  (BLANK TO ESCAPE)
-----------------------------------------------------------------
```

If the file resides on a diskette, the routine will ask if the file is still at the original address. If the file is at the indicated address,

PRESS: RETURN

If the file is at another address,

TYPE the new disk address, and

PRESS: RETURN

If the in-use count is set, you will see the following message on the screen:

```
-----------------------------------------------------------------
          IN-USE COUNT INDICATES (#) USERS OF FILE.
     DO YOU WANT TO CONTINUE FILE MAINTENANCE (Y OR N)?
-----------------------------------------------------------------
```

Make sure that you are indeed the only user at the time, then, to continue,

PRESS: Y

If there are other users, either have them end their editing session, or terminate the maintenance routine by,

PRESSING: N

If you continue, the File Maintenance Menu, figure A-2, will be displayed.

```
-------------------------------------------------------------
          USE SPACE BAR AND BACKSPACE KEY TO SELECT OPTION
               THEN PRESS 'RETURN' TO EXECUTE.
             - RESET FIRST DATA SECTOR POINTER
             - RESET LAST DATA SECTOR POINTER
             - RESET FIRST FREE SECTOR POINTER
             - RESET NUMBER OF FREE SECTORS
             - SET INTERNAL FILE ID
             - RESET IN-USE FLAG
             - SET WORD PROCESSING FILE FLAG
             - CLEAR/SET REORGANIZE FLAG
             - RESET PRIOR SECTOR POINTER
             - RESET NEXT SECTOR POINTER
             - END FILE MAINTENANCE
-------------------------------------------------------------
```

Figure A-2. File Maintenance Menu

To reset the counter,

PRESS: ACKSPACE KEY

PRESS: RETURN

This will return you to the Utilities Menu.

LIST THE FILE CATALOG

If you can't remember a file name or for some other reason would like to review the file names entered in the file catalog, use the LIST THE FILE option from the utility routines.

Access the Utilities Menu and,

PRESS: 6-Maintain File Catalog.

The File Catalog Menu in figure A-3 will then be displayed.

```
SELECT OPTION BY PRESSING NUMBER KEY
    0 - Return to the Utilities Menu
    1 - LIST THE FILE
    2 - LIST AN ENTRY
    3 - CHANGE AN ENTRY
    4 - DELETE AN ENTRY
    5 - ADD AN ENTRY
    6 - EXPAND THE CATALOG
    7 - CHANGE DISK ADDRESS
```

Figure A-3. File Catalog Menu

To review the files in the file catalog,

PRESS: 1-List the File.

The following message will be displayed:

```
SELECT OPTION BY PRESSING NUMBER KEY
    1- FILE NAME LIST
    2- DISK ADDRESS LIST
    3-.FILE CATALOG MENU
```

The file catalog lists the file name, the disk location, and the disk file ID number of each file entered into the TIPS. The contents of the file catalog may be listed in alphabetical order by file name or by disk address.

To list the file catalog by file name,

PRESS: 1

To list the file catalog by disk address

PRESS: 2

To return to the File Catalog Menu,

PRESS: 3

The file may be listed on the CRT or on a line printer. If you choose options 1 or 2, you will be asked to select an output device,

TYPE the device address, and

PRESS: RETURN

NOTE: The device address for the CRT is 005.

If output is on the CRT, the following paging instructions are displayed at the bottom of the screen:

PRESS P FOR PRIOR PAGE; N FOR NEXT PAGE; R TO RESTART; E TO END

The system returns to the File Catalog Menu after listing the catalog.

CLEAR A TEXT FILE

This option clears a text file of all data and resets it as an empty file.

To clear a file, access the Utilities Menu and

PRESS: 8-Clear a Text File

When the program asks for the file name,

TYPE the name of the file to be cleared, and

PRESS: RETURN

If the file is on a diskette, the system will display the last known address of the disk and ask for verification.

If the diskette is on the indicated drive,

PRESS: RETURN

If the disk is on another drive,

TYPE the address of the diskette, and

PRESS: RETURN

The program will ask if you really want to clear the file.

To clear the file,

PRESS: Y

After the file has been cleared, the system returns to the Utilities Menu.

To return to the Utilities Menu without clearing the file,

PRESS: N

MODIFY PHRASE FILE

This option allows you to store phrases for future access by all users of the TIPS. A maximum of 26 70-character phrases may be stored at one time. The Phrase File must be installed on your system prior to selecting this option. If it is not installed, the option will be ignored.

To store or modify a phrase, access the Utilities Menu and,

PRESS: 5 - Modify Phrase File

The following message will then be displayed:

PRESS KEY FOR DESIRED PHRASE (A-Z) OR 'RETURN' TO QUIT

If you are storing a new phrase, this letter will henceforth be associated with the phrase. It will be used to recall the phrase when editing text or modifying the phrase file. If you are changing an existing phrase, select the letter previously associated with the phrase you are changing.

PRESS: a letter key

The following message will be displayed:

CURRENT PHRASE IS: (phrase)
DO YOU WANT TO REPLACE IT (Y OR N)?

If you press Y the following message will be displayed:

TYPE NEW PHRASE

Type the new phrase using BACKSPACE and LINE ERASE keys as needed. When the phrase is the way you want it,

PRESS: RETURN

If you do not want to change a phrase,

PRESS: N

At this point you will be returned to the initial message which gives you the option to choose another phrase by pressing a letter key, or pressing RETURN to quit.

APPENDIX B

TEXT AND ILLUSTRATION PROCESSING SYSTEM

INSTALLATION AND MAINTENANCE ROUTINES

FOR THE SYSTEM MANAGER

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

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INTRODUCTION

PURPOSE

This section describes procedures for installing TIPS and provides instructions on system maintenance. It is intended for use by the system manager rather than the TIPS user.

SYSTEM OVERVIEW

The Text and Illustration Processing System (TIPS) software package consists of several programs and data files. System files are described in attachment 1. A summary of program functions is included in attachment 2.

The minimum hardware configuration for using the TIPS is: a WANG 2200 VP or MVP CPU, a 2216A or 2236D CRT, a WANG compatible printer, and sufficient disk space to accommodate system programs and data files. A 2270A Diskette Drive should be available for loading system programs onto the user's disk.

INSTALLING THE SYSTEM

INITIAL INSTALLATION

TAEG provides users with two 8-inch flexible disks (diskettes), compatible with the WANG 2270A Drive. One diskette contains all TIPS programs and data files and the other diskette contains TIPS documentation. You will also receive the programs required to load the TIPS onto your disk.

The word processing system can be installed on any disk or diskette platter which meets the following conditions:

- Standard WANG Disk Catalog with at least 20 free entries

- At least 500 free sectors reflected in disk catalog

To install the system,

MOUNT the TIPS in a 2270 drive.

TYPE: CLEAR

PRESS: RETURN

TYPE: SELECT DISK and the address of the unit in which the TIPS diskette is mounted.

PRESS: RETURN

TYPE: LOAD RUN

PRESS: RETURN

The system menu, as shown in figure B-1, should now appear on the screen.

SELECT OPTION BY PRESSING NUMBER KEY

0 - TERMINATE
1 - INSTALL WORD PROCESSING SYSTEM
2 - INSTALL PHRASE FILE
3 - LIST PROGRAMS
4 - PRINT DOCUMENTATION
5 - RESET DISK/PRINTER ADDRESSES

Figure B-1. TIPS Installation Menu

NOTE: When installing the TIPS for the first time, the program must be told the disk and output device addresses for the system on which it is being installed. If there are no addresses currently assigned, the installation program will immediately stop and ask that you assign disk and output devices. If you have already installed TIPS once and you are now installing it on a different system, you may wish to change disk and output device assignments before installation. In either case, follow the procedures outlined in RESETTING DISK/PRINT ADDRESSES below.

To install the Word Processing System,

PRESS: 1 - Install Word Processing System

The system load routine will now proceed to load all required programs and files onto your disk. During the installation process you will be asked to answer the following questions:

ONTO WHICH DISK IS THE WORD PROCESSING SYSTEM TO BE LOADED?

TYPE the address of the platter which you wish to contain the word processing system, and

PRESS: RETURN

NOTE: There must be at least 500 free sectors on the disk platter.

NOTE: If a program named START is on the disk platter, it will not be available following TIPS installation.

WHAT IS THE MAXIMUM SIZE OF WORD PROCESSING BUFFER (2048-99999 BYTES)?

The size of the internal editing buffer can be dynamically set at installation time. The larger the buffer, the more data which can be manipulated at one time. In selecting the size of your buffer, consider the following:

- The size of the largest progam which must be in memory with the buffer is about 18K (18432 BYTES)
- 20 percent of the buffer size is reserved for the addition of new data
- The average size of your data files
- An even multiple of 250 will allow more efficient I/O operations, but is not mandatory.

To set the buffer size,

TYPE the buffer size most suited to your operation, and

PRESS: RETURN

DO YOU WANT TO INSTALL PHRASE FILE NOW (Y or N)?

A common phrase file of 26 70-character phrases may be built during system installation. (The file may also be built at a later date, if desired.) The phrase file is optional. If built, it will require 10 disk sectors.

To install the phrase file,

PRESS: Y

To skip installation,

PRESS: N

DO YOU WANT TO INSTALL START PROGRAM (Y or N)?

To install general purpose start program which you can modify to suit your needs,

PRESS: Y

To avoid installing start program,

PRESS: N

If you reply No, the system will then ask,

DO YOU WANT TIPS AS A STAND-ALONE SYSTEM (Y OR N)?

To have TIPS available as the only system on the disk,

PRESS: Y

Otherwise,

PRESS: N

If you reply Yes, the TIPS start module will be renamed "START" and will replace any existing program of that name on the disk.

The following message should now appear on the screen:

WORD PROCESSING SYSTEM NOW INSTALLED ON (disk)
PRESS ANY KEY TO TERMINATE.

PRESS any key to return to the Installation Menu

To end the installation process,

PRESS: 5 - Terminate

REMOVE the TIPS diskette and retain it in a safe place. The word processing system is now installed and ready for use.

ERRORS. If a fatal error occurs, the program will stop. Should this happen, try the corrective measures indicated below. Non-fatal errors, resulting from incorrect data entry, may be corrected by typing the correct response.

DISK UNIT (disk) NOT AVAILABLE

The disk unit indicated could not be accessed. Type a correct disk address or make the unit ready.

NOT ENOUGH ROOM ON (disk) FOR WORD PROCESSING SYSTEM

The available disk space indicated in the disk catalog is less than that required for all word processing programs and files. Either make room available or select another disk platter.

FATAL ERROR - CAN NOT FIND (program id)

The required program indicated is not on the TIPS diskette. Contact TAEG for a new system diskette.

FATAL DISK ERROR

The initialization program was not copied correctly or is not correct on the TIPS diskette. Attempt to reinstall the system. If problem persists, notify TAEG.

NOT ENOUGH ROOM ON (disk) TO INSTALL PHRASE FILE

Increase the amount of disk space and try again. File requires 10 sectors.

FILE NAME WP PHRASE ALREADY IN USE ON (disk)
DO YOU WANT TO USE EXISTING FILE (Y or N)?

Either a previous version of the phrase file or a user file entitled WP$PHRAS was found on the indicated disk unit. A user file should be renamed, or moved and deleted from the word processing disk. A previous phrase file can be overwritten.

To use the existing file, destroying its contents,

PRESS: Y

To terminate processing,

PRESS: N

EXISTING FILE IS TOO SMALL TO USE AS PHRASE FILE.
CAN NOT INSTALL PHRASE FILE AT THIS TIME!!!

An existing file named WP$PHRAS must be at least 10 sectors long. File name has been scratched. Delete the file or expand it to 10 sectors and try again.

INSTALLING THE PHRASE FILE

The phrase file is optional and may be independently installed at any time. Reinstalling the phrase file is a convenient way to erase all existing phrases and start over with new ones.

The phrase file may be installed either from the TIPS diskette or from the utilities menu on the installed word processing system disk.

To install the phrase file,

MOUNT the disk platter on which the TIPS has been installed.

TYPE: CLEAR

PRESS: RETURN

TYPE: SELECT DISK and the address of the platter on which the TIPS has been installed, and

PRESS: RETURN

-or-

MOUNT the TIPS Disk

TYPE: SELECT DISK and the address of the TIPS Disk

PRESS: RETURN

TYPE: LOAD RUN

PRESS: RETURN

If you are using the TIPS disk, the System Installation Menu (figure B-1) will appear on the screen; otherwise, the main word processing menu (figure B-2) will appear.

SELECT OPTION BY PRESSING NUMBER KEY

0. QUIT

1. CREATE NEW FILE
2. EDIT EXISTING FILE
3. PRINT SINGLE FILE
4. UTILITIES
5. BUILD MAINTAIN INDEX
6. PRINT USING INDEX
7. BACKUP/RESTORE FILES

Figure B-2. Main Menu

From the System Menu,

PRESS: 2 - Install Phrase File

-or-

From the Main Menu,

PRESS: 4

The Utilities Menu (figure B-3) should appear on the screen.

```
SELECT OPTION BY PRESSING NUMBER KEY

0 - RETURN TO MAIN MENU
1 - REORGANIZE TEXT FILE
2 - STRUCTURAL INTEGRITY
3 - W-P FILE MAINTENANCE
4 - INSTALL PHRASE FILE
5 - MODIFY PHRASE FILE
6 - MAINTAIN FILE CATALOG
7 - LIST W-P FILE DISK SECTORS
8 - CLEAR A TEXT FILE
9 - PRINT AN OUTPUT DISK FILE
```

Figure B-3. Utilities Menu

PRESS: 4 - Install Phrase File

Prior to installing the phrase file, the installation program will display:

```
TYPE DISK UNIT ON WHICH WORD PROCESSING SYSTEM WAS INSTALLED
```

TYPE the disk address and

PRESS: RETURN

When the file has been installed, the following message will appear:

```
PHRASE FILE INSTALLED ON (disk)
PRESS ANY KEY TO TERMINATE
```

PRESS a key

If you were running from the TIPS disk,

PRESS: 4 - Install Phrase File

REMOVE and save the TIPS disk.

If you were running from the installed word processor,

PRESS: 5 - Terminate (to return to the Main Menu).

ERRORS: Refer to the previous subsection's discussion of errors for any problems which may arise.

RESETTING DISK/PRINT ADDRESSES

This routine may be called automatically by any start program which has a blank disk address table. The routine will allow you to reset any or all disk and output device assignments for TIPS. The program will first display on the CRT screen a list of all current disk address assignments.

To add a disk address to the table,

TYPE the number of the entry in which you wish to add the new disk address, then,

PRESS: RETURN

TYPE the new disk address, and

PRESS: RETURN

To change an existing entry in the table,

TYPE the number of the existing entry which you want to change, then

PRESS: RETURN

TYPE the new disk address, and

PRESS: RETURN

To delete an entry from the table,

TYPE the number of the entry which you wish to delete, then

PRESS: RETURN

PRESS: ERASE

PRESS: RETURN

When the table contains the correct disk addresses,

TYPE: 0

PRESS: RETURN

The table will be compressed and all blank entries will be purged. The final table format will then be displayed for final approval. If the list is correct,

TYPE: 0

PRESS: RETURN

If the table still has an error in it, make the necessary corrections as indicated above.

When you have accepted the table of disk addresses (typed 0 twice in succession), the program will display the current table of output devices. You may add, change, or delete entries in this table just as you did for the disk address table above. The output device table must also be accepted by twice entering a 0.

NOTE: The CRT is also an output device. If you wish to display information, format documents, etc. on the CRT, you must enter its address (005) in the table of output devices. Non-printing peripheral devices such as tape drive or graphic display units do not have to be included in this table.

ERRORS. An entry number which is not in the range of entries for the current table will not be accepted. When you type a valid entry number, the address will be underlined. If the number was typed in error, you may retain the current address by pressing RETURN before you type a new address.

If you have typed a new address in error, you may use the backspace, line erase, and cursor keys to aid in correcting the error. Type the correct address and proceed normally.

UTILITY ROUTINES

INTRODUCTION

Several utility routines have been included in the word processing package to help you make the most of your system. These routines will normally be used by the system manager as opposed to the general system user. They aid in such areas as file management, disk management, and error recovery. All of these routines may be accessed from the Utility Menu, figure B-3.

UTILITY MENU ITEM 0 - RETURN TO MAIN MENU

The Main Menu described under INSTALLING THE SYSTEM is displayed.

UTILITY MENU ITEM 1 - REORGANIZE THE TEXT FILE

The Reorganize Utility allows you to relink the sectors of a text file, placing all unused sectors into the free space pool. When large amounts of data (250 characters or more) have been deleted from the file, the space previously occupied by that data can only be used for new data when it has been included in the free space pool. This utility will accomplish that for you.
The routine will ask you to type the name of the file being reorganized. The file must be a TIPS file and must be in the file catalog.

TYPE the file name (1-20 characters), and

PRESS: RETURN

If the file resides on a diskette, the routine will ask if the file is still at the original disk address.

If file is at the indicated address,

PRESS: RETURN

If the file is at another address,

TYPE the new disk address, and

PRESS: RETURN

The routine will now place all logical file sectors into sequence at the start of the file and clear any unused sectors at the end of the file for the free space pool.

ERRORS. The following error messages may appear.

FATAL ERROR - CAN NOT FIND FILE CATALOG

The file catalog is missing from the system disk. Reinstall the TIPS.

FATAL ERROR - CAN NOT FIND FILE FOR (file name)

The file does not reside at the indicated disk address. Determine proper disk address and try again.

DISK DEVICE (disk) IS NOT AVAILABLE

Make sure you entered the correct address. Check device status. Find out who's hogging the disk. Wait awhile and try again.

FILE (file id) IS NOT ACTIVE ON (disk)

The file has just been scratched or a diskette was changed.

FILE ID DOES NOT MATCH (file id)

The internal and external file id's are not the same. Either this isn't a TIPS file or someone changed the file id improperly. If this is a TIPS file, use the text file maintenance routine to fix the problem.

FILE IS IN USE BY (number) TERMINAL(S)

Someone is using the file or the in-use count has been erroneously set. If no one is using the file, the count can be reset by the text file maintenance routine.

UTILITY MENU ITEM 2 - STRUCTURAL INTEGRITY

Text files built by the TIPS are structured as linked lists of records with pointers in each record to the next and preceding records. It is always possible in such files for a pointer to be mis-set. The structural integrity (SI) routine checks all pointers and sector counts to ensure that the file is in good condition. It will also ensure that any unused sectors are properly set for file reorganization. SI should be run weekly on very active files, periodically on all files, and always prior to reorganizing a file.

The program will ask you to type the name of the file to be checked. The file must be (1)a TIPS file, (2)in the file catalog, and (3)not in use.

TYPE the file name (1-20 characters), and

PRESS: RETURN

If the file resides on a diskette, the routine will ask if the file is still at the original address.

If the file is at the indicated address,

PRESS: RETURN

If the file is at another address,

TYPE the new disk address and

PRESS: RETURN

The program will now ask you to specify the device on which you want the error list to be printed. It may be a CRT or a line printer.

TYPE the device address, and

PRESS: RETURN

NOTE: The address of the CRT is 005

The file will be checked and a list of noted conditions will be printed on the designated device.

ERRORS. The following error messages may appear:

DISK (disk) IS NOT AVAILABLE

Make sure you entered the correct address. Check device status. Find out who's hogging the disk. Wait awhile and try again.

CAN NOT LOCATE DATA FILE FOR (file name)

The file has just been scratched or a diskette was changed.

INTERNAL FILE ID DOES NOT MATCH DISK FILE ID

The internal and external file id's are not the same. Either this isn't a TIPS file or someone changed the file id improperly. If this is a TIPS file, use the text file maintenance routine to fix the problem.

FILE IS IN USE

Someone is using the file or the in-use count has been erroneously set. If no one is using the file, the count can be reset by the text file maintenance routine.

FILE (file name) IS NOT A WORD PROCESSING FILE

The word-processing file flag is not properly set. File might belong to some other system. If not, flag can be reset via file maintenance routine.

CAN NOT RUN SI ON THIS FILE
PRESS ANY KEY TO TERMINATE

A fatal error, probably one of the above, precludes any further action on this file. Correct error and try again.

UTILITY MENU ITEM 3 - TEXT FILE MAINTENANCE

System failures, aborted edit sessions, and fumble fingering of keys can cause problems with the linkage in text files. This routine is designed to repair most common errors.
The routine will ask you to type the name of the file to be repaired.

The file must be a TIPS file and must be in the file catalog.

TYPE the file name (1-20 characters), and

PRESS: RETURN

If the file resides on a diskette, the routine will ask if the file is still at the original address.

If the file is at the indicated address,

PRESS: RETURN

If the file is at another address,

TYPE the new disk address and

PRESS: RETURN

The file will now be examined for obvious errors. If the file is error free, or you insist on accepting the conditions which are found, the File Maintenance Menu, figure B-4, will be displayed.

USE SPACE BAR AND BACKSPACE KEY TO SELECT OPTION

THEN PRESS 'RETURN' TO EXECUTE

- RESET FIRST DATA SECTOR POINTER
- RESET LAST DATA SECTOR POINTER
- RESET FIRST FREE SECTOR POINTER
- RESET NUMBER OF FREE SECTORS
- SET INTERNAL FILE ID
- RESET IN-USE FLAG
- SET WORD PROCESSING FILE FLAG
- RESET PRIOR SECTOR POINTER
- RESET NEXT SECTOR POINTER
- END FILE MAINTENANCE

Figure B-4. File Maintenance Menu

FM MENU ITEM 1 - FIRST DATA SECTOR POINTER. The current value of the data element will be displayed. You may change the value or accept its current value.

To change the value,

TYPE the new value, and

PRESS: RETURN

To accept the value,

PRESS: RETURN

FM MENU ITEM 2 - LAST DATA SECTOR POINTER. Same as Item 1.

FM MENU ITEM 3 - FIRST FREE SECTOR POINTER. Same as Item 1.

FM MENU ITEM 4 - NUMBER OF FREE SECTORS. Same as Item 1.

FM MENU ITEM 5 - SET INTERNAL FILE ID. The internal file id will be set to the same value as the file's external id, as reflected in the file catalog.

FM MENU ITEM 6 - RESET IN-USE FLAG. Same as Item 1.

NOTE: An in-use count of 255 indicates file maintenance in progress.

FM MENU ITEM 7 - SET WORD PROCESSING FILE FLAG. A flag in the header record is set to indicate that this is a word-processing file.

FM MENU ITEM 8 - PRIOR SECTOR POINTER. The routine asks which sector, relative to the start of the file, you wish to review.

TYPE the sector number, relative to the start of the file (the first available data sector of any file is always sector 1), and

PRESS: RETURN

Your response is thereafter the same as in Item 1.

FM MENU ITEM 9 - NEXT SECTOR POINTER. Same as Item 8.

FM MENU ITEM 10 - END FILE MAINTENANCE. Returns to the Utilities Menu.

ERRORS. The following error messages may appear:

FATAL ERROR - CAN NOT FIND FILE CATALOG

The file catalog is missing from the system disk. Reinstall the TIPS.

FATAL ERROR - CAN NOT FIND FILE FOR (file name)

The file does not reside on the indicated disk. Determine proper disk address and try again.

DISK DEVICE (disk) IS NOT AVAILABLE

Make sure you entered the correct address. Check device status. Find out who's hogging the disk. Wait awhile and try again.

FILE (file id) IS NOT ACTIVE ON (disk)

The file has just been scratched, or a diskette was changed.

FILE IS NOT A WORD PROCESSING FILE

The word processing file flag is not set. To continue file maintenance,

PRESS: Y

INTERNAL ID OF (Internal id) DOES NOT MATCH

FILE ID (file id)

The internal file id does not match the disk file id. To continue file maintenance,

PRESS: Y

IN-USE COUNT INDICATES (number) USERS OF FILE.

In-use count was not reset, or someone is currently using the file. If no one is using the file, to continue file maintenance,

PRESS: Y

If someone is using the file, do not attempt file maintenance!

PRESS: N

IN-USE FLAG INDICATES FILE MAINTENANCE ON THIS FILE IS IN PROGRESS

If there are no other users of the file, then to continue file maintenance,

PRESS: Y

If there are any other users, do not attempt file maintenance!

PRESS: N

UTILITY MENU ITEM 4 - INSTALL PHRASE FILE

The Phrase file may be installed at any time after the TIPS installation. Reinstallation of the Phrase File also serves to erase all previous entries in an existing file.

To install the Phrase File,

TYPE the disk address of the TIPS (this should be the same disk address used in the SELECT DISK statement you typed when you signed on the system), and

PRESS: RETURN

The phrase file will be installed on the disk and the system will return to the Utilities Menu.

ERRORS. The following error messages may appear:

DISK UNIT (disk) NOT AVAILABLE AT THIS TIME

You either typed the wrong address, or someone has hogged the disk. Try again.

NOT ENOUGH ROOM ON (disk)
TO INSTALL PHRASE FILE AT THIS TIME

This will only occur on new installations. Room fot the Phrase File must be made on the disk by removing scratched files, or removing some non-TIPS files.

EXISTING FILE IS TOO SMALL TO USE AS A PHRASE FILE

A file already exists on the disk with the file id of the Phrase File. This is a dangerous situation! The existing file should be renamed or removed as soon as possible.

FILE NAME (file id) ALREADY IN USE ON (disk)

This message will occur whenever you are reinstalling the Phrase File. To continue, using the existing file,

PRESS: Y

If there is not supposed to be a Phrase File on the disk, the indicated file should be renamed or removed as soon as possible.

PRESS: N

If you are just on the wrong disk, try again.

UTILITY MENU ITEM 5 - MODIFY PHRASE FILE

Use this routine to place common phrases in the Phrase File, change existing phrases, or delete phrases. (To delete all phrases, reinstall the Phrase File.) A single phrase may be effectively deleted by changing it to blanks. Each phrase is identified by an alphabetical character (A - Z).

To locate and display a phrase,

PRESS: A letter key

The current phrase assigned to that letter will be displayed.

To change a phrase,

PRESS: Y

TYPE the new phrase, and

PRESS: RETURN

NOTE: All cursor moving keys, backspace key, and line erase key are active to aid in editing phrases.

To delete a phrase,

PRESS: Y

PRESS: ERASE

PRESS: RETURN

To accept the phrase as is,

PRESS: RETURN

To return to the Utility Menu,

PRESS: RETURN

ERRORS. The following error message may appear:

PHRASE FILE NOT AVAILABLE

The Phrase File has not been installed, or something wiped it out. Install the Phrase File and try again.

UTILITY MENU ITEM 6 - MAINTAIN THE FILE CATALOG

Since the file catalog can contain a maximum of 500 files, it will be necessary in a dynamic environment to update periodically the contents of the catalog. New files are added automatically by the editor routines until all file space is exhausted. The file may then be expanded in increments to its maximum capacity. Files which are no longer required should be purged from the catalog as soon as possible to make room for new files. All of these functions may be performed from the File Catalog Menu, figure B-5.

SELECT OPTION BY PRESSING NUMBER KEY

1 - LIST THE FILE

2 - LIST AN ENTRY

3 - CHANGE AN ENTRY

4 - DELETE AN ENTRY

5 - ADD AN ENTRY

6 - EXPAND THE CATALOG

7 - UTILITIES MENU

Figure B-5. File Catalog Menu

FILE CATALOG MENU ITEM 1 - LIST THE FILE. The contents of the file catalog may be listed in alphabetical order by file name or by disk address. They may be listed on the CRT or on a line printer. The CRT listing provides paging options.

To list the file catalog by file name,

PRESS: 1

To list the file catalog by disk address,

PRESS: 2

To return to the File Catalog Menu,

PRESS: 3

To select an output device,

TYPE the device address, and

PRESS: RETURN

NOTE: The device address for the CRT is 005.

If output is on the CRT, the following paging instructions are displayed at the bottom of the screen.

Should a device error occur, the program can be restarted as follows:

TYPE: RUN

PRESS: RETURN

FILE CATALOG MENU ITEM 2 - LIST AN ENTRY. A single File Catalog entry can be displayed on the CRT screen as follows:

TYPE the file name, and

PRESS: RETURN

FILE CATALOG MENU ITEM 3 - CHANGE AN ENTRY. An entry in the File Catalog may be changed as follows:

TYPE the file name, and

PRESS: RETURN

The existing file catalog entry will be displayed on the CRT screen with a list of options.

To change the file name,

PRESS: 1

TYPE the new file name, and

PRESS: RETURN

NOTE: All cursor moving keys, backspace key, and line erase key are active.

To change the disk address,

PRESS: 2

TYPE the new disk address, and

PRESS: RETURN

To change diskette status,

PRESS: 3

All changes will be held until you are sure you have the entry the way you want it. Each change is displayed as it is made.

When all data is correct and you want to change the file,

PRESS: 4

When the entry has been changed in the file, the File Catalog Menu will return.

To return to the File Catalog Menu without making a change,

PRESS: 5

FILE CATALOG MENU ITEM 4 - DELETE AN ENTRY. To prevent an accidental deletion, a verification step has been included. The delete process will remove the entry from the catalog and will also scratch the text file from disk. The scratched file may be removed from the disk by copying or compressing the platter.

To delete an entry,

TYPE the file name, and

PRESS: RETURN

If you really want to delete the file,

PRESS: Y

To return to the File Catalog Menu,

PRESS: N

If the file is on a diskette, the system will display the last known location of the diskette and ask for verification.

To accept the disk address,

PRESS: RETURN

To specify a new location for the diskette,

TYPE the new disk address, and

PRESS: RETURN

The system will then ask you to mount the disk. When this has been done, and any key pressed, the file will be scratched. No error will occur if the file can not be found.

FILE CATALOG MENU ITEM 5 - ADD AN ENTRY. File catalog entries are normally added when a new file is created for editing. This procedure is intended primarily for disaster recovery and for those installations requiring in excess of 500 data files. (By rotating files into and out of the file catalog, any number of text files may be retained for future use.)

To add a file name to the catalog,

TYPE the name of the file (1 - 20 characters), and

PRESS: RETURN

TYPE the disk address of the file, and

PRESS: RETURN

If the disk address is a diskette drive,

PRESS: Y

Otherwise,

PRESS: N

Type the disk file id (8 characters), and

PRESS: RETURN

FILE CATALOG MENU ITEM 6 - EXPANDING THE CATALOG. The catalog is initially sized at 104 entries (13 sectors). It may be expanded in increments of 104 entries to a maximum of 520 entries (65 sectors). If no errors are encountered, file expansion will be completed and the File Catalog Menu will be displayed.

FILE CATALOG MENU ITEM 7 - RETURN TO UTILITIES MENU. The Utilities Menu is displayed.

ERRORS. The following errors may occur during File Catalog processing:

FATAL ERROR - CAN NOT FIND FILE CATALOG

The File Catalog is missing from the system disk. Reinstall the TIPS.

FATAL ERROR - CAN NOT FIND FILE FOR (file name)

The file does not reside at the indicated disk address. Determine the proper address and try again.

FATAL ERROR - NO ROOM TO ADD FILE

The file catalog is full. Expand the catalog or delete entry and try again.

FILE NAME NOT FOUND

The specified file name could not be located in the disk directory.

Check your spelling and try again.

FILE ALREADY EXISTS IN CATALOG

The file name you are trying to add is already in the File Catalog. Choose another name and try again.

DISK DEVICE (disk) IS NOT AVAILABLE

Make sure you entered the correct address. Check device status. Find out who's hogging the disk. Wait awhile and try again.

FILE FOR (file name) NOT FOUND ON (disk)

The file to be deleted could not be found at the indicated disk addrress. The file may have been deleted, or you may have the wrong address. To try another disk address,

PRESS: Y

To return to the File Catalog Menu,

PRESS: N

FILE CATALOG AT MAXIMUM SIZE NOW
CAN NOT ENLARGE FURTHER

If you need more space delete some entries. Return is to File Catalog Menu.

NO ROOM ON DISK TO EXPAND FILE

There is not enough room on the disk for an expanded copy of the File Catalog. Scratch some files and/or compress disk space and try again.

UTILITY MENU ITEM 7 - LIST THE TEXT FILE BY DISK SECTORS

This option prints the header record data and all sectors between the

first data sector and the first free sector. The actual and relative location of each sector is printed, as are the prior and next pointers. The output may be on a CRT or a line printer. CRT displays allow paging through the file.

NOTE: Since some line printers can not tolerate the paragraph break characters, format delimiter characters, or other control characters, these have been altered for line printer output. Formater control characters print as @; carriage returns as !; and page breaks as back-slashes.

To list the file,

TYPE the file name (1-20 characters) of the file to be listed, and

PRESS: RETURN

If the file is on a diskette, the system will display the last known address of the diskette and ask for verification.

If the diskette is in the indicated drive,

PRESS: RETURN

If the diskette is in another drive,

TYPE the address of the diskette, and

PRESS: RETURN

The system will then ask for the address of the output device:

TYPE: the output device address, and

PRESS: RETURN

NOTE: The address for the CRT is 005.

If a line printer was selected for output, the system will print the data file and will return to the Utilities Menu when finished.

If you chose CRT output, the system will display the header data and the first data record and wait for your response:

To look at a previous record,

PRESS: B

To start over at the first record,

PRESS: R

To end the listing and return to the Utilities Menu,

PRESS E:

To look at the next record,

PRESS: RETURN

The program will automatically terminate after displaying the last record, unless a B or an R is pressed. Return is to the Utilities Menu.

UTILITY MENU ITEM 8 - CLEAR TEXT FILE

This option clears a text file of all data and resets it as an empty file.

To clear a file,

TYPE the file name of the file to be cleared, and

PRESS: RETURN

If the file is on diskette, the system will display the last known address of the diskette and ask for verification.

If the diskette is on the indicated drive,

PRESS: RETURN

If the disk in in another drive,

TYPE the address of the diskette, and

PRESS: RETURN

UTILITY MENU ITEM 9 - PRINT AN OUTPUT DISK FILE

This option allows you to print the contents of a disk file created by the formater program. The file may be printed on the CRT or on a line printer.

To print a disk file,

TYPE the 8-character disk file id of the file to be printed, and

PRESS: RETURN

TYPE the disk address of the file to be printed, and

PRESS: RETURN

TYPE the address of the output device, and

PRESS: RETURN

If you are printing on the CRT, the program will wait for a key depression after printing each page.

LIST PROGRAMS

A special utility routine to list the TIPS programs is included on the System Installation Menu. This routine may be useful in installing patches or modifying TIPS to conform to local requirements.

To list programs,

MOUNT the TIPS diskette,

TYPE: SELECT DISK and the address of the TIPS diskette

PRESS: RETURN

TYPE: LOAD RUN

PRESS: RETURN

The Installation Menu, figure B-1, will be displayed.

PRESS: 3

TYPE the address of the line printer on which you wish to list the programs,

PRESS: RETURN

TYPE the name of the program you wish to list,

PRESS: RETURN

TYPE: 1

PRESS: RETURN

The program will be listed. When the display again requests the program name, you may type a new program to be listed, or you may return to the Installation Menu, as follows:

TYPE: END, and

PRESS: RETURN

To terminate processing from the Installation Menu,

PRESS: 4

PRINT DOCUMENTATION

A special program has been included on the System Installation diskette documentation to print additional copies of the system documentation. The documentation may be printed on the CRT or on a line pinter.

To print the documentation,

MOUNT the TIPS Installation diskette

TYPE: SELECT DISK and the address of the TIPS Installation diskette

TYPE: LOAD RUN

PRESS: RETURN

The Installation Menu, figure B-1, will be displayed.

PRESS: 4

The documentation menu, figure B-6, will be displayed. Select the item you wish to print by pressing the corresponding letter key. The program will then display the following options:

---

1 - PRINT DOCUMENTATION ON THE LINE PRINTER
2 - PRINT DOCUMENTATION ON THE CRT
3 - INSTALLATION MENU

To print documentation on the line printer,

PRESS: 1

TYPE the address of the line printer

PRESS: RETURN

To print documentation on the CRT,

PRESS: 2

To return to the System Installation Menu, without printing the documentation,

PRESS: 3

The output formatting program is used to print the documentation. Refer to section VII of the report for a description of its operation.

When the documentation has been printed the System Installation Menu will be redisplayed. To terminate processing,

PRESS: 5

SELECT DOCUMENT DESIRED BY PRESSING LETTER KEY

A - USERS MANUAL

B - INTRODUCTION

C - USING THE SYSTEM

D - REVISING TEXT

E - ADDITING TO A FILE

F - DISPLAY FUNCTIONS

G - TEXT FORMAT COMMANDS

H - OUTPUT

I - USING THE INDEX FILE

J - GRAPHICS CAPABILITIES

K - USER UTILITY FUNCTIONS

L - TECHNICAL MANUAL

M - INTRODUCTION

N - SYSTEM INSTALLATION

O - UTILITY ROUTINES

P - PRINT DOCUMENTATION

Q - SAVE/RESTORE TEXT FILES

R - SYSTEM FILES

S - PROGRAM DESCRIPTIONS

Z - * * Return to Installation Menu * *

Figure B-6. Documentation Options

SAVING/RESTORING TEXT FILES

INTRODUCTION

On any system there will eventually come a time when the available disk space will become filled with files which still have some value, but which are no longer required for daily, or even weekly, access. Such files may be moved from the on-line disk to diskettes using system utilities. If a tape drive is available they may also be saved on tape using the BACKUP/RESTORE routines of the TIPS.

A set of utility routines allows you to backup text files onto tape and subsequently to restore the files onto disk. Files may be backed up for security and kept on disk for access and changes. Changed files may be replaced on the backup tape. The contents of the backup tape may be listed in alphabetical order. You can reach these routines from the Main Menu by selecting option 7. Each function is described in detail below.

```
SELECT OPTION BY PRESSING NUMBER KEY

     0  -  RETURN TO MAIN MENU
     1  -  BACKUP TEXT FILE
     2  -  RESTORE TEXT FILE
     3  -  LIST CONTENTS OF TAPE
     4  -  INITIALIZE TAPE
```

Figure B-7. Backup/Restore Menu

INITIALIZING THE TAPE

The first step in backing up text files is to initialize a tape to contain the files. Mount a scratch tape (either a new tape, or one which contains nothing of value) with a ring in it and bring it to load point. The Backup/Restore programs will work with 9-track tapes at either 800 or 1600 bits-per-inch (BPI). If the BPI is selectable on your tape drive, insure that the BPI setting on the tape drive and the instructions you will give the program are the same.

To initialize a tape, call up the Backup/Restore Menu by selecting option 7 from the Main Menu. Then,

PRESS: 4 - Initialize Tape

The initializing routine will sign on and wait for you to mount the tape. When the tape is mounted and at load point,

PRESS any key.

The program will then ask you to specify the BPI at which the tape is to be written. If you are writing at 800 BPI,

PRESS: 1

If you are writing at 1600 BPI,

PRESS: 2

The program will then initialize the tape and return it to load point. The Backup/Restore Menu will return.

BACKING UP A TEXT FILE

To backup a text file, select option 7 from the Main Menu. This will call up the Backup/Restore Menu, figure B-7. From the Backup/Restore Menu,

PRESS: 1 - Backup Text File

The program will ask you for the name of your text file:

TYPE the file name, and

PRESS: RETURN

If the file resides on a diskette the program will ask you for the disk device:

TYPE the disk address, and

PRESS: RETURN

If the name can not be found in the file catalog or the file is currently in use, a warning message will be printed. You will not be allowed to backup the file.
The first time through the program, you will be asked to specify at which BPI you wish the tape to be written. Ensure that the correct tape is mounted and at load point. Then, for 800 BPI,

PRESS: 1

For 1600 BPI,

PRESS: 2

The program will then look on the tape for the file you are backing up. If it is found, you will be given the option of replacing the file or skipping this file. If you choose to replace the file, be sure that the new version of the file is not physically longer than the file on the tape. If it is, the replacement will not be allowed. If the file is not found on the tape, it will be added to it.

When the file has been replaced or added, the program will ask if you wish to scratch the file from the disk. To leave the file on disk,

PRESS: N

To scratch the file from disk at this time,

PRESS: Y

If you select to scratch the file, it will be removed from the file catalog and will be set to scratched status on disk. The next time the disk is compressed, the file will be deleted.

The program will then ask for another file to backup. To terminate the program and return to the Backup/Restore Menu,

PRESS: CLEAR and then

PRESS: RETURN

RESTORING A TEXT FILE

To restore a text file from tape, select option 7 from the Main Menu. That will display the Backup/Restore Menu, figure B-7. Then,

PRESS: 2 - Restore Text File

The Restore routine will ask for the name of the file you wish to restore as indicated above.

TYPE the file name, and

PRESS: RETURN

The program will now search the tape for the file you have selected. Ensure that the correct tape has been mounted and is at load point. Then select the BPI at which the tape is to be written. To select 800 BPI,

PRESS: 1

To select 1600 BPI,

PRESS: 2

If the requested file can not be found, or the wrong tape has been used, an error message will be printed and you may select another file name or quit.

When the file has been found, the name will again be displayed and you have the option of changing the name before it is entered into the file catalog. To keep the same name,

PRESS: RETURN

To change the name,

TYPE the new name desired, and

PRESS: RETURN

You will then be asked to specify the disk address for the file and the type of disk it is. Respond as you would for creating a new TIPS file. If the requested name is already in the file catalog, an error message will be printed and you may change the name and try again. If there is not enough room on disk you may also try again with a new disk. (NOTE: When using diskettes, be sure that the correct diskette

is mounted, with write permission, before specifying the disk address to the program.)

The file will now be copied to the indicated disk and placed into the file catalog. You will then be asked for more files to copy. To copy another file,

PRESS: Y

To terminate the program,

PRESS: N

LISTING THE TAPE CONTENTS

The contents of the tape may be listed on the CRT screen or on a line printer using this routine. To list the tape contents, select option 7 from the Main Menu. This will call up the Backup/Restore Menu, figure B-7, then:

PRESS: 3 - List Contents of Tape

Ensure that the correct tape is mounted and is at load point, then, for 800 BPI tape,

PRESS: 1

For a 1600 BPI tape,

PRESS: 2

The program will search the tape for files, sort the list of files found and ask whether you want a title on your listing. To enter a title,

PRESS: Y

TYPE the title you desire, and

PRESS: RETURN

To skip a title,

PRESS: N

The program will ask you for the desired line spacing. To select single spacing,

PRESS: 1

To select double spacing,

PRESS: 2

Finally, the program will ask you to specify the output device for the listing.

TYPE the address of the output device (CRT is '005'), and

PRESS: RETURN

If you selected a line printer for output, the entire contents of the tape will be listed at 50 entries per page. If you selected the CRT for output, 20 entries at a time will be displayed. To see the next 20 entries,

PRESS: N

To see the previous 20 entries,

PRESS: P

To return to the first page of the listing,

PRESS: F

To terminate the display of the file,

PRESS: E

ATTACHMENT 1

SYSTEM FILES

The heart of the system is the user's textual data file. One file is used to install the word processing system onto the user's disk. One file is required for the File Catalog. One file may optionally be used for common phrases. Each of these files is discussed below.

USER TEXT FILE

The text file consists of a header record, some text records, and a system trailer record. The format of each record is shown in table 1-1, 1-2, and 1-3. The number of text records is determined when the file is created and can not be changed thereafter. Two hundred fifty characters are allocated to each text record by the system. Initially, all records are free space. After data have been entered into the file, any unused records remaining at the end of the file comprise the free space. Once used records, no longer required because of data deletion, may be added to the available free space via the file reorganize utility.

TABLE 1-1. TEXTUAL DATA FILE - HEADER RECORD

Record Position	String Position	No. of Charac.	Description
1	1,8	8	Internal File ID
2	9,2	*	Location of first data record
3	11,2	*	Location of last data record
4	13,2	*	Location of first free record
5	15,2	*	Number of free records
6	255,2	*	Edit file ID

* Binary Data Field

TABLE 1-2. TEXTUAL DATA FILE - DATA RECORD

Record Position	String Position	No. of Charac.	Description
1	1,250	250	Textual Data
2	251,2	2	Reserved for Structural Integrity
3	253,2	*	Location of prior text record
4	255,2	*	Location of next text record

* Binary Data Field

TABLE 1-3. TEXTUAL DATA FILE - TRAILER RECORD

Record Position	String Position	No. of Charac.	Description
1	1,2	2	Trailer ID
2	3,2	*	Used Record Count
3	5,252	252	Filler

* Binary Data Field

INSTALLATION FILE - COPY.WPx

This file is used by the system installation programs to determine which files and programs are to be loaded and the amount of space required for installation. It resides on the Master System Diskette and does not become a part of the user's system. The file is three sectors long. The file format is shown in Table 1-4.

TABLE 1-4. COPY.WPx FILE FORMAT

Record Position	String Position	No. of Charac.	Description
1	1,6	6	COPY.W
2	7,8	8	File/Program ID
3	15,8	8	" " "
		etc.	

FILE CATALOG - WP$FILES

The file catalog serves to link the user's file name of 1-20 characters with a system disk file. This file is initially structured to contain 104 entries. It can be extended, user disk space permitting, to a maximum size of 520 entries or 65 disk sectors. The file names in the file are retained in alphabetical order, with high values (hex FF) used as trailing filler characters. The record format is shown in table 1-5.

TABLE 1-5. FILE CATALOG RECORD FORMAT

Record Position	String Position	No. of Charac.	Description
1	1,20	20	File name
2	21,1	1	Diskette flag 00 - Fixed Disk FF - Diskette
3	22,3	3	Disk Address
4	25,8	8	Disk File ID

PHRASE FILE - WP$PHRAS

The Phrase File allows the user to define up to 26 phrases which are accessible to all users of the TIPS. Each phrase can be up to 70 characters long. Phrases may be changed or deleted at will. The file is 10 sectors long, the last sector being used for a system trailer record. The format of each sector is shown in table 1-6.

TABLE 1-6. PHRASE FILE SECTOR FORMAT

Sector Position	String Position	No. of Charac.	Description
1	1,80	80	Phrase Data
2	81,80	80	" "
3	161,80	80	" "
4	241,16	16	Filler

ATTACHMENT 2

SYSTEM PROGRAMS

The Word Processing System consists of many programs grouped essentially into four categories: System Installation Programs, Text Editing Programs, Text Formatting Programs, and Associated Utility Programs. All programs are provided on the Master System Diskette with explanatory remarks.

SYSTEM INSTALLATION PROGRAMS

WPLOAD. Verifies the availability of the disk designated for the word processing system and ensures there is sufficient disk space on the disk for all required programs and files. Uses the COPY.WPx file. Loaded via Installation Menu Item 1. Loads WPLOAD01 on completion.

WPLOAD00. Resets the tables of valid disk addresses and output device addresses for the system. Loaded by the START program initially or from the Installation Menu.

WPLOAD01. Copies files and programs from the Master System Diskette to the user's disk. Uses COPY.WPx file. Loaded by WPLOAD program. Loads the WPLOAD02 program on completion.

WPLOAD02. Renames the WPSTART program as START after all programs have been installed on the user's disk. Loaded by WPLOAD05. Returns to Installation Menu upon completion.

WPLOAD03. Asks user to define maximum buffer size for the TIPS. Inserts the buffer size in the initialization routine. Loaded by WPLOAD01. Loads WPLOAD04 on completion.

WPLOAD04. Installs the Phrase File and sets all entries to blanks. During installation process, this program is loaded by WPLOAD03 and will return to the System Installation Menu upon completion. It may also be loaded via Item 4 on the Utility Menu, and will return to that menu on completion.

WPLOAD05. Asks the user whether he/she wants a general start program installed on the TIPS disk or the TIPS converted to a stand-alone system by changing WPSTART to START. Loaded by WPLOAD04, it can load WPLOAD02 to change WPSTART, or install the START program and return to the Installation Menu.

START. On the Master System Diskette, this program provides the System Installation Menu. It is loaded via a LOAD RUN Command from the terminal.

TEXT EDITING PROGRAMS

WP00. Initializes the editing process. Resets system variables and establishes required common variables. Locates the phrase file, if any, on the system. Loaded from the Main Menu Item 1 or 2. Loads WP01 on completion.

WP01. Creates or locates the user data file, depending on option taken from Main Menu. Uses WPS1 to access File Catalog. Loaded by WP00. Loads WP02 upon completion.

WP02. Reads the input data file and fills buffer. If no data available, end of data or no input file, the program clears the buffer. It may be loaded by several programs in the normal course of processing. It is initially loaded by WP01; it may be loaded by WP03 in response to READ NEXT BUFFER command; it may be loaded by WP04 after the current buffer has been written. The program may load different routines in its wake. WP03 is normally loaded after filling or clearing the buffer; WP04 may be loaded during termination to write a buffer; WP06 may be loaded if a fatal error is detected.

WP03. This routine does all editing of textual data. It is the largest single program in the system, requiring some 18K of memory with minimum buffer size. It is normally loaded by WP02 when a new buffer has been filled/cleared, but it may be loaded by WP04 after a WRITE BUFFER command has been executed. WP03 may load WP04 to write a buffer or terminate; it may load WP02 to execute a READ FILE command; it may load WP06 to terminate processing.

WP04. Writes data to the original input file. It may be loaded by WP03 to terminate a file or execute a WRITE BUFFER command; it may be loaded by WP02 to complete the copying of a file during termination; it may be loaded by WP06 to initiate termination of a file. On completion, WP04 may load WP02 to read data from a file; it may load WP03 after executing a WRITE BUFFER command; it may load WP06 after writing the last sector of output data.

WP05. Saves the original input file parameters and allows the user to specify an alternate input file for the copy or append functions. It is loaded by WP06 and loads WP02 on completion.

WP06. Termination routine which closes the current input file during an append or copy function and at end of processing. Also handles fatal errors detected by any other system programs. Normally loaded by WP04, it may be loaded by any module when a fatal error occurs. It will load WP05 when alternate input has been requested, otherwise, on completion it will return to the Main Menu.

WPSTART. Start-up program for the TIPS. It provides the Main enu and controls program loading. It may be renamed START by the system installation procedures. It may be accessed by typing LOAD RUN at a terminal, from the disk START module, by Utility Menu Item 8, and by WP06.

WPS1. Subroutine which is used to access the File Catalog and correlate the user's file name to a disk unit and disk file id. It uses the File Catalog. It is loaded by WP01, WP20, WP40, and WP50.

TEXT FORMATTING PROGRAMS

FM01. Initializes the formatting parameters and allows the user to select output device and to review and change formatting defaults. Loaded from the Main Menu Item 3. Loads FM02.

FM02. Reads the text file and generates the requested output onto printer, typewriter, or CRT device. Interprets the formatting commands contained in the text file. Loaded by FM01 or WP91. It calls subroutines FMS1 or FMS2 for output. It returns to WPS1 or to the START program.

FM03. Initializes the graphic display system. It is loaded by FM01. It loads FM02.

FM05. Transmits graphics to the graphic display unit. It is loaded by FM02. It returns to FM02.

FMS1. Subroutine to print formated output to the line printer or the CRT. Called by FM02.

FMS2. Subroutine to print formated output to the daisy wheel printer (WANG 2281). Called by FM02.

FMS3. Subroutine to transmit text data to the graphic display system. Called by FM02.

FMS4. Subroutine to write formated output to disk. Called by FM02.

ASSOCIATED UTILITY PROGRAMS

WP10.. Presents the Utility Menu. It may be loaded by Main Menu Item 3, WP20, WP30, WP40, WP42, WP50, WP60, or WPLOAD04. It may load WP20, WP30, WP40, WP50, WP60, or WPLOAD04.

WP20. Allows the system manager or a user to reset the pointers in a text file. Permits the rebuilding of the text file header record. It

is loaded from the Utility Menu Item 3. It uses WPS1 to access the File Catalog. On completion, it returns to WP10.

WP30. Allows user to maintain the common Phrase File, WP$PHRAS, including changing, adding, or deleting phrases. It is loaded by Utility Menu Item 5. It returns to WP10.

WP40. Maintains the File Catalog, WP$FILES, by allowing user to change, add, delete, or list File Catalog entries. It is loaded from Utility Menu Item 6. WP40 uses WPS1 to locate files in the Catalog and for adding files. It returns to WP10. WP40 may load WP41 for lists of catalog entries.

WP41. Builds a list of files in the File Catalog, WP$FILES. If requested, it will sort the list into disk address order. It is loaded by WP40 and loads WP42 to print the ordered list.

WP42. Prints the list of files in the File Catalog which was built by WP41. It is loaded by WP41 and returns to WP10 on completion.

WP50. Reorganizes the user text file by aligning logical and physical records beginning with relative record 1. Moves all unused sectors to the end of the file and includes them in free space. Resets all pointers following successful execution. Loaded via Utility Menu Item 1. It uses WPS1 to access the File Catalog. It returns to WP10 on completion.

WP51. Clears a word processing text file of all data and resets pointers to indicate an empty file. Loaded from Utility Menu option 8. It returns to the Utility Menu when done.

WP60. Lists the data sectors in a textual data file in disk sector order. Includes header record data. Listing may be directed to CRT or line printer. The CRT output allows paging through the file. Loaded via Utility Menu Item 7. It returns to WP10.

WP61. Prints the contents of a disk file created by WP51. Data may be printed on the CRT or a line printer. Loaded from Utility Menu option 9. It returns to the Utility Menu when finished.

WP70. Reviews the structure of the data file looking for broken chains, incorrect sector counts, etc. Produces a listing of all errors found on either the CRT or a line printer. Loaded via Utility Menu Item 2. Returns to the Utility Menu.

WP80. Presents the file indexing menu. It is loaded by WPSTART. It returns to WPSTART. It may load WP81, WP82, WP83, or WP84.

WP81. Build an index of word processing files to concatenate output of multiple files into a single document. It is loaded by and returned to WP80.

WP82. Maintain the index of files built by WP81. It permits user to change, delete, or add files to the index. It is loaded by and returned to WP80.

WP83. Deletes an index file built by WP81. It is loaded by and returned to WP80.

WP84. Lists the contents of an index file built by WP81. Index may be listed on printer or CRT. It is loaded by and returned to WP80.

WP85 Prints a single document from the files contained in an index built by WP81. It is loaded by and returned to WPSTART.

WP90. Lists the program from the Master System Diskette on a line printer. Can list one program, several adjacent programs, or all programs at once. Loaded via System Installation Menu Item 3. Returns to System Installation Menu.

WP91. Produces a copy of the system documentation on the CRT or on a line printer. Loaded from the System Installation Menu Item 4. Returns to the System Installation Menu.

WPA0. Backup/Restore menu. It is called by WPSTART and can call WPA1.000, WPA2.000, WPA3.000, or WPA4.000 It will return to WPSTART.

WPA1. Copies TIPS text files from disk to tape. May replace an existing version of the file already on tape. It calls subroutines WPS1.000 and GXEC.SB0. It is loaded by WPA0.000. It may load WP40.000 to delete text files following a copy operation. It returns to WPA0.000.

WPA2. Restore TIPS text files from tape to disk. It calls subroutines WPS1.000 and GXEC.SB0. It is loaded by WPA0.000 and returns to WPA0.000.

WPA3. Extracts, sorts and lists the file names contained on an archive tape. It calls the subroutine GXEC.SB0. It is loaded by, and returns to, WPA0.000.

WPA4. Initializes an archive tape for the storage of TIPS text files. It calls the subroutine GXEC.SB0. It is loaded, and returns to WPA0.000.