

CHAPTER 9 SUBSCRIPTS, SUPERSCRIPTS, AND COMPOSITE CHARACTERS

With the word processing system you can easily type subscripts, superscripts, and composite characters.

A subscript is a character or characters typed one half-space below the rest of the line. For example, the number 2 in the chemical formula for water is a subscript.



Similarly, a superscript is a character or characters typed one half-space above the rest of the line. For example, the number 2 in the equation for the area of a circle is a superscript.

$$\text{area} = \text{pi} * \text{radius}^2$$

A composite character is a character printed by striking two or more characters on top of one another. You can use a composite character to create a special character that is not found on the main keyboard. For example, you can print ≠ by forming a composite character with the equal sign (=) and slash (/) or ÷ with the colon (:), and minus sign (-).

9.1 SUBSCRIPTS AND SUPERSCRIPTS

There are two ways of producing word processing subscripts and superscripts.

1. **With the gold SUB SCRIPT and SUPER SCRIPT keys.** Use this method with a short subscript or superscript, such as



2. **With half-line ruler spacing.** Use this method with lines that contain complicated subscripts and superscripts, such as the following:

$$\left(\underset{m}{a_x} + \underset{n}{b_x} \right)^2 = \underset{m}{a_x}^2 + 2 \underset{m}{a_x} \underset{n}{b_x} + \underset{n}{b_x}^2$$

Subscripts and superscripts can be printed properly only when using a letter quality printer. They will be printed on the same line as the rest of the typing when using a draft printer.

9.1.1 Producing Subscripts and Superscripts With the Gold SUB SCRIPT and SUPER SCRIPT Keys

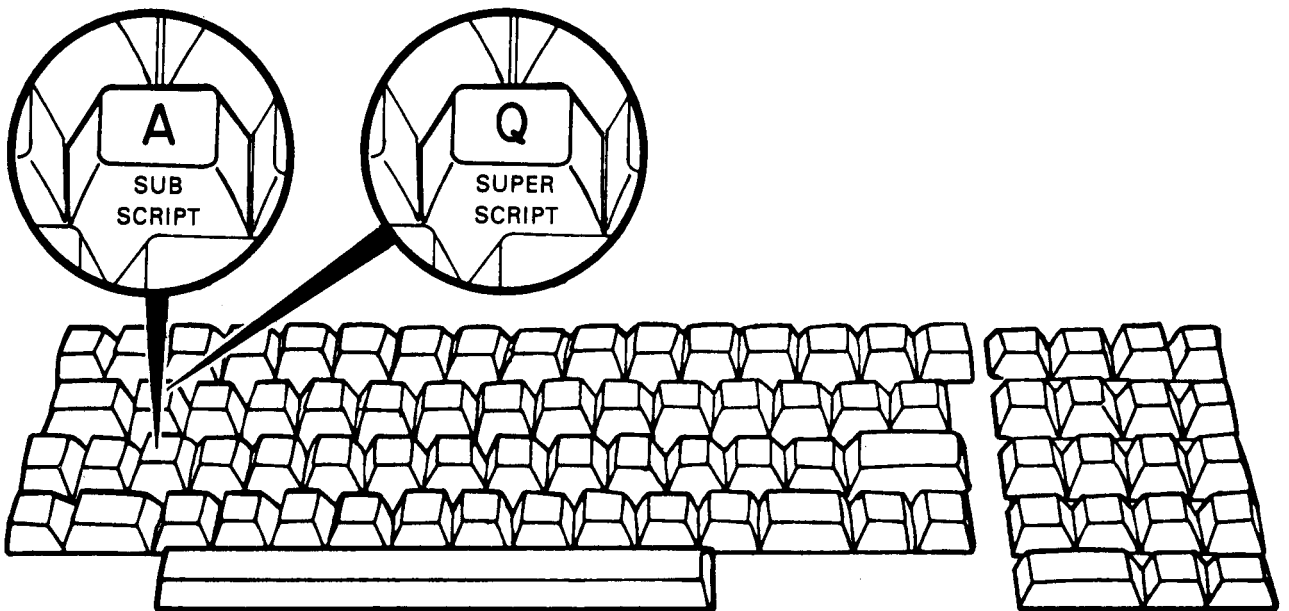
The gold SUB SCRIPT and gold SUPER SCRIPT keys are used for short subscripts and superscripts.

To produce a subscript or superscript, follow these steps:

1. Press the SEL key.
2. Type the character(s) to be printed below or above the line level.
3. Press the gold and either the SUB SCRIPT or SUPER SCRIPT key.

Here is what happens:

1. The cursor will be positioned under the character to the immediate right of the subscripted or superscripted ones.
2. The characters will continue to be displayed on the screen like ordinary text, on the same level as the line. However, the system has "marked" them for subscripting or superscripting. To determine whether text is subscripted or superscripted, you must view it by pressing the gold and the VIEW keys (see Appendix D).



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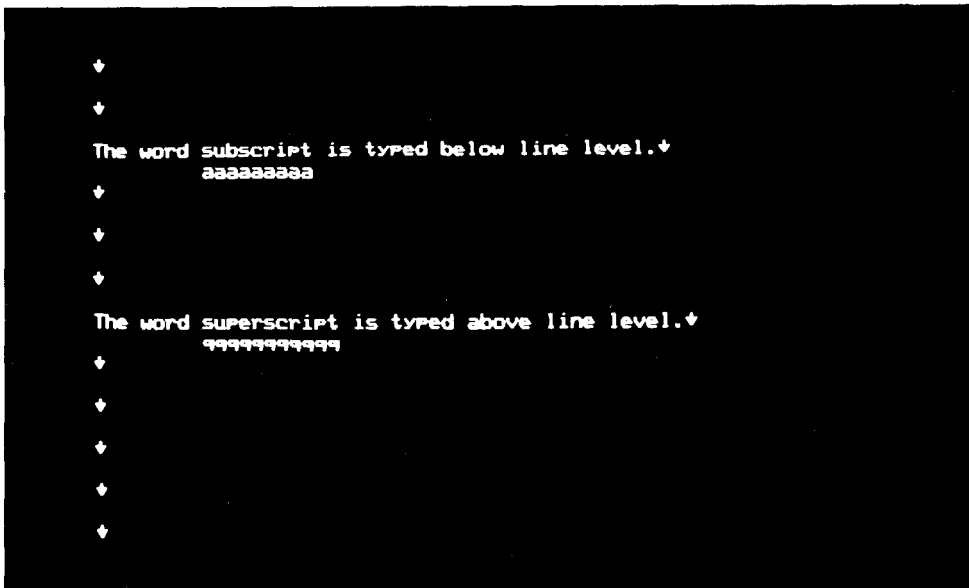
Figure 9-1 Main Keyboard SUB SCRIPT and SUPER SCRIPT Keys

When text is viewed, it appears as follows:

1. **Subscripted.** A lower case letter "a" appears underneath the text (upper case "A" if the subscript was boldfaced).

2. **Superscripted.** A lower case letter "q" appears underneath the text (upper case "Q" if the superscript was boldfaced).

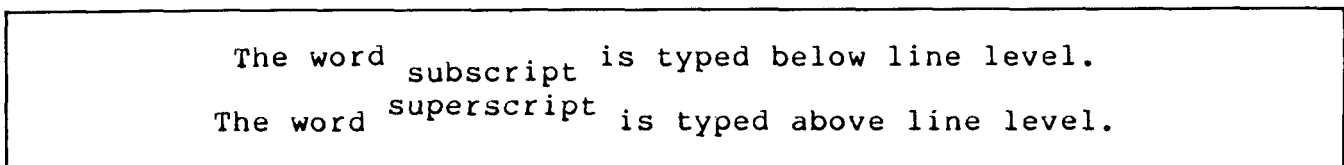
Here is an example of viewing subscripts and superscripts:



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Figure 9-2 Example of Viewing Subscripts and Superscripts

Here is how the example looks when printed:



9.1.1.1 Removing a Subscript or Superscript –

To restore a subscript or superscript to normal line level, do the opposite of what you originally typed.

1. To go from subscript to line level. Superscript the characters.
2. To go from superscript to line level. Subscript the characters.

Of course, you can also delete the characters and retype them.

9.1.1.2 Qualifications – The following qualifications apply to subscripts and superscripts produced with the gold SUB SCRIPT and SUPER SCRIPT keys.

1. You cannot underline with the UNDERLINE key. Instead, make a composite character (see Section 9.2) with the underscore character and the subscript or superscript.
2. It is advisable to use double-spacing (or at least space and a half). If you don't, your printing will be too crowded, as in the following:

H₂O is the chemical equation for
w^ater. The number 2 is a subscript.

3. You cannot subscript a subscript or superscript a superscript. For example, you cannot have the following:

$$a_{x_m} + 2a_{x_m} b_{x_m} + b_{x_m}$$

Also, you cannot have a subscript and superscript in the same typing position, such as the subscript x and superscript 2 in the following:

$$a_x^2$$

You can, however, produce the above by using either half-line ruler spacing (see Section 9.1.2) or composite characters (see Section 9.2).

9.1.2 Producing Subscripts and Superscripts with Half-line Ruler Spacing

To type complicated subscripts and superscripts, use half-line ruler spacing.

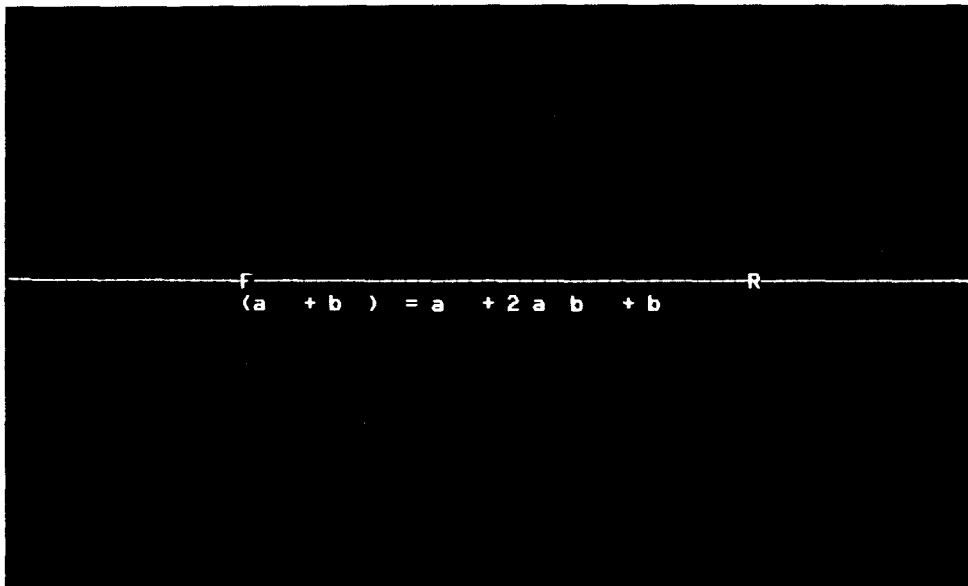
1. Press the gold and the RULER keys to display the ruler.
2. Move the cursor to the location of the left margin and type the letter F.
3. Press the RETURN key to clear the ruler display and embed the ruler back into the document.

Next, type each line of your equation separately while inspecting the spacing on the screen (the lines will be displayed single-spaced but will be printed with space and a half). Type the main line of your equation first, then each level of subscript, and lastly each level of superscript.

For example, to type the following equation:

$$(a_m + b_n)^2 = a_m^2 + 2 a_m b_n + b_n^2$$

1. Type only the main line, leaving enough space for the subscripts and superscripts, and press the RETURN key. For the example you would type the following:



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Figure 9-3 Typing an Example Equation: Step 1

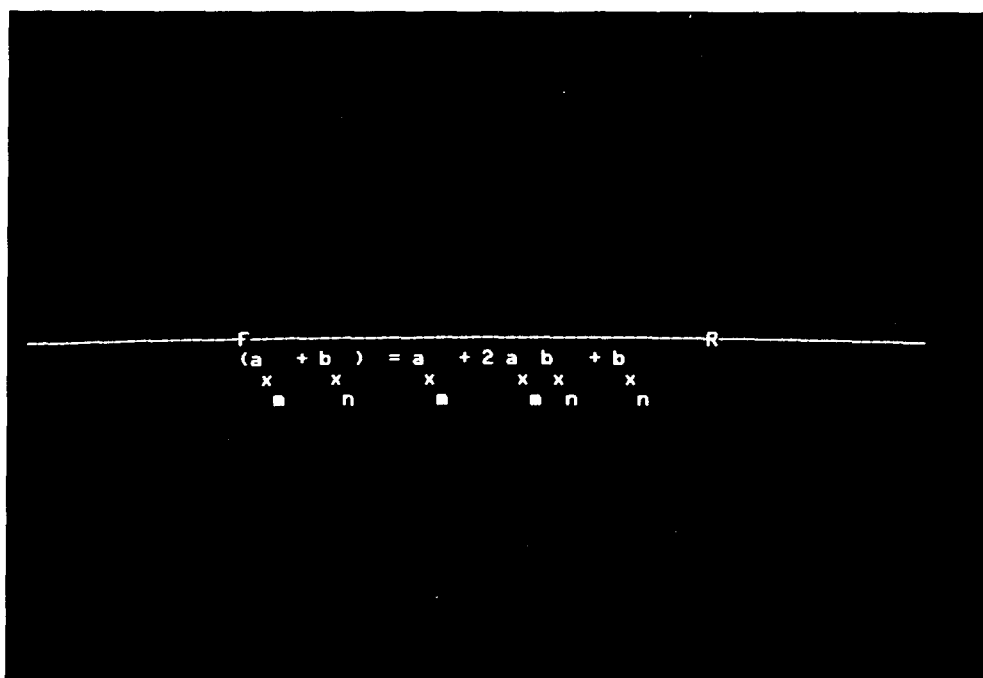
2. Type the first level of line with the subscripts (the letter x six times) directly beneath the main line and press the RETURN key. You should now have the following:

The image shows a terminal window with a horizontal line. Below the line, the equation $(a + b)^2 = a^2 + 2ab + b^2$ is displayed. Each letter in the equation has a small 'x' directly beneath it, indicating a subscript. The 'F' and 'R' characters are positioned at the far left and right ends of the horizontal line, respectively.

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Figure 9-4 Typing an Example Equation: Step 2

3. Type the second level of line with the subscripts (the letters m and n three times each) directly beneath your previous lines and press the RETURN key. You should now have the following:

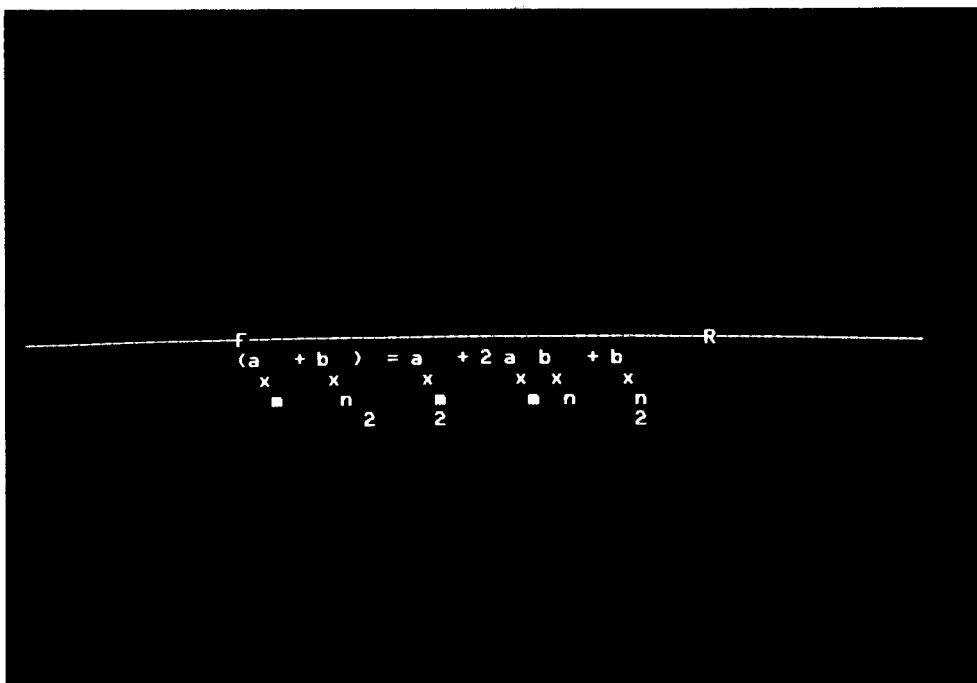


The image shows a terminal window with a horizontal line. Below the line, the equation $(a + b)^n = a^n + 2 a b x + b^n$ is displayed. Underneath each letter in the equation, there are subscripts: 'x' under 'a', 'x' under 'b', 'n' under 'a', 'x' under 'a', 'x' under 'b', 'n' under 'x', and 'n' under 'b'. Small square markers are placed below the subscripts 'n' and 'n'.

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Figure 9-5 Typing an Example Equation: Step 3

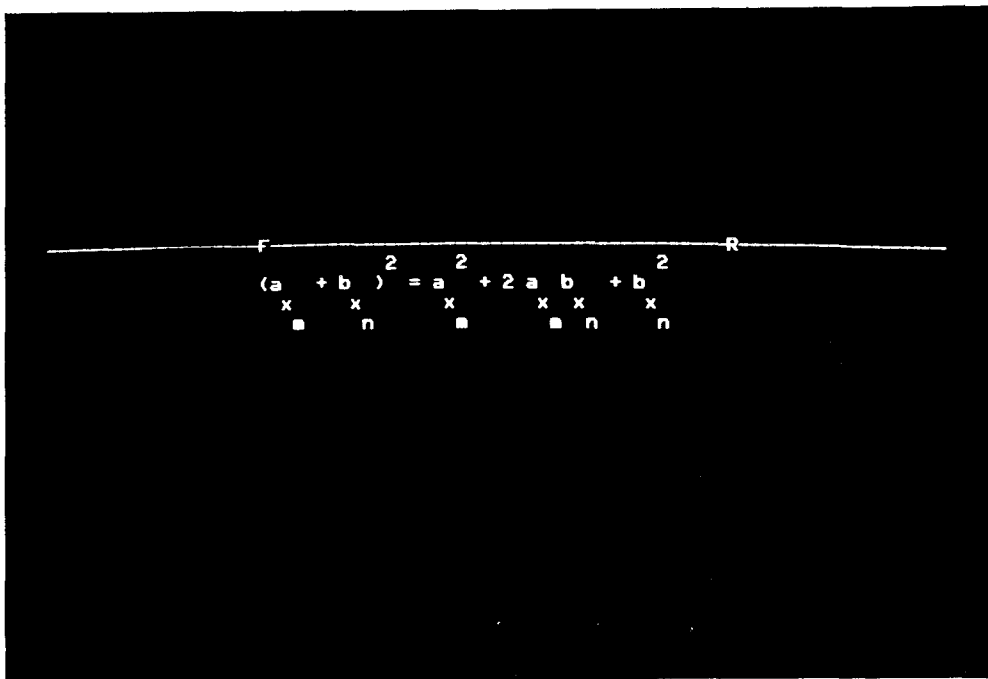
4. Type the line with the superscripts (the number 2 three times) directly beneath your previous lines and press the RETURN key. Follow the spacing on the screen. You should now have the following:



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Figure 9-6 Typing an Example Equation: Step 4

5. Now cut out the bottom line (with the 2's) and paste it in above the main line to complete the equation:

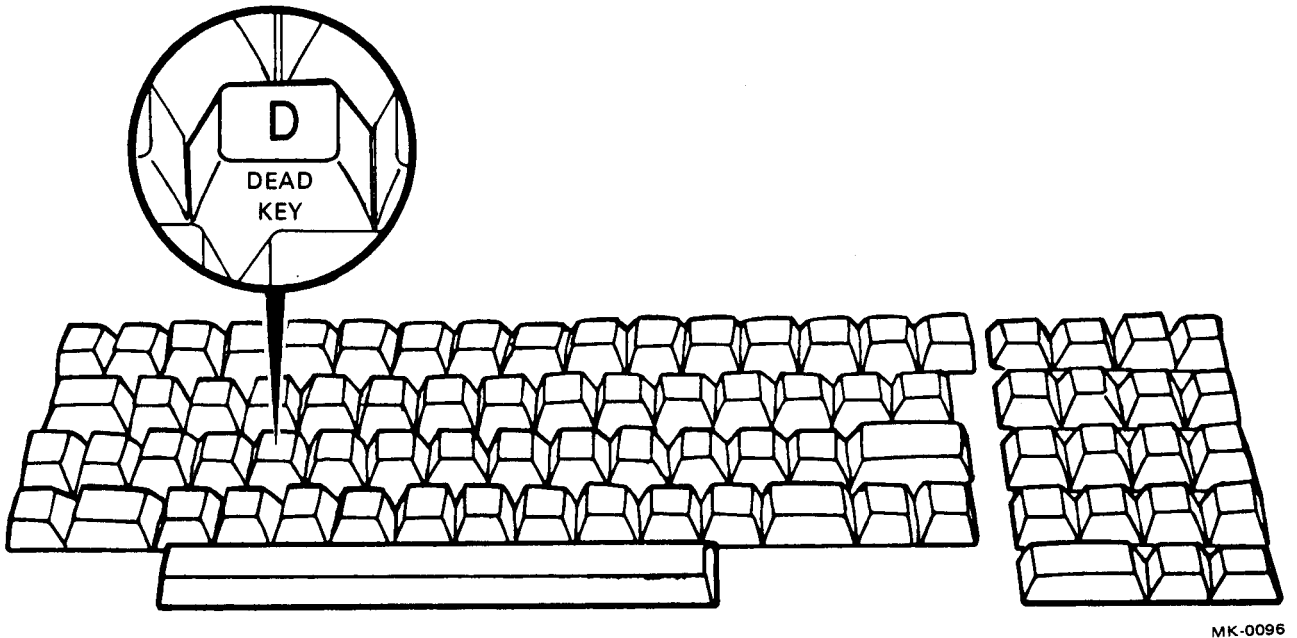


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Figure 9-7 Typing an Example Equation:
Final Results

9.2 COMPOSITE CHARACTERS

A composite character is a character printed by striking two or more characters on top of one another (overstruck). Use the gold and the DEAD keys to produce a composite character.



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Figure 9-8 Main Keyboard DEAD Key

It is necessary to have a special key to produce a composite character because you cannot overstrike on the word processing system as you do on an ordinary typewriter (all the characters you type are automatically inserted in a separate position).

To form a composite character, follow these steps:

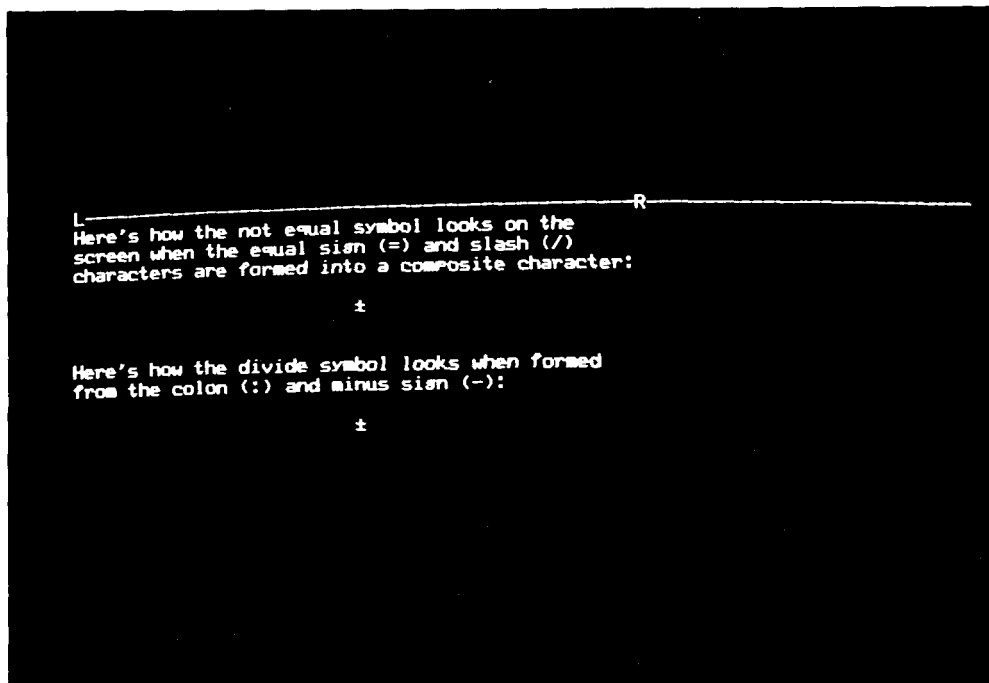
1. Type the first two characters.
2. Move the cursor backwards one character.
3. Press the gold and the DEAD keys. The special symbol \pm is displayed on the screen

in place of the two or more overstruck characters.

To add another character to the same group, type the next character and repeat steps 2 - 3.

To restore a composite character to its individual characters, position the cursor under the \pm and press the gold and the DEAD keys. The two or more individual characters will be displayed on the screen with the cursor positioned under the second. (Even if the composite character was composed of several, the cursor will still be under the second.)

A maximum of 100 characters may be formed into composite characters on the screen at the same time.



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Figure 9-9 Example of Typing Composite Characters

CHAPTER 10 REUSABLE TEXT: LIBRARY DOCUMENTS

The word processing library document feature allows you to minimize repetitious typing. For example, you might have to type the same words, phrases, or paragraphs many times in a single day – your company’s name and address, names and numbers for different products or projects, or a signature block on a letter (“Yours truly, Joseph G. Greenwood, President”). You might be typing an instruction manual, for example, and need to use the term “the drill pressing system” many times. Or you might work in a law office where you use different combinations of standard or “canned” paragraphs to type a contract or will.

With a typewriter you’ve got to retype the words, phrases, or paragraphs each time they are used. With the word processing system you can type something just once, store it in a library document, and then use it as many times as needed.

There are two kinds of word processing library documents.

1. **Abbreviation.** This document is for saving words or phrases which you use frequently or whose spelling is difficult to remember. For example, if you work in a dental office, you might regularly need to use the following phrases:

Panoramic, maxilla and mandible

Recalcification (CaOH, temporary restoration)

Alveoplasty with ridge extension

Apicoectomy including apical curettage

2. **Paragraph.** This library document is similar to the abbreviation library except that it should be used for saving paragraphs or larger pieces of text.

With the word processing library document feature, all you do is give each phrase or paragraph a name and type it just once. For example, you might give “panoramic, maxilla and mandible” the abbreviation name “pn.” Then, whenever you are typing a dental invoice or report, just press two keys and type the abbreviation or paragraph name. The word processing system will automatically insert all the text that corresponds to the name.

You can also reuse the same piece of text by cutting and pasting, or typing some text once and then inserting it one or more times at different places in a document. Cutting and pasting is intended for use when changing a document during one particular typing session whereas library documents are intended for permanent storage of reusable text. See Section 5.4.4 for details on cutting and pasting.

You can also avoid extra typing by inserting a copy of a document at any point in the document you’re currently working on by means of the gold GET DOCMT key. See Section 5.1.3 for details.

10.1 CREATING A LIBRARY ENTRY

Abbreviation and paragraph library entries are created by bringing a copy of the library document to the screen for editing, typing the entry’s name and its associated words or paragraphs, and then filing the library document.

10.1.1 Creating an Abbreviation Entry

To make an abbreviation entry, bring a copy of document number two on the system diskette to the screen for editing. This is the document automatically used by the word processing system for abbreviations (see Section 10.5 for how to use a different abbreviation library document).

Here is an example of the format to use for typing an abbreviation entry:

<<wp>>the word processing system<<>>

① ② ③ ④ ⑤ ⑥

The following explains each item in the abbreviation entry format:

- ① << must be used in front of the abbreviation name.
- ② The abbreviation name. This must contain exactly two characters (letters, numbers, punctuation marks, or special characters). The name must be unique, that is it should not be the same as another entry in the abbreviation library document (if you have two entries with the same name, the system will always find the first one when you use the abbreviation).
- ③ >> must be used after the name.
- ④ The word(s) you want saved for reuse. This may be tabbed, centered, and include hard returns or new rulers. Do not put spaces or hard returns between an abbreviation entry and the next << because such spaces or returns are considered part of the abbreviation itself (when you use it, you may get more than intended).
- ⑤,⑥ <<>> followed by a hard return may be used to mark the end of the abbreviation. Though these are not required, their use enables you to start each abbreviation on a separate line. Here is an example of two abbreviation entries:

```
<<wp>>the word processing system<<>>  
<<ad>>the abbreviation library document<<>>
```

If you do not place the <<>> characters and a hard return at the end of an abbreviation, you must start the next one on the same line. Here is

how the above abbreviation entries would appear if the <<>> and hard return were omitted:

```
<<wp>>the word processing system<<ab>>the  
abbreviation library document
```

10.1.2 Creating a Paragraph Entry

To make an entry in the paragraph library document, follow the format for making an abbreviation entry with these exceptions.

1. The paragraph library document automatically used by the word processing system is

number three (the standard abbreviation document is two) on your system diskette.

2. A paragraph entry name may contain between one and 16 characters (an abbreviation name must contain two).

Here is an example of two paragraph entries:

```
<<CLASS I>>
```

```
DIAGNOSIS: CLASS I, NEGATIVE FOR NEOPLASTIC CELLS
```

```
Present are endocervical cells with enlarged nuclei and a coarsely  
granular chromatin pattern and acute inflammatory exudate of poly-  
morphonuclear leukocytes related to trichomonas and fungus organ-  
isms present. <<>>
```

```
<<CLASS II>>
```

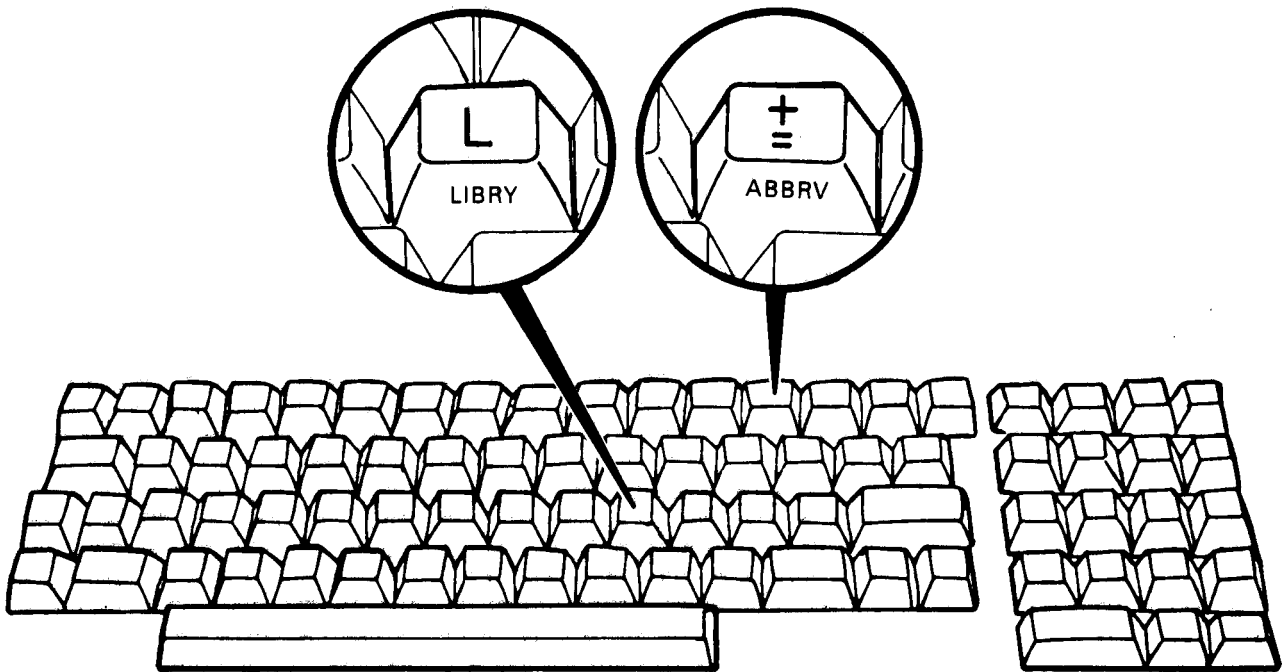
```
DIAGNOSIS: CLASS II, NEGATIVE FOR NEOPLASTIC CELLS
```

```
Present are squamous cells with enlarged reactive nuclei and an  
acute inflammatory exudate of polymorphonuclear leukocytes related  
to fungus organisms present. No endocervical cells are seen.  
<<>>
```

10.2 USING AN ABBREVIATION OR PARAGRAPH ENTRY

The gold and the ABBRV keys are used for in-

serting an abbreviation into a document while the gold and the LIBRY keys are used for inserting a paragraph entry.



MK-0097

Figure 10-1 Main Keyboard LIBRY and ABBRV Keys

To use an abbreviation or paragraph entry, position the cursor where you want to insert the abbreviation or paragraph entry. Then do the following:

1. **For an abbreviation entry, press the gold and the ABBRV keys and type the abbreviation name.** (It is not displayed on the screen.) The contents of the abbreviation will be inserted into your document, and the cursor will be positioned immediately after the last character inserted. If you type a name that doesn't exist, the terminal will buzz. When

this happens, press the gold and the ABBRV keys once again to try a different abbreviation name.

2. **For a paragraph entry, press the gold and the LIBRY keys.** The screen displays the following:

ENTER NAME:

Now type the paragraph name and press the RETURN key. After the contents of the paragraph entry are inserted into your

document, the cursor will be positioned immediately after the last character inserted. If you type a name that doesn't exist, the screen will display the following message:

NOT FOUND - REENTER:

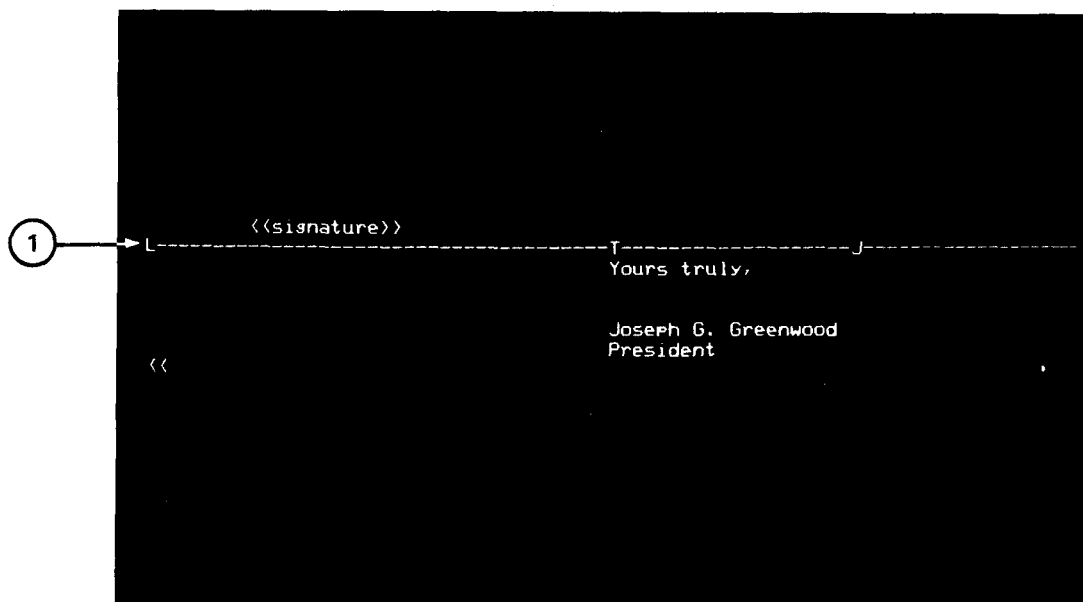
Now type another name. If you can't remember the correct name, press the RETURN key to continue typing or editing your document.

If you create many abbreviation or paragraph entries, it may become difficult to remember the

exact name of each. For this reason, it's generally a good idea to keep a printed copy of the library document handy for reference.

10.3 INCLUDING A RULER IN AN ABBREVIATION OR PARAGRAPH ENTRY

When the contents of an abbreviation or paragraph entry are inserted into a document, they are formatted according to the ruler in effect at the insertion point. However, it is possible to specify a ruler along with an abbreviation or paragraph entry and have that ruler take effect when the entry is used. Here is an example of the format to follow:



① PUT RULER HERE, AFTER ENTRY NAME

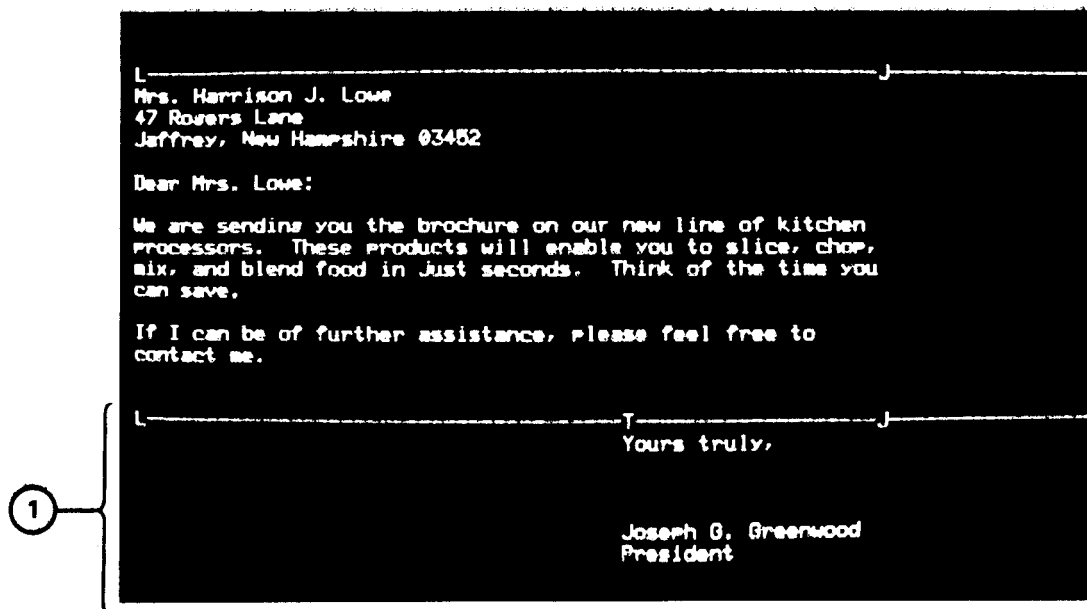
8920-4R3-A0108

Figure 10-2 Example of Inserting Ruler in Abbreviation Library Entry

In order to specify a ruler with an abbreviation or paragraph entry and have that ruler take effect when the entry is used, put the ruler immediately AFTER the >> characters that end the entry's name.

Here is what happens when the above abbreviation is inserted into a document:

Notice that the abbreviation's ruler is retained when the abbreviation is inserted into the letter.



① TEXT PLUS RULER INSERTED INTO DOCUMENT

9113-9R3-A0105

Figure 10-3 Example of Text After Abbreviation
Library Entry Which Includes Ruler Is Inserted

10.4 QUALIFICATIONS

Abbreviation and paragraph documents are subject to the following qualifications.

1. **Name spelling.** If you spell an abbreviation or paragraph name with upper case letters in the library document, you can use it by typing either lower or upper case letters.

However, if you spell it with lower case letters, you can use it only by typing lower case.

For example, suppose you have the following entries in your abbreviation library document:

<<PN>>panoramic, maxilla and mandible<<>>

<<al>>alveoplasty with ridge extension<<>>

To have the words “panoramic, maxilla and mandible” inserted in a document, you can type either “pn” or “PN.” You can type only “al” to have the words “alveoplasty with ridge extension” inserted in a document.

2. **Organization.** When you type an abbreviation or paragraph name, the word processing system searches the entire library document for a match. You can speed up processing by placing frequently-used names near the top of the document. Also, if you work on different projects for which each has its own terminology, create separate abbreviation or paragraph documents for each project (see Section 10.5 for how to create your own abbreviation and paragraph library documents).
3. **Editing.** You can easily inspect and edit an abbreviation library document by pressing the mini keyboard <> key (bottom right). Pressing this key positions the cursor after a right angle bracket (>) character.

10.5 NONSTANDARD ABBREVIATION AND PARAGRAPH DOCUMENTS

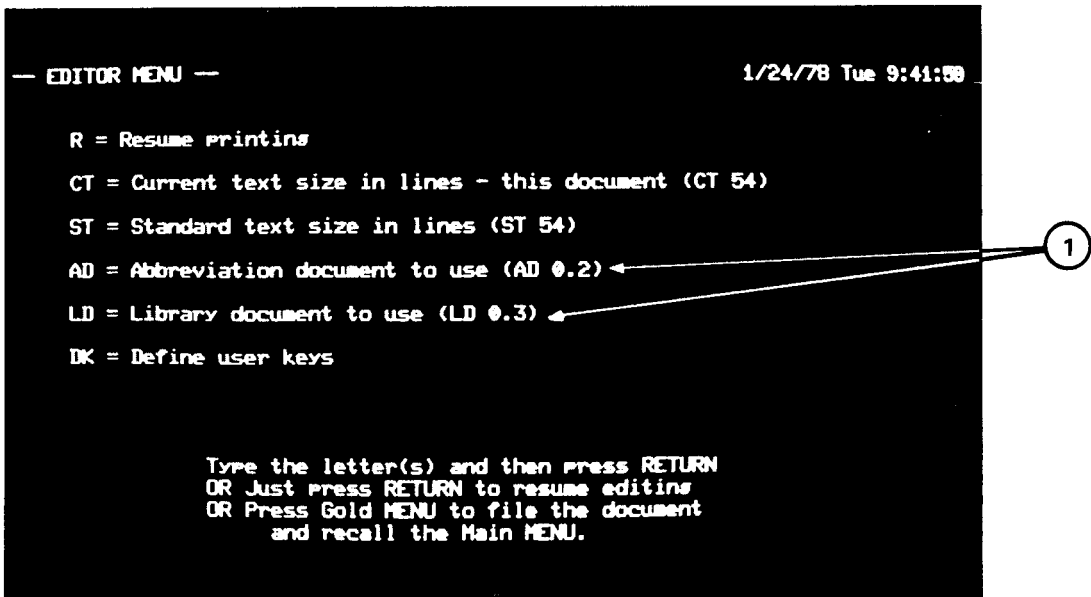
Unless you specify otherwise, the word processing system uses documents two and three on the system diskette for abbreviation and paragraph library documents respectively. There are situa-

tions where it may be more convenient for you to create additional abbreviation and paragraph documents or to use other, nonstandard ones. For example, if you work on several different projects and each has its own terminology, you might want to maintain one abbreviation document for each separate project. Or you might want to maintain a separate paragraph document for each task you assemble from paragraphs, such as having one paragraph document for wills, another for contracts, and a third for invoices.

Another reason for specifying nonstandard abbreviation or paragraph documents is to use the same document diskette on different terminals or by different typists (who all have their own system diskettes with possibly different abbreviation and paragraph documents). Storing the abbreviation and paragraph documents on your document diskette instead of on your system diskette allows you to use the document diskette with any system diskette.

Create a nonstandard abbreviation paragraph document the same as you would any other document (see Section 3.1). Follow the format described in Section 10.1 for making entries.

You can use a nonstandard abbreviation or paragraph document when typing or editing any document by following this procedure:



① STANDARD ABBREVIATION AND PARAGRAPH LIBRARY DOCUMENTS

9113-11R3-A0106

Figure 10-4 Editor Menu Showing Standard Abbreviation and Paragraph Library Documents

1. Press the gold and the MENU keys. The word processing Editor Menu will be displayed on the screen.
2. Type the letters AD to specify an abbreviation document or LD to specify a paragraph

document, a space, identify your library document, and press the RETURN key. The screen display will now show the diskette drive number and new document number (not the name) of the abbreviation or paragraph library document.

```
— EDITOR MENU —                               1/24/78 Tue 9:42:48

R = Resume printing
CT = Current text size in lines - this document (CT 54)
ST = Standard text size in lines (ST 54)
AD = Abbreviation document to use (AD 1.7) ←
LD = Library document to use (LD 1.9) ←
DK = Define user keys

Type the letter(s) and then press RETURN
OR Just press RETURN to resume editing
OR Press Gold MENU to file the document
and recall the Main MENU.
```

① USER-SUPPLIED ABBREVIATION AND PARAGRAPH LIBRARY DOCUMENTS

9113-13R3-A0107

Figure 10-5 Example of Editor Menu Showing User-Supplied Abbreviation and Paragraph Library Documents

You can type either a document name or its number when identifying the new library document. You can also specify the diskette drive where the document is stored. Refer to Appendix C-1 for details on specifying different drive numbers.

3. Press the RETURN key. The document you were working on is again displayed on the screen with the cursor in the same position as previously.

Once you specify a nonstandard abbreviation or paragraph library document, the system auto-

matically checks that document whenever you press the gold and the ABBRV or the gold and the LIBRY keys.

When you specify a nonstandard abbreviation or paragraph document, it takes effect in the document you are currently using plus in any new documents you create with the same system diskette. If you do not wish to use the nonstandard abbreviation or paragraph document with a newly-created document, you must repeat the procedure described above and specify the desired abbreviation or paragraph document.

CHAPTER 11 HYPHENATION

Hyphenation allows you to improve the visual appearance of your document. Some of the features of hyphenating with the word processing system are:

1. **You can use a “breaking” hyphen in a compound word** to improve the appearance of your document. When a word with this kind of hyphen crosses the right margin, the word processing system will attempt to split the word at the hyphen. For words that must not be split across two lines, such as the telephone number 1-617-897-6000, you can always use a nonbreaking hyphen. See Section 11.1 for details.
 2. **You can inspect your document for awkward line endings** – lines that end with a lot of unused space followed by a multisyllable word at the beginning of the next line. You can then “push” some of the characters up to the preceding line to fill up some of the space. If you push too many characters,
- you can reverse the process and “pull” some back down. See Section 11.2 for details.
3. **You can also specify an “invisible” hyphen** in addition to the visible type. This is a hyphen which may be invisible to you (on the screen or in your printed document) but which is visible to the word processing system. Whenever a word containing such a hyphen crosses the right margin, the word processing system will automatically attempt to break it at the invisible hyphenation point. See Section 11.3 for details.
 4. **You can specify a hyphenation zone**, the maximum number of unused spaces at the end of a line that you will accept in your printed document. If a line contains more than this number of spaces, the system will automatically notify you so you can either place some additional characters there or decide to tolerate it. See Section 11.5 for details.

11.1 COMPOUND WORDS

You can form a compound word by joining two or more separate words with a hyphen. The main keyboard hyphen key is used for forming compound words.

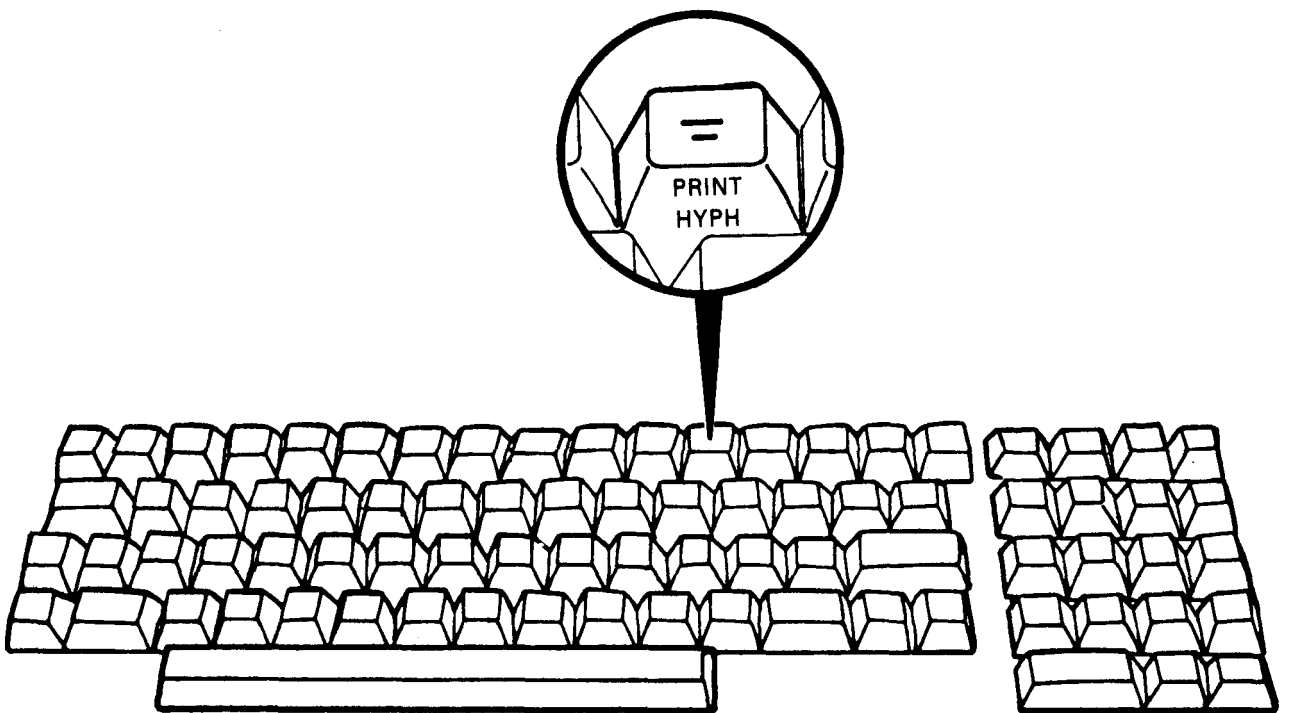
There are two kinds of hyphens that you can type on the word processing system.

1. **Nonbreaking.** Use this kind of hyphen in compound words that must appear entirely on the same line. Generally, such words are

people's names, telephone numbers, acronyms, or names of products or projects, as in the following examples:

Mr. Colin Moore-Batty
617-899-9000
DECsystem-10

If a compound word joined with a non-breaking hyphen does not fit at the end of a line, the entire word is placed at the beginning of the next line.



MK-0099

Figure 11-1 Main Keyboard PRINT HYPH Key

To produce a nonbreaking hyphen, press the main keyboard hyphen key.

2. **Breaking.** Use this kind of hyphen in compound words which may be split at the end of a line. For example:

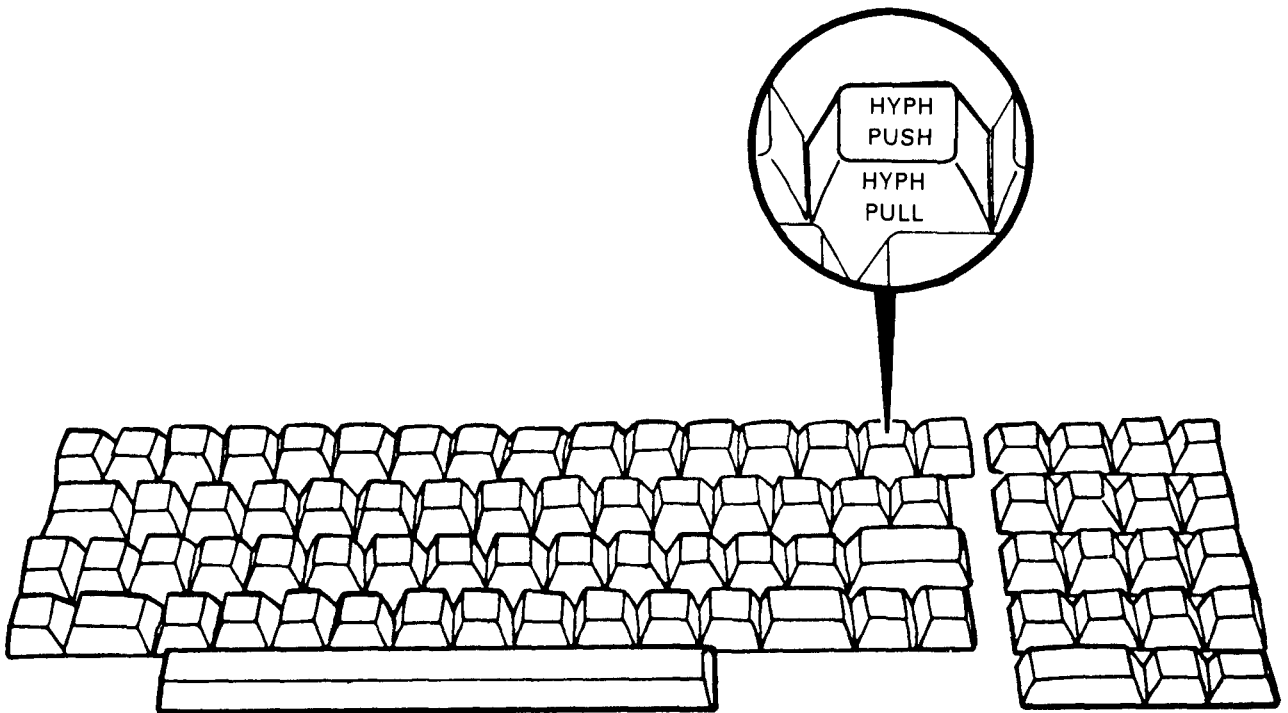
There was a two-thirds majority on the current subject of right-to-life.

If a compound word joined with a breaking hyphen does not entirely fit at the end of a line, the system may possibly break it at the hyphen.

To produce a breaking hyphen, press the gold and the hyphen keys.

11.2 HYPHENATING TYPED TEXT BY PUSHING AND PULLING

You can hyphenate words to produce a neat-looking right margin after you've finished typing by using the HYPH PUSH and gold HYPH PULL keys.



MK-0100

Figure 11-2 Main Keyboard HYPH PUSH and HYPH PULL Keys

After you've typed some text, inspect the line endings on the screen. If one line is short (top line) and the next (bottom line) starts with a long word, you can hyphenate the long word by pushing part of it up to the short line.

1. **Position the cursor** anywhere on the bottom line.
2. **Press the HYPH PUSH key.** The first character from the bottom line is moved up to the top, and a hyphen mark is automatically inserted after it.
3. **Continue to press the HYPH PUSH key** until you are satisfied with the hyphenation just produced. Each time you press this

key, one character moves up to the top line to the left of the hyphen mark. If you push more characters than can fit inside the right margin, the entire word is automatically brought back down to the bottom line.

If you push too many characters to the top line, press the gold and the HYPH PULL keys. This action moves a single character at a time back to the line with the cursor.

4. **Press the PARA key.** This reformats the remainder of your paragraph to fit the right margin. Now you can perform other typing or editing.

For example, here is how some text looked before it was hyphenated:

Press the HYPH PUSH key. The first character from the bottom line is moved up to the top, and a hyphen mark is automatically inserted after it. If you like the results, proceed to another line.

Notice how uneven the lines are. The first is short and is followed by a multisyllable word ("character") at the beginning of the second. To

make the first line look better, the first syllable of the word "character" should be pushed up to give the following:

Press the HYPH PUSH key. The first character from the bottom line moves up to the top, and a hyphen mark is automatically inserted after it. If you like the results, proceed to another line.

Notice that now the third line is short and is followed by a multisyllable word (“automatically”) at the beginning of the next. Therefore, some syl-

lables of “automatically” should be pushed up. As a result, the paragraph looks good so no further hyphenation is performed.

Press the HYPH PUSH key. This first character from the bottom line moves up to the top, and a hyphen mark is automatically inserted after it. If you like the results, proceed to another line.

When you hyphenate a word by pushing or pulling, the word processing system “remembers” your hyphen as an “invisible” hyphen. This means that, if you change your text so that the word no longer crosses the right margin, the hyphen will disappear. If the word ever crosses the

right margin again, the hyphen will automatically reappear where you originally specified.

To remove a hyphen inserted by pushing or pulling, delete the character *in front of the hyphen*. This action removes both the character and the hyphen.

11.3 USING INVISIBLE HYPHENS

You can put an “invisible” hyphen into a word with the gold PRINT HYPH and the SHIFT keys.

This hyphen is invisible to you because it is not displayed on the screen. However, it is not invisible to the word processing system. Whenever a word containing an invisible hyphen crosses the right margin, the system will automatically try to hyphenate it. An invisible hyphen has no effect if the word is not located at the end of a line.

To put an invisible hyphen into a word, follow these steps:

1. Position the cursor under the character that is to follow the hyphen.
2. Press the gold, **hold down** the SHIFT, and press the PRINT HYPH keys.

Invisible hyphens can be used with abbreviation and paragraph library entries (see Chapter 10). If you put invisible hyphens in these entries, not only will you avoid unnecessary typing but you will also have your text hyphenated if a word in the inserted abbreviation or paragraph crosses the right margin.

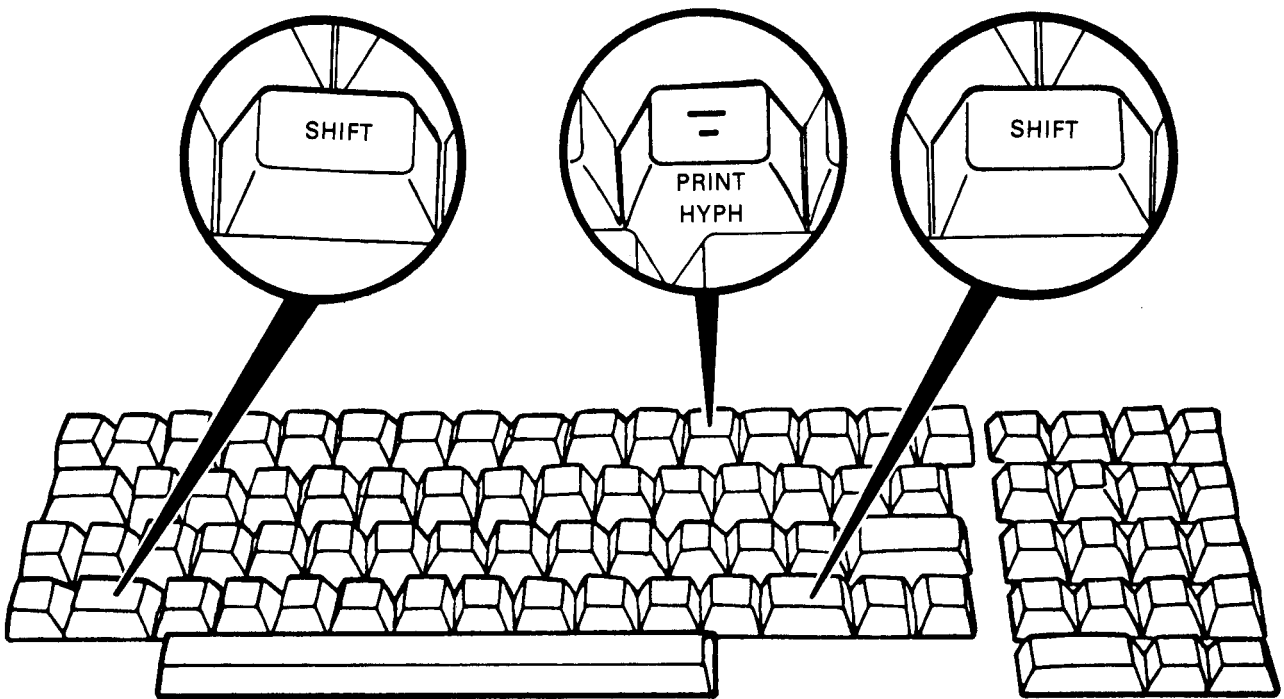


Figure 11-3 Main Keyboard SHIFT and PRINT HYPH Keys

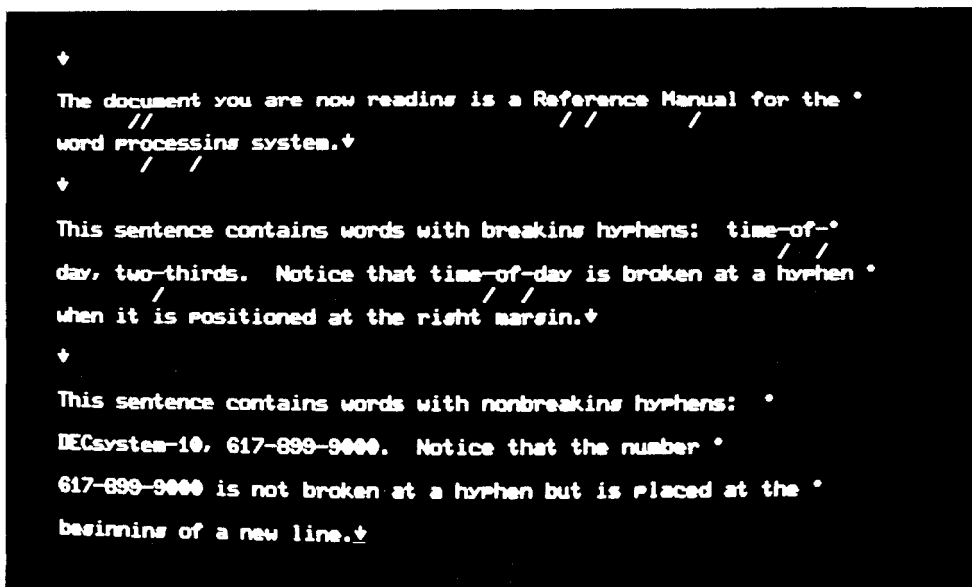
MK-0098

11.4 EXAMINING TEXT FOR BREAKING AND INVISIBLE HYPHENS

To determine whether your text contains any invisible hyphens, you must view it (see Appendix D). You must also view text to determine whether a visible hyphen is the breaking or non-breaking kind. A / mark appears under a breaking hyphen; nothing appears under a

nonbreaking hyphen. A / mark also indicates an invisible hyphen; the / mark appears under the character preceding the one where you pressed the gold, PRINT HYPH, and SHIFT keys. In addition, a / mark appears under the last character of a word that was hyphenated.

Here is an example of hyphens in viewed text:



9113-17R3-A0110

Figure 11-4 Example of Viewing Text for Breaking, Nonbreaking, and Invisible Hyphens

11.5 IMPROVING RIGHT MARGIN APPEARANCE BY HYPHENATION ZONE

You can improve the appearance of your right margin by specifying a *hyphenation zone*. This is the maximum number of typing positions in front of the right margin that may remain unused on a line.

A hyphenation zone takes effect by making the system buzz at you whenever a line ends with no characters in the hyphenation zone. The buzzing is to alert you to take action: either hyphenate by pushing up some characters from the next line or decide to accept the line with all its unused space.

For example, if you type the following lines without a hyphenation zone, you might not notice that the first line ends with a lot of space and

is followed with a large word (“synthesization”) on the next line. If you use a hyphenation zone, the word processing system will buzz when you type “synthesization.”

**The subject of this report is the
synthesization of the optimization and
maximization principles.**

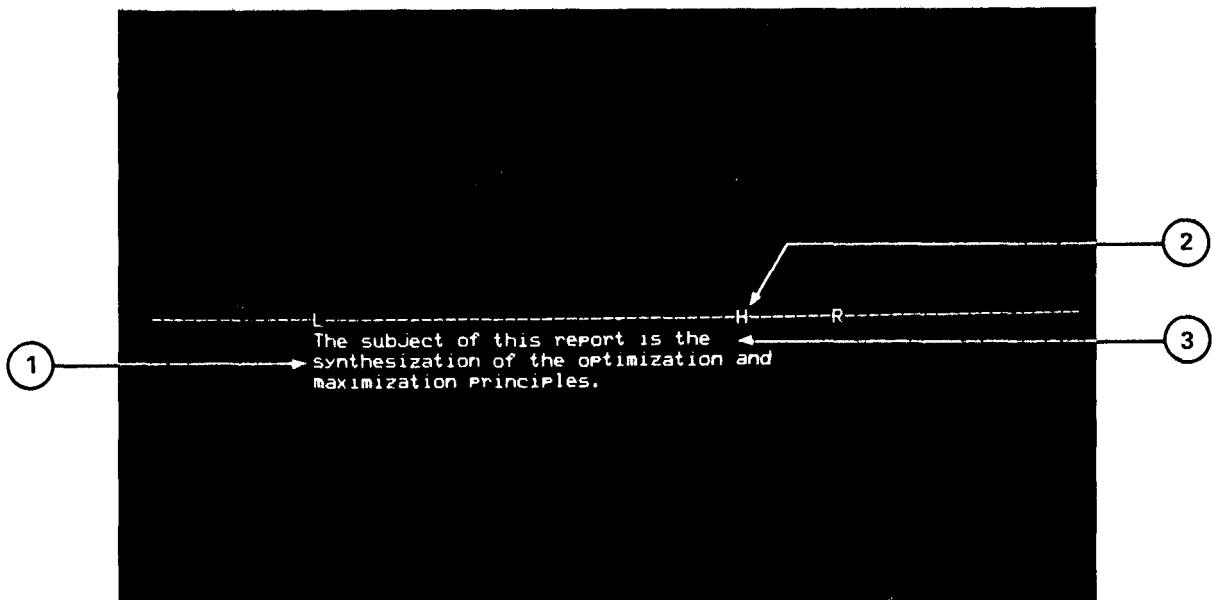
If you use a hyphenation zone, the system will buzz when you type or edit a document (see Section 11.5.1) or when you paginate (see Section 11.5.2).

11.5.1 Using a Hyphenation Zone When Typing or Editing

To use a hyphenation zone when typing or editing a document, follow these steps:

1. Put the letter **H** in your ruler(s) where the hyphenation zone is to begin (see Section 6.1.2 for making ruler settings). Generally, it is most effective to mark the zone between five and ten characters inside the right margin.

2. Type or edit your text. If the system buzzes, the last line you used ends with no characters in the hyphenation zone. If desired, push up some characters from the next line (see Section 11.2). You may ignore the buzzing and accept the line as it appears.



- ① LARGE WORD AT START OF LINE THAT COULD BE HYPHENATED
- ② HYPHENATION ZONE IN RULER
- ③ LINE CONTAINS ALL BLANKS IN ZONE
RESULT: SYSTEM BUZZES

8920-12R3-A0109

Figure 11-5 Example of Using a Hyphenation Zone

11.5.2 Using a Hyphenation Zone When Paginating

To use a hyphenation zone when paginating a document, follow these steps:

1. **Put the letter H in your ruler(s)** where the hyphenation zone is to begin (see Section 6.1.2 for making ruler settings). Generally, it is most effective to mark the zone between five and ten characters inside the right margin.
2. **Press the gold and mini keyboard PAGE keys** to display the end of a page (see Section 12.3). The system will attempt to count down a preassigned number of lines and mark the bottom of the page. If there's a "short" line, one that ends with no characters in the hyphenation zone, the system

buzzes and stops counting. (The bottom-most line on the screen will be the one following the short line and will contain the cursor.)

3. **Inspect the line ending.** If the screen displays "---PAGE MARKER---" the system was able to mark the end of the page. Repeat steps 2 and 3. If the system buzzed, the second from last line on the screen ends with no characters in the hyphenation zone. If desired, push up some characters from the next line (see Section 11.2) and repeat steps 2 and 3.

Continue repeating steps 2 and 3 until pagination is complete.

CHAPTER 12 PAGINATION

Pagination means determining where to end a printed page and start a new one. There are three different ways of paginating a document with the word processing system. This chapter explains when to use each:

1. **When you want the system to automatically end each page as it prints your document.** The system will print a preassigned, or standard, number of lines on a page and then automatically start a new page. It will repeat this process until it comes to the end of the document. See Section 12.1 for details.
2. **When you have text that absolutely must start on a new page.** For example, if your document contains a table, you can prevent it from being broken in the middle by telling the system to always print the table on a new page. This is accomplished by inserting a NEW PAGE mark in your document. See Section 12.2 for details.

3. **When you want to inspect each page ending before the document is printed** so you can change any you don't like. The system will count down a preassigned number of lines, insert a PAGE MARKER in your document, and display the page ending for your inspection. See Section 12.3 for details.

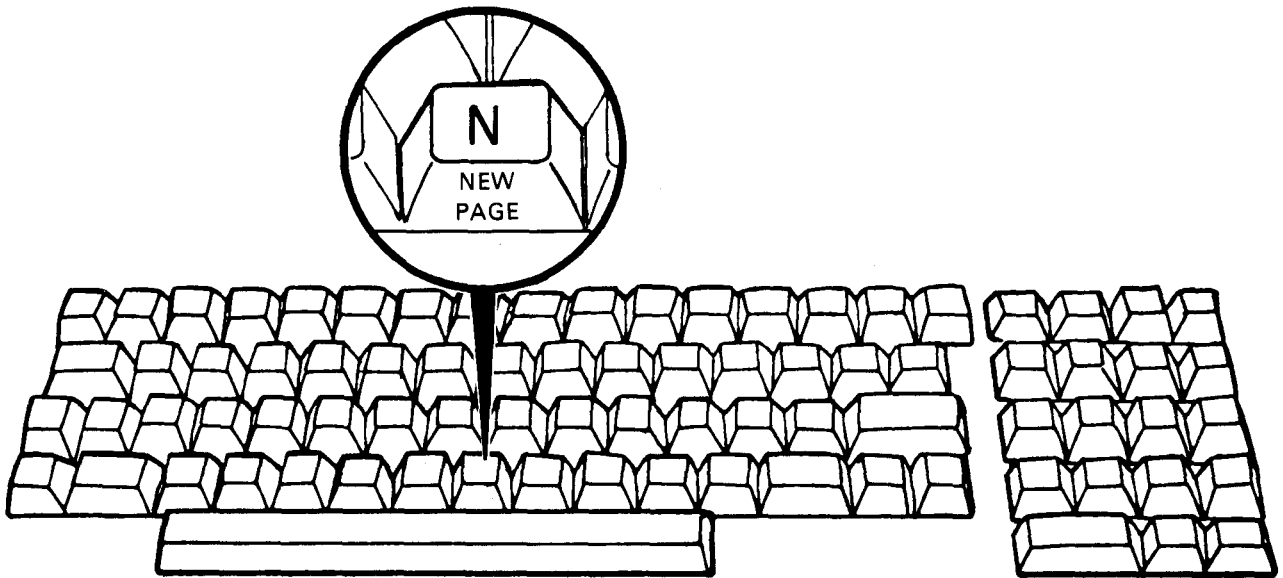
12.1 AUTOMATIC PAGINATION

To have the word processing system automatically paginate a document while printing, set the value of Print Menu setting AP to YES. The system will determine where to end each page and start the next. Whenever the document contains a NEW PAGE mark (see Section 12.2), the system will automatically advance to the top of a new page.

The number of lines printed per page is equal to the total number of lines per page (Print Menu setting PS) less the number of lines in the top margin (Print Menu setting TM) less the number of lines in the bottom margin (Print Menu setting BM).

12.2 FORCING PAGE ENDINGS

You can force the system to always print certain text (such as each new chapter, a figure, or a table) at the start of a new page with the gold and NEW PAGE keys.



MK-0101

Figure 12-1 Main Keyboard NEW PAGE Key

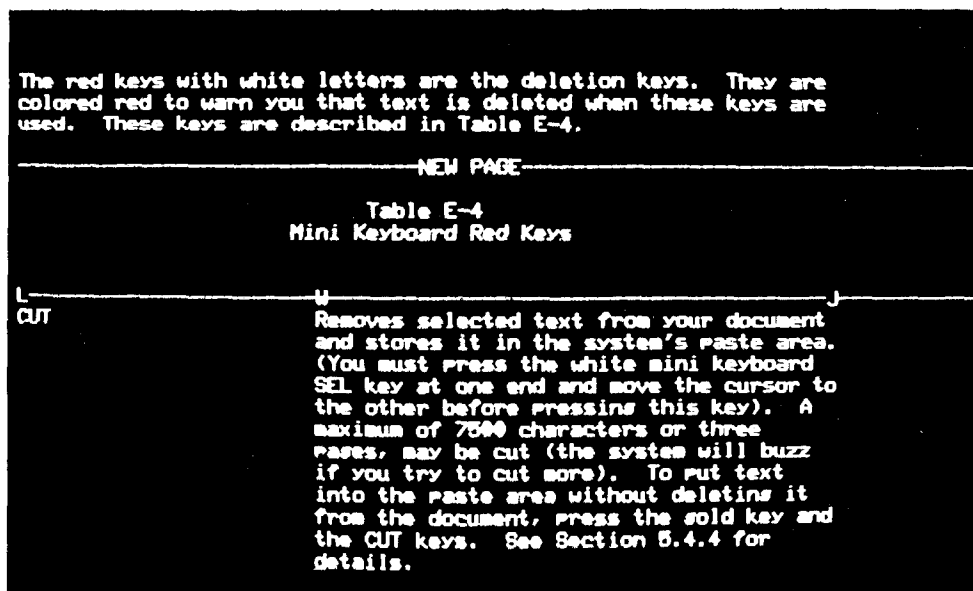
To force page breaks, follow these steps:

1. **Position the cursor** where a new page is to start.
2. **Press the gold and the NEW PAGE keys.**
This action inserts a NEW PAGE mark (a

line of dashes with the words NEW PAGE in the center) into your document.

Repeat steps 1 and 2 for each place in your document that must always be printed on a new page.

Here is an example of a document that contains NEW PAGE marks:



9113-19R3-A0115

Figure 12-2 Example of Using a NEW PAGE Mark

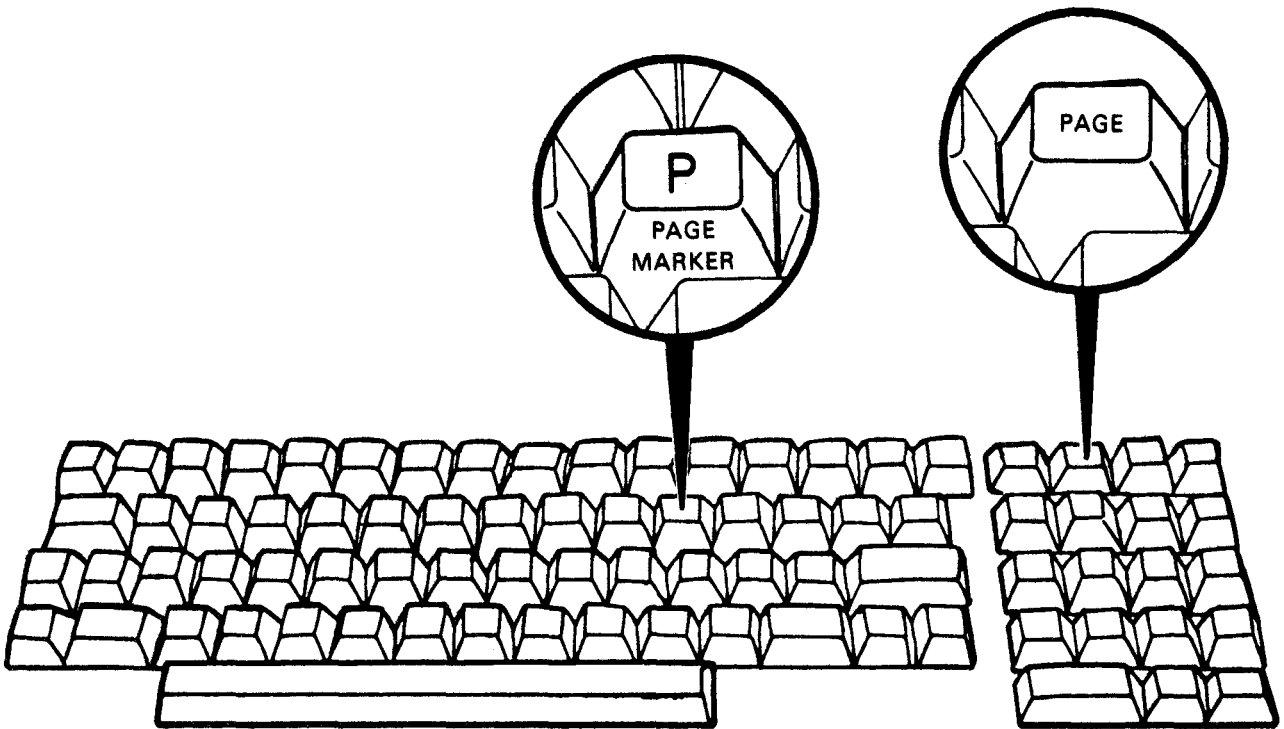
To remove a NEW PAGE mark, use either the RUB CHAR OUT or DEL CHAR key. (Even though a NEW PAGE mark occupies a full screen line, it is nevertheless only a single character.)

12.3 DISPLAYING AND MODIFYING PAGE ENDINGS

You can have the word processing system show you where each page would end if you were to paginate automatically (as it would if you set the value of Print Menu setting AP to YES). The system will insert a PAGE MARKER into your document (displayed on the screen as a line of dashes with the words PAGE MARKER in the

center) to show you where each page will end when printed. If you don't like this page ending, you can change it.

Use the mini keyboard PAGE key to display page endings that the system determines. Use the gold and the PAGE MARKER keys to modify page endings.



MK-0102

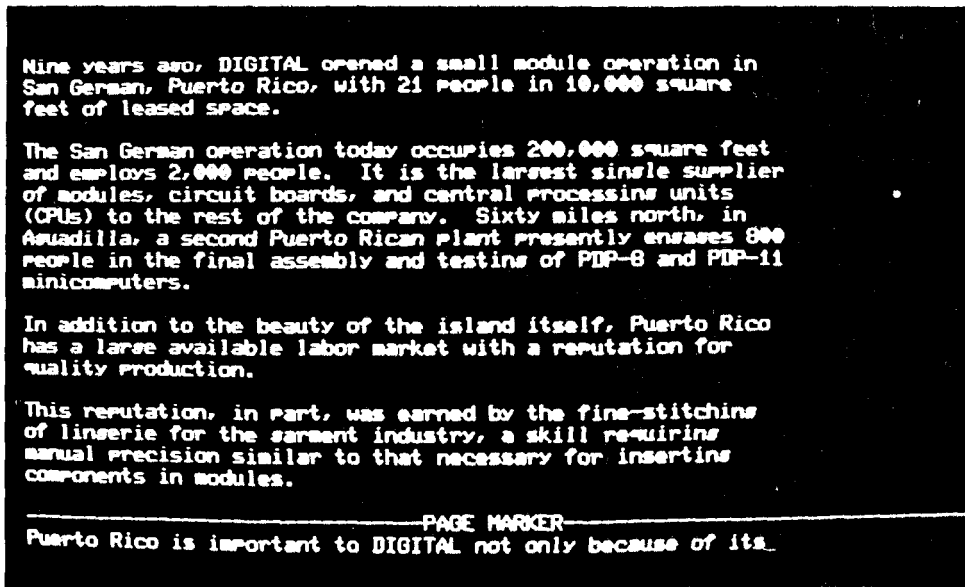
Figure 12-3 Main Keyboard PAGE MARKER Key and Mini Keyboard PAGE Key

To display page endings and modify them if desired, follow these steps:

1. **Position the cursor** at the top of your document.
2. **Press the gold and the mini keyboard PAGE keys.** The system will count down a pre-assigned number of lines (determined by

the setting CT in the document's Editor Menu), insert a **PAGE MARKER** into the document, and position the cursor under the first character of the next line. Once the system starts counting lines, you cannot stop it.

Here is an example of a **PAGE MARKER** inserted by the system:



9113-21R3-A0114

Figure 12-4 Example of a **PAGE MARKER**
Inserted by the Word
Processing System

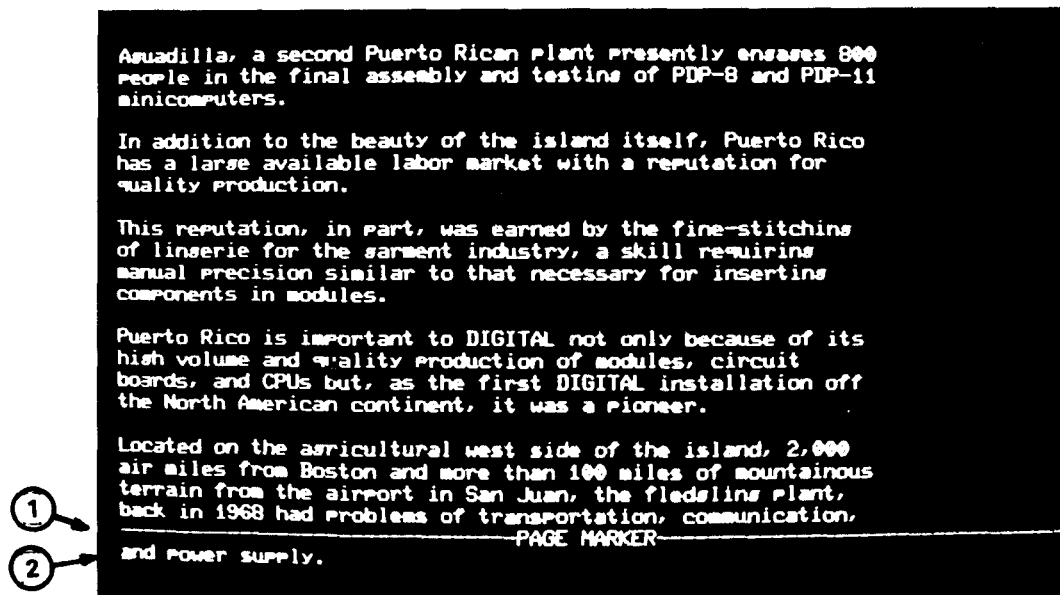
The system will stop and not insert a **PAGE MARKER** if any of the following conditions occurs:

- There is a **NEWPAGE** mark. The cursor will be located under the first character of the next line. To proceed with pagination, repeat step 2.
- There is a "short" line, one that ends with too much space when a hyphenation zone (see Section 11.5) is in effect. If this happens, the system will buzz and display the short line on the second from last screen line (the last line contains the cursor). You can either hyphenate by

pushing up some characters (see Section 11.2) or accept the line with its unused space. To proceed with pagination, repeat step 2. (The system may again stop and buzz if you have another short line.)

- The end of the document was reached.

3. **Inspect the page ending.** If you are satisfied with it, repeat step 2. If the page ending is not satisfactory, change it. For example, suppose the system inserts a PAGE MARKER in the following location, thereby giving you one short line at the top of a page:



① PAGE MARKER INSERTED BY WORD PROCESSING SYSTEM

② RESULT: SHORT LINE TO APPEAR ON NEW PAGE

9113-23R3-A0111

Figure 12-5 Example of Page Ending Which Could Be Improved

To change an awkward page ending, move the cursor backwards to a suitable place to end the page and press the gold and the PAGE MARKER keys. This action inserts another PAGE MARKER. (The system

will automatically remove the first PAGE MARKER when you continue pagination.)

4. Repeat steps 2 and 3 until you reach the end of your document.

It is possible to move a PAGE MARKER forward to squeeze a few extra lines on a page. Just remove the PAGE MARKER (if you don't, the document will be printed with an extra page break), move the cursor down the few lines, and press the gold and the mini keyboard PAGE keys. However, be careful when doing this because the additional lines (beyond where the system wanted to end the page) are printed in the bottom margin. Either (or both) of the following undesirable conditions might result.

- If you add more lines to the page than can physically fit there, the printing may extend over the bottom edge of the paper. If you're using continuous-form paper, your printing could extend right over the fold. If you're using single sheets, your printing could appear on the roller (platen) of the printer.
- If you're using a footer (see Chapter 14), the printing will extend into the footer. The footer will then be printed at the bottom of the next page, thereby producing a page almost entirely empty.

When you are ready to print your paginated document, set the value of Print Menu setting AP to NO. If you don't, the system will ignore the page endings you just inserted and will paginate automatically instead. See Section 13.3.1 for details.

12.3.1 Changing PAGE MARKERS

If you add new text to a document that contains PAGE MARKERS, you must repaginate. If you don't, your printed document may extend over the edge of the page. Of course, if you print a document and don't like where the pages end, you can always repaginate it. Just position the cursor at the beginning of the first page to be

repaginated (right after a PAGE MARKER, NEW PAGE, or top of document) and follow steps 2 - 3 in Section 12.3.

If you do not position the cursor at the beginning of a page when you press the gold and PAGE keys, the system will automatically find the beginning for you. However, if your document contains many lines of text without any PAGE MARKERS or NEW PAGE marks, the system may not be able to paginate properly. When this occurs, the system will buzz and no PAGE MARKER will be inserted.

12.3.2 Qualification: Automatic Removal of PAGE MARKERS

If you do any of the following three actions while editing a document, the system will automatically remove PAGE MARKERS.

1. Change a ruler when there is a PAGE MARKER before the next ruler. This PAGE MARKER will be removed.
2. Modify some text when there's a PAGE MARKER before the next hard return. This PAGE MARKER will be removed.
3. Insert a copy of another document (by means of the gold and GET DOCMT keys). All PAGE MARKERS are removed from the inserted document.

12.3.3 Qualification: Word Wrapping

If you insert a PAGE MARKER or NEW PAGE mark in the middle of a paragraph, the line endings are "thrown off" so that existing text extends beyond the right margin. To reformat the text, press the mini keyboard PARA key. This action word wraps the remainder of the paragraph and advances the cursor forward to the next paragraph.

12.4 CHANGING THE NUMBER OF LINES PER PAGE

The system uses the value of Editor Menu setting CT (Current Text size) in determining page endings. Change the value of CT if you want to specify a different number of lines per page for the document you're currently using. You can also specify a number of lines per page for all new documents you create by changing the value of Editor Menu setting ST (Standard Text size).

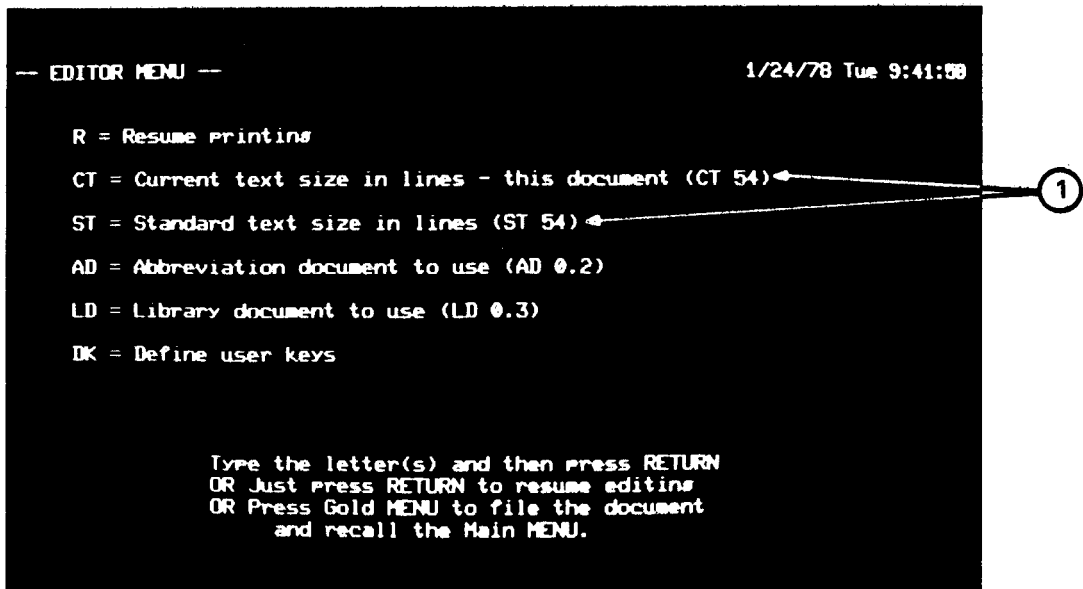
To find out the values of CT and ST in effect and to change them, follow these steps:

1. Press the gold and the MENU keys when you are editing the document. This action displays the Editor Menu. If the values of CT and ST are satisfactory, press the RETURN key to redisplay your document. Here is an example of an Editor Menu:

```
-- EDITOR MENU --                               1/24/78 Tue 9:41:58

R = Resume printing
CT = Current text size in lines - this document (CT 54)
ST = Standard text size in lines (ST 54)
AD = Abbreviation document to use (AD 0.2)
LD = Library document to use (LD 0.3)
DK = Define user keys

Type the letter(s) and then press RETURN
OR Just press RETURN to resume editing
OR Press Gold MENU to file the document
and recall the Main MENU.
```



① SYSTEM-SUPPLIED TEXT SIZES

9113-11R3-A0112

Figure 12-6 Editor Menu Showing System-Supplied Text Sizes

2. Type the letters CT or ST, a space, the new value, and press the RETURN key to change the number of lines of text per page. The number just typed replaces the pre-

vious value of CT or ST on the screen. Now press the RETURN key to redisplay your document. Here is an example of an Editor Menu after changing the value of ST:

```
— EDITOR MENU —                               1/24/78 Tue 9:43:12

R = Resume printing
CT = Current text size in lines - this document (CT 54)
ST = Standard text size in lines (ST 60) ←
AD = Abbreviation document to use (AD 0.2)
LD = Library document to use (LD 0.3)
DK = Define user keys

Type the letter(s) and then press RETURN
OR Just press RETURN to resume editing
OR Press Gold MENU to file the document
and recall the Main MENU.
```

1

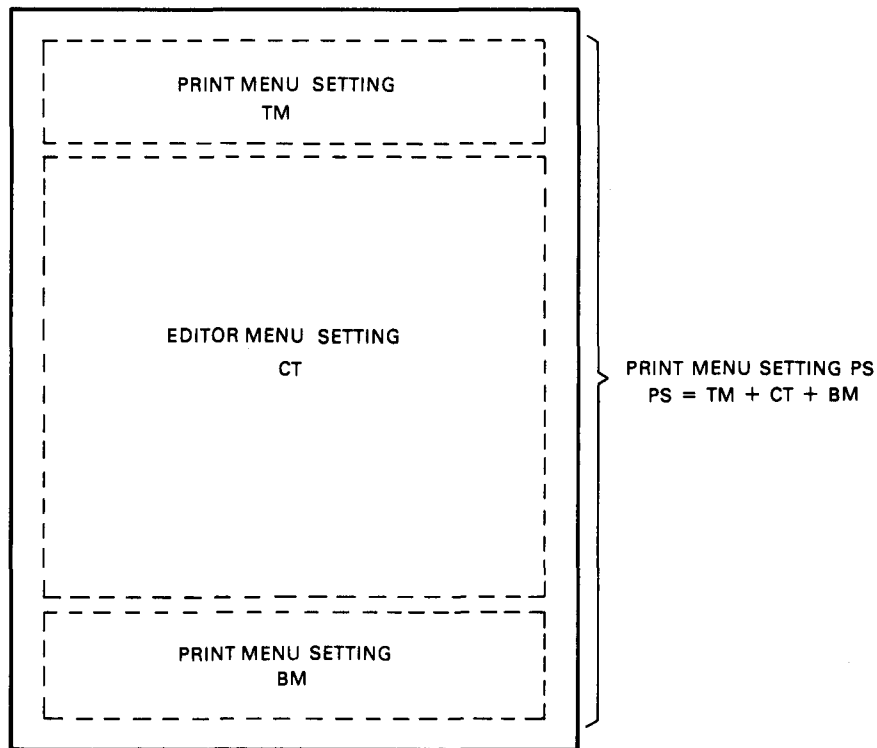
1 USER-SUPPLIED TEXT SIZE

9113-15R3-A0113

Figure 12-7 Editor Menu Showing User-Supplied Text Sizes

3. Repaginate the document (see Section 12.3).
4. Change the value of Print Menu setting PS (page size), TM (top margin), or BM (bottom margin) when you go to print the docu-

ment. See Section 13.3. Such action is necessary because these Print Menu settings must satisfy the following relationship:



MK-0110

Figure 12-8 Relationship of Editor and Print Menu Settings for Page Size

If you change CT in the Editor Menu and do not change PS, TM, or BM, your document will not be printed correctly.

CHAPTER 13 PRINTING A DOCUMENT

Some of the features of printing with the word processing system are:

- **Simultaneous printing and editing.** While a document is being printed, you can create or edit another document (not the same one). This feature enables both you and the system to operate efficiently. You don't waste time waiting for printing.
- **Unattended printer operation.** You can submit as many as eight documents for printing and then leave the area. The system will automatically print each document in its turn. You can use continuous form-feed paper so you won't have to keep an eye on the system while it's printing.
- **Number of copies and pages.** You can print one entire copy of a document, several copies of it, or just certain selected pages.
- **Extra space.** You can have the system add extra vertical space between lines to produce a draft copy, one which can easily be marked up. You can also add extra space in the left margin (horizontal) to leave room for notations.

- **Adaptability to reproduction.** If a printed document is intended to be used for photographic reproduction, you can have it printed extra dark. In addition, you can print a document with two different styles of type to produce a visually-attractive printed page.

Follow these steps to print a document:

1. **Type the letter P and press the RETURN key** when any Main Menu page is displayed on the screen.
2. **Identify the document to be printed** (see Section 13.1). The Print Menu, which contains different printing options (how many copies, what page to start with, line spacing, etc.), will be displayed on the screen.
3. **Inspect the print settings** and make any changes desired (see Section 13.3). As the Print Menu is set up with preassigned values, you may not have to change any settings (see Section 13.2).
4. **Make certain that the equipment and paper supply are ready** (see Section 13.4).

5. Type the word YES (or OK) and press the RETURN key when you are ready to print.
6. Type the letter N and press the RETURN key when printing is completed. You can perform this action when either the Main Menu or Stop Printer Menu (see Section 13.5) is displayed on the screen. This action advances the paper one page so you can easily rip it off.

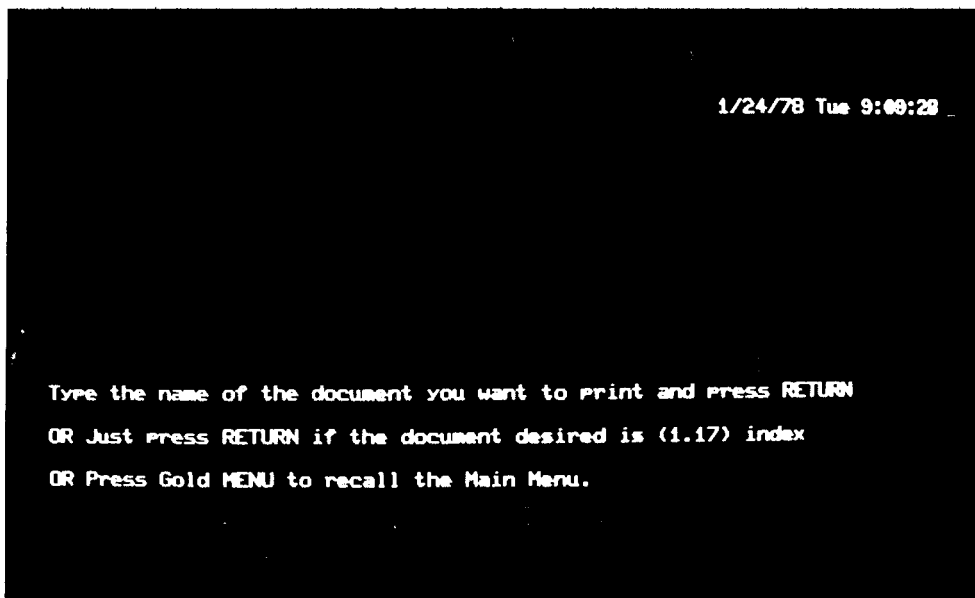
You can interrupt printing at any time, even before the end of document is reached. This feature is useful if you see something that doesn't quite look right like a spot on the paper or poor printing quality. After fixing whatever caused you to halt, you can then perform one of several actions: (1) resume where you left off, (2) print only to the end of the page, (3) start printing the

entire document from the very beginning, (4) go back a few pages and resume printing (thereby avoiding reprinting those pages which are correct), or (5) altogether stop printing the document. See Section 13.5 for details.

You can submit printing requests even when your system does not have the desired printer. The system will put your requests into a "waiting to print" list without actually printing the documents. You can later take the diskette with the list to another system (which has the desired printer) and print the documents. See Section 13.7 for details.

13.1 IDENTIFYING A DOCUMENT TO BE PRINTED

After you type the letter P and press the RETURN key, the system asks you to identify the document to be printed.



9113-15R1-A0117

Figure 13-1 Printing Request Prompt

If you have previously worked on another document in the current word processing session, the system will ask you if you want to print that document. If you have inspected the index, the system will ask if you want to print the document marked by the asterisk.

Type either the document's name or its number in the index. If the screen displays the correct document, just press the RETURN key.

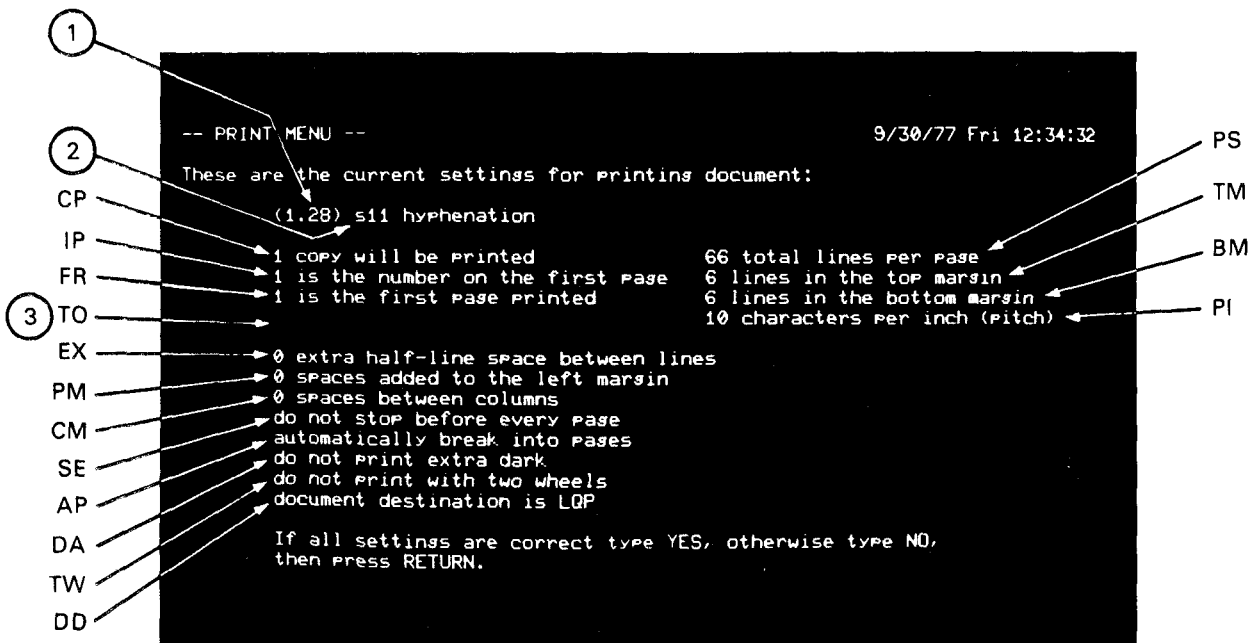
As a shortcut, you can type the letter P, a space, identify the document, and press the RETURN key. In this case the word processing system does not prompt for your document name because you've already typed it.

13.2 PRINT MENU

Settings in the Print Menu control how a document is printed. After inspecting them, you can tell the system to go ahead and print according to the settings displayed, or you can change as many as desired.

The Print Menu actually consists of three pages. The first contains a summary of the print settings and their current values. This Print Menu page is displayed on the screen when you direct the system to print.

Here is an example of the first Print Menu page:



8920-14R3-A0123

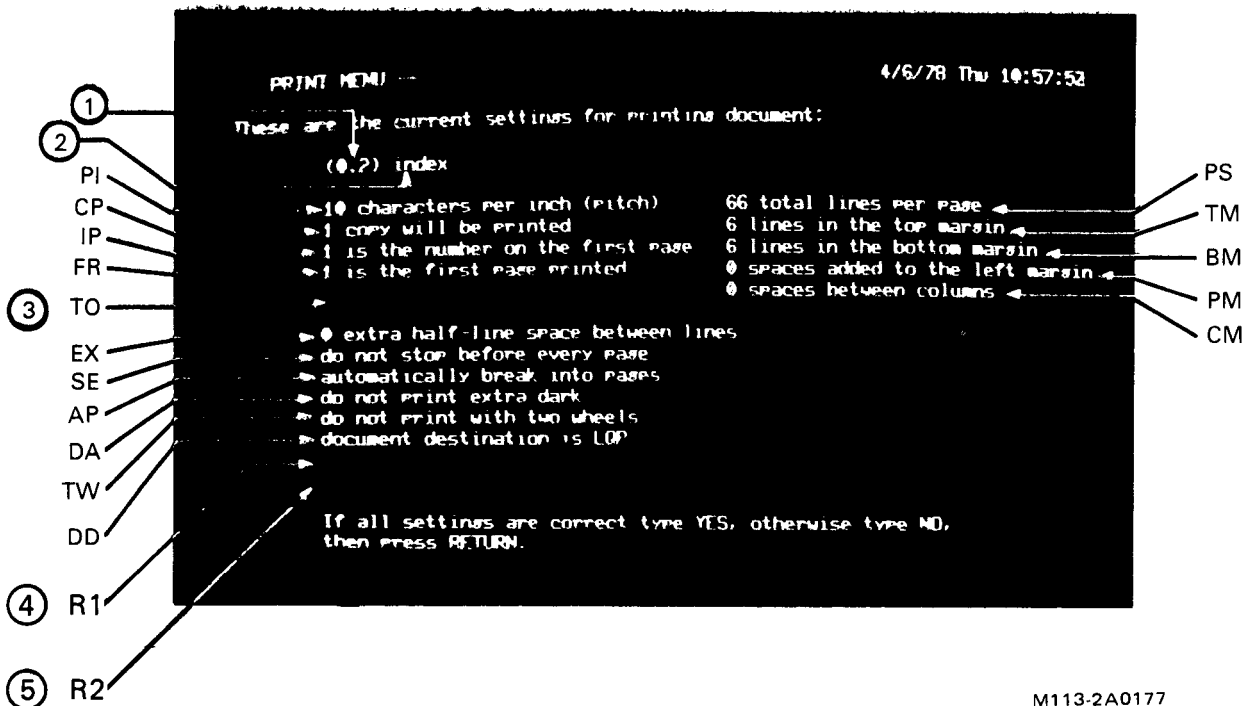
Figure 13-2 Example of Print Menu Page One (Version 2.7)

Items ①, ②, ③, ④, and ⑤ in the screen display are explained below. Items in the screen display marked with two letters are abbreviations and are explained in Table 13-1.

- ① **Diskette drive number and document number.** The first number is the diskette drive where the document is stored. The second is the document's number in the index.
- ② **Document name.** The document name you specified is displayed in this position. If you specified a document number, this screen position contains that number.

- ③ **Number of last page to be printed.** This line is blank (as in the example above) if you are printing to the last page of the document. This line contains information only if you specify printing is to stop before the last page of the document.

- ④, ⑤ **First and second replacement characters (Version 3.0 only).** These characters will be used in printing the document only if other characters have previously been relinquished.



M113-2A0177

Figure 13-2 Example of Print Menu Page One (Version 3.0)

The second Print Menu page is displayed on the screen by typing NO and pressing the RETURN

key in response to the first Print Menu page. Here is an example of the second Print Menu page:

```
— PRINT MENU (cont.) —                               1/24/78 Tue 9:47:58
To change a setting type the letters and the new setting and press RETURN.
1 → CP = Number of copies to be printed (CP 1)
   IP = Initial page number (IP 1)
   FR = Print from this page number (FR 1)
   TO = Print up to and including this page number (TO 0)
   SE = Stop before each sheet (SE no)
   AP = Automatically break into pages (AP yes)
   DA = Darkness (DA normal)
   TW = Use two wheels (TW no)
   DD = Document destination (LDP)

   SS = Store print settings
   RS = Retrieve stored print settings

   PL = Show page layout settings (page size, margins, etc.)
   OK = All settings correct, print document.

Press Gold MENU to go back to the Main Menu without printing.
```

1 ABBREVIATION

2 CURRENT VALUE

9113-25R3-A0122

(Version 2.7)

```
— PRINT MENU (cont.) —                               4/6/78 Thu 11:00:00
To change a setting type the letters and the new setting and press RETURN.
PL = Show page layout settings (page size, margins, etc.)
SE = Stop before each sheet (SE no)
AP = Automatically paginate (AP yes)
DD = Document destination (LDP)
DA = Darkness (DA normal)
TW = Use two wheels (TW no)
CP = Number of copies (CP 1)
FR = Print from page number (FR 1)
TP = Print thru page number (TO 0)
IP = Initial page number (IP 1)

R1 = Replacement character for extra print wheel position 1
R2 = Replacement character for extra print wheel position 2

SS = Store print settings
RS = Retrieve stored print settings

If all settings are correct, type OK and press RETURN
OR Press Gold MENU to go back to the Main Menu without printing.
```

M113-3A0383

(Version 3.0)

Figure 13-3 Example of Print Menu Page Two

13.3 CHANGING PRINT MENU SETTINGS

If you are satisfied with the values of the Print Menu settings displayed, you can tell the system to start printing. Type YES or OK and press the RETURN key (see Section 13.4 for how to position the paper correctly).

To change a print setting, follow these steps:

1. **Type NO and press the RETURN key** when any Print Menu page is displayed on the screen.
2. **Type a two-letter abbreviation to identify the setting you want to change, a space, the new value, and press the RETURN key.** When you change a setting, the new value will be displayed on the screen (provided the ap-

propriate Print Menu page is displayed at that time). Repeat this step for each setting you want to change.

3. **Type OK or YES and press the RETURN key when you are ready to print.**

You can change any Print Menu setting no matter what Print Menu page is displayed on the screen. Therefore, if you remember the two letters for the abbreviation to be changed, you can omit typing NO (step 1).

Table 13-1 summarizes, in alphabetical order, all Print Menu abbreviations, their meaning, the values you can supply for each, and where to find more detailed information. The following sections present more detailed information.

Table 13-1
Print Menu Settings

| Abbreviation | Meaning | Possible Value Settings | Resets After Printing? | Printer On Which Values Take Effect | Refer Here for Additional Information |
|---------------------|---|--|-------------------------------|--|--|
| AP | Automatic Pagination. Page endings can automatically be determined by the system if desired. | YES, for having the system automatically paginate while printing. NO, for having the system use the page endings you specified. | NO | Letter quality printer Draft printer | Sections 12.1, 13.3.1 |
| BM | Bottom Margin. Number of lines between the last line of text and the bottom edge. | Any number. This value plus the value of TM plus the value of Editor Menu setting CT must equal the value of PS if you have previously paginated the document. | NO | Letter quality printer Draft printer | Sections 13.3.2, 14.5 |
| CM | Column Margin. Number of spaces (typing positions) to be added between multiple columns. | Any number between 0 and 999. | NO | Letter quality printer | Section 13.3.3 |
| CP | Number of original copies to be printed. Copies are printed completely from beginning to end. | Any number between 0 and 999. | YES, to 1 | Letter quality printer Draft printer | Section 13.3.4 |
| DA | Darkness, or number of times characters are struck. | NORMAL, for striking each character once (except for boldface characters which are struck three times). DARK, for striking each character twice. | NO | Letter quality printer Draft printer | Section 13.3.5 |
| DD | Document Destination. The output device to be used for printing. | LQP, for letter quality printer. DP, for draft printer. HOST, for output over the communications line. DP2, for a serial output device attached to the second communications port of a WS78 system. | NO | Letter quality printer Draft printer | |

Table 13-1 (Cont.)
Print Menu Settings

| Abbreviation | Meaning | Possible Value Settings | Resets After Printing? | Printer on Which Values Take Effect | Refer Here for Additional Information |
|--------------|--|---|------------------------|---|---------------------------------------|
| EX | Extra half-line vertical spacing. Number of extra, blank half-lines to be used between printed lines. This value is used in addition to the vertical spacing in the document's ruler(s). | 0, 1, 2, 3 | NO | Letter quality printer Draft printer | Section 13.3.6 |
| FR | Print from this page number. Allows you to skip over some pages in the document before starting to print. | Any number between 1 and 999. | YES, to 1 | Letter quality printer Draft printer | Section 13.3.7 |
| IP | Initial Page number. This number appears in the header and/or footer of the first page printed (provided you specify the page number is to be printed). | Any number between 1 and 999. | NO | Letter quality printer Draft printer | Section 13.3.7 |
| PI | Pitch, the number of characters that can be printed per inch. | Any number between 1 and 64 or THEME (for proportional spacing). | NO | Letter quality printer | Section 13.3.8 |
| PL | Display the page layout. | Not applicable. Typing this abbreviation causes the third Print Menu page to be displayed on the screen. | Not applicable | Letter quality printer Draft printer | Section 13.2 |
| PM | Print Margin. Number of spaces (typing positions) to be added to the left of each printed page. | Any number between 0 and 999. | NO | Letter quality printer Draft printer | Section 13.3.9 |
| PS | Page Size. Number of lines that can fit on a page from the top edge to the bottom (6 lines = 1 inch). | Any number between 1 and 200. Here are some suggested values: 66, for 11-inch long paper 84, for 14-inch long paper | NO | Letter quality printer Draft printer | Section 13.3.10 |

Table 13-1 (Cont.)
Print Menu Settings

| Abbreviation | Meaning | Possible Value Settings | Resets After Printing? | Printer on Which Values Take Effect | Refer Here for Additional Information |
|--------------|--|---|------------------------|---|---------------------------------------|
| RS | Retrieve stored print settings. Values of all Print Menu settings associated with the number typed after RS are to be used in printing the document. | Any number between 0 and 9. The settings associated with 0 are used the first time each document is printed. | Not applicable | Letter quality printer Draft printer | Section 13.3.12 |
| R1 | Replacement character for extra print wheel position 1. | Any character. | NO | Letter quality printer | Section 13.3.11 |
| R2 | Replacement character for extra print wheel position 2. | Any character. | NO | Letter quality printer | Section 13.3.11 |
| SE | Stop every page (so you can insert special paper). | YES, for stopping at the beginning of each page. NO, for printing continuously from the first through the last page. FIRST, for stopping only at the beginning of the first page of a document. | NO | Letter quality printer | Section 13.3.13 |
| SS | Save stored print settings. Saves the values of all this document's print settings and associates them with the number typed after SS (see RS also). | Any number between 0 and 9. The settings associated with 0 are used the first time each document is printed. | NO | Letter quality printer Draft printer | Section 13.3.12 |
| TO | Print to this page number. Allows you to stop printing prior to the last document page. | Any number between 0 and 999 (0 means print to the last document page). | YES to 0 | Letter quality printer Draft printer | Section 13.3.7 |

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Table 13-1 (Cont.)
Print Menu Settings

| Abbreviation | Meaning | Possible Value Settings | Resets After Printing? | Printer on Which Values Take Effect | Refer Here for Additional Information |
|--------------|---|--|------------------------|---|---------------------------------------|
| TM | Top Margin. Number of lines between the top edge of each page and the first text line printed. A header, if used, will be printed here. | Any number. This value plus the value of BM plus the value of Editor Menu setting CT must equal the value of PS. | NO | Letter quality printer Draft printer | Sections 13.3.2, 14.5 |
| TW | Two wheels. Two different type styles can be used to print a document (done by means of two different print wheels). | YES, for using two print wheels. NO, for using one print wheel. | NO | Letter quality printer | Section 13.3.14 |

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13.3.1 Specifying Pagination

Print Menu setting AP (Automatic Pagination) lets you automatically paginate a document while printing. If you set AP to YES, the word processing system will determine where to end each page and start the next. The number of text lines automatically printed per page will be equal to the total number of lines per page (Print Menu setting PS) less the number of lines in the top margin (Print Menu setting TM) less the number of lines in the bottom margin (Print Menu setting BM).

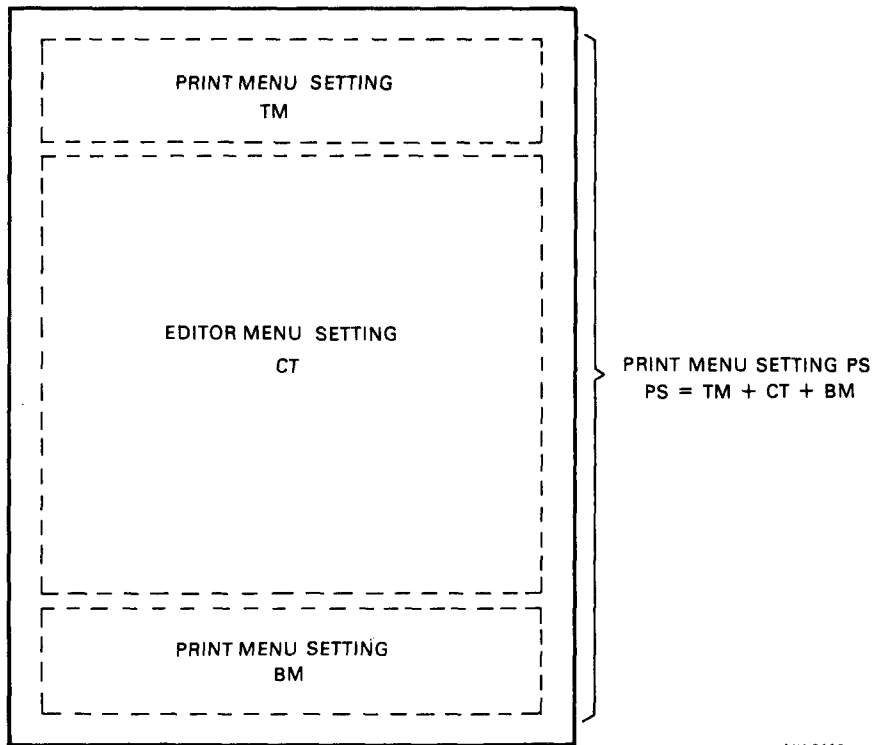
If you set AP to NO, the word processing system will use PAGE MARKER and NEW PAGE marks which you have placed in the document (see Chapter 12 for details). If you set AP to NO without paginating your document, it will be

printed as one long page. This means it may extend across the paper fold if you're using form-feed paper or onto the roller (platen) if you're using single sheet paper.

13.3.2 Specifying a Top Margin and Bottom Margin

Print Menu setting TM (Top Margin) lets you specify a top margin, a number of lines above printed text on each page. Similarly, Print Menu setting BM (Bottom Margin) lets you specify a bottom margin, a number of lines below the printed text on each page. You can leave these margins blank, use them for a header and/or footer (see Chapter 14), or eliminate them altogether and allow the text to be printed from the very top edge of a page to the bottom.

By changing TM or BM you are effectively changing the number of text lines that may appear on a page, because the following relationship exists:



MK-0110

Figure 13-5 Relationship of Editor and Print Menu Settings for Page Size

If you have paginated the document and have directed the word processor to use your page endings (by setting AP to NO), you must also change the value of the current text size (setting CT in the document's Editor Menu) when changing TM or BM. This action is necessary to preserve the relationship shown above.

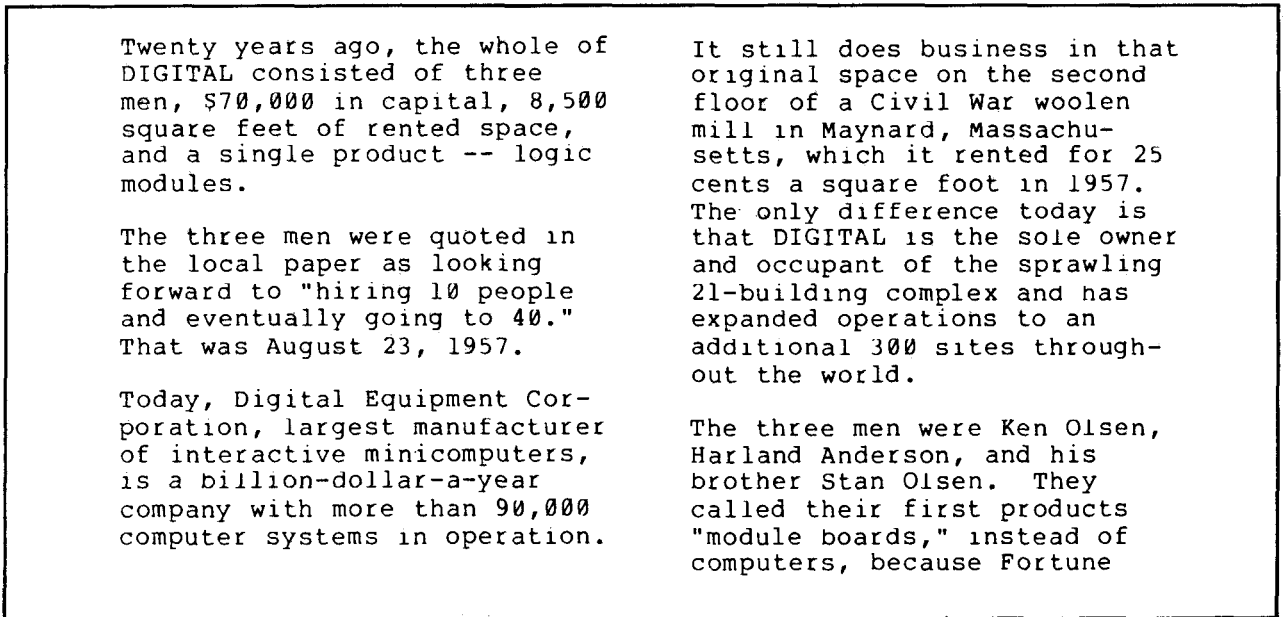
To change the value of CT, follow these steps:

1. Add the values of TM and BM together and then subtract the sum from the value of Print Menu setting PS, the total number of lines that can fit on a page. Remember this value. For example, if you change TM to 13 and BM to 8 when PS is 66, then the value to remember is 45.
2. Type the word NO and press the RETURN key to redisplay the Main Menu.

3. Bring the document to the screen for editing.
4. Press the gold and the MENU keys to display the Editor Menu.
5. Type the letters CT, a space, the value computed in step 1, and press the RETURN key. The CT value just typed will be displayed on the screen.
6. Press the RETURN key again. The document will return to the screen.
7. If you have previously paginated the document, you must repaginate it to accommodate the new text size (see Section 12.3.1).
8. File the document.
9. Submit the document for printing.

13.3.3 Multiple Column Printing

You can type text as one long continuous column and then have it printed with two or more columns per page. For example, here is some text which is printed as two columns:



MK-0329

Figure 13-6 Example of Two-Column Printed Text

The system prints each column completely from top to bottom before starting the next. In the above example, the entire first column was printed, then the paper was automatically turned back to the top of the page, and the entire second column was printed.

To indicate that text is to be printed with two or more columns, you must put a "multicolumn" command into your document.

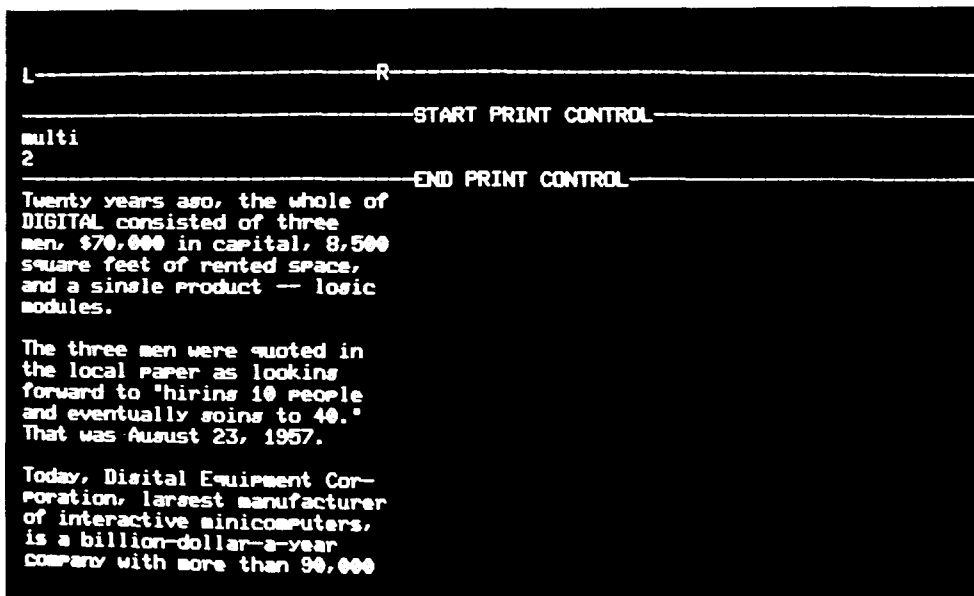
1. **Position the cursor in your document where multiple column printing is to begin.** Be certain the ruler to be used with the multiple column text is in effect.
2. **Press the gold and the CMND keys.** A line of dashes with the words START PRINT CONTROL will be displayed on the screen (this line counts as one word processing character so you can remove it with either

the DEL CHAR or RUB CHAR OUT key).

3. Type the word MULTI and press the RETURN key.
4. Type the number of columns you want printed and press the RETURN key again.

5. Press the gold and the CMND keys again. A line of dashes with the words END PRINT CONTROL will be displayed on the screen (this line also counts as only one word processing character).

Here is how the above example was typed on the word processing system:



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Figure 13-7 Example of Typing Two-Column Text

When you tell the system to print your document, it will print the number of columns you specified in the multicolumn command (step 4 above) on each page. If you want to change the number of columns printed, just insert another multicolumn command into your document and specify a different number. For example, if you

want only the first part of a document printed in two columns and the last part in just one, put a multicolumn command with the number 2 at the beginning of your document and another one with the number 1 where the single column is to start.

13.3.3.1 Space Between Multiple Columns -
You can print multiple columns separated by an equal amount of space. Set the value of Print Menu setting CM (Column Margin) to the num-

ber of blank typing positions desired between the printed columns. Here is an example of columns separated by two spaces:

| | |
|---|--|
| <p>New England from Rhode Island to Portland, Maine, was buried by a hurricane-class blizzard that roared into the region on Monday, February 6, brought wonder and destruction for 42 hours and swirled out to sea the night of February 7.</p> <p>In its wake, coastal areas were flooded and strewn with the lumber and concrete of destroyed homes and seawalls. Most of New England peered out over a fluffy white comforter of snow, 20 to 50 inches deep, and drifts up to 20 feet high.</p> <p>DIGITAL plants in eastern Massachusetts, like everything else around, were buried, but their pulses never stopped. In the middle of everything, the payroll got out on time, scores of DEC employees and customers</p> | <p>were flown in or out of state by Aviation Services, which also airlifted critical computer parts out of Woburn to airports where they could be dispatched around the world.</p> <p>Maintenance personnel worked through the blizzard, digging out cars so plowing operations could begin. They shoveled heavy piles of snow from plant roofs, opened up emergency paths, cleared the helipads, chipped the snow from company fleet cars so Security could turn the keys over to those stranded out-of-state who needed transportation home when they were helicoptered back to Parker Street.</p> |
|---|--|

CM = 2 SPACES → | | ←

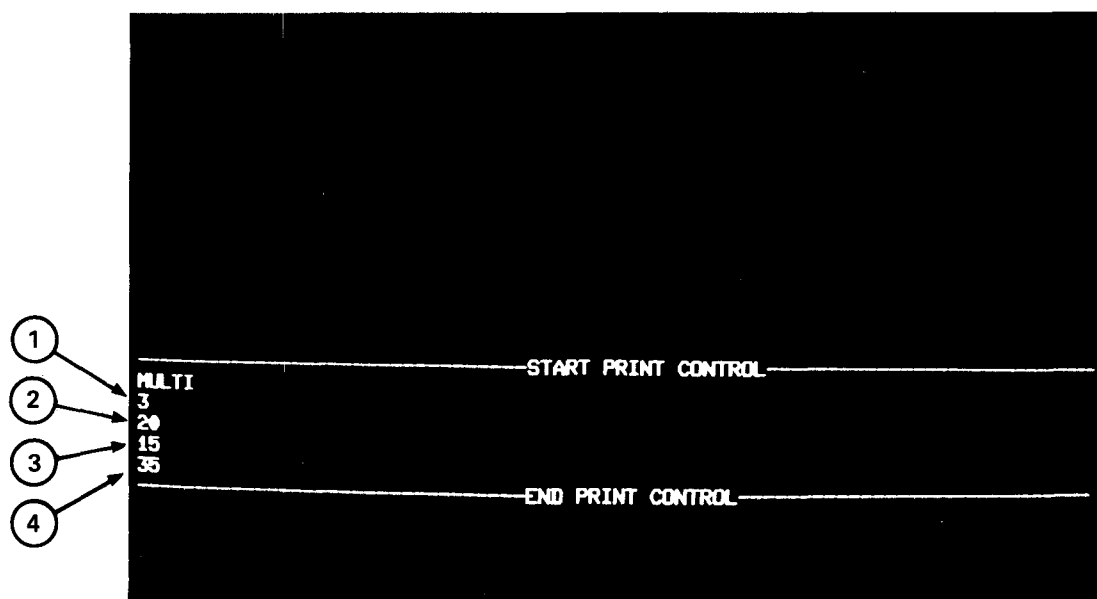
MK-0330

Figure 13-8 Example of Two-Column Text Separated by Two Spaces

If you want to print multiple columns separated with different amounts of space, specify the width (number of typing positions) of each column within the multicolumn command. On the multicolumn command line immediately following the number of columns, put the number of typing positions to appear in the first column

and press the RETURN key. Type a similar line for each of your multiple columns.

Here is an example of a multicolumn command that specifies different widths for each of three columns:



- ① 3 COLUMNS
- ② WIDTH OF FIRST COLUMN
- ③ WIDTH OF SECOND COLUMN
- ④ WIDTH OF THIRD COLUMN

9113-31R3-A0121

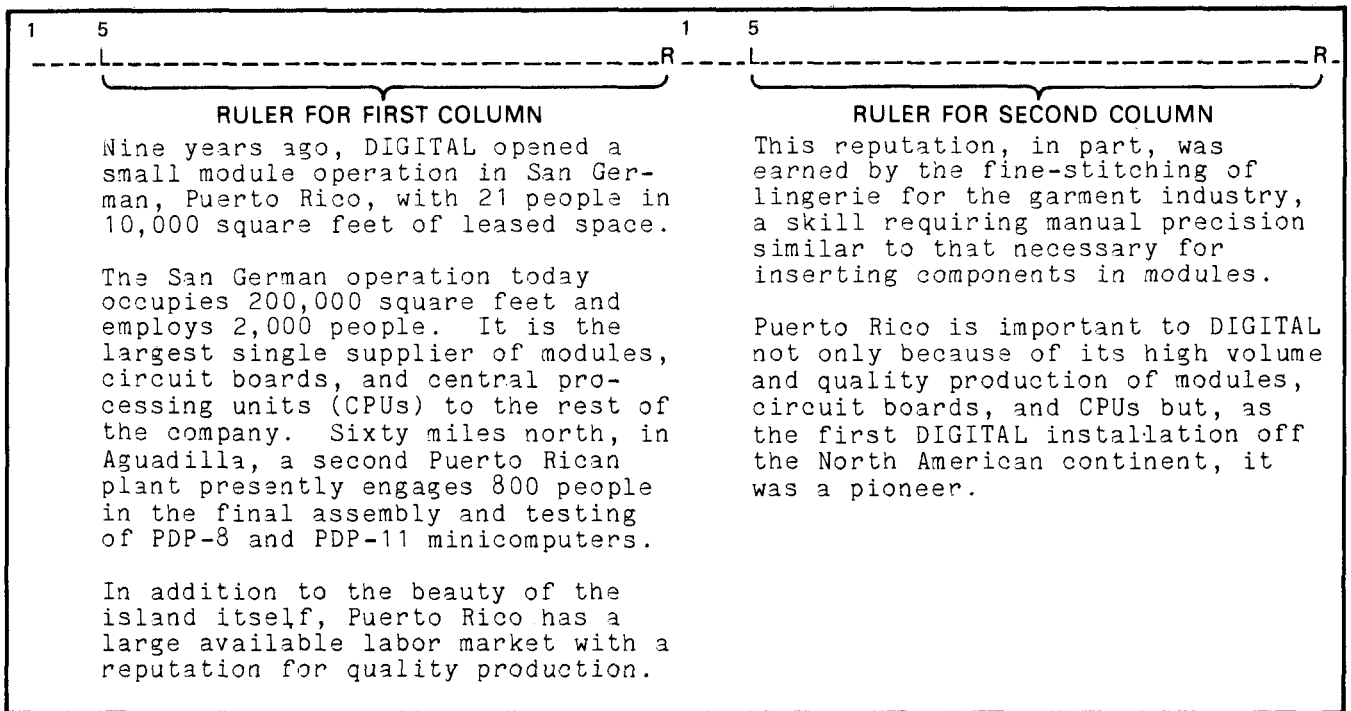
Figure 13-9 Example of Specifying Different Widths in Multiple Columns

When giving the number of typing positions in each of your multiple columns, be careful to specify a number that is larger than the value of the right margin ruler position. For example, if your ruler is set up with a right margin at typing position 30, you should specify a number greater than 30 for that particular column in your multi-column command. If you don't, your columns may be printed on top of one another.

13.3.3.2 Effect of Rulers - When you print with multiple columns, the system "picks up" your

ruler and "puts it down" so that typing position number 1 is next to the previous column's right margin ruler position (either setting J or R). Because the system "puts down" more than one ruler on a single page, be careful to use a ruler narrow enough that all your columns will fit on the paper.

The following diagram illustrates how the system uses rulers in multiple column printing:



MK-0331

Figure 13-10 Example of Ruler Use with Multiple Columns

13.3.3.3 Advancing to New Columns and Pages

– When using single column printing, both a PAGE MARKER and NEW PAGE mark indicate the beginning of a new page. When using multiple column printing, however, a PAGE MARKER and NEW PAGE mark indicate the beginning of a new column. Similarly, when you direct the system to determine page endings while printing (by setting AP to YES), the system will automatically start a new page if single column printing is used, a new column if multiple column printing.

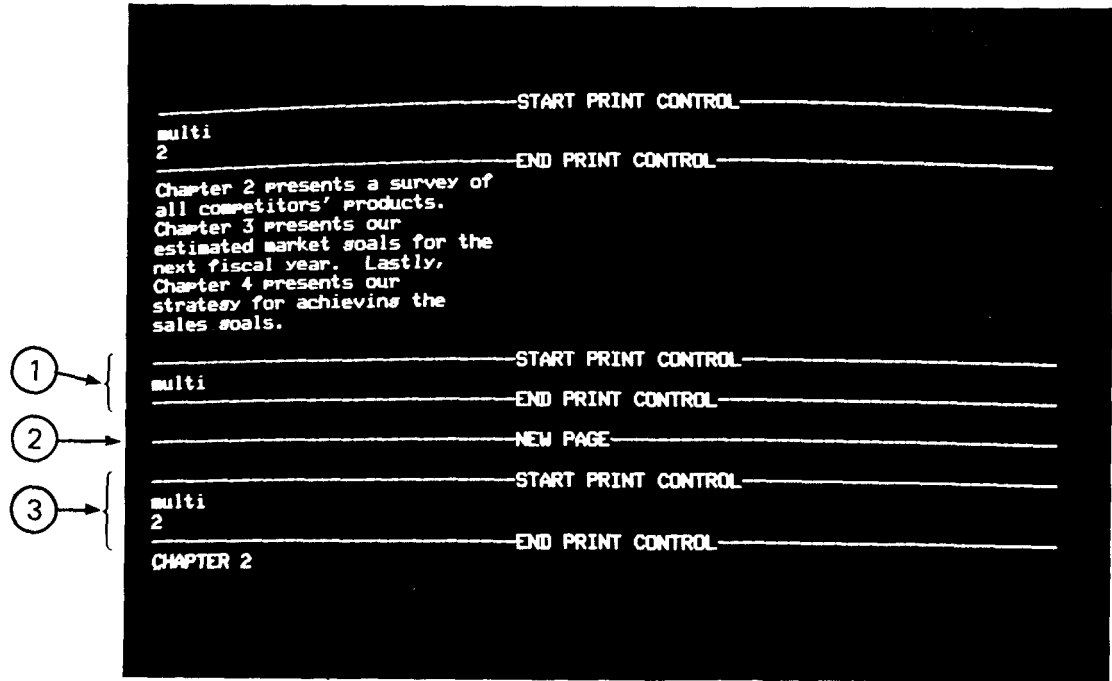
To indicate that multiple column text is to be printed at the beginning of a new column, insert

a NEW PAGE mark in your document by pressing the gold and the NEW PAGE keys.

To indicate that multiple column text is to be printed at the beginning of a new page, do the following:

1. Put a multicolumn command immediately after the last word on a page. This command should contain just the word MULTI or the word MULTI followed by either the number 0 or 1.
2. Press the gold and the NEW PAGE keys to insert a NEW PAGE mark.
3. Insert a multicolumn command.

Here is an example of how to set up a report to be printed with two columns so that each chapter starts on a new page:



M123-16-A0197

- ① MULTICOLUMN COMMAND
- ② NEW PAGE MARK
- ③ MULTICOLUMN COMMAND

Figure 13-11 Example of Starting Multiple Column Text on a New Page

13.3.3.4 Printing Multiple Columns of Unequal Length – You can print columns of unequal length across a page and then correctly start again at the left margin. For example, you can print paragraphs in one language on the left side

of each page and the same paragraphs translated to another language on the right.

Here is an example of a complicated table that was produced with the word processing multiple column feature:

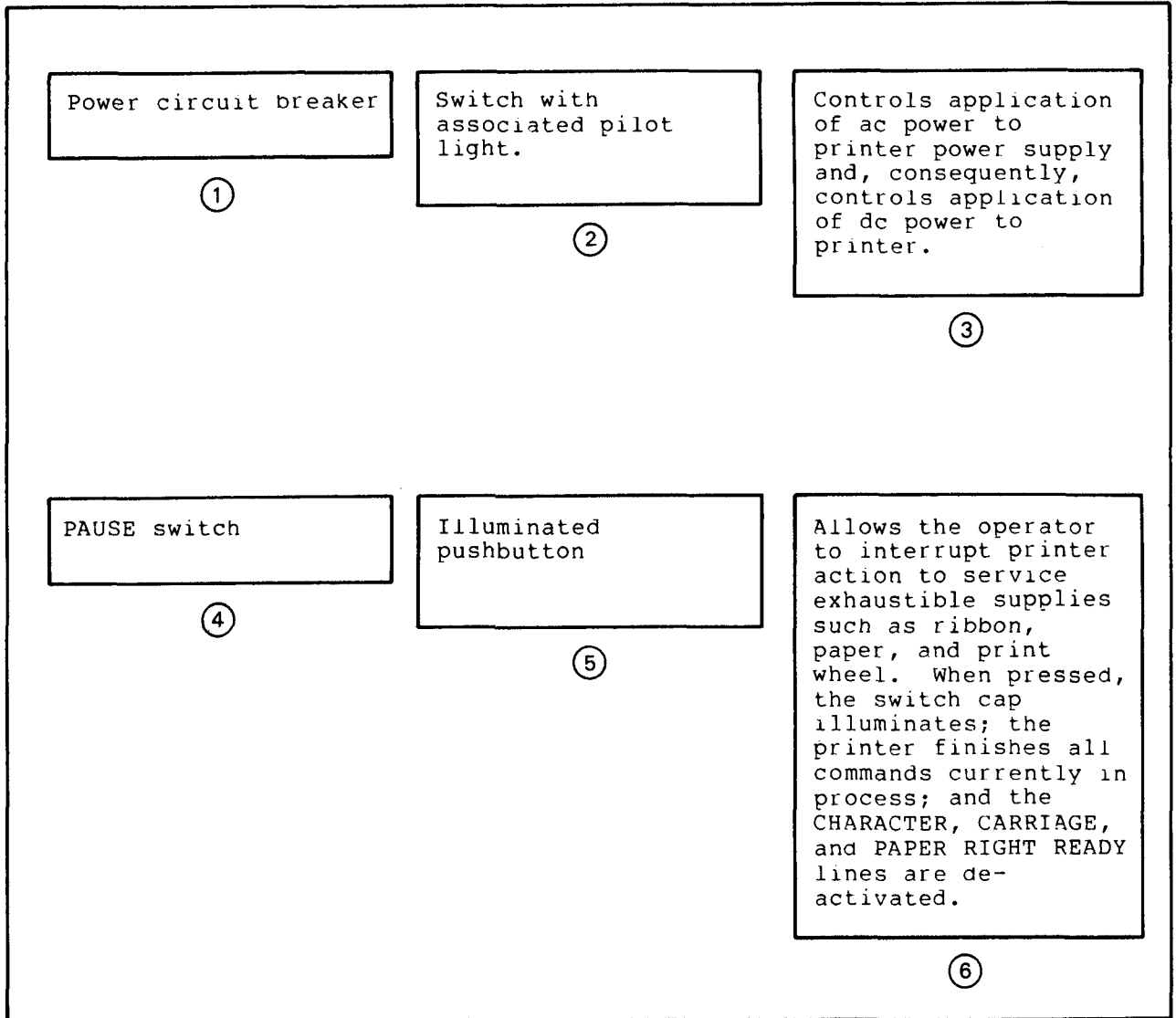
| Operating Controls and Indicators | | |
|-----------------------------------|-------------------------------------|--|
| <u>Control/Indicator</u> | <u>Type</u> | <u>Function</u> |
| Power circuit breaker | Switch with associated pilot light. | Controls application of ac power to printer power supply and, consequently, controls application of dc power to printer. |
| PAUSE switch | Illuminated pushbutton | Allows the operator to interrupt printer action to service exhaustible supplies such as ribbon, paper, and print wheel. When pressed, the switch cap illuminates; the printer finishes all commands currently in process; and the CHARACTER, CARRIAGE, and PAPER RIGHT READY lines are de-activated. |

Figure 13-12 Example of a Complicated Multiple Column Table Produced by Word Processing

Here is how to use the multiple column feature with unequal portions of text:

first two rows of the "Operating Controls and Indicators" table, type the text in the order shown below.

1. Type the text for each column in horizontal order. For example, if you want to print the



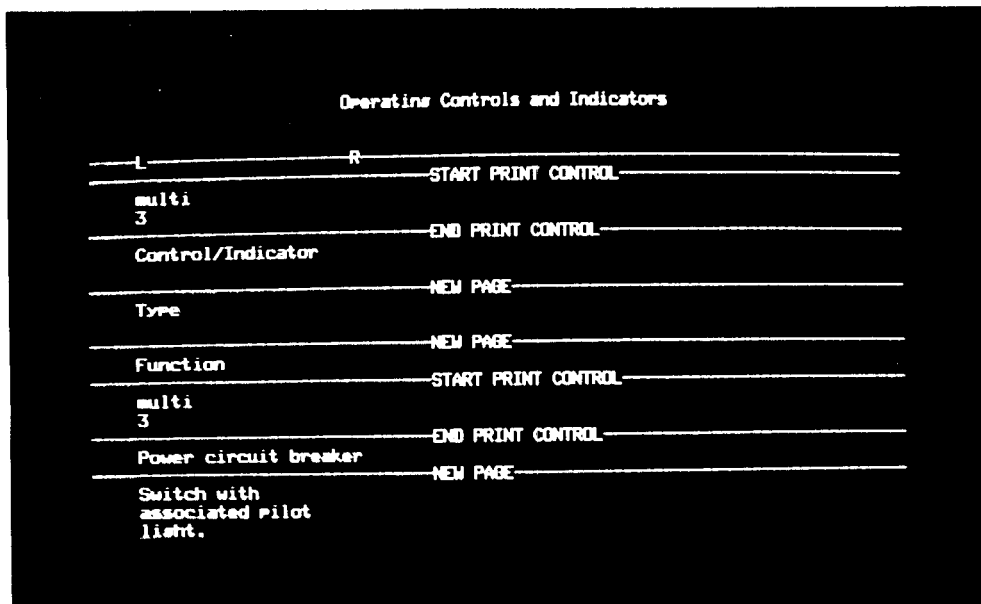
MK-0111

Figure 13-13 Example of Order in Which a Multiple Column Complicated Table Was Typed

2. Put a **NEW PAGE** mark at the end of each portion except the last in each horizontal group. For the above example, put a **NEW PAGE** mark at the end of portions 1, 2, 4, and 5.
3. Put the same multicolumn command at the beginning of each horizontal group. For the

above example, put the same multicolumn command at the beginning of portions 1 and 4.

Here is how the beginning of the "Operating Controls and Indicators" table was typed:



M105-27-A0133

Figure 13-14 Example of Screen Display for Typing a Multiple Column Complicated Table

13.3.3.5 Qualifications - The following qualifications apply to multiple column printing.

1. In order to determine correct page endings when printing multiple columns, first print your document automatically (with AP set to YES). Then inspect the printed document, decide where each page should end,

edit the document, insert a **NEW PAGE** mark at the end of each page, and reprint the document.

2. If two columns are reversed when printed, insert an additional **NEW PAGE** mark where you want the previous page to end. Then reprint the document.

13.3.4 Specifying the Number of Copies To Be Printed

Print Menu setting CP (CoPies) lets you indicate how many original copies are to be printed. Each copy is printed completely from beginning to end.

If desired, you can set CP to a very large number. Just be certain that there is an adequate supply of paper.

After the document is printed, CP is automatically reset to one.

13.3.5 Specifying the Document Destination

Print Menu setting DD (Document Destination) lets you indicate the kind of printer to be used. The possible settings are: LQP, for a letter quality printer; DP, for a draft printer; HOST, for output over the communications line; and (for Version 3.0 only) DP2, for connecting a serial draft printer to the auxiliary port of a WS78 system. The HOST value may be used for a DIGITAL serial line printer or a photocomposition machine.

When DD is set to DP2, the value of System Options Menu setting DP2 must indicate the baud rate (communications line speed) of the serial draft printer (see Appendix G).

If your word processing system has only one kind of printer, you must correctly set DD to indicate that particular printer. If you don't, your document will not start printing when you tell the system you are through changing Print Menu settings. To correct this situation, do the following:

1. Type the letter S and press the RETURN key. The Stop Printer Menu (see Section 13.5) along with the message "The printer is stopped for nonexistent printer" will be displayed on the screen.

2. Type the letter S and press the RETURN key again. The Main Menu will be displayed on the screen.

3. Submit the same document for printing again (by typing the letter P and identifying the document). The Print Menu will be displayed on the screen.

4. Set the value of DD correctly.

5. Tell the system to print your document (by typing YES or OK and pressing the RETURN key).

13.3.6 Adding Extra Vertical Space

The EX (EXtra) Print Menu setting lets you add extra vertical space between printed lines to leave room for marking changes (rough draft). After you have incorporated all changes into the document, you can print it without the extra vertical space. The extra space added by EX does not affect how the document is stored.

The allowable values for EX when a letter quality printer is used are 0, 1, 2, and 3. These values denote the number of extra half-lines to be added to whatever spacing is specified in the document's rulers.

If you set EX for extra vertical space (to either 1, 2, or 3) when using a draft printer, you'll get a different effect than you would with a letter quality printer. That's because the draft printer can print only in whole line increments. Sometimes you will get an extra whole line and other times no additional vertical spacing (effect depends on a combination of EX value and ruler line spacing).

An alternative method of adding extra vertical space is to change the line spacing in the document's rulers. However, this method requires

you to change all your rulers again when ready for final printing. The advantage of adding extra space by means of EX is that you don't have to make any changes to document rulers.

If you have previously paginated the document and are using EX to add extra vertical space, set AP to YES to have the system automatically determine where each page should end as the document is printed. The system will then ignore any page endings you previously specified (with PAGE MARKERS). These endings were calculated using a different number of text lines per page (inserted before you decided to add extra vertical space) and are no longer correct. Once you reset EX to zero to remove the extra line spacing, you can also reset AP to NO so the system will use your page endings.

You can specify your own page endings and not have the system determine them by doing the following:

1. Change the value of the number of text lines per page (setting CT in the document's Editor Menu) to account for the extra vertical line spacing.
2. Repaginate the entire document.

See Section 12.4 for how to perform the above steps.

Should you decide to specify your own page endings when adding vertical space with setting EX, here are recommended values to use for CT. These CT values assume your text is typed single-spaced (ruler setting character L) and the number of lines in the top margin and bottom

margin (Print Menu settings TM and BM, respectively) are each equal to six.

| EX Value | CT Value for 8 1/2 by 11 Inch Paper | CT Value for 8 1/2 by 14 Inch Paper |
|----------|---|---|
| 0 | 54 | 72 |
| 1 | 36 | 48 |
| 2 | 27 | 36 |

13.3.7 Specifying the First and Last Pages To Be Printed and the Number To Appear on the First Page

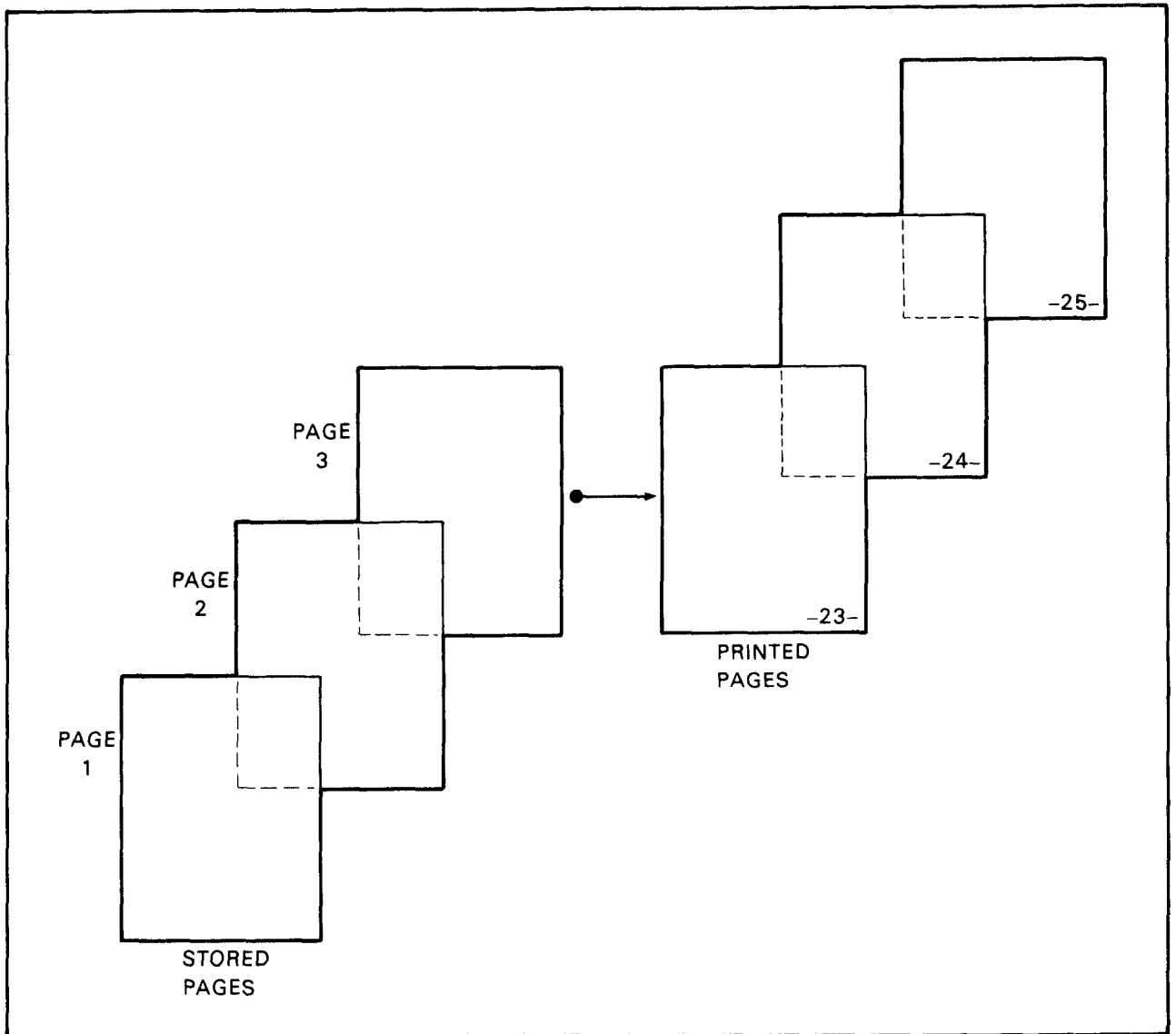
The FR (FRom) and TO Print Menu settings let you print a selected range of document pages. This feature is useful if you make just a few changes to the text of a large document which has already been printed: all you need print again are the changed pages. For example, if you want to print only page four, set both FR and TO to four.

Once printing is complete, the values of the FR and TO settings are reset to their original values. The value zero for TO means printing is to continue through the last page of the document.

The IP (Initial Page) Print Menu setting lets you set the number to be printed on the first page of a document. (See Section 12.1 for how to direct the word processing system to automatically number pages.) This feature is useful if you maintain separate documents for a large report and want each segment of the report numbered in sequence. If the first document, or segment, contains pages one through ten of the report, set IP to eleven before printing the second document.

Always set the value of IP to the number that would appear on the first page of the document even if you are not printing the first page. Be sure to take the value of IP into consideration

when setting FR. For example, if you want to start printing with the third page of a document and want it numbered 23, set the value of IP to 21 and FR to 23.



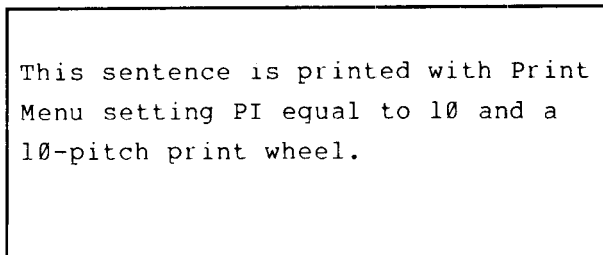
MK-0112

Figure 13-15 Example of Printing the Third Stored Page as Number 23

13.3.8 Specifying the Pitch

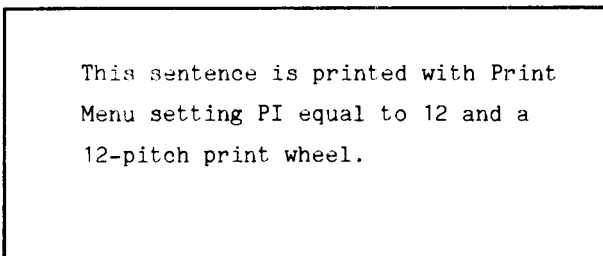
Pitch means the maximum number of characters to be printed per inch. When using a letter quality printer, set the value of PI to whatever number appears in the center of the print wheel. Because a draft printer can print only ten pitch, do not change the value of setting PI when using a draft printer. (While you can change it, the new value will have no effect.)

Here are two examples of different pitch settings:



This sentence is printed with Print Menu setting PI equal to 10 and a 10-pitch print wheel.

Figure 13-16 Example of Using Ten-Pitch Letter Quality Printer Print Wheel

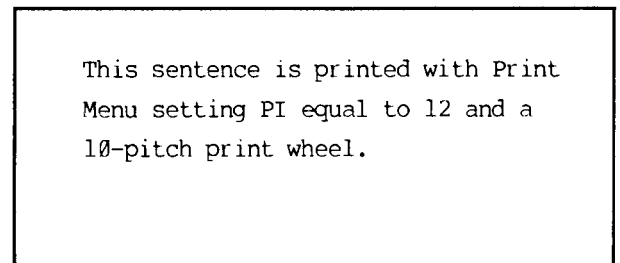


This sentence is printed with Print Menu setting PI equal to 12 and a 12-pitch print wheel.

MK-0104

Figure 13-17 Example of Using Twelve-Pitch Letter Quality Printer Print Wheel

The system prints PI characters per inch regardless of what pitch print wheel is actually used. Therefore, setting the value of PI to a number larger than what appears on the print wheel will cause compressed printing. Similarly, setting PI to a number smaller than on the print wheel will cause “stretched out” printing. For example:



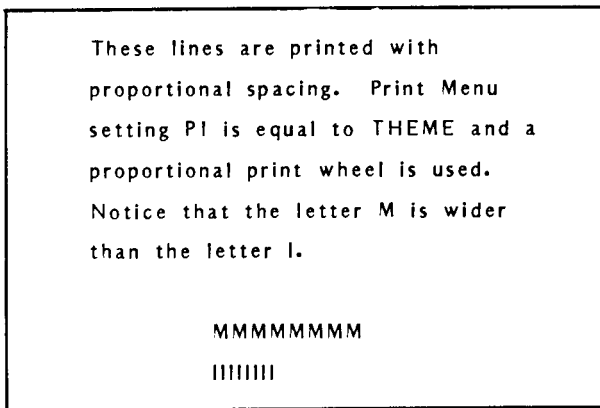
This sentence is printed with Print Menu setting PI equal to 12 and a 10-pitch print wheel.

MK-0105

Figure 13-18 Example of Using a Ten-Pitch Print Wheel with a Twelve-Pitch Setting

If a line is justified, the number of characters printed per inch may be less than the value of PI because the system adds extra space between characters when justifying to “stretch” a line so it lines up with the right margin. Therefore, if the system adds much extra space when justifying the line, it will have less than the number of characters per inch you specified for PI.

13.3.8.1 Proportional Spacing - You can also print a document with proportional spacing. This causes different characters to be printed with different widths.



MK-0106

Figure 13-19 Example of Proportional Printing

To print a document with proportional spacing, follow these steps:

1. **Tell the system you want to print a particular document** (by typing the letter P and identifying the document) and change any Print Menu settings desired.
2. **Set the value of Print Menu setting PI to THEME** (the name of the proportional print wheel).

3. **Tell the system to start printing** (by typing either OK or YES and pressing the RETURN key).

13.3.8.2 Qualifications - The following qualifications apply to proportional printing:

1. If you know (1) other documents have been submitted for printing before yours or (2) the printer is not set up with the proportional print wheel, you should also set the value of Print Menu setting SE to FIRST. This action guarantees that your document will not start printing before you have installed the proportional print wheel. When the printer stops, type the letter S and press the RETURN key. The following message will be displayed on the screen:

The printer is stopped for SE first

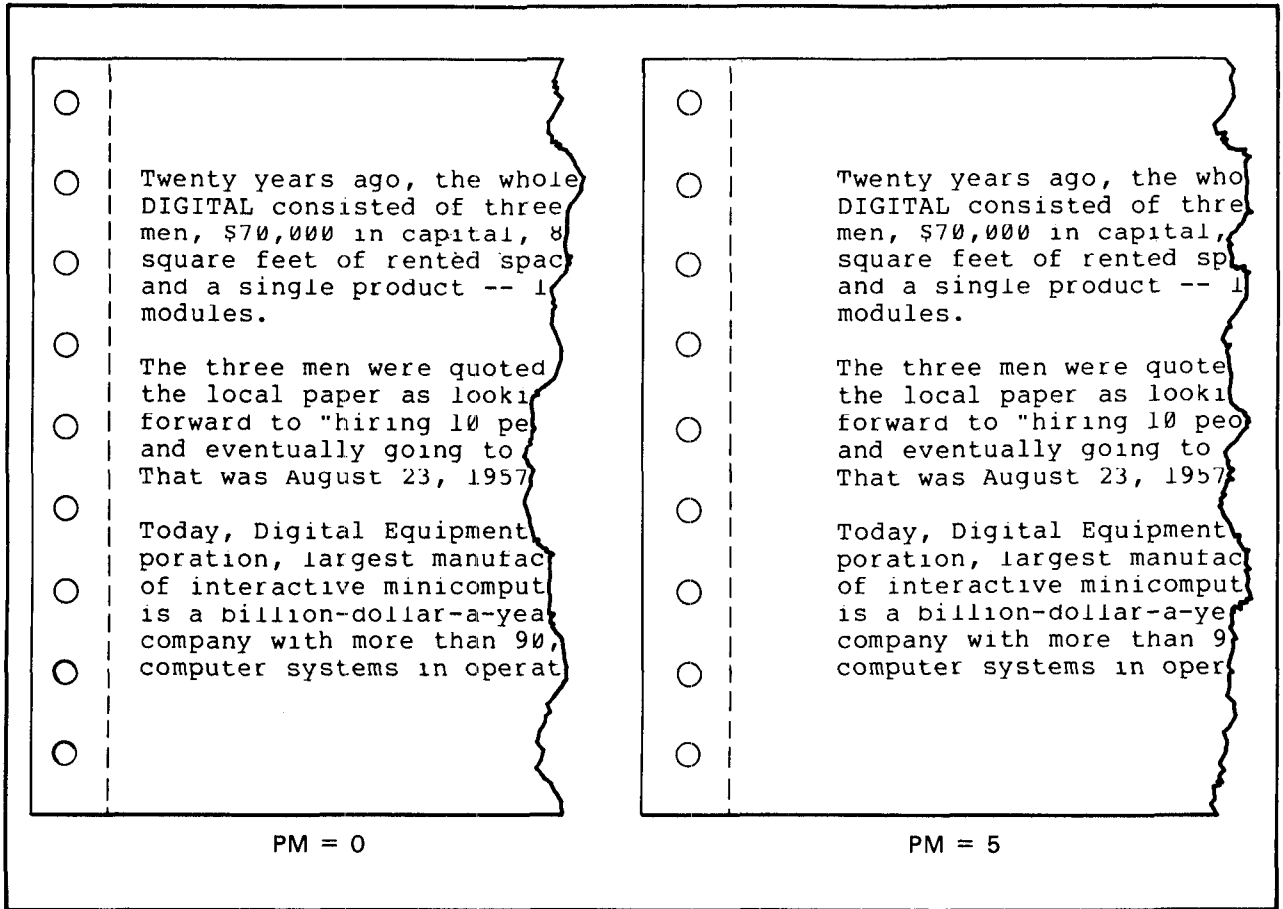
Make sure the proportional print wheel is installed in the printer. Then type the letter R and press the RETURN key. The system should now start printing your document.

2. If you have short, single lines of indented text (such as items in a list or entries in table columns), indent such lines by changing your left margin position rather than by tabbing. This action is necessary to properly line up entries in table columns.

13.3.9 Adding Extra Space in the Left Margin

The PM (Printing Margin) Print Menu setting lets you add extra spaces (typing positions) in the left margin. This word processing feature can

be used to print text that might appear too close to the left edge of the paper (if the document's rulers have the left margin near typing position one).



MK-0107

Figure 13-20 Example of Adding Space in the Left Margin of a Printed Page

Be certain you do not set PM so large that the printed document runs off the right side of the paper. The system will not check if the value you specify for PM is too big.

13.3.10 Specifying the Physical Page Size

The PS (Page Size) Print Menu setting lets you specify the total number of lines that fit on a page of paper, from the top edge to the bottom. Set PS so it is consistent with the paper size. Multiply the paper length (number of inches) by six (the number of printed lines per inch). Set PS to the value just computed. For example, set PS to 66 for 11-inch long paper and to 84 for 14-inch paper.

13.3.11 Using Extra Print Wheel Characters (Version 3.0 only)

The letter quality printer contains two more print wheel characters than word processing main keyboard keys. The R1 and R2 (Replacements 1 and 2) Print Menu settings let you print these two additional characters. It is necessary, however, to relinquish use of two other characters.

To use the extra print wheel characters, follow these steps:

1. Type the letters R1, a space, the first printing character to be replaced, and press the RETURN key when any Print Menu page is displayed on the screen. When the document is printed, the character you just typed will be replaced with the first extra print wheel character.
2. Type the letters R2, a space, the second printing character to be replaced, and press the RETURN key when any Print Menu page is displayed on the screen if you wish to use the second extra print wheel character.

3. Type the word OK or YES and press the RETURN key after changing any other Print Menu settings desired.

When a document is completely printed, the replacement characters specified for R1 and R2 remain set. To reset them before you next print the document, type the letters R1 and R2 and press the RETURN key when any Print Menu page is displayed on the screen.

The two extra characters may differ among the many available letter quality printer print wheels. If you are uncertain what the two are, replace any two characters and print a single page of a document. Then inspect the printed page to determine which two extra characters are present.

13.3.12 Saving and Retrieving Print Menu Settings

The SS (Store Settings) Print Menu setting lets you save as many as ten different groups of particular Print Menu values. The RS (Retrieve Settings) print setting lets you automatically retrieve a group of previously-saved print settings and apply them to any other document. This feature is useful if, for example, you always print rough drafts double-spaced on a letter quality printer.

You must type the values of each group of Print Menu settings once and then save them. Each time you go to print a document, you can automatically retrieve the saved settings and avoid unnecessary retyping.

Use the SS and RS Print Menu settings as follows:

1. **To save settings.** Change the values of all desired Print Menu settings, type the letters SS, a space, a single number between 0 and

9, and press the RETURN key. The group of Print Menu setting values saved with the number 0 are automatically used when a document is submitted for printing for the first time, unless you specify otherwise. Therefore, type the number 0 after the letters SS only when you want to use those particular Print Menu settings with all other documents.

2. **To reuse a group of saved settings.** Type the letters RS, a space, the number of the saved group of desired settings, and press the RETURN key. You must use the system diskette with which you previously saved the settings (because they are stored on the system diskette).
3. **To change a group of saved print settings.** Type the letters RS, a space, and the group's number. This action displays the first Print Menu page with the previously stored values. Change as many settings as desired. Then type SS, a space, the number of the group, and press the RETURN key.

13.3.13 Stopping the Printer To Insert Special Paper

The SE (Stop Every) Print Menu setting lets you stop the printer to insert special paper. There are three possible values: NO, YES, and FIRST.

Set SE to NO to use continuous-form paper that is already inserted in the printer. In this case, the printer will not stop at all once you tell it to print. You can submit as many as eight different documents for printing, leave the word processing area of your office, let someone else use the system, and return later to pick up the printed copies.

Set SE to YES when you want to stop before printing each page, such as when using single let-

terheads or special forms. In addition, you must also do the following.

1. **Insert your special sheet of paper in the printer.** After you tell the printer to start (by typing OK or YES and pressing the RETURN key) and a Main Menu page is displayed on the screen, line up your paper (see Section 13.4) and pull the paper bail forwards.
2. **Type the letter R (for resume printing) and press the RETURN key.** You can do this in three different word processing situations:
 - When any Main Menu page is displayed on the screen.
 - When you are editing or creating a document and the Editor Menu is displayed on the screen (by pressing the gold and MENU keys). The document you were previously editing or creating will be displayed again as soon as printing resumes.
 - When the Stop Printer Menu is displayed on the screen (see Section 13.5).
3. **Flip the paper bail down** once printing begins so the paper will be held securely.

Repeat steps 1 - 3 each time the printer stops, at the beginning of each new page.

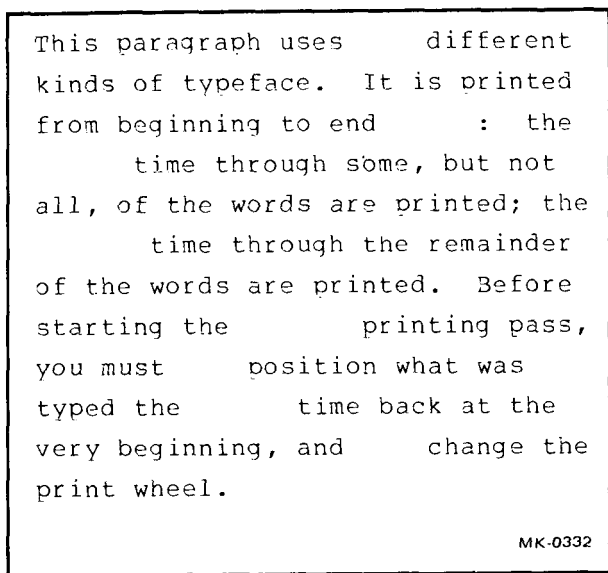
Set SE to FIRST when you want the printer to stop only before printing the first page. This setting allows you to print a document with different paper, a different print wheel, or a different ribbon from the one used for the previous document. To print with SE set to FIRST, follow steps 1 and 2 above.

13.3.14 Using Two Different Styles of Type

The TW (Two Wheels) Print Menu setting lets you print a document with two different type styles. Set TW to YES to print with two wheels. (It is generally preset to NO to print with just one.)

Printing two styles of type is done with two separate print wheels. First you print just part of a document from beginning to end with the first print wheel. This leaves "holes," or blank spaces that are to be printed with the second print wheel.

Here is how a paragraph looks after it has been printed with just the first wheel:

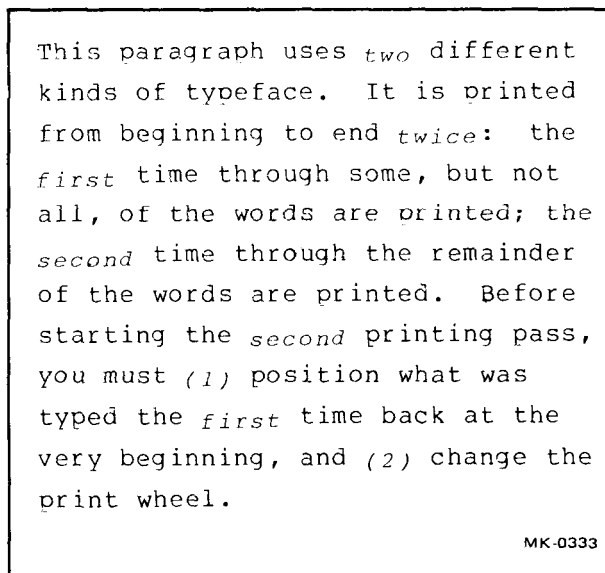


This paragraph uses different kinds of typeface. It is printed from beginning to end : the time through some, but not all, of the words are printed; the time through the remainder of the words are printed. Before starting the printing pass, you must position what was typed the time back at the very beginning, and change the print wheel.

MK-0332

Figure 13-21 Example of Two-Typeface Text After Being Printed with the First Print Wheel

Next you remove the print wheel, insert the second wheel, reposition the paper back at the top, and print again, this time filling in the holes. Here is how the example paragraph looks after it has been printed the second time:



This paragraph uses *two* different kinds of typeface. It is printed from beginning to end *twice*: the *first* time through some, but not all, of the words are printed; the *second* time through the remainder of the words are printed. Before starting the *second* printing pass, you must (1) position what was typed the *first* time back at the very beginning, and (2) change the print wheel.

MK-0333

Figure 13-22 Example of Two-Typeface Text After Being Printed with Both Print Wheels

To print a document with two print wheels, follow these steps:

1. Edit the document and mark all text to be printed with the second wheel as if you wanted it printed in boldface (see Section 8.2).
2. Press the printer's PAUSE button, put the first wheel to be used into the printer, align the paper (see Section 13.4), and press the PAUSE button again.

3. Display the Print Menu, set TW to YES, change any other print settings, type OK, and press the RETURN key. The printer will print all text except what you marked for boldface.
4. When printing stops, put the second wheel into the printer. Reposition the printed document so the top edge of the first page is lined up. As the printer is going to fill in "holes" in lines that are already printed, be careful to get the paper lined up correctly.
5. Type the letter R (for resume) and press the RETURN key when the Main Menu, Editor Menu, or Stop Printer Menu is displayed on the screen. The printer will use the second print wheel to fill in the missing text.
6. When the printing stops, replace the print wheel with the one that was in the printer before you started your two wheel printing. Now type the letter R and press the RETURN key. If you don't, the system will not print another document.

If you set the value of SE to YES (for using single sheet paper) when printing with two wheels, the printer will stop at the beginning of every page. You then must type the letter R and press the RETURN key. After you have inserted the second print wheel, you must type R and press the RETURN key twice.

13.4 CHECKING OUT THE PRINTER

Before you tell the system to start printing (by typing either YES or OK and then pressing the RETURN key), check that the printer is properly set up. Follow this checklist.

1. **The printer is powered up and not paused.** If you're using a letter quality printer, the PRINTER READY button should be lit and the PAUSE button not lit. If you're using a draft printer, the POWER switch should be in the ON position and the ON LINE/OFF LINE switch in the ON LINE position.
2. **The correct print wheel (letter quality printer only) is properly in place.**
3. **The paper is correctly positioned at the top of a new page.** If it is not, your printing might start in the middle of a page and extend across the paper fold. To align the paper when using a letter quality printer, follow these steps:
 - Press the gold and the MENU keys. A Main Menu page will be displayed on the screen. Now type the letter N and press the RETURN key. This action advances the paper to the top of a new page.
 - If the paper is not positioned correctly, line up the top edge of the paper so it is even with the paper alignment point. Then roll the knob up two stops (clicks).
 - Type the letter P, press the RETURN key, and specify the document to be printed.
4. **The paper supply is adequate.**

13.5 INTERRUPTING PRINTING

You can interrupt printing at any time, even before the end of the document being printed is reached, by typing the letter S (for Stop) and

pressing the RETURN key (when any Main Menu page is displayed on the screen). This action stops the printer (after a few more lines are printed) and displays the Stop Printer Menu on the screen.

```
-- STOP PRINTER MENU --                               9/30/77 Fri 13:07:45

R = Resume printing and return to the last menu
N = New page, bring the printer to the top of the paper
S = Stop printing this document and return to the Main Menu
P = Continue printing until the end of this page
B = Start printing this document from the beginning
T = Go back a number of pages and resume printing from the top of the page
L = List the documents waiting to print

Type the letter and then press RETURN.
```

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Figure 13-23 Stop Printer Menu

At this point you have only interrupted printing. The Stop Printer Menu presents you with a list of options of what to do next. You can either cancel printing the rest of the document or resume printing (in several different ways). To

cancel printing, press the gold and the MENU keys. To resume printing, type the Stop Printer Menu letter for the desired option and press the RETURN key. The different options are described on the next page.

Table 13-2
Stop Printer Menu Options

| Stop Printer Menu Letter | Description | Stop Printer Menu Letter | Description |
|---------------------------------|--|---------------------------------|--|
| R | Resume printing. Printing continues exactly where it was interrupted and a Main Menu page (same one that was displayed before you typed the letter S) will be displayed on the screen. Use this option if, for example, you have interrupted printing to insert paper, a ribbon, or a print wheel. | B | Beginning. The printer will advance to a new page and start printing the interrupted document from the very beginning. The Main Menu will be displayed on the screen. Use this option if, for example, your ribbon is too light or you used the wrong kind of paper. |
| N | New page. The printer will advance the paper to the top of the next page but will not start printing. The Stop Printer Menu will still be displayed on the screen, and the printer will be waiting to continue printing the interrupted document. You must select another option. | T | Top of a few pages back. To use this option you must type the letter T, a space, and then a number specifying how many pages to go back. The printer will advance to a new page and start printing again where you specified. A Main Menu page will be displayed on the screen. Use this option if, for example, your last few pages are spotted or wrinkled. |
| S | Stop printing (cancel) the interrupted document. A Main Menu page will be displayed on the screen. If there's another document waiting to be printed, it will be printed. | L | List waiting documents. All the documents which you have submitted for printing (including the interrupted one) will be displayed on the screen in the order they will be printed. This gives you a general estimate of how much more printing you have to do (because it doesn't tell you how large each document is). Use this option if, for example, your paper supply is running low and you want to know how soon you will have to insert a new box. |
| P | Page end. Printing will continue to the end of the current page only. The Main Menu will be displayed on the screen and the printer will be waiting to continue printing the interrupted document. Redisplay the Stop Printer Menu and select another option. | | |

If you type S to interrupt the printer when it is not in use, the message "The printer is not in use now." will be displayed on the screen.

13.6 WHEN PRINTING FAILS TO START

Sometimes when you submit a printing request your document might fail to start printing. There are four reasons why this might happen.

1. **Other printing requests were submitted before yours.** When this occurs, the system will print your document as soon as all previously-submitted requests are printed. If the system is not currently printing a document, you can rule out this reason.
2. **The system cannot accept any more printing requests until the document currently being printed is done.** You can submit as many as seven additional requests while a document is being printed. The following message will be displayed on the screen if you try to submit too many document printing requests:

There are already 8 documents waiting to print. Press RETURN to recall the Main Menu.

If the screen does not display the above message, you can rule out this reason.

3. **The printer is not turned on or is paused.** If you're using a letter quality printer, the PRINTER READY button should be lit and the PAUSE and END OF RIBBON

buttons not lit. If you're using a draft printer, the POWER switch should be in the ON position and the ON LINE/OFF LINE switch in the ON LINE position.

4. **You made an incorrect Print Menu setting or you directed the system to stop so you could perform some special action** (such as inserting special paper or a different print wheel).

If the last reason appears to be the cause, you can get more information from the system and then take action to get your printing started. Type the letter S and press the RETURN key when any Main Menu page is displayed on the screen. If the following message is displayed on the screen, you never submitted the request that you thought you did.

The printer is not in use now.
Press RETURN to recall the Main Menu

Just resubmit your request to start the document printing.

If the system is not printing because you directed it to stop or you made an incorrect Print Menu setting, a descriptive message will be displayed on the screen. The following summary of all messages that might appear (in alphabetical order) explains what to do to get your document to start printing.

| Message | Action |
|--|---|
| Printer not active (Type AK NO and press RETURN) | <ol style="list-style-type: none"> 1. Type the letters AK, a space, and press the RETURN key. 2. Type the letter R and press the RETURN key. |
| The printer is stopped at the end of the page | <ol style="list-style-type: none"> 1. Select one of the Stop Printer Menu options listed in Section 13.5, type its corresponding letter, and press the RETURN key. |
| The printer is stopped for nonexistent printer | <ol style="list-style-type: none"> 1. Type the letter S and press the RETURN key. This action cancels printing your document. 2. Resubmit your document for printing. 3. Set the value of Print Menu setting DD (for document destination) so it correctly specifies the printer which is connected to your system (see Section 13.3.5) 4. Tell the system to start printing (by typing OK or YES and pressing the RETURN key). |
| The printer is stopped for "R" to print a proportional-spaced document (Version 2.7) The printer is stopped for "R" to begin dedicated printing (Version 3.0) | <ol style="list-style-type: none"> 1. Type the letter R and press the RETURN key. As soon as you take this action, you won't be able to create, edit, transmit, or receive a document until your document is completely printed. If you must continue other word processing work, press the gold and the MENU keys (type R and press the RETURN key only when you're ready to print). |
| The printer is stopped for SE first | <ol style="list-style-type: none"> 1. Insert your special paper. 2. Type the letter R and press the RETURN key. |
| The printer is stopped for SE yes | <ol style="list-style-type: none"> 1. Insert your special paper. 2. Type the letter R and press the Return key. |
| The printer is stopped for the print wheel change | <ol style="list-style-type: none"> 1. Insert your print wheel. 2. Type the letter R and press the Return key. |

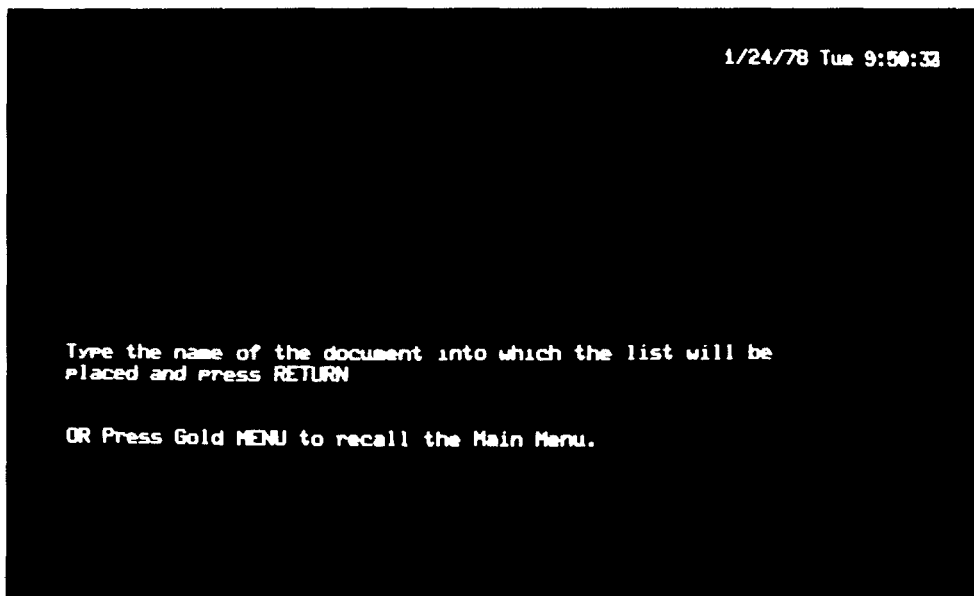
13.7 PRINTING DOCUMENTS ON ANOTHER SYSTEM

The SL (Store List) Main Menu command lets you put printing requests into a "waiting to print" list without actually printing the documents on your system. The RL (Retrieve List) Main Menu command lets you use a different system and print the documents from the list. This feature is useful if, for example, your system has a letter quality printer but you want to print on a draft printer or if your system does not have a printer at all.

13.7.1 Saving a List of Documents To Be Printed on Another System

To save a document in the print list, follow these steps:

1. **Submit all documents for printing** (as many as eight) by displaying the Print Menu, changing any desired settings, typing OK or YES, and pressing the RETURN key.
2. **Type the letters SL and press the RETURN key** when any Main Menu page is displayed on the screen. The following will be displayed on the screen:

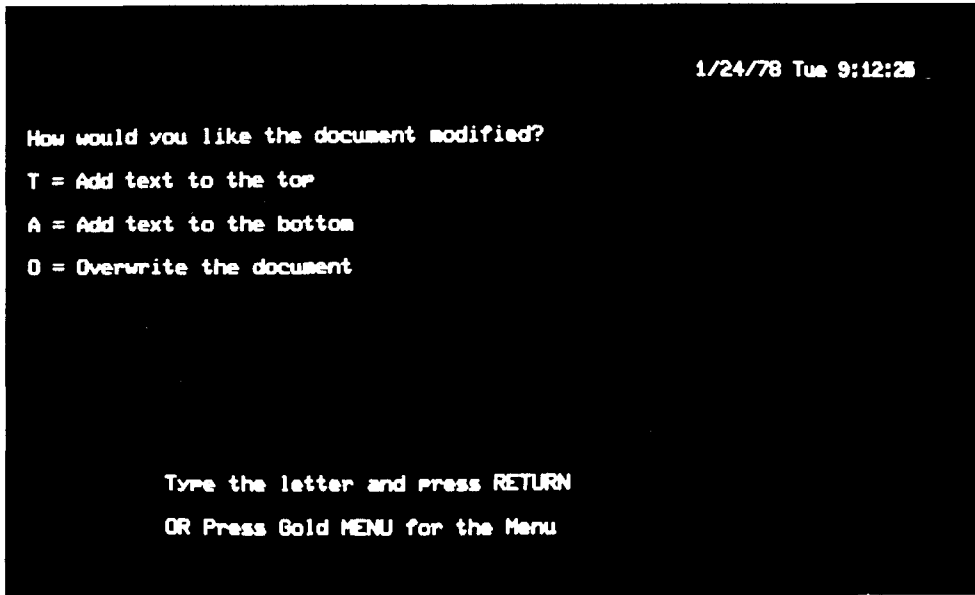


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Figure 13-24 Prompt for Saving a List of Documents to Be Printed

Respond to the prompt and then press the RETURN key (you could also type a space and identify the document immediately after typing SL). If you specify a document

which does not exist, the word processing system will automatically create it. If you specify one which does exist, the system will display the following:



9113-27R3-A0116

Figure 13-25 Prompt for Modifying an Existing Printing List

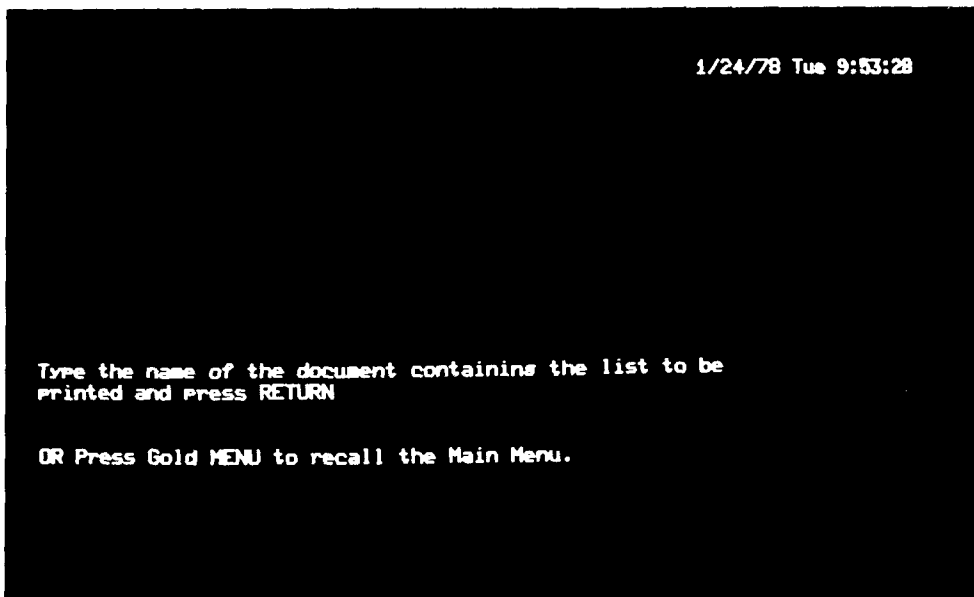
After you specify the document to contain your printing list, the Main Menu will again be displayed on the screen.

13.7.2 Printing Documents from a Saved List

To print documents from a saved printing list, follow these steps:

1. Remove your document diskette from its drive and insert it into a drive on the system with the desired printer.

2. Type the letters RL and press the RETURN key when any Main Menu page is displayed on the screen. The following will be displayed on the screen:



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Figure 13-26 Prompt for Printing Documents from a Saved List

3. Respond to the prompt and press the RETURN key (you could also type a space and identify the document immediately after typing RL).

After the documents are printed, the Main Menu will again be displayed on the screen.

13.7.3 Qualifications

The following qualifications apply to using the SL and RL commands:

1. Printing requests will be put into a list only if the documents to be printed are stored on the same diskette as the printing list document. Any documents on a different diskette will not be added to the list.
2. The RL command will be processed only if no documents are currently printing or waiting to print.

CHAPTER 14 HEADERS AND FOOTERS

A header is text that appears at the top of printed pages and a footer is text that appears at the bottom of printed pages. Here is an example:

The diagram illustrates three overlapping boxes representing page headers and footers for a document titled "History of the Mills".

- Top Box (Page 1-3):** Contains the header "History of the Mills", "FIRST DRAFT", and "Jane Underwood, x315". The main text describes "Building 3" as the oldest part of the mill, dating from 1859, with several additions made afterwards, including arches over the river in the late 1800s.
- Middle Box (Page 1-2):** Contains the header "History of the Mills", "FIRST DRAFT", and "Jane Underwood, x315". The main text describes the mill's best-known feature: a clock tower with four faces, each nine feet in diameter, mechanically controlled by DIGITAL steps to wind the gears for the timer.
- Bottom Box (Page 1-1):** Contains the header "History of the Mills", "FIRST DRAFT", and "Jane Underwood, x315". The main text describes the mill buildings occupied by Digital Equipment Corporation in Maynard, Massachusetts, as modern examples of two old New England traditions: the development of industry and the growth of a community around it. The other is the "make it do" principle: the idea that it's better to get the most from what you have than to abandon it and buy something new and expensive. The site of the mill was once part of the town of Sudbury, while the opposite bank of the Assabet River belonged to Stow. The present town, formed in 1871, was named for the man most responsible for its development, Amory Maynard.

Page 1-3
Printed: 1/19/78

Page 1-2
Printed: 1/19/78

Page 1-1
Printed: 1/19/78

MK-0114

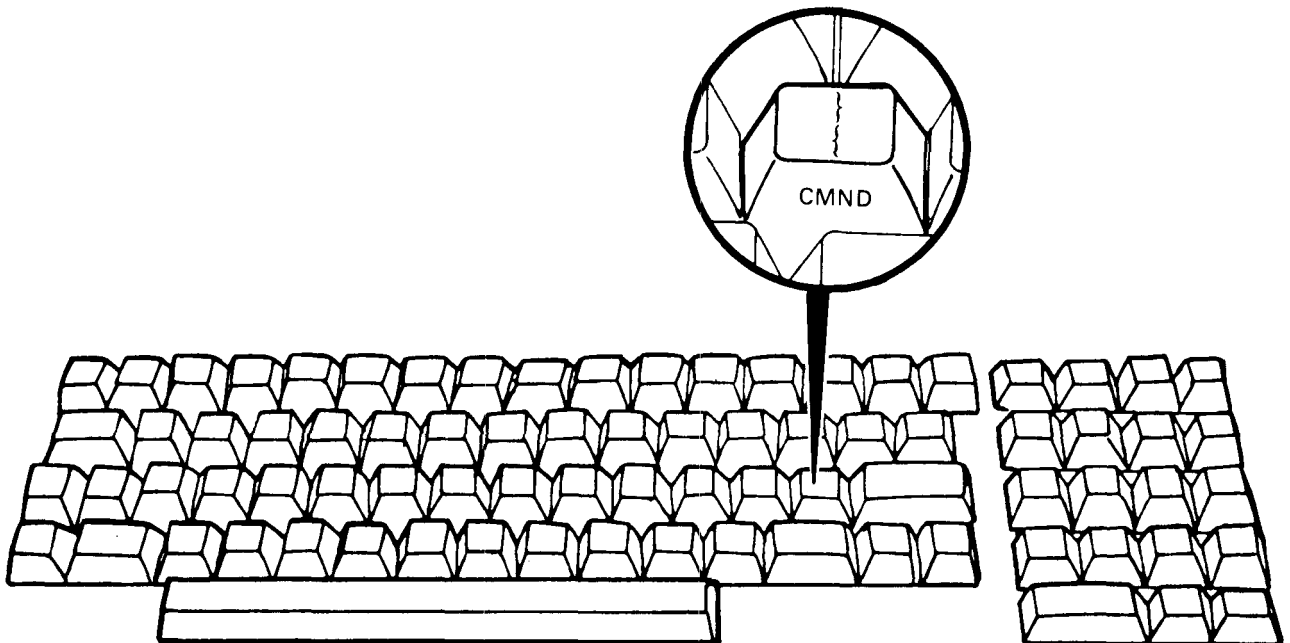
Figure 14-1 Example of Headers and Footers

You can use a header or footer to print identifying information on every page. This information may include the page number (automatically counted by the system) or the date the document is printed.

14.1 CREATING A HEADER OR FOOTER

To create a header or footer, follow these steps:

1. **Position the cursor.** Edit your document and move the cursor to the top of the first page that will contain a header. If you do not put the cursor at the very top of the page, the header will not be printed until the next page. Footers are not so restrictive. You can position the cursor anywhere on the page that is to contain a footer.
2. **Press the gold and the CMND keys.** A line of dashes with the words START PRINT CONTROL will appear on the screen.
3. **Specify either a header or footer.** Type the word TOP for a header or the word BOTTOM for a footer, and press the RETURN key.
4. **Type the text of your header or footer and press the RETURN key.**
5. **Press the gold and the CMND keys again.** A line of dashes with the words END PRINT CONTROL will appear on the screen. If you leave out this step, you won't be able to print the remainder of your document.

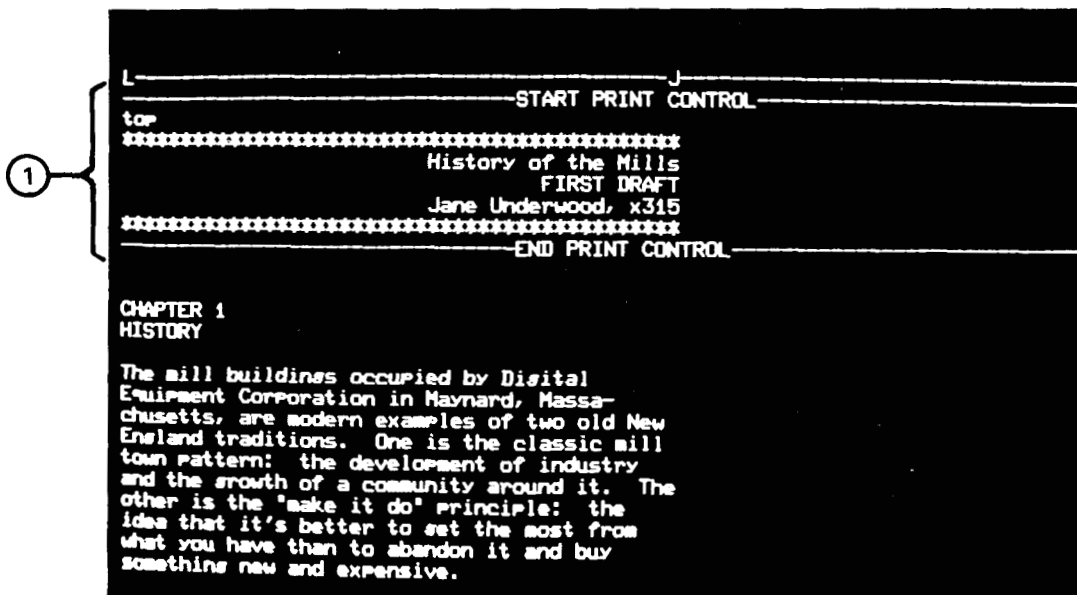


MK-0115

Figure 14-2 Main Keyboard CMND Key

You can have only a single header or footer between the “----START PRINT CONTROL----” and “-----END PRINT CONTROL-----” markers. To specify both a header and a footer, you must repeat steps 2-5.

Here is an example of how a header is typed:



(1) HEADER

9113-4R4-A0128

Figure 14-3 Screen Display Showing a Header

Though not a requirement, it is a good idea to follow these guidelines when typing headers and footers.

off from the first text on each page of your document by one line.

1. Press the RETURN key an extra time after typing a header (before pressing the gold and the CMND keys). This sets the header

2. Press the RETURN key before typing a footer (after pressing the gold and the CMND keys). This sets the footer off from the text of your document by one line.

For additional space between a header or footer and your text, press the RETURN key the desired number of times.

14.2 CHANGING A HEADER OR FOOTER

It is not necessary to have the same information at the top or bottom of every printed page. You can change a header or footer as many times as needed. For example, you might want to print four pages of "Chapter 2" and then six of "Chapter 3." Just type a new header at the top of the first page of the third chapter.

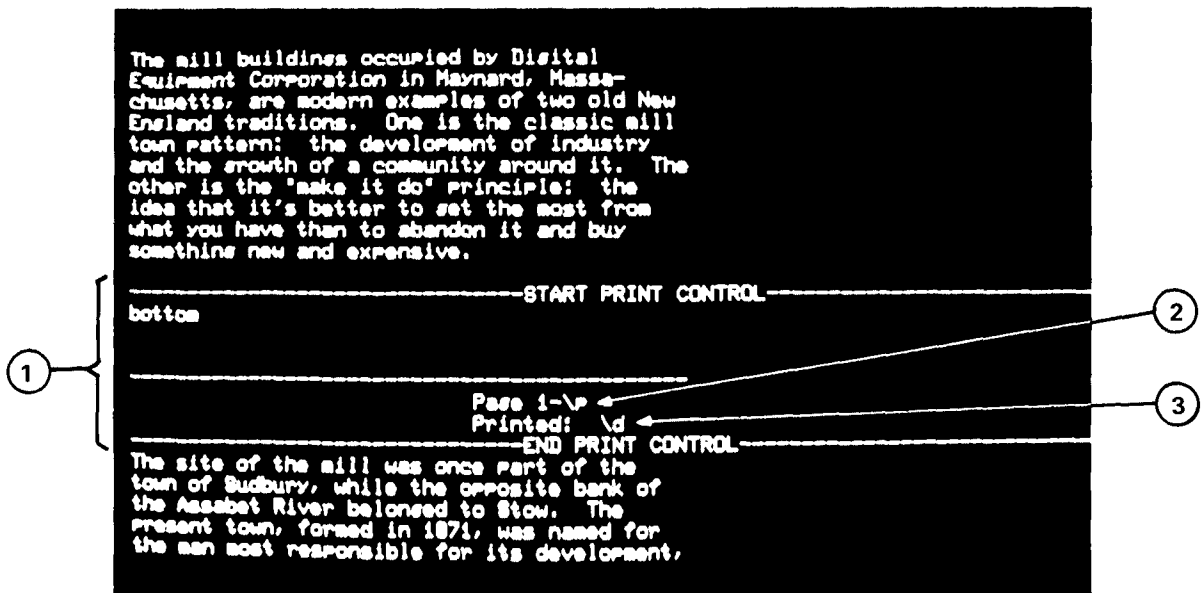
Do not put two headers or footers on the same document page; only the last one will be printed.

The "----START PRINT CONTROL----" and "----END PRINT CONTROL----" markers each occupy only one character even though they are displayed as an entire line. Therefore, to remove either marker, use the DEL CHAR or RUB CHAR OUT key.

14.3 PRINTING THE DATE AND PAGE NUMBERS

You can also have the system automatically print the date at the top or bottom of each page. To have this done, put the two characters \d (only lower case may be used) into a header or footer. The system will use the date you specified when you started up (if you did not specify a date and time, 0/0/00 will be printed).

You can also have the system automatically print the number of each page. To have this done, put the two characters \p (only lower case may be used) into the header or footer in your document. It is possible to combine the page number with other text, as shown in the following example.



- ① FOOTER
- ② PAGE NUMBERING REQUEST
- ③ DATE REQUEST

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Figure 14-4 Screen Display Showing a Footer, Page Numbering Request, and Date Request

When specifying a date or page number to be printed use the \ character (located on the upper right of the main keyboard) and not the / character.

To have the date underlined or printed in boldface, underline or boldface the letter d in the header or footer (see Section 8.2). Similarly, to have a page number underlined or printed in boldface, underline or boldface the letter p in the header or footer.

In order to use a \ character as part of a header or footer, type two \ characters. Only one will be printed.

14.4 RESETTING PAGE NUMBERS

You can have the page numbering start over again in the middle of a document. This is useful if, for example, you want to print four pages of a "Sales Report, Year To Date" followed by one page of "Quarterly Sales Report" and want the last page to be renumbered with one.

To reset page numbers, follow these steps:

1. **Position the cursor** at the top of the first page to be renumbered.
2. **Press the gold and the CMND keys.** A line of dashes with the words **START PRINT CONTROL** will appear on the screen.

3. **Type the word RESET and press the RETURN key.** Do not type any other information. (If you also want a new header or footer, you must put the new information inside a separate set of markers.)

4. **Press the gold and the CMND keys again.** A line of dashes with the words **END PRINT CONTROL** will appear on the screen.

When you reset page numbers, the system automatically starts numbering with the value of Print Menu setting IP (see Section 13.3.7).

If the page numbering is part of a header and you are setting up a new header as well as resetting the page numbering, you must reset before specifying the new header. If the page numbering is part of a footer and you are setting up a new one as well as resetting, you must reset before specifying the new footer.

14.5 HEADER AND FOOTER POSITIONING ON A PAGE

A header is printed in the top margin of a page directly above the text. Similarly, a footer is printed in the bottom margin of a page immediately after the text. For example, if you have a four-line header with a six-line top margin and a three-line footer with a six-line bottom margin, you will get the following results:

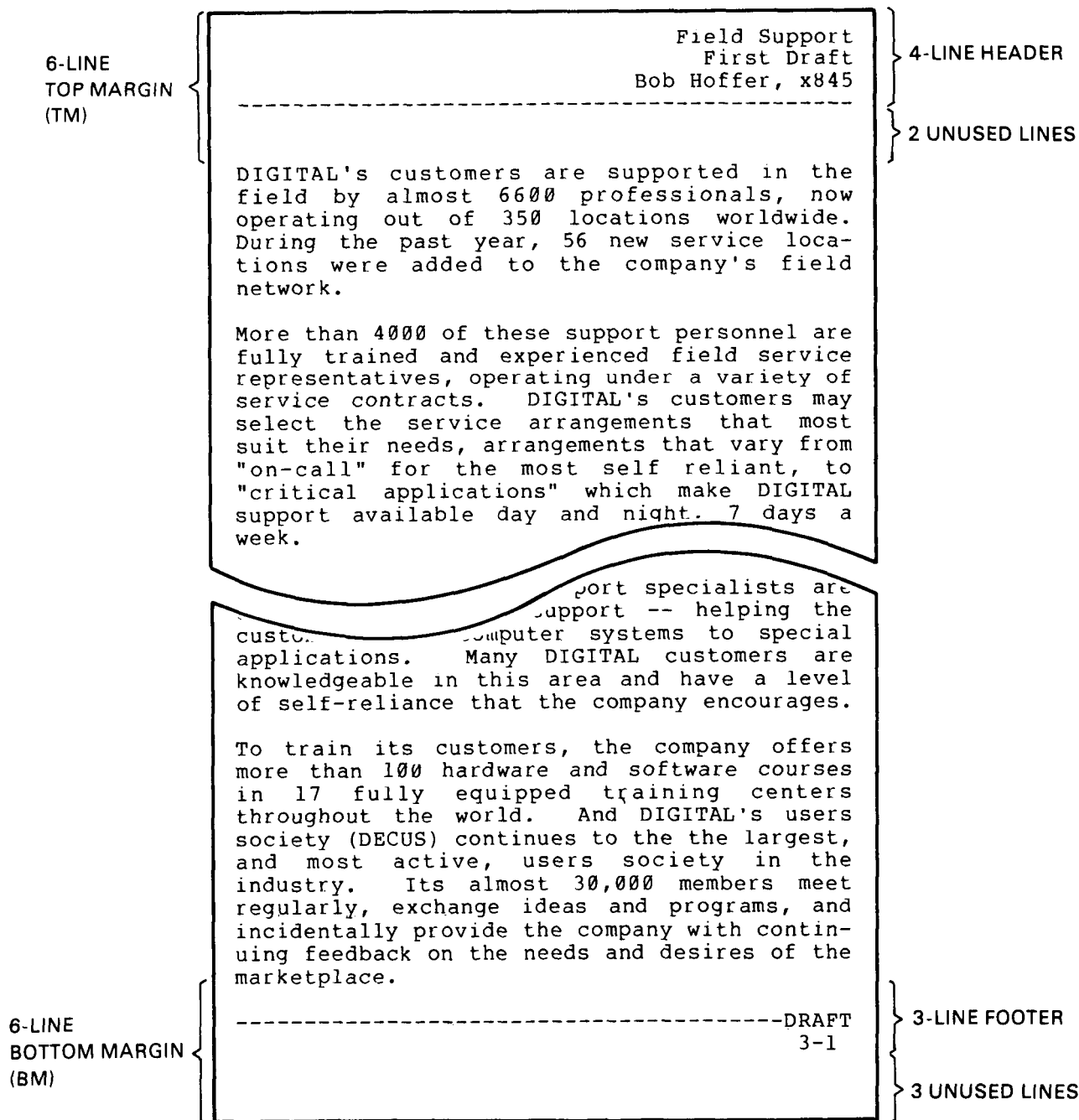


Figure 14-5 Header Positioning Within Top Margin; Footer Positioning Within Bottom Margin

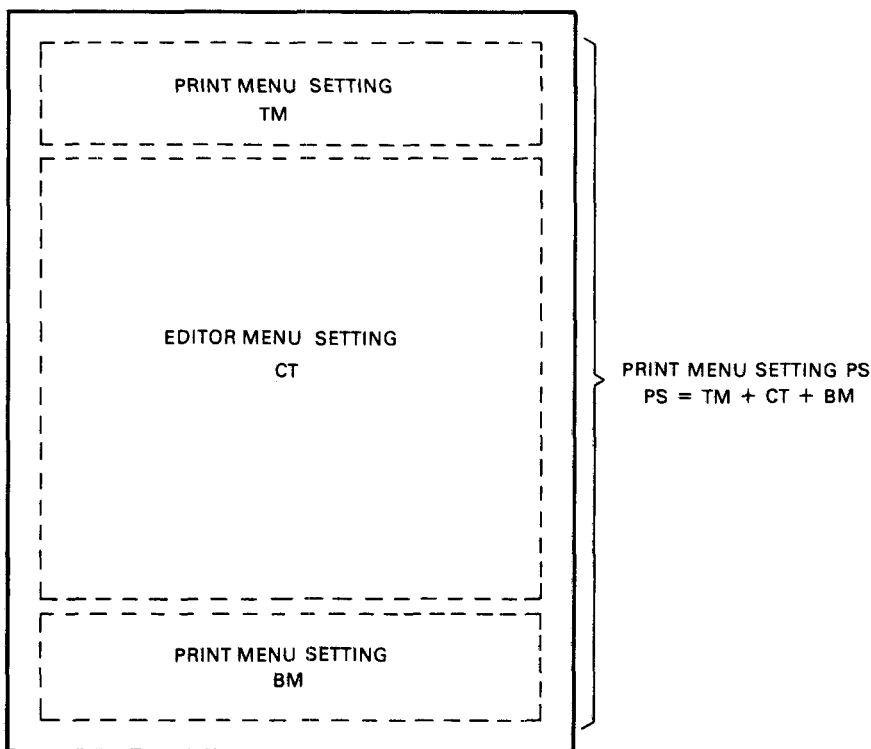
MK-0116

The number of lines used in a header must not exceed the value of Print Menu setting TM (Top Margin). If it does, the extra lines at the top of the header will not be printed. For example, if you want to print the following eight-line header when TM is equal to six, the top two lines will not be printed.

```
*****
Chapter 4, Survey of Competition
      Document #4 of 5
      Created: 1/19/78
      Printed: \d
      Typed by: Mary C. Williams
*****
```

The number of lines used in a footer must not exceed the value of Print Menu setting BM (Bottom Margin). If it does, the extra lines at the bottom of the footer will not be printed.

In order to have all lines in a header printed, increase the value of Print Menu setting TM; in a footer, increase the value of Print Menu setting BM (see Section 13.3.2). When changing these values, you should also change the value of Editor Menu setting CT (Current Text size) in order to preserve the following relationship.



MK-0110

Figure 14-6 Relationship of Editor and Print Menu Settings for Page Size

14.6 QUALIFICATIONS: EFFECT OF RULER

Headers and footers are subject to the following qualifications:

1. A header or footer is printed according to the ruler with which it was created and not the ruler in effect where it is printed.
2. The vertical line spacing in the first ruler (F, L, N, or D) of a header or footer will be

used to print it. Even if you put another ruler with different vertical line spacing in the header or footer, the system will still use the first one.

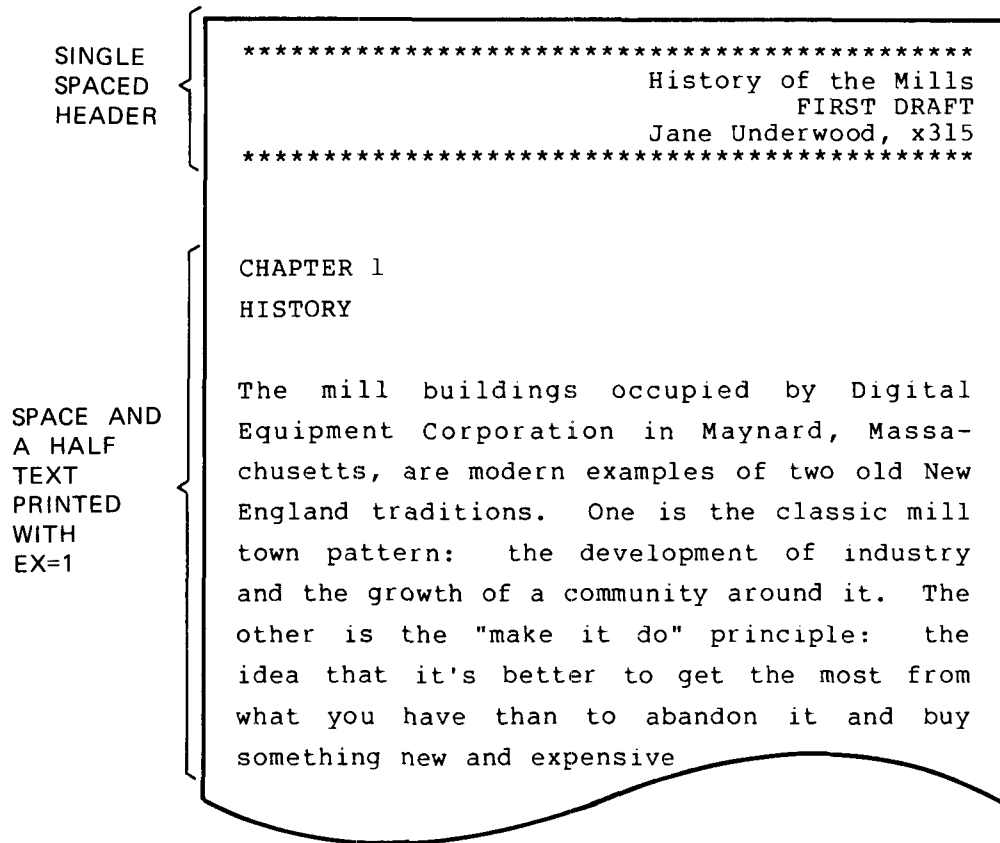
3. A header or footer will be printed justified only when proportional spacing is used (the value of Print Menu setting PI is equal to THEME). This qualification applies only to WS78 and WS100 systems.

14.7 EFFECT OF ADDING EXTRA VERTICAL SPACE WHEN PRINTING

A header or footer is always printed with the same amount of line spacing (half, single, space and a half, double) as it is typed with. It is not affected by extra vertical space added when printing a document (by means of Print Menu

setting EX). For example, here is a document which was typed single-spaced and printed space and a half (Print Menu setting EX equal to one).

Notice that the spacing in the header is the same whereas the spacing in the rest of each page differs.



MK-0117

Figure 14-7 Example of Printed Header and Text When Extra Vertical Space Is Specified

CHAPTER 15 USER DEFINED KEYS

A user defined key allows you to press any series of keystrokes (text, gold-lettered keys, mini keyboard keys) just once and save them (see Section 15.1). Whenever you need to reuse that series of keystrokes, all you have to do is recall the user defined key and the word processing system responds as if you had just typed each one (see Section 15.2).

Suppose, for example, that when you finish typing a 20-page report you find out you typed "CT" every place you were supposed to type "Cooling Tower." So you put the words "Cooling Tower" into the system's paste area, and then do the following: (1) press the gold key, (2) press the CONT SRCH & SEL key, (3) press the gold key, and (4) press the REPLC key. In order to replace all occurrences of "CT" you must re-

peat the above sequence of four keystrokes many, many times. If you save the keystrokes as a user defined key, you need type them only once.

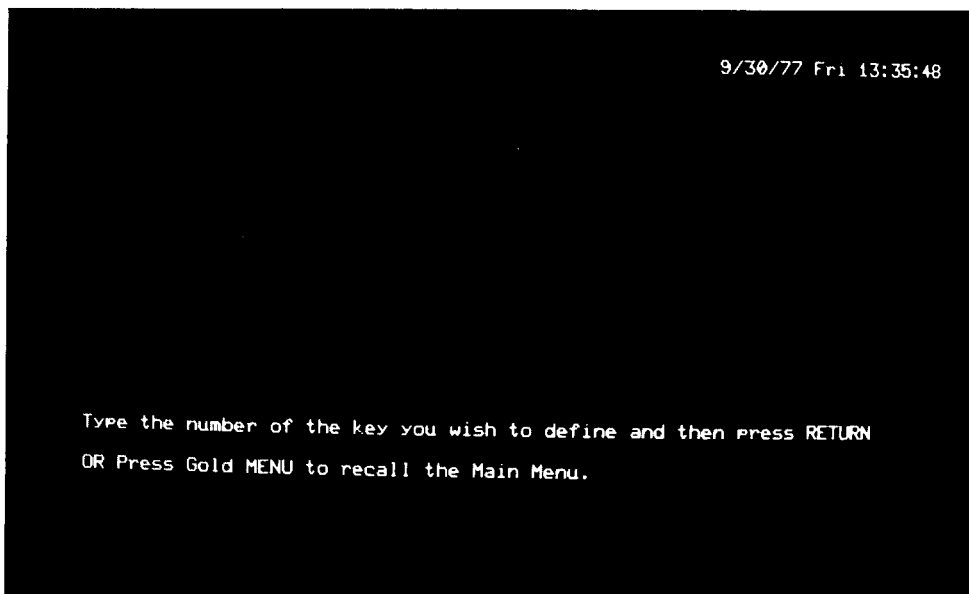
15.1 CREATING A USER DEFINED KEY

To create a user defined key:

1. **Type the letters AK, a space, the word YES, and press the RETURN key** only if you are using a WS78 or WS100 system. If you are using a WS102 system, go to step 2 below. You can set AK (Activate user defined Keys) to YES when any Main Menu page is displayed on the screen or when typing or editing a document (first press the gold and the MENU keys to display the Editor Menu). Once AK is set to YES, you cannot print any documents.

2. **Type the letters DK (Definition of user Key) and press the RETURN key.** You can do this when any Main Menu page is displayed on the screen or when typing or editing a document (first press the gold and the MENU keys to display the Editor Menu). Typing DK causes the following to be displayed on the screen:

If you are using a WS78 or WS100 system and type DK when AK is set to NO, the system will display the message "User Keys not active. Type AK YES and press RETURN." on the screen. If this occurs, go to step 1 above.

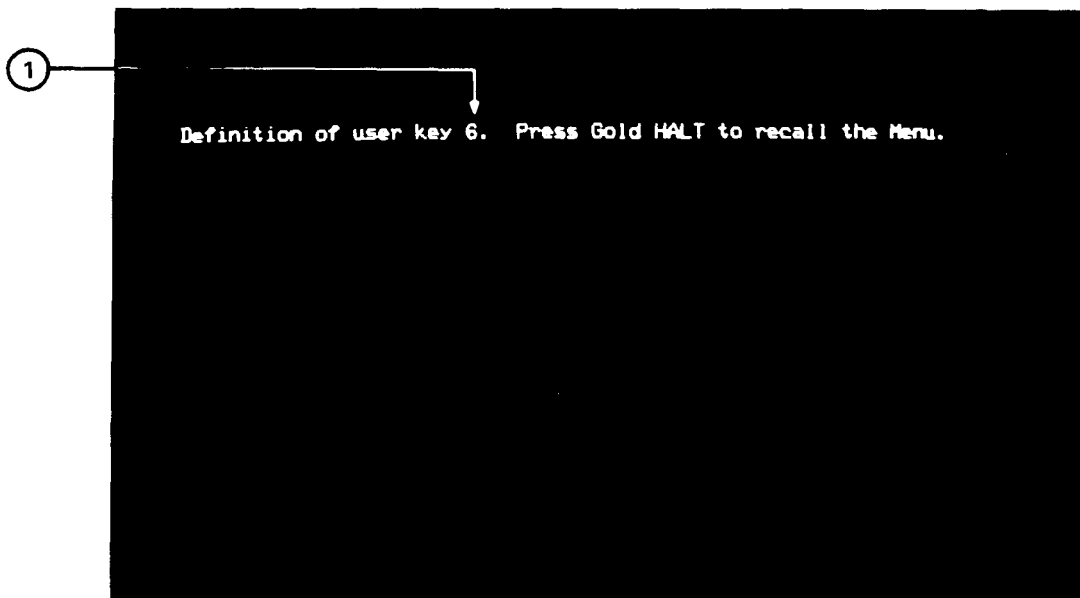


8920-12R4-A0130

Figure 15-1 Prompt for Defining a User Defined Key

3. Type a number between 0 and 9 and press the RETURN key. This is the number you will later use to refer to the user defined key. Typing the number causes the following to be displayed on the screen:

You can also type the number right after the letters DK (space in between). In this case, the screen display asking for the number is omitted.



1 USER TYPED THE NUMBER 6 AFTER "DK"

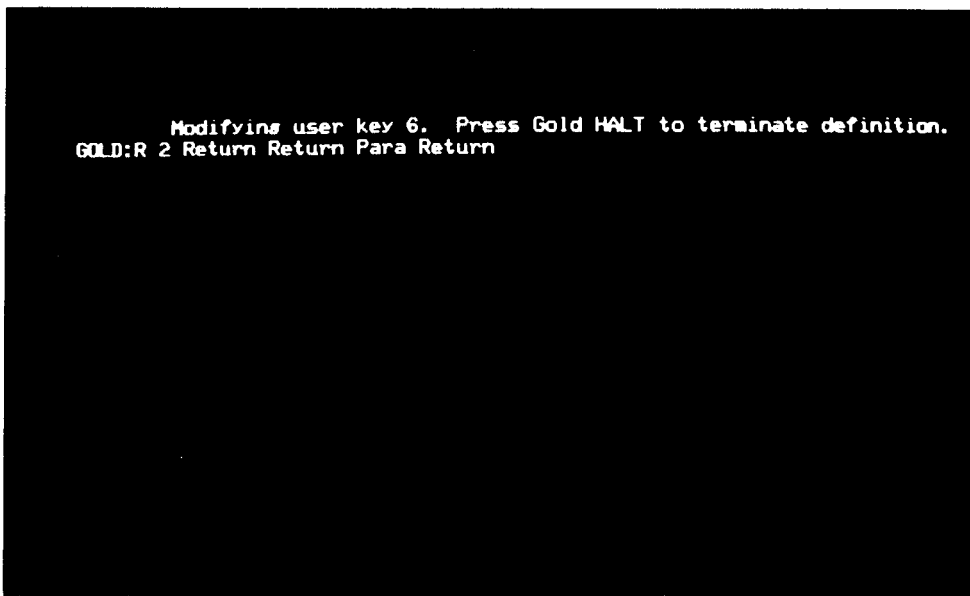
9113-10R4-A0129

Figure 15-2 Screen Display for Typing a User Defined Key

4. **Type the keystrokes that you want saved** with the user defined key number. Each letter, number, punctuation mark, or special character that you type will be displayed on the screen with a space before and after it. Any other (nontext) keystroke will be displayed with a descriptive name. Appendix F lists all nontext keystrokes and the corre-

sponding name that is displayed when each is typed into a user defined key.

Here is an example of a user defined key which reformats text by inserting a new ruler and then adds a hard return both before and after the reformatted text:



9113-12R4-A0131

Figure 15-3 Example of a User Defined Key Displayed on the Screen

The word "Definition" in the screen display will be changed to "Modifying" as soon as you press the first keystroke.

If you make a mistake while typing the definition, press the gold key and type the user defined key's number again. This acts as if

you had pressed the RUB CHAR OUT key and removes the previous keystroke. To change any other keystroke in the definition, you must repeatedly press the RUB CHAR OUT key to remove the preceding keystrokes.

5. **Press the gold and the HALT keys** when you have typed all keystrokes. The screen will now display whatever Main Menu page was previously displayed; if you were previously typing or editing a document, it will display your text.
6. **Type the letters AK, a space, the word NO, and press the RETURN key only if you are using a WS78 or WS100 system and don't intend to use the user defined key right away** (see step 1 for details of setting AK from both the Main and Editor Menus). This step is not necessary if you are using a WS102 or WS202 system.

15.2 USING A USER DEFINED KEY

In order to use a user defined key, you must start up the word processing system with the same system diskette as you used in creating the user defined key. This action is necessary because user defined keys are stored on your system diskette.

Follow these steps to use a user defined key:

1. **Type the letters AK, a space, the word YES, and press the RETURN key only if you are using a WS78 or WS100 system. If you are using a WS102 system, go to step 2 below.** You can set AK to YES when any Main Menu page is displayed on the screen or when typing or editing a document (first press the gold and the MENU keys to display the Editor Menu). Once AK is set to YES, you cannot print any documents.
2. **Press the gold key and type the number of the user defined key.** You can be typing or editing a document, or you can also be looking at any menu display.

3. **Type the letters AK, a space, the word NO, and press the RETURN key only if you are using a WS78 or WS100 system and don't intend to use the user defined key in the near future** (see step 1 for details of setting AK from both the Main and Editor Menus). This step is not necessary if you are using a WS102 or WS202 system.

Whenever you press the gold key and type the number of the user defined key, the word processing system responds as if you had just pressed all the keystrokes in the key's definition.

15.3 CHANGING A USER DEFINED KEY

Once you save a user defined key, you cannot insert additional keystrokes or change any existing ones. The only way to make changes is to replace the entire definition with a new one. To do so, you must first display the user defined key on the screen.

To display a user defined key, type the letters DK, a space, the number of the user defined key, and press the RETURN key to display the entire definition on the screen. You can do this when any Main Menu page is displayed on the screen or when typing or editing a document (first press the gold and the MENU keys to display the Editor Menu).

After displaying a user defined key, you have three options:

1. **Save the user defined key.** Press the gold and the HALT keys.
2. **Replace a user defined key.** Just type the new definition. When you have typed all keystrokes, press the gold and the HALT keys to save the user defined key.

3. **Eliminate a user defined key.** Press any key. The definition is replaced with the single keystroke just pressed. To remove this keystroke, press the gold key and type the user defined key's number. Then press the gold and the HALT keys.

The screen will now display whatever Main Menu page was previously displayed; if you were previously typing or editing a document, it will display your text.

15.4 RESTRICTIONS

User defined keys are subject to the following restrictions:

1. The keystrokes for pressing the gold and the HALT keys cannot be included in a user defined key. Pressing these two keys saves all keystrokes just typed.
2. The combined total of keystrokes in all user defined keys used with your system diskette cannot exceed 250. An error message will be displayed on the screen if you try to use more.

Because user defined keys are stored on your system diskette, you can create additional user defined keys by obtaining a new system diskette. (However, if you get a new system diskette you

will no longer be able to use your original user defined keys.)

15.5 INCLUDING ONE USER DEFINED KEY WITHIN ANOTHER

The keystrokes for one user defined key may be included within another. To do so, press the gold key and type the number of the user defined key to be included when you are typing the new user key's definition.

As an example of using this feature, consider the situation in which you already have a user defined key number 3 that inserts two hard returns, a ruler change, and a tab. Should you sometimes wish to have the words ACTION ITEM typed after the tab, all you do is define a new user defined key, number 4, for example, which contains the following key strokes:

1. Press the gold key,
2. Press the 3 key, and
3. Type ACTION ITEM.

It is not possible to include a particular user defined key number within itself. That is, you cannot specify user defined key number 3 when you type the definition string for user defined key number 3. Doing so removes the previous keystroke in the definition.

CHAPTER 16 CUSTOMIZING

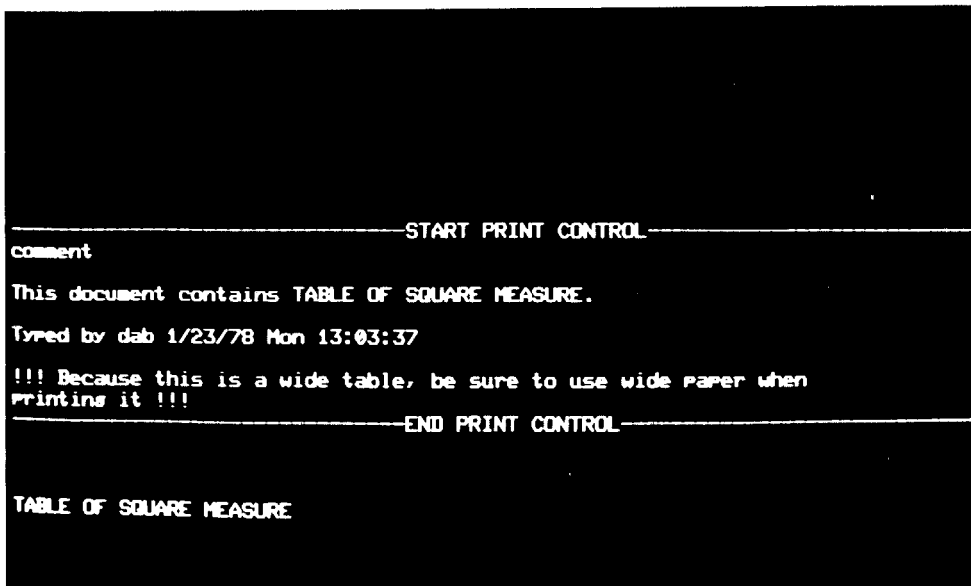
You can customize a document by using word processing features that make it more readable, usable, and reusable. Customization features available include the following.

1. Comments (see Section 16.1).
2. Date and time stamp (see Section 16.2).

3. Customization points (see Section 16.3).
4. List processing (see Section 16.4).

16.1 COMMENTS

A comment is text which displays on the screen but does not print out. It is useful for adding extra information or instructions to a document.

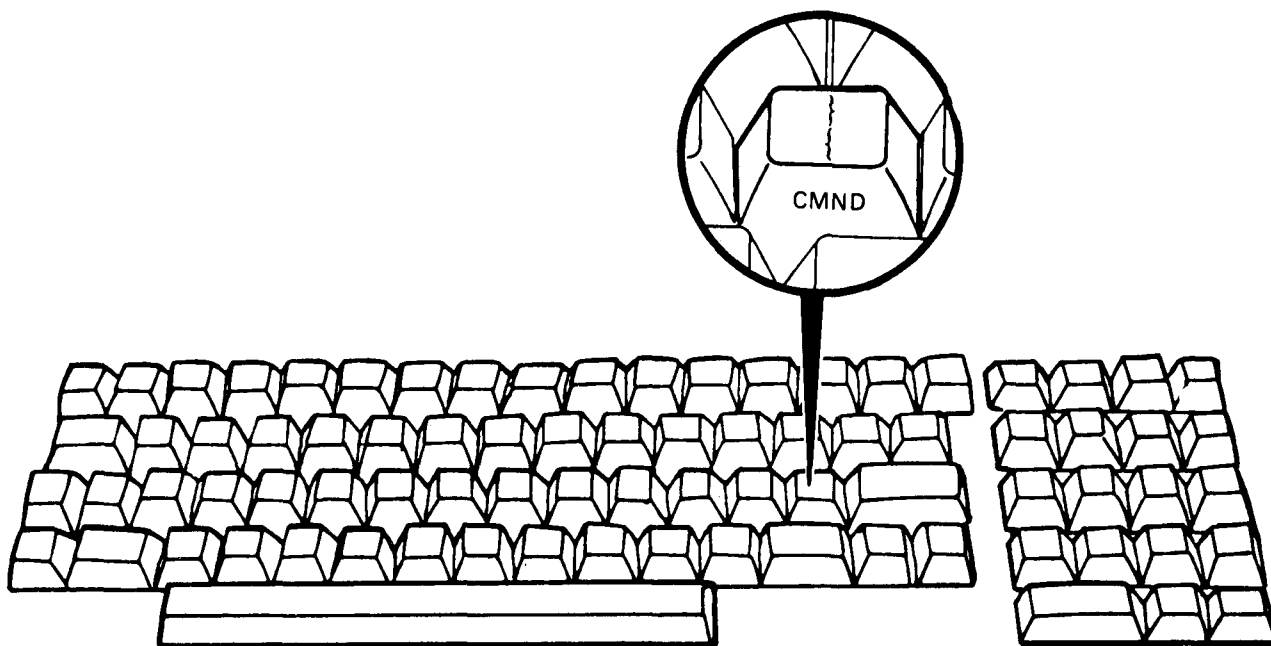


9113-14R4-A0132

Figure 16-1 Example of a Comment

The gold and the CMND keys are used to produce a comment.

There is no limit to how many comments you can use in a document.



MK-0115

Figure 16-2 Main Keyboard CMND Key

To produce a comment, follow these steps:

1. **Position the cursor** where the comment is to begin. While you can place a comment anywhere in a document, it is best to do so at the beginning of a line.

2. **Press the gold and the CMND keys.** A line of dashes with the words **START PRINT CONTROL** will be displayed on the screen. This line counts as only one word processing character so you can use either the **DEL CHAR** or **RUB CHAR OUT** key to remove it.

3. **Type the word COMMENT and press the RETURN key.**

4. **Type your comment.** There is no size limitation to a comment.

5. **Press the gold and the CMND keys again.** A line of dashes with the words **END PRINT CONTROL** will be displayed on the screen. This line also counts as only one word processing character so you can use either the **DEL CHAR** or **RUB CHAR OUT** key to remove it.

16.2 DATE AND TIME STAMP

You can automatically insert the current date and time in your document by pressing the gold and the DATE+TIME key.

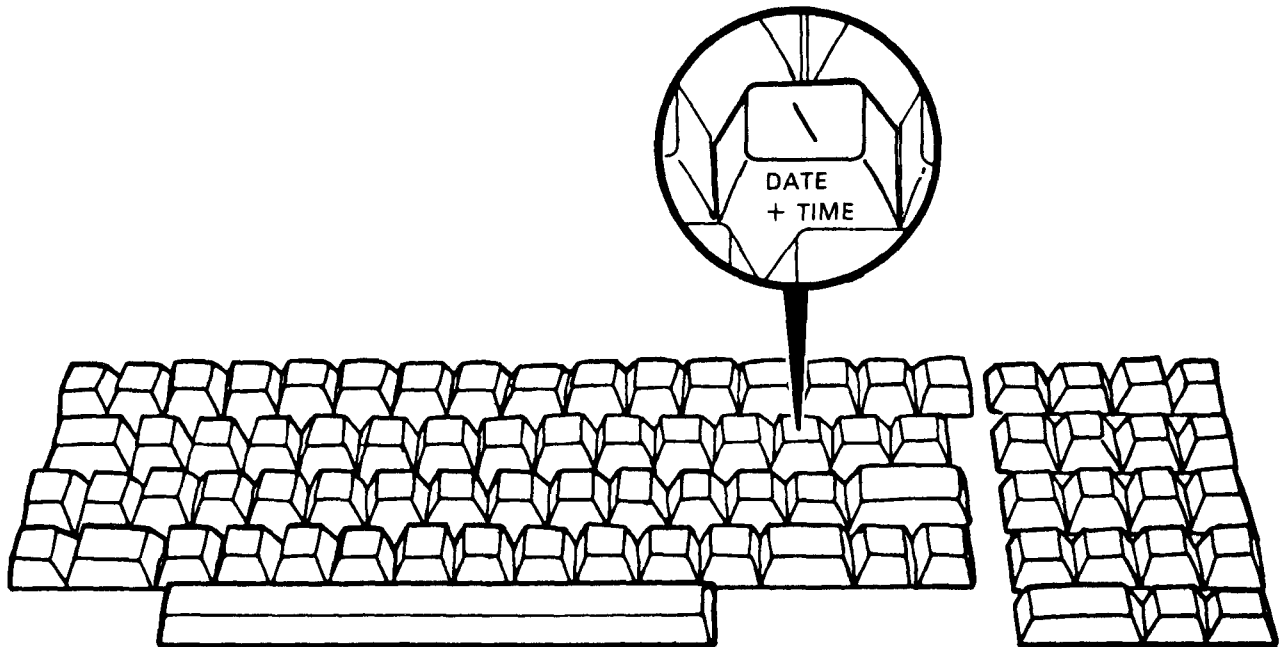
This key is useful when you need to put the date into a document. In the comment example of Section 16.1, the DATE+TIME key was used to indicate when the document was typed.

In order for the DATE+TIME key to take effect, you must type the date and time when you start up the word processing system. If you do not, a date of 0/0/00 and the amount of elapsed time since you started the system will be inserted into your document when you use the DATE+TIME key.

16.3 CUSTOMIZATION POINTS

A customization point is text which is surrounded with the angle bracket (< and >) characters. You can rapidly move the cursor to such text with the mini keyboard <> key. Therefore, type the angle bracket characters at places in your document which you intend to change later.

For example, suppose you are typing a chapter of a report which you know is going to be reorganized and revised. By surrounding all section heading numbers and cross-references with the angle bracket characters, you can rapidly find each place and update it when you produce the final revision. The following example shows a use of angle brackets surrounding changeable text (a section number).



MK-0118

Figure 16-3 Main Keyboard DATE + TIME Key

<7.3.1> How To Use the ON/OFF Switch

If the machine is already in use, skip this section and go to Section <7.3.2>. Otherwise, press the red ON/OFF switch located on the front of the machine.

You can use the angle bracket (< and >) characters to indicate places where information is to be added. For example, you can set up a reusable memo header that looks like this:

```
TO:    <>
FROM:  M.F. TAUB
DATE:  <>
SUBJECT: <>
```

Whenever you need to type a new memo, just get a copy of your form (you can use a paragraph library document effectively for this), and press the <> key to advance to each customization point. Then remove the angle bracket characters and type your information.

16.4 LIST PROCESSING

With list processing you can produce the same kind of typing over and over again – letters to people on a mailing list, purchase requisitions, baseball box scores, rows in tables – while just certain information varies from one piece of typing to another. For example, each letter produced by list processing contains the same body but is addressed to a different recipient. Similarly, each line in a table is typed in the same format, contains the same kind of information, but has different actual values.

Figure 16-4 shows some form letters produced with list processing

SOUTHPORT BOOK STORE
Greentree Shopping Mall
Bedford, Mass. 01730

December 25, 1976

Mrs. Alice Hartford
Brook Hill Road
Reading, Mass. 01867

Dear Mrs. Hartford:

All of us at the Southport Book Store would like to thank you for your patronage in the past year. We consider you one of our valued customers and look forward to many more years of supplying your reading needs.

Sincerely yours,



Thomas Flanders
President

December 25, 1976

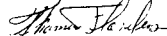
SOUTHPORT BOOK STORE
Greentree Shopping Mall
Bedford, Mass. 01730

Mrs. John Driscoll
256 Walnut Avenue
Brighton, Mass. 02135

Dear Mrs. Driscoll:

All of us at the Southport Book Store would like to thank you for your patronage in the past year. We consider you one of our valued customers and look forward to many more years of supplying your reading needs.

Sincerely yours,



Thomas Flanders
President

December 25, 1976

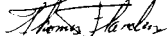
SOUTHPORT BOOK STORE
Greentree Shopping Mall
Bedford, Mass. 01730

Mr. Arthur Mitchell
407 Memorial Drive
Cambridge, Mass. 02140

Dear Mr. Mitchell:

All of us at the Southport Book Store would like to thank you for your patronage in the past year. We consider you one of our valued customers and look forward to many more years of supplying your reading needs.

Sincerely yours,



Thomas Flanders
President

CP-2781

Figure 16-4 Example of Form Letters
Produced by List Processing

16.4.1 Summary Of Features

Some of the features of list processing are:

Efficiency. List processing saves typing time by automatically typing repetitious information. Form letters are a good example of this efficiency. All you have to do is type the names and addresses just once, type a "skeleton" form that contains the body of the letter plus indicators showing where the names and addresses are to

be plugged in, and tell the system to perform list processing. It will then type out a separate letter to each recipient.

Variety. You can produce many different kinds of output from the same collection of information. For example, you can type letters addressed to people on a mailing list (who do not have overdue balances) and can also produce a table listing those with overdue accounts, such as the following:

Outstanding Accounts Payable

| Name | Amount Due in \$ | Overdue Code in months |
|------------------|---------------------|---------------------------|
| Hartford, Alice | 8.95 | 2 |
| Mahoney, Charles | 84.50 | 1 |
| McDonald, Joseph | 107.16 | 4 |

In addition, dunning letters (requests for payment) to overdue accounts, can also be produced. Figure 16-5 shows how these might look.

SOUTHPORT BOOK STORE
Greentree Shopping Mall
Bedford, Mass. 01730

December 25, 1976

Mrs. Alice Hartford
Brook Hill Road
Reading, Mass. 01867

Dear Mrs. Hartford:

Our records indicate that you have owed the Southport Book Store \$8.95 for more than 2 months. We would appreciate your attention to this matter with no further delay.

Sincerely yours,



Ralph McKelvey
Treasurer

P.S. If you have recently paid this small amount, please accept our apologies for this letter.

SOUTHPORT BOOK STORE
Greentree Shopping Mall
Bedford, Mass. 01730

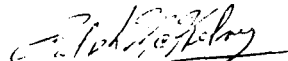
December 25, 1976

Mr. Joseph McDonald
23 Hampshire Street
Waltham, Mass. 02154

Dear Mr. McDonald:

Our records indicate that you have owed the Southport Book Store \$107.16 for more than 4 months. We would appreciate your attention to this matter with no further delay:

Sincerely yours,



Ralph McKelvey
Treasurer

P.S. Unless this balance is paid within ten days, we will be forced to turn your account over to our lawyers.

CP-2779

Figure 16-5 Example of Customized Letter
Produced by List Processing

Selectivity. You can be selective in deciding what to type out: you can produce output for every entry in the list (the Southport Book Store's thank you letters), or you can be choosy and process only a select group (the dunning letters to overdue accounts).

Customization. By incorporating the same piece of information several times in the same piece of output you can get a "customized product." For example, you can produce a letter that looks like this:

Miss Mary Canfield
101 North Chelsea Avenue
Warwick, Rhode Island 02889

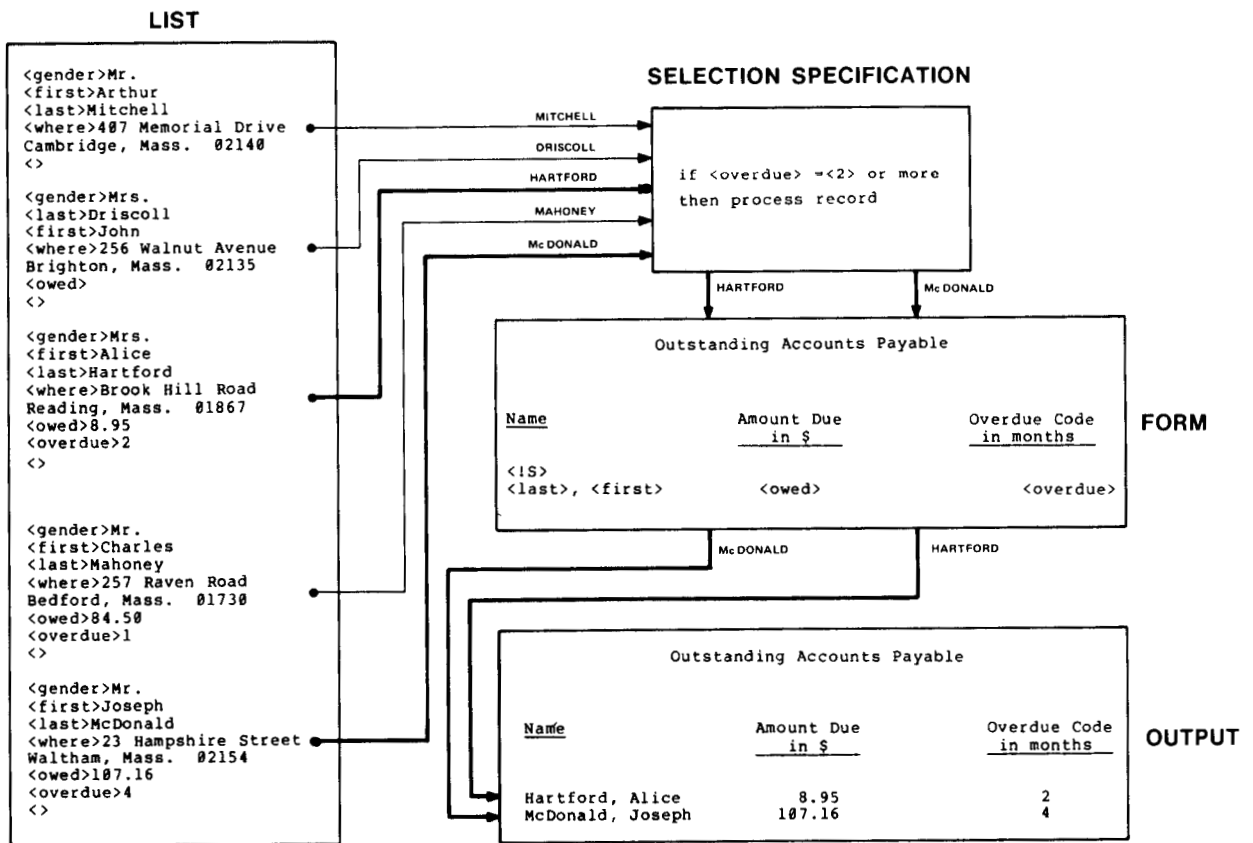
Dear Mary,

We are sure you will agree, Mary, that reading a newspaper helps keep you aware of what's happening. Many of your neighbors on North Chelsea Avenue already subscribe to the Daily Mercury and ...

16.4.2 Using List Processing

List processing operates by merging certain pieces of information from a list into a form and printing the merged result. This process is then repeated for each entry in the list. You can be selective in processing by telling the word pro-

cessing system which list entries are to be merged with the form for printing, for example, only those entries whose account balances are two or more months overdue. Figure 16-6 illustrates this process:



CP-2863

Figure 16-6 List Processing Selection/
Merging/Printing Production

To use list processing you need to have three documents:

1. **List.** This document contains the data that may possibly be merged into a form for printing.
2. **Form.** This document contains the text to be printed plus indicators showing where

and what kind of information (from the list document) is to be inserted.

3. **Selection specification.** This document specifies exactly which list entries are to be selected for merging with the form document.

Complete details for using list processing may be found in the *Word Processing System List Processing User's Manual*, AA - 5269B - TK.

CHAPTER 17 MAINTAINING DISKETTES

Using the word processing system is similar to using a typewriter, automobile, or any other piece of equipment: a certain amount of maintenance is necessary.

One type of maintenance is deleting documents which you no longer need. If you delete such documents, the system can reuse the diskette space for storing other documents. See Section 17.1 for details of deleting a document.

Another type of maintenance is initializing, verifying, and copying diskettes. Initializing means

to remove whatever is currently stored on a diskette and process the diskette so you can use it either for creating documents or for copying the word processing system software (see Sections 17.2.1 and 17.2.2). Verifying means to inspect the condition of a diskette after some odd symptom occurs, such as after you spill coffee on it or when a document contains text you never typed (see Section 17.2.3). Copying means to make an exact copy of one diskette onto another to maintain a “backup” of your work in case you accidentally destroy the original diskette (see Section 17.2.4).

17.1 DELETING A DOCUMENT

When you delete a document, the system removes all its text plus all its bookkeeping information from the index.

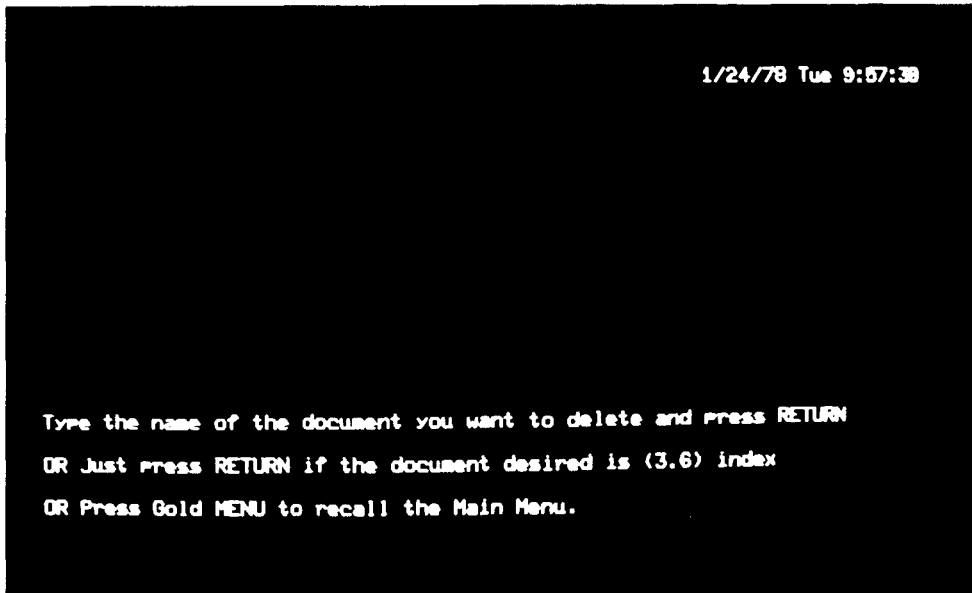
To delete a document, type the letter D when any Main Menu page is displayed on the screen and press the RETURN key. The system will ask you to identify the document to be deleted.

If you have previously worked on another document in the current word processing session, the system will ask you if you want to delete that

document. If you have inspected the index, the system will ask if you want to delete the document marked by the asterisk.

Type either the document's name or its number in the index. If the screen displays the correct document, just press the RETURN key.

As a shortcut, you can type the letter D, a space, identify the document, and press the RETURN key. In this case the word processing system does not prompt for your document name because you have already typed it.



9113-16R4-A0139

Figure 17-1 Document Deletion Prompt

After you identify the document, the word processing system will display its first ten lines and ask you to confirm your choice. This action prevents you from deleting the wrong document as

the system will delete a document only if you answer YES to the confirmation. Here is an example of a delete confirmation:

```
— Begins of the document to be deleted —                1/24/78 Tue 9:58:00
6   index                1/5/78  1/5/78 1:28    3    2    0:00  0:00
5   Memo for basic information on preliminary plan
    11/11/77 11/11/77 16:31  10    1    0:01  0:01
3   abbrev                11/4/77  11/4/77 11:12    1    3    0:01  0:05
2   intro part ii
— Entries in the index document for 3.6 —
index
— Is this the document you wish to delete? (yes or no) —
```

9113-18R4-A0138

Figure 17-2 Deletion Confirmation Prompt

17.2 INITIALIZING, VERIFYING, AND COPYING DISKETTES

To initialize, verify, or copy a diskette, type the letters MC (for Maintenance Commands) when any Main Menu page is displayed on the screen and press the RETURN key. The Diskette Maintenance Menu is then displayed.

The Diskette Maintenance Menu gives you four processing options. To perform any one, type its corresponding letter and press the RETURN key. Use these guidelines to choose the appropriate option:

1. To initialize a document diskette (option D).

- For brand new diskettes.

- To discard obsolete documents. You can delete all documents on a single diskette so it can be used for storing new documents (this is easier than deleting each individual document).

2. To initialize a system diskette (option S).

- For brand new diskettes.
- To create a copy of the system software only (without any additional documents that the system diskette may contain).

```
— DISKETTE MAINTENANCE MENU —                               1/24/78 Tue 9:58:20

D = Initialize a document diskette
S = Initialize a system diskette
V = Verify diskette structure
C = Copy diskette

Type the letter and then press RETURN
OR Press Gold MENU to recall the Main Menu.
```

9113-20R4-A0141

Figure 17-3 Diskette Maintenance Menu

3. To verify a diskette (option V).

- When something odd happens such as being unable to create, edit, print, or delete a document, finding text you never typed in a document, or seeing a message that your diskette has errors.
- After a power failure. Electrical damage could destroy portions of a diskette or could create incorrect text.

4. To copy a diskette (option C).

- To create a "backup" copy of your typing so if you accidentally delete or lose a document, you can still recover your work.

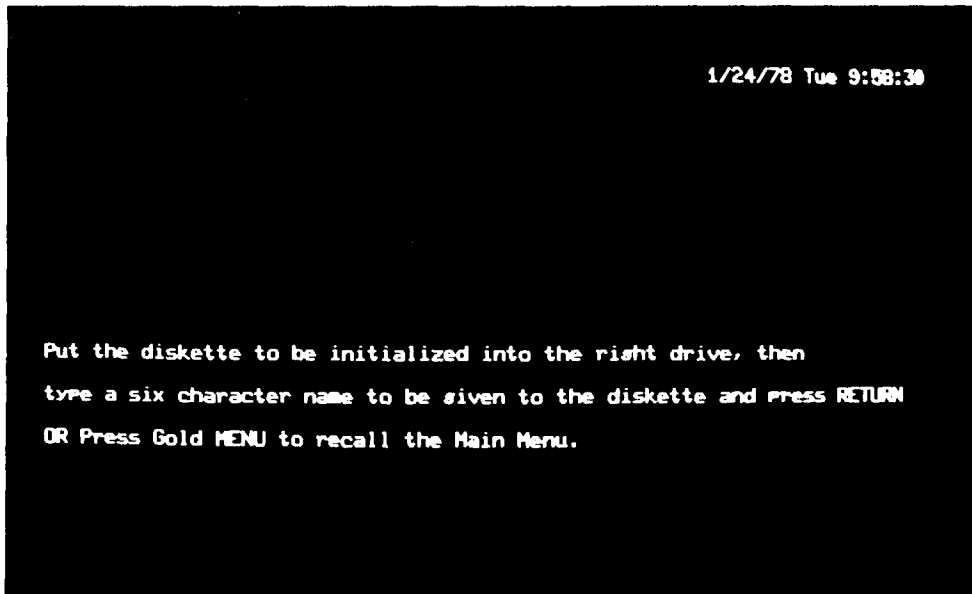
- To create an extra copy of your typing for distribution to other typists, offices, or for permanent storage.

17.2.1 Initializing a Document Diskette

Initializing a document diskette prepares a diskette so documents can be stored on it. Any documents already stored on the diskette are deleted.

To initialize a document diskette, follow these steps:

1. **Type the letters MC and press the RETURN key** when any Main Menu page is displayed on the screen.
2. **Type the letter D and press the RETURN key.** The screen will display the following instructions:



9113-21R4-A0140

Figure 17-4 Diskette Initialization Prompt

3. **Follow the instructions on the screen.** Put the diskette to be initialized into the right diskette drive. Type a diskette name (between one and six characters) and press the RETURN key. You will see this name when you display the diskette's index of documents.
4. **Observe the elapsed time clock on the screen.** Initialization takes a minute or two and, once begun, cannot be stopped (so you have some time for other activities).
5. **Press the gold and the MENU keys** when the screen displays the ending time plus a message telling you to "Press Gold MENU to recall the Main Menu."

17.2.2 Initializing a System Diskette

When you initialize a system diskette, the word processing software is copied from the system diskette you are currently using onto your new one (after the previous contents of the new diskette are first deleted). Initialization does not copy any documents that are stored on the system diskette currently being used (if you want a new diskette with both those documents and the software, copy the system diskette as described in Section 17.2.4).

To initialize a system diskette, follow these steps:

1. **Type the letters MC and press the RETURN key** (when any Main Menu page is displayed on the screen).
2. **Type the letter S and press the RETURN key.** The screen displays the same instructions as for initializing a document diskette (see Section 17.2.1 above).
3. **Follow the instructions on the screen.** Put the diskette to be initialized into the right disk-

ette drive. Type a diskette name (between one and six characters) and press the RETURN key. You will see this name when you display the diskette's index of documents.

4. **Observe the elapsed time clock on the screen.** Initialization takes a minute or two and, once begun, cannot be stopped (so you have some time for other activities).
5. **Press the gold and the MENU keys** when the screen displays the ending time plus a message telling you to "Press Gold MENU to recall the Main Menu."

17.2.3 Verifying a Diskette

You should verify a diskette after a power failure, when garbled characters appear in a document, when text you typed has disappeared, when text appears out of order, when the system displays a disk error message, when any other strange symptom appears, when you remove a diskette without filing the document you were using, or when you perform any other action which may have damaged the diskette or its contents.

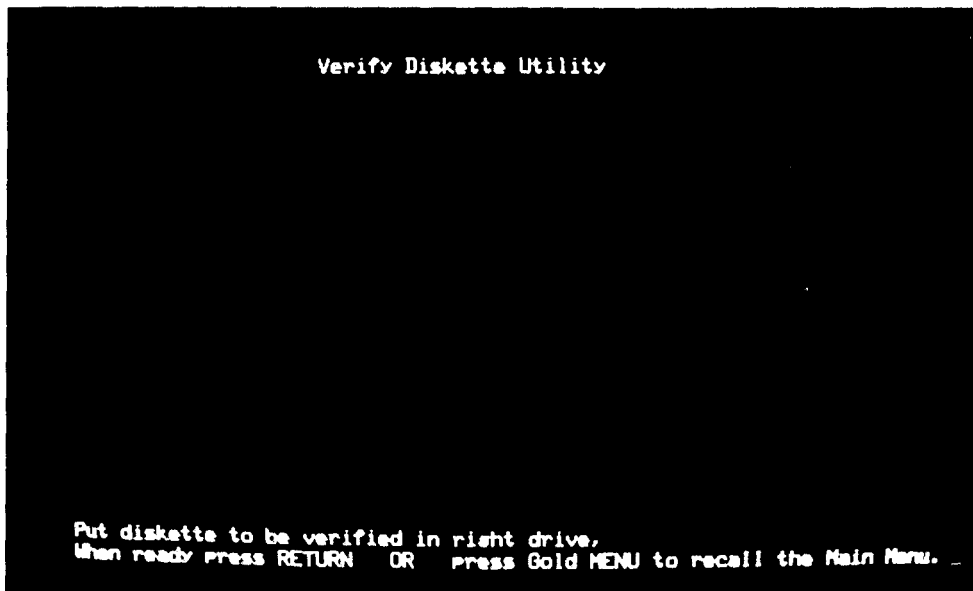
The system verifies a diskette in two stages.

1. **Physical, or readability, check.** The diskette may have physical damage which you cannot visually detect. Because the system examines the diskette by "reading" it, this check is referred to as *readability*.
2. **Format check.** Even though the information (text or software) on a diskette may be read successfully, that information may be formatted incorrectly (not located in the correct places on the diskette). Therefore, the system examines the entire diskette for formatting errors.

When the system finishes verifying a diskette, it not only informs you whether the diskette contains errors but it also supplies the capability of salvaging valid text from the damaged diskette and correcting certain errors.

17.2.3.1 How To Verify a Diskette – To verify a diskette, follow these steps:

1. **Type the letters MC and press the RETURN key** when any Main Menu page is displayed on the screen.
2. **Type the letter V and press the RETURN key.** The screen displays the following instructions:



9113-24R4-A0134

Figure 17-5 Diskette Verification Prompt

3. Follow the instructions on the screen.

When you press the RETURN key to proceed with verification, the word processing system examines each of the diskette's 632 blocks and displays the following message. The system continually updates this message as it examines successive diskette blocks.

Verify Diskette Utility

① block checked, ② errors detected.

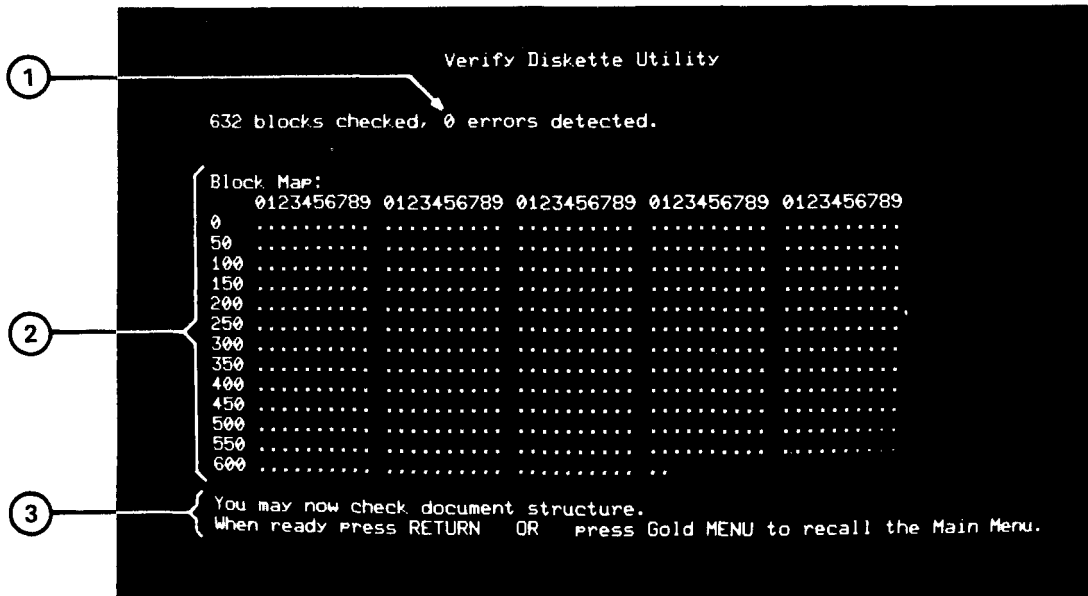
Checking diskette for readability...

Numbers will appear in the display in place of the circled number above and indicate:

- ① **Block currently being examined.** This number is incremented by 10 until the maximum value of 632 is reached.
- ② **Number of errors detected.** This is incremented by 1 as each error is detected.

You can stop verification before it is complete by pressing the gold and the HALT keys.

When the system finishes examining the last block, it displays a summary of the diskette's physical condition. Here is an example of this display:



8920-24R4-A0137

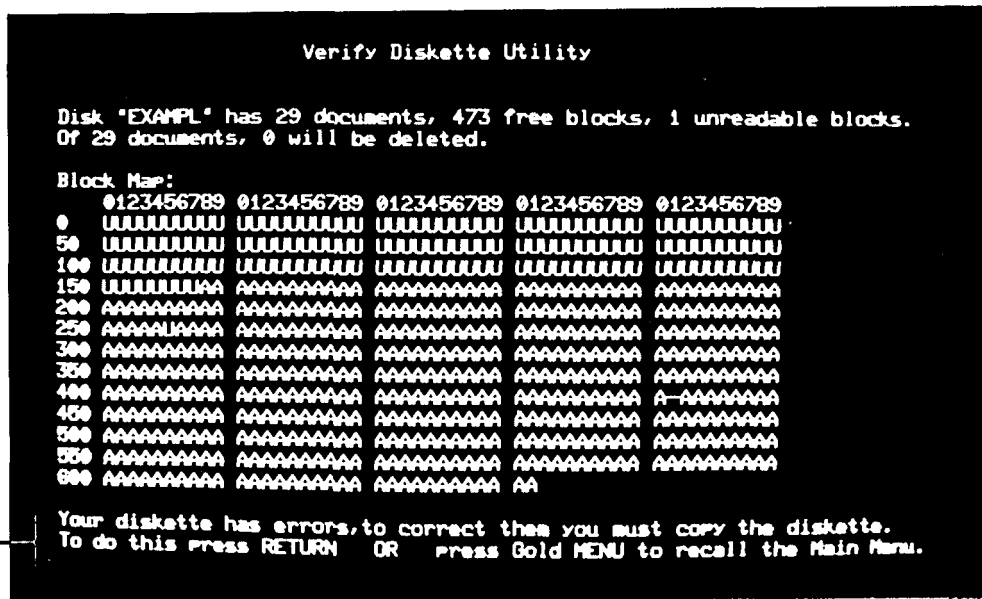
Figure 17-6 Example of Diskette Verification Screen Display for a Diskette Without Errors

- ① **Number of errors found.** This is the number of physical diskette errors detected.
- ② **Block map.** This indicates which blocks are valid (the ones with dots) and which are physically damaged (the ones with exclamation points).
- ③ **A message** asking whether you want the diskette verified for additional errors.

Even if the screen display indicates zero errors, your diskette may still contain errors of another

type: text incorrectly formatted. These errors will be detected by the system provided you type YES and press the RETURN key in response to the prompt. While you can answer NO and proceed with other word processing work (a Main Menu page will be displayed on the screen), you may later have difficulties using the diskette.

During formatting verification, the system again examines each of the diskette's 632 blocks and displays a constantly-updated message. When formatting verification is complete, the system displays a summary. Here is an example of this display for a diskette that contains formatting errors:



① INSPECT THIS MESSAGE

9113-25R4-A0136

Figure 17-7 Example of Diskette Verification Screen Display for a Diskette Having Errors

Inspect the last two lines of your screen display. If the following message appears in the next to last line, then your diskette has no errors and you may proceed to use it.

```
No errors found.  
Press Gold MENU to recall the Main  
Menu.
```

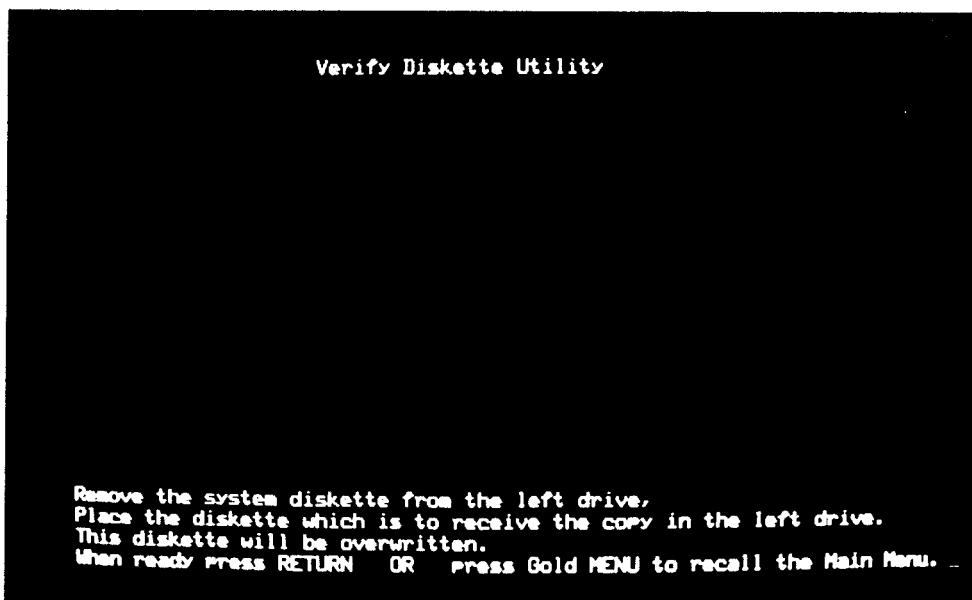
As many errors as possible will be corrected by the system provided you press the RETURN key in response to the prompt. While you can ignore the warning and proceed with other word processing work (a Main Menu page will be displayed on the screen), you will later have difficulties using the diskette.

17.2.3.2 Recovering from Diskette Errors - You can correct certain errors and salvage valid text

from a damaged diskette with the verification recovery procedure. In summary, the system will copy as much text as possible onto a new document diskette (even if your original diskette is a system diskette). It will correct as many errors as possible and then store the corrected text on the new diskette. If the system cannot salvage any portion of a document from the original diskette, it will not put anything for that document onto the new diskette. The original diskette is not altered.

To use the verification recovery procedure, follow these steps:

1. **Press the RETURN key** in response to the prompt that is displayed at the conclusion of formatting verification. The system will display the following instructions:



9113-26R4-A0157

Figure 17-8 Diskette Verification Prompt

2. **Remove the system diskette, insert a new diskette into the left drive, and press the RETURN key.** The system will proceed to copy as much text as possible onto the new diskette, will reverify each document copied, and will display a constantly-updated message of the number of documents copied on the screen. This process will take at least five minutes.

When complete, the system will display a list of those documents which either were not copied at all or which are not entirely complete (a portion could not be copied) on the screen.

3. **Remove the two diskettes, insert the system diskette in the left drive, insert the new document diskette in the right drive and press the gold and the MENU keys.**
4. **Examine the affected documents** on the new diskette. If only portions of a document are missing, you can retype them. If most of a document is missing, use your backup diskette to get a new copy of the entire document (or retype if you have no backup).
5. **Examine the index of documents** for the new diskette. The message "There is no document with the number" will appear in the index after the name of each document which the system was not able to copy from the original diskette (because the document was so badly damaged that no text could be salvaged). Either make a new copy of the document from your backup diskette or retype it.
6. **Initialize the original diskette** (see Sections 17.2.1 and 17.2.2). If the system displays a message that the diskette contains an error, discard it. Otherwise, you can now reuse

the diskette for storing either documents or the word processing system software.

The following qualifications apply to the diskette recovery procedure.

1. **The new diskette may have the name "FIXED"** instead of the same name as the original one. This results when the original diskette has certain types of uncorrectable errors.
2. **A document may still contain errors even though it was not listed as "affected."** This results from errors that the system cannot detect. For example, if a portion of text or a ruler is missing from a document on the original diskette, the system will still copy that document onto the new one.
3. **When you type a document name, you may not be able to use a document from the new diskette even though it was copied there.** This results when document one (see Section 4.4) on the original diskette was damaged and the system could not correct the errors. Without document one, the system cannot find the other documents on a diskette even though they are there. (If document one was destroyed, you will still be able to use a document by typing its number.) You can salvage such a diskette by creating a new document one and typing the names and corresponding numbers of all documents on that diskette.

17.2.3.3 Preventing Diskette Problems – Some of the common causes of diskette problems and ways to avoid them include:

1. **Power failures during typing or editing.** Some of these, such as failures caused by thunderstorms, are unavoidable; others

you can guard against. For example, never unplug the system while typing or editing a document.

2. **Human errors.** The most common human error is removing a diskette from its drive before filing the document you are working with. Even worse, you could remove a diskette without filing the document and insert another diskette in the drive. Then, you not only lose text from the document on the first diskette, but you can also destroy text on the second diskette.

Always check whether documents are still being processed before you remove a diskette. This is especially critical with the WS102 system: the person at the other terminal may be using documents from your diskette. Type the letter F (for Finish) when any Main Menu page is displayed on the screen. If any documents are being processed from your diskette, the system will display a warning message. If no documents are being processed, the system will display the message "FINISHED USING THE SYSTEM."

3. **Dirt, grease, or other foreign matter on the surface of the diskette** resulting from improper handling. To avoid this problem, do not touch the brown, shiny diskette surface, and don't bend, fold, spindle, or mutilate the diskette. Write out the label **before** attaching it to the diskette. If you change the label, use a felt-tip pen and press lightly.

4. **Physical damage to the surface of the diskette** resulting from using a faulty diskette drive. If your diskette appears torn or bent after removal from the drive, call your DIGITAL Field Service Representative and do not use the drive until it is repaired.

5. **Diskette overflow.** This results from attempting to type or edit text after the system has warned you that the diskette is almost full. If you ever see the following message, file your document and use another diskette.

-- Do not add much more to document --

Only "number" blocks left on diskette.

Press Return

An actual number will appear in place of "number" in the second line of the warning message.

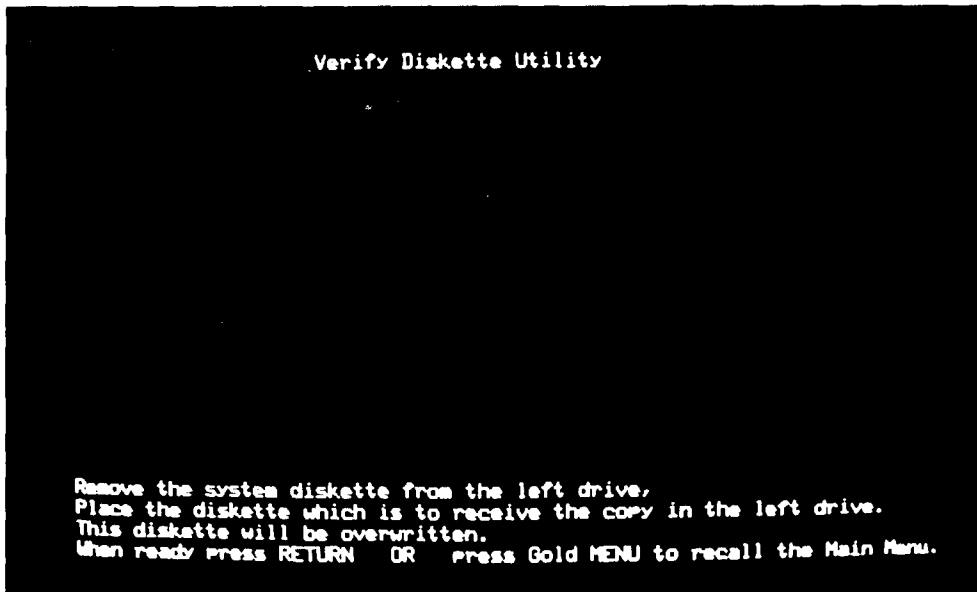
The best precaution is to copy your diskettes (see Section 17.2.4) regularly.

The Diskette Maintenance Menu copy option (see Section 17.2.4) should be used to do this. Copying takes only a few minutes and, in the long run, is well worth it. At the end of each day, make it a point to copy each diskette you used. Then label each with the name, date, and the fact that it is a backup copy. If you've done a lot of complicated work, such as editing a long document with extensive changes, it is a good idea to back up your diskette immediately.

17.2.4 Copying a Diskette

To copy an entire diskette (either document or system) onto another, follow these steps:

1. **Type the letters MC and press the RETURN key** when any Main Menu page is displayed on the screen.
2. **Type the letter C and press the RETURN key.** The screen will display the following instructions:

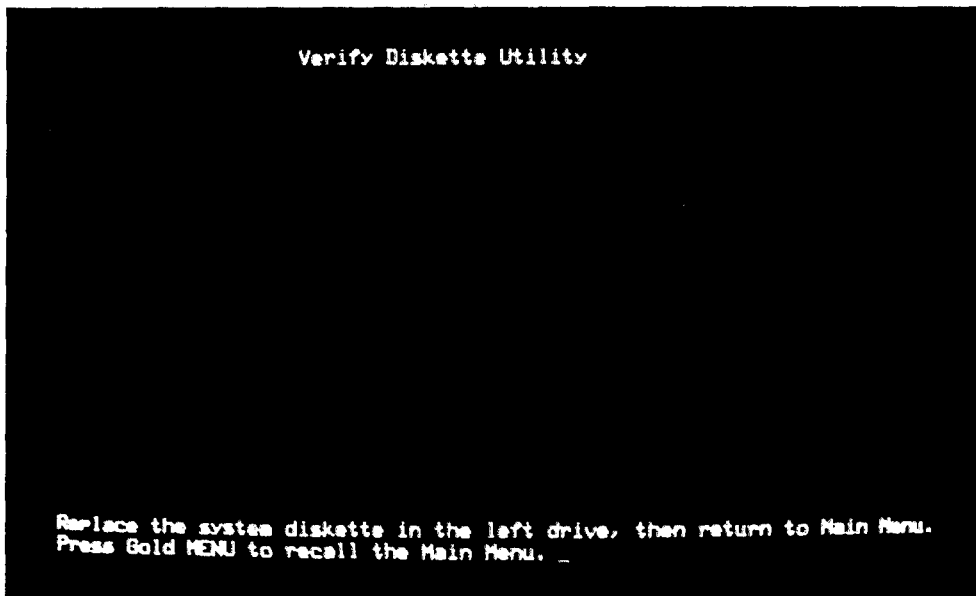


9113-26R4-A0157

Figure 17-9 Diskette Copy Prompt

3. Follow the instructions on the screen CAREFULLY. Insert the diskette to receive the copy in the left drive and the original diskette in the right. It is not necessary to initialize the diskette to receive the copy.

4. Observe the elapsed time clock on the screen. Copying takes a few minutes and, once begun, cannot be stopped (so you have some time for other activities). When copying is complete, the following instructions will be displayed on the screen:



9113-26R4-A0135

Figure 17-10 Prompt Displayed at Completion of Diskette Copy

5. Follow the instructions on the screen carefully.

The copying process would then take three or four times longer.

The following qualifications apply to copying a diskette:

1. Both users of a WS102 or WS202 system should not copy documents at the same time.

2. A diskette's name is copied to the new diskette. This means that if you initialized the new diskette, the name you assigned will be replaced with the name of the diskette being copied,

CHAPTER 18 WS102 AND WS202 SPECIAL FEATURES

Two special features are unique to the WS102 and WS202 systems.

1. **Both users can look at the same screen** and thereby share the same document. See Section 18.1 for details.
2. **Each user can specify the order in which documents are printed.** You can alternate printing your documents with the other

user, have all yours printed first, or allow all the other user's documents to be printed before yours. See Section 18.2 for details.

Both of these features are controlled by Main Menu settings which appear only in WS102 and WS202 systems.

References to the WS102 system in this chapter also apply to the WS202 system.

```
-- MAIN MENU (continued) --                               1/24/78 Tue 9:00:00

SS = Allow other terminal to share your screen (SS yes)
VS = View the screen of the other terminal
XK = Exchange keyboard with the other terminal
SP = Share printer (SP no)
SD = Send document to other terminal
M = More main menu selections...

Type the letter(s) and then press RETURN
```

9113-11R1-A0142

(Version 2.7)

```
-- MAIN MENU (continued) --                               4/28/78 Fri 14:00:30

SS = Allow other terminal to share your screen (SS no)
VS = View the screen of the other terminal
XK = Exchange keyboard with the other terminal
SP = Share printer (SP no)
M = More main menu selections...

Type the letter(s) and then press RETURN
```

M123-17-A0260

(Version 3.0)

Figure 18-1 WS102 Main Menu Page

18.1 SHARING THE SAME SCREEN

Both WS102 users may look at the same document on their screens. However, only one user may type into or edit the document, while the other user may only view the results. In the instructions which follow, the user who can type into the document is referred to as the controlling user because he or she has keyboard control, and the other user is referred to as the viewing user.

To share a document, each user follows a specific procedure:

1. **Controlling user.** Type the letters SS, a space, the word YES, and press the RETURN key when any Main Menu is displayed on the screen (if the last Main Menu page is currently displayed, YES will appear on the same line as SS).
2. **Viewing user.** Type the letters VS, a space, the word YES, and press the RETURN key when any Main Menu page is displayed on the screen. You must do this AFTER the other user sets SS to YES. If you try to set VS to YES while the other user's SS value is still NO, the word processing system displays an error message saying "The other terminal is not set to allow you to view its screen."

If you set VS to YES when the controlling user has already displayed a document, your screen will go blank. You will see the document only when the controlling user moves the cursor.

If you set VS to YES when the controlling user is still displaying the Main Menu, you will see only the date and time. As soon as

the controlling user specifies a document, you will see the beginning of that document.

While viewing the other user's document, you can retain control of your keyboard by pressing the gold and the MENU keys. The Main Menu will be displayed on the screen, and you can proceed with other word processing work. If you want to look at the other user's screen again, set VS to YES.

It is possible to exchange keyboard control when sharing a document so that the user who previously was only viewing can now type and edit.

1. **Currently controlling user.** Type the letters XK (eXchange Keyboard), and press the RETURN key when any Main Menu page is displayed on the screen. If you type XK when the other user has SS set to NO, the word processing system displays an error message saying "Keyboards may not be exchanged unless screens are being shared."
2. **Currently viewing user.** You will have keyboard control as soon as the other user types XK and presses the RETURN key.

18.2 ORDER IN WHICH DOCUMENTS ARE PRINTED

When both users on a WS102 system submit documents to be printed, the system always prints the first one submitted. What happens next depends on the values of Main Menu setting SP (Share Printer). If both users have SP set to YES, the system alternates between users, servicing the user who submitted the first printing request and then the other, and then returning to the first user, etc. It is also possible to have all your printing requests serviced before the other user's. Set SP to NO to have all your documents printed first.

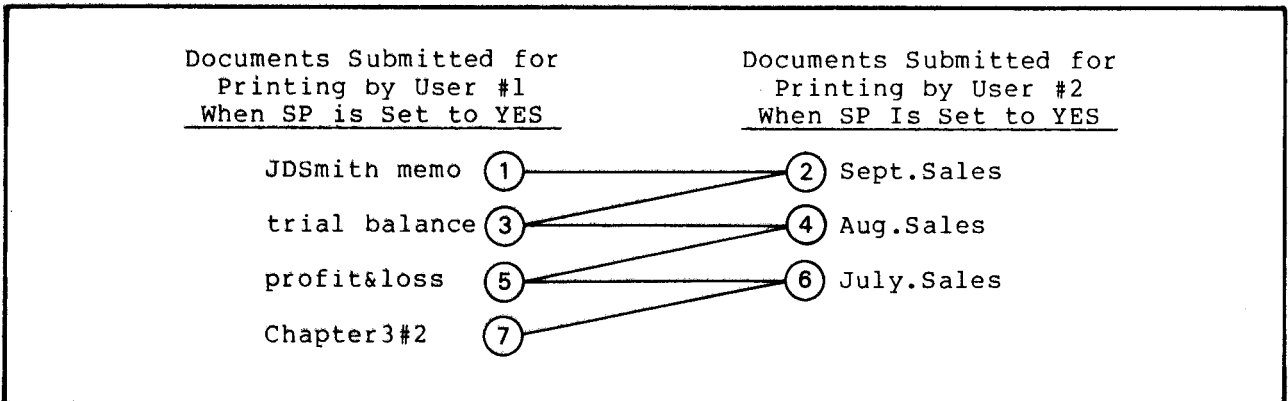
To change the value of SP, follow these steps:

1. When the Main Menu is displayed on the screen, type the letter M and press the RETURN key until the page with SP is displayed on the screen.
2. Inspect the value of SP. If it is satisfactory, proceed with your work. To change it, type the letters SP, a space, either YES or NO, and press the RETURN key. The new value you just typed is automatically displayed on the screen.

There are three possible combinations of SP settings: (1) both users set SP to YES, (2) both users

set SP to NO, and (3) one user sets SP to YES while the other sets SP to NO. Here is how the word processing system handles each of these SP setting combinations.

1. **Both users set SP to YES.** The word processing system prints a single document for the user who submitted the first printing request and then prints a single document for the other user. The system continues this process until all documents submitted are printed. In the following example, User #1 submitted the first printing request and User #2 the second.

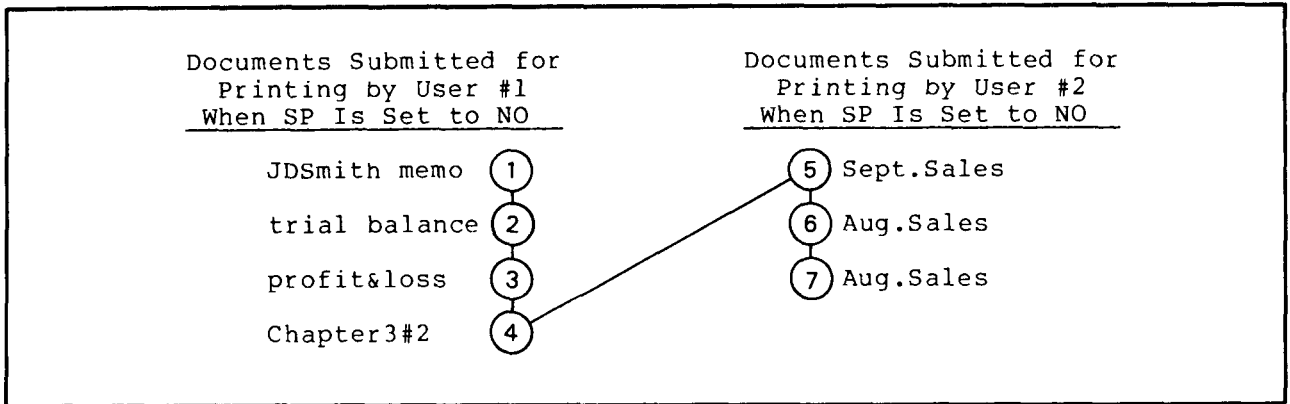


MK-0119

Figure 18-2 Example of Document Printing Order: Both Users Set SP to YES

2. **Both users set SP to NO.** The word processing system prints all documents for the user who submitted the first printing request

(User #1 in the example) and then prints all documents for the second user (User #2 in the example).

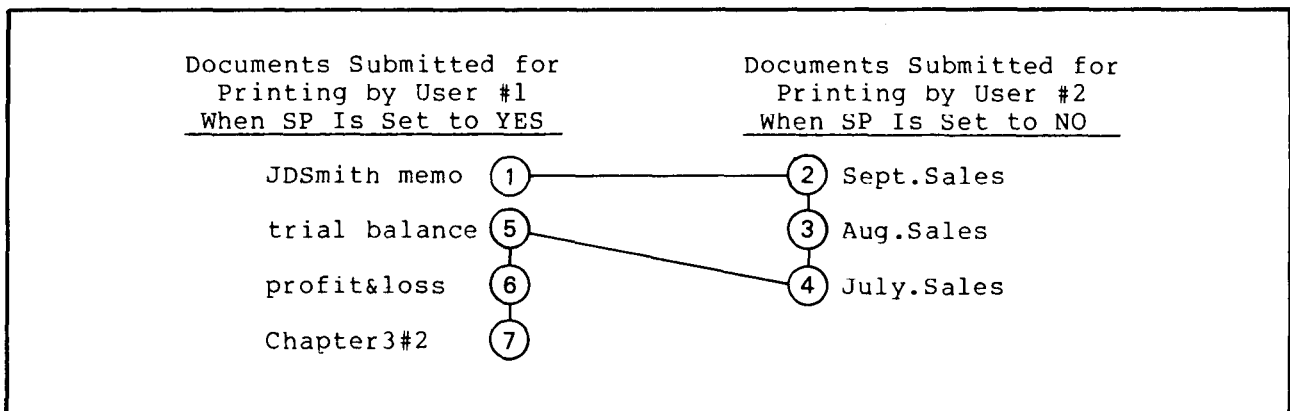


MK-0120

Figure 18-3 Example of Document Printing
Order: Both Users Set SP to NO

3. **One user sets SP to YES and the other to NO.** The word processing system prints a single document for the user who submitted the first printing request (User #1 in

the example) and then prints all documents for the second user (User #2 in the example).

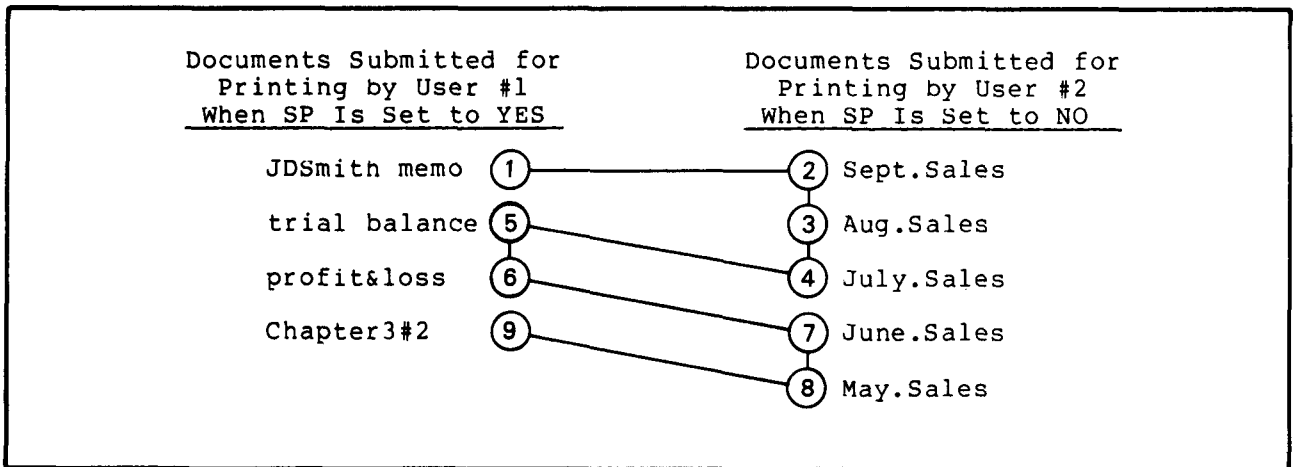


MK-0121

Figure 18-4 Example of Document Printing
Order: One User Sets SP to YES, Other to NO (1)

If any documents are submitted for printing by the user with SP set to NO when a document is being printed for the other user, all these documents are printed next (when the current one is complete). To con-

tinue the above example, if User #2 submits "June.Sales" and "May.Sales" for printing while "profit&loss" is being printed, the system follows this order of printing:



MK-0122

Figure 18-5 Example of Document Printing Order: One User Sets SP to YES, Other to NO (2)

APPENDIX A WORD PROCESSING KEYS

The word processing system contains two keyboards: a main one and a mini.

Appendix A.1 describes the main keyboard keys while Appendix A.2 describes the mini keyboard.

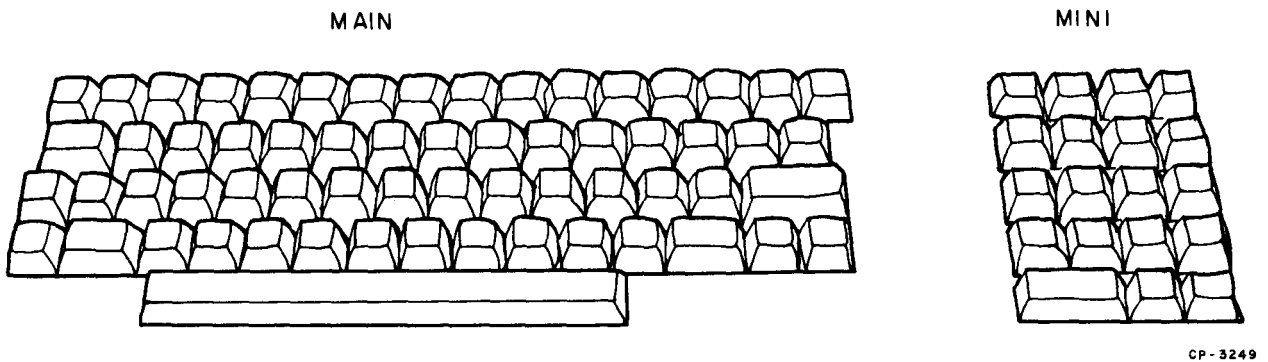
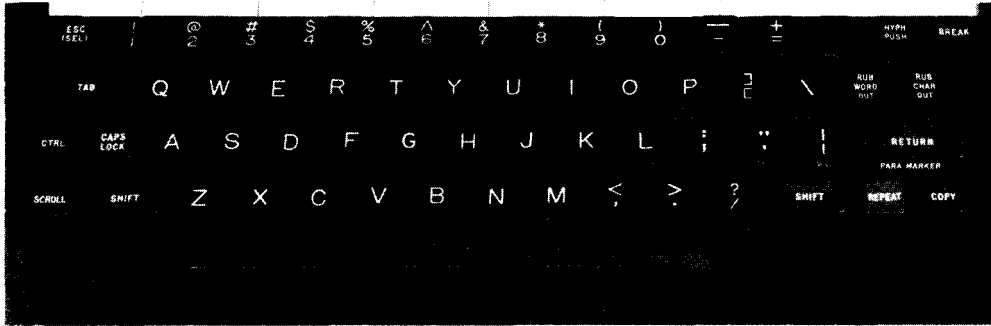


Figure A-1 Word Processing Main and Mini Keyboards

A.1 THE MAIN KEYBOARD

The main keyboard has a standard typewriter keyboard plus special keys.



8018-215-A0143

Figure A-2 Main Keyboard

Some main keyboard keys have two sets of color-coded labels. The top of each key is labelled with a letter, number, or special mark while the front face of some keys is labelled with gold letters. Pressing one of these keys is equivalent to typing the letter, number, or special mark. When the gold key on the mini keyboard is pressed first, these keys perform the special operation indicated by the gold labels rather

than their normal operation. (The sides of some of these keys are labelled with white letters; however, these functions are not used for word processing.)

Each main keyboard special key (not found on a standard typewriter) and gold-lettered key is described in Table A-1.

Table A-1
Main Keyboard Keys

ABBRV

(Black key, gold lettering)

Pressing the gold and this key copies frequently-used words or phrases from the abbreviation library document into the document currently being used. After pressing the gold and ABBRV keys, type a two character name to identify the abbreviation. See Chapter 10 for details.

BOT DOCMT

(Black key, gold lettering)

Moves the cursor to last character of the document. The screen will be blank until repositioning is completed.

BREAK (Red)

This key is not used for word processing.

CAPS LOCK

(Blue)

Pressing the gold and this key lets you type the letters A through Z in upper case. When pressed, this key stays locked until pressed again. Pressing this key does not affect the numbers or punctuation marks.

CENTR

(Black key, gold lettering)

Pressing the gold and this key centers the line of text. Press the gold and the CENTR keys at the end of the line to be centered. See Section 8.1 for details.

CMND

(Black key, gold lettering)

Pressing the gold and this key the first time inserts a line of dashes centered with the words START PRINT CONTROL. The second time the gold and the CMND keys are pressed inserts a line of dashes centered with the words END PRINT CONTROL. Between these two lines must be typed a header or footer (see Chapter 14), comment (see Section 16.1), multicolumn printing command (see Section 13.3.3), or page numbering reset command (see Section 14.4).

Each of these lines counts as one word processing character so you can remove it by positioning the cursor on the line and pressing the DEL CHAR key.

CONT SRCH

(Black key, gold lettering)

Pressing the gold and this key continues searching for the same phrase again after the first occurrence is located. Searching continues in the same direction as it started. See Chapter 7 for details.

CONT SRCH & SEL

(Black key, gold lettering)

Pressing the gold and this key searches for a specified phrase and automatically selects it for subsequent action (cutting, or replacing with other text). See Chapter 7 for details.

COPY (Red)

This key is not used for word processing.

Table A-1 (Cont)
Main Keyboard Keys

CTRL (Red)

This key is not used for word processing.

DATE & TIME

(Black key, gold lettering)

Pressing the gold and this key inserts the current date and time in the document at the point where the cursor is presently located, e.g. 3/29/76 Mon 12:02:10. Date and time must be typed when you start up the system. See Section 2.4 for details if you are using either a WS78 or WS100 system; Section 2.5, for a WS102 system.

DEAD KEY

(Black key, gold lettering)

Pressing the gold and this key causes two or more characters to be printed on top of one another (overstruck). Position the cursor under the second character before pressing the gold and this key. The character above the cursor and the one to its left will be replaced with the ± symbol (the two characters will no longer be displayed). Overstruck characters can be redisplayed by positioning the cursor under the ± symbol and pressing the gold and the DEAD keys again. See Section 9.2 for details.

ESC (Red)

This key is not used for word processing.

FILE DOCMT

(Black key, gold lettering)

Pressing the gold and this key stores the document that is currently being used. The system will prompt you for the name of the document to be inserted. See Section 3.3 for details.

GET DOCMT

(Black key, gold lettering)

Pressing the gold and this key inserts a copy of a document into the document currently being used. The system will prompt you for the name of the document to be inserted. See Section 5.1.3 for details.

HALT

(Black key, gold lettering)

Pressing the gold and this key stops the following current word processing operations: the gold key followed by either ABBRV, LIBRY, GET DOCMT, SEARCH, ADVANCE, BACK UP, BOT DOCMT, a list processing merge, any blue grammatical key, or a user defined key.

HYPH PULL

(Black key, gold lettering)

Pressing the gold and this key pulls the last letter from the previous line to the beginning of the current line. Use this key if you push too many characters with the HYPH PUSH key. See Section 11.2 for details.

Table A-1 (Cont)
Main Keyboard Keys

HYPH PUSH

(Black key, white lettering)

Pressing this key pushes the first letter on the current line back to the end of the last line where it will appear (if it fits) followed by a hyphen. See Section 11.2 for details.

LIBRY

(Black key, gold lettering)

Pressing the gold and this key copies text from the paragraph library document into the document currently being used. See Section 10.2 for details.

MENU

(Black key, gold lettering)

Pressing the gold and this key displays the Main Menu. If pressed while creating or editing a document, displays the Editor Menu on the screen.

NEW PAGE

(Black key, gold lettering)

Pressing the gold and this key inserts a **NEW PAGE** mark in the document. The text which follows the mark will always be printed on a new page. Use this for text that must start on a new page (such as a title page or new chapter). The cursor will stop on the first nonblank line following this mark when the mini keyboard **PAGE** key is pressed. This mark counts as one

word processing character and can be removed by positioning the cursor on the line and pressing the **DEL CHAR** key. See Section 12.2 for details.

Numbers 0 through 9

(Black key, white lettering)

Pressing the gold key and then typing one of the numbers 0 through 9 inserts the keystrokes previously saved with a user defined key into your document. See Chapter 15 for details.

PAGE MARKER

(Blue key, gold lettering)

Pressing the gold and this key inserts a **PAGE MARKER** in the document. This causes the text which follows to be printed on a new page only when you tell the system to use the **PAGE MARKERs** and not automatically determine page endings while printing. See Section 12.3 for details.

PARA MARKER

(Black key, gold lettering)

Pressing the gold and this key inserts a mark in the text to identify the beginning of a new paragraph. The following text will start on a new line. In addition, if a paragraph indent (letter **P**) is set in the current ruler, succeeding text is indented to the indicated typing position. When the mini keyboard **PARA** key is pressed, the cursor will stop on the first character after this mark. See Section 6.1.2.3 for details.

Table A-1 (Cont)
Main Keyboard Keys

PRINT HYPH

(Black key, gold lettering)

Pressing the gold and this key inserts a visible hyphen in a compound word. This hyphen will always appear in the word regardless of its position on a line. If the word crosses the right margin, the system will attempt to break it at the hyphen. See Section 11.1 for details.

Holding down the shift key at the same time as pressing PRINT HYPH inserts an “invisible” hyphen in a word. This hyphen will appear in the text only if the word crosses the right margin. See Section 11.3 for details.

REPEAT (Blue)

Pressing this key lets you repeat the action of a main or mini keyboard key (such as typing a line of periods or dashes). Hold REPEAT down when pressing the key you want repeated. Be careful when using the REPEAT key; it is very easy to repeat more than intended.

REPLC

(Black key, gold lettering)

Pressing the gold and this key replaces selected text with text you previously put into the paste area (by cutting). Use this key in conjunction with the gold CONT SRCH & SEL key to locate and change multiple occurrences of the same phrase throughout a document. See Section 7.2 for details.

RUB CHAR OUT

(Black key, white lettering)

Pressing this key deletes (erases) the character to the left of the cursor.

RUB LINE

(Black key, gold lettering)

Pressing the gold and this key deletes (erases) a complete line to the left of the cursor.

RUB SENT

(Black key, gold lettering)

Pressing the gold and this key deletes (erases) a complete sentence to the left of the cursor. A word processing sentence is any amount of text followed by a period, question mark, exclamation point, tab, hard return, PAGE MARKER, or NEW PAGE mark. If any spaces appear to the immediate left of the cursor, pressing the RUB SENT key removes both the spaces and the preceding sentence.

RUB WORD OUT

(Black key, white lettering)

Pressing this key deletes (erases) the word plus all spaces, hard returns, tabs, paragraph marks, PAGE MARKERS, or NEW PAGE MARKS, to the immediate left of the cursor.

Table A-1 (Cont)
Main Keyboard Keys

RULER

(Black key, gold lettering)

Pressing the gold and this key displays the current ruler settings. See Chapter 6 for details.

SCROLL (Red)

This key is not used for word processing.

SHIFT (Blue)

Pressing the gold and this key lets you type a character that appears at the top position of a number or punctuation mark key or a single upper case letter. There are two SHIFT keys, one at the left of the bottom row and one at the right. These keys do not lock; you must hold SHIFT down for each keystroke.

SRCH

(Black key, gold lettering)

Pressing the gold and this key moves the cursor forward (or backward) in the text to the first match with the phrase typed after the prompt "ENTER PHRASE:" is displayed on the screen. Press the ADVANCE key after specifying the phrase to start a forward search, the BACK UP key to start a backward search. Use the RUB CHAR OUT or RUB WORD OUT keys to correct characters in the phrase. Upper case (capital letters) in the phrase will match only upper case letters in the text but lower case will match either case. The system will buzz if no match is found. See Chapter 7 for details.

SUB SCRIPT

(Black key, gold lettering)

Pressing the gold and this key moves a character down one half-line when printed (not shown on the display screen). See Section 9.1 for details.

SUPER SCRIPT

(Black key, gold lettering)

Pressing the gold and this key moves a character up one half-line when printed (not shown on the display screen). See Section 9.1 for details.

TAB CENTER (Blue)

This key is not operational. Pressing the gold and this key causes the system to buzz.

TOP DOCMT

(Black key, gold lettering)

Pressing the gold and this key moves the cursor directly to the top (first line) of the document. The screen will display the message "--DOCUMENT FILING--" until repositioning is completed. This action is equivalent to filing a document and then requesting to edit it again (because the system updates bookkeeping information as if the document had been filed).

VIEW

(Black key, gold lettering)

Pressing the gold and this key shows the results of certain typing actions that are not normally displayed on the screen (such as tabs, underlines, hard and word wrap returns). After pressing the gold and VIEW keys, you can view successive lines by pressing the mini keyboard LINE key. You can redisplay the text in its original format by pressing the gold and VIEW keys again. Pressing any other key when viewing text redisplay the original text format but also inserts that keystroke into your document. See Appendix D for details.

A.2 THE MINI KEYBOARD

The mini keyboard contains keys used for editing and organizing text. They are grouped by color (blue, white, red, black, and gold) according to the functions performed.

The blue keys with white letters are used to position the cursor in a document so you can inspect the text, make changes, or type new material. They are called grammatical keys because they move the cursor by a grammatical amount (word, line, sentence, paragraph, page). The blue mini keyboard keys are described in Table A-2.

The white keys with black letters are mode keys. Two of them, the ADVANCE and BACK UP

keys, set a direction mode and also move the cursor one character forward or backward. After pressing either of these mode keys, you can then move the cursor with any of the blue grammatical keys in the direction just set. The SEL (for SElect), UPPER CASE, BOLD, and UNDER LINE keys set an action mode in addition to setting a forward direction mode. After pressing one of these four mode keys, you can then use any of the blue grammatical keys to indicate how much text is to be selected (for other action), displayed as upper case characters, marked for boldface printing, or marked for underlined printing. The white mini keyboard keys are described in Table A-3.

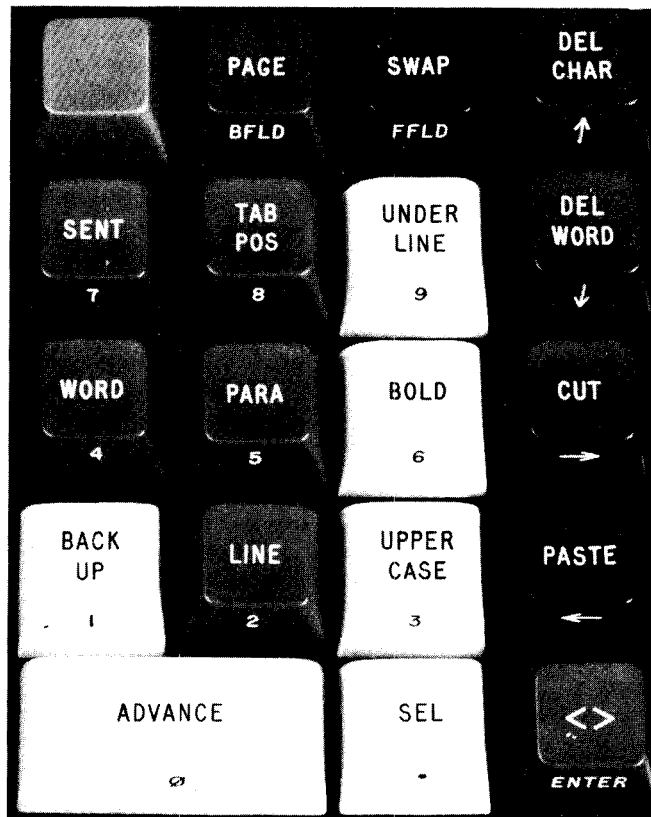


Figure A-3 Mini Keyboard

8018-214

The red keys with white letters are the deletion keys. They are colored red to warn you that text is deleted when these keys are used. These keys are described in Table A-4.

The black keys are used for two special editing functions: SWAP transposes two characters, and

PASTE inserts previously-typed text. These keys are described in Table A-5.

The gold key activates the gold-lettered functions of the main keyboard keys. If you accidentally press the gold key, press the HALT key to cancel its effect.

Table A-2
Mini Keyboard Blue Keys

LINE

Moves the cursor from the beginning of one line to another. A line is what is displayed on the screen between the left and right margins.

PAGE

Moves the cursor from the beginning of one page to the beginning of the next provided you previously inserted **PAGE MARKERs** or **NEW PAGE** marks in your document (see Chapter 12). If the document does not contain any, pressing this key is equivalent to pressing either the gold and the **ADVANCE** or the gold and the **BACK UP** keys. (Even though you may have printed your document and noticed that the word processing system automatically allocated it to pages, you cannot then use the **PAGE** key to move by pages through the document.)

PARA

Moves the cursor from the beginning of one paragraph to the next. A paragraph is either of the following:

1. Text that is separated by two hard returns.
2. Text that is marked with a paragraph mark (by pressing the gold and the **PARA MARKER** keys) when the ruler contains a paragraph indent (letter **P**) setting. See Section 6.1.2.3 for details on typing indented paragraphs.

SENT

Moves the cursor from the beginning of one sentence to the beginning of the next sentence. A word processing sentence is any amount of text which is followed by a period, question mark, exclamation point, tab, hard return, **PAGE MARK**, or **NEW PAGE** mark. A word processing sentence may not be the same as defined by English grammar. For example, "Is pi equal to 3.1416?" is really two word processing sentences because it contains one question mark and one period.

TAB POS

Moves the cursor from the beginning of one tab position to the next. If no tabs are present on the current line, moves the cursor to the beginning of the next line.

WORD

Moves the cursor from word to word. A word is a group of characters followed by a space, tab, hard carriage, return, or page break marker. For example, "easy-to-use" is one word. If it were typed "easy - to - use" it would be five words ("easy," "to," "use," plus two dashes). Each dash is an individual word because it is followed by a space.

<>

Moves the cursor from the first character after one right angle bracket (>) character to another.

Table A-3
Mini Keyboard White Keys

ADVANCE

Moves the cursor forward one character at a time. Also, places the system in the advance direction mode, allowing the cursor to be moved toward the bottom of the document by using the WORD, LINE, SENT, PARA, TAB POS, <>, and PAGE keys. Pressing the gold and the ADVANCE keys moves the cursor continuously toward the bottom of the document (this action can be stopped by pressing the gold and the HALT keys). The system will buzz if the ADVANCE key is pressed when the cursor is positioned at the bottom of the document.

BACK UP

Moves the cursor backward one character at a time. Also, places the system in the backup direction mode, allowing the cursor to be moved toward the top of the document by using the WORD, LINE, SENT, PARA, TAB POS, <>, and PAGE keys. Pressing the gold and the BACK UP keys moves the cursor continuously toward the top of the document (this action can be stopped by pressing the gold and the HALT keys). The system will buzz if the BACK UP key is pressed when the cursor is at the top of the document. It will then reverse the direction mode to forward.

BOLD

Marks the character above the cursor for boldfacing when printed. Also, places the system in

the advance and boldface mode so that pressing the WORD, LINE, SENT, PARA, TAB POS, PAGE, and <> keys marks additional text for boldfacing. Press the ADVANCE or BACK UP key to terminate the boldface mode. Boldfacing can be removed by pressing the gold key before pressing the BOLD key. This puts the system in the advance and boldface removal mode, similar to the advance and boldface mode. Once boldfacing is removed, press the ADVANCE or BACK UP key to terminate the mode. See Section 8.2 for details.

SEL

Marks the beginning or end of text for subsequent word processing action (cutting and pasting, changing to upper or lower case, marking for boldface or underlined printing, removing boldface or underline markings, subscripting, superscripting, or forming into a composite character) by placing a white square on the display screen. After pressing this key, either move the cursor to the other end of the selected text or type additional text (when you press SEL, the character above the cursor will be part of the selected text if you move the cursor forward but will not be part if you move the cursor backward). Then press the desired key(s). The selected text will be changed according to the key(s) just pressed and the white square removed from the screen. If you accidentally press the SEL key, press it a second time (the cursor will then be located where the SEL key was first pressed).

Table A-3 (Cont)
Mini Keyboard White Keys

UNDER LINE

Marks the character above the cursor for underlining when printed. Also, places the system in the advance and underline mode so that pressing the WORD, LINE, SENT, PARA, TAB POS, PAGE, and <> keys marks additional text for underlining. Press the ADVANCE or BACK UP key to terminate the underline mode. Underlining can be removed by pressing the gold key before pressing the UNDERLINE key. This puts the system in the advance and underline removal mode, similar to the advance and underline mode. Once underlining is removed from all characters, press the ADVANCE or BACK UP key to terminate the mode. See Section 8.2 for details.

UPPER CASE

Changes the character above the cursor to upper case (capital letter). Also, places the system in the advance and upper case mode so that pressing the WORD, LINE, SENT, PARA, TAB POS, PAGE, or <> changes additional text to upper case. Press the ADVANCE or BACK UP key to terminate the upper case mode. Upper case letters can be changed to lower case by pressing the gold key before pressing the UPPER CASE key. This puts the system in the advance and upper case removal mode, similar to the advance and upper case mode. Once all characters are changed to lower case, press the ADVANCE or BACK UP key to terminate the mode. See Section 8.2 for details.

Table A-4
Mini Keyboard Red Keys

CUT

Removes selected text from your document and stores it in the system's paste area. (You must press the white mini keyboard SEL key at one end and move the cursor to the other before pressing this key). A maximum of 7500 characters, or three pages, may be cut (the system will buzz if you try to cut more). To put text into the paste area without deleting it from the document, press the gold key and the CUT keys. See Section 5.4.4 for details.

DEL CHAR

Deletes (erases) the character above the cursor. The character can be restored by pressing the

gold key and then the DEL CHAR key again. Repeatedly pressing this key deletes characters to the right of the cursor. However, only the last character deleted can be restored.

DEL WORD

Deletes (erases) the remainder of the word above and to the right of the cursor including any spaces, hard returns, tabs, paragraph or centering marks, PAGE MARKERS, or NEW PAGE marks that follow. The word can be restored by pressing the gold key and then the DEL WORD key again. Repeatedly pressing this key deletes words to the right of the cursor. However, only the last word deleted can be restored.

Table A-5
Mini Keyboard Black Keys

PASTE

Copies the text from the paste area into your document so that it conforms to the current text ruler. The text in the paste storage area may be repeatedly inserted by pressing the PASTE key again. To preserve the pasted text's ruler, place the text into the paste area by using the CUT key (and not the gold and CUT keys), position the cursor at the insertion point, and press the gold

key before the PASTE key. See Section 5.4.4 for details.

SWAP

Interchanges the character above the cursor with the character immediately to its right. Positions the cursor under the character just moved forward (i.e., the one on the right). See Section 5.4.1 for details.

APPENDIX B MAIN MENU OPTIONS

This Appendix provides cross-references for all Main Menu options. Where the option is described in this Reference Manual, a cross-reference to the exact chapter or section is supplied. Where the option is described in a separate

document, the title and DIGITAL part number of the document are supplied.

Here is the first Main Menu page:

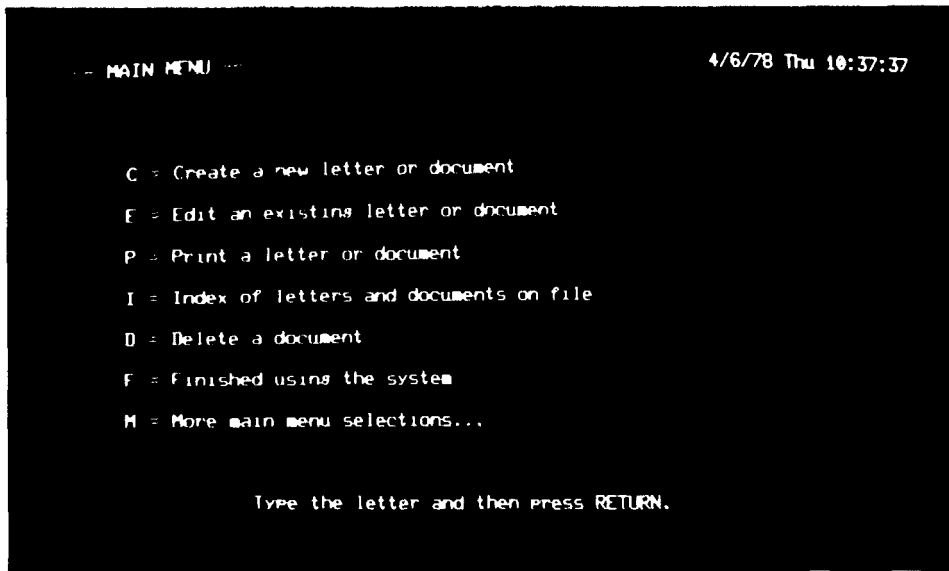
```
— MAIN MENU —                                     1/24/78 Tue 9:06:00

C = Create a new letter or document
E = Edit an existing letter or document
P = Print a letter or document
I = Index of letters and documents on file
F = Finished using the system
M = More main menu selections...

Type the letter and then press RETURN.
```

9113-11R1-A0146

Figure B-1 Main Menu Page One
(Version 2.7)



M113-12A0385

Figure B-1 Main Menu Page One
(Version 3.0)

| Option | Cross-reference | Option | Cross-reference |
|--------|---------------------------------|--------|--|
| C | Chapter 3 | F | Section 2.7 for WS78 and WS100 Section 2.8 for WS102 and WS202 |
| E | Chapter 5 | | |
| P | Chapter 13 | | |
| I | Section 4.1 | M | Typing the letter M and pressing the RETURN key causes the next Main Menu page to be dis- played on the screen. |
| D | Section 17.1 (Version 3.0 only) | | |

Here is the second Main Menu page:

```
— MAIN MENU (continued) —                               1/24/78 Tue 9:06:38

S = Stop printing
R = Resume printing
N = New page, bring the printer to the top of the paper
D = Delete a document
SL = Store list of documents waiting to print
RL = Retrieve list of documents waiting to print
M = More main menu selections...

Type the letter(s) and then press RETURN.
```

9113-5R1-A0149

(Version 2.7)

```
— MAIN MENU (continued) —                               4/6/78 Thu 10:43:58

S = Stop printing
R = Resume printing
N = New page, bring the printer to the top of the paper
SL = Store list of documents waiting to print
RL = Retrieve list of documents waiting to print
CI = Copy index into a document
M = More main menu selections...

Type the letter(s) and then press RETURN.
```

M113-13A0386

(Version 3.0)

Figure B-2 Main Menu Page Two

| Option | Cross-reference | Option | Cross-reference |
|--------|---------------------------------|--------|---|
| S | Sections 13.5 and 13.6 | RL | Section 13.7 |
| R | Sections 13.5 and 13.6 | CI | Section 4.3 (Version 3.0 only) |
| N | Section 13.5 | M | Typing the letter M and pressing the RETURN key causes the next Main Menu page to be displayed on the screen. |
| D | Section 17.1 (Version 2.7 only) | | |
| SL | Section 13.7 | | |

Here is the third Main Menu page:

```

— MAIN MENU (continued) —                               1/24/78 Tue 9:07:40

MC = Maintenance commands for diskettes
RD = Reset Date/Time
CI = Copy index into a document
DK = Define user keys
LP = List Processing Package
M = More main menu selections...

Type the letter(s) and then press RETURN.

```

9113-7R1-A0150

Figure B-3 Main Menu Page Three
(Version 2.7)

```

-- MAIN MENU (continued) --
4/6/78 Thu 10:44:21

SO = Set system options
MC = Maintenance commands for diskettes
RD = Reset Date/Time
AK = Activate user keys and deactivate printer
DK = Define user keys
LP = List Processing Package
M = More main menu selections...

Type the letter(s) and then press RETURN.

```

M113-14A0387

Figure B-3 Main Menu Page Three
(Version 3.0)

| Option | Cross-reference | Option | Cross-reference |
|--------|---|--------|---|
| SO | Appendix G, Word Processing System Communications Options User's Manual, AA-5264C-TK (Version 3.0 only) | DK | Section 15.1 |
| MC | Section 17.2 | LP | Word Processing System List Processing User's Manual, AA-5269B - TK |
| RD | Sections 2.6 for WS78 and WS100 Section 2.7 for WS102 and WS202 | M | Typing the letter M and pressing the RETURN key causes the next Main Menu page to be displayed on the screen. |
| CI | Section 4.3 (Version 2.7 only) | | |

Here is the fourth Main Menu page:

```
-- MAIN MENU (continued) --                               1/24/78 Tue 9:07:00

CX = Character transmission package
DX = Document transmission with a MP system
AD = Automatic Document Receive
M = More main menu selections...

Type the letter(s) and then press RETURN.
```

9113-9R1-A0147

(Version 2.7)

```
-- MAIN MENU (continued) --                               4/6/78 Thu 10:45:38

CX = Character transmission package
DX = Document transmission with a MP system
AX = Automatic document transmission
M = More main menu selections...

Type the letter(s) and then press RETURN.
```

M113-15A0388

(Version 3.0)

Figure B-4 Main Menu Page Four

| Option | Cross-reference | Option | Cross-reference |
|--------|---|--------|--|
| CX | Word Processing System Communications Options User's Manual, AA-5264C-TK | M | For WS78 and WS100 systems, typing the letter M and pressing the RETURN key causes the first Main Menu page to be displayed on the screen. |
| DX | Word Processing System Communications Options User's Manual, AA-5264C-TK | | |
| AD | Word Processing System Communications Options User's Manual, AA-5264C-TK (Version 2.7 only) | | For WS102 and WS202 systems, typing the letter M and pressing the RETURN key causes the next Main Menu page to be displayed on the screen. |
| AX | Word Processing System Communications Options User's Manual, AA-5264C-TK (Version 3.0 only) | | |

Here is the fifth Main Menu page. This page appears only in WS102 and WS202 systems.

```

-- MAIN MENU (continued) --                               1/24/78 Tue 9:08:00

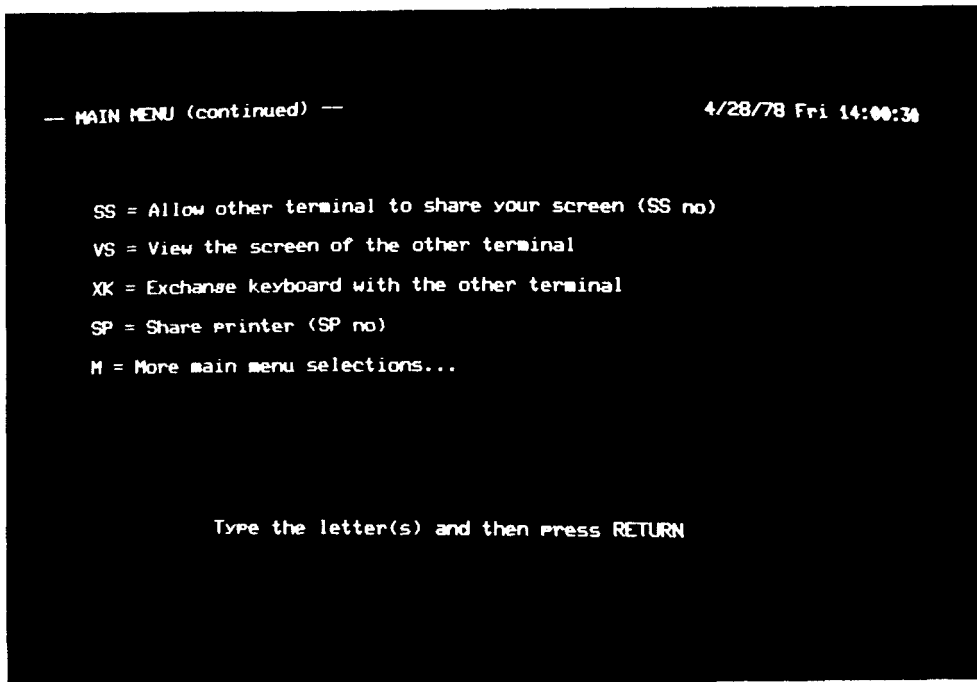
SS = Allow other terminal to share your screen (SS yes)
VS = View the screen of the other terminal
XK = Exchange keyboard with the other terminal
SP = Share printer (SP no)
SD = Send document to other terminal
N = More main menu selections...

Type the letter(s) and then press RETURN

```

9113-11R1-A0148

Figure B-5 Main Menu Page Five (Version 2.7)
(WS102 and WS202 Systems Only)



M123-17-A0260

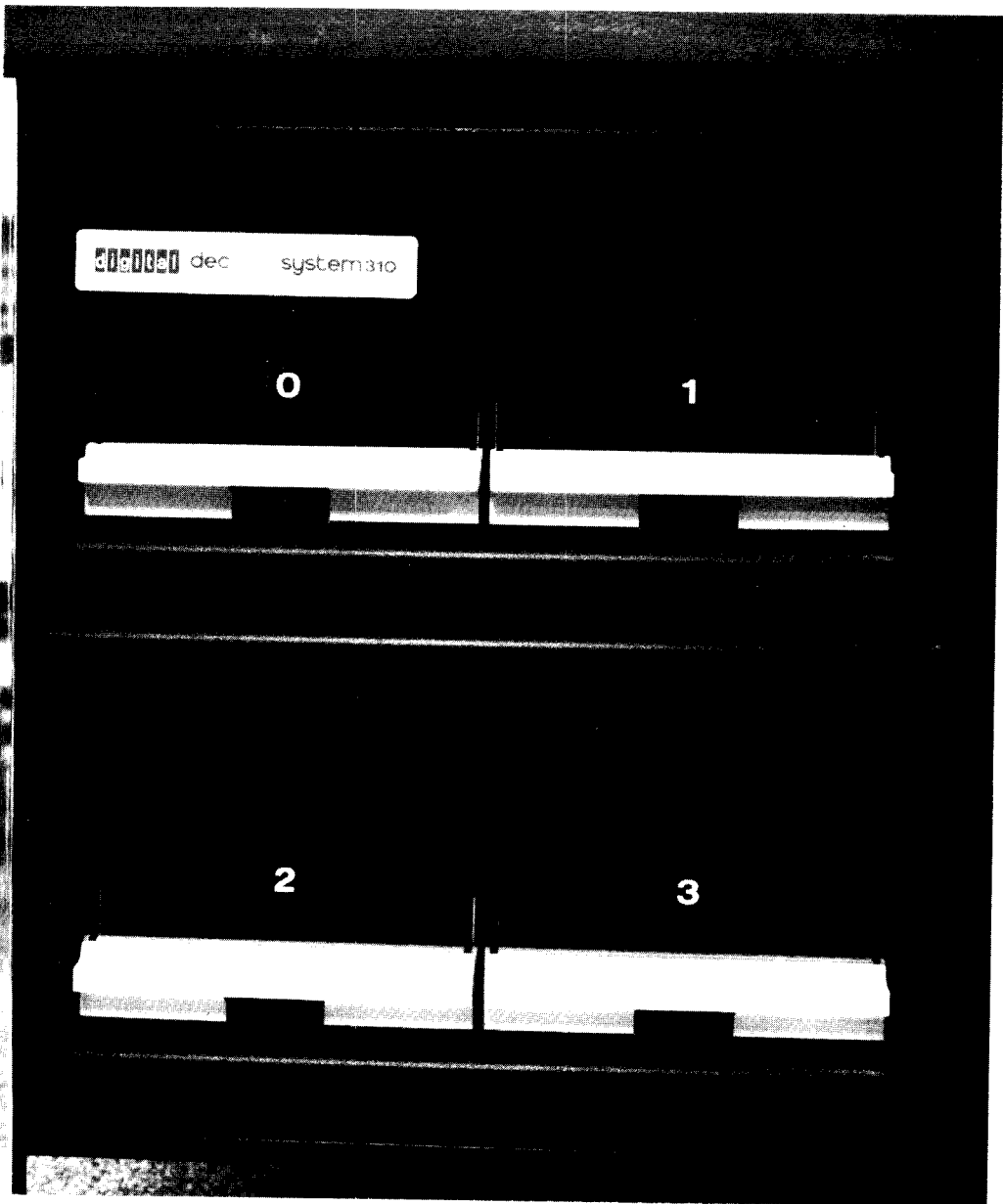
Figure B-5 Main Menu Page Five
(Version 3.0)

| Option | Cross-reference | Option | Cross-reference |
|--------|-----------------|--------|--|
| SS | Section 18.1 | SD | Word Processing System Communications Options User's Manual, AA-5264C-TK (Version 2.7 only) |
| VS | Section 18.1 | | |
| XK | Section 18.1 | | |
| SP | Section 18.2 | M | Typing the letter M and pressing the RETURN key causes the first Main Menu page to be displayed on the screen. |

APPENDIX C USING SYSTEMS THAT HAVE FOUR DISKETTE DRIVES

If you are operating a word processing system that has four diskette drives, you can reference documents on all four diskette drives. *Referencing* a document means to create, edit, print, delete, or copy it, or to specify a nonstandard abbreviation or paragraph library document. In addition, you can use the index of each of the four diskettes.

The numbers that appear above the diskette drive handles (0,1,2,3) are used in identifying documents by both you and the system. You have to type a diskette drive number only when you want a document that is stored on other than your system or document diskette. The system always uses the diskette drive number in any menu or message that includes information about a document (such as asking you if you want to edit the document you used previously).



8899-6BW-A0144

Figure C-1 Four Diskette Drives

C.1 REFERENCING A DOCUMENT

To reference a document, precede the document name or number with the diskette drive number and a period. No spaces are permitted. For example, to print a document called "inventory" which is stored on a diskette in drive two, type the following:

P 2.inventory

You may omit typing the diskette drive number when referencing a document stored on a document diskette in any one of the following situations.

1. Drive one in a WS78 or WS100 system having either two or four drives.
2. Drive one for the main user of a WS102 or WS202 system.
3. Drive three for the other user of a WS102 or WS202 system.

For example, to create a document called "outline" to be stored on a diskette in drive one for the main WS102 user, type either of the following:

C outline
C 1.outline

Similarly, you may reference documents stored on your system diskette by preceding the document name or number with either a { character or the number zero and a period.

The following restrictions apply to referencing documents in a WS102 or WS202 system.

1. Two users may not edit or print a document at the same time. Two users may,

however, both get a copy of the same document simultaneously (by means of the gold and GET DOCMT keys) or may use the same abbreviation or paragraph library document simultaneously.

2. If one user is performing a diskette maintenance operation, the other user cannot reference any document on that diskette. The system will display a warning message if this occurs.
3. If only one person is operating the system, there may be one system diskette (drive zero) and three document diskettes in the drives. However, if two people are operating the system, there must be two system diskettes (drives zero and two) and may be only two document diskettes (drives one and three).

If you switch terminals (WS102 and WS202 systems only), the system automatically adjusts for the standard abbreviation and paragraph library documents (documents two and three respectively on the system diskette). For example, you might use documents on WS102 diskette drive number one in the morning. After lunch you return to the WS202 system, find the main terminal in use, and therefore use the second terminal. When you insert your system and document diskettes (same ones as used in the morning) in drives two and three, the word processing system automatically recognizes that the standard abbreviation and boilerplate documents are now stored on diskette drive two.

If you use nonstandard library documents (see Section 10.5) and switch terminals, the system will nevertheless assume you want to use the

standard library documents. Either respecify the library documents (see Section 10.5), or do the following:

1. Insert the system diskette previously used in the left drive.
2. Type the letter F when any Main Menu page is displayed on the screen and press the RETURN key. The "FINISHED USING THE SYSTEM" message will be displayed on the screen.
3. Press the RETURN key to display the Main Menu.

C.2 USING THE DISKETTE INDEX

To use a diskette index, type the letter I, a space, the diskette drive number (you may optionally put a period after the number) and press the RETURN key. For example, to use the index for diskette drive number three, type the following:

I 3

You may omit typing the diskette number to use the index for the document diskette in any one of the following situations:

1. Drive one in a WS78 or WS100 system having either two or four drives.
2. Drive one for the main user of a WS102 or WS202 system.
3. Drive three for the other user of a WS102 or WS202 system.

You may type either of the following to use the index for the system diskette (drive zero) for a WS78 system having four diskette drives or for the main user of a WS102 system.

I {
I 0

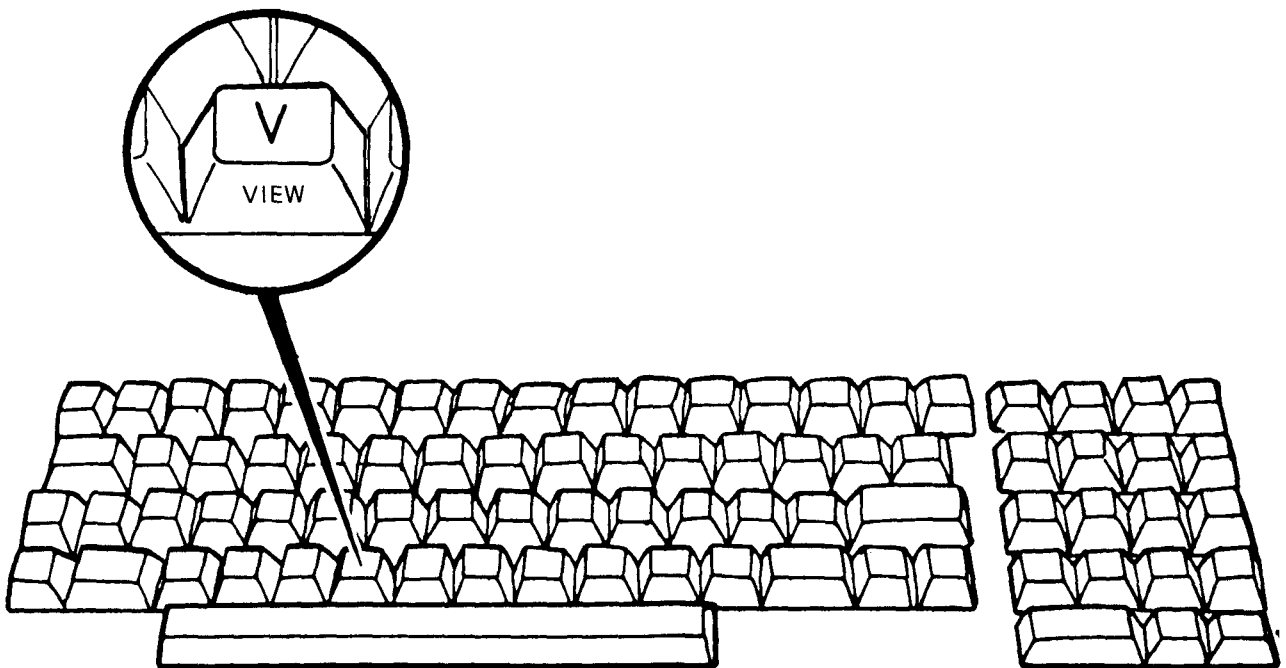
The second user of a WS102 or WS202 system may type either of the following to use the index for the system diskette (drive two).

I {
I 2

APPENDIX D VIEWING TEXT

“Viewing” text allows you to inspect your document for the results of certain typing actions that are not displayed on the screen (tabs, underlines, etc.). To view text, press the gold and the VIEW keys.

The screen display will show half as many lines as previously plus viewing symbols wherever relevant. Table D-1 describes the viewing symbols that may be displayed.



MK-0065

Figure D-1 Main Keyboard VIEW Key

When text is viewed, you can do one of the following actions:

1. **View additional, successive lines of text** by pressing the mini keyboard LINE key.

2. **Restore the standard screen display** by pressing either the gold and VIEW keys again or the ADVANCE key.

Pressing any other key (main or mini keyboard) when viewing text restores the standard screen display in addition to performing the key's action.

Table D-1 Viewing Symbols

| Symbol | Means | Explanation |
|----------------|------------------|---|
| ↓ | Hard return | User pressed the RETURN key at end of line. |
| ° | Word wrap return | System automatically inserted a return at the end of a line. |
| → | Tab | User pressed the TAB key (see Section 6.1.2.5). |
| •••• | Spaces | Inserted by the system in three different places: <ol style="list-style-type: none"> 1. Between the typing position where the TAB key was pressed and the next tabbed word (or the right margin if the line does not contain another tab stop). 2. Between typing position 1 and the left margin (when the left margin is set beyond position 1). 3. Between the left margin and the first character of centered text. |
| ¶ | Paragraph indent | The next word starts on a new line and is indented (provided the ruler contains the letter P). Created with the gold and PARA MARKER keys and the letter P in the ruler (see Section 6.1.2.3). |
| c _d | Centered text | All text on the line is centered. Created with the gold and CENTR keys (see Section 8.1). |
| * | Boldface | Character will be printed in boldface (overprinted three times). Created with the BOLD key (see Section 8.2). |
| — | Underline | Character will be underlined when printed. Created with the UNDER LINE key (see Section 8.2). |

Table D-1 Viewing Symbols (Cont)

| Symbol | Means | Explanation |
|---------------|----------------------------|---|
| = | Bold and underline | Character will be overprinted three times and also underlined. Created with both the BOLD and UNDERLINE keys (see Section 8.2). |
| q | Superscript | Character will be printed one half-line above the level of the line. Created with the gold and SUPER SCRIPT keys (see Section 9.1.1). |
| Q | Superscript and bold | Character will be printed as a superscript and boldfaced. Created with the gold and SUPER SCRIPT keys and the BOLD key (see Sections 9.1.1 and 8.2). |
| a | Subscript | Character will be printed one half-line below the level of the line. Created with the gold and SUB SCRIPT keys (see Section 9.1.1). |
| A | Subscript and bold | Character will be printed as a subscript and boldfaced. Created with the gold and SUB SCRIPT keys and the BOLD key (see Sections 9.1.1 and 8.2). |
| / | Possible hyphenation point | User did one of the following actions : <ol style="list-style-type: none"> 1. Pressed the gold and PRINT HYPH keys to insert a breaking hyphen in a word (see Section 11.1). 2. Hyphenated a word by using the gold, HYPH PUSH, and/or HYPH PULL keys (see Section 11.2). 3. Inserted an invisible hyphen in a word (see Section 11.3). |
| ± | Composite character | Two or more characters will be printed in the same position. Created with the gold and DEAD keys (see Section 9.2). |
| ÷ | End of text | Supplied by the word processing system to indicate the end of the document. |
| ■ | Select point | User pressed the mini keyboard SEL key. |

APPENDIX E RULER SETTING CHARACTERS

Table E-1 summarizes all allowable ruler setting characters and supplies a cross-reference to the

appropriate location in this Reference Manual for additional information.

Table E-1
Summary of Ruler Setting Characters

| Ruler Character | Meaning | For Additional Information |
|------------------------|---|-----------------------------------|
| C | Centering point | Section 8.1 |
| D | Left margin position double-spaced | Section 6.1.2.1 |
| F | Left margin position, half-line spaced | Section 6.1.2.1 |
| H | Hyphenation zone | Section 11.5 |
| J | Right margin position, justified (lined up evenly on right) | Section 6.1.2.2 |
| L | Left margin position, single-spaced | Section 6.1.2.1 |

Table E-1
Summary of Ruler Setting Characters (Cont)

| Ruler Character | Meaning | For Additional Information |
|------------------------|---|-----------------------------------|
| N | Left margin position, space and one half spaced | Section 6.1.2.1 |
| P | Automatic paragraph indent | Section 6.1.2.3 |
| R | Right margin position, ragged | Section 6.1.2.2 |
| T | Left-justified tab | Section 6.1.2.5 |
| W | Automatic word wrap indent | Section 6.1.2.4 |
| > | Right-justified tab | Section 6.1.2.5 |
| . | Decimal-aligned tab | Section 6.1.2.5 |

APPENDIX F HOW NONTEXT KEYSTROKES ARE DISPLAYED WHEN TYPED INTO A USER DEFINED KEY

| Keystroke | Displays As |
|--------------------------|--|
| Gold and ABBRV | Gold: = |
| Gold and ADVANCE | G-Adv |
| ADVANCE | Advanc |
| Gold and BACK UP | G-Back |
| BACK UP | Backup |
| Gold and BOLD | G-Bold |
| BOLD | Bold |
| Gold and BOT DOCMT | Gold:B |
| Gold and CENTR | Gold:C |
| Gold and CMND | Gold:{ |
| Gold and CONT SRCH | Gold:. |
| Gold and CONT SRCH & SEL | Gold:/ |
| Gold and CUT | G-Cut |
| CUT | Cut |
| Gold and DATE + TIME | Gold:\ |
| Gold and DEAD KEY | Gold:D |
| Gold and DEL CHAR | G-Del |
| DEL CHAR | Delchr |
| Gold and DEL WORD | G-Del |
| DEL WORD | Del Wrđ: |
| Gold and FILE DOCMT | Gold:F |
| Gold and GET DOCMT | Gold:G |
| Gold and HALT | Not possible to include Terminates definition. |
| Gold and HYPH PULL | Hypull |
| HYPH PUSH | Hypush |
| Gold and LIBRY | Gold:L |
| LINE | Line |
| Gold and MENU | Gold:M |

Keystroke

Gold and NEW PAGE
PAGE
Gold and PAGE
Gold and PAGE MARKER
PARA
Gold and PARA MARKER
Gold and PASTE
PASTE
Gold and PRINT HYPH
Gold and REPLC
RETURN
RUB CHAR OUT
Gold and RUB LINE
Gold and RUB SENT
RUB WORD OUT
Gold and RULER
SEL
SENT
Space
Gold and SRCH
Gold and SUB SCRIPT
Gold and SUPER SCRIPT
SWAP
TAB
TAB POS
Gold and TOP DOCMT
Gold and UNDER LINE
UNDER LINE
Gold and UPPER CASE
UPPER CASE
Gold and VIEW
WORD
<>

Displays As

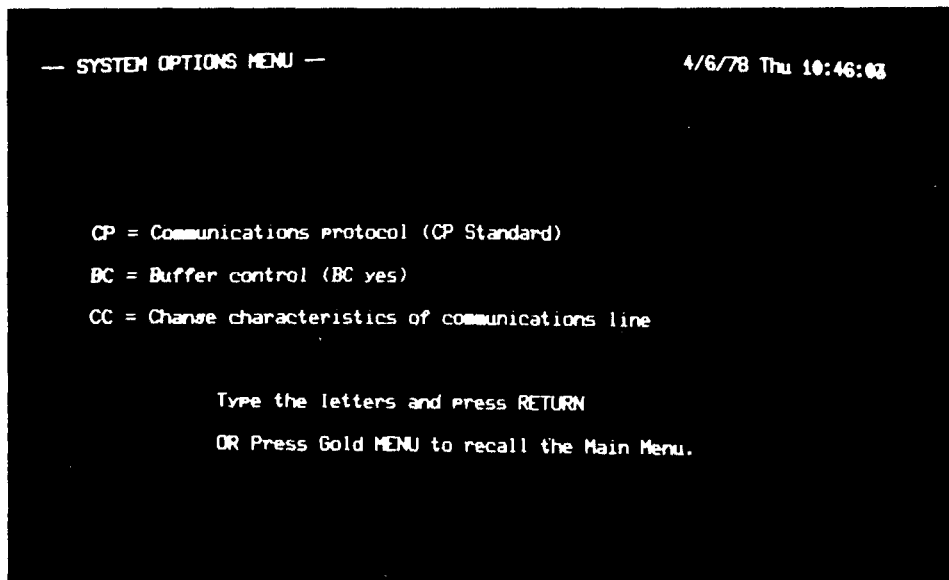
Gold:N
Page
G-Page
Gold:P
Para
Parmrk
G-Pste
Paste
Gold:-
Gold:'
Return
Rubchr
Rublin
Rubsen
Rubwrđ
Gold:R
Sel
Sent
Space
Gold:,
Gold:A
Gold:Q
Swap
Tab
Tabpos
Gold:T
G-Undr
Under
G-Uppr
Upper
Gold:V
Word
<>

APPENDIX G USING THE WS78 AUXILIARY COMMUNICATIONS PORT

This Appendix applies to version 3.0 only.

When a serial draft printer (DIGITAL part number LA180-Ex) is connected to the WS78 auxiliary communications port, it is necessary that the value of System Options Menu setting DP2 indicate the printer's baud rate (communications line speed). Do the following:

1. Type the letters **SO** and press the **RETURN** key when any Main Menu page is displayed on the screen. This action causes the System Options Menu to be displayed on the screen.



M113-16A0389

Figure G-1 System Options Menu

2. Type the letters **CC** and press the **RETURN** key. This action causes the Communications Settings Menu to be displayed on the screen (see below).
3. Inspect the **baud rate value displayed for setting DP2**. If this value is equal to the baud rate of the serial printer attached to the auxiliary communications port, omit step 4 below and return to other word processing work. Just press the gold and the **MENU** keys once, to redisplay the System Options Menu, and a second time, to redisplay the Main Menu.
4. Type the letters **DP2**, a space, the **baud rate of the serial printer**, and press the **RETURN** key to change the value of setting DP2. Then press the gold and the **MENU** keys once, to redisplay the System Options Menu, and a second time, to redisplay the Main Menu.

Here are the allowable values for DP2.

| | |
|-------|-------|
| 50 | 1800 |
| 75 | 2000 |
| 110 | 2400 |
| 134.5 | 3600 |
| 150 | 4800 |
| 300 | 7200 |
| 600 | 9600 |
| 1200 | 19200 |

The value specified for DP2 will always be in effect whenever the same system diskette (as used to set DP2) is used. This system action occurs because the value of DP2 is stored on the system diskette.

```

-- COMMUNICATION SETTINGS MENU --                                4/6/78 Thu 10:56:25

  B = Baud rate (B 2000)
  P = Parity (P no)
  D = Data bits (D 8)
  S = Stop bits (S 2)

  DP2 = DP2 Baud rate (DP2 9600)

  Type the desired option and press RETURN
  OR Press Gold MENU to recall the System Option Menu

```

M113-1A0381

Figure G-2 Communications Settings Menu

GLOSSARY

ABBREVIATION:

The two letters which denote a particular Print Menu setting. For example, CP denotes the "number of Copies" setting.

ABBREVIATION LIBRARY DOCUMENT:

A document that contains groups of words or short phrases saved in association with a two-character abbreviation. Whenever an abbreviation is used, the word processing system automatically inserts the corresponding words or phrase into the document currently being typed or edited.

ALIGNED:

To be lined up at a particular typing position. For example, if successive entries in a column of a table all start at the same typing position, then they are aligned on the left. Conversely, if table entries all end at the same position, they are aligned on the right.

ALPHABETIC:

Either an upper or lower case letter (A-Z) of the alphabet.

ASTERISK:

Appears in the index to the left of a document entry. The asterisk can be moved to

any index entry and then the word processing system can be directed to edit, delete, or print that particular document.

AUTOMATIC:

Performed by the word processing system with no assistance from the typist.

AUTOMATIC RETURN:

A carriage return automatically inserted by the word processing system.

BLOCK:

The word processing unit in which text is stored. A block is 512 characters, or approximately one paragraph.

BOLDFACE:

Text which is printed extra dark (**this text is boldface**). Word processing boldfaced text is struck three times.

BOOTSTRAP:

To put a computer program into the terminal so it can begin functioning as a word processor.

BOTTOM MARGIN:

Lines between the last line of text printed per page and the bottom edge of the paper.

BREAK:

To end a printed page and start a new one (see Chapter 12) or to hyphenate a word across two lines.

BREAKING HYPHEN:

A '-' mark used to join two (or more) words which may be divided at the end of a line.

BROWN-OUT:

A momentary drop in electrical power supply.

CAPITALIZE:

To produce upper case letters (A-Z) such as THESE WORDS.

CARRIAGE RETURN:

The word processing system has two kinds of carriage return: word wrap and hard. A word wrap return occurs when the system determines where a line is to end. A hard return occurs when the typist presses the RETURN key to end a line.

CENTER:

To indicate that a typed line is to be automatically located an equal distance from both the left and right margin positions.

CENTER POINT:

Typing position indicated in the document's ruler, around which text is to be centered.

CHARACTER:

A single letter, digit, punctuation mark, or special symbol produced by pressing a main keyboard key.

CLEAR A RULER:

To instruct the word processing system that no further ruler changes are to be made to a displayed ruler.

COLUMN MARGIN:

Number of spaces separating multiple columns.

COMMENT:

Text which displays on the screen but is not printed.

COMPOSITE CHARACTER:

A printed character produced by striking two or more characters on top of one another.

COMPOUND WORD:

Two or more separate words joined together with a user-supplied hyphen mark, such as "user-supplied."

CONFIGURATION:

A grouping of equipment that constitutes a particular member of the DIGITAL family of word processing systems.

CONTROLLING USER:

The WS102 or WS202 user who can type or edit a document when the two screens are shared.

COPY:

To make an extra version of a word processing document or to make a duplicate of a diskette.

CREATE:

To tell the word processing system a new document is to be typed and the name that document is to be called.

CREATION DATE:

The date on which a document is created.

CURRENT TEXT SIZE:

The number of text lines per page used by the word processing system for the current document being typed or edited.

CURSOR:

A blinking underscore character displayed on the screen that marks the current position in text. New typed text is inserted to the left of the cursor.

CUSTOMIZATION POINT:

A place in a document marked with the < and > characters. Such a point may easily be located by pressing the mini keyboard <> key.

CUT:

To remove a piece of text from a word processing document (by means of the CUT key). Removed text is placed in a word processing paste area and can be inserted anywhere (more than once) in the same or a different document.

DATE AND TIME STAMP:

Automatic insertion of the current date and time into a document.

DECIMAL-ALIGNED TAB:

Typing position with which a decimal point in a number will be lined up.

DEFINITION:

All the characters and keystrokes that are acted on when a particular user defined key is used.

DELETE:

To remove a character, word, line, sentence, or larger text portion from a document or to remove a document from storage.

DIGIT:

The single character numbers 0, 1, 2, ..., 9.

DISKETTE:

A round piece of magnetic material, about the size of a 45-rpm record, on which documents and the word processing system software are stored.

DISPLAY:

Text, prompts, and error messages which are shown on the word processing screen.

DISPLAY A RULER:

To instruct the word processing system to accept new or changed ruler settings.

DISPLAY SCREEN:

The television-like word processing equipment on which typed text, prompts, and error messages are shown.

DOCUMENT:

The word processing unit of storage in which typed text is saved, similar to a file folder in a file cabinet.

DOCUMENT DESTINATION:

The type of printer or output device (communications line, photocomposition machine) on which a document is to be printed.

DOCUMENT NUMBER ONE:

A document which contains the names of all other documents on a particular diskette. To change the spelling of a document name, edit document number one and retype the new name.

DRAFT PRINTER:

The word processing printer which produces typing comparable to a computer printout at an average speed of 2160 words per minute.

DRIVE:

The word processing equipment which holds a diskette, similar to a phonograph.

EDIT:

To bring an existing document to the screen for the purposes of inspecting it, adding new text, and/or making changes.

EMBED:

To place new or changed ruler settings into a document.

ERASE:

To remove the character, word, line, or sentence to the immediate left of the cursor by pressing the RUB CHAR OUT, RUB WORD OUT, RUB LINE, or RUB SENT key respectively.

ERROR MESSAGE:

Information which is automatically displayed on the screen when you type an incorrect response.

FIELD SERVICE REPRESENTATIVE:

The DIGITAL person to contact in the event of a word processing hardware or software failure.

FILE:

To tell the word processing system that typing and editing of a particular document are complete and it is to be saved for reuse.

FLOPPY:

Colloquialism for diskette.

FOOTER:

Text that appears in the bottom margin of printed pages such as a document title, page number, or date.

FORM:

A document containing text to be printed plus indicators of where and what kind of information is to be merged when using list processing.

FORM-FEED PAPER:

A long, continuous sheet of paper whose pages are separated by perforations. This type of paper is used with the word processing system so lengthy documents can be printed without having to repeatedly insert individual pages.

HARD RETURN:

A carriage return inserted by pressing the RETURN key.

HARDWARE:

The word processing equipment including the keyboards, display screen, diskette drives, and computer.

HEADER:

Text that appears in the top margin of printed pages such as a document title, page number, or date.

HIGHLIGHT:

To center, underline, boldface, or capitalize word processing text.

HYPHEN:

A '-' mark used (1) at the end of a line to divide a word into two parts and (2) between two words to join them into a compound word.

HYPHENATE:

To divide a word into two parts at the end of a line, putting the first part with a hyphen mark on one line and the second part at the beginning of the next line.

HYPHENATION ZONE:

The maximum number of typing positions in front of the right margin that may remain unused on a line.

INDEX:

A screen display showing all documents on a diskette with the following information: available number of blocks in the area for new typing, name and number of each document, when each was created and most recently modified, the size of each, the amount of time used in the most recent editing session, and the total amount of time spent editing. The index is automatically created and updated by the word processing system.

INITIALIZE:

To process a diskette so it can be used for storing either documents or the word processing software.

INVISIBLE HYPHEN:

A nondisplaying mark indicating where a word may be hyphenated should it be positioned at the right margin of a line.

JUSTIFIED:

To have text lined up evenly at the right margin of a page.

KEYBOARD:

The keys by which word processing characters are typed and instructions are supplied.

LEFT MARGIN:

The typing position where the beginning of each line is to appear. Indicated in a document's rulers.

LEFT-JUSTIFIED TAB:

The typing position where tabbed text is to begin.

LETTER:

A single alphabetic character (A-Z) produced by pressing one of the main keyboard keys. Can be either lower or upper case.

LETTER QUALITY PRINTER:

The word processing printer which produces typing comparable to a typewriter at an average speed of 540 words per minute.

LIBRARY DOCUMENT:

A document that contains groups of text saved in association with a "shorthand" name. A word processing abbreviation library document contains groups of words or short phrases while a paragraph library document contains groups of paragraphs.

LINE:

All text displayed on the screen between one particular left margin and right margin.

LINE LEVEL:

The invisible horizontal line on which characters are printed. A subscript or superscript is used to print characters below or above line level respectively.

LIST:

A document containing information that may possibly be merged into a form for printing when using list processing.

LIST PROCESSING:

A word processing feature that allows you to produce the same kind of typing many times with just certain information varying from one piece of typing to another.

MAIN KEYBOARD:

The keys by which word processing characters are typed. Some main keyboard keys may also be used to perform special word processing actions.

MENU:

A list of word processing options from which the typist can choose an action to perform, similar to a restaurant menu.

MINI KEYBOARD:

A group of 19 word processing keys used for editing and organizing text.

MODIFICATION DATE:

The date on which a document was last edited.

MULTIPLE COLUMN COMMAND:

A word processing feature that enables text to be typed as one continuous column and then be printed with two or more columns per page.

NEW PAGE MARK:

A mark inserted in a document by pressing the gold and NEW PAGE key that forces the following text to always be printed on a new page. Generally used for the beginning of new chapters or for long tables which should appear undivided on a single page.

NONBREAKING HYPHEN:

A '-' mark used to join two (or more) words which cannot be divided at the end of a line, such as the hyphens in the telephone number 617-899-9000.

NUMBER:

A single digit (0, 1, 2, ..., 9) or several digits typed together (no spaces between any). Examples are 3, 25, 1977, 567890.

OVERWRITE:

To save word processing typing in a document that already contains some text. The old text is replaced with the new.

PAGE MARKER:

A mark inserted in a document to indicate that the following text may be printed on a new page.

PAGE SIZE:

Number of lines that fit on a printed page from the top edge to the bottom.

PAGINATION:

To determine where to end a printed page and start a new one.

PARAGRAPH:

Any text that begins with either two or more hard returns or a paragraph mark.

PARAGRAPH INDENT:

Typing position where the first word of an indented paragraph is to appear.

PARAGRAPH LIBRARY DOCUMENT:

A document that contains groups of paragraphs saved in association with a name (maximum of 16 characters). Whenever the name is used, the word processing system automatically inserts the corresponding paragraph into the document currently being typed or edited.

PARAGRAPH MARK:

A mark, indicating the start of a new paragraph inserted by pressing the gold and the PARA MARKER keys. When a paragraph indent position is specified in the ruler, a paragraph so marked will be indented.

PASTE:

To insert a piece of already-typed text into a document. The same piece of text may be inserted several times in the same or different documents. Requires use of the CUT and PASTE keys.

PASTE AREA:

Word processing location where the most recently-cut text is kept. Paste area contents remain unchanged until another cut is made.

PHRASE:

The characters, word, or group of words to be searched for.

PITCH:

The number of characters printed per horizontal inch.

PRINT:

To direct the word processing system to produce a paper copy of stored typing.

PRINTER:

The word processing equipment which produces a paper copy of stored typing.

PRINTING MARGIN:

Spaces added to the left margin of a page when a document is printed.

PRINT QUEUE:

The documents waiting to be printed.

PRINT SETTING:

A control on how a document is printed (number of copies, lines per page, characters per inch, etc.). Displayed on the screen in the Print Menu.

PRINT WHEEL:

A round plastic device which prints characters in the letter quality printer. The printing characters are located at the end of spokes on the print wheel. When struck by a hammer, these spokes produce printed characters.

PROMPT:

A message displayed on the screen either asking for some information or giving instructions.

PROPORTIONAL SPACING:

Capability of printing characters that occupy different widths, the letter M being wider than the letter l, for example.

PULL:

To hyphenate a word by bringing a character down from the end of one line to the beginning of the next.

- PUSH:**
To hyphenate a word by (1) placing a character from the beginning of a line at the end of the previous line and (2) inserting a hyphen.
- QUEUE:**
A waiting line (like the teller's window at a bank) into which the word processing system puts all documents submitted for printing.
- REFERENCE:**
To create, edit, print, delete, or copy a word processing document.
- REPLACE:**
To automatically locate a particular phrase in a document and insert some previously-typed text.
- RIGHT MARGIN:**
The typing position where the last character of each line may appear. Indicated in a document's rulers.
- RIGHT-JUSTIFIED TAB:**
The typing position where the last character of a tabbed word is to be placed.
- RULER:**
The margin settings, vertical line spacing, and tabs (if any) for a document.
- SCROLL:**
To move the cursor continuously through a document, displaying all text on the screen.
- SEARCH:**
To instruct the word processing system to locate and position the cursor at the beginning of a particular phrase.
- SELECT:**
To mark one end of a piece of text for (potential) word processing editing. The editing may be underlining, boldfacing, capitalization, subscripting or superscripting, the removal of one of these, or deletion.
- SELECT MARK:**
A white rectangle on the display screen marking the position where the SEL key was pressed.
- SELECTION SPECIFICATION:**
A document that specifies exactly which list entries are to be selected for merging with a form document when using list processing.
- SENTENCE:**
Any combination of characters, words, spaces, or lines which are followed by a period, question mark, exclamation point, tab, hard return, PAGE MARKER, or NEW PAGE mark.
- SHARING THE SCREEN:**
Capability of the WS102 system which allows both users to view the same document on the screens.
- SOFTWARE:**
Computer programs that cause the terminal to function as a word processor.
- SPACE:**
Blank character, occupying one typing position, which is produced with the space bar.

SPLIT SCREEN:

Text whose first 80 characters of each line are displayed at the bottom of the screen and the rest at the top. This occurs when a wide ruler (right margin set beyond typing position 79) is in effect.

STANDARD RULER:

The ruler settings automatically supplied for each new document created. These are associated with ruler number zero.

STANDARD TEXT SIZE:

The number of text lines per page used by the word processing system for all newly-created documents.

STORED PRINT SETTINGS:

A collection of all Print Menu settings that are saved in the system for reuse.

STORED RULER:

A particular ruler saved on the system diskette for reuse.

SUBSCRIPT:

One or more characters that are printed one half-line below the level of the typed line, like the number 2 in H₂O.

SUPERSCRIPT:

One or more characters that are printed one half-line above the the level of the typed line, such as the number 2 in the following example.

$$e=mc^2$$

SWAP:

To reverse the position of the character above the cursor with the one to its immediate right by pressing the mini keyboard SWAP key.

SYSTEM MANAGER:

The person who is responsible for total operation of a word processing system.

TAB:

To press the TAB key and thereby cause the cursor to advance immediately to a previously-set tab position.

TAB MARK:

A mark, inserted by pressing the TAB key, which causes text to be formatted according to previously-set tab positions in the ruler.

TAB POSITION:

Typing position where text is to be placed when the TAB key is pressed. Word processing tab positions are indicated in a document's rulers.

TABBED TEXT:

Text which is typed immediately after the TAB key is pressed.

TEXT:

The words, characters, numbers, and information that constitute a word processing document.

TOP MARGIN:

Lines between the top edge of a page and the first line of text printed.

UNDERLINE:

To print a line under some text such as right here.

USER DEFINED KEY:

A number which, when pressed immediately after the gold key, activates previously-stored key-strokes.

VERIFY:

To inspect the condition of a diskette after an odd symptom occurs.

VERSION NUMBER:

The number of times a particular document has been edited. The version number can be seen by inspecting the document index.

VIEWING USER:

The WS102 user who cannot type or edit a document when screens are shared.

VIEW:

To inspect a document for the results of certain typing actions that are not displayed on the screen.

WIDE LINE:

A typed line whose right margin setting is located anywhere between typing position 80 and 158.

WIDE RULER:

A ruler that allows for between 80 and 158 characters per typed line.

WORD:

Any combination of characters plus all following spaces, hard returns, tabs, paragraph marks, PAGE MARKERS, or NEW PAGE marks.

WORD WRAP:

To allow the word processing system to automatically place a word that crosses the right margin boundary at the beginning of the next line.

WORD WRAP RETURN:

A carriage return automatically inserted by the word processing system.

WORD WRAP INDENT:

A typing position, indented from the left margin, where a word is automatically placed when it crosses the right margin. These lines illustrate word wrap indent.

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