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7/15/77 ("US")

DOCTOR

TC-2

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## INTRODUCTION

This note describes the command set of DOCTOR, a document formatter. DOCTOR is a straight-forward formatter. It has only local knowledge about the document with which it is working. It is never concerned with the global structure of the document, only with the layout of the current line, paragraph, and page. DOCTOR is intended to be as convenient as possible to use, so that naive users can format simple documents without knowing very much about the program. Sophisticated users can format more complexly structured documents by taking advantage of the entire command set. Macros can be defined to make a personal shorthand command set, in order to reduce the number of commands to be entered.

Flexibility was also one of the major design goals. DOCTOR accepts quite wide variations in document geometry-- The size of margins (left, right, top and bottom) can be varied from nonexistent up to leaving only a small area of the page for a document. The number of lines on a page can be changed, as can the page width. Spacing can be single, double, triple, etc.

The design of DOCTOR has been strongly influenced by the formatter described by Kernighan and Plauger in Software Tools, and by the Bell Labs system called PWB/MM (Programmer's Workbench Memorandum Macros), described in "Documentation Tools and Techniques" by Mashey and Smith (Proceedings, 2nd International Conference on Software Engineering, 1976, pp 177-181). Other influences were B1700 DDCEDR, and Medium System's ADS.

All input is via file SOURCE, a disk file. DOCTOR does no file maintenance or file merging, unlike compilers. It only generates one output file, LINE, a printer-backup file. References to the sequence-number or record-number (as appropriate) of the input are printed to the left of each output text line. Errors are printed right on the output document being generated, thus eliminating the need to look at both the document and an error list to figure out the problem. Error recovery is simply to print the offending input record, and any following text records, without formatting them; The next control record will cause DOCTOR to resume normal editing.

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### INPUT RECORD FORMAT

Records are assumed to be in the same format as SDL/UPL source--90 bytes long, 72 bytes of source, 8 bytes of sequence number, and 10 bytes of System/Patch data. If sequence numbers are not used, then input line-number is used as the reference to the source on the output listing. For scanning purposes, there is an implied blank at the end of each line (between byte 72 of one line and byte 1 of the next line). If present, System/Patch data will be printed on the right side of the listing.

Command records are discriminated from text by the presence of a period in the first position. Several commands can appear on one command record, separated by blanks. If a command consists of multiple tokens, the entire command must appear on one record. Note that commands have the same effect whether they appear on one command record, or sequentially on their own records. A command record may be followed by another command record, or by document text. Commands may be entered in upper or lower case or in a mixture of both (e.g. "SK" = "sk" = "sK"). Within this note, the example commands are usually given in upper case to distinguish them from text, but this is only for example purposes. Text may be entered on the same line as commands by terminating the command field with another period. For example,

".UL CE. words and stuff

"

Commands are two characters long. Some may be followed by a parameter, and a few by more than one parameter (PH, PF). Where a number is called for as the parameter, as in "IN n", a signed number may be given in order to specify a relative change in the current setting of the control. For example, "IN -5" results in the current setting of the indentation being decremented by 5, making the left margin 5 positions smaller. "IN +5" makes the left margin 5 positions larger. "IN 5" sets the left margin width to exactly 5 positions. In some commands a signed number may be entered, but the sign is ignored: "DF Alpha -5" = "DF Alpha +5" = "DF Alpha 5".

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Parsing rules of input text follow. Only blanks (including the implied blank at the end of the line) are treated as token separators. Punctuation marks are simply concatenated to the preceding token, so that blanks added during paragraph right justification will be added to the right of the punctuation marks. For example, the string "end of sentence. Beginning, but not all, of next" will be broken into these tokens:

```

end
of
sentence.
Beginning,
but
not
all,
of
next

```

Unless hyphenation is requested, DOCTOR will never insert blanks into the middle of tokens when right-justifying paragraphs, only between tokens. Punctuation marks on the end of tokens will be given special attention when a place must be found for blank insertion while blocking a paragraph. Extra blanks will be dumped after punctuation marks in preference to between alphabetic tokens.

Punctuation marks do affect the minimum number of blanks that will be inserted after a token. The following punctuation marks are recognized by DOCTOR.

Punctuation Mark	Minimum Following Blanks
Period "."	2
Comma ","	1
Semicolon ";"	2
Colon ":"	2
Question Mark "?"	2
Hyphen "-"	0
Double hyphen "--"	0
Exclamation mark "!"	2

If the user desires special treatment of certain occurrences of punctuation characters, there is a literal convention that forces DOCTOR punctuation marks and blanks as a single token. Refer to the "LT" inline convention.

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Commands may be divided into two different groups depending on the scope of their effect. Some commands are "global" in scope in the sense that once entered, they continue to influence the subsequent document unless explicitly changed. Examples of global commands are LS (which determines whether following paragraphs are single or double spaced), and PW. "Local" commands affect only the following sequence of text records; their scope ends when a text record is followed by a new command record. Examples of local commands are CE (center) and TI (temporary indent).

#### BREAK

The break concept is crucial to the operation of DOCTOR. DOCTOR assembles text in a line buffer. When the buffer is full, the line is printed. The buffer may be printed before it is full by a break. Break clears the buffer. Many commands force a break before the following text is put into the buffer, for example CE and SK. Other commands do not force a break, so the following text is simply concatenated with the current contents of the buffer. Examples of the latter type of command are UL, FR and TI. The latter commands can influence the formatting of inner parts of paragraphs, since the partial paragraph not yet printed when the command is encountered will not be affected by the command.

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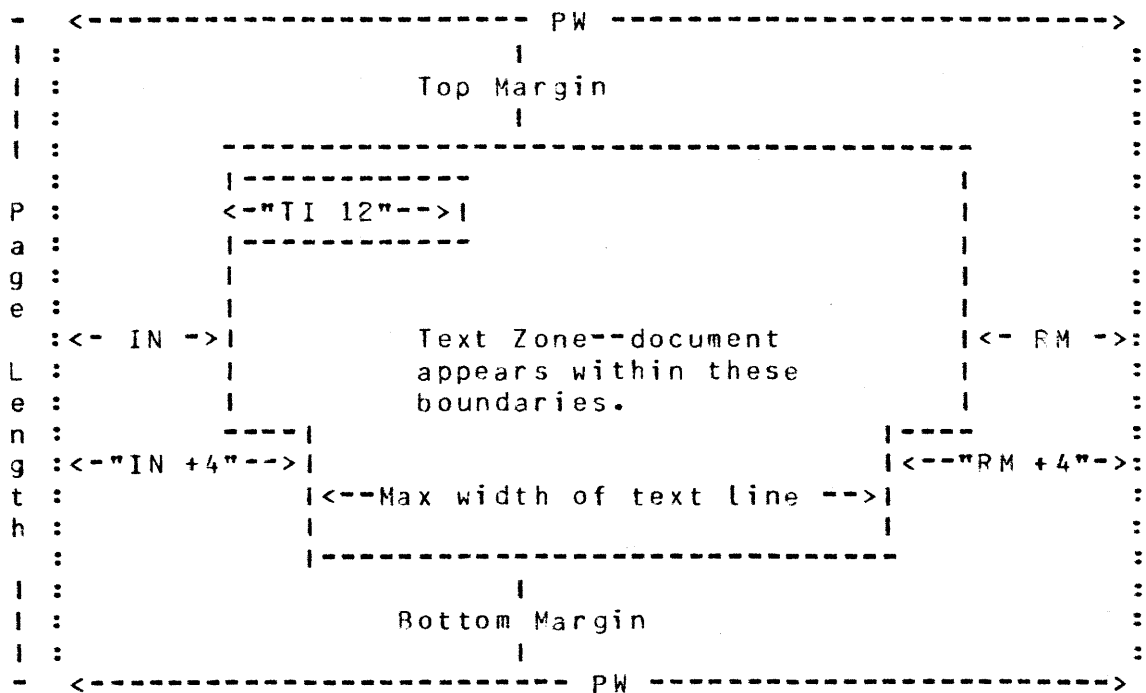
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### PAGE LAYOUT DEFAULTS

The defaults of the various "page geometry" commands are those of the normal typing page (8 and 1/2 by 11) printed on a standard printer (10 characters/inch, 6 lines/inch):

PW 85	% 8.5 inches * 10 characters/inch
PL 66	% 11 inches * 6 lines/inch
RM 10	% 1 inch
IN 10	% 1 inch
TM 6	% 1 inch
BM 6	% 1 inch

These defaults leave a text area 65 positions wide and 54 lines long. The document text will be assembled within this area. The only non-blank characters that DOCTOR will put in the right and left margins are the change character and line numbers. Only page head/foot lines can go in the top and bottom margins.



Page Geometry Diagram

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Note that the "text zone", the area where DOCTOR will form-up paragraphs and so forth, is defined subtractively-- it is the space left on the page after the size of the top, bottom, left, and right margins have been defined. The Temporary-Indentation command, TI, also subtracts from (or adds to) the text zone. This is different from DOCEDR's style of defining the shape and location of paragraphs, of course ("\*PAR 10 60 5" defines the left margin, right margin, and paragraph indentation for the following paragraph).



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COMMAND SET

**BC <graphic character>: Blank Character**

The user can redefine any one graphic character to become a blank in the output document. This is useful to cause DOCTOR to treat strings with embedded blanks as single tokens, guarantying that they will appear on one line, and that no more blanks will be inserted into the string. An ellipsis can be input successfully, for example, as

```

".bc a
"this ellipsis a . a . a . a will be printed.
-----
a single token

```

The output would be

```

this ellipsis . . . will be printed.

```

This character can be reset at will. The option can be turned off by "NO BC".

**BM <n>: Bottom Margin of Page**

<n> identifies the number of lines left at the bottom of the page. Default is 6, leaving a 1 inch bottom margin.

**BP [<n>]: Begin Page**

This command forces a page break. First a break will be forced to clear the current line buffer, then the page foot will be printed, followed by any page heading. If <n> is present, it resets the current page number appropriately, otherwise the page number is simply incremented.

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**BR: Break**

If not empty, the current line buffer is printed. The buffer is cleared.

**CC [<graphic character>]: Change Character (PCN mark)**

[Note: The means of printing PCN marks on a document using DOCTOR is still under design--this is only one alternative. Others include making DOCTOR sensitive to the data in the System/Patch field, and giving a number to each "CC" command which could be armed by another command.]

The change character will be printed at the CP-position of every document line assembled from the subsequent text. This command can be turned off by the "NO CC" command. The change character, by default the vertical bar, can be changed to any graphic by simply supplying it as a parameter to the CC command. Subsequent simple CC commands will use the new character. For example:

```

".CC N
"When formatted, this text will be flagged by the "
"character "N" as a pcn-mark.
".NO CC

```

The CC command does not cause a break, so part of a paragraph could be marked, and part not marked.

**CE [<n>]: Center Text**

The following <n> lines of text will be printed centered between the left and right margins. Note that the CE-center of the page moves whenever IN or RM is changed. If there is more than one line, each will be individually centered. The default is one line. If you must center several lines, counting can be avoided like this:

```

.CE 100
Center this line.
This too.
And this one.
.CE 0

```

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CE and LT are mutually exclusive-- each turns the other off. If both appear on the same command record, only the rightmost command is effective since commands are parsed left-to-right. Temporary indentation (TI) and the packing of words into paragraphs is overridden by CE.

#### CH [<n>]: The Continuation Heading Command

"CH" notifies DOCTOR that the following <n> records are a continuation heading, to be used whenever a page break occurs while formatting the following text. This is really a global or on-going command, not a local command. For example:

```

      ".TC SK 3 IN +5           "
      "4.3.1 Common Console Languages  "
      ".CH 2                   "
#1  ".UL                       "
#2  "Languages (cont.)       "
      ".TI 5                   "
```

Notice that other local formatting commands can be applied to the continuation heading--they will be stored with it and used at every page break. This feature can be turned off by means of a "NO CH" command.

#### Comments: "%" Records

Any record which has a percent sign ("%") in position 1 is considered as a comment record by DOCTOR. It will not appear in the document, nor will it affect the format of the document. +

Sequences of input text records within a file can be hidden from DOCTOR with "%+" & "%-". If "%+" appears in positions 1-2 of the input record, DOCTOR will ignore the following records. When "%-" appears in positions 1-2, DOCTOR will resume normal processing. This works just like the SDL "/\*" & "\*/". +

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### CP <n>: Change Character Position

The absolute position on the document line where the change character is to be printed is specified as <n>. <n> must fall in either the left or right margins. The range of <n> is 1 to page width. The default is the second position of the right margin.

### CT [<n>]: Continuation Title

When a long table or figure is put into a document, some carryover title is required for the second and following pages. Multiline continuation titles can be defined with the CT command. The following <n> records (text or command) will be saved until a page break occurs. After the page head (and any continuation heading) is printed, the <n> records are processed, resulting in a continuation title. <n> defaults to 1. <n> may not be signed. Continuation titles can be turned off by "NO CT". The continuation title can be changed by simple entering the new "CT" and the new records--the old title is overridden. For example:

```

".ch 3
#1 ".lt
#2 "      TITLE1          TITLE2          TITLE3
#3 "-----
"followed by normal text or commands

```

### DF <name> [<param>] [<n>]: Define

Macro commands can be defined with "DF". The <n> following records are stored under the name <name>. They may be recovered by using <name> just as if it were one of the predefined commands. For example, two defines used to format this document are "h1", for formatting headings like the above "DF <name> . . .", and "hs", for skipping after a heading. They are defined as follows:

```

".DF h1 2
#1 ".sk 3 ul
#2 ".tc 5 ne 6
".DF hs
#1 ".sk 2

```

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<name> must begin with an alphabetic character, and consist of alphanumeric characters. The first 10 characters of the name must be unique.

The optional <param> allows the user to specify a parameter that will be replaced with an actual parameter when the define is invoked. The <param> is defined:

<param> ::= <special> <string> <special>

<special> ::= Any non-alpha, non-number, non-period character

The syntax of the parametric define invocation is

<name> <param>

For example, DOCEDR-style glossaries might be formatted as follows:

```

".DF Gloss /item/ 2
".sk 2 ul ti -10.item
".nb
"% Invocation of "Gloss" is like this --
".Gloss /Term1/.Definition of "Term1".
".Gloss /Term2/.A longer definition so that the reader
"can see the indentation of the second and following
"lines after "Term2".

```

The result of the above sequence of commands would look like this:

Term1      Definition of "Term1".

Term2      A longer definition so that the reader can see the indentation of the second and following lines after "Term2".

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**DR <n>: Draft Format Document**

01 This turns on the line-numbering of lines on each page. The  
02 line number is formatted as a two digit number, with the  
03 leftmost digit in absolute position <n>. <n> and <n>+1 must  
04 fall in either the left or right margin, outside the text  
05 area. The range of <n> is from 1, at the left edge of the  
06 page, to page\_width-1. <n> may not be signed. For example,  
07 the line-numbers to the left were generated by "DR 4". DR  
08 may be turned off with "NO DR".

**FN <n> <in> <ti>: Footnote Text**

\*\*\*\*\* Footnotes are not yet implemented \*\*\*\*

The actual text associated with a footnote must be given to DOCTOR before the footnote is referenced (see FR). The FN command tells DOCTOR that the following text is to be saved until after a footnote reference appears, then the footnote is to be printed at the bottom of that page, using the format given with the FN definition. The footnote text ends when a subsequent command record is read. DOCTOR will add a short heading to the footnote text, as follows: "Note <x>:", where <x> is a decimal integer which is the number of the footnote on the current page.

<in> is the indentation associated with the footnote text, while <ti> is the temporary indentation of the heading ("Note <x>: ") of the footnote. <in> is relative to the left margin, while <ti> is relative to <in>. Both <in> and <ti> may be signed.

<n> is an integer which is locally unique (in the following sense). <n> must match the corresponding <n> in a subsequent FR footnote reference. If another FN is encountered with a matching <n> before a reference, an error is printed--the two FN's are not unique. For example,

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```

".FN 5 9 -9
"This is the text of the first footnote, which"
"is long enough to show the temporary indent."
".FN 3 9 -9
"This is the second footnote
".TI 5
"This text is absolute nonsense but it does
"serve to show that any word
".FR 5
"can be marked with an arbitrary
".fr 3. footnote.
  
```

The resulting document would look like this:

This text is absolute nonsense but it does serve to show that any word (see note 1) can be marked with an arbitrary footnote (see note 2).

<following text to the bottom of the page>

Note 1: This the text of the first footnote, which is long enough to show the temporary indent of the footnote.

Note 2: This is the second footnote.

#### FR <n>: Footnote Reference

The word immediately preceding the ".FR" command is considered the reference of footnote <n>, which must have been previously defined with the FN command. FR does not cause a break.

#### HY: Automatic Hyphenation

\*\*\*\*\* Not yet implemented \*\*\*\*\*

HY invokes the automatic hyphenation feature, which is used whenever a word can be broken in two while filling lines of paragraphs. "NO HY" turns the feature off. By default, HY is set.

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### IN <n>: Indent

The current indentation from the left margin is changed according to the value of <n>. <n> may be signed. Notice that "IN 5", "IN -5", and "IN+5" have entirely different effects:

"IN 5" sets the size of the left margin to exactly 5 characters.

"IN -5" reduces the size of the left margin by 5 characters.

"IN +5" increases the size of the left margin by 5 characters.

Once set, the indentation remains the same until it is explicitly changed. IN also changes the effect of text centering (see "CE"). To temporarily indent a line of text, as in the conventional first line of a paragraph, use the "TI" command, not the more permanent IN command.

### IO: Index Only

The following text line is only put into the alphabetic index; it is not printed (unless it is within the scope of a command which forces it to be printed).

### IX: The Index command

If the token "IX" appears in a command record, the next text record encountered will be entered in the alphabetic index. The actual string of text indexed is the string resulting when leading and trailing blanks are deleted from the text record. If the text string is too long, it will be truncated in the index. IX does not cause a break, so words or phrases in the middle of a paragraph may be indexed without interrupting the paragraph assembly.



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Example:

```
" .ix tc 10 sk 2                                     "
```

```
" 4.1.3 Common Console Languages                       "
```

Example:

```
" .TI. This is a                                     "
```

```
" .IX.paragraph                                       "
```

```
" which is not interrupted by indexing "paragraph". "
```

Printing of the index can be suppressed by entering the command "NO IX". Once "NO IX" has been entered, the index cannot be printed-- only removing the "NO IX" will reenale printing.

DOCTOR will save a file for the user containing all index entries if program switch 0 is set to non-zero (e.g. "?EX DOCTOR SW 0 = 1"). The file is unsorted. The internal file-name is "IXFILE"; this will be the external name too, unless the file is label-equated.

#### LB: Leading Blanks

This option determines how DOCTOR treats leading blanks on text records. If LB is set (which is the default), leading blanks are assumed to be meaningful-- they have the same effect as a temporary indent (TI) of the same number of positions. That is, a break occurs and the first word after the leading blanks starts a new paragraph. If LB is reset ("NO LB"), then leading blanks are ignored.

For example, the indentation of this sentence was produced by entering a text record which looked like this:

```
"      For example, the indentation of this sentence"
"was produced by entering . . .                               "
```

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### LS <n>: Line Spacing

The spacing of paragraphs within the text of the document will be set to <n>. Single spacing is "LS 1", double spacing is "LS 2". The default is "LS 1". The spacing of literals and headings is unaffected by this command.

### LT: Literal Input

All text lines following LT will be printed literally as entered. The LT is considered to end when another "." record is encountered. LTs are intended to be used for user-supplied diagrams and such-- document text too complex for DOCTOR to format. The entire text of each record is printed, with the first character appearing left justified against the current left margin (the "IN" setting). Literal text will be printed right into the right margin, however, if the literal line is too long. To ensure that the literal is printed on one page, use the NE command. LT's that overrun one page will be continued on the next and following pages. Note that LT and CE are mutually exclusive-- each turns the other off. If CE and LT appear on the same command record, only the later of the two will be effective.

### Inline Literals

\*\*\*\*\* Not yet implemented \*\*\*\*\*

Sometimes in a document a user may wish to mark a sequence of words that is not to be broken up onto two lines by the formatter, or perhaps the user wishes to ensure that blanks are not inserted into the sequence for right justification. This can be guaranteed by the inline LT convention. The inline LT does not cause a break, so the literal text is simply accumulated by DOCTOR.

```

".TI 5
"any old text \Lt\this text is protected\ and"
"this text is not.
"
```

The literal text must be all on one record.

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### NB [<n>]: No Break Temp-indent

This command is very much like the "TI" command, except that it does not cause a break. It is intended to be used to format glossaries and other labelled paragraphs. The following text is added to the contents of the line-buffer. The next word is positioned relative to the current indentation, with <n> used as an offset (either positive or negative) from the current indentation. If <n> is omitted, DOCTOR assumes that the next word is to begin at the current indentation.

A list of terms to be defined, together with their definitions, might be formatted as follows:

```

.in 20
.ti -10.First
.nb.Text of the definition of "First".
.sk ti -10.Second
.nb.Text of the definition of "Second". Note that
the paragraph is formed up beginning at position 20.
.sk ti -10.Third
.nb 5.This one begins 5 characters further over to
the right, but without changing the current
indentation.
```

The result would look like this:

```

First      Text of the definition of "First".

Second     Text of definition of "Second". Note that the
           paragraph is formed up beginning at position 20.

Third      This one begins 5 characters further over to the
           right, but without changing the current indentation.
```

### NE <n>: Need n lines

Frequently it is necessary to ensure that several lines of the document appear all on the same page. The "NE" command provides a simple means of forcing a page break if there are not at least <n> lines left till the bottom of the page. "Widow" lines can be avoided by using "NE" at the top of each paragraph-- for instance a "PAR" define can be defined as follows:

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".DF PAR  
 ".SK 2 NE 2

"  
 "

#### NO <option>: Negate an Option

This command negates one of the on-going options of DOCTOR. The two character option must follow the word "NO". For example, "NO HY NO CC" turns off both hyphenation and change character printing.

#### OP [<n>]: Overprint

The words on the <n> following text records will be emphasized by overprinting for a boldface effect. No break is caused, so OP is ok within paragraphs.

#### PF \<left>\<center>\<right>\: Page Foot

PF is just like PH, except that the foot lines are printed in the bottom margin. One document may have both a page head and a page foot.

#### PH \<left>\<center>\<right>\: Page Headings

This command allows the user to specify arbitrary page heading lines to be printed on every following page. <left>, <center>, and <right> are text strings (which may include embedded blanks) which are to be left-justified, centered, and right justified, respectively. The backslash character is a string delimiter. Any non\_blank character can be used as a string delimiter in the PH and PF commands. Justification and centering of the strings is determined relative to the left and right margins (see RM and IN). Any of the three strings may be null, like

".PH \Center this\  
 ".PH \Left Justify This\  
 ".PH \Right Justify This\  
 "

The line on which page heading lines appear is determined by the size of the top margin (see TM and PL); DOCTOR will centralize the heading within the top margin. For example,

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if the top margin is 6 lines, a single heading line will appear on line 4, leaving lines 1-3 and 5-6 blank.

Successive PH commands put additional lines on the page heading (without increasing the top margin). The product spec heading for this document looks approximately like this:

```

".ph \DOCTOR#\
".ph \
".ph \BURROUGHS CORPORATION\COMPANY CONFIDENTIAL\
".PH \COMPUTER SYSTEMS GROUP\IN-PLANT USE ONLY\
".PH \SANTA BARBARA PLANT\

```

The appearance of the "#" character tells DOCTOR to use the current value of the page number (prefixed with the page number prefix, if any). Page headings can be reset by a "NO PH" command.

#### PL <n>: Page Length

Set the overall length of the document page, including the top and bottom margins, to <n> lines. The upper limit of page length is 88 lines (to allow for 8 line/inch printers). The default is 66 lines, for the standard 11 inch page on a 6 line/inch printer.

#### PP <quoted string>: Page Number Prefix

The string will be prefixed to the page number. For example, if page numbering by section is desired, at each section break the new section number will be made the page prefix:

```
.PP "14-" BP 1
```

The above will cause page numbering from the new page to go 14-1, 14-2, 14-3, etc. Any graphic characters are valid in the <quoted string>, including embedded blanks. The entire page number, including the prefix, is referenced in the index and table of contents. The maximum length of a page-prefix is 20 characters.

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**PW <n>: Page Width**

Set the overall width of the document page to <n> positions. <n> includes the left and right margins. The upper limit of page width is 132 positions. Do not use the PW command to increase the size of the right margin within a "glossary"-- use the RM command. PW will ordinarily never be changed after being initialized. Most users need never use this command, as the default is the size of the normal typing page: 85, or 8 and 1/2 inches.

**RJ: Right Justify (Block-style) Paragraphs**

The text of paragraphs will be filled out with blanks to the right margin if this command is given. This is the default. This option can be turned off with "NO RJ".

**RM <n>: Right Margin**

Sets the width of the right margin to <n> character positions. <n> can also be signed (e.g. "+5"), in which case the right margin is changed by the specified number of positions. Positive numbers make the margin wider, moving subsequent paragraph's right edge to the left. This paragraph's right margin was increased by "RM +5" at the start of the paragraph, and reset with "RM -5" at the end.

**SK [<n>]: Skip lines**

SKIP causes a break, and follows it with <n> blank lines. SK without <n> is equivalent to "SK 1" (one blank line). <n> may not be signed. If DOCTOR reaches the end of the page without completing the entire skip, the remaining blank lines are forgotten.

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### TC [<n>]: Table of Contents

The following text line is entered into the table of contents. <n> refers to the indentation level of the entry within the table of contents. If <n> is not present, <n> is defaulted to zero (no indentation). The appearance of a TC command causes DOCTOR to generate a table of contents. Unlike IX, TC causes a break, so the text to go in the table of contents is printed after the current contents of the line buffer is printed. <n> may be signed.

### TI [<n>]: Temporary Indent

TI applies a temporary indentation to the next word. A traditional paragraph indentation of 5 positions can be produced by ".TI 5". Note that temporary outdenting is also possible, as in ".TI -5". This might be used in preparing DDCEDR-style "glossaries", where the term to be defined is offset to the left from the definition, or in numbered paragraphs as shown below.

```

      ".ti -4.1.                                     "
      ".nb.This paragraph is the first of a whole  "
      "series of numbered paragraphs.              "
  
```

This input would result in:

1. This paragraph is the first of a whole series of numbered paragraphs.

TI causes a break.

### TM <n>: Top Margin of Page

<n> identifies the number of lines specified for the top margin. Default is 6, leaving a margin of 1 inch.

### UC: Uppercase output

This option prints the entire output listing in uppercase alphabets. It is provided as a convenience for printers without lowercase alphabets on the printchain.

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**UL [<n>]: Underline**

All words on the <n> following text records will appear in the output document underlined by the underscore character. No break is caused, so UL may be used to underline phrases within a paragraph. For example,

" .TI. The next	"
" .UL	"
" word	"
" will be underlined	"

results in

The next word will be underlined

DOCTOR will not automatically underline text with the hyphen, like DOCEDR. This can be done manually, if the user desires, by following the text to be under-hyphenated by a suitable literal of hyphens.

**US [<n>]: Underscore**

The underscore command works just like the underline command-- it also emphasizes text by means of the "\_" character. However, blanks in the middle of underscored text are also underscored:

" .ce us.Underscore this text" results in

Underscore this text

whereas " .ce ul.Underline this text" results in

Underline this text



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COMMAND SUMMARY

<u>Command</u>	<u>Break?</u>	<u>Description</u>
BC c	no	Set blank character
BM n	no	Size of bottom margin on page
BP [n]	yes	Begin page, setting page-number to n.
BR	yes	Break
CC [c]	no	Change-character := c
CE [n]	yes	Center the following n lines
CH [n]	no	Continuation Heading
CP n	no	Change-character absolute position := n
CT [n]	no	Continuation Title
DF i [p] [n]	no	Define "i" to be the n following records.
DR	no	Draft format (print line numbers on document)
FN n i t	yes	Footnote definition
FR n	no	Footnote reference
HY	no	Hyphenate automatically
IN n	yes	Indent
IO	no	Add to alphabetic index but not document
IX	no	Add to alphabetic index
LB	no	Leading blanks = temporary indent
LS n	no	Line spacing := n
LT	yes	Literal
NB [n]	no	No-break temporary indent
NE n	yes	Need n lines (page break if less than n left)
NO cmd	no	Negate option (BC,CC,CT,DR,HC,HY,LS,LT,PH,PF,RJ,UC)
OP [n]	no	Overprint
PF	yes	Page foot
PH	yes	Page head
PL n	no	Overall page length in lines := n
PP str	no	Page number prefix := quoted string str
PW n	no	Overall page width := n
RJ	yes	Right justify (block) paragraphs
RM n	no	Right margin := n positions wide
SK n	yes	Skip n lines
TC	yes	Add to Table of Contents
TI	yes	Temporary Indent
TM n	no	Size of top margin on page
UC	no	Print document in all uppercase characters
UL [n]	no	Underline