

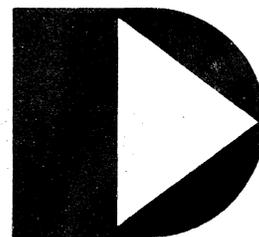
**DOS TEXT PROCESSING
SYSTEM
DESCRIBE
User's Guide**

Version 3

July, 1976

Model Code No. 50235

DATAPoint CORPORATION



The leader in dispersed data processing™

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PREFACE

Manually typed documents often require modifications to correct errors, to insert or delete information or to change the format of the text. The text preparation system based on the DSCRIBE program and the Datapoint Processor is designed to provide easy update facilities and complete, simple to use, formatting capabilities.

DSCRIBE uses the Datapoint Processor keyboard and screen for creation of text and uses the disk files for storage of the text. Once the text has been recorded on disk, the text is printed by the DSCRIBE program which recognizes and responds to the DSCRIBE commands embedded in the text. Creating the text on the screen eliminates the time consuming correction of hard copy errors. All errors can be corrected before the text is recorded on disk. If an error is recorded, the editing features of the supplementary General Purpose Editor (GEDIT) program or the DOS EDIT (EDIT/CMD) facilitate error correction.

In addition to the error reduction and error correction features, the DSCRIBE system allows the typist to control the format of the printed text with typed commands rather than with

manual operations. The operator can type completely free-form, imbedding DSCRIBE commands in place of performing manual operations such as carriage return, margin changes and tabstop setting. The dozens of DSCRIBE commands allow the most complicated charts and text formats to be disposed of quickly. With the exception of changing pages (even this can be avoided by use of continuous forms), the typing of the final document requires no supervision by the operator.

DSCRIBE is written for the Datapoint 2200 Processor (16K) or the Datapoint 5500 Processor and the 9350, 9370 or 9380 series disk. Seven output devices are supported:

- 1) Selectric Interface 9240 and IBM Model 735 Selectric I/O Typewriter (with correspondence code and reverse polarity 24 volt coils).
- 2) Serial Printer
- 3) Line Printer
- 4) Servo Printer
- 5) Thermal Printer 3200 with Communications Adaptor 9400 and cable 9435.
- 6) IBM 2741 Communications Adaptor 9400 and Cable 9434.
- 7) 9350, 9370 or 9380 disk drives.

NOTE: This entire manual was prepared and printed using the DSCRIBE system.

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CHAPTER 1. BASIC CONCEPTS

A typist's output is normally a one-time product and changes in the text or format of a document often require a complete retyping effort. The DSCRIBE system, run under the Disk Operating System, is designed to provide a typist with a storage medium (the disk file) on which text can be recorded, a method for recording and making changes to the recorded information (the EDIT program) without having to retype the entire document, and a program (DSCRIBE) to produce a finished printed copy from the recorded information.

A typist performs a number of non-keystroke operations in the preparation of a document. Setting margins and tabstops, performing tabulations, and returning the carriage at the end of lines and for multiple spacing, are functions performed almost automatically. When using DSCRIBE, the same tasks are performed through the use of control information that is embedded within the text. For example, instead of physically setting the right margin to 65 on the typewriter, the command +RM65 (set right margin at column 65) is entered at the point in the text where the margin need be changed. If the margins need to be changed later in the document, new margin setting commands can then be typed. Similarly, the +TC, +TS, and +TB commands (for tab clear, tab set, and tabulate, respectively) are entered in the text whenever the typist ordinarily performs the function at the typewriter. Of course, the commands are not printed in the final text but are processed by DSCRIBE to effect the final copy.

DSCRIBE executes many functions that a typist normally performs as the text is being prepared, such as going to a new page after an appropriate number of lines and page numbering. It also performs functions which are difficult for the typist to achieve the first time the text is typed (e.g., centering headings and justifying the text to provide even margins). Note that, unless instructions are given to the contrary, there is no correspondence between the format of the lines as they are recorded on the storage medium and as they are arranged on the printed copy. Thus, one need not concern himself with the format of the input text.

Since DSCRIBE represents a radical change in the usual procedure for producing a document, a simple example follows to help the reader conceptualize what is being described. The first part, TYPED TEXT, is the text as it is entered with the EDIT program and the second part, PRINTED BY DSCRIBE, is the copy that is produced by the DSCRIBE program given the first part as data. The commands used in the example are:

- +pp - start a new paragraph
- +nl - start a new line
- +ts - set a tab stop
- +tb - tabulate to the next stop
- +tc - clear all tab stops

TYPED TEXT:

+pp The items listed in the catalog are available for purchase by 2200 customers. We suggest you review the latest available version of the Program Generation Tapes in order to keep your programming current. Call your Systems Engineer for information or more details on the software listed in this catalog.

+nl+ts5+ts50
+nl PRICES
+nl+tb 2200 Reference Manual Version+tb2.00
+nl+tb Cassette Tape Operating System Manual +tb 2.00
+nl+tb Editor Manual +tb 4.50
+nl+tb Assembler Manual +tb 4.50
+nl+tc

PRINTED BY SCRIBE:

The items listed in the catalog are available for purchase by 2200 customers. We suggest you review the latest available version of the Program Generation Tapes in order to keep your programming current. Call your Systems Engineer for information or more details on the software listed in this catalog.

PRICES

2200 Reference Manual Version	2.00
Cassette Tape Operating System Manual	2.00
Editor Manual	4.50
Assembler Manual	4.50

1.1 Control Commands

A command is differentiated from text by starting with a plus sign (+). It is of the form +XX where XX (which may be either upper or lower case) indicates which command is to be exercised. A complete list of DESCRIBE commands (106 in all) is contained in Appendix I for quick reference.

Many of the commands are followed by a number, thus taking the form +XXnnn where nnn may be one, two, or three digits. Note if nnn is less than three digits, it must be followed by a space if the first character of text that follows is a digit. If the nnn field is omitted completely, a zero value will be assumed.

A few special commands, discussed later under page numbers, take the form +XXnnnnn where nnnnn must always be five characters.

A special exception to the above is that a plus sign followed by another causes a single plus sign to be printed (++ causes + to be printed).

EXAMPLES:	COMMAND	EFFECT
	+PG	eject a page
	+PP2	skip 2 lines and indent
	+SL1 234	skip one line and print 234
	+SL1234	skip 123 lines, or to the next page, and print 4
	+PP	skip 0 lines (i.e. carriage return only) and indent
	+TB	tabulate to the next tabstop
	++	print a plus sign (+)
	+PB02-01	print 02-01 at the bottom of the current page and increment for each subsequent page

Except for the right and left margin setting commands (+RM, +LM, +RT, +LT, +AR and +AL), all DESCRIBE commands go into effect immediately. The margin setting commands do not effect the margins until after the line upon which they appear is printed.

Commands themselves are never printed unless they are in error. If a command is decoded partially, the remaining portion of the command will appear in the output text. For

example, +PX2 gives a command error and prints the 2.

1.2 Format Assumptions

If formatting commands, which control the general appearance of the output page (e.g., margins, paragraph indentation), are not issued, input text will assume an output format defined by default. The following is a partial list of format conditions initially in effect:

Case:	Lower
Left Margin:	Column 1
Right Margin:	Column 60
Line Justification:	Left
Header Spacing:	3 lines
Body Length:	53 lines
Footing Length:	10 lines
Line Spacing:	Single
Paragraph Indentation:	5 Spaces

A complete description and explanation of all default assumptions is given in the following sections and is summarized in Appendix B. Changing the overall format of DESCRIBE output is done by issuing the format control commands.

EXAMPLE:	COMMAND	EFFECT
	+LM10	sets the left margin to column 10
	+LS2	causes the following text to be double spaced
	+BL80	sets the body length to 80 lines

Straight text can be formatted according to the default assumptions using only one command: +PP (paragraph indent). Text is prepared as a continuous stream of words and punctuation with the +PP command embedded wherever a new paragraph is needed. The text is printed left justified between column 1 (i.e., wherever the left margin on the printer is positioned) and column 60. The current line is printed, left justified; the carriage returns and then spaces over 5 columns everywhere the +PP command is encountered, forming a new paragraph. At the end of 53 lines of text, the page is ejected and the operator is requested to place another sheet of paper in the printer for the next page.

If double spacing between paragraphs is desired, each +PP command is simply changed to a +PP1 (skip 1 line and

paragraph indent).

To produce page numbered copy, only one additional command is needed: +PB 1. Placed before the text, or typed by the operator, this command will cause centered page numbers to be placed at the bottom of every page.

To produce a standard letter, three more commands would be useful:

+TS	set tabstops
+TB	tab to a tabstop
+NL	new line - carriage return

With these commands, the operator can set a tabstop (for the date, address, etc.) and can force carriage returns without paragraph indentation. (See Appendix G, Example 6 for a sample letter.)

1.3 Spaces and Special Characters

Multiple spaces in the input text are reduced to a single space (except after certain punctuation characters). Therefore, special commands must be used to generate multiple spacing. For example, entering:

I RUN. YOU JUMP. will cause

I RUN. YOU JUMP. to be printed.

Certain characters are treated in special ways to provide compatibility with normal punctuation conventions. The period, question mark, double and single quotation marks, colon, semicolon, right hand parenthesis, and exclamation point are unique since the number of spaces following these characters will not exceed two, but can be one or zero.

EXAMPLES:	TYPED	PRINTED
	stop.Go	stop.Go
	stop. Go	stop. Go
	stop. Go	stop. Go
	stop. Go	stop. Go

Note that spaces after commands are discarded by DSCRIBE.

EXAMPLE:	TYPED	PRINTED
	Now+UN is the+NU time	Now <u>is</u> <u>the</u> time
	Now +UNis the +NUtime	Now <u>is</u> <u>the</u> time

DSCRIBE adds a space after every input line. Since multiple spaces are suppressed and spaces after commands are ignored, this replacement will normally be an aid to the operator (since he will not have to supply a space after the last word on a line or before the first word on the next line). However, this replacement implies that words cannot be continued from one input line to the next since a space will always be inserted. Note that if an input line is terminated by a period, it must be followed by a space on the next line or be followed by +SP2 (force 2 spaces) if the period is to be followed by two spaces in the output text. A continuous string may be broken between two edited lines if the first line is terminated by a non-essential command (such as +LJ when you are already in left justified mode) since spaces after a command are suppressed.

1.4 "As is" Text

The user of DSCRIBE can print text one line at a time without any format control or blank suppression by using one of the "as is" commands. When +AS is issued, the remaining text on the current line is ignored, the current output line is printed, and the input file is read one line at a time and printed as it was entered, including plus signs and multiple spaces. The line spacing, left margin, line justification and number of lines per page in effect before the +AS command is executed will be applied to the "as is" text. "As is" text can, however, exceed the right margin. Escape from this mode is achieved by entering a single line containing +## (the rest of the escape line is ignored).

EXAMPLE:
+as
This is a line of untouched text.
+##

A different "as is" command is required to list DSCRIBE input files. See the section on Text Input/Output Control.

1.5 DSCRIBE Manual Organization

The DSCRIBE manual is organized by command categories, e.g., all page control commands (page numbering, headers, lines/page, etc.) are grouped in one section. Each section's opening paragraph provides a list of the commands covered, allowing the user to leaf through the manual to become acquainted with the various commands as he needs them. Appendix I contains a complete set of DSCRIBE commands for quick reference.

Section 8, Text Input/Output Controls, describes the operation of DSCRIBE and how to generate drafts and final copy.

The appendices contain a list of EDIT commands, default conditions, program messages and error explanations, and a comprehensive set of examples.

CHAPTER 2. PAGE CONTROL

AL	left margin for page number
AR	right margin for page number
BH	begin header text
BL	body length
FF	begin full footer text
FL	footing length
HL	header length
LF	left hand page footing
NF	stop printing full footer
NH	stop printing header text
PB	page number at bottom of page
PC	page continue
PG	new page
PH	page halt
PM	page manual - numbers in alternating lower corners
PN	page normalize - new page
PR	page restart (see section 8.8)
PS	special page skip
PT	page number at top of page
RF	right hand page footing
RN	Roman numeral page numbers

2.1 Page Extent

The length of a page is defined by the number of lines skipped at the top, the number of lines printed and the number of lines skipped at the bottom.

+HLnnn, header length, controls the number of lines to be skipped from the top of a page before the next line of text is printed. This count does not take into consideration where the operator positions the first printable line of a page. Default value for the heading length is 3.

+BLnnn, body length, sets the number of lines to be printed on a page. This count starts from the first printable line on the page, i.e., the fourth line from the

top under normal default conditions. The default value for body length is 53.

+FLnnn, footing length, sets the number of lines skipped at the bottom of each page. The default value for the footing length is 10.

Therefore, the actual length of a page, under the default conditions, is 3+53+10 or 66 lines. To vary the number of lines on a page without changing the length of the page itself, the sum of the header length, body length, and footing length should remain 66. However, combinations which generate longer or shorter page lengths are permitted. Standard continuous forms are 66 lines. Appropriate changes to header and/or body length should be made if non-standard continuous forms (e.g. checks) are used, if header, footer or body lengths are to be different from the default settings on the first page, the +HL, +FL or +BL command should appear before the +PN command.

A body length of zero (0) is used to indicate an infinite page or, in other words, continuous printing.

Setting the header length to zero will prevent printing of headings or top-of-page page numbers.

Setting the footing length to less than 5 lines will prevent printing of bottom-of-page page numbers and left, right and full footers.

2.2 New Pages

Pages are automatically ejected when the specified body length is reached.

+PG causes the current page to be ejected immediately. The number of line feeds needed to complete the specified body length will be issued.

+PSnnn, page skip, is a conditional new page command. If there are less than nnn lines remaining on the current page, the page will be ejected. If at least nnn lines remain, no page ejection will occur. If, for example, you have a ten line table that should appear on a single page, preceding it by a +PS10 command will eject a page if the table will not fit on the current page.

+PN, page normalize, would normally be used at the

very beginning of the text to inform DSCRIBE that it is at the top of a page. The command will cause the header space (3 lines, header and page number if any) to be printed. +PN does not increment the actual page number or the physical page number before printing. Note a +PG command could also be used to initialize, however, +PG would issue 53 line feeds and add 1 to the page number.

+PH, page halt, causes the printing to halt when the end of page is reached to allow the operator to change the paper. The message "NEW PAGE" will be displayed on the CRT. When the paper is in place, the operator presses the ENTER key and printing resumes. The page halt condition is ON when DSCRIBE is started.

+PC, page continue, command negates the page halt command, i.e., DSCRIBE doesn't halt the end of page for paper changing. It is intended for use with continuous form paper and is turned OFF when DSCRIBE is started.

2.3 Page Numbering

Page numbering is an option of the DSCRIBE program. Normally page numbers are suppressed.

+PBnnnnn, page numbering - bottom, will cause page numbers to be printed at the bottom of every page. DSCRIBE will automatically increment the page number as pages are ejected. The five character field following the command contains the initial value for page numbering. Non-numeric characters are allowed in the nnnnn field (e.g. A-12). Though only 5 characters may be entered (e.g. AA-99), 6 characters may be printed (e.g. AA-100). The page number will be printed in the fourth line after the body of the text has been completed.

+PB***** suppresses any page numbering at the bottom of the page, including Roman numeral paging (+RN) and manual paging (+PM).

EXAMPLE:	COMMAND	EFFECT
	+PB 1	The current page will be numbered 1 at the bottom.
	+PB	The current page will not be numbered, the next page will be numbered 1.
	+PB*****	Suppress further page numbering.
	+PB01-01	The current page will be numbered 01-01 at the bottom of the page

+PTnnnnn, similiarly, causes page numbering to appear at the top of each subsequent page. Top-of-page page numbers are printed in the first line of the header space. +PT***** suppresses page numbering at the top of the page.

EXAMPLE: COMMAND EFFECT
 +PT 20 If followed by a +PN command, the
 current page will be numbered 20 at
 the top.
 +PT 20 If followed by a +PG command or if the
 next page is reached automatically,
 the new page will be numbered 21 at
 the top.
 +PT***** Page numbering will be suppressed.

NOTE: executing a +PN command (page normalize) after a +PB or +PT command will not increment the page number.

+PMnnnnn, page manual, will cause page numbers to be printed in the lower right and left hand corners of the page alternately starting with the right hand page.

+RNnnnn, Roman numerals, will print Roman numerals at the bottom of the page from i to xv starting with nnn (entered as a decimal number), where 1 (i) is assumed if nnn is not given. This is useful for a preface or table of contents.

+ALnnnn and +ARnnnn are used to set the left and right margins which are used only for the page number field. The default assumptions are left page number margin at column 1 and right page number margin at column 60. Therefore, if the margins are not reset, page numbers will be centered at top or bottom of the page. Resetting the left margin to column 55 (+AL55) would produce right justified page numbering (actually centered between columns 55 and 60). The page numbers printed by the Page Manual command are relative to the text on the page and are not affected by the +AL and +AR commands.

2.4 Page Heading

A string of characters may be designated as a heading. These characters will be printed, left justified, starting at the left margin as defined for the body of the text when the header is defined. The heading will appear in the first line of the header space. The page number, if any, will still be centered between the left and right page

number margins.

+BH, begin header, signifies that the following characters are a heading. Up to 132 characters following the command are accepted "as is" for the heading. No commands may be used since the first plus sign (+) terminates the heading. Headings may be changed by typing a new +BH command.

+NH suppresses further printing of headings.

EXAMPLE:

TYPED TEXT:

+BHD S C R I B E MANUAL July 1976 Page

+pt 1+a155+pn

PRINTED BY DSCRIBE:

D S C R I B E MANUAL July 1976 Page 1

2.5 Page Footings

+LF, left hand footing, will cause the following text, up to a command (which MUST be on the same line) to be saved "as is" (as in headings) to be printed in conjunction with the left hand page numbers generated by Page Manual (+PM). The text will then be processed in-line. This allows a chapter name, for instance, to be printed and saved for a footing at the same time.

+RF, right hand footing, works the same as +LF except that the text is printed in conjunction with right hand page numbers.

EXAMPLE:

TYPED TEXT:

+AL1+AR66+CN+SL10

+LF DOCUMENT TITLE+PG

+RF CHAPTER 1. INTRODUCTION+PP3

+PM 1-1+LJ

In this example, DSCRIBE would enter "DOCUMENT TITLE" on a title page, print "CHAPTER 1. INTRODUCTION" on the top of the next page and produce page footings:

1-2 DOCUMENT TITLE

on even pages and

CHAPTER 1. INTRODUCTION 1-1

on odd pages.

+FF, full footer, signifies that the following characters are accepted "as is" for a footing to be printed, left justified, starting at the left margin defined for the body text when the footer is defined. A plus sign terminates the footer. Unlike the +LF and +RF commands, the full footer is not processed in-line; it is merely saved for the footing. Footers may be changed by typing a new +FF command.

+NF suppresses further printing of the full footing.

The +PB command may be used in conjunction with the +FF command. However, the +FF command is not compatible with +PM, +LF and +RF.

EXAMPLE:

TYPED TEXT:

+FF FOOTING (accepted "as is") PAGE
+al40+pb 1

PRINTED BY DSCRIBE:

FOOTING (accepted "as is") PAGE 1

CHAPTER 3. HORIZONTAL CONTROL

AT	actual tab
EL	elite (12 per inch) character spacing
IS	set paragraph indentation (See +PP)
JK	right justify at current column
LM	set left margin
LT	set left margin to tab
NR	stop field right justification
PI	Pica (10 per inch) character spacing
PP	paragraph indent (See Section 5.)
RM	set right margin
RT	set right margin to tab
SI	character size (width) change
SP	skip spaces
TB	tabulate
TC	clear all tabstops
TM	tab to left margin
TR	tab and right justify the field
TS	set tabstop
TT	typewriter tab
TX	tab extended (tab right to right margin)

3.1 Margins

Text margins may be set absolutely or to a tab stop and page number margins may be set absolutely.

3.1.1 Left Margin

+LMnnn sets the left margin. The left margin is the first column into which text will be placed when a new line is started (unless overridden by a tab or paragraphing command). The +LM command does not take effect until the current line has been printed. One may also use the +PL command to cause immediate resetting of the margin. The default value for left margin is column 1.

EXAMPLE

TYPED TEXT:

```
+LM5+plGeneral Purpose Editor 3.1
+LM10+n1 For programmers using GEDIT this manual provides
a complete reference and instructions for use.
```

+LM5+s11Datapoint 2200 Reference Manual
+LM10+n1 The Reference Manual describes the specific hardware details, physical design, instruction set and the input/output specifications.+LM5

PRINTED BY DSCRIBE:

General Purpose Editor 3.1

For programmers using GEDIT this manual provides a complete reference and instructions for use.

Datapoint 2200 Reference Manual

The Reference Manual describes the specific hardware details, physical design, instruction set and the input/output specifications.

3.1.2 Right Margin

+RMnnn sets the right margin. The right margin is the last column used on the right side of the printed line. When a attempt is made to place text past this column, the current line will be justified and printed and a new line will be started at the left margin. The default value for right margin is column 60.

EXAMPLE

TYPED TEXT:

+lm20+RM35+lj+plNow is the time for all good men to come to the aid of their country.
+s11+emNow is the time for all good men to come to the aid of their country.
+lm15+RM40+s11Now is the time for all good men to come to the aid of their country.

PRINTED BY DSCRIBE:

Now is the time
for all good men
to come to the
aid of their
country.

Now is the time
for all good men
to come to the
aid of their
country.

Now is the time for all
good men to come to the
aid of their country.

The margin setting commands do not go into effect until the next line is started. Setting the right and left margins before the first line is printed will not effect the format of the first line. This delayed action is designed to prevent loss of data and justification errors on the line being constructed. The composer may overcome the delay by using the +PL command to have the margins reset immediately. (See the section on Print Suppression for a discussion of the +PL command.)

Placing the right margin to the left of the left margin will cause a single character to be printed on each output line.

3.1.3 Set Left Margin to Tab

The command +LT sets the left margin to the next tabstop. It is further explained below.

3.1.4 Set Right Margin to Tab

The command +RT sets the right margin to the next tabstop. Both the +LT and +RT commands cause the tabstop indicator to be incremented. Thus, if tabs are set at 10, 20, 40, 60, and 80, and the margins are to be changed to 10 and 80, the commands +LT+TB+TB+TB+RT+PL will effect the margin change. +RT and +LT, as in the +LM and +RM commands, do not change the margin until the current line has been printed. To force an immediate margin change, the +PL command may be used. Using these commands enables the user to change tabstops without also being forced to change corresponding margin commands.

3.1.5 Run-On Lines

When there exists a series of characters with a length greater than the distance between the right margin and the left margin and containing no intervening space, DSCRIBE will break the series so that it will fit between the left and right margins. The remainder of the series will be placed on the next line.

EXAMPLE

TYPED TEXT:

+LM025+RM033+NLMrs. X, Chairwoman of the house subcommittee on Government Information,...

PRINTED BY DSCRIBE:

Mrs. X,
Chairwoma
n of the
house
subcommit
tee on
Governmen
t
Informati
on,...

3.1.6 Page Numbering Margins

In addition to the text control margins +LM and +RM there are also the margins +AL and +AR for positioning of page numbers which are explained in the section on Page Controls. The two sets of margins do not interact with each other.

3.1.7 Margins and Line Justification

Line justification is performed when an attempt is made to place a character past the +RM column. When this attempt has been made the incomplete word existing at this point is placed on the next line and the current line is justified. See the section Line Justification for a more detailed explanation.

3.1.8 Data Outside the Margins

No text can ever be placed past the right margin. However, text may be printed before the left margin setting by using one of the tabulation commands (e.g. +AT). In this manner marginal notes may be entered. Note: only text between the left and right margins will be justified.

EXAMPLE

TYPED TEXT:

```
+em+LM15+rm35+pl+AT1NOTE:+at15Only data between the specified
margins will be justified. However, single field justification
can be performed outside the margins.
+nl+AT1BE+at15Care must be taken that the pointer to the last
column is past the end of data.
+AT1CAREFUL+AT36
```

PRINTED BY DSCRIBE:

```
NOTE:          Only data between the
                specified margins
                will be justified.
                However, single field
                justification can be
                performed outside the
                margins.
BE             Care must be taken
                that the pointer to
                the last column is
CAREFUL       past the end of data.
```

3.2 Indentation and Paragraphing

+ISnnn sets the number of columns to indent for paragraphing. The indentation occurs relative to the left margin. Therefore, +IS10, when the left margin is set to 10, will space 19 columns over and print the first character in column 20. The default value for indentation is 5 columns.

+PPnnn causes the current line to be printed, with only left justification. The number of lines specified by nnn will be skipped and the text following the command will start at the current value of the left margin plus the value set in the +IS command. See the section on Vertical Control for the other effects of +PP.

3.3 Column Skipping

+SPnnn forces multiple spaces (see Section 1.3). Since DSCRIBE normally leaves one space between words, a means of forcing multiple spaces becomes necessary. +SPnnn skips forward a fixed number (nnn) of columns, thus leaving blank spaces. The even margin justification mode may add more spaces to this area, but will never decrease the number.

EXAMPLE

TYPED: wide+SP3open+SP4spaces
PRINTED: Wide open spaces

The space skipping command resets the line output pointer only and does not blank out any existing characters in the line. Since lines are blanked and assumed to be blank after each new line is started, the above command only appears to leave blank spaces.

EXAMPLE

TYPED:
????????????????????+AT5A B+SP3C+AT50

PRINTED:
???A B???C???????????

In this example the +SP command moved the current output pointer backward over an area already set with data ('s) with the result that no spaces appeared in the line. With the +SPnnn command, if there are less than nnn positions remaining in the line, DESCRIBE will space out to the end of the line but will not carry over the extra spaces to the next line.

3.4 Tabulation

Tabs may be cleared or set (up to 20) and may be approached in several different ways.

3.4.1 Tab Setting

+TSnnn is the command to set a tabstop. Tabstops are set consecutively so that the first tabulate command goes to the first tabstop, even if the current pointer in the line is past that point. Therefore, tabstops do not need to be in ascending order. However, care must be taken that the current pointer is past all the actual text before new line type commands are executed. Up to twenty tabstops may be set. The column specified may be anywhere on a printed line, from column 1 to column 132, but it should not exceed the right margin since positioning past the right margin causes the current line to be printed and subsequent text to appear at the left margin of the next line. No tabstops are set at initialization.

3.4.2 Tab Clearing

+TC, the tab clear command, clears all tabstops. Since it is difficult to keep track of where and how many tabstops have been set, it is a good standard practice to execute a +TC command before setting new tabstops.

3.4.3 Tabbing

+TB tabulates, i.e., positions the output pointer to the column specified in the next (in order of setting, which may not be in sequential order) tabstop setting. The subsequent input character will be placed in that column. If you want to skip a tabstop, you must still type +TB to get past that tab, even if the current position in the line is past the tabstop.

EXAMPLE

TYPED TEXT:

```
+TC+TS15+TS25+TS45+TS35+TS50
+TBThe+TBcolumn+TBxxx+TBin the+TB+nl
+TBmiddle+TBis typed+TBxxx+TBlast+TB
```

PRINTED BY DSCRIBE:

```
      The      column      in the      xxx
      middle    is typed    last      xxx
```

3.4.4 Typewriter Tab

The +TT command tabs to the next tabstop in the list to the right of the current position (rather than just the next tabstop in the list) similar to the way a typewriter would do it.

3.4.5 Absolute Tabbing

+ATnnn is the absolute tab command. It positions the line output pointer at the specific column and places the next input character in that column. The column specified can be anywhere on a printed line, from column 1 through 132; however, if the column exceeds the right margin, a carriage return will occur and the data will be printed starting at the left margin.

Once a document has become dependent on a large number of absolute tab settings, it becomes very difficult to change, since each +AT instance must be changed individually. This is true for the use of any absolute setting in DSCRIBE.

EXAMPLE

```
TYPED: +AT20X+AT30Y+AT40Z+nl
PRINTED:          X          Y          Z
```

3.4.6 Tab and Right Justify

+TR command puts the output line pointer at the next sequential tabstop. However, data entered from this point (until a +NR command is received or column 1 is reached) will be shifted right, causing the data to be right justified one column before the tab stop. WARNING: input data includes the implied space at the end of an edited line. Entering a non-essential command (e.g., a +LJ when already in left justified mode) will eliminate the implied space as spaces following commands are suppressed.

+NR terminates right justification and leaves the output pointer at the tabstop position.

EXAMPLE

```
TYPED TEXT:
+tc+ts20+ts30
+TRxxx+NRyyy+TRabc+NRzzz+nl
+tbAAA+tbBBB+nl

PRINTED BY DSCRIBE:
                xxxyyy      abczzz
                AAA         BBB
```

EXAMPLE

```
TYPED TEXT:
+tc+ts10+ts30+ts40
+TRthis+TR123.50+TRone+nl
+TRcolumn+TR22.00+TRtwo+nl
+TRis+TR1000.00+TRthree+nl
+TRjustified+TR1.50+TRfour+nl
+tbbut+tbthese+tbcolumns+nl
+tbare+tbtabulated+nl

PRINTED BY DSCRIBE:
  this          123.50      one
  column        22.00      two
  is            1000.00     three
justified      1.50       four
  but          these      columns
  are          tabulated
```

There are many traps waiting for the incautious user of tabulation commands. See the section on Common Pitfalls.

3.4.7 Tab Extended

+TX, tab extended, causes a tab and right justify against the right margin. This is useful for something like a table of contents.

3.4.8 Tab to Left Margin

+TM, tab to left margin, tabulates to the current left margin regardless of the direction the output pointer must move to point to the left margin. It acts like a +AT instruction to position the output pointer to the left margin and does not increment the tab counter. If the +TM instruction causes the pointer to move to the left, any previously entered data will be overlaid. This may cause problems if even margins have been requested or if any of the commands for the servo printer (such as +el, +si, +li, +br, etc.) are overlaid.

EXAMPLE

TYPED TEXT

```
+tc+ts1+ts5+ts10+ts30
```

```
+lm20+nl+tb+tbTAB MARGIN+tm
```

This command is useful when printing headings to the left of text.

PRINTED BY DSCRIBE

```
TAB MARGIN
```

This command is useful when printing headings to the left of text.

3.5 Field Right Justification

If field right justification is desired where no tabstop is set, the justify right (+JR) command, usually used in conjunction with the absolute tab (+AT) command, is available.

+JR causes DSCRIBE to go into a right justification mode at the current column, so that subsequent input text will be moved to the left, overlaying any previously entered data, until a +NR or a line terminating command is received or until column 1 is reached.

EXAMPLE

TYPED TEXT:

```
+at12+JRThis data+NL+at12+JRis+NR+at30But the third line +nl  
+at12+JRight justified+NR+at30ran into the margin.+nl
```

PRINTED BY DSCRIBE:

```
This data  
is  
ht justified
```

But the third line
ran into the margin.

3.6 Pica and Elite (Servo Printer)

As both pica (10 characters per inch) and elite (12 characters per inch) wheels are available for the servo printer, the +PI (pica) and +EL (elite) commands allow the user to specify which spacing is needed to match the character wheel in use.

3.7 Size Increment (Servo Printer)

The servo printer may be positioned horizontally to 60 micropositions per inch. Pica and Elite are 6 and 5 micropositions per character respectively. However, the user may desire a non-standard character spacing. +SInnn, size increment, allows the user to specify the number of micropositions per character, where nnn may be from 1 to 255. Using this command in conjunction with the line increment (+LInnn) command allows a pseudo-graphic capability. WARNING: since DSCRIBE is character oriented, a large size (width per character) may cause the carriage to hit the right hand end of the servo printer. On the other hand, setting it to 1 reduces the effective width of 132 columns to 2.2 inches.

In text with the +SI command, other DSCRIBE commands will produce expected results unless size increments are changed within the line. It is permissible to change sizes within a line; however, margins and tab positions will be determined according to the last size increment requested. The justification calculations expect characters to be the same size so centering, right justification and even margins may not look as expected if the +SI command occurs within the line.

CHAPTER 4. LINE JUSTIFICATION

CN	center
EM	even margins
LJ	left justify
RJ	right justify

Four modes of line justification are available: left justification; right justification; centering between the margins; and "even margins" (right and left justified). Left justification is the default condition assumed when DSCRIBE is initially used.

4.1 Left Justification

+LJ, left justification, produces output lines less than or equal to the right margin in length. Whenever the next word of input text crosses the right margin, the current line is printed and the last word is placed at the beginning of the next line.

EXAMPLE

TYPED TEXT:

```
+lm10+rm40+pl+LJ Left Justification looks like this, the right  
hand margin is ragged. Tabbed columns are maintained.+nl  
+at15 1111+at25The tabbed spacing+nl  
+at15 2222+at25will not be disturbed even though the margin is  
reached and a carriage return occurs.
```

PRINTED BY DSCRIBE:

```
Left Justification looks like  
this, the right hand margin is  
ragged. Tabbed columns are  
maintained.
```

```
    1111      The tabbed  
spacing  
    2222      will not be  
disturbed even though the  
margin is reached and a  
carriage return occurs.
```

4.2 Right Justification

+RJ, right justification, shifts the formatted line to the right hand margin. Tabbed locations may be shifted. No justification on the left occurs, thus, the left margin will be ragged.

EXAMPLE

TYPED TEXT:

```
+RJThis text will be shifted to the right under the right
justification mode. Tabbed positions will move along with
unformatted strings. New line commands will cause the line to
be shifted right.+NL
+at10xxxxx+at30yyyyy+at50zzzzz these columns are off.+nl
+at10xxxxx+at30yyyyy+at50zzzzz+nl
```

PRINTED BY DSCRIBE:

This text will be shifted to the right under the right justification mode. Tabbed positions will move along with unformatted strings. New line commands will cause the line to be shifted right.

```
xxxxx          yyyyy          zzzzz these
columns are off.
          xxxxxx          yyyyy          zzzzz
```

4.3 Centering

+CN, centering, computes the central point between the left and right margins and then subtracts half the length of the text to determine the starting column for the text.

EXAMPLE

TYPED TEXT:

```
+CN Titles are Centered+nl
(Subtitles too)
```

PRINTED BY DSCRIBE:

```
Titles are Centered
(Subtitles too)
```

4.4 Even Margins

+EM, even margins, are obtained by evenly distributing the blanks left between the last character and the right margin, in between the words in the output line. The spaces are distributed from right to left.

EXAMPLE

TYPED:

+EMEVEN margins look like this.+NE

PRINTED:

Even margins look like this.

These commands go into effect immediately when issued and remain in effect until another line justification command is issued (e.g., if centering is in effect and a +LJ command is issued, the current line will be left justified in the output line).

It is very important to realize that line justification requests go into effect immediately. If a line was generated in even margins mode and just before it was printed (with a +NL) a +RJ was issued, the resulting line will be printed right justified.

Only information between the margins is affected by line justification. Thus, information tabbed to the left of the left margin will not be moved.

CHAPTER 5. VERTICAL SPACING CONTROL

LI	line increment
LS	line spacing
NE	new line even margins
NL	new line
PG	go to a new page (see Section 2.2)
PP	new paragraph (see Section 3.2)
SL	skip lines or to new page
SU	skip until x lines left in body

Unless otherwise stated, all commands that implicitly terminate a line do so by issuing an internally generated +NL (new line).

5.1 Carriage Control

+LS, line spacing, determines the number of lines skipped each time the carriage is returned. The default condition is single spacing (+LS1).

EXAMPLE

TYPED TEXT:

```
+lm10+rm50+pl+LS2This text will be double spaced. A new line
spacing command should not be issued until the text it effects
is in progress.
+lm20+rm40+nl +LS1This text will be single spaced and indented.
Care must be taken when switching back to double spacing mode.
+LS2+lm10+rm50+nl The instructions in this example will achieve
the proper spacing.
```

PRINTED BY DESCRIBE:

This text will be double spaced. A new
line spacing command should not be issued
until the text it effects is in progress.

This text will be
single spaced and
indented. Care must
be taken when
switching back to
double spacing mode.

The instructions in this example will
achieve the proper spacing.

5.2 Line Termination (new line)

+NL, new line, and +NE, new line even margins, commands force the termination of any output line under construction. After the line has been printed the line output pointer is set to the left margin. If multiple +NL's are issued, multiple new lines will be printed.

The line termination commands are used when a limited amount of text is required on a printed line. If even margins are in effect, the use of the +NL command, or any command that forces a new line, will force the current output line to be left justified. If right justification or centering is in effect, the appropriate justification will be performed. If even margins are required, the +NE command can be used causing the partially completed line to be stretched to fill the space between the left and right margins.

EXAMPLE

TYPED TEXT:

+lm15+rm45+em+NLNew line commands are a necessary part of text preparation.

+NLThey are not needed for each and every line, only for the terminating lines of paragraphs.

+NL +NL If even margins are required for the last line of the paragraph, the new-line-even-margins command must be used.+NE

PRINTED BY DSCRIBE:

New line commands are a necessary part of text preparation.

They are not needed for each and every line, only for the terminating lines of paragraphs.

If even margins are required for the last line of the paragraph, the new-line-even-margins command must be used.

5.3 Line Skipping

Lines may be skipped by issuing multiple new line (+NL) commands or by use of a skip line command.

+SLnnn, causes the current output line to be printed and skips the number of lines specified by nnn or goes to the top of a new page if there are not enough printable lines on the page.

EXAMPLE

TYPED TEXT:

Whenever the SL command is encountered,+SL1
The number of lines requested will be skipped,+SL2
And the next line will start at the left margin.

PRINTED BY DSCRIBE:

Whenever the SL command is encountered,

The number of lines requested will be skipped,

And the next line will start at the left margin.

+SUnnn skips down until there are nnn lines left in the body. If there were fewer than nnn lines left when the command is encountered, an error message will be displayed and the command ignored.

5.4 Paragraphing

Frequently, at the end of a paragraph, a combination of operations are desired: the new line command (to end the current paragraph), the skip line command (to skip an appropriate number of lines), and a command to indent for the next paragraph. The +PP command will combine all of these functions.

+PPnnn, paragraph, will cause the current line to be printed, the specified number of lines, nnn, to be skipped and will position the next text to the left margin plus the indentation set by the +IS command (see Horizontal Control section).

5.5 Overall Page Control

The unconditional page skip command (+PG), and the conditional page skip command (+PS) can be used to control page skipping. Under normal conditions, text flow will cause pages to be skipped automatically at the correct line on the page with page numbering is so desired. See the section on Page Control for more details.

5.6 Line Increment (Servo Printer)

+LI nnn , line increment, allows the user to change the number of micropositions (48 per inch vertically) to move on each carriage return. The default value is 8 (6 characters per inch vertically). Changing it to 6 will set vertical spacing at 8 characters per inch. Changing it to 12 will produce line-and-a-half spacing as on a typewriter. In conjunction with the size increment (+SI nnn) command, a pseudo-graphic capability is allowed. If nnn is outside the range of 1 to 80, it is in error. +LI40 causes no vertical motion; for example, +LI40+n1 returns the carriage without moving the paper. If nnn is greater than 40, then line spacing is $nnn-40$ micropositions UP. If the servo printer is operating with pin-feed tractors (normally used with continuous forms), the paper is likely to jam on reverse motion.

CHAPTER 6. TYPE FACE CONTROL

BE	boldface end
BF	begin boldface
BR	black ribbon
CC	clear 'case'
LC	force lower case
NS	no super/subscripting
NU	no underlining
OP	overprint the prior character
RR	red ribbon
SB	subscript
SS	superscript
UC	force upper case
UN	underline

6.1 Underlining (Servo)

The +UN command is provided for underlining main line text. Its effect is terminated by the +NU command.

EXAMPLE

TYPED: These +UNtwo words +NU are underlined

PRINTED: These two words are underlined

+UN, underline, backspaces and underlines all letters and numbers on the servo printer. To underline blank spaces use an underline character "_" in place of the spaces. To underline special characters, the overprint command (+OP) may be used.

+NU, no underlining, turns off underlining. When using this command place a blank before the command to insure a blank following the last word if you so desire.

EXAMPLE

TYPED: +UNAnd what's her history? A_blank,_my_lord+NU

PRINTED: And what's her history? A blank, my lord

6.2 Upper and Lower Case

The commands +LC, +UC, +CC give the operator the ability to force letters to lower case (+LC), or upper case (+UC) or to clear 'case' flags (+CC). EDIT allows entry of text in upper and lower case so these commands are only useful in unusual cases such as

when it is desired to capitalize a large section of text without re-entering it or when an upper case only printer does not automatically convert lowercase letters to uppercase (see 8.4.4).

EXAMPLE

TYPED: +lcTHESE LETTERS WILL APPEAR AS LOWER CASE.
+UCthese letters will appear as upper case.
+ccThese will appear as TYPED.

PRINTED: these letters will appear as lower case.
THESE LETTERS WILL APPEAR AS UPPER CASE.
These will appear as TYPED.

6.3 Black and Red Ribbon (Servo)

+BR, black ribbon, and +RR, red ribbon, allows switching between colors on a two color ribbon on the servo printer. Text following a +BR command will be printed in black and that following a +RR command will be printed in red. The default is black. The cloth and carbon ribbons are narrower than a two color ribbon and therefore characters put out as "red ribbon" may only be partially printed if a plain black ribbon is used.

6.4 Subscripts and Superscripts (Servo)

+SS, superscript, will move the paper down on the servo printer 3 micropositions (three-eighths on a line space). +SB, subscript, will move the paper up 3 micropositions. +NS, no sub/superscripts, will return the paper to its original position before the +SS or +SB. A +SS or +SB can only be followed by a +NS command.

6.5 Overprint (Servo)

+OP, overprint, will back up the carriage one space (over the prior character). The following character will then overprint the prior character. There is no limit to the number of accumulated overprints.

6.6 Boldface (Servo)

+BF, begin boldface, and +BE, end boldface, may be used to bracket character strings which are to be boldfaced on a servo printer. Each character between these commands will overprint itself four times to print a darker character and to produce a heavier impression. It may be useful to boldface an entire text when cutting stencils.

CHAPTER 7. PRINT SUPPRESSION

N1	turn OFF switch 1
N2	turn OFF switch 2
N3	turn OFF switch 3
NP	turn off print suppression
NW	turn OFF switch
P1	print only if switch 1 is on
P2	print only if switch 2 is on
P3	print only if switch 3 is on
PL	purge line
PW	print only if switch is on
S1	turn ON switch 1
S2	turn ON switch 2
S3	turn ON switch 3
SW	turn ON switch

7.1 PRINT SUPPRESSION UNDER SWITCH CONTROL

It is possible to type up to two hundred fifty-eight different pieces of text and allow the operator to enable printing of one or all of them from the 2200 keyboard.

7.1.1 Print Suppression Switches

+S1, +S2, +S3, +SWnnn are commands which turn ON the indicated switch 1, 2 or 3 or any of the 255 "SW" switches where nnn may range from 1 to 255. These switches are only meaningful when used in conjunction with the print suppression (+P1,+P2,+P3,+PWnnn) commands.

+N1, +N2, +N3, +NWnnn turn off the indicated switch. The default assumption is that all switches are OFF when DESCRIBE starts.

7.1.2 Print Suppress Initialization

+P1, +P2, +P3, +PWnnn signify that the following text should be printed only if the corresponding switch is ON. If the switch is off, the text and all commands embedded in the suppressed text (except +NP) will be ignored.

+NP indicates the end of print suppressed text. The output line is adjusted for whatever text actually prints.

EXAMPLE

TYPED TEXT:

The earth is +P1hollow+NP+PW1round+NP+PW175flat+NP.
The poles so long sought are +P1but phantoms+NP
+PW1frozen+NP+PW175unreachable+NP.
There are +P1+unopenings +nu+NP+PW1icebergs +NP+PW175shear
drops +NP at the northern and southern extremities.

PRINTED BY DESCRIBE (with Switch 1 ON):

The earth is hollow. The poles so long sought are but phantoms.
There are openings at the northern and southern extremities.

PRINTED BY DESCRIBE (with Switch SW1 ON):

The earth is round. The poles so long sought are frozen. There
are icebergs at the northern and southern extremities.

PRINTED BY DESCRIBE (with Switch SW175 ON):

The earth is flat. The poles so long sought are unreachable.
There are shear drops at the northern and southern extremities.

7.2 Purge Line

+PL deletes the output line under construction and causes margins, which normally are not changed until the current line has been printed, to be reset immediately.

New line commands should precede purge commands to reset margins - data could be lost.

EXAMPLE

TYPED:

+lm10+rm30+PLThis example resets the margins immediately.

PRINTED:

This example resets
the margins
immediately.

7.3 Page Search

Printing can be suppressed while the input file is searched for a specific physical page. (See +PR discussion in the section on Text Input/Output Control.)

CHAPTER 8. TEXT INPUT/OUTPUT CONTROL

CD	CRT Display
DO	Disk Output
D1	Open disk file as logical file 1
D2	Open disk file as logical file 2
ED	2741 Printer (PTTC/EBCD code)
F0	Switch to File 0 - (CRT)
F1	Switch to File 1
F2	Switch to File 2
FR	Input File Return
LD	Local Printer Display
PE	Page End
PR	Page Restart
R1	Rewind and Open File 1
R2	Rewind and Open File 2
RD	Remote Printer Display
RS	Restart All Input Buffers
SD	Selectric Typewriter Display
XD	2741 Printer (Correspondence Code)
10	Equate File 1 to 0
11	Equate File 1 to 1
20	Equate File 2 to 0
22	Equate File 2 to 2

8.1 Input Generation

DSCRIBE input may come from an EDIT compatible file on disk or typed in directly through the screen. Any programs which use the EDITed file as data to produce files to be DSCRIBEd should not increase the line length (the number of characters between end-of-line indicators) above 132. DSCRIBE truncates lines of longer lengths.

8.1.1 EDIT

EDIT is a separate program which enables the user to create disk files containing text and DSCRIBE commands and to edit these tapes or disk files to make corrections or additions to the text. For detailed instructions on EDIT operation, see the DOS Manual. An EDIT command list is included in Appendix A of this manual.

8.1.2 Keyboard

One-time text may be directly prepared using the DSCRIBE program. The operator types text and commands, just as with EDIT. Instead of recording the accumulated line on a disk file, DSCRIBE will print that line on the output device.

Operator keyins may also be required for certain documents. For example, a form letter may require a name and address or perhaps a specific dollar amount.

8.2 Input Files

DSCRIBE provides three input Files which are:

- 0 - The Datapoint 2200 or 5500 Keyboard
- 1 and 2 - Disk files

When DSCRIBE is first loaded, the default input File is 0, the Datapoint 2200 Keyboard. The message "KEYIN:" is displayed on the bottom line of the CRT to which the user responds with commands and/or text.

8.3 Input File Manipulation

Input files may be opened, rewound, selected, and/or logically switched as desired.

8.3.1 Input Disk File Selection

When executing DSCRIBE, file names may be entered on the command line. For example, by typing:

```
DSCRIBE LETTER,ADDRESS
```

DSCRIBE would be executed with file LETTER/TXT opened as logical file 1 and ADDRESS/TXT opened as logical file 2. Once into DSCRIBE the commands +D1<filespec1> and +D2<filespec2> are used to specify other disk files as logical files 1 and 2. The file specification assumes 'TXT' if an extension is not given. If a drive number is not given, all drives will be searched.

A logical file may assign another file to the same

logical file number as long as the commands to open and to transfer control are on a single line (i.e., appear on one screen line when the file is generated by the editor). For example, chapters of a book may be kept in separate files on the disk for ease of editing. The files can be automatically linked to each other by terminating each file with the commands:

```
+D1<next chapter file name>+F1
```

The user would type in the commands to specify the first chapter as file 1 (e.g., +D1CHAPT1+F1) and subsequent chapters would automatically be printed.

8.3.2 Input Device Selection

With the +F1 and +F2 commands, the input text stream may be switched to another file to retrieve, as an example, names and addresses that have been entered through EDIT and have DESCRIBE commands within the text. As soon as the operator types +F1 or +F2 the specific file becomes the input file and DESCRIBE will start processing the text and commands recorded on the file.

EXAMPLE

```
File 1:  
  +PL...+F2...+F2...+PG+R1+F1  
File 2:  
  +PLname 1+F1address 1+F1  
  name 2+F1address 2+F1  
  name 3+F1address 3+F1  
Operator:  
  +R1+R2+F1
```

In the above example, the operator rewinds both files, and begins processing the data with File 1. File 1 calls File 2 twice per page; once to retrieve the name, and the second time the address. File 1 rewinds and switches back to itself. This operation continues until an end of file is found in File 2.

By using the +10, +11, +20, or +22 commands the operator can switch the logical input from File 1 or 2 to File 0, or restore the input associated with 1 or 2 back to 1 or 2.

EXAMPLE

File 1:

+PL...+F2...+F2...+PG+R1+F1

Operator:

+20+R1+F1

Subsequent Operator input:

name 1+F1

address 1+F1

name 2+F1

address 2+F1

name 3+F1

address 3+F1

An additional command is available for input control: the +FR or File Return command. In the above example, the +F1 commands in the subsequent input could have been the +FR command instead, thus returning input to the file that called for manual input. This is useful if several files call File 0 for manual input.

To discard all input buffers, the command +RS should be used, as this will close Files 1 and 2 and switch to File 0 immediately. Use this command only in preparation for new runs of data after previous runs have been made. This command restores the format control assumptions to their original values.

8.3.3 Input File Re-initialization

The commands +R1 and +R2 are used to rewind and open their respective files. Since whenever input files are switched DSCRIBE saves the place for their return, these commands should be entered if it is desired to return to the beginning of the file. The commands may also be used to provide a recursive file that calls itself many times to print multiple copies of text.

EXAMPLE

+PL

This is the body of the text.

+PG+R1+F1

Suppose EXAMPLE is a file on disk. After calling in the DSCRIBE program with the command DSCRIBE EXAMPLE, the operator opens the file with the command +F1. When the last line of text in the file is read, the commands +R1 and +F1 are read and the file EXAMPLE is opened and read from the beginning. Without any other file commands, this example

would continuously produce the same output text.

8.4 Output Facilities

DSCRIBE will display the resultant text on one of six output devices, an IBM Model 735 Selectric Typewriter, the Datapoint Processor CRT, the Datapoint 3200 Thermal Printer, Datapoint Serial or Line Printer, Datapoint 9250 Servo Printer, or a PTTC/EBCD- or correspondence-coded IBM 2741 Communications Terminal. DSCRIBE can also build a print file on disk. The default output device for DSCRIBE is the Processor CRT. The user must issue a command to indicate a different device.

To speed up the printing of the text, all output to the printer or typewriter is overlapped with the setting up of the next three lines. As much overlap as possible is done, although there are times the mechanism will pause due to internal line justification processing.

8.4.1 Selectric Typewriter

+SD causes the output to be printed on a 735 Selectric typewriter, interfaced to the Datapoint 2200 or 5500 through a selectric interface. If there is no Selectric interface, or if the Selectric typewriter is not turned on, the message "OUTPUT DEVICE NOT AVAILABLE" will be displayed. If the Selectric is not available when the +SD command is received, the output will be switched to the previously selected output device or the default assumption for output.

8.4.2 The CRT Display

+CD switches the output to the CRT. When using the CRT display, the user will receive a fast, clear picture of the output text as it would appear on the printer or typewriter. Once a line has been constructed, it is displayed, although the operator may delay the display by depressing the DISPLAY switch. The DISPLAY light is turned on, indicating that a line is ready to be displayed.

8.4.3 The Remote Printer Display

+RD switches the output to a remote printer. In this mode, all output is directed to the 3200 Thermal Printer attached to the 9400 Communications Adaptor. Any serial ASCII printer, which will run at 300 baud, can be attached. The +RD command sets up the interface to 300 baud and stores

the +RD option for the output line handler. If no communications adaptor is attached, the message "OUTPUT DEVICE NOT AVAILABLE" will be displayed and the output will be switched to the previously selected device.

8.4.4 The Local Printer Display

+LD switches the output to a local printer and does a form feed. In this mode, all output is directed to the Serial Printer or the Line Printer directly attached to the Processor. If the printer does not have lower case capability and does not convert lower case to upper case, precede the DESCRIBE text with +UC (force following text to upper case). Underlining will not appear. +LDnnn (as in +DDnnn) creates an absolute left margin position at nnn (range 1-132). See the section on Servo Printer Display for details. Since the Selectric typewriter has the same device address as a local printer, if a local printer is present no error message will be displayed when the program checks for the presence of the Selectric at initialization. The operator must still issue the +LD command to insure proper printing.

8.4.5 The Servo Printer Display

+DD switches the output to the Servo Printer (9250) and does a form feed if the printer is not at the top of the page. The +DD may be followed by one to three digits (1-132) which are an absolute margin position (like moving the paper guide on a typewriter). When the command is executed, the printer will move that many places to the right of the rest position and all subsequent printing will be relative to this position. The maximum value allowed for commands such as +LM, +RM, +AL, +AR, +TS and +AT is automatically decreased by nnn if +AMnnn, +LDnnn, or +DDnnn is used.

The +AM command (Absolute Margin) does exactly the same thing as +DD except it does not do a form feed.

8.4.6 The IBM 2741 Display

+ED switches the output to a PPTC/EPD-coded IBM 2741 attached to the 9400 Communication Adaptor. +XD switches the output to a correspondence coded IBM 2741. The 2741 must be properly set up before this command is issued or else data will be transmitted to the 2741 but will be ignored. Follow this procedure:

1. Turn the 2741 on.
2. Place the mode switch in COM, not LOCAL.
3. Use the DSCRIBE command +ED or +XD as appropriate.

The 2741 is used only as an output device connected locally to the communications adaptor. If the 2741 is placed back in the LOCAL mode, the user must repeat the above procedure starting at step 2.

8.4.7 Disk Output

If DSCRIBE is executed with a third file specification in the command line or a +DO (NOT +D0!) command is given followed by a file specification, then that file will be opened on disk and all DSCRIBE output will be directed to that file in EDIT compatible print format. If the file existed on an on-line drive, it will be overwritten, otherwise a new file will be opened. The default file extension is 'PRT' if one is not given, and the default drive is zero. 'Page continuous' mode is also set. For example:

```
DSCRIBE CHAP1,,MANUAL1
```

will open MANUAL1/PRT:DRO as the output file. Putting +DOMANUAL1 in the DSCRIBE text will accomplish the same thing.

8.5 Preparing Rough Drafts

To check the appearance of the output, the user should initially switch the output to the CRT (using the +CD command). This will enable him to check the format visually.

To prepare a double-spaced hard-copy version, the operator should select his input and output devices. Before actually switching to the input file, he should type +LS2 to cause the data to be printed double spaced.

EXAMPLE

```
+r1+ld+ls2+f1 These commands will re-initialize the
                file, select the local printer for
                output, cause the output to be
                double-spaced and begin the printing by
                switching to the file logically named as
                file one.
```

If it becomes necessary to get a printout of the input file complete with commands, the +A1 and +A2 commands will transfer the input to the specified file, 1 or 2, and indicate that it is to be printed "as is". No formatting will take place. However, left margin, justification other than even margins, body length and line spacing in effect before the "as is" command is issued will be applied to the output. All text, including escape lines (+##'s), is printed by the +A1 or +A2 command. Entering a +## when a "KEYIN: " is requested will return control to the operator.

8.6 Operator Comments

With the command +**, the text file has the ability to communicate with the operator of the 2200. When this command is issued, the processor will beep, the input line is displayed to the operator, and the rest of the line is ignored as input text. This command is useful to place directions before a switch to F0 so the operator will know what information he is expected to key in or what special forms to insert into the printing device.

EXAMPLE

```
+** Please insert special forms number 137A.  
+** Thank you. JRL.  
+F0 (operator then inserts forms and types +FR).
```

8.7 Print Termination

The operator of the Datapoint 2200 or 5500 may terminate any run by depressing, then releasing, the KEYBOARD switch. When this occurs, all input buffers are discarded, Files 1 and 2 are closed and control passes to input File 0. The output buffers that are waiting to print will print, but some input text will be lost when the input buffers are purged.

8.8 Partial Printing and Recovery Procedure

+PRnnn, page restart, enables the operator to suppress printing until the physical page specified is reached. The physical page number is the number displayed in the right-hand lower corner of the CRT screen. This is a counter of the number of pages DESCRIBE has read. DESCRIBE will not begin printing until the physical page nnn is encountered when the +PRnnn command is used. This is useful while you are still preparing drafts of a document or when

changes do not effect the begining of the text. If page numbering has been specified, each page will have the same page number as it would if the entire document had been printed. The file should always be re-initialized before switching input to it.

EXAMPLE

+r1+PR5+f1 These commands will re-initialize the file, suppress printing until physical page 5 is reached, and switch the input to the file logically named as file one.

+PEnnn, page end, enables the operator to specify the last physical page that is to be printed. It may be used with or without the +PRnnn command. If it is used in conjunction with the +PR command, the page requested in the +PE command must be greater than the page specified in the +PR command. This pair of commands is useful if only a portion of the text needs to be printed, especially if the DESCRIBE commands are in a chain file and the processor is unattended.

8.9 Returning to the Operating System

The command +OS used in DESCRIBE will reload the Disk Operating System immediately and transfer control to it. The Disk Operating System will identify itself and await a keyed input.

APPENDIX A. EDIT Command List

:A APPEND pointed line to command line and roll up
:B BYPASS end of file
:C COPY pointed line to command line and roll up
:D DELETE entire line
:D <old text> DELETE from left thru <old text>
:E END edit - copy remainder of file and update source
:EO EOF display - fetch and display data until end of file
:E/ END/DELETE update without copying remainder
:E* EOF search - find end of file and display last full screen
:F <old text> FIND match - search file for matching leading text
:F<SPACE> FIND repeat - use previous find/locate <old text>
:F* FIND display - display previous find/locate <old text>
:I INSERT a blank line below pointed line
:L LOCATE next - clear screen and get next line
:L <old text> LOCATE match - search file for matching imbedded text
:L<SPACE> LOCATE repeat - user previous find/locate <old text>
:L* LOCATE display - display previous find/locate <old text>

LINE MODIFICATION

:M [old text]<[new text] - MODIFY replace old text by new text,

adjusting the entire line

:M [old text]>[new text] - MODIFY insert new text after old text, adjusting the entire line

:M [old text]\[new text] or :M [old text]![new text] - MODIFY append new text after old text adjusting the entire line

FIELD MODIFICATION

:M<#> [old text]<[new text] - field MODIFY replaces old text within specified field with new text without disturbing the remainder of the line.

:M<#> [old text]>[new text] - field MODIFY inserts old text after new text within specified field, without disturbing the remainder of the line.

:M<#> [old text]\[new text] or :M<#> [old text]![new text] - field MODIFY appends the new text after the old text within the specified field without disturbing the remainder of the line.

:M* MODIFY displays the previous modify [old]<sep>[new]

:M[#] MODIFY repeats the previous modify [old]<sep>[new]

:SB SCRATCH BELOW deletes the pointed line and all screen lines below it

:SC SCRATCH ABOVE deletes the pointed line and all screen lines above it

:T TAB SET permits the user to set up to ten tab stops

:X TEXT mode switches to text mode with word wrap around and no shift key inversion.

:<character> changes the tab key character to <character>.

APPENDIX B. DSCRIBE Default Conditions

Key Inversion	OFF
Body Length	53 lines
Header Spacing	3 lines
Footing Length	10 lines
Paragraph Indentation Setting	5 columns
Left Margin	Column 1
Right Margin	Column 60
Absolute Left Margin	Column 1
Absolute Right Margin	Column 60
Underlining	OFF
Page Numbering	OFF
Page Halt	ON
Line Justification	Left Justification
Line Spacing	Single Spacing
Input file	0 (2200 or 5500 Keyboard)
Output file	CRT Screen
Size increment	Pica (6 micropositions)
Line Increment	6 characters per inch vertically (8 micropositions)

APPENDIX C. Program Messages

DISK S C R I B E 3.1

The initial message from DSCRIBE. This message is displayed only once; when the program is first loaded into memory.

KEYIN:

This message indicates that the input is File 0, the Datapoint 2200 or 5500 keyboard. The operator may enter any text as if it came from one of the files. It is normally during this mode that rewind and File switch, output initialization, and page control commands are issued. If the +10 or +20 commands have been issued, this message will be displayed if a switch to File 1 or 2 has occurred. The user then issues the +FR command to return to the calling file.

END OF FILE. n

This message indicates that an end of file has been reached on input File n. At this point, input is switched back to File 0 for continued processing.

INTERNAL ERROR. x

This message indicates that the file input routines have found an ERROR of type x. Processing is aborted at this time. It is best to check your files or re-create the text file.

INTERNAL ERROR B or G - the file is not properly formatted. You may not have initialized with a +R1 or +R2 command. The file may not have been created by EDIT. The text file may not be properly terminated.

INTERNAL ERROR D - a parity error has been encountered. This is a physical error on the file. Use EDIT to "repair" or recreate the file.

COMMAND ERROR.

This message indicates that the command processing routines would not accept the command displayed. Check for misplaced +'s, or numeric fields out of

range.

NEW PAGE?

This message indicates that a new page is now ready to begin and the +PH command has been issued. The user should change or adjust the paper in the output device and press ENTER. Typing a "C" before pressing ENTER will switch from page halt to page continue mode. Typing any other letter before pressing ENTER will cause an abort of the current printing and will return control to the 2200 or 5500 operator.

OUTPUT DEVICE NOT AVAILABLE.

The message may appear in response to a +AM, +ED,+LD,+RD,+SD,+DD, or +XD command when the device selected is not available. Check the connections and power switches. Output will automatically be switched to the previously selected device unless this is the first selection in which case output is switched to the CRT screen.

OUT OF PAPER. HIT 'ENTER' WHEN READY.

This message is displayed if the output device is the servo printer in page continuous mode and the paper sensor (light at the left rear) senses the lack of paper. The printer stops at the top of a page to facilitate alignment of more paper. DO NOT hit FORMFEED for the printer will lose its absolute margin. After paper has been inserted and aligned, hitting the 'ENTER' key will cause printing to continue.

APPENDIX D. Command Errors

Illegal commands may result from improperly typed command letters or extraneous plus signs in your text. Legal commands with improper numbers will also cause errors.

AL	range 1-(132-nnn) if +AMnnn, +LDnnn, or +DDnnn is used (see 8.4.5)
AM	range 1-132
AR	range 1-(132-nnn) (see 8.4.5)
AT	range 1-(132-nnn) (see 8.4.5)
DD	range 1-132
LI	range 1-80
LM	range 1-(132-nnn) (see 8.4.5)
LS	no number or zero specified
NS	NS already in effect
NW	range 1-255
PE	must be greater than zero and greater than the +PR (if used)
PR	page number must be greater than 1
PS	no number or zero specified
PW	range 1-255
RM	range 1-(132-nnn) (see 8.4.5)
RN	number greater than 15
SB	NS not in effect
SI	range 1-80
SL	no number or zero specified
SP	maximum 132
SS	NS not in effect
SW	range 1-255
TB	no more tabstops set or a +NL was omitted
TR	no more tabstops set or a +NL was omitted
TS	range 1-(132-nnn) (see 8.4.5). Twenty tabstops may be set.

APPENDIX E. Data Preparation Conventions

EDIT Conventions:

Preparing DSCRIBE text files will be facilitated if the text and DSCRIBE commands are entered according to the following rules:

1. Each paragraph and each key line of text, e.g., section titles, should start at the left edge of the screen with no DSCRIBE commands preceding the text. EDIT command FIND searches for leading text.
2. Long groups of DSCRIBE commands should be placed on lines by themselves so they can be spotted and easily changed.
3. The TAB facility of EDIT should be used only when typing "as is" text since multiple spaces will be discarded by DSCRIBE. However, EDIT tabstops may be set and used to help the operator determine the correct settings to specify for DSCRIBE. The test line should be deleted once the desired tabstop values have been determined.
4. Extremely long documents should be broken up into several files. This will speed up both editing and partial reprinting. Once a document is finalized, multiple files can be merged into one long file.
5. Remember, hitting the enter key is like typing a space at the end of the line.

DSCRIBE Conventions:

There are certain commands which should not be included as part of the file - but should generally be options for the operator to type in:

1. Selection of the output device
2. Continuous paging
3. Switch setting (to override print suppression)
4. Overall line spacing - if set only once
5. Body length, again, if set only once.

Certain initialization and termination conventions should be used to insure that documents which have been prepared in multiple

files will be printed properly. They are:

1. If continuous forms are used, start only the first file with a page normalize command. However if non-continuous paper is used, start each file with a page normalize command (+PN). This does not disturb page numbering and insures the printing on the first page of the file is positioned like all subsequent pages.
2. End each file with a +PG command to insure the last page number will be printed and that the page number will be updated before the next file is printed.
3. If section-type page numbers and headings are being used, the commands between the end of one section and the beginning of the next should look like:

```
+PN
+BH      SECTION 1
+PB01-01
.
.
+NH
+PG
+PB02-01
+BH      SECTION 2
```

In this example, page numbers will not be changed until the last page of Section 1 is printed. No header will appear on the first page of Section 2, but all subsequent pages of the section will have the specified header.

If section 2 is on a separate file, follow the conventions described in (1) above.

Some other conventions will avoid confusion during initial preparation of the text and will facilitate making changes later:

1. Try to avoid absolute tab commands, since each +AT must be individually changed. Instead, use the tab set and tabulate commands (+TS,+TB).
2. Always reset tabs by performing a tab clear (+TC) and then the necessary tab set (+TS) commands.

APPENDIX F. Common Pitfalls

At times, the printed copy may not look anything like you expected. The errors are sometimes difficult to detect. Examples of some common mistakes are:

1. Tabbing past the right margin causes a carriage return and places the tabbed text at the left margin.

EXAMPLE:

TYPED TEXT:

```
+tc+ts10+ts40+ts60
+tb2200-200+tb000-110-101-A+tbSerial Printer+nl
+tb2200-220+tb000-110-101-B+tbLine Printer+nl
```

PRINTED BY DSCRIBE:

```
2200-200                000-110-101-A
Serial Printer
2200-220                000-110-101-B
Line Printer
```

2. Tabbing backward will cause the data past the final output pointer to be lost.

EXAMPLE:

TYPED TEXT:

```
+at40xxx+at50yyy+at10zzz+nl
```

PRINTED BY DSCRIBE:

```
zzz
```

If tabbing in this manner is necessary, an additional tab to the end of the data in the line will insure all text is printed.

EXAMPLE:

TYPED TEXT:

```
+at40xxx+at50yyy+at10zzz+at53+nl
```

PRINTED BY DSCRIBE:

```
zzz
```

```
xxx
```

```
yyy
```

- The data following a tab and right justify command (+TR) must be terminated by a +NR, another +TR, or some form of new line command. If the field appears at the end of a line on a EDIT tape, pressing the ENTER key will cause an extra space to be generated. This space will cause the field to appear shifted left one extra space.

EXAMPLE:

TYPED TEXT:

```
+tc+ts10+ts20+ts30
+tr123+tr456+tr7777+nl
+tr22+tr122
+tr3333+nl+tr44444
+tr3232+nr
+tr55555+nl
```

PRINTED BY DSCRIBE:

```
123      456      7777
 22      122      3333
44444    3232    55555
```

Normal tabbing (+TB) immediately after +TR commands will cause the data to the left of the tab to continue shifting. Your output might look like this:

EXAMPLE:

TYPED TEXT:

```
+tc+ts10+ts20+ts30+ts40
+tb1+tb2+tb3+tb4+nl
+tb0123456789012345678901234567890123456789+nl
+tb111+tr222+tbthis line is ok+nl
+tb222+tr22+tbbut this is messed up+nl
```

PRINTED BY DSCRIBE:

```
                1          2          3          4
                0123456789012345678901234567890123456789
                111      222          this line is ok
22          but this line is messed up
```

APPENDIX G. DSCRIBE EXAMPLES

Example 1 - Simple Text

This example demonstrates how few commands are needed to prepare simple text. The default assumptions (see Appendix B) for margins, line spacing, etc. will generate text in a standard report format. Commands used to generate this example are:

- +PP, to start a new paragraph
- +NL, to start a new line

The +PP command incorporates printing the last line of a paragraph, skipping a specified number of lines and indenting five columns (the default assumption for paragraph indentation).

- +PN, start at the top of a page
- +PB, page number at the bottom of the page

The +PN command should precede every file. This command instructs DSCRIBE to perform the start of page processing (header space, heading, page numbers) immediately.

+PB initiates page numbering at the bottom of the page. New pages will be generated automatically when 53 lines (the body length default assumption) have been printed.

The user prepares a file RECBUG (using the EDIT program) in the form of PART 1 of this example. Then he uses the command DSCRIBE RECBUG to call in the DSCRIBE program and open RECBUG as file one. The command +f1 will print the file, in the form of PART 2, on the screen. After proof-reading, the user keys in +r1+ld+f1 to print the final version on a local printer. The following excerpt is from Outdoors USA published by the United States Department of Agriculture.

PART 1 - INPUT TO SCRIBE

+pn+pb 314WHEN THE RECREATION BUG BITES+NL

Ross H. Mellinger+pp2

"The hottest thing right now is the use of land for recreation! This is good news for the city dweller who wants to get out into the great outdoors.

It means fishing, swimming, and boating, horseback riding, picnicking, camping, and hunting for him and his family and perhaps for a club he belongs to." +pp1

That's Tom Simpson speaking. He's a professional in the land use field, and he knows what he's talking about. +pp1

Tom is a soil conservationist for the Agriculture Department's Soil Conservation Service. But he deals with lots more people than farmers. +pp1

He has advice for folks who buy land for part-time country living, for weekend retreats, or even for full-time country living. Many of these people buy farmland, but don't want to farm it. Neither do they want to chop it up into subdivisions because they like the beauty of their outdoor landscape and want to preserve it. And farmers, too, are doing things with their land besides growing crops. +pp1

But let Tom tell about it. Farming is close to his heart, and he likes to take farmland as an example of what can be done by landowners to make money from outdoor recreation. And his advice can be used by any landowner with enough property to give folks outdoor elbowroom close to home. +pp1

"I'd like to tell you about the Burton place," Tom commences, tipping back his smart field cap. +pp1

"The place is owned by Sam Burton-- the third generation of Burtons on their 250-acre, 40-cow dairy farm up the Little Kanawha River a bit from Parkersburg, W. Va. The Burtons have always been kind to their land. In fact, Sam was the first farmer to develop and apply a conservation plan with the help of the newly organized Little Kanawha Soil Conservation District. +pp1

"But things are changing now on the Burton place. Sam and his wife Mildred, bitten by the recreation bug, asked me to come up and talk about recreation as a possible main source of income.

+pp1

"We started with the soil map for their place. It showed the suitability of soils for different kinds of recreation facilities.

+pp1 "The Burtons made it plain that they weren't going to give up farming entirely. They did want to change from dairy to beef cattle if the recreation angle looked promising. Sam told me the family had spent evenings talking about the problems involved. They had asked themselves such questions as: +pp1

* Would they enjoy working with all kinds of people and enduring the many problems that were sure to crop up? +pp

* Could they give up their Sundays and holidays and reconcile their deep religious beliefs with Sunday work?+pp
* Could they depend on their children to help out, and how long would it be until they would be off to school or taking other jobs?+pp* Would the additional income and kind of work attract their oldest son John to stay on the place under a two-family arrangement?+pp* How much would the changeover cost, and what would be the expected financial returns?+pp1
"With these basic questions partially answered, Sam was interested in what kinds of enterprises would best fit their land, resources, and personalities.+pp1
"We started down at the river which stretches for more than half a mile along the Burton place. This is a good fishing stream, but not big enough for operation of powerboats or water skiing. One place offered possibilities for a small bathing area. Boat rentals for fishing and pleasure could be included.+pp1

PART 2 - OUTPUT BY DSCRIBE

WHEN THE RECREATION BUG BITES
Ross H. Mellinger

"The hottest thing right now is the use of land for recreation! This is good news for the city dweller who wants to get out into the great outdoors. It means fishing, swimming, and boating, horseback riding, picnicking, camping and hunting for him and his family and perhaps for a club he belongs to."

That's Tom Simpson speaking. He's a professional in the land use field, and he knows what he's talking about.

Tom is a soil conservationist for the Agriculture Department's Soil Conservation Service. But he deals with lots more people than farmers.

He has advice for folks who buy land for part-time country living, for weekend retreats, or even for full-time country living. Many of these people buy farmland, but don't want to farm it. Neither do they want to chop it up into subdivisions because they like the beauty of their outdoor landscape and want to preserve it. And farmers, too, are doing things with their land besides growing crops.

But let Tom tell about it. Farming is close to his heart, and he likes to take farmland as an example of what can be done by landowners to make money from outdoor recreation. And his advice can be used by any landowner with enough property to give folks outdoor elbowroom close to home.

"I'd like to tell you about the Burton place," Tom commences, tipping back his smart field cap.

"The place is owned by Sam Burton-- the third generation of Burtons on their 250-acre, 40-cow dairy farm up the Little Kanawha River a bit from Parkersburg, W. Va. The Burtons have always been kind to their land. In fact, Sam was the first farmer to develop and apply a conservation plan with the help of the newly organized Little Kanawha Soil Conservation District.

"But things are changing now on the Burton place. Sam and his wife Mildred, bitten by the recreation bug, asked me to come up and talk about recreation as a possible main source of income.

"We started with the soil map for their place. It showed the suitability of soils for different kinds of recreation facilities.

"The Burtons make it plain that they weren't going to give up farming entirely. They did want to change from dairy to beef cattle if the recreation angle looked promising. Sam told me the family had spent evenings talking about the problems involved. They had asked themselves such questions as:

- * Would they enjoy working with all kinds of people and enduring the many problems that were sure to crop up?
- * Could they give up their Sundays and holidays and reconcile their deep religious beliefs with Sunday work?
- * Could they depend on their children to help out, and how long would it be until they would be off to school or taking other jobs?
- * Would the additional income and kind of work attract their oldest son John to stay on the place under a two-family arrangement?
- * How much would the changeover cost, and what would be the expected financial returns?

"With these basic questions partially answered, Sam was interested in what kinds of enterprises would best fit their land, resources, and personalities.

"We started down the river which stretches for more than half a mile along the Burton place. This is a good fishing stream, but not big enough for operation of powerboats or water skiing. One place offered possibilities for a small bathing area. Boat rentals for fishing and pleasure could be included.

Example 2 - Elaborate Text

The text in this example is somewhat more complex. Instead of relying on the default assumptions, the following new commands are used:

- +CN, to center the heading
- +EM, to justify the text between the margins
- +LM, to indent text and then to restore the margins
- +RM, to the default value
- +AL, change the left margin for page numbering
to cause page numbers to be placed at the
right edge of the page

The following example is taken from The President's Commission on The Assassination of President Kennedy Report.

PART 1 - INPUT TO DSCRIBE

+pb 208+a155

+pn+cnTHE ABORTIVE TRANSFER+pp2+em

In Dallas, after a person is charged with a felony, the county sheriff ordinarily takes custody of the prisoner and assumes responsibility for his safekeeping. Normally, the Dallas Police Department notifies the sheriff when a prisoner has been charged with a felony and the sheriff dispatches his deputies to transport the accused to the county jail. This is usually done within a few hours after the complaint has been filed. In cases of unusual importance, however, the Dallas city police sometimes transport the prisoner to the county jail.+ppThe decision to move Oswald to the county jail on Sunday morning was reached by Chief Curry the preceding evening. Sometime after 7:30 Saturday evening, according to Assistant Chief Batchelor, two reporters told him that they wanted to go out to dinner but that "they didn't want to miss anything if we were going to move the prisoner." Curry came upon them at that point and told the two newsmen that if they returned by 10 o'clock in the morning, they wouldn't "miss anything." A little later, after checking with Captain Fritz, Curry made a similar announcement to the assembled reporters. Curry reported the making of his decision to move Oswald as follows:

+lm5+rm55+pp1

Then, I talked to Fritz about when he thought he would transfer the prisoner, and he didn't think it was a good idea to transfer him at night because of the fact you couldn't see, and if anybody tried to cause them any trouble, they needed to see who they were and where it was coming from and so forth, and he suggested that we wait until daylight, so this was normal procedure, I mean, for Fritz to determine when he is going to transfer his prisoners, so I told him "Okay." I asked him, I said, "What time do you think you will be ready tomorrow?" And he didn't know exactly and I said, "Do you think about 10 o'clock," and he said, "I believe so," and then is when I went out and told the newspaper people * * * "I believe if you are back here by 10 o'clock you will be back in time to observe anything you care to observe."

+lm1+rm60+pp1During the night, between 2:30 and 3 a.m., the local office of the FBI and the sheriff's office received telephone calls from an unidentified man who warned that a committee had decided "to kill the man that killed the President." Shortly after, an FBI agent notified the Dallas police of the anonymous threat. The police department and ultimately Chief Curry were informed of both threats.

+pp1Immediately after his arrival at the building on Sunday morning between 8:30 and 8:45 a.m., Curry spoke by telephone with Sheriff J.E. Decker about the transfer. When Decker indicated that he would leave to Curry the decision on whether the sheriff's office or

the police would move Oswald, Curry decided that the police would handle it because "we had so much involved here, we were the ones that were investigating the case and we had the officers set up downstairs to handle it."

PART 2 - OUTPUT BY DSCRIBE

THE ABORTIVE TRANSFER

In Dallas, after a person is charged with a felony, the county sheriff ordinarily takes custody of the prisoner and assumes responsibility for his safekeeping. Normally, the Dallas Police Department notifies the sheriff when a prisoner has been charged with a felony and the sheriff dispatches his deputies to transport the accused to the county jail. This is usually done within a few hours after the complaint has been filed. In cases of unusual importance, however, the Dallas city police sometimes transport the prisoners to the county jail.

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Example 3 - Tabulation

The following table is prepared using the tabulation facilities of DSCRIBE. The new commands utilized are:

+TC, tab clear
+TS, tab set
+TB, tabulate
+AT, place text at specified column
+SP, place multiple spaces in the line

The following table is from Agriculture Handbook No. 8.

PART 1 - INPUT TO DSCRIBE

```
+rm100+pn+cnSTANDARDS FOR ENRICHMENT:+nl Minimum and Maximum  
Amounts of Required Nutrients Specified for Foods Labeled  
"Enriched"+nl(Milligrams per pound of product)+nl+lj  
+tc+ts40+ts45+ts50+ts55+ts60+ts65+ts70+ts75+ts82+ts87  
+at20Item+at40Thiamine+sp2Riboflavin Niacin+at72Iron+at83Calcium+nl  
+at40Min+sp2Max+sp2Min+sp2Max+sp2Min+sp2Max  
+sp2Min+sp2Max+sp3Min+sp3Max+nl  
+nlBread, rolls, and buns, white+tb1.1+tb1.8+tb0.7+tb1.6+tb10.0  
+tb15.0+tb08.0+tb12.5+tb---+tb----+nl  
Cornmeal; corn grits+tb2.0+tb3.0+tb1.2+tb1.8+tb16.0+tb24.0;tb13.0  
+tb26.0+tb---+tb----+nl  
Cornmeal, self-rising+tb2.0+tb3.0+tb1.2+tb1.8+tb16.0+tb24.0+tb13.0  
+tb26.0+tb500+tb1,750+nl  
Farina+tb2.0+tb2.5+tb1.2+tb1.5+tb16.0+tb20.0+tb13.0+tb+sp1(3)  
+tb---+tb----+nl  
Flour, white+tb2.0+tb2.5+tb1.2+tb1.5+tb16.0+tb20.0+tb13.0+tb16.5  
+tb---+tb----+nl  
Flour, self-rising+tb2.0+tb2.5+tb1.2+tb1.5+tb16.0+tb20.0+tb13.0  
+tb16.5+tb500+tb1,500+nl  
Macaroni products;noodle products+tb4.0+tb5.0+tb1.7+tb2.2+tb27.0  
+tb34.0+tb13.0+tb16.5+tb---+tb----+nl  
Rice, milled+tb2.0+tb4.0+tb1.2+tb2.4+tb16.0+tb32.0+tb13.0+tb26.0  
+tb---+tb----+nl
```

NOTE: By simply changing the heading and tabstops, the order of columns can be switched. Care must be taken when setting tabs in other than ascending order, since, when a new line command is issued, no data past the current output pointer (e.g. the last tabstop) will be printed.

PART 2 - OUTPUT BY DESCRIBE

STANDARDS FOR ENRICHMENT:

Minimum and Maximum Amounts of Required Nutrients Specified for Foods Labeled "Enriched"
(Milligrams per pound of product)

Item	Thiamine		Riboflavin		Niacin		Iron		Calcium	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Bread, rolls, and buns, white	1.1	1.8	0.7	1.6	10.0	15.0	08.0	12.5	---	----
Cornmeal; corn grits	2.0	3.0	1.2	1.8	16.0	24.0	13.0	26.0	---	----
Cornmeal, self-rising	2.0	3.0	1.2	1.8	16.0	24.0	13.0	26.0	500	1,750
Farina	2.0	2.5	1.2	1.5	16.0	20.0	13.0	(3)	---	----
Flour, white	2.0	2.5	1.2	1.5	16.0	20.0	13.0	16.5	---	----
Flour, self-rising	2.0	2.5	1.2	1.5	16.0	20.0	13.0	16.5	500	1,500
Macaroni products; noodle products	4.0	5.0	1.7	2.2	27.0	34.0	13.0	16.5	---	----
Rice, milled	2.0	4.0	1.2	2.4	16.0	32.0	13.0	26.0	---	----

Example 4 - Right Justified Tabulation

Frequently right justification of tabbed information is necessary. Instead of using the +TB command, a new command must be used:

+TR, tabulate and right justify

+SL, skip the specified number of lines

NOTE: set the tabstops at the right limit of the field since the data will be shifted to the left from this point.

This example is from The President's Commission on The Assassination of President Kennedy Report.

PART 1 - INPUT TO DSCRIBE

```
+pn+cnAnalysis of Lee Harvey Oswald's Finances+nl
From April, 1963,+nlThrough June, 1963+nl+lj
+lm4+rm70+pn+at50Expendi--+nl+at1April 1963:+at40Receipts
+at51tures+at60Balance+nl+tc+ts47+ts57+ts67
Net salary+tr$108.86+nl
Income Tax refund+tr57.40+nlRent and utilities+tr-----
+tr$62.97+nlBus fare from Dallas to New Orleans+tr-----
+tr13.85+nlEstimated cost of food, clothing, and incidental
+nl+sp2expenses+tr-----
+tr100.00+nl+tr_____+tr_____+nl+sp5Total+tr166.26+tr176.82+nl
Cash on hand, Apr. 30, 1963+tb+tb+tr$174.14+sl1
+at1May 1963:+nlNet salary+tr107.44+nlUnemployment compensation
check+tr33.00+nlRent and utilities+tr-----+tr75.00+nl
Subscription for the Militant+tr-----+tr1.00+nl
Dues and printing-Fair Play for Cuba+tr-----+tr9.00+nl
Estimated cost of food, clothing, and incidental+nl+sp2expenses
+tr-----+tr100.00+nl
+tr_____+tr_____+nl+sp5Total+tr100.00+tr185.00+nl
Cash on hand, May 31, 1963+tb+tb+tr129.58
+sl1+at1June 1963:+nlNet salary+tr216.00+nl
Rent and utilities+tr-----+tr67.85+nl
Post office box rental+tr-----+tr4.00+nl
Printing-Fair Play for Cuba+tr-----+tr15.23+nl
New alien registration card+tr-----+tr5.00+nl
Estimated cost of food, clothing, and incidental+nl+sp2expenses
+tr-----+tr100.00+nl+tr_____+tr_____+nl+sp5Total+tr216.00+tr192.08
Cash on hand, June 30, 1963+tb+tb+tr153.50+nl
```

PART 2 - OUTPUT BY DSCRIBE

Analysis of Lee Harvey Oswald's Finances
 From April, 1963,
 Through June, 1963

	Receipts	Expendi- tures	Balance
April 1963:			
Net salary	\$108.86		
Income Tax refund	57.40		
Rent and utilities	-----	\$62.97	
Bus fare from Dallas to New Orleans	-----	13.85	
Estimated cost of food, clothing, and incidental expenses	-----	100.00	
Total	<u>166.26</u>	<u>176.82</u>	
Cash on hand, Apr. 30, 1963			174.14
May 1963:			
Net salary	107.44		
Unemployment compensation check	33.00		
Rent and utilities	-----	75.00	
Subscription for the Militant	-----	1.00	
Dues and printing-Fair Play for Cuba	-----	9.00	
Estimated cost of food, clothing and incidental expenses	-----	100.00	
Total	<u>140.44</u>	<u>185.00</u>	
Cash on hand, May 31, 1963			129.58
June 1963:			
Net salary	216.00		
Rent and utilities	-----	67.85	
Post office box rental	-----	4.00	
Printing-Fair Play for Cuba	-----	15.23	
New alien registration card	-----	5.00	
Estimated cost of food, clothing and incidental expenses	-----	100.00	
Total	<u>216.00</u>	<u>192.08</u>	
Cash on hand, June 30, 1963			153.50

Example 5 - A Poem

This example utilizes the following commands:

- +CN, to center the heading,
- +LJ, to left justify the text,
- +NL, to begin a new line,
- +IS, to set the paragraph indentation, and

The "+CN" command will center the output text line when the line is ready to print, such as with a "+NL" command. This command takes effect immediately and will be revoked when the "+LJ" command is issued to revert back to left justify mode, that is to line up the first text on the line at the left margin when a command such as "+NL" is issued.

The "+NL" command is used to print the current output line and begin a new line at the left margin. If centering is selected, the output line will be centered between the current margins.

The "+IS" command sets the value of the paragraph indentation setting. When the "+PP" command is issued, the first text that is placed on the output line is computed as the left margin location plus the current value of the paragraph indentation.

The operator would use the same commands as in example 1.

PART 1 - INPUT TO DSCRIBE

+pn+cnJABBERWOCKY

+sl1+lj+is2'Twas brillig, and the slithy toves

+ppDid gyre and gimble in the wabe:

+nlAll mimsy were the borogoves,

+ppAnd the mome raths outgrabe.

+sl1""Beware the Jabberwock, by son!

+ppThe jaws that bite, the claws the catch!

+nlBeware the Jubjub bird, and shun

+ppThe frumious Bandershatch!""

+sl1He took his vorpal sword in hand:

+ppLong time the maxome foe he sought-

+nlSo rested he by the Tumtum tree,

+ppAnd stood awile in thought.

+sl1And, as in uffish thought he stood,

+ppThe Jabberwock, with eyes of flame,

+nlCame whiffling through the tulgey wood,

+ppAnd barbled as it came!

+sl1One, two! One, two! And through and through

+ppThe vorpal blade went snicker-snack!

+nlHe left it dead, and with its head

+ppHe went galumphing back.

+sl1""And hast thou slain the Jabberwock?

+ppCome to my arms, my beamish boy!

+nlO frabjous day! Callooh! Callay!""

+ppHe chortled in his joy.

+sl1'Twas brilig, and the slithy toves

+ppDid gyre and gimble in the wabe:

+nlAll mimsy were the borogoves,

+ppAnd the mome raths outgrabe.

PART 2 - OUTPUT FROM DSCRIBE
JABBERWOCKY

'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.

""Beware the Jabberwock, my son!
The jaws that bite, the claws the catch!
Beware the Jubjub bird, and shun
The frumious Bandersnatch!""

He took his vorpal sword in hand:
Long time the manxome foe he sought-
So rested he by the Tumtum tree,
And stood awhile in thought.

And, as in uffish thought he stood,
The Jabberwock, with eyes of flame,
Came whiffling through the tulgey wood,
And burbled as it came!

One, two! One, two! And through and through
The vorpal blade went snicker-snack!
He left it dead, and with its head
He went galumphing back

""And hast thou slain the Jabberwock?
Come to my arms, my beamish boy!
O frabjous day! Callooh! Callay!""
He chortled in his joy.

'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.

Example 6 - A Letter

In this example, the following commands are used:

- +LM, to set the left margin,
- +RM, to set the right margin,
- +FO, to keyin input,
- +**, to communicate with the operator,
- +EM, for even margins, and
- +RJ, to right justify text.

The "+LM" and "+RM" commands allow the user to reset the margins to new values between 1 and 132. The new settings for the margins will not go into effect until the current output line has been completed or purged with the "+PL" command.

Two new justifications commands are introduced in this example, namely that of "+RJ" right justification and "+EM" even margins. These commands will position the output text on the output line either right justified along the current right margin or as in the case of the "+EM" command, fill in with blanks when possible to complete a line out to the right margin.

The "+**" command tells the operator what input is expected when the next KEYIN: message is displayed. Remember that all remaining text in this line is only displayed and not processed in any way.

Finally, this example introduces a file switch command, "+FO", used to obtain text from the operator of the Datapoint 2200 or 5500 that will fill in blank spaces in the letter.

The operator must now work with two files: the disk file, and the keyboard input of the 2200 or 5500. The operator issues the same commands in example 1, but he must now respond to new KEYIN: requests as shown in the operator responses for this example.

+PN+CNThe ABC Co.
+NL17 W. 42nd Street
+NLNew York City
+SL2+RJ
+** Today's date please:
+FO
+SL2+EM
+** Name and address according to format 1 please:
+FO
+SL1Dear sir:
+SL1Many thanks for your recent order.
+SL1Since we have not had the pleasure of serving you previously,
there will be a slight delay until the necessary credit data is
received through normal credit channels.
+SL1You have our assurance, that as soon as satisfactory
information is received, your order will be processed for
immediate shipment.
+SL1Any additional information you can furnish to help us would be
appreciated.
+SL1Please direct any written requests to:
+LM5+NLDelta Credit Corporation
+NL1531 North Park Ave. So.
+NLNew York City,
+NLNew York
+NL10029
+RM50

+SL1+RJVery truly yours,
+SL3Ted Davidson,
+NLCredit Manager
+LM1+RM60+SL1+LJTAD/dt

Operator input (once per letter typed):
8/18/72+FR
Quincy E. D. Smith+NL12 Oak Park+NLAnywhere, U.S.A.,
99999+NL+FR

The ABC CO.
17 W. 42nd Street
New York City

8/18/72

Quincy E. D. Smith
12 Oak Park
Anywhere, U.S.A., 99999

Dear Sir:

Many thanks for your recent order.

Since we have not had the pleasure of serving you previously, there will be a slight delay until the necessary credit data is received through normal credit channels.

You have our assurance, that as soon as satisfactory information is received, your order will be processed for immediate shipment.

Any additional information you can furnish to help us would be appreciated.

Please direct any written requests to:
Delta Credit Corporation
1531 North Park Ave. So.
New York City,
New York
10029

Very truly yours,

Ted Davidson,
Credit Manager

TAD/dt

APPENDIX H. Setting up DSCRIBE (Disk Scribe)

DSCRIBE is released as an object file on tape which must be loaded to disk before processing or as an object file on diskette. To load DSCRIBE from tape, load the Disk Operating System and place the DSCRIBE object tape in the front deck. Type the DOS command:

```
MIN ;AO
```

This will cause the DSCRIBE program to be transferred from the cassette to the disk cartridge. When the READY message appears the transfer is complete. DSCRIBE may now be used by typing:

```
DSCRIBE [filespec1][,filespec2][,filespec3]
```

where the filespecs (DOS file specifications, each consisting of a name/extension) are optional. If the extension is omitted from the file specifications 1 or 2, the extension 'TXT' is assumed. The third file specification designates the disk file name for DSCRIBE disk output. The extension 'PRT' is assumed.

The names specified by filespec1 and filespec2 should correspond to text files either created by EDIT/CMD, or created by the cassette program EDIT and MIN'd to the disk. For example, typing:

```
DSCRIBE LETTER,ADDRESS
```

causes DSCRIBE to look for files on the disk called LETTER/TXT and ADDRESS/TXT. The first file, LETTER, is considered logical file 1 and is subsequently referred to by the standard DSCRIBE commands +F1, +R1 and +A1. Similarly, ADDRESS is logical file 2 and is controlled by the +F2, +R2 and +A2 commands.

Disk files may also be specified after DSCRIBE is running. For example, if DSCRIBE is executed by typing simply:

```
DSCRIBE
```

no disk files are opened. Using any of the file accessing commands (+F1, +F2, +R1, +R2, +A1 or +A2) causes an error.

To specify a file once DSCRIBE is running, the commands +D1<filespec1> and +D2<filespec2> must be used. For example, when DSCRIBE displays the 'KEYIN' message, the operator types:

+D1LETTER+D2ADDRESS

to open the files LETTER/TXT and ADDRESS/TXT. These commands may also be used at any time to change the text files being processed.

When DSCRIBE has been executed, the message:

DISK S C R I B E 3.1
KEYIN:

will appear awaiting a reply. The operator then enters the commands (e.g. output device selection, disk file selection, etc) necessary to process DSCRIBE. The default output device is the 2200 CRT, however all printers (Local, Remote, Servo, Selectric, and IBM 2741) are available for selection.

APPENDIX I. DSCRIBE COMMAND CROSS REFERENCE LIST

		Section
+A1	Display File 1 "As Is"	8.5
+A2	Display File 2 "As Is"	8.5
+ALnnn	Left Margin Set for Page Numbers	2.3
+AMnnn	Absolute Margin the Servo Printer	8.4.5
+ARnnn	Right Margin Set for Page Numbers	2.3
+AS	"As Is" Text	1.4
+ATnnn	Absolute Tab to Column nnn	3.4.5
+BE	Boldface End (Servo)*	6.6
+BF	Begin Boldface (Servo)*	6.6
+BH	Begin Header	2.4
+BLnnn	Body Length Definition	2.1
+BR	Black Ribbon (Servo)*	6.3
+CC	Clear 'case' Flags	6.2
+CD	CRT Display (Default)	8.4.2
+CN	Center Output Text	4.3
+D1<file>	Open <file> on Disk as File 1	8.3.3
+D2<file>	Open <file> on Disk as File 2	8.3.3
+DDnnn	Select the Servo Printer	8.4.5
+DO	Disk Output	8.4.7
+ED	Print on 2741 (EBCD Code)	8.4.6
+EL	Elite (12 characters per inch) spacing (Servo)*	3.6
+EM	Even Margins for Output Text	4.4
+EN	Reserved	
+FO	Switch Input to File 0	8.3.2
+F1	Switch Input to File 1	8.3.2
+F2	Switch Input to File 2	8.3.2
+FC	Reserved	
+FF	Full Footer	2.5
+FLnnn	Set the Footing Length	2.1
+Fk	Input File Return	8.3.2
+HLnnn	Header Spacing	2.1
+ISnnn	Paragraph Indentation Set	3.2
+JR	Right Justify at Current Column	3.5
+LC	Force to Lower Case	6.2
+LDnnn	Print on 2200/Local Printer	8.4.4
+LE	Reserved	
+LF	Left Footing for Manual Paging	2.5
+Linnn	Line Increment - change line spacing (Servo)*	5.6
+LJ	Left Justify Output Text	4.1
+LMnnn	Left Margin Set	3.1.1
+LS	Set Line Spacing	5.1
+LT	Set Left Margin to Tab	3.1.3

+MS	Reserved	
+N1,2,3	Turn Switch 1,2,3 Off	7.1.1
+NE	Print Current Text Even Margins; Begin New Line	5.2
+NF	Stop Printing Full Footer	2.5
+NH	Stop Printing Header	2.4
+NL	Print Current Text; Begin New Line	5.2
+NP	Resume Printing	7.1.2
+NR	End Field Right Justification	3.5
+NS	No Super/Subscripting (Servo)*	6.4
+NU	No Underlining	6.1
+NWnnn	Turn Switch nnn off	7.1.1
+OP	Overprint (Servo)*	6.5
+OS	Return to Disk Operating System	8.9
+P1,2,3	Suppress Print Unless Switch 1,2,3 On	7.1.2
+PBnnnn	Page Numbering at Bottom of Page	2.3
+PC	Continue at New Page; No Halt	2.2
+PEnnn	Terminate after Printing Page	8.7
+PG	Begin A New Page	2.2
+PH	Halt at New Page	2.2
+PI	Pica (10 characters per inch) spacing (Servo)*	3.6
+PL	Purge Current Output Text	7.2
+PM	Page Manual (numbers in alternating corners)	2.3
+PN	Page Normalize; Begin New Page	2.2
+PPnnn	Skip nnn Lines and Begin New Paragraph	3.2
+PRnnn	Start Printing at Physical Page nnn	8.8
+PSnnn	Special Page Skip	2.2
+PTnnnn	Page Numbering at Top of Page	2.3
+PWnnn	Suppress Print Unless Switch nnn On	7.1.2
+R1	Rewind and Open File 1	8.3.1
+R2	Rewind and Open File 2	8.3.1
+RD	Print on Remote Printer	8.4.3
+RF	Right Footing for Manual Paging	2.5
+RJ	Right Justify Output Text	4.2
+RMnnn	Right Margin Set	3.1.2
+RNnnn	Roman Numerals	2.3
+RR	Red Ribbon (Servo)*	6.3
+RS	Restart Input Buffers	8.3.2
+RT	Set the Right Margin to Tab	3.1.4
+S1,2,3	Turn Switch 1,2,3 On	7.1.1
+SB	Subscript (Servo)*	6.4
+SC	Reserved	
+SD	Print on 2200/Selectric	8.4.1
+SInnn	Size Increment - change character width (servo)	3.7
+SLnnn	Skip nnn Lines or to New Page	5.3
+SPnnn	Skip Spaces	3.3
+SS	Superscript (Servo)*	6.4
+SUnnn	Skip Until nnn lines left in the body	5.3

+SW	Turn switch nnn On	7.1.1
+TB	Tabulate	3.4.3
+TC	Tab Clear	3.4.2
+TM	Tab to left margin	3.4.8
+TR	Tabulate and Right Justify Field	3.4.6
+TS	Tab Set	3.4.1
+TT	Typewriter Tab	3.4.4
+TX	Tab Extended - tab right against right margin	3.4.7
+UC	Force Upper Case	6.2
+UN	Begin Underline	6.1
+XD	2741 Display(Correspondence Code)	8.4.6
+@@	Reserved	
+**	Operator Comment	8.6
++	Output a "+"	1.1
+##	End of As Is text	1.4
+10	Equate File 1 to File 0	8.3.2
+11	Equate File 1 to File 1	8.3.2
+20	Equate File 2 to File 0	8.3.2
+22	Equate File 2 to File 2	8.3.2

* Special servo commands are permissible when DESCRIBing to other output devices; however a servo printer is necessary to produce the desired effects.

Manual Name _____

Manual Number _____

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