HP 125 Business Assistant

GRAPHICS/125

HEWLETT
PACKARD

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Printing History

New editions of this manual will incorporate all material updated since the previous edition. Update packages may be issued between editions and contain replacement and additional pages to be merged into the manual by the user. Each updated page will be indicated by a revised date at the bottom of the page. Note that pages which are rearranged due to changes on a previous page are not considered revised.

The manual printing date and part number indicate its current edition. The printing date changes when a new edition is printed. (Minor corrections and updates which are incorporated at reprint do not cause the date to change.)

First Edition. . . . . July 1981

HP 125
change sheet

MANUAL IDENTIFICATION
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CHANGE IDENTIFICATION
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THE PURPOSE OF THIS MANUAL CHANGE is to accumulate all changes to the current edition of the manual. Earlier changes, if any, are contained herein for your convenience. (If you have made all previous changes to this manual, you need only make the changes described under the change number indicated above.) This change notice may consist of changed pages, new pages, write-in change instructions, or a combination of all.

CHANGED PAGES ARE IDENTIFIED by the change number at the bottom of the page and a vertical line (change bar) in the outside margin to indicate the area of the text that has been changed.

NEW PAGES ARE IDENTIFIED by the change number at the bottom of the page. "New" pages are those which were not present when the current edition of the manual was published.

WRITE-IN CHANGE INSTRUCTIONS are presented on the following pages of this Manual Change Notice in procedural form.

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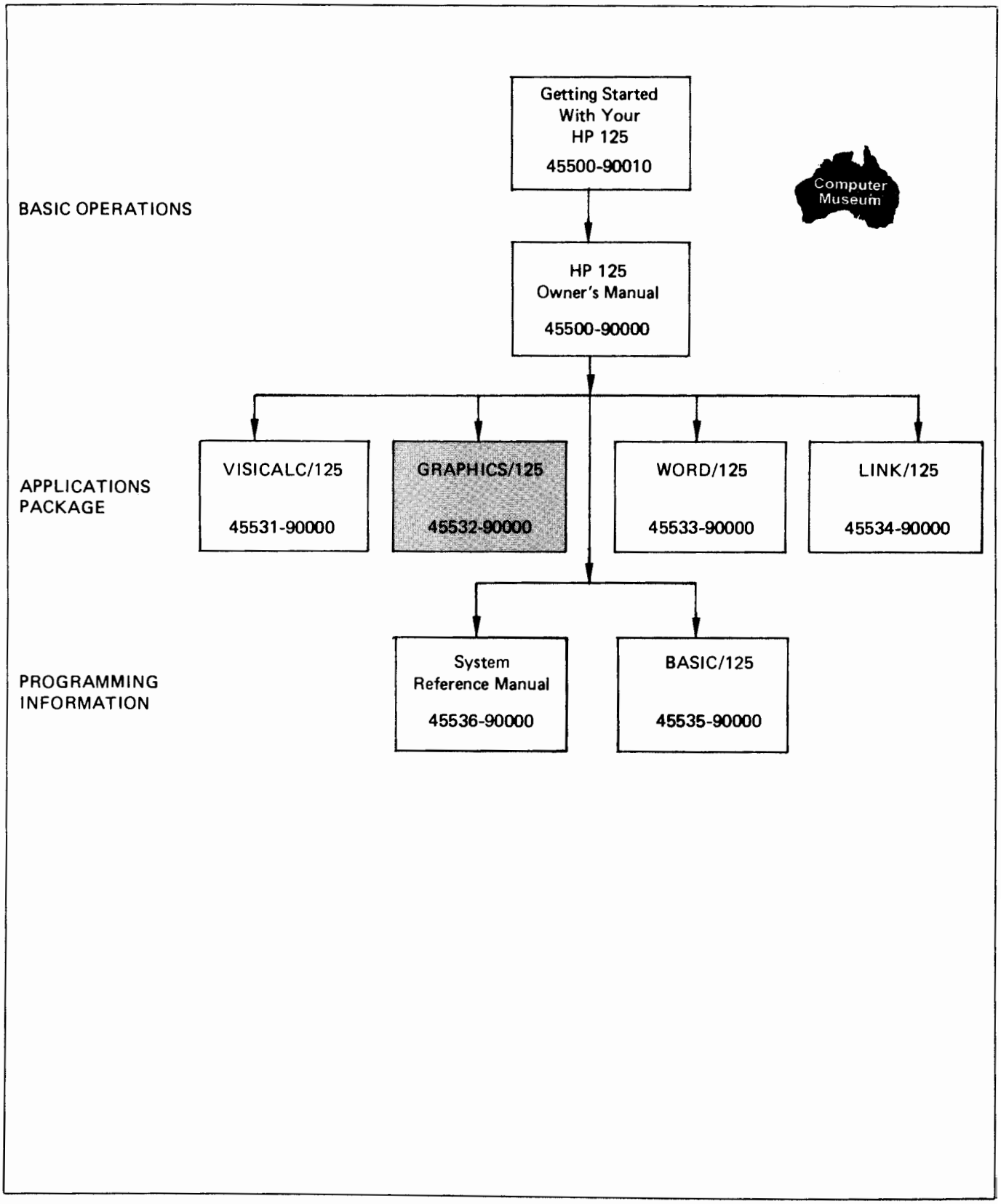
The WELCOME program differs between Operating System Version A.Ø1.Ø1 and Version A.Ø1.2Ø. Chapter 2, included in this update package, reflect the Version A.Ø1.2Ø WELCOME program.

If you are are running under Version A.01.01, then you do not need to replace the pages related to installing software. Do not throw away these new pages. Then, if you ever convert to a later version of the Operating System, you can use these new pages.

Manual Plan


BASIC OPERATIONS
Getting Started With Your HP 125
45500-90010
Computer Museum
HP 125 Owner's Manual
45500-90000
APPLICATIONS PACKAGE
VISICALC/125
45531-90000
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CHAPTER 1

INTRODUCTION

Introducing Graphics/125

This manual has been prepared to acquaint you with Graphics/125, a software package developed for the HP 125 computer. Using Graphics/125 with your computer and a plotter you can:

* transform numeric data into pie charts, bar charts, linear graphs, and logarithmic graphs;
* format text in various sizes, colors, type styles, and positions (left-justified, right-justified, centered);
* arrange text and graphics for overhead transparencies and report illustrations.

How Does Graphics/125 Work

Once you load the desired plotting function into your computer, a simple form or "menu" is displayed on the screen. Contained within the menu are areas (or "fields") either for your numeric data and chart labels or for your text and specifications. When you have filled in the menu with the information, you merely press the PLOT softkey on the keyboard. Graphics/125 then begins to draw the figure on the plotter.

How to Use This Manual

The following chapters present detailed descriptions and examples of Graphics/125:

GETTING STARTED -- tells you how to load Graphics/125 into the HP 125 computer.

USING Graphics/125 WITH HP PLOTTERS -- shows you how to output Graphics/125 plots to several Hewlett-Packard plotters.

PLOTTING A PIE CHART, PLOTTING A BAR CHART, and PLOTTING A LINEAR CHART -- discuss the functions that generate the different charts. Each chapter contains a full explanation of a function's capabilities as well as examples that demonstrate the procedure for using it.

MAKING A SLIDE -- shows you how to arrange text on the screen of your computer and how to transfer the final draft to a plotter.

If you are already familiar with Graphics/125, you need not read the entire manual. Instead, you can use the TABLE OF CONTENTS to locate answers to specific questions you may have.

CHAPTER 2

GETTING STARTED

How to Load Graphics/125 into the HP 125 Computer

Installing Graphics/125 Software

To install Graphics/125 on the HP 125, you need to perform the following steps:

1. Place the system disc into disc drive A (the left drive). Press the LOAD OP Sys function key. This will load the local operating system, and the Application menu will appear on the screen.

2. To place the Welcome program into installation mode press the [SHIFT], [CTRL] and [@] keys simultaneously. The screen displays the following instructions:

```
APPLICATION INSTALLATION MODE
```

3. To install Graphics/125, insert the Graphics/125 disc into the B drive and press INSTALL APPL.

   Follow the directions on the display screen and the message below is displayed:

```
Application Installation In Progress
Installing Graphics/125
```

   Drive A and B alternately light until Graphics/125 is installed.

4. Once you have installed Graphics/125, press the EXIT softkey and the following message is displayed:

```
***Save in Progress
***Do Not Disturb
```

5. At this point a new copy of the Welcome program (containing Graphics/125) is being saved on your System disc and you return to the Application menu.

   Notice, the function keys displayed at the bottom of the screen now include the Graphics/125 application you just installed.

Running Graphics/125

You are now ready to run Graphics/125. Simply perform the steps that follow:

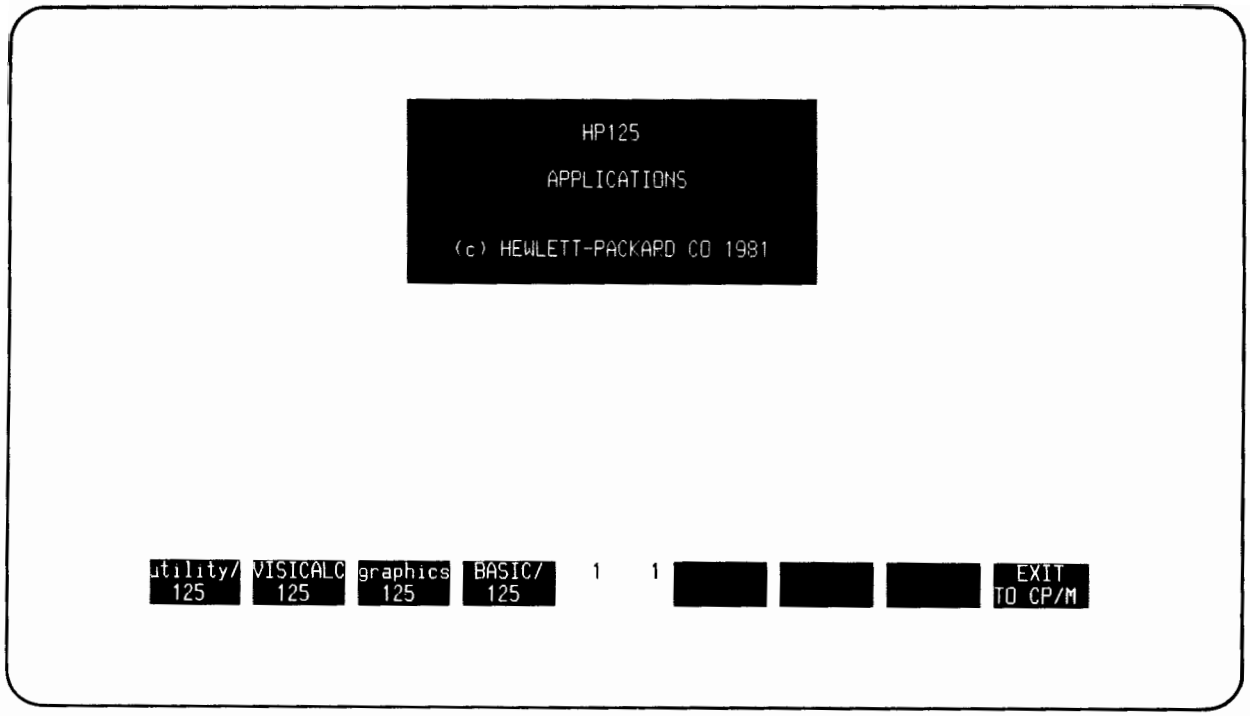
1. Press the Graphics/125 key. The light on drive A will light up and the following message appears on the screen:

```
***Application Loading***
```

2. The system comes up with Graphics/125 and you are ready to begin using it.

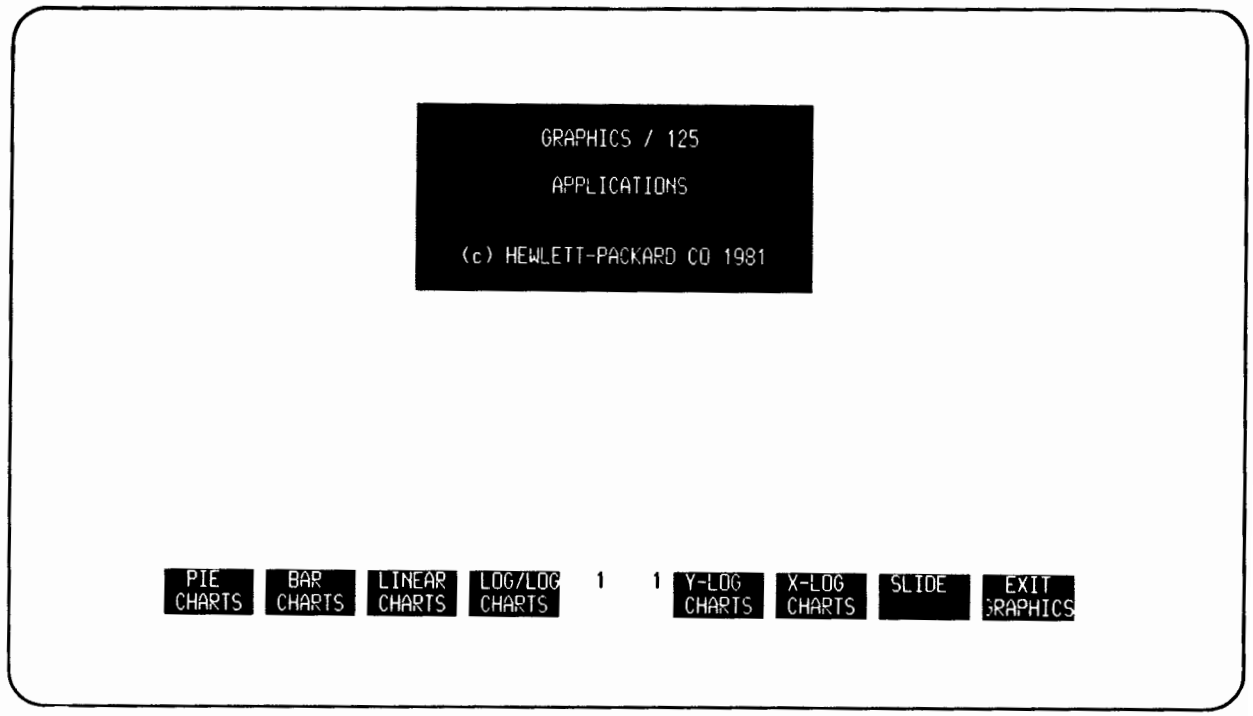
How to Select Graphics/125 if Already in Your System

Step 1. The labels that appear across the bottom of the screen correspond to the softkeys ([f1] through [f8]) located at the top of the keyboard. Press the Graphics/125 softkey.



Applications Selection Menu

Step 2. Choose the desired plotting function by pressing one of the softkeys ([f1] through [f7]). The appropriate program is automatically located on the disc and loaded into the computer. The computer returns a blank menu for your data entry and chart specifications. The fields designated for your input are highlighted in inverse video.



Graphics/125 Selection Menu

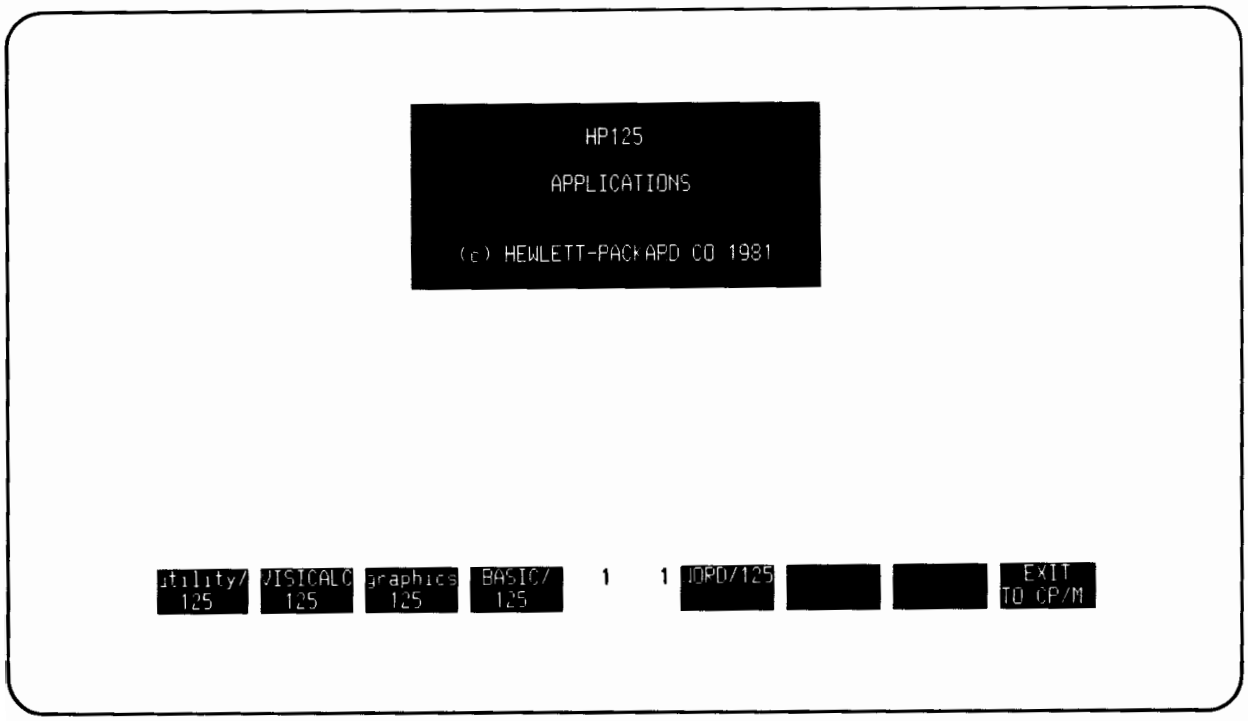
Off to a Quick Start

To illustrate how easy it is to use Graphics/125, consider the following task:

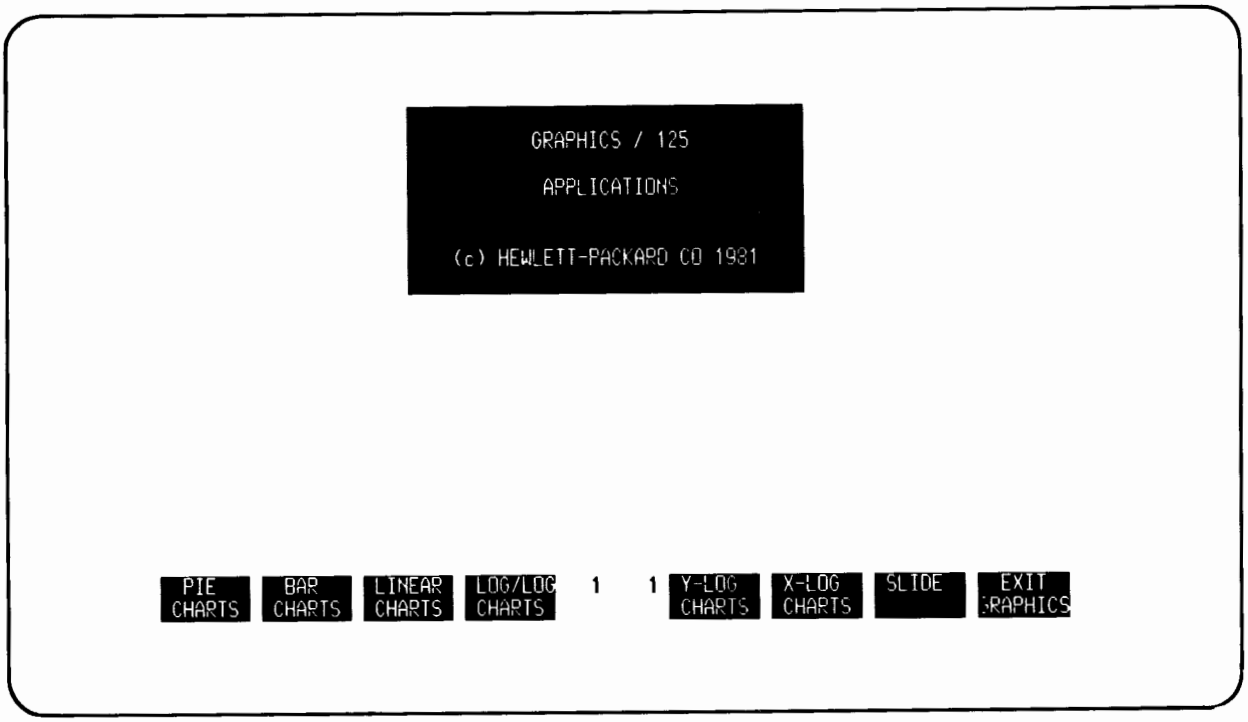
We wish to present a graph at a meeting of luggage company executives that illustrates our company's market share with respect to other producers of luggage.

For this example we will assume that a pie chart menu has already been constructed and is stored in the disc file "MARSHARE". Let us examine the menu and see how to create our slide.

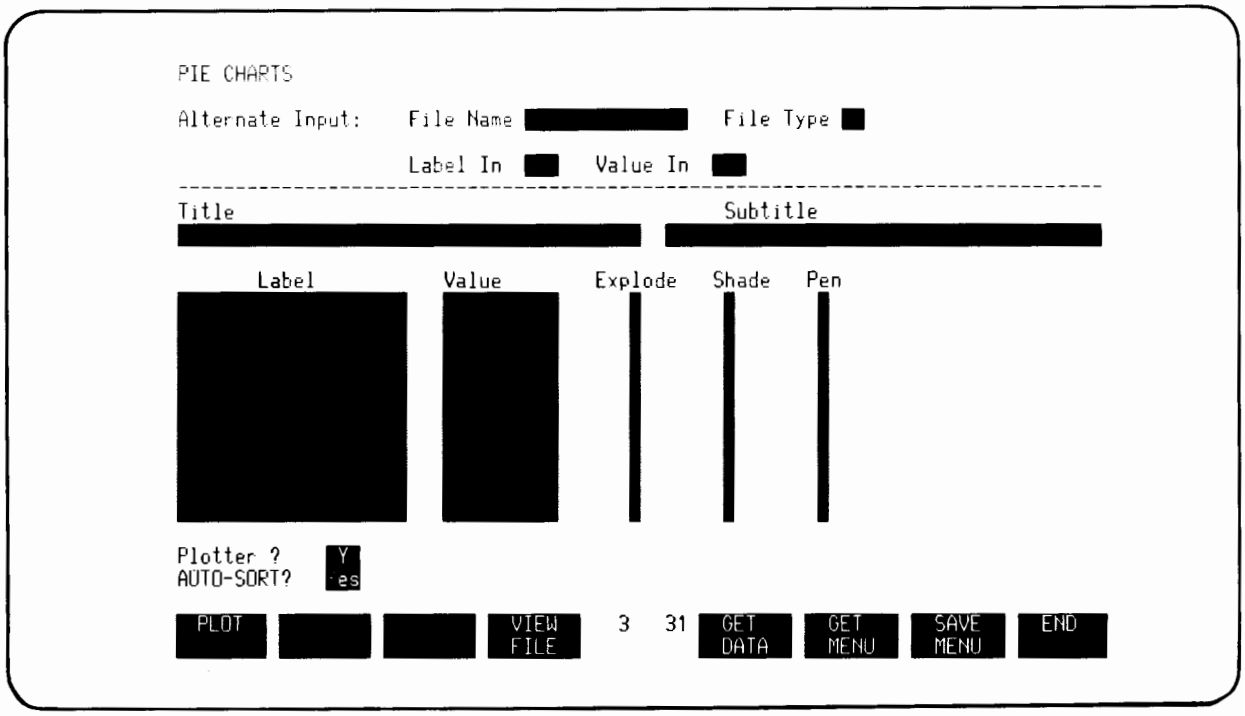
To begin with, after the system is turned on, the applications menu will be displayed:



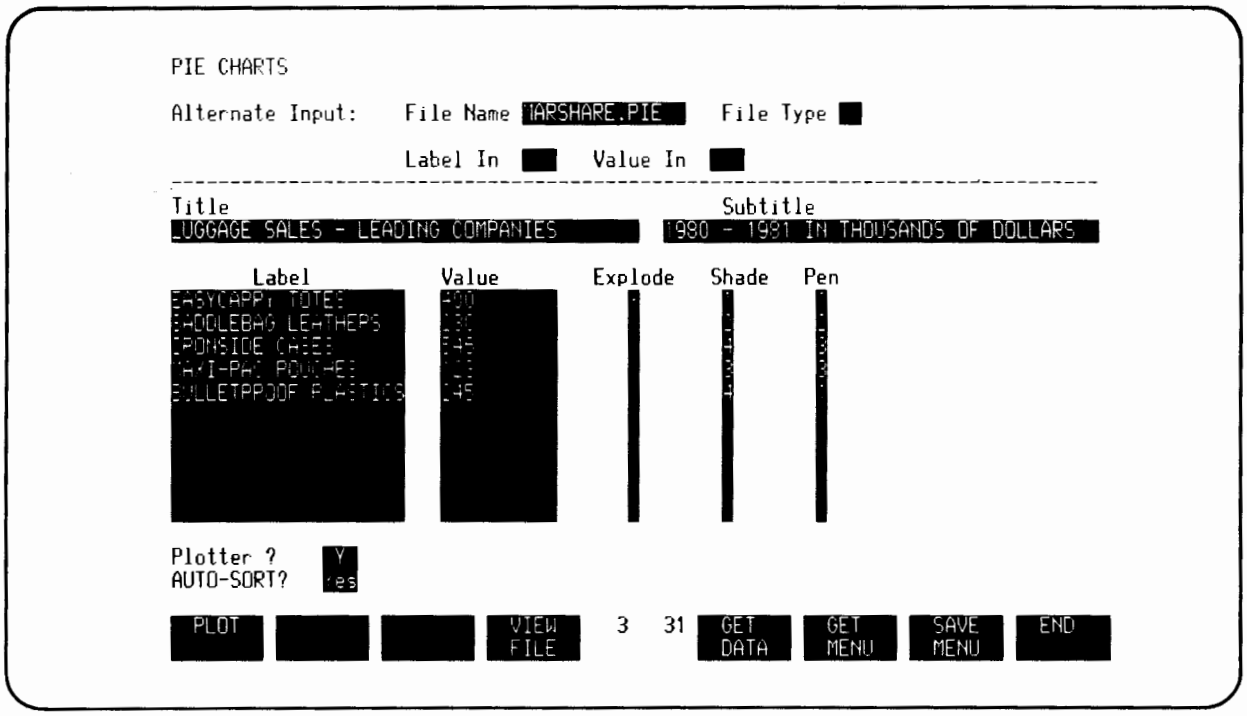
Now we press the Graphics/125 softkey to get the plotting functions:



Next we press the PIE CHART softkey and a blank menu is presented to us:



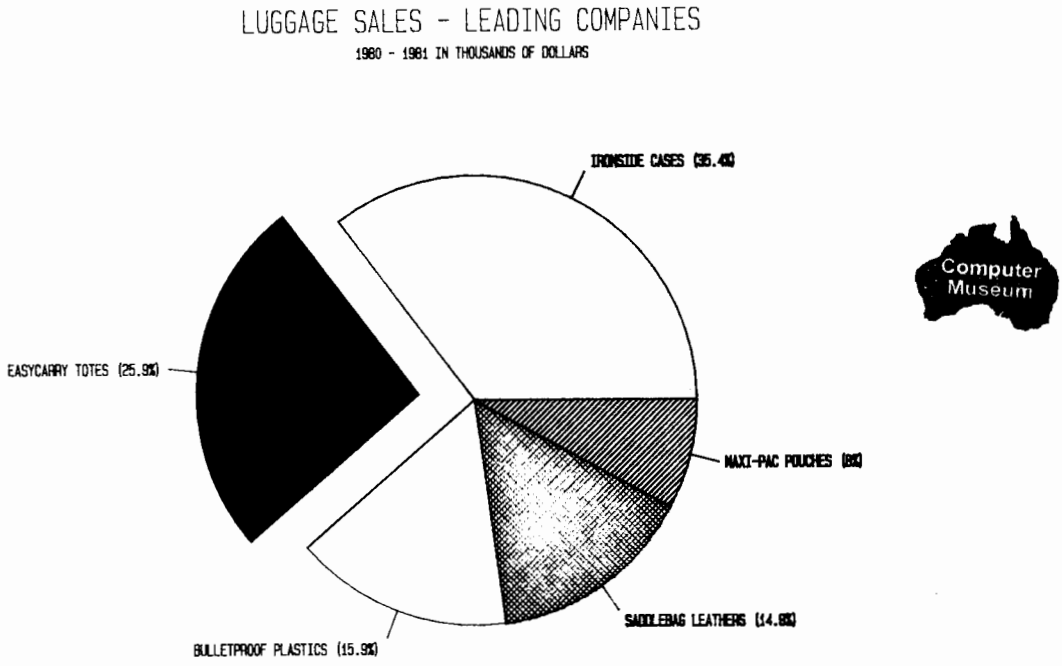
Now we are ready to produce our slide. The cursor is already at the File Name field, so we enter the name of our menu file, "MARSHARE". After this is done, press the GET MENU softkey. The following will appear on the screen:



The titles will appear at the top of the plot. The label field contains the names of leading luggage manufacturers, while the value field contains the market share for each company. The shade and pen numbers select the appropriate shading and color of each pie "slice". The slice can be drawn "exploded" (cut from the pie) by so specifying in the explode field.

As indicated by "Y" in the "PLOTTER?" field, we are set to output to the plotter. AUTO-SORT causes the slices to be plotted in order by percent of market share instead of in the order typed on the menu. All other fields are not important to this task.

Now press the PLOT softkey. The plot appears as follows:



See how easy it is!

Pressing the END softkey will return you to the operating system.

Additional Notes

Keyboard Functions

In the course of operating Graphics/125, you will often use functions controlled by the softkeys [f1] to [f8]. The softkey labels will appear at the bottom of the screen in inverse video. In the discussions that follow, you will be instructed to execute a function by pressing a softkey. The softkey will be identified by the label that appears on the screen rather than the "f" number that appears on the keycap.

The TAB Key

After you have loaded a Graphics/125 function, the computer displays a blank menu on the screen with fields designated for your input. Pressing the [TAB⇆] or [TAB→] key moves the cursor forward to the beginning of the next field reserved for your entry. Using the [TAB←] key or holding down the [SHIFT] key and then pressing [TAB⇆] moves the cursor back to the first column of the previous field. (When the cursor reaches the end of one field, it automatically repositions itself at the beginning of the next field.)

Interrupting Graphics/125

When Graphics/125 is plotting information on the plotter, you can interrupt the operation by pressing the END softkey. This returns you to the menu automatically. After a plot, or during text entry, you can return to the system by pressing the END softkey and then confirming your intentions by typing "Y" for YES.

CHAPTER 3

USING GRAPHICS/125 WITH HP PLOTTERS

You can produce hardcopies of your Graphics/125 charts on the following devices:

* HP 9872C Plotters
* HP 7225B Plotter

For installing HP plotters on your system, refer to the manual "Getting Started", number 45530-90010.

How to Use the HP 9872 and HP 7225A Plotters

Step 1. TURNING ON THE POWER. (HP 9872 Plotters) The line switch is located on the front of the plotter below the pen slots. Press the switch to the '1' position (on).

(HP 7225) The line switch is located on the right side panel. Press the switch to the '1' position (on).

Step 2. LOADING THE PENS. (HP 9872 Plotters) Pen slots are positioned along the right-hand corner of the plotting surface, and are numbered 1 through 8, from left to right. Select the color of pen you want in pen storage location 1, and remove the cap. Press and hold the silver lever next to the slot, snap in the pen, then release the lever so that the pen slips into the black rubber holder. Repeat this procedure for the remaining seven pens. The small display hole at the top of each slot lets you easily identify the color of the pens.

(HP 7225B) When the plotter receives a message from Graphics/125 to change pens, the plotting arm stops and waits for you to change the pen manually. The computer signals you with a bell and displays the message:

Place Pen Number (#) In Pen Holder, Press RETURN to continue.

Place the desired pen in the pen holder. With the index finger, support the ring that accepts the pen while gently pressing down on the pen until it snaps into position. Press RETURN, and the plotting operation will continue.

Step 3. LOADING PAPER. (HP 9872C) Press [CHART LOAD]. Lay the document on the platen surface against the left and bottom paper stops, and smooth out any wrinkles. Press [CHART HOLD] to activate the electrostatic paper hold-down.

(HP 7225) Press [CHART LOAD]. Lay the document on the platen surface against the left and bottom paper stops, and smooth out any wrinkles. Press [CHART LOAD] to activate the electrostatic hold-down. (The light over this button should now be off.)

Step 4. SETTING THE GRAPHICS LIMITS. When you power up the plotters, the physical plotting limits are set to the maximum size. Before plotting a Graphics/125 chart, you should set the lower left and upper right plotting limits for your chart. Use the pen movement keys (←, ↑, →, and ↓) to move the pen to the desired lower left coordinate. Press the [ENTER o] button, and then press the [P1] (or [LOWER LEFT]) button to set the point. Use the same procedure with the [P2]) or [UPPER RIGHT] button to set the upper right limit. Be sure to set [P1] before setting [P2]. (Note: The SLIDE function sets these boundaries for you.)

Step 5. ENTERING THE PLOTTER ADDRESS. Graphics/125 menus all include a field labeled PLOTTER? which can be set to the address of the plotter. This field is preset to "Y" for YES in the PIE, BAR, and LINEAR charts functions. This implies direct output to the plotter at default HPIB address 5. Although you will probably use the default, technically it is possible to specify any HPIB address (except Ø,1 and 2)to which the plotter is set. Leaving the field blank assumes the default address. In the SLIDE function, the field is left blank, which allows you to do a preview on screen before plotting, when ready to draw the slide, you type "Y" in the plotter field to direct the plot to HPIB address 5.

Step 6. REMOVING THE PAPER. Press [CHART LOAD] and peel the document away from the surface.

CHAPTER 4

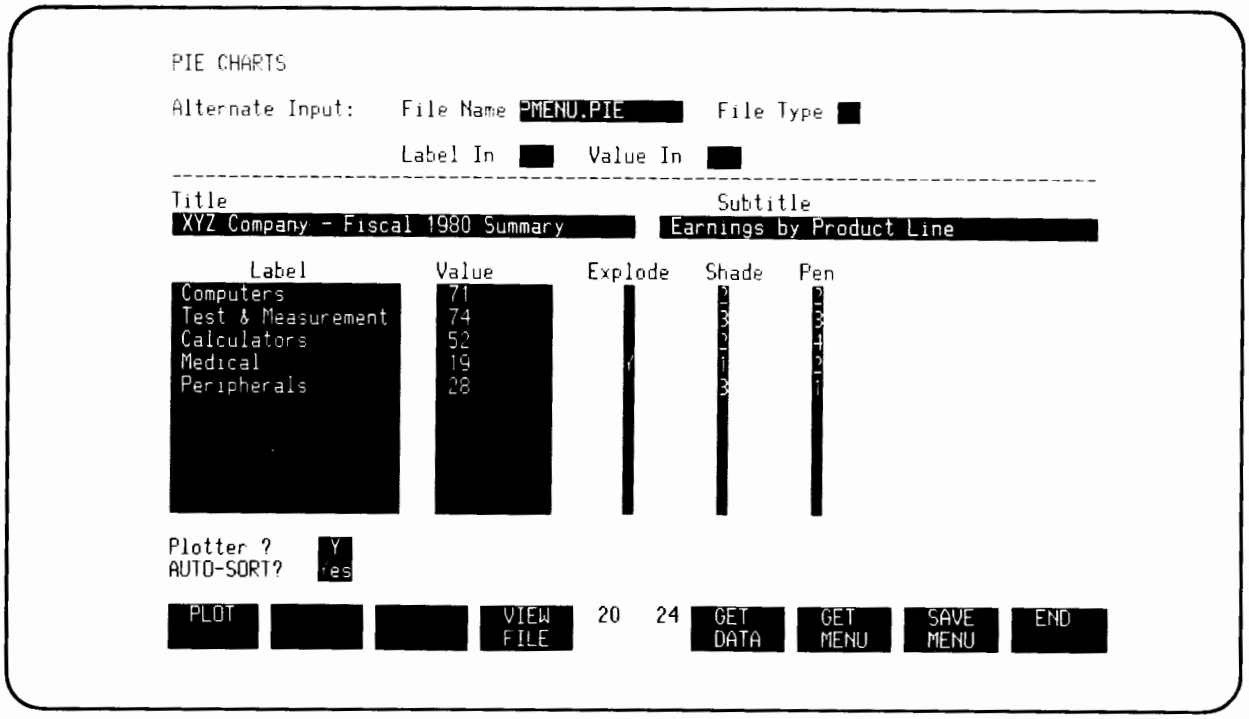
PLOTTING A PIE CHART

To become familiar with the procedure for preparing pie charts from the computer, you may want to perform the exercise below for generating the 'XYZ Company -- Fiscal 1980 Summary' chart. You can refer to these instructions when plotting your own data.

Step 1. Upon system startup or reload of system, press the Graphics/125 softkey; then press the PIE CHARTS softkey. The blank pie chart menu will now be displayed.

Step 2. FILLING IN THE MENU. Fill in the menu fields with the data in the sample menu. (Each field is explained in detail below.) Note that the Plotter? defaults to "Y" for output to the plotter located at HPIB address 5.

Use the [TAB⇆], [TAB→] and [TAB←] keys to move the cursor forward or backward from field to field. The fields above the "Title-Subtitle" line will be explained under "Accessing menus and data from flexible disc."



The Pie Chart Menu

Title

The main title of your chart may contain a maximum of 40 alpha-numeric characters*. If you supply a title, it is centered over the pie chart.

*'Alphanumeric characters'=numbers, letters, punctuation

Subtitle

You may enter a descriptive subtitle to be centered immediately below the main title. This field can hold 37 alphanumeric characters.

Label

The chart "pie" may be divided into a maximum of 10 sections. Each section may be given a descriptive label with at most 20 alpha-numeric characters. A label is displayed adjacent to its corresponding section.

Value

The numeric value you enter to be plotted as a percentage of the pie may contain as many as 10 characters (including digits 0 - 9, +,-, $, and period. Negative signs and dollar signs preceding the values are ignored. Commas or any other alpha-character delimits the number field. For example, '12,784' is interpreted as '12'.) 10 'values', either labeled or unlabeled, are allowed.

Explode

You may choose to set apart or "explode" any section from the pie by entering 'Y' (yes). Enter 'N' (no) or leave the field blank if you want the section to remain attached to the pie.

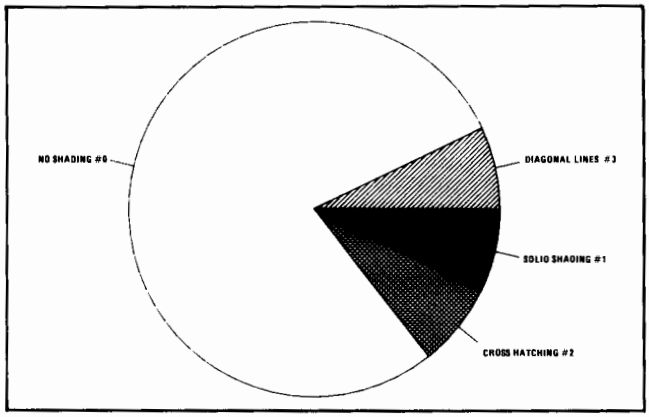
Shade

One of three patterns may be selected to shade in a section. Each pattern corresponds to a single-digit value as follows:

* 1 = solid pattern
* 2 = cross hatching
* 3 = diagonal lines

If you do not want shading to occur in a section, enter '0' or leave the field blank.

- 1 = solid pattern
- 2 = cross-hatching
- 3 = diagonal lines



Pie Chart Shading Values

Note: Solid Patterns take the longest to plot.

Pen

You may make one of eight possible pen assignments per section when running Graphics/125 to a plotter with an assortment of colored pens. Enter a pen number (1-8). These numbers refer most specifically to the HP 9872 Plotter family. If you leave the field blank, Graphics/125 chooses the last one selected by default.

Plotter?

Although the HP-IB address of the plotter defaults to "Y" for "5", you can specify a different address (except 0,1 and 2) by entering that address in the Plotter? field.

When producing overhead transparencies, enter 'T' next to the 'Y' (or HPIB address). Graphics/125 will drive the plotter pen at a slower speed to ensure the ink flows evenly over the surface of the acetate sheet.

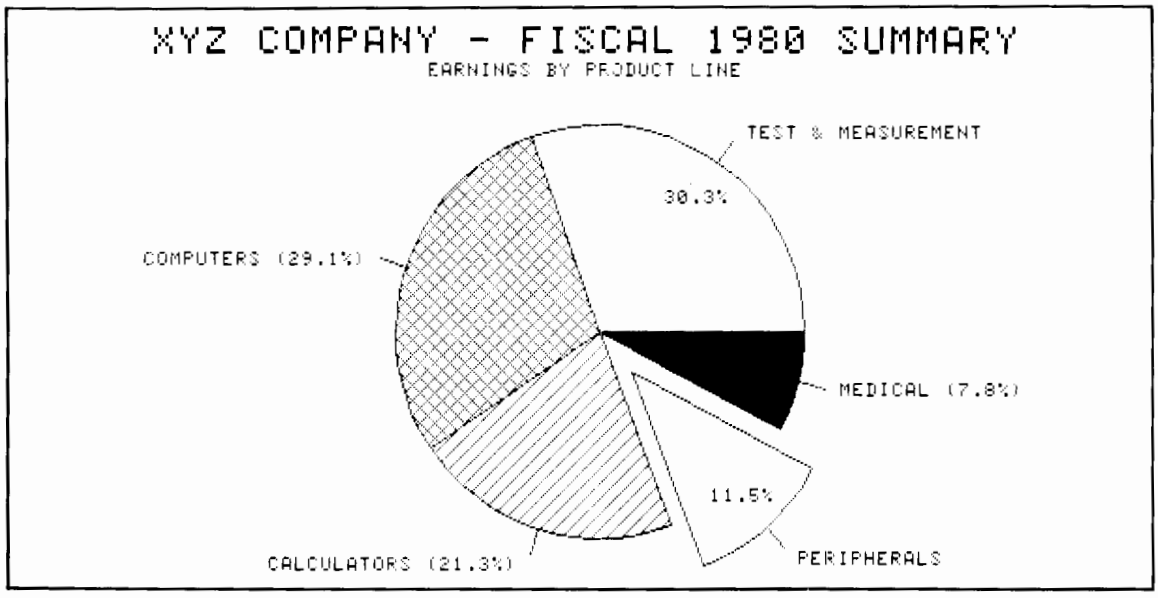
```
Plotter ?
AUTO-SORT?
```

AUTO-SORT?

A 'Y' (yes) response directs Graphics/125 to sort the percentages and arranges the sections on the chart in ascending order. If you wish the sections to be drawn in the order listed on the menu, enter 'N' (no), otherwise, Y (yes) is assumed.

Step 3. PRINTING YOUR CHART. Set the lower left and upper right pen limits of your plotter to enclose an area of your paper. Confirm the plotter address in the Plotter? field and press the PLOT softkey. Press the END softkey if you need to terminate the plotting operation prematurely.

In this example, each entry in the Value column represents the earnings in millions of dollars of the associated product listed in the label column. Graphics/125 translates the dollar value into a percentage of the pie.



Completed Pie Chart

Step 4. ALTERING THE CHART. You can now alter the data as desired. If you are performing this example at your computer, try replacing 'Computers' with 'Data Processing', in the Label column, and change '71' to '85', in the Value column. Press the PLOT softkey to replot the chart.

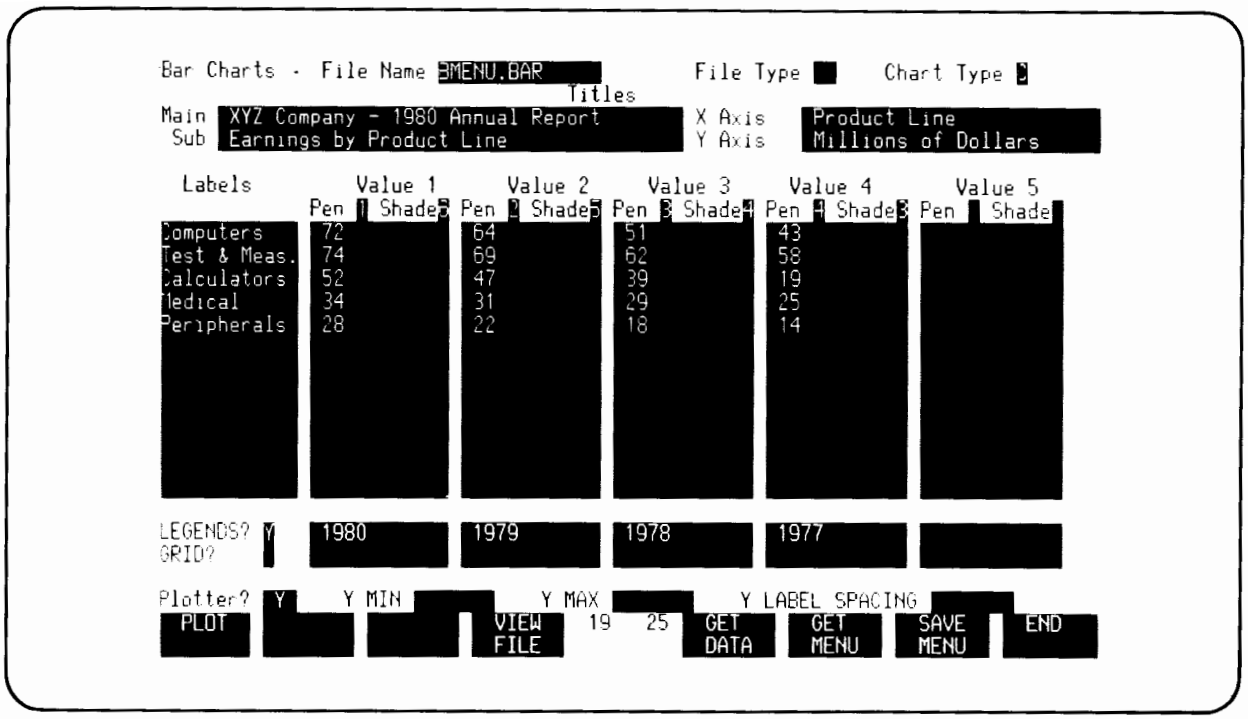
CHAPTER 5

PLOTTING A BAR CHART

Instructions for operating the Bar Chart function are explained below. Also, a guide for generating a chart for the 'XYZ Company -- 1980 Annual Report' is provided to illustrate the general procedure.

Step 1. Upon system startup or reload of system, press the Graphics/125 softkey; then press the BAR CHARTS softkey. The blank bar chart menu will now be displayed.

Step 2. FILLING IN THE MENU. Fill in the menu fields with the data from this sample. (Each field is explained in detail below.) Note that the Plotter? field defaults to "Y" for HP-IB address "5". Use the [TAB⇆], [TAB→], and [TAB←] to move from field to field. The file related fields will be discussed under "Accessing menus and data from flexible disc."



The Bar Chart Menu

Type (Normal, Stacked, Comparative)

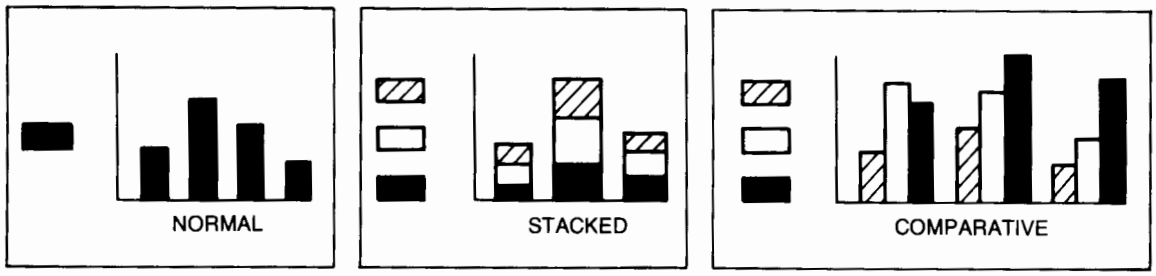
The Bar Chart program can plot data in one of three ways:

N (normal mode) plots only the data in the Value 1 column.

S (stacked mode) plots all the data in the Value columns by row. The plot for each row consists of up to five bars (one for each Value entry) vertically stacked.

C (comparative mode) also plots all the data in the Value columns, grouping the bars of data by row and arranging them side by side.

The default specification is 'N' (normal mode) if the field is left blank.



Types of Bar Charts

Main

The main title of your chart may contain a maximum of 40 alpha-numeric characters*. If you supply a title, it is centered over the bar chart.

*'Alphanumeric characters'=letters, numbers, and punctuation

Sub

You may enter a descriptive subtitle to be centered immediately below the main title. This field can hold 40 alphanumeric characters.

X Axis

You may supply a general heading of at most 26 alphanumeric characters to describe the classifications of data by row. The X-axis heading is centered beneath the plotting area.

Y Axis

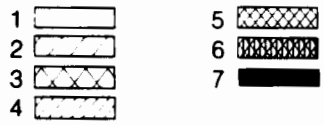
You may supply a general heading containing a maximum of 26 alpha-numeric characters to describe the classifications of data by Value column. The Y axis heading is displayed over the top left-hand corner of the plotting area.

Pen

You may make one of eight possible pen assignments per Value column when running Graphics/125 to a plotter with an assortment of colored pens. Enter a pen number (1-8). These numbers refer most specifically to the HP 9872 Plotter family. A blank response assigns the last pen selected.

Shade

You may assign one of seven different shading patterns to each Value field. Each shading pattern corresponds to a single-digit value as follows:



Bar Chart Shading Values

Note: Solid patterns take longer to plot.

If the shading fields are left blank, Graphics/125 automatically selects shading patterns based on the number of bars to be plotted.

Number of Bars	Shading Pattern(s)
1	2
2	4 & 2
3	5, 4, & 2
4	6, 5, 4, & 2
5	6, 5, 4, 3, & 2

Bar Chart Default Shading Values

Labels

Each row of data may have a descriptive label consisting of up to 12 alphanumeric characters. A maximum of 12 labels are allowed. A label is centered below the group of bars produced by the corresponding row of data. Note that overlapping of labels may occur depending upon the number of characters per label, the number of bars plotted, as well as the decision to exercise the legends option. (See explanation under Legends?)

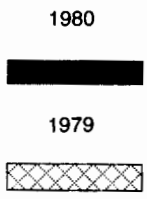
Value 1 Through Value 5

The numeric value you enter to be plotted as a bar may contain as many as 12 characters (including digits 0 - 9,+,-,$, and ','. Negative values can be plotted only in normal or comparative charts. Dollar signs preceding the values are ignored. Commas or any other alpha character delimits the number field. For example, '1,234' is interpreted as '1'.) The program can accommodate five values per row and 12 values per column. If Value 1 is blank, the entire row is ignored.

Legends?

The first section of this field accepts a single alpha-character response. If you enter 'Y' (yes), a legend displaying the shading patterns of each value column appears at the left side of the chart. 'N' (no) or a blank response inhibits the display. The length of the plotting area (on the screen) is necessarily shortened if a legend is requested; therefore the labels along the X-axis may overlap. The labels will not overlap when the chart is plotted by one of the HP 9872 plotters.

The second section of the Legends? field allows you to assign a descriptive heading for the data in each of the five value columns. Headings appear in the legend and serve to identify the shading patterns for their corresponding value columns. Two lines, both with a capacity of 12 alphanumeric characters, are provided for every heading.



Legends

Grid?

This field accepts a single alpha-character response: 'Y' (yes) to produce a grid or 'N' (no) to prevent a grid. The grid is formed by extending the Y axis tics across the chart (see explanation for Y Label Spacing field). If you omit a response in this field, 'N' (no) is assumed.

Plotter?

Although the HP-IB address of the plotter defaults to "Y" for "5", you can specify a different (except 0,1 and 2) address by entering that address in the Plotter? field.

When producing overhead transparencies, enter 'T' after the 'Y' (or HPIB address). Graphics/125 will then drive the plotter pen at a slower speed to ensure that the ink flows evenly over the surface of the acetate sheet.

Plotter? 5T

Y Min

You can specify a numeric minimum value with seven characters for the Y axis. This value can be negative, positive or zero. (A dollar sign preceding the value is ignored.) If you omit a response in this field, Graphics/125 calculates an appropriate minimum value.

Y Max

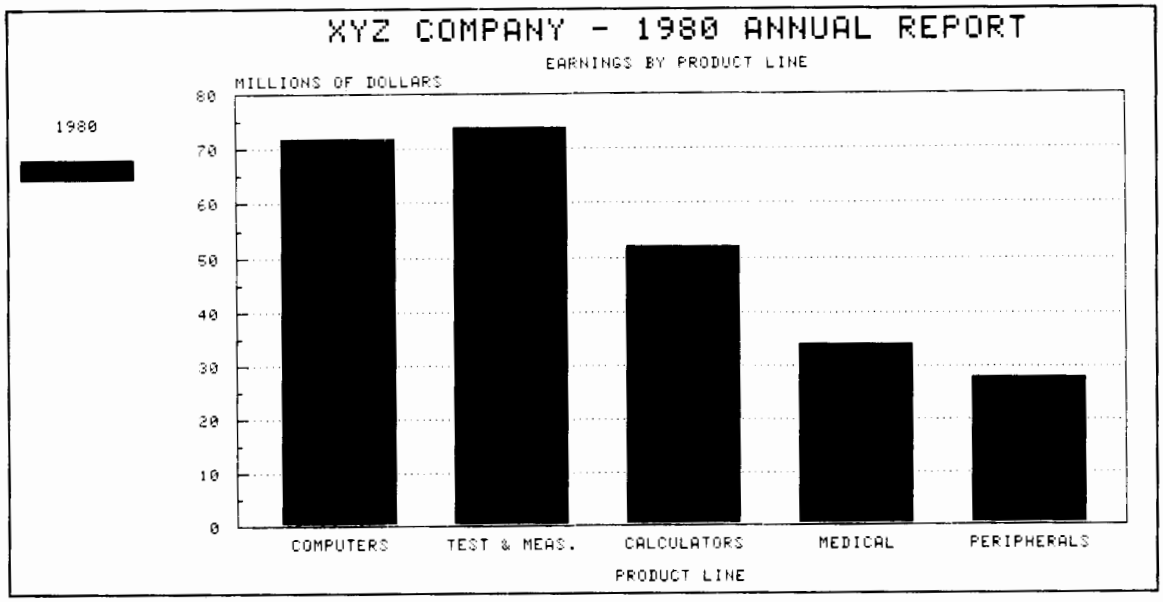
You can specify a maximum numeric value with seven characters for the Y axis. This value can be negative, positive, or zero. (A dollar sign preceding the value is ignored.) It must, however, be greater than that value specified in the Y Min field.If you omit a response, Graphics/125 calculates an appropriate maximum value.

Y Label Spacing

You can enter a value with a maximum of seven numeric characters to define the incremental spacing of major tics along the vertical axis. Each tic is labeled with the value it represents. If you omit a response, Graphics/125 automatically calculates the spacing.

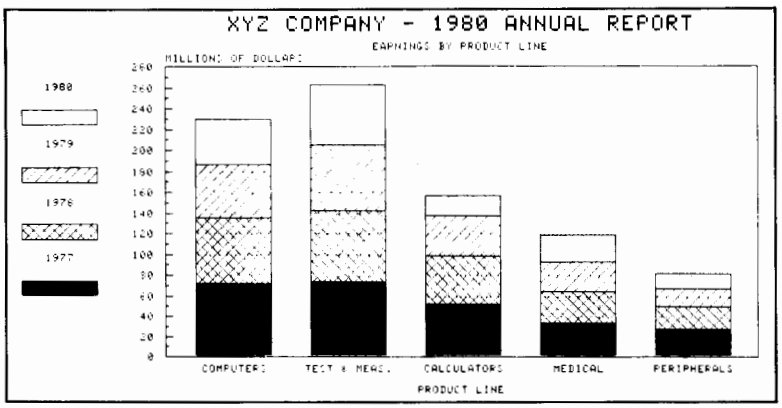
Step 3. PRINTING YOUR CHART. Set the lower left and upper right pen limits of your plotter to enclose an area of your paper. Confirm the plotter address in the Plotter? field and press the PLOT softkey. Press the END softkey if you need to terminate the plotting operation prematurely.

Note that only the 1980 data (entries from the Value 1 column) are shown on the chart. This chart is characteristic of the 'N' (normal type) chart which you specified in the menu.



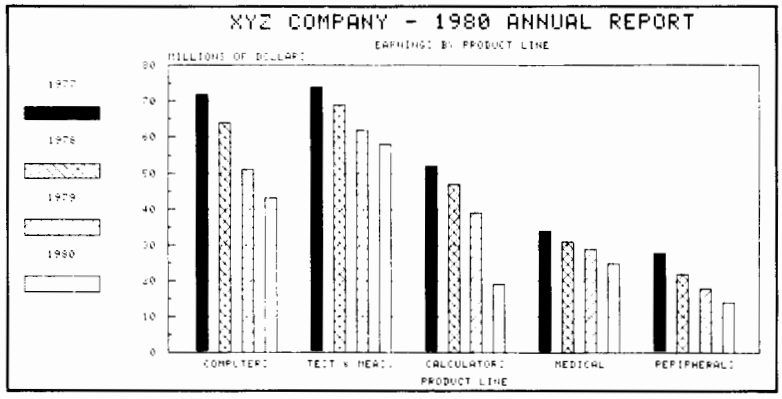
Normal Type Bar Chart

Step 4. ALTERING THE CHART. Plotting a "Stacked" chart. Enter 'S' in place of the 'N' in the Type field, and press the PLOT softkey. The stacked chart type 'S' plots each row of data in the columns labeled Value 1 through Value 5 by stacking the bars which represent each entry one on top of the other.



Stacked Type Bar Chart

Plotting a "Comparative" chart. By repeating this procedure for comparative chart type ('C'), you can produce a bar chart where data from the Value columns are plotted side by side for easy comparison of levels. For this exercise, try plotting a comparative type chart with a few negative values.



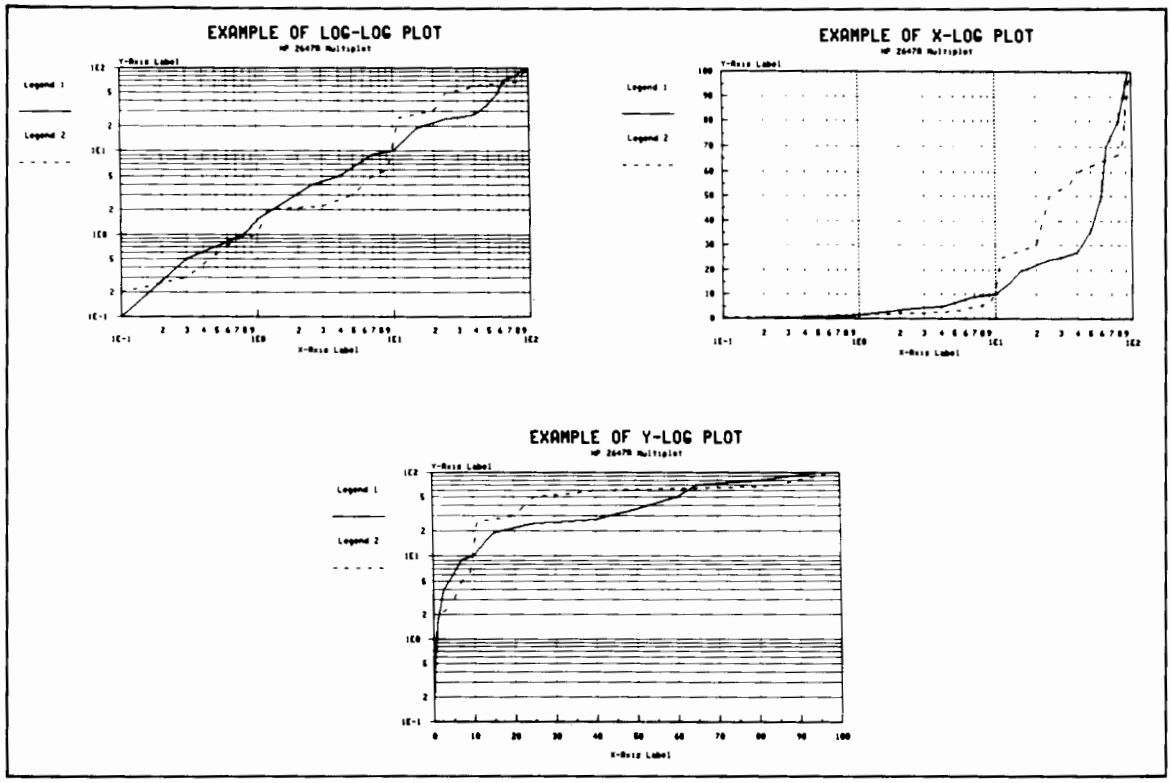
Comparative Type Bar Chart

CHAPTER 6

PLOTTING A LINEAR CHART

The Linear Chart program allows you to plot charts with linear scaling, logarithmic scaling, or combinations of both. This chapter begins with two examples that demonstrate most of the program's capabilities. Other program features explained in the last section of this chapter include:

* How to produce charts with multiple line plots.
* How to label the X-axis scale with the days-of-the-week or with months-of-the-year.
* How to make scattergrams.
* How to plot data from the display memory.
* How to edit extraneous values from the plotting data.



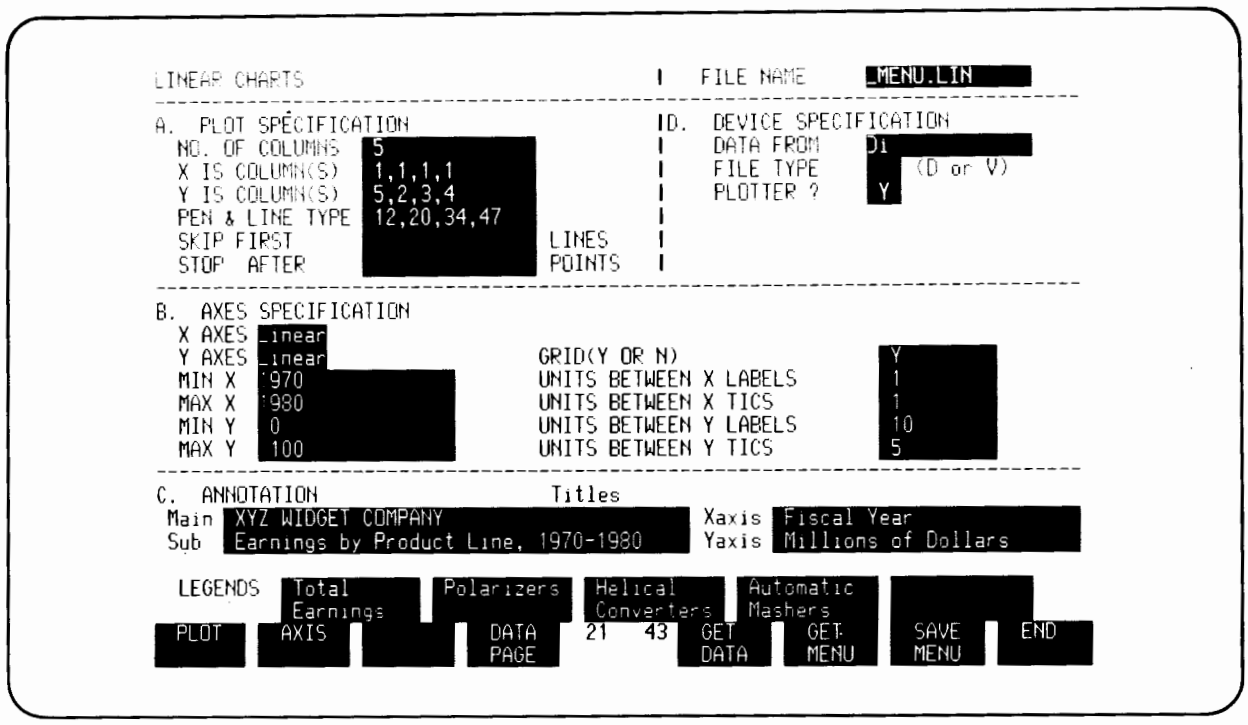
Linear Chart Example No. 1

By performing the steps explained below for generating the 'XYZ WIDGET COMPANY -- Earnings by Product Line' chart, you will become familiar with operating the Linear Chart program locally from the computer. Refer to this guide when producing your own charts.

Step 1. Upon system startup or reload of system, press the Graphics/125 softkey.

Then press any one of the keys [f3] through [f6] (LIN/LIN, LOG/LOG, Y-LOG, X-LOG) to load the Linear Chart program. Each of the four keys loads the same program; only the contents of the X Axes and Y Axes specification fields vary from menu to menu. These fields are not permanent, and therefore you may change either axis specification without reloading the program.

Step 2. FILLING IN THE MENU. Fill in the menu fields with the sample data provided. (Each field is described below.) Note that the Plotter? field defaults to "Y" for HP-IB address "5". Use the [TAB⇆], [TAB→] and [TAB←] key to move from field to field. The file related fields will be discussed under "Accessing menus and data from flexible disc."



The Linear Chart Menu

A. Plot Specification

No. Of Columns

Enter the total number of data columns. If the integer you enter here is either more or less than the actual number of columns, Graphics/125 will not correctly distinguish the X-axis data from the Y-axis data.

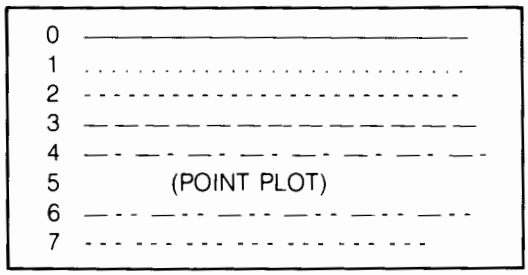
X Is Column(s) -- Y Is Column(s)

Enter the number of the column that contains the X-axis (Y-axis) data.

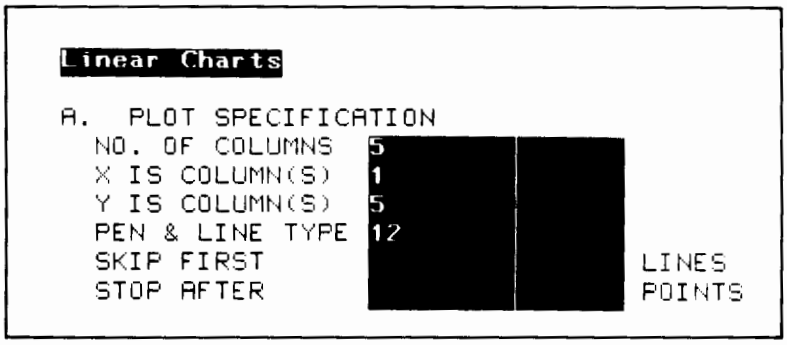
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
1970	5.1	0	0	5.1
1971	9.3	0	0	9.3
1972	13.2	3	0	16.2
1973	16.9	5.9	0	22.8
1974	15.2	6.3	1.3	22.8
1975	19.7	10.1	4.5	34.3
1976	23.6	12.9	9.3	45.8
1977	15.2	16.8	12.7	44.7
1978	8.3	20.9	19	48.2
1979	0	27.5	22.4	49.9
1980	0	35.4	29.1	64.5
X-data	**Y-data**	**Y-data**	**Y-data**	**Y-data**

Pen & Line Type

You may choose from one of eight line types for each line plotted. Each line type corresponds to a numeric value as follows:



You may make one of eight possible pen assignments per line plotted when running Graphics/125 to a plotter with an assortment of colored pens. Enter pen number (1-8). The Pen & Line Type field accepts a one or two digit response; the first digit indicates the pen number, and the second digit indicates the line type. If you leave the field blank, Graphics/125 chooses line type 0 and directs the plotter to use the last pen selected.



Skip First Lines

You can instruct Graphics/125 to skip over (n) lines of data before commencing with the graph. Graphics/125 skips these lines beginning with the line containing the cursor.

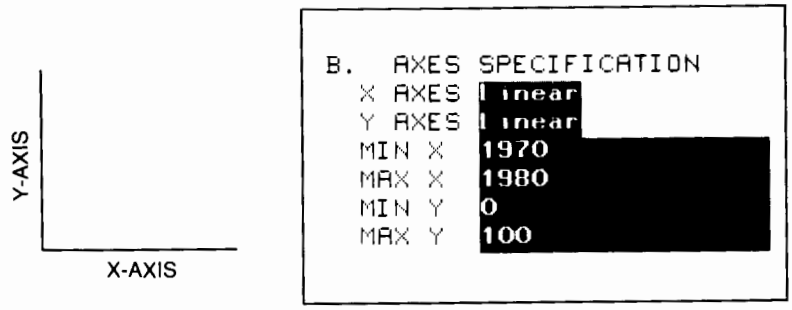
Stop After Points

Allows you to terminate Graphics/125 after (n) x-y coordinates have been plotted.

B. Axes Specification

X Axes -- Y Axes

In these fields, you specify whether you want the data in the X column (Y column) plotted on a linear or logarithmic scale. Linear is always the default specification when a field is left blank, regardless of your original softkey choice. The variations LOG, LINEAR, or LIN are all legal entries within these fields.



Min X -- Min Y

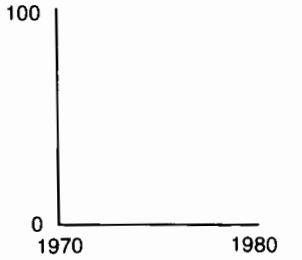
Specify the minimum value for the X (Y) axis. The value may be negative, positive, or zero for linear scales; it must be positive for logarithmic scales. The number may not be preceded by an alpha character (letters or punctuation).

Max X -- Max Y

Enter a maximum value for the X (Y) axis of your chart. The value for Max X (Max Y) must be greater than that specified for Min X (Min Y). The other restrictions for this field are the same as those for Min X (Min Y).

Units Between X Labels -- Units Between Y Labels (Major Tics)

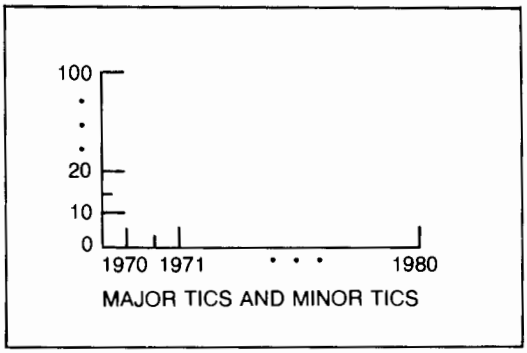
By defining an interval value, you can cause the display of major tics at consecutive intervals along an axis. You may enter any positive number, preferably one that divides evenly into the difference between the minimum and maximum values for the axis. Major tics are labeled with the values they represent. If you specify the value with a decimal point, the label is printed with the same number of decimal places as the original value. If the label value is too small (less than .000001) or too large (greater than 9999999), exponential notation is used for the label. The tics are not displayed unless a value is entered. If a log axis is specified, Graphics/125 will calculate the tic marks.

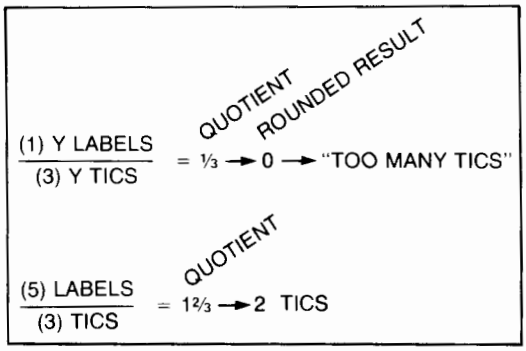


(Minimum and Maximum X and Y Axis Values

Units Between X Tics -- Units Between Y Tics (Minor Tics)

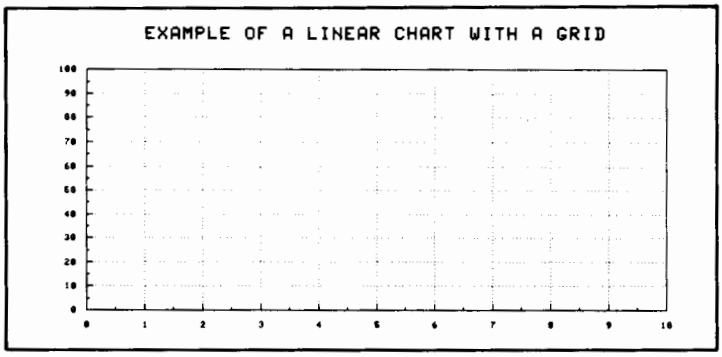
You can cause minor tics to be displayed between the labeled tics on the X or Y axis. Enter a value greater than zero. This value is used to divide the number in the Units Between X (Y) Labels field, and the result is rounded to the nearest integer. This integer result determines the number of partitions between major labeled tics. If the result (quotient) is rounded to zero, you will receive the error message 'TOO MANY TICS'. In this event, enter a number which makes the rounded integer result greater than zero.





Grid (Y or N)

The chart can be overlayed with a grid by extending the major tic marks on the X and Y axis across the chart. (See Units Between X Labels -- Units Between Y Labels.) Enter 'Y' (yes) to display the grid, 'N' (no) to inhibit the display. A blank field is read as 'N'.



C. Annotation

Main

The main title of your chart may contain a maximum of 40 alphanumeric characters*. If you enter a title, it is centered over the graph.

*'alphanumeric characters'=letters, numbers, and punctuation

Sub

You may enter a heading of up to 26 alphanumeric characters to describe the data in the X-axis columns. The heading is displayed above the top left-hand corner of the plotting area.

X axis

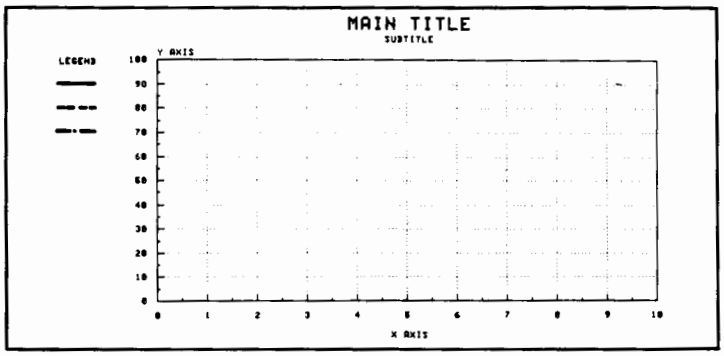
You may enter a heading of up to 26 alphanumeric characters to describe the data in the X-axis columns. The heading is centered beneath the major tic labels along the X-axis.

Y axis

You may enter a heading of up to 26 alphanumeric characters to describe the data in the X-axis columns. The heading is displayed above the top left-hand corner of the plotting area.

Legends

You can supply descriptive labels to identify each line function. Two lines, both with 12 alphanumeric character capacity, are provided for each label. A label will appear in a legend above a segment of the line type you specified for the corresponding plot.



D. Device Specification

Data From

Indicate the device which will supply the X and Y column data. The possible input devices are the display screen or a flexible disc file. Only 23 lines (records) can be input from the display screen.

The default source is the computer's display (Di).

File Type

This field is used to indicate whether the data is from a display formatted file or a VisiCalc™ file.

Plotter?

Although the HP-IB address of the plotter defaults to "Y", (for HPIB address "5") you can specify a different (except 0,1, and 2) address by entering that address in the Plotter? field.

When producing overhead transparencies, enter 'T' next to the plotter address. Graphics/125 will then drive the plotter pen at a slower speed to ensure that the ink flows evenly over the surface of the acetate sheet.

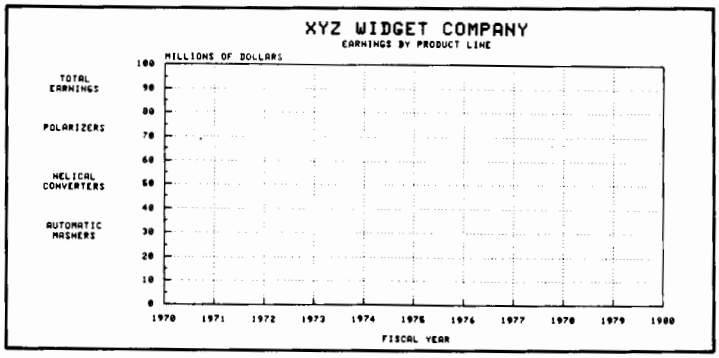
VisiCalc™ is a trademark of Personal Software Inc.

Step 3. PLOTTING THE CHART FROM DISPLAY MEMORY

When the display is chosen as the input device, ('Di' is entered in Data From), Graphics/125 scans the screen for X and Y columnar data. The first data found is assumed to be Column 1, the second is assumed to be Column 2, and so forth until the limit specified in the No. Of Column(s) field is reached. As the data in the columns designated X and Y are found, they are highlighted in inverse video.

a. Set the lower left and upper right pen limits of your plotter to enclose an area of your paper.

b. After you have filled in the menu, press the AXIS softkey to draw the axis and position the titles. Then press the Data Page softkey to clear the screen and proceed with entering data. Press the END softkey if you need to terminate the plotting operation prematurely.



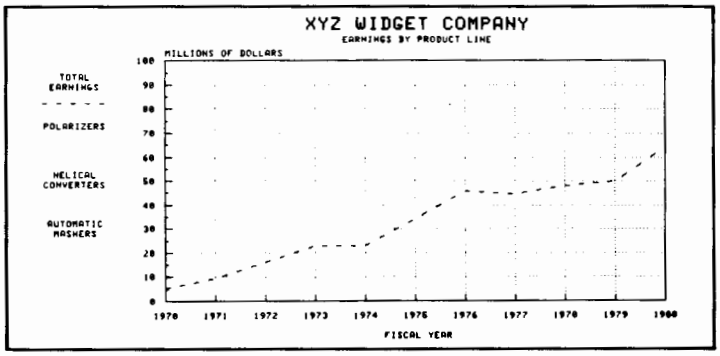
Labeled Linear Chart Axes

c. Now enter the data onto the screen in tabular columns. Commas or double blanks can be used for separators and decimal points do not have to be aligned. You can make positioning the cursor to the columns easier by setting tab stops at the start of each column. To set a tab stop, position the cusor to the beginning of the column and press the control and s keys. To remove a tab stop, position the cursor to the tab you want to remove the press the control and r keys. After you have set tabs you can use the TAB key to position the cursor to each column.

	Polarizers	H. Converters	A. Maskers	Total E.
1970	5.1	0	0	5.1
1971	9.3	0	0	9.3
1972	13.2	3	0	16.2
1973	16.9	5.9	0	22.8
1974	15.2	6.3	1.3	22.8
1975	19.7	10.1	4.5	34.3
1976	23.6	12.9	9.3	45.8
1977	15.2	16.8	12.7	44.7
1978	8.3	20.9	19	48.2
1979	0	27.5	22.4	49.9
1980	0	35.4	29.1	64.5

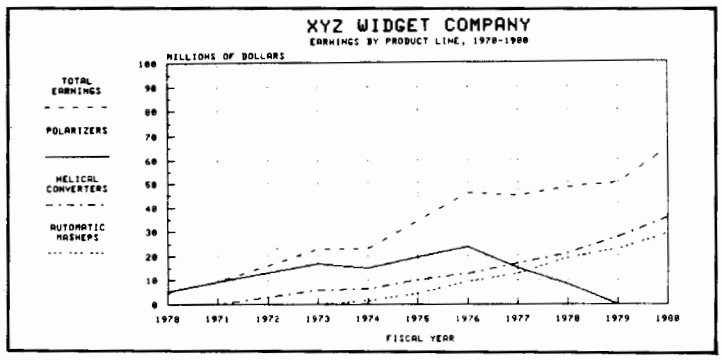
Sample Linear Chart Data

d. Position the cursor at the beginning of the first data column. Press the PLOT softkey. The resultant chart shows the data in column 5 plotted as a function of the data in column 1. Notice that the screen data is highlighted in inverse video as it is found.



Step 4. ALTERING THE CHART. Return to the menu via the MAIN MENU softkey to plot an additional line.

Change the entry in the Y Is Column(s) field from "5" to "2". Change the line type to "0". Return to the data by pressing Data Page and position the cursor at the beginning of the first data column. Press the PLOT softkey to plot the additional line. To complete the chart return to the menu and repeat this procedure for Y columns 3 and 4. Use line-types "4" and "7".



Completed Multiple Plot Linear Chart

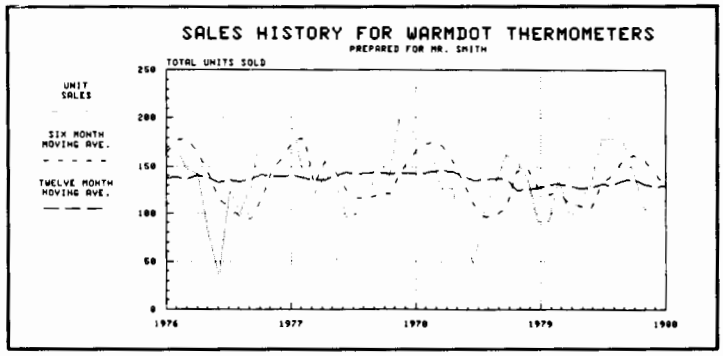
Linear Example No. 2

This example shows you how to represent months on a scale whose major tics are labeled with years.

Note that the menu fields Min X and Max X define the time interval 1976 to 1980 over which the sales of WARMDOT thermometers will be charted. The '1' in the Units Between X Labels field will cause a major-labeled tic to be placed on the X axis for each consecutive year. By entering .083333333 in the Units Between X Tics field, you can subdivide the interval between each year into 12 segments (one for each month of the year).

```
LINEAR CHARTS                                  |  FILE NAME
-----------------------------------------------------------------------
A.  PLOT SPECIFICATION                         |D.  DEVICE SPECIFICATION
  NO. OF COLUMNS  4                            |    DATA FROM
  X IS COLUMN(S)  1,1,1                        |    FILE TYPE          (D or V)
  Y IS COLUMN(S)  2,3,4                        |    PLOTTER ?
  PEN & LINE TYPE 20,30,40                     |
  SKIP FIRST                    LINES          |
  STOP  AFTER                   POINTS         |
-----------------------------------------------------------------------
B.  AXES SPECIFICATION
  X AXES LINEAR
  Y AXES LINEAR                  GRID(Y OR N)                    Y
  MIN X  1976                    UNITS BETWEEN X LABELS          1
  MAX X  1980                    UNITS BETWEEN X TICS            .083333333
  MIN Y  0                       UNITS BETWEEN Y LABELS          50
  MAX Y  250                     UNITS BETWEEN Y TICS            10
-----------------------------------------------------------------------
C.  ANNOTATION                          Titles
  Main SALES HISTORY FOR WARMDOT THERMOMETER      TOTAL UNITS SOLD
  Sub

 UNIT SALES  SIX MONTH MOVING AVE.  TWELVE MONTH MOVING AVE.
 PLOT | AXIS |  | DATA PAGE |  | GET DATA | GET MENU | SAVE MENU | END
```



Sample Chart

Press the AXIS softkey to plot the axes. Erase the entries in the Units Between X Labels and Units Between X Tics fields. Change the entries in the Min X and Max X fields from 1976 and 1980 to 1 and 48. Now the 48 months can be represented in the X data column in integer form rather than as 1976, 1976, etc. You are now ready to enter the data and plot the chart.

1	174	164	137
2	167	178	138
3	148	179	136
4	142	165	140
5	80	143	138
6	34	115	133
7	123	106	135
8	102	96	134
9	129	94	136
10	194	116	141
11	191	147	139
12	185	160	139
13	190	178	140
14	133	179	137
15	120	131	135
16	140	155	135
17	134	144	140
18	96	125	144
19	100	117	142
20	114	116	143
21	155	120	144
22	140	121	142
23	202	142	143
24	192	160	143

Page One of Data

25	172	172	142
26	165	175	145
27	126	172	146
28	127	157	145
29	77	134	140
30	46	109	135
31	107	97	136
32	132	98	137
33	163	106	137
34	157	145	125
35	138	149	126
36	91	128	127
37	91	120	131
38	136	122	132
39	100	111	130
40	116	108	127
41	131	105	128
42	179	132	132
43	180	142	131
44	177	157	135
45	143	162	137
46	104	157	132
47	109	143	129
48	114	130	130

Page Two of Data

More on Linear Charts

Two Methods of Plotting Multiple Charts

Multiple line plots can be drawn on the same set of axes in two ways. The first method, which was used in the introductory linear chart example, requires changing the menu specifications for each additional line.

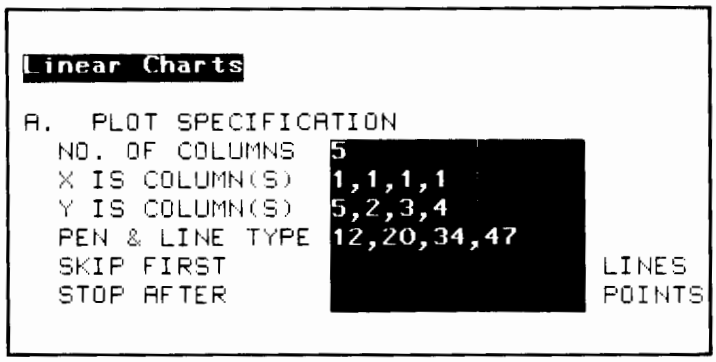
Step 1. Change the specifications in the X Is Column(s), Y Is Column(s), and Pen & Line Type fields.

Step 2. Press the DATA PAGE softkey, and reposition the cursor at the beginning of the first data column.

Step 3. Press the PLOT softkey.

Alternatively, you may graph up to five lines at once by supplying multiple specifications in the X Is Column(s), Y Is Column(s), Pen & Line Type fields.

Indicate which columns contain the X (or Y) data and designate pen-line type for each line. Separate the multiple entries with commas; no embedded blanks are allowed. Columns are plotted in the order listed on the menu, not in the order they are entered on the screen. Therefore, you must list corresponding X and Y column numbers and pen-line type specifications in the same relative position (within their respective fields). For example:



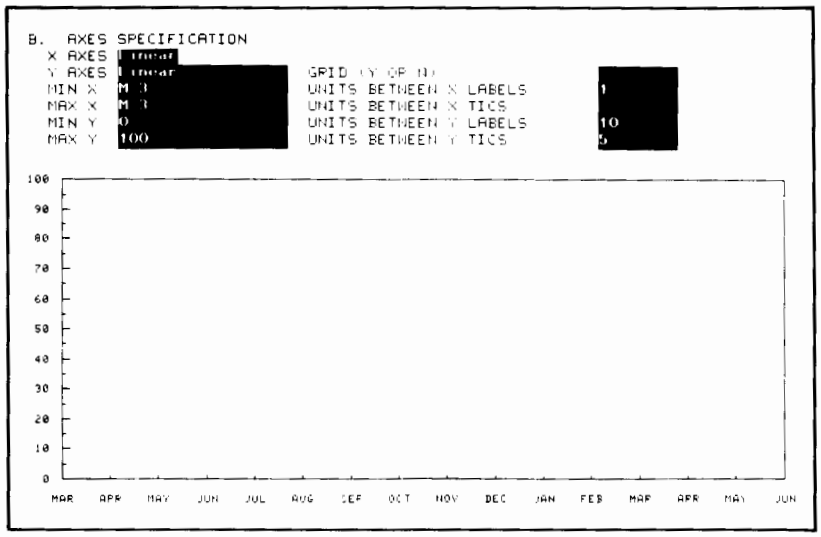
These 3 fields must contain the same number of entries. Also, if you specify a legend, a chart will hold a maximum of 5 plotted lines. Without the legend option, however, you can plot as many columns as you like, though you may enter specifications in the menu for only five lines at one time.

Month or Day Labels

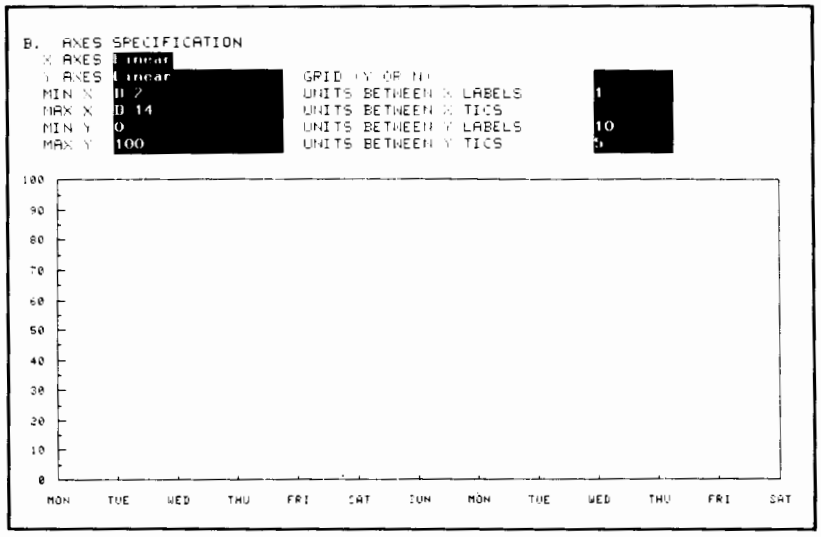
You can label the major tics along the X-axis with the names of months of the year or days of the week. Use format M=x (for months) and D=x (for days), where x is an integer value, in the Min X and Max X fields. The value of x in the Min X field must be less than the value of x in the Max X field.

The equations M=1 through M=12 correspond to the months January through December of Year One; the equation M=13 through M=24 correspond to January through December of Year Two; and so on. Similarly, the equations D=1 and D=7 specify the days Sunday through Saturday of Week One; D=8 through D=14 specify Sunday through Saturday of Week Two; and so forth.

If you leave the Units Between X labels field blank, Graphics/125 will display a label for each consecutive month or day, but it will not display any tics.



Labeling the X-Axis With Months-of-the-Year

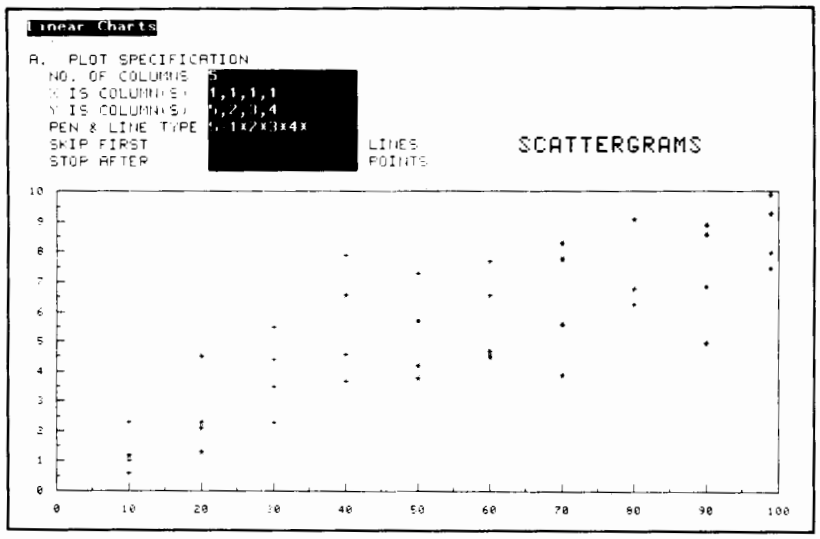


Labeling the X-Axis With Days-of-the-Week

Scattergrams

You can plot scattergrams on your linear chart by selecting line type 5. A dot is placed at each coordinate; the dots are left unconnected. You can also construct a scattergram using any alphanumeric character in place of the dot by entering S=xy in the Pen & Line Type field, where x is the desired pen number and y is the desired character. Specifications for multiple line types are entered in the format (S=x1y1x2y2...x5y5). Do not separate the entries with commas as you do with normal pen-line specifications.

(Note: You may not mix scattergram specifications with normal pen-line specifications.)



Plotting Scattergram

Notes on Plotting Values

Digits 0-9, '+','-', and ',' are recognized by the Linear Chart Function as valid characters for a plotting value. Dollar signs preceding the data are ignored. Any other non-numeric characters (including commas) act as separators.

The examples on this page show how the Linear Chart Program interprets numeric strings in the plotting data.

123x456#78 9	123 456 78 9	(non-numeric character separates data)
123- 456	-123 456	(trailing - assumed)
123 -456	123 -456	(- goes with second number)
-$123,456	-123 456	($ ignored)
$123,456,$789	123 456 789	
- 123	123	(can't have blanks after sign)
123E 02	123 2	(can't have blanks betw E and exponent)
123+02	123E02	

If the display is chosen as the input device, a number cannot be broken across two separate display lines because Graphics/125 will interpret it as two numbers. When Graphics/125 accepts plotting data from a disc file it does not care where the characters appear on the screen.

CHAPTER 7

ACCESSING DISC FILES

Accessing Menus and Data from Flexible Disc

You can input data into Graphics/125 from files created on flexible disc. These files may be created by using the CP/M® editor or Word/125; by saving previous menus; or they may be VisiCalc™ program output files.

Pie and Bar Charts

FILE NAME FIELD
The File Name field must contain the name of a menu or data file. If plotting from a previously saved menu (accomplished by pressing the SAVE MENU softkey), just press the GET MENU softkey to read in the menu and data; then press the PLOT softkey to actually produce the plot.

If plotting from a data file, you must specify the row/column structure of the data. To do this, type one of the following designators in the File Type field:

R or r	for a CP/M file in row format
C or c	for a CP/M file in column format
V or v	for a VisiCalc program file stored by row or column
blank	defaults to column format

VisiCalc™ is a trademark of Personal Software Inc.
CP/M® is a registered trademark of Digital Research

If you are uncertain what the data structure is, you can press the VIEW FILE softkey. Up to 23 lines will be read from the file to the display. The View File feature does not fill the menu, so you must return to the main menu by striking the [↖] key. When back in the menu, supply the appropriate designator for the File Type field.

Refer to the following guide when examining the data structure:

'R' and 'C' formats must have blanks as separators.

'C' type file:

```
Computers  72  64  51  43
Test & Meas.  74  69  62  58
Calculators  52  47  39  19
Medical  34  31  29  35
Peripherals  28  22  18  14
```

'R' type file:

```
Computers,Test & Meas.,Calculators,Medical,Peripherals
72 74 52 34 28
64 69 47 31 22
51 62 39 29 18
43 58 19 25 14
```

'V' type files:

'V' type files are VisiCalc Data Interchange Format (DIF™) files. Note that this file is generated by using the S#S command in VisiCalc - It is not likely that you will want to build such a file with an editor or word processor, but is is shown here so that you can recognize its format. For clarity the sample file below has been broken into three columns and should be viewed as a continuous stream starting with the left column.

Header Items	Data Items	
TABLE	-1,0	-1,0
0,1	BOT	BOT
""	0,72	0,43
VECTORS	V	V
0,5	0,74	0,58
""	V	V
TUPLES	0,52	0,19
0,4	V	V
""	0,34	0,25
LABEL	V	V
1,1	0,28	0,14
"Computers"	V	V
LABEL	-1,0	-1,0

DIF™ is a trademark of Software Arts, Inc.

```
1,2                      BOT        EOD
"By GSD"                 0,64
LABEL                    V
2,1                      0,69
"Test & Meas."          V
LABEL                    0,47
2,2                      V
"By IDG"                 0,31
LABEL                    V
3,1                      0,22
"Calculators"            V
LABEL                    -1,0
3,2                     BOT
"From Corvalis"          0,51
LABEL                    V
4,1                      0,62
"Medical Instruments"   V
LABEL                    0,39
4,2                      V
"From Andover"            0,29
LABEL                    V
5,1                      0,18
"Peripherals"            V
LABEL
5,2
"From Boise"
DATA
0,0
```

Refer to the VisiCalc/125 Manual regarding the storage of DIF files and their format.

LABEL IN AND VALUE IN FIELDS

The pie chart program contains two additional fields:

'Label in' - You fill this field with an integer 1 to n to indicate in which column (of the VisiCalc worksheet) the labels are located.

'Value in' - You fill this field with an integer 1 to n to indicate in which column the currently desired values are located.

Now that you have identified the data structure, press the GET DATA softkey to read the data into the menu, and then press the PLOT softkey to execute the actual plot.

Linear Charts

Linear charts can be plotted in several ways. Probably the most likely is from a previously saved menu with associated data. In this case, all you have to do is type the file name in the FILE NAME field, and then press the GET MENU softkey followed by pressing the AXIS and PLOT softkeys.

Plotting from Separate Menu and Data Sources

Of course you could have saved a menu without any data - the intention of which was to provide the data later by typing it into display memory or referencing a VisiCalc file.

To access a menu without data, type the file name into the FILE NAME field at the top of the main menu. Then press the GET MENU softkey. After the menu is read, you press the DATA PAGE softkey and type the data into display memory. To execute the plot, press the AXIS and PLOT softkeys.

If the data is to come from a file, type the name in the FILE NAME field. Then press the GET DATA softkey to load the data onto the data page. Next press the DATA PAGE softkey to examine the data. Return to the main menu to fill in the FILE TYPE field by pressing the MAIN MENU softkey.

Direct Plots from Data File

If the type of file is already known, you can plot the data directly by doing the following:

1. Access the menu file or type it in as described above.
2. Provide the data file name and type in the DATA FROM and FILE TYPE fields.
3. Press the AXIS and PLOT softkeys. With this technique, you do not use the GET DATA function.

Refer to the following when examining data for file type:

D or d	for display formatted files
V or v	for VisiCalc files
blank	defaults to 'D' if there is a file name specified in the 'Source' field.

LINEAR Charts file type 'D' format:

1965	5.1	0	0	5.1
1966	9.3	0	0	9.3
1967	13.2	3	0	16.2
1968	16.9	5.9	0	30.9
1969	15.2	6.3	1.3	22.8
1970	19.7	10.1	4.5	34.3
1971	23.6	12.9	9.3	45.8
1972	15.2	16.8	12.7	44.7
1973	8.3	20.9	19	48.2
1974	0	27.5	22.4	49.9
1975	0	35.4	29.1	64.5

LINEAR Charts 'V' format is the same as described above. If the VisiCalc DIF file was stored by rows, particular attention must be paid to the PLOT SPECIFICATIONS section of the LINEAR CHARTS MENU. Note that the Linear Charts function normally expects the data to be stored by columns, so the menu requests the number of columns and the column numbers of the x and y data. However, if the data was stored by row, these menu entries do not appear to be appropriate. The solution is to mentally replace the word "column" with "row" and specify the number of rows and the correct row location of the x and y data. GRAPHICS will be able to determine from the DIF file that the data is row oriented.

Saving Data

If you want to save data typed on the data page, it can only be saved with the menu by providing a file name in the FILE NAME field and then pressing the SAVE MENU softkey. To retrieve the data, use the same file name to access the menu with the GET MENU softkey. Both menu and data will be placed in memory, and you can modify either to produce a plot.

CHAPTER 8

MAKING A SLIDE

SLIDE is a versatile program with text formatting and plotting capabilities. Step-by-step instructions and practice exercises are provided to help you understand each programming feature.

Slide Example

Step 1. SELECTING THE PROGRAM. Upon system startup or restart the Graphics/125 application program selection softkeys are displayed. Press the SLIDE softkey to enter the slide generation program.

Step 2. FORMATTING THE TEXT.

a. Viewing the menu. The SLIDE menu covers two pages. To survey the remainder of the menu not shown on the screen you can flip through each page by pressing the [NEXT PAGE] or [PREV PAGE] keys or you can scan through the lines by pressing and holding the [ROLL UP] or [ROLL DOWN] keys.

b. Positioning the cursor. When the cursor is in the area below the solid line below the annotation field, pressing the [↖] key moves the cursor to the leftmost character position of the first line. From this location, the cursor can be moved to the (H/V) field by pressing the [↖], and to the File Name field by pressing it once more.

Use the [TAB←], [SHIFT] [TAB⇆] to skip the cursor backward to the previous field.

Note that the tabs must be set in SLIDE by using the SET TABS and CLEAR TABS softkeys displayed below the menu.

c. Filling in the slide menu. Fill in your menu with the information in the sample menu. Each menu field is explained in detail below.

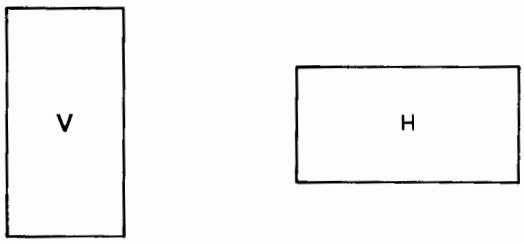
```
SLIDE   File Name: SMENU.SLD          | Horizontal/Vertical (H/V) H | S J P F
                                      | Margin:  Left 05 , Right 05 | i.u e o
                                      | Frame Pen#? 1  Plotter? YES | z s n n
========+========+========+========+========+========+========+======= e t # t
Annotation:  3/30/81                                                  |S R 1 N|
GRAPH/125 SLIDE                                                       |L C 1 R|
Overhead Transparency Preparation                                     |M      |
                                                                      |     N |
* Menu-driven                                                         |  L    |
* Full editing (tab, insert, delete, etc.)                            |       |
* Four character fonts                                                |       |
    Roman                                                             |     R |
      Normal                                                          |     N |
        Slanted                                                       |     S |
           Italics                                                    |     I |
* Selectable character sizes                                          |     N |
* Selectable justification                                            |       |
                                                                      |       |
Left-justify                                                          |S L 2  |
Center-justify                                                        |  C 3  |
Right-justify                                                         |  R 4  |
                                                                      |       |
* Automatic pen (color) selection                                     |M L 1  |
                                                                      |*      |
PLOT | | SET TAB | CLEAR TAB | 6 | 1 | | GET MENU | SAVE MENU | END
```

The Slide Menu

The first three lines of the menu contain the document specification fields.

Horizontal/Vertical (H/V)

Indicate the alignment of the document on the plotter.



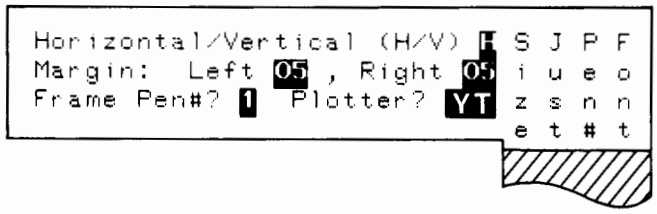
The default setting 'H', appears in the field when the SLIDE menu is requested.

Margin: Left, Right

The numbers you enter here define the left and right margins of the text relative to the edges of the document. A common margin setting, '05' or 5 units, appears in both specification windows when the menu is requested. If the field is blank, the margin setting is '00'.

Frame Pen#?

If you enter a digit 1 through 8, SLIDE instructs the plotter to draw a solid line border around the document using the pen associated with that number. Frames do not affect the left and right margins specified for the text, but they do determine the position of the first line of text. If a frame is specified, the first line of text is positioned such that it is contained within the boundaries of the frame. Entering a '0' in this field enforces the same constraints on the first line of text, but suppresses the plotting of the frame. Leaving the field blank also inhibits the frame but allows the text to begin on the very first line of the transparency or paper.



Plotter?

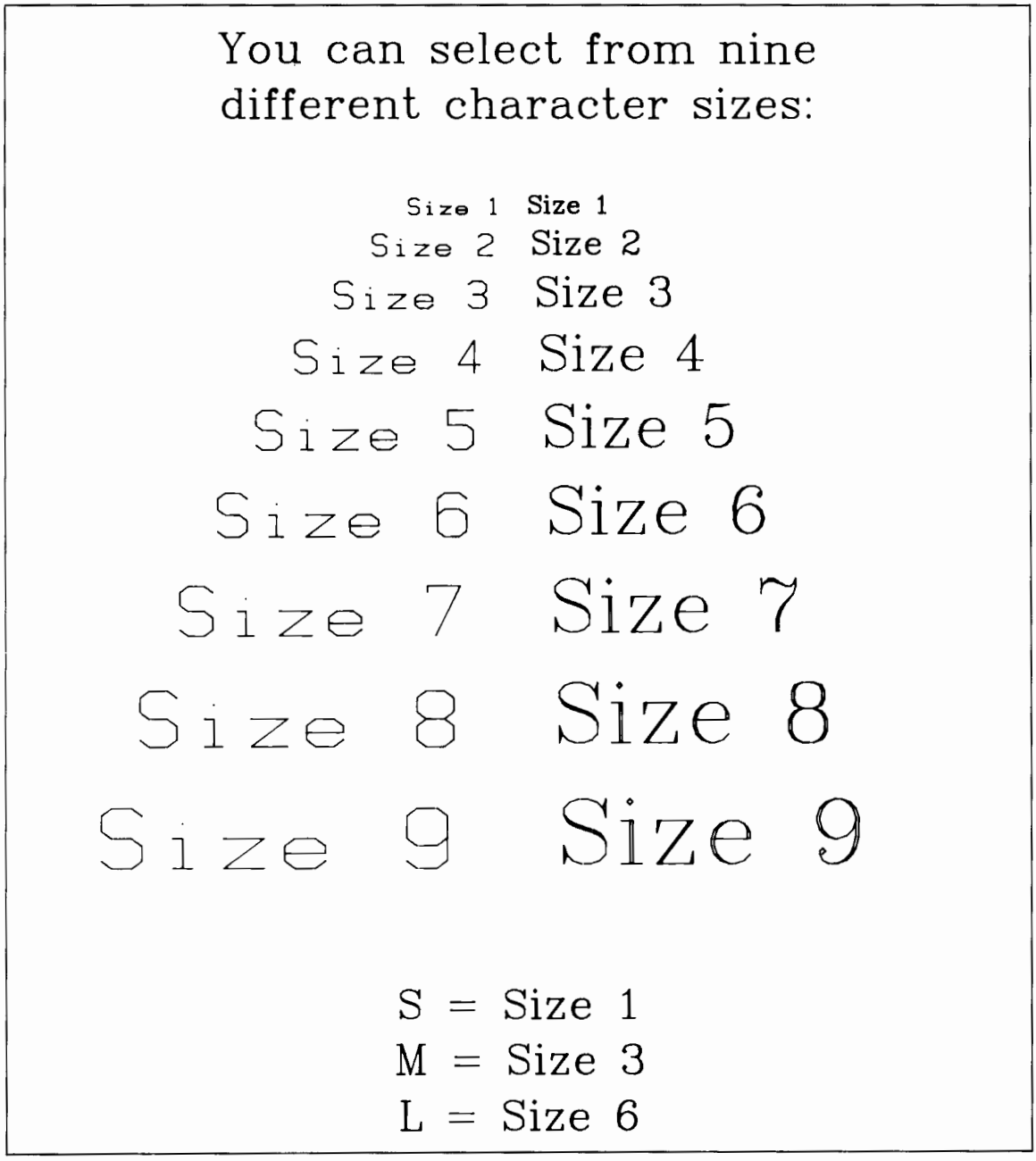
Enter the address of the plotter or 'Y' (yes) if the address is 5. Leave the field blank if you wish to have the slide drawn on the screen to verify the overall layout. When you are ready to draw the slide using the plotter, enter the plotter's address followed by a 'T' if you are making an overhead transparency. The 'T' directs SLIDE to slow down the speed of the plotting pen to ensure that the ink flows evenly over the surface of the acetate sheet. Selecting an 'F' in the Plotter? field requests a fast plot if a valid address accompanies it. A fast plot ignores font and pen number specifications and uses only normal font and pen #1. This feature allows you to do a quick test plot of slides using the slow drawing italic and roman character fonts.

The large unshaded area beneath the solid line is reserved for lines of text. To the right of the text area is a column containing four text specification fields, Size, Just, Font, and Pen#, for each line of text.

Size

The text may be set in one of 9 sizes. Enter any integer from the interval 1 through 9 (1=smallest and 9=largest), or enter one of the alpha-characters S, M, or L (S=size 1, M=size 3, and L=size 6).

Since the character size also determines the vertical spacing of a line of text, you may use this field to set the vertical spacing of a blank filler line.



Just

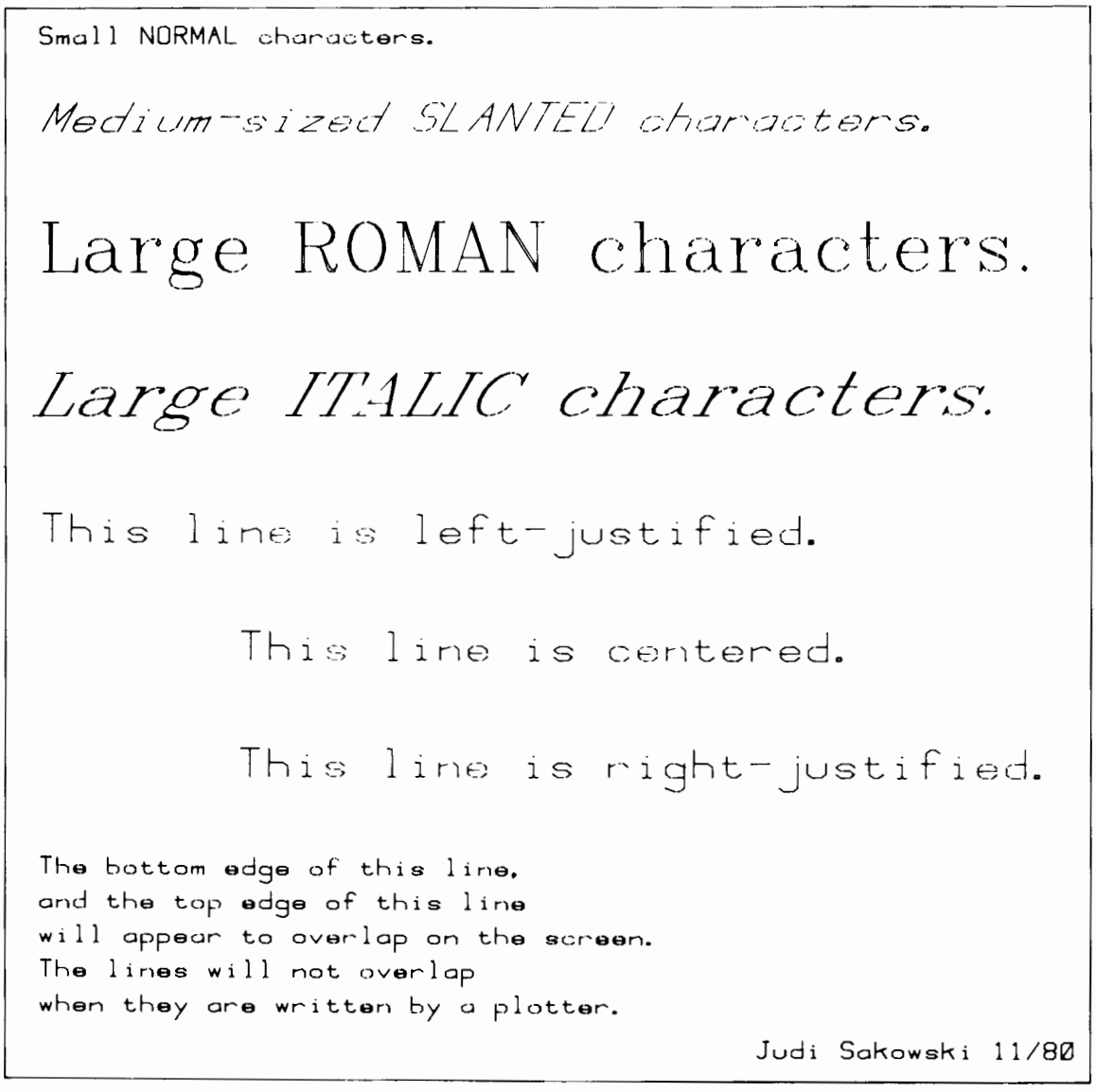
Your entry in the justification field indicates the desired arrangement of the text within the right and left margins. L=left-justified text, R=right-justified text, C=centered text.

Pen#

You can direct the plotter to use a specific (color) pen when it sets the corresponding line of text. Enter a digit 1 - 8. These numbers refer most specifically to the HP9872 plotters. The HP7255B plotter will prompt you to change pens.

Font

The plotter is capable of plotting text in four type faces. The choices and their proper codes are identified below:



N=normal face, S=slanted or italicized normal face, R=roman face, and I=italicized roman face.

Annotation

This field is located above the solid line that begins the text area on the first "page" of the menu. Whatever characters you enter here will appear as the last line of text within the boundaries of the frame (whether or not a frame has been specified). The Annotation is also right- or left-justified against the predetermined margin of the frame. Note: the [TAB] key does not function in this field. you must use the alphanumeric cursor control keys: [→], [↑], [←] and [↓] in this field.

Default Specifications for Fields: Size, Just, Pen#, Font

When the SLIDE menu is originally requested, the default specifications are displayed in the first row of the four columns. A specification remains in effect for all subsequent lines of text until it is changed.

Signalling End-of-Text

If you have substantially less than the possible 40 lines of text in the menu, it is a good idea to enter an asterisk in the Size field in the row below the last line of text. (See sample menu.) This signal reduces the amount of time required to draw a slide because it tells SLIDE not to examine the remaining lines of the menu for text. For convenience in previewing text or placing comments in the menu (that will not appear on the plot), a dollar sign ($) can be placed in the 'size' field of a line to tell the program to skip this line and all subsequent lines up to and including the next dollar sign (or asterisk).

Step 3. PREVIEWING THE SLIDE ON THE SCREEN.

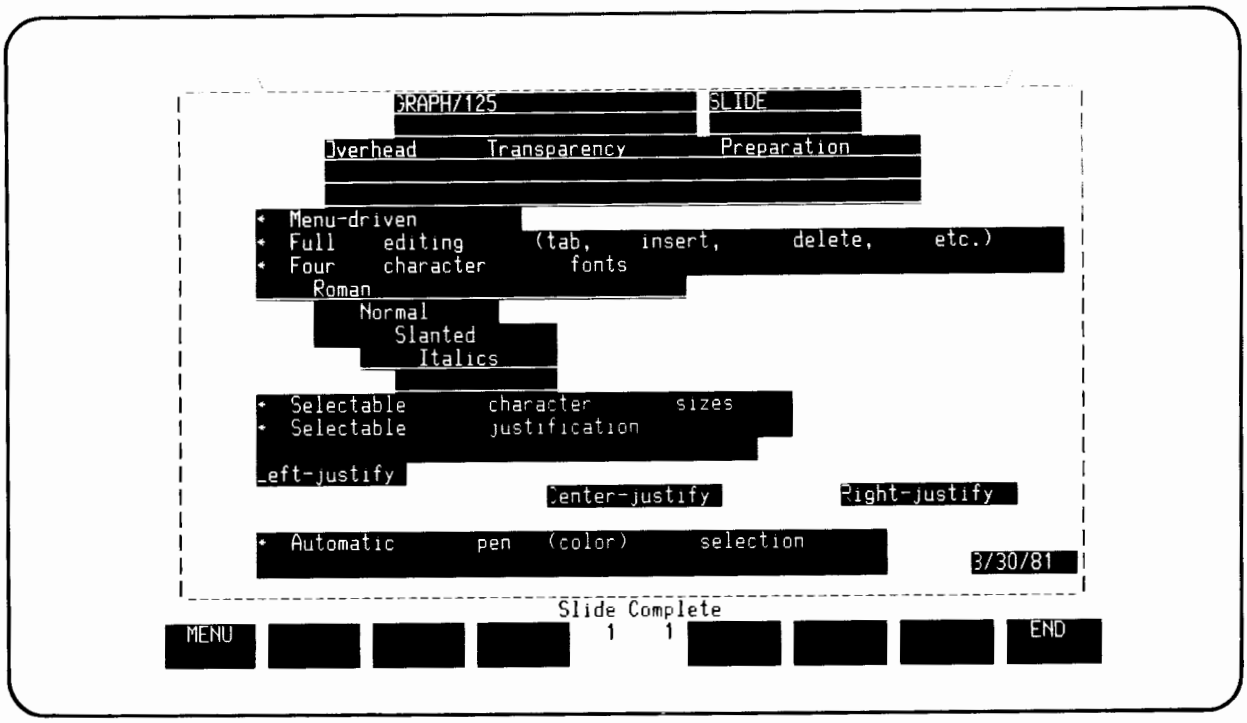
As you are setting up the text in your menu, you will typically want to verify the format before making a hardcopy of the slide.

a. Be sure to leave the Plotter? field blank for a preview.

b. Press the PLOT softkey. The preview, if selected, starts by drawing the plotter outline and two margin indicators ('\','/') at the top. Then an enhanced field is printed for each word in the text with as many characters as will fit on the first line of that field. Fields from line to line or from word to word may overlap. This is due to lack of resolution in going from plotter coordinates and will not affect the outcome of the plotted slide. But if lines are outside of the plotter area, as indicated by '<' or '>' marks, this indicates that an attempt to cross plotter boundaries would occur. SLIDE will also indicate if the data is too long for the plotter by placing a row of 'v's below the plotter outline.

The enhancements are defined as follows:

Normal Text = Full Bright, Inverse Video
Slanted Text = Half Bright, Inverse Video
Roman Text = Full Bright, Inverse Video, Underlined
Italic = Half Bright, Inverse Video, Underlined



c. The plot can be stopped at any time by pressing the END softkey. The plot must be restarted from the beginning after returning to the main menu.

If END is pressed while SLIDE is drawing a preview, you may either press the MAIN MENU softkey to return to the menu or press the END softkey a second time to exit SLIDE.

Step 4. ALTERING THE SLIDE MENU. Return to the menu by pressing the MAIN MENU softkey. Make any necessary alterations.

Step 5. DRAWING THE SLIDE ON THE PLOTTER.

After you are satisfied with the format of the slide on the screen, return to the SLIDE menu.

a. Verify the horizontal or vertical entry in the H/V field.

b. Enter "Y" or the correct plotter address in the Plotter? field. Note: You do not need to set the pen points of the plotter. SLIDE is programmed to plot the text in an 8-1/2 x 11 area.

c. Press the PLOT softkey. Use the END softkey if you need to terminate the plotting operation prematurely.

Special Features

Changing Specifications within a Line of Text

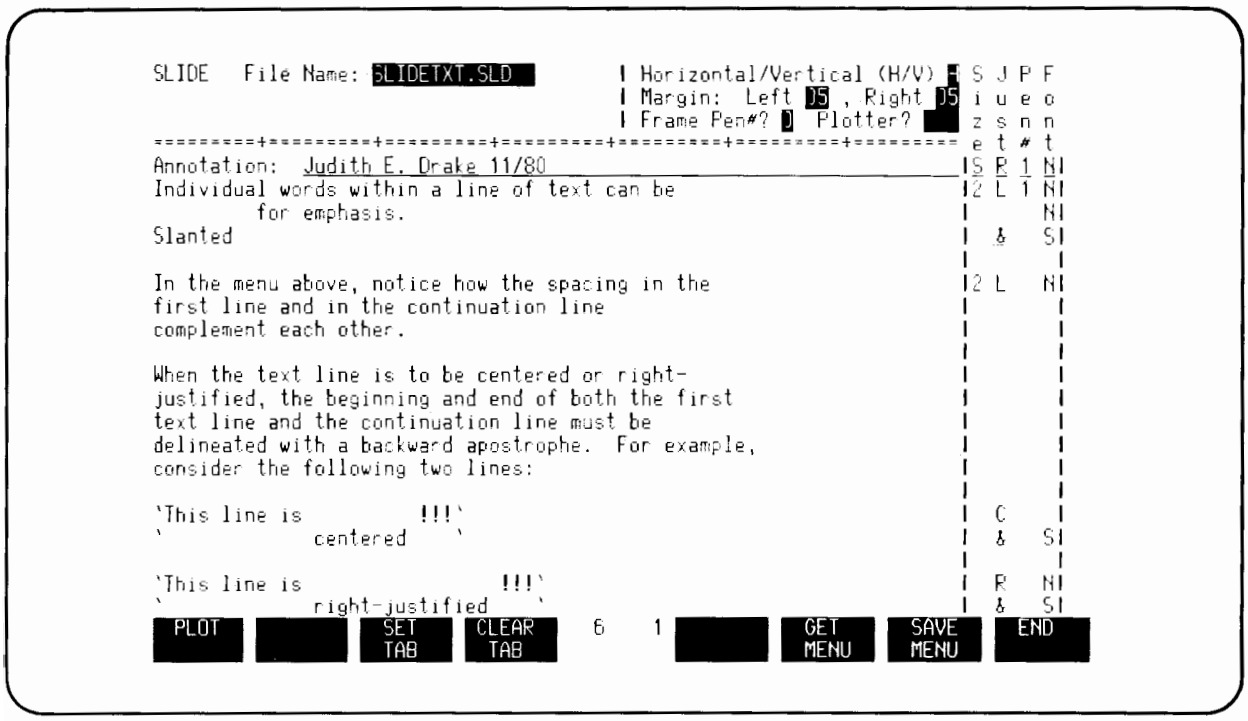
SLIDE allows you to change the character size, pen number, and font within a single line of text.

Step 1. Place text requiring a unique format change or a unique combination of format changes on separate lines. Allow space at appropriate positions on each line to accommodate the missing text. Locate the missing text below the appropriate reserved space on the next available blank line (hereafter referred to as a "continuation" line).

Step 2. Make the necessary changes in the specification fields of each continuation line, and enter an ampersand (&) in the Just field to indicate that the adjacent line of text belongs on the same line as the previous lines of text.

Changing specifications within a line of text that is centered or right justified. When SLIDE centers or right-justifies a line of text, it identifies the text unit as beginning with the leftmost non-blank character and ending with the rightmost non-blank character. Normally, this character would cause problems when attempting to fit continuation lines into right-justified or centered text, however, SLIDE will recognize leading and ending blank characters as part of the text unit if they are set off with a backward apostrophe (`).

The benefit of this feature is demonstrated in the following example:



Individual words within a line of text can be
slanted for emphasis.

In the menu above, notice how the spacing in the
first text line and in the continuation line
complement each other.

When the text line is to be centered or right-
justified, the beginning and end of both the first
text line and the continuation line must be
delineated with a backward apostrophe. For example,
consider the following two lines:

This line is *centered* !!!

This line is *right-justified* !!!

Judith E. Drake 11/80

While word spacing for changes in pen number is straightforward, changes in character size or font require a bit of experimenting. In such cases, plot the slide on the screen to see how the various continuation lines mesh together, and then return to the menu and make any necessary adjustments.

Using Pen # Zero

By entering '0' in the Pen# field, you can reserve space for a line of text without printing it. This capability allows you to include additional text on a slide you have already drawn on a plotter.

Step 1. Place the document back onto the plotter. Return to the menu via the MENU softkey and clear the Plotter? field.

Step 2. Press the PLOT softkey to dispay the original layout on the screen.

Step 3. Return to the menu and change all the Pen# field entries to zeros (including Frame Pen#, unless that field is blank).

Step 4. If you are entering new text, remove the asterisk (the end-of-text flag) if necessary, and enter the new line of text and a corresponding non-zero pen number.

Step 5. Return to the menu and enter the correct specification in the Plotter? field. Press the PLOT softkey. SLIDE will correctly position the new item(s) without damaging the rest of your document.

Saving and Retrieving Slide Disc Files

SLIDE menus can be stored and retrieved from disc files by using the GET MENU and SAVE MENU softkeys displayed during the PLOT command level.

Enter a Filename in the Filename field and press the desired function.

If a file exists, a message will appear asking you to confirm that you wish to destroy it and create a new one with the same name.

If you change the name of a menu file that you have just accessed, the new name will be used when the file is saved.

APPENDIX A

INSTALLING HP PLOTTERS

To connect a plotter to the HP 125, perform the following steps:

1. Position the plotter next to the System Processor. Attach the plotter cable (HP-IB cable) to the HP-IB connector located on the rear of the plotter. Connect the other end of the plotter cable to the HP-IB connector at the right rear of your System Processor by securing the screws (refer to Figure A-1). Notice, there is only one way to connect the HP-IB connector; therefore do not force the connector.

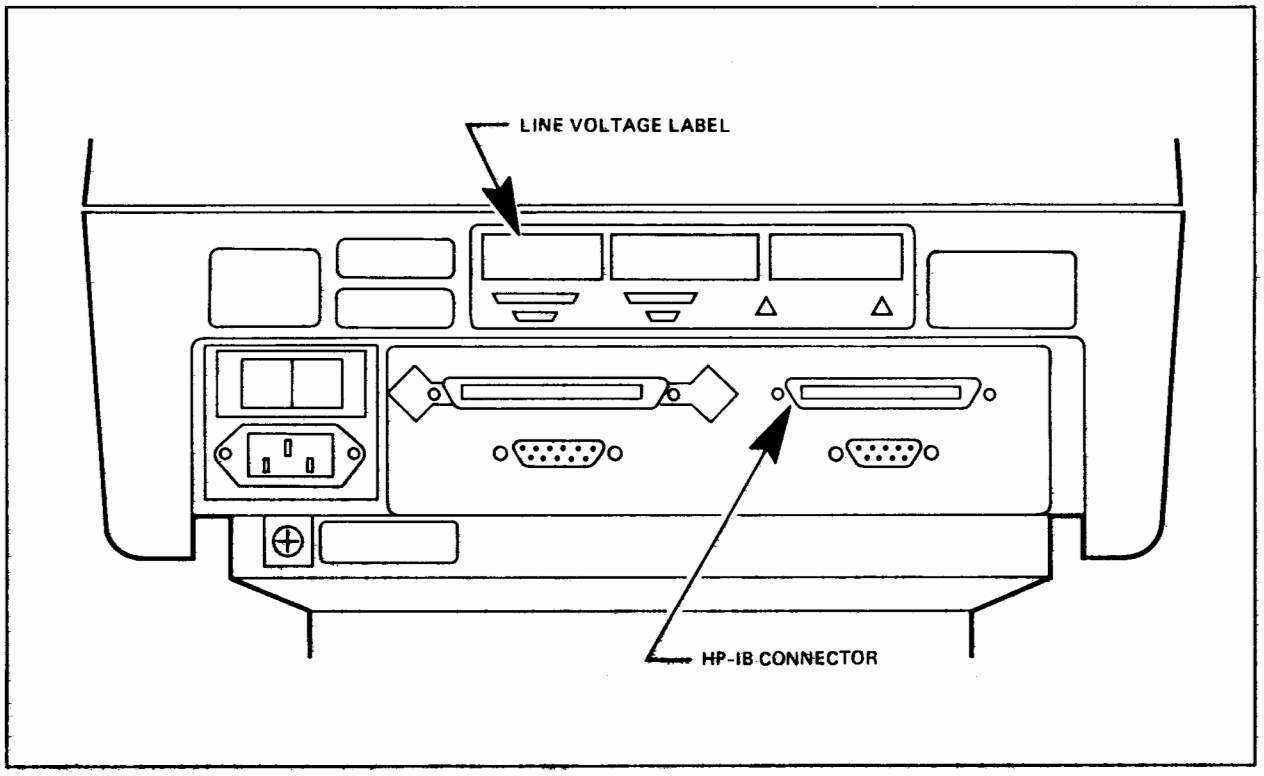


Figure A-1. HP 125 Rear View.

2. Locate the switches labeled ADDRESS on the back of the plotter. With a 7225B or 9872C, set the address by moving switch A1 and switch A3 to the up position (address "5"); swithes A2, A4 and A5 should be set the down position.

   With a 7470A, set the address by pressing on the top portion of switches 1 and 3; switches 2, 4 and 5 are set off by pressing on the bottom portion of the switch. Refer to Figure A-2. (Note: Switch 6 is not used, and switch 7 is used to establish the maximum plotting limits.)

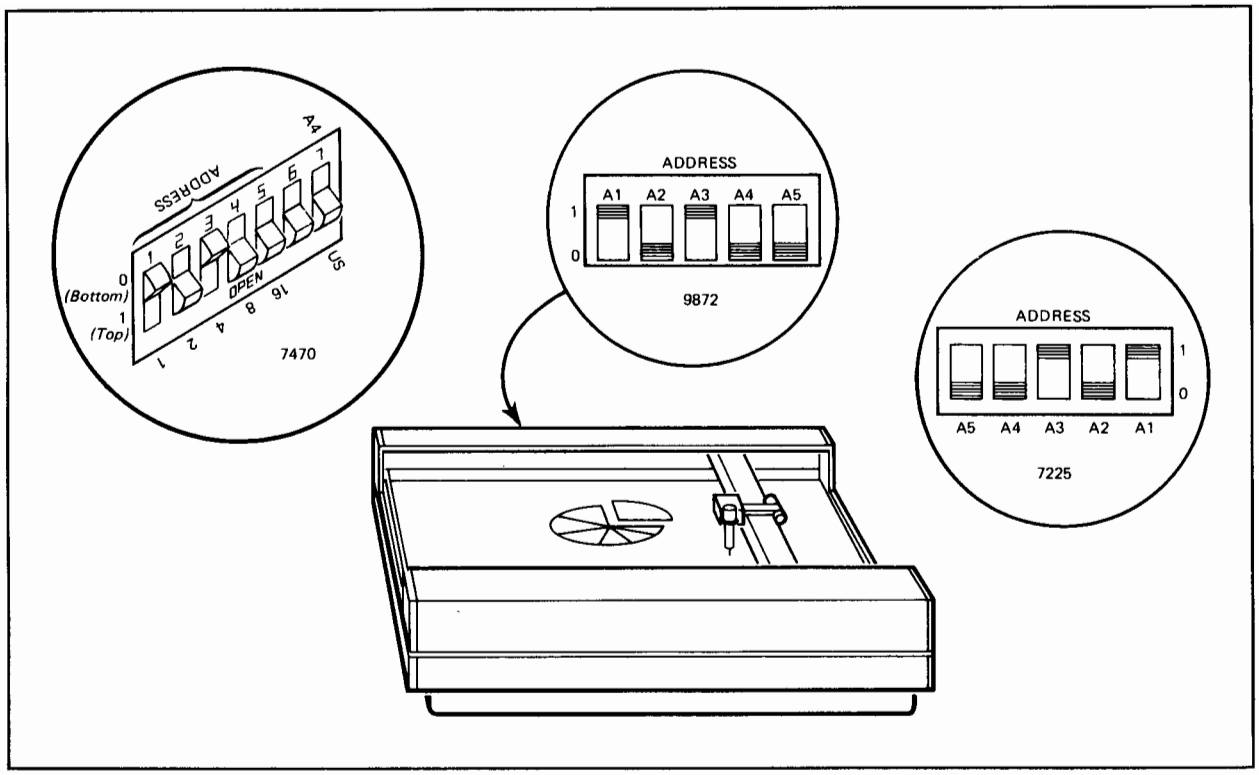


Figure A-2. Plotter address setting.

3. Make sure the POWER switch is OFF. Connect the power cord from the plotter to the power outlet.

4. Set the power switch on the plotter to the ON position.

The plotter is now ready to use! For further instructions on using the plotter, refer to the appropriate Plotter Operator's Manual.

READER COMMENT SHEET

HP 125 Business Assistant
GRAPHICS/125

45532-90000 **July 1981**

We welcome your evaluation of this manual. Your comments and suggestions help us improve our publications. Please use additional pages if necessary.

Is this manual technically accurate?	Yes ☐ No ☐	(If no, explain under Comments, below.)
Are the concepts and wording easy to understand?	Yes ☐ No ☐	(If no, explain under Comments, below.)
Is the format of this manual convenient in size, arrangement, and readability?	Yes ☐ No ☐	(If no, explain or suggest improvements under Comments, below.)

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