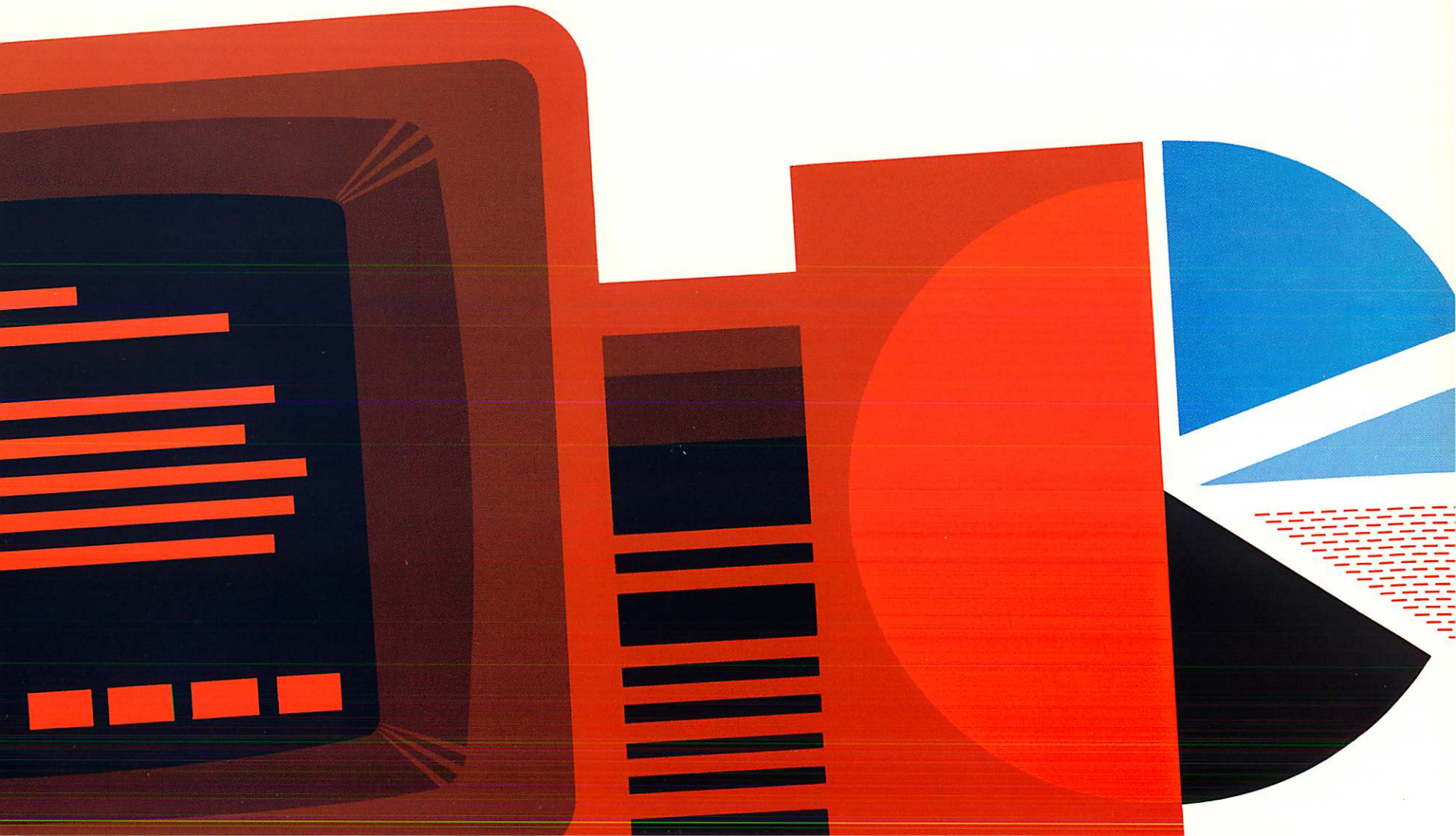
# HPEASYCHART
# Reference Guide

HEWLETT PACKARD



HP 3000 Computer Systems

# HPEASYCHART

## Reference Guide

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# PRINTING HISTORY

New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The dates on the title page change only when a new edition or a new update is published. No information is incorporated into a reprinting unless it appears as a prior update; the edition does not change when an update is incorporated.

The software code printed alongside the date indicates the version level of the software product at the time the manual or update was issued. Many product updates and fixes do not require manual changes and, conversely, manual corrections may be done without accompanying product changes. Therefore, do not expect a one to one correspondence between product updates and manual updates.

| | | |
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# LIST OF EFFECTIVE PAGES

The List of Effective Pages gives the date of the most recent version of each page in the manual. To verify that your manual contains the most current information, check the dates printed at the bottom of each page with those listed below. The date on the bottom of each page reflects the edition or subsequent update in which that page was printed.

| Effective Pages | Date |
|---|---|
| All | Jan 1984 |

Hello, and welcome.

Please take a moment to read this information.

HPEASYCHART is a chart-making tool that allows the user to produce line charts, bar charts, pie charts, and scatter charts within a few minutes. No previous experience is required.

HPEASYCHART is a subsystem of the HP 3000, and is a member of the HP Office Product Graphics family.

## How To Use This Manual

**Section 1** is a self-paced course in the design of a stacked bar chart. It begins with logging on to the system and takes the user through the process of filling out menus, saving charts, and plotting them.

The course is divided into two parts since the time you have to take the course may be limited. At the end of Part 1, the user will be able to design, save, and plot a single chart to a piece of paper. Part 2 teaches chart modification, saving the modified chart under a different name, and plotting two charts to a single page.

Section 1 is designed for new users and those who need a review of chart design methods from time to time. It should not take more than an hour to complete both parts.

**Section 2** lists the features of HPEASYCHART, and discusses how it is run on HP terminals. It provides instructions on how to use HPEASYCHART with other HP Office Products and contains suggestions for selecting chart types as well as reference information which will be of use to more experienced users.

**Section 3** covers all the menus in the EZCHART program field by field. Examples of the chart types clearly demonstrate the effects on the finished chart of each specification entered on the menu. This section provides users with review materials and invites them to try different types of charts for different purposes.

**Appendix A** reviews invoking EZCHART using the INFO string with the MPE :RUN command.

**Appendix B** contains information about default (pre-set) values for plotting colors, pen numbers, and textures.

**Appendix C** summarizes data entry field limitations.

**Appendix D** contains information on peripheral specifications.

# CONVENTIONS USED IN THIS MANUAL

| NOTATION | DESCRIPTION |
|---|---|
| ⟨ ENTER ⟩ | May be used to illustrate specific keys on the terminal keyboard corresponding to the label within the symbol, such as the ⟨ ENTER ⟩ key. On some terminal keyboards, abbreviated key labels may differ. |
| `Function Label` | May be used to illustrate specific function labels currently assigned to the special function keys labeled `f1` through `f8` on the terminal keyboard. |
| OR, | |
| `Function` | |
| `nonitalics` | Words in syntax or format statements which are not in italics must be entered exactly as shown. Punctuation characters other than brackets, braces and ellipses must also be entered exactly as shown. For example:<br>`EXIT;` |
| *italics* | Words in syntax in lowercase italics denote a parameter which must be replaced by a user-supplied variable. For example:<br>`CLOSE` *filename* |
| [ ] | Within syntax, an element inside brackets is optional. Several elements stacked inside brackets means the user may select any one or none of these elements. For example:<br>[A / B] User *may* select A or B or neither. |
| { } | Within syntax, when elements are stacked within braces the user must select one of those elements. For example:<br>{A / B} User *must* select A or B. |

( )

Elements *within* parentheses *within* a word or a parameter in syntax or format statements are not entered by the user and appear for identification purposes only. For example:

| | |
|---|---|
| C(OMMAND) | User enters C *only.* |
| Y(*es*) | User enters Y *only.* |

...

Within syntax, a horizontal ellipses indicates that a previous element may be repeated. For example:

```
[,itemname]...;
```

underlining

When necessary for clarity in an example, user input may be underlined. For example:

```
NEW NAME? ALPHA
```

In addition, brackets, braces or ellipses appearing in syntax or format statements which must be entered as shown will be underlined. For example:

```
LET var[[subscript]] = value
```

Δ

When necessary for clarity, the symbol Δ may be used to indicate a required blank or an exact number of blanks. For example:

```
SET[(modifier)]Δ(variable);
```

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# A Quick Course In Chart Design

# SECTION 1

**Welcome to HPEasyChart.**

Even if you have never designed a chart before, you'll be able to design and plot a bar chart after this brief introductory course. You can complete it on your own, and it will require no additional instructions.

The HPEasyChart program, EZCHART, lives up to its name — it's easy to learn and easy to use.

# The Course Design

## Part One

To design a chart, review it on your terminal screen, save it for future use, and plot it on your plotter, you will need to complete the steps listed below. If your primary objective is simply to design a chart and draw it on a plotter, some of these steps are not necessary. The optional steps are indicated.

**Step 1.** Log On and Run EZCHART

**Step 2.** Select a Chart Type

**Step 3.** Fill Out the Chart Design Menu

**Step 4.** Plot the Chart to the Terminal Screen (Optional)

**Step 5.** Save the Chart (Optional)

**Step 6.** Plot the Chart to a Plotter

**Step 7.** Exit from EZCHART

## Part Two

A second part of the short course will take you through the additional steps needed to recall the chart you made, add to and edit it, save the newly revised chart under a different name, and plot the two charts side by side on a single sheet of paper. The steps you will cover, listed in order, are:

**Step 8.** Log On and Run EZCHART

**Step 9.** Recall Chart

**Step 10.** Edit and Add to Chart

**Step 11.** Save the Modified Chart

**Step 12.** Plot Two Charts to a Single Page

**Step 13.** Exit from EZCHART

## The Self-Paced Training Program

Self-paced training emphasizes doing. You should arrange for a minimum of a half hour to complete Part 1. The second part will probably not take as long. Once you start, try to finish one part without stopping and without skipping ahead. Even if you are quite certain that you can skip steps, make an effort to complete the course as presented.

Once you have successfully completed the two parts, and the exercises that conclude each part, you will be able to design charts using the capabilities and convenience of EZCHART. This training focuses on a single chart type — the Vertical Stacked Bar Chart — but the methods used to design any of the other types are essentially the same and the skills transfer quickly.

To get the most from the course, you should have a graphics terminal — the 2623A, 2627A, 2647A, 2647F, 2648A, or 2703 — and a plotter with pen(s) and paper.

If at any time you feel confused, stop and go back to the step where the confusion started. The problem may be a misunderstood instruction on the menu. The answer may be displayed on the terminal screen when you ask for Help, by pressing function key [f7]. If you make a mistake, you can correct it, or go back and start over. There is nothing you can do using EZCHART that will cause any serious problems to your computer or the program.

Making charts using EZCHART should be a pleasant experience. The more relaxed and comfortable you feel as you go through the training, the more interested you will be in experimenting with chart design. You will also find that charts are an effective means of presenting information in an attractive and easily understood visual form.

# Part One

You should be seated before your terminal.

In order to select a chart type, you must first log on to the system and run EZCHART.

# Step 1. Log On and Run EZCHART

Before you can run EZCHART you have to complete several basic steps. The first step is turning on your terminal.

The switch is located on the back. Find it and turn it to the ON position.

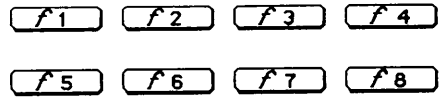
If you are using a 264X series terminal, you should also make sure that the REMOTE key, on the second row from the top, is depressed.

After a moment's pause, a short blinking line will appear on your screen. This line is called an alphanumeric cursor. It indicates where characters would appear on the screen if you began typing.

Before we continue, let's look at your keyboard so you will know where certain keys are and how they relate to information which will appear on your terminal screen.

## Graphics Terminal Keyboards

You need to familiarize yourself with the special keys at the top of the keyboard. Notice the keys that are labeled f1 through f8. They may appear in a single row, or in two short rows on the top right side of the keyboard, as follows:




These keys are called *special function keys* and you will be using them to tell the EZCHART program what you wish to do. Your choices are displayed on your screen.

## EZCHART Menus

When you have completed Step 1, EZCHART will display a form on your terminal screen. This form is called a Menu. EZCHART uses a number of menus to communicate with you, and each one performs a different task. Since each menu presents its own instructions and choices, you only need to reply to what you see on your terminal screen. See Figure 1-1.

At the bottom of each menu is a series of labels corresponding to the eight function keys. The labels tell you what function is assigned to each key for that menu. You do not have to memorize the functions since they are reassigned with each menu.

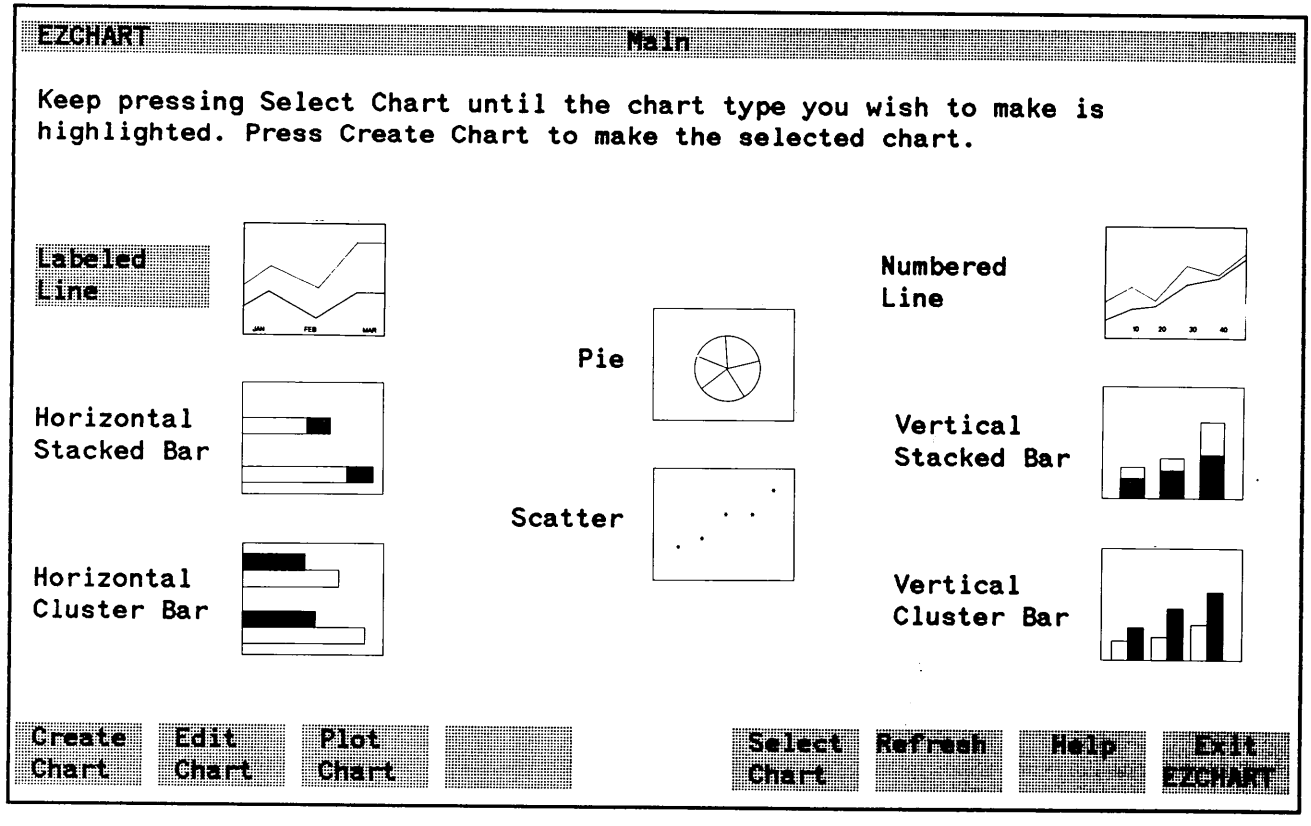



Figure 1-1. The Main Menu

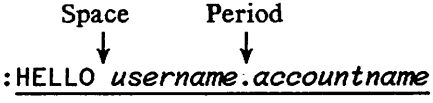
## Going To Work

When your terminal is on and the cursor indicates that it is ready, it is time to inform the computer that you wish to start working. To do this, you must identify yourself by signing on with a user name and account name.

First, press the RETURN key on your keyboard until a colon (:) appears on the screen.

Note that the cursor sits to the right of the colon (:_ ), and that the colon appears in the upper left hand corner of the screen.

Type the following, substituting your user and account names:




Press the RETURN key.

After a brief pause, the computer acknowledges your hello with a message.

```
HP3000 / MPE IV C.DO.20.   SUN, JAN 30, 1983,  2:51 PM

:
```

This indicates that you have successfully logged on. When a colon (:) appears following the message, the computer is ready to accept your next instruction.

You are ready to tell the computer system to run HPEasyChart's program, EZCHART. At the colon, type:

```
:RUN EZCHART.PUB.SYS
```

Press the RETURN key.

The first message you see will display the version of EZCHART available on your system, as follows:

```
EZCHART      (A.02.00) HP32109 (c) COPYRIGHT Hewlett-Packard Co.  1983

   DSG/3000 (A.03.00)
   V/3000   (B.03.20)
   AGL/3000 (A.03.00)
```

The screen will blank out and display a brief welcome message:

```
Welcome to EZCHART
```

After a brief pause, the Main Menu will be displayed.

You are ready for Step 2.

## Step 2. Select a Chart Type

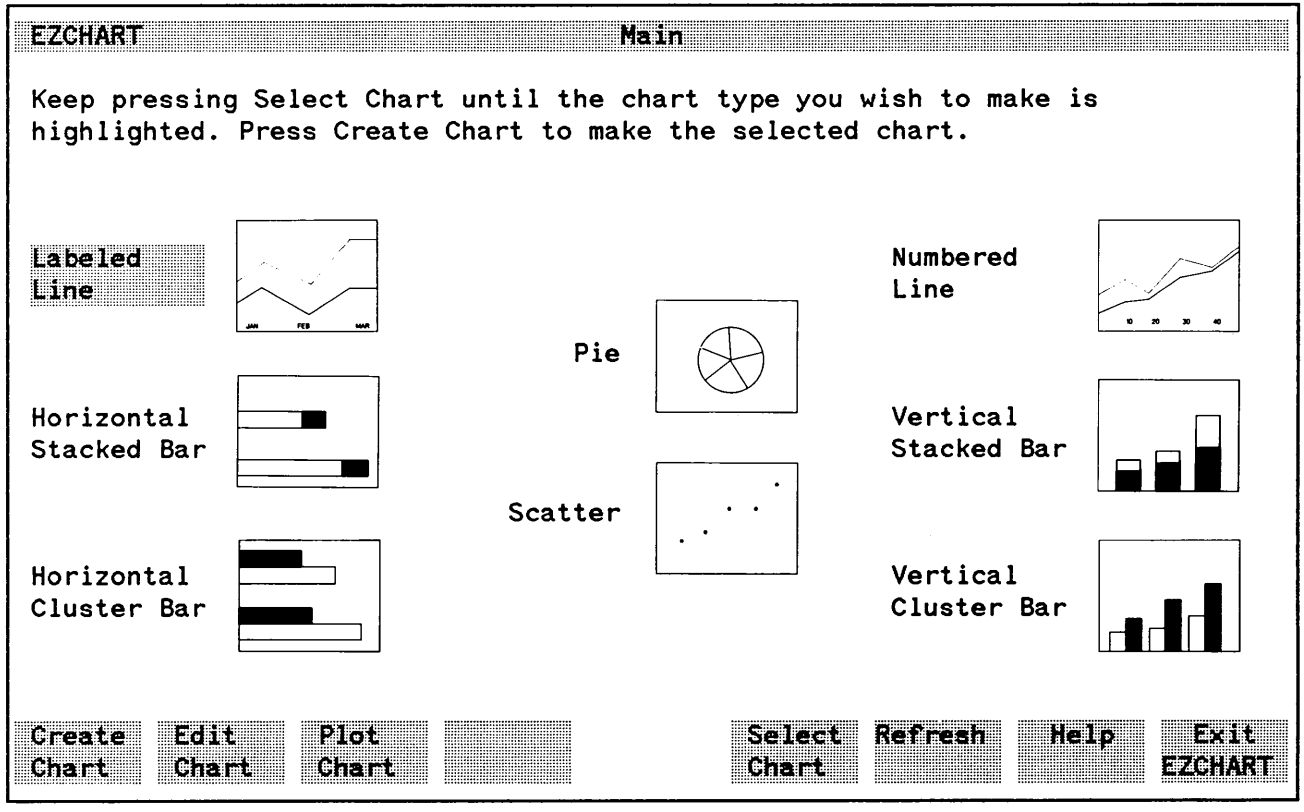



Figure 1-2. Labeled Line Chart Highlighted

You select your chart type by pressing the Select Chart function key, which corresponds with function key [f5] on your terminal keyboard.

**2.1.** Press **Select Chart**

Each time you press this key, the **highlight** moves to the next chart type. Try it.

Press the key until the **highlight** has gone through the complete cycle of chart types, then move the highlight to Vertical Stacked Bar and you are ready for the second part of this step.

**2.2.** Press `Create Chart`

This tells EZCHART that you want to create a chart of the `highlighted` type.

After you press Create Chart, the following message appears in the banner window at the top of your screen.

```
Setting up. ***
```

When the Bar Chart Design Menu appears on the screen, you are ready for Step 3.

## Step 3. Fill out the Chart Design

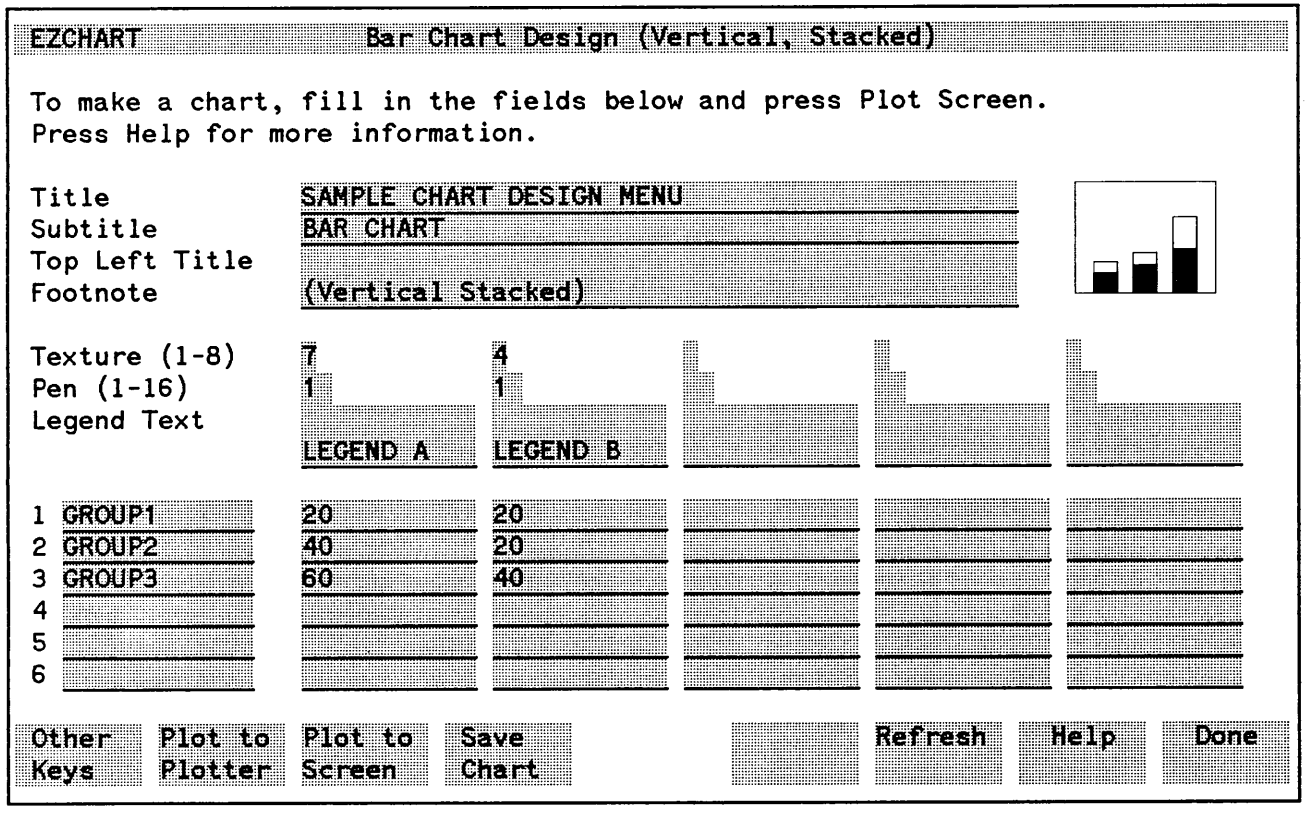



Figure 1-3. The Bar Chart Design Menu

Note that this menu is already filled out.

If you run into problems, use this sample menu to resolve them. Follow these steps:

**3.1.** Simply press **Plot to Screen**

Two messages appear on the menu banner.

```
Plot Screen
```

```
Preparing data. ***
```

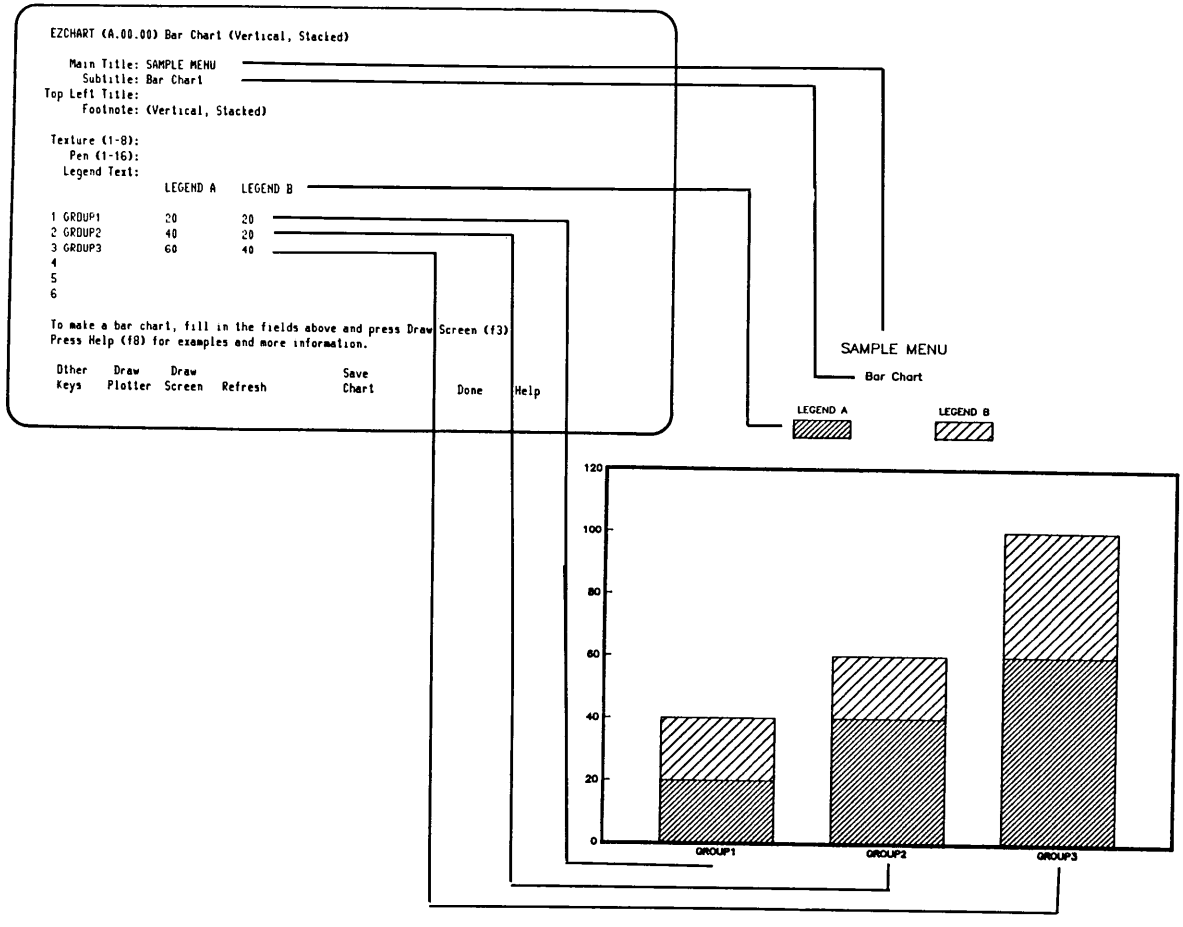



Figure 1-4. Relating Menu Fields to Chart Locations

Figure 1-4 associates the menu fields—some of which may not be immediately familiar—with the chart elements they represent. Since all EZCHART Chart Design Menus have values entered in them, you can always relate the fields to the chart by bringing the menu to the screen and pressing Plot Screen as you did here.

If you pressed Plot Screen to look at your chart, you will have to return to the Chart Design Menu to continue.

**3.2.** Press Done

Notice that the cursor is positioned in the first highlighted field, where the Title is to be entered. In this step you are to replace the sample information with the following new information.

| | | | | | |
|---|---|---|---|---|---|
| Title | PRODUCTS A & B | | | | |
| Subtitle | 1974 THRU 1976 | | | | |
| Top Left Title | | | | | |
| Footnote | COMPARING SALES OF PRODUCTS A & B | | | | |
| Texture (1-8) | 1 | 8 | | | |
| Pen (1-16) | 1 | 1 | | | |
| Legend Text | PRODUCT A | PRODUCT B | | | |
| 1 | 1974 | 465 | 200 | | |
| 2 | 1975 | 400 | 300 | | |
| 3 | 1976 | 290 | 500 | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |

**3.3.** Your cursor is already positioned for the title. Type:

PRODUCTS A & B

You type directly over the sample entries on the menu. You should space over (thus, blanking out) any of the old Title remaining after you have entered the new Title.

**3.4.** Press the **TAB** key. Note that the cursor moves to the beginning of the Subtitle field.

**3.5.** Type the new subtitle directly over the sample. Type:

1974 THRU 1976

**TAB** to Footnote. Note that you will have to **TAB** twice. The first tab moves the cursor to the Top Left Title. The second tab moves the cursor to the Footnote field.

**3.6.** Type directly over the footnote. Type:

COMPARING SALES OF PRODUCTS A & B

**TAB** to Legend Text. Note that the cursor moves through each Texture and Pen field to reach the Legend Text field. Since you are replacing information on the second line, you must tab until the cursor reaches the second Legend Text line.

**3.7.** Replace the sample legend text with:

PRODUCT A (type over LEGEND A)

PRODUCT B (type over LEGEND B)

---

**NOTE**

There are two lines available for Legend Text. Only the second line is used here. Both lines may be used, but the bottom line is generally preferred for maximum clarity when plotted.

---

**3.8.** **TAB** until the cursor reaches the highlighted field next to the number 1. Replace GROUP1 with 1974.

---

**NOTE**

Now that you have TABed through several fields, note that the cursor only moves within the highlighted areas on the menu. These areas are called *Unprotected Fields*, and are those areas on the menu where you can type in new information. The *Protected Fields* contain the headings, instructions, and information which cannot be deleted or typed over.

---

**3.9.** **TAB** to the next field (beneath the legend text PRODUCT A), and type: 465

**TAB** to the next field (beneath the legend text PRODUCT B), and type: 200

**TAB** until the cursor is located in the field next to the number 2.

**3.10.** Repeat the process above until you have entered the data for the years 1975 and 1976.

When your menu is complete, it should look like the example in Figure 1-5.

You are ready for Step 4.

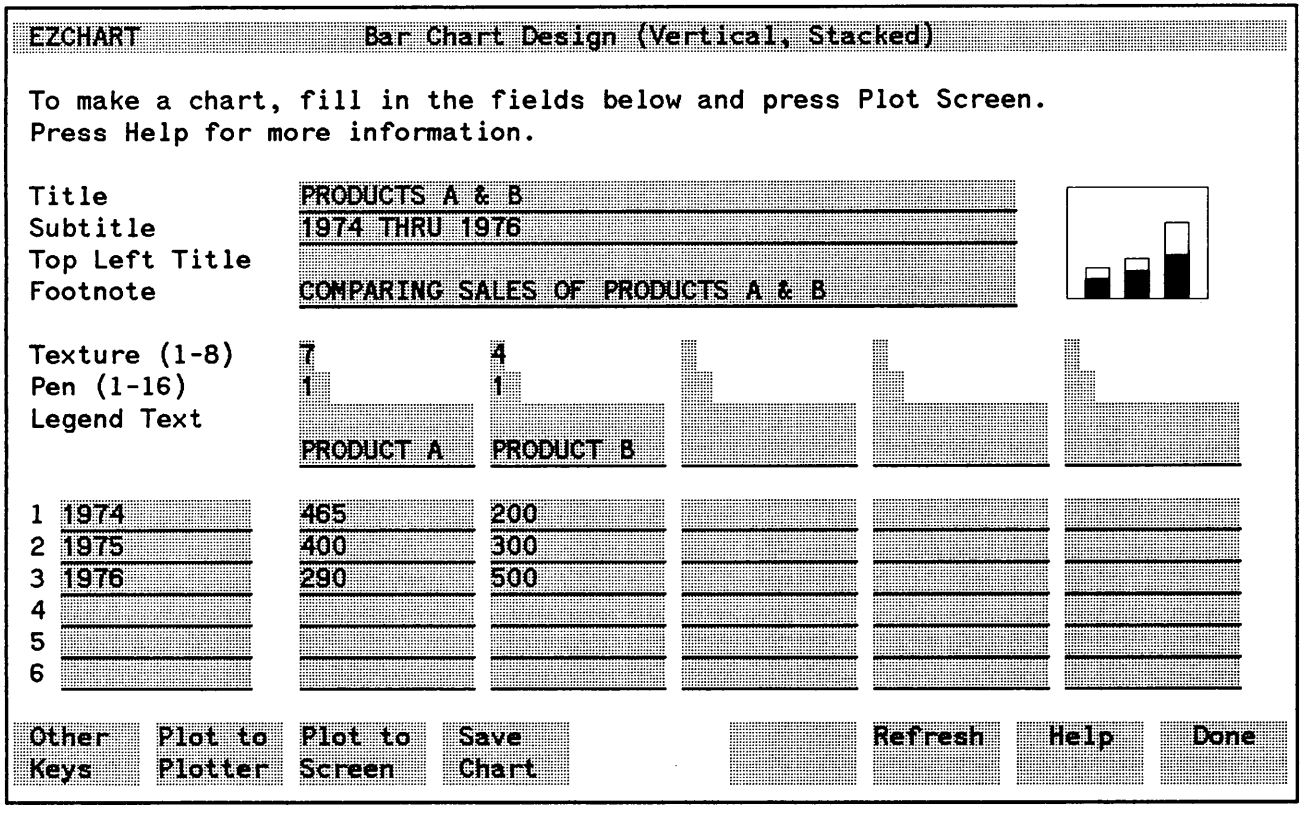



Figure 1-5. Your Completed Chart Design Menu.

**NOTE**

There are a number or ways you can move the cursor within the unprotected fields on a menu. You may wish to do so to modify data or correct a typing error.

- If you see a typing error while you are still on the line in which the error occurs, use the [BACKSPACE] key to return you to the error, and make the correction.

- If you have moved on to another line or field before spotting the mistake, you will have to move the cursor back field by field. To do so, hold the [CONTROL] (CNTL) key down if your terminal is a 2647A or 2648A, and press the **TAB** key. If you are using a 2623A, hold the [SHIFT] key down and press **TAB**.

- If the error or modification is a number of fields or lines away from the cursor position, the Cursor Control Keys may be the fastest way to return to the field and make the correction. The Cursor Control Keys are located in the Display Control Group on your keyboard. They are marked with arrows which indicate the direction the cursor will move if you press them.

## Step 4. Plot the Chart to the Terminal Screen

Plotting a chart to the terminal screen is not required in the process of designing a chart. However, it can be of value to you. By previewing the chart, you can make sure that it conveys all the information to be displayed as you want it. You can make any changes you think necessary before taking the time to plot the chart to a plotter. This step will plot the information you just entered on the Chart Design Menu.

**4.1.** Press `Plot to Screen`

The screen clears except for the banner message window and the function key labels. Two execution messages appear.

The first acknowledges your instruction and appears for only a few moments as follows:

```
Plot Screen
```

The second message tells you that the program is working.

```
Preparing data. ***
```

On color terminals, the chart is plotted on a dark backgound. On non-color terminals, the chart is plotted on a white background. There will be a short delay before the program can display your chart on the screen.

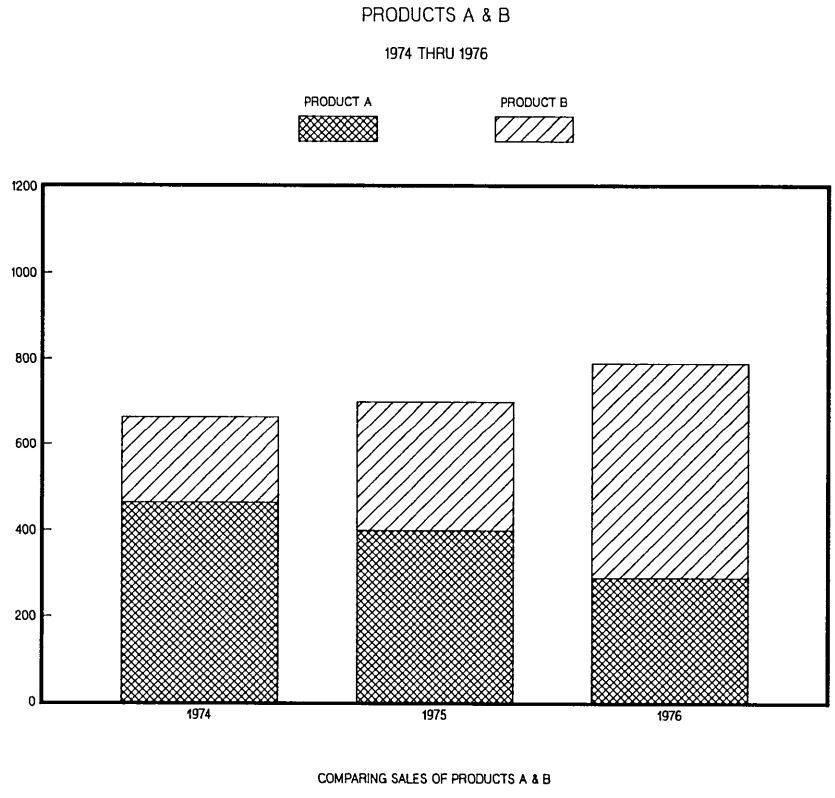



Figure 1-6. Your First Bar Chart with Vertical Stacked Bars

Here is your first chart. It may not seem terribly impressive but it communicates the information you entered simply and directly, and it is much more interesting to look at than rows of typed numbers.

If you are satisfied with the chart you have designed, you can save it so that it can be edited, expanded, or plotted on your terminal or plotter at a later time.

You are ready for Step 5.

## Step 5. Save the Chart

You need to use a function key labeled Save Chart to save the chart displayed on your terminal screen.

**5.1.** Press `Done`

Done returns you to the Bar Chart Design Menu which has a function key labeled Save Chart.

**5.2.** Press `Save Chart`

This takes you directly to the Save Chart Menu. Notice that there are two `highlighted fields` on this menu — Name and Description.

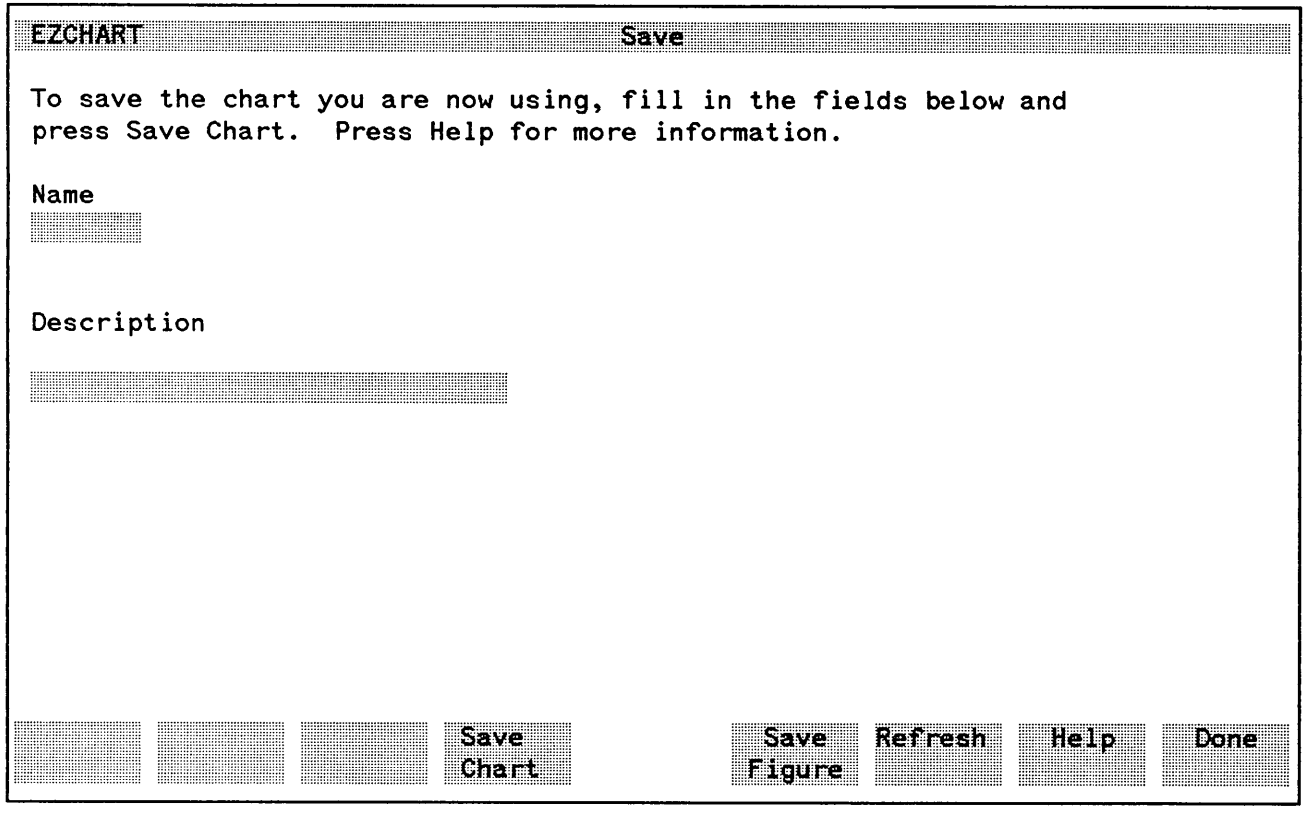



Figure 1-7. The Save Chart Menu

**5.3.** Under Name type: MYCHART

You must fill in the chart name when you are saving a chart. Chart names begin with a letter and may include letters or digits. They may contain seven or fewer characters.

**5.4.** Under Description, type:

SALES OF PRODUCTS A & B

Descriptions are optional, but a brief description of your charts will come in handy as you make and save more and more charts. Your description will appear when when you press Browse Charts on the Edit, and Plot Selection Menus. (To be discussed later.)

**5.5.** Press Save Chart

A message appears in the banner window acknowledging your instruction.

Saving chart. ***

When the operation is completed, the message is replaced with:

Your chart was successfully saved.

---

**NOTE**

If someone completed this course before you, and did not :PURGE MYCHART when finished, a message will be displayed. The message tells you that MYCHART already exists, and tells you to repeat pressing Save Chart if it is alright to overwrite MYCHART.

---

**5.6.** Press Done

This brings the Bar Chart (Vertical,Stacked) Design Menu to the screen once more.

And, you are ready for Step 6.

**NOTE**

When you press Save Chart, you save it for EZCHART and you also make the chart available for use by the DSG/3000 interactive program GRAPH. How this is done, and the naming of the chart, chart file, and data file for use by GRAPH are discussed in Section 2 of this Reference Guide.

When you design a chart and do not Save it, you will have to redesign it completely if you need it again later. This can be time-consuming. On the other hand, saving a chart takes up file space. It's best to save only those charts you are certain will be needed again, and to periodically purge unused charts.

Purging charts is discussed in Section 2 of this manual. To purge chart files and data files, use the MPE :PURGE command described in the *MPE COMMANDS REFERENCE MANUAL (Part No. 30000-90009).*

Note also the function key labeled Save Figure. Pressing this key creates a figure file into which this chart will be copied so that it can later be used by other HP office and graphics products. Figure files are explained in the reference section of this manual and do not concern us here.

## Step 6. Plot the Chart to a Plotter

If you are satisfied that your chart presents information in the best possible way, you will probably wish to plot it on the plotter.

**6.1.** Press `Plot to Plotter`

This displays the Plot Chart Menu on your screen.

In order to fill out this menu correctly, you need to know the model number of your output device. You will find this number on the HP label on the device itself. This is also a good time to make sure the plotter is turned on, and that paper and pen(s) have been loaded. If you are uncertain as to the type of plotter you have, ask your system manager.

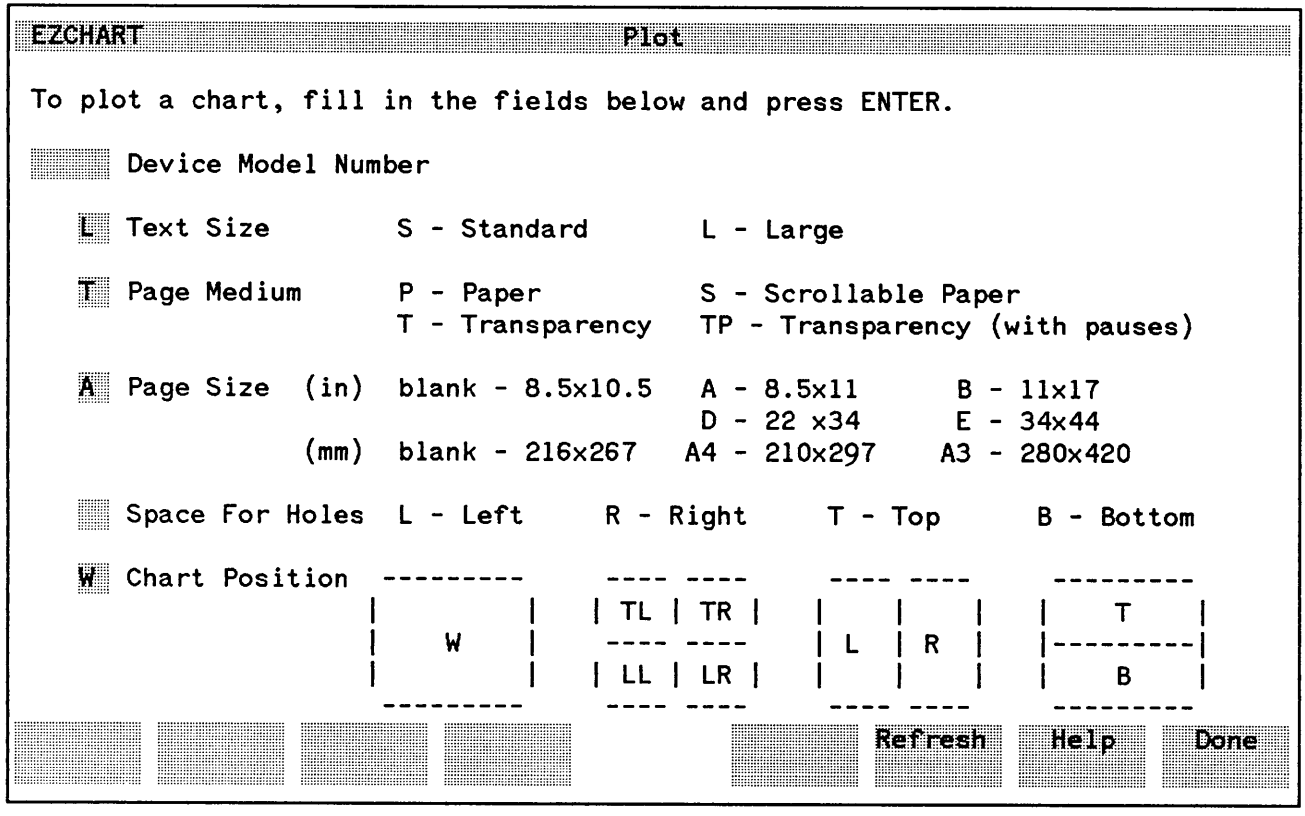



Figure 1-8. The Plot Chart Menu

When the Plotter is turned on and loaded with paper and pens, you are ready to instruct EZCHART to Plot your chart to the Plotter. In addition to the device number, you may specify how you wish your chart to appear on the page by entering your choices in the following fields.

### 6.2. [ ] Device Model Number

The first time the Plot Chart Menu is displayed on your terminal screen, your terminal model number appears in the Device Model Number `field`. This is the default (pre-set) entry. Type your plotter model number over the terminal number. Enter the entire number. If you are using a 9872A, include the letter `A`. If you have already used the Plot Chart Menu, the last entry you made will appear in the Device Model Number field.

### 6.3. [L] Text Size

The default value for Text Size is Large. You also have the option of specifying standard text. Be sure you consider the effect on the overall chart and the size of the plotted page.

### 6.4. [T] Page Medium

The default value for Page Medium is transparency. This setting produces the best results by plotting at a slower speed. This is necessary to provide drying time for the ink on the transparency surface. Specifying paper will plot at a faster speed. You may wish to to specify transparency even if you are using paper, particularly if your pens are worn and you are not getting clearly defined lines. If your plotter is using scrollable paper, enter an `S`. Specifying TP will cause a 15 minute delay between each pen color. This will help stop the bleeding of ink between colors when using transparencies.

### 6.5. [A] Page Size

The default Page Size is `A`, or the standard 8.5 by 11 inch page. Unless you have loaded paper of a different size in your plotter, let the default stand. (Some transparencies are smaller than 8.5 by 11. If you are plotting on a smaller transparency, leave this entry blank.

### 6.6. [ ] Space for Holes

This is an optional entry; no default is supplied. If you plan to punch holes so that your charts may be included in a binder, your entry here determines where the space will be made.

### 6.7. [W] Chart Position

The default Chart Position is `W`, or the whole page. Let the default stand for this plot.

### 6.8. Press (ENTER)

This brings two messages to the menu banner:

```
Preparing data. ***
```

followed by,

```
Plotting chart. ***
```

When the second is displayed, the plotter is activated. When the drawing is completed, the Plot Menu remains displayed. You are ready for the last step in this part of the course — to EXIT from the system.

## Step 7. Exit from EZCHART

Only one menu has a function key assigned the Exit function, and that is the Main Menu.

How do you get to the Main Menu from the Plot Chart Menu?

If you think pressing Done will do it, you're right.

**7.1.** Press Done

This brings the Bar Chart Design Menu to the screen again. However, there is still no Exit function key available.

**7.2** Press Done

A message appears in the menu banner window:

```
OK to leave this chart?
```

**7.3.** Press Done

**NOTE**

You are asked to repeat pressing Done on the Chart Design Menu because this function will erase all new data and restore the default data to the menu fields. When you are asked to repeat your instruction, it gives you time to reconsider and save your data if you have not already done so.

Now you have reached the Main Menu and Exit appears among the function key labels.

**7.4.** Press Exit EZCHART

A message appears acknowledging your exit from the program.

```
End of Program
:
```

You've completed the first part of this course—you have designed, plotted, and saved a chart of your own. Even though the chart is simple, you have still mastered all the basics of chart design. After you add to and modify the chart, in Part II of the course, you'll be ready to design any kind of chart that EZCHART is capable of making.

## Part Two

In the second part of this short course in chart design, you will gain experience in the following areas:

**Step 8.** Log On and Run EZCHART

**Step 9.** Recall Chart

**Step 10.** Edit and Add to Chart

**Step 11.** Save the Modified Chart

**Step 12.** Plot Two Charts to a Single Page

**Step 13.** Exit From EZCHART

## Step 8. Log On and Run EZCHART

You have already performed this activity. The steps involved depend upon whether you merely exited from EZCHART or went further and logged off the system when you finished Part One.

**8.1.** If you have not logged on to the system, do so now. Remember the elements and syntax necessary for logging on. Type:

```
:HELLO username.accountname
```

See Step 1 in Part One if you need a review.

**8.2.** Run EZCHART. Type:

```
:RUN EZCHART.PUB.SYS
```

When the banner welcoming you to EZCHART is replaced on the screen by the Main Menu, you are ready to begin.

## Step 9. Recall Chart

In this step, instead of creating a new chart, you are going to recall the chart you saved in Part One of this course, and modify it.

First, you need to inform EZCHART that you wish to edit an existing chart.

**9.1.** Press **Edit Chart**

The Edit Chart Selection Menu appears on your screen.

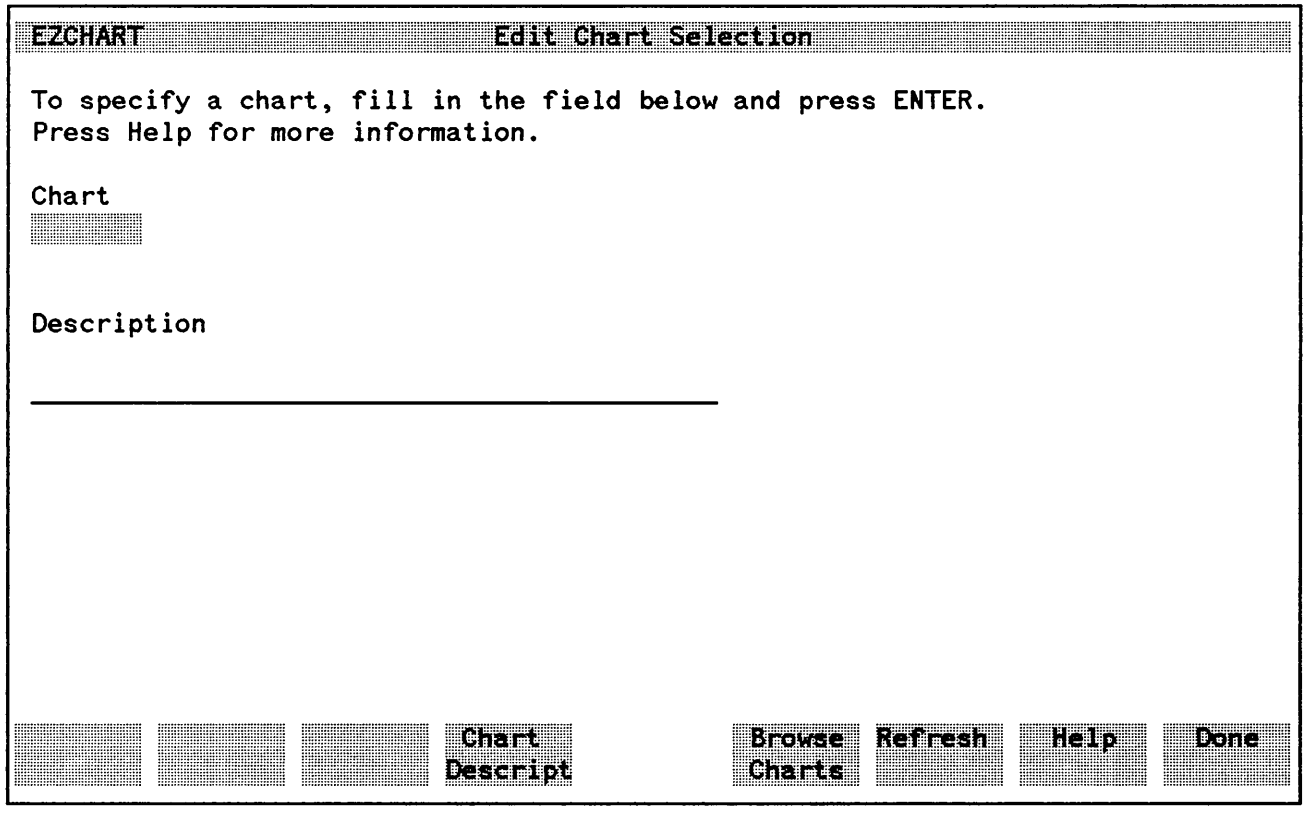



Figure 1-9. The Edit Chart Selection Menu

**9.2.** Type MYCHART in the field designated for the Chart name.

**9.3.** Press ENTER

An execution message appears in the banner window as follows:

```
Recalling chart. ***
```

When the recall is complete, the filled-in Chart Design Menu for MYCHART appears on the screen; ready for editing, reviewing, or expanding. You are ready for Step 10.

## Step 10. Edit and Add to Chart

Suppose you want to modify the chart you recalled (MYCHART) in the following way:

- include another product— Product C —in your graph.
- add sales information for all three products for the years up to and including 1982.
- change the titles and footnote so that the content of the graph will be understood by anyone who sees it.

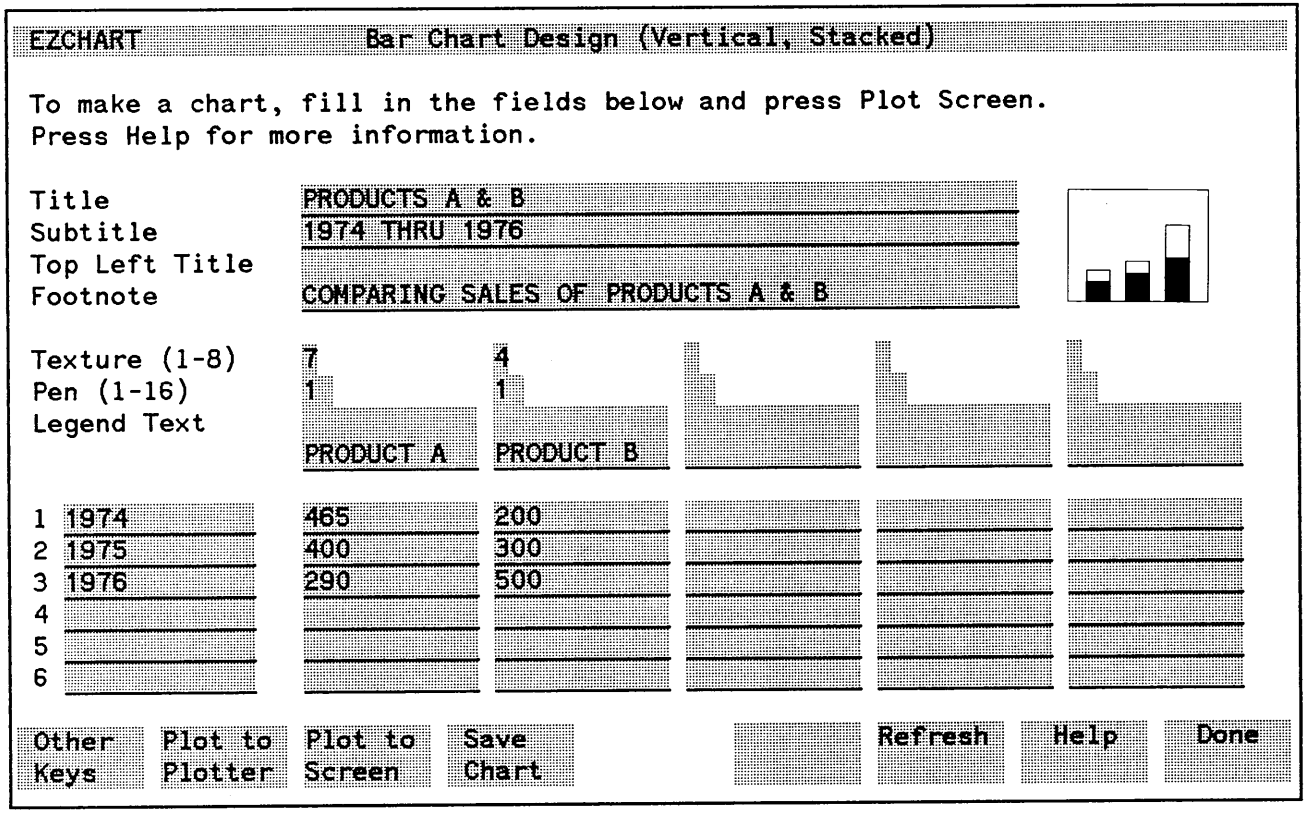



Figure 1-10. Bar Chart Design Menu with MYCHART Specifications

To make these modifications, do the following:

**10.1.** In the Title field, type:

```
TOTAL SALES BY PRODUCT
```

Type directly over the old Title.

**TAB** to the next field.

**10.2.** In the Subtitle field, type:

```
1974 THROUGH 1982
```

Type the new Subtitle directly over the old one.

**TAB** to the Top Left Title field.

**10.3.** Since this field was left blank when you initially made your chart, there is no old information to replace. Type:

```
Thousands of Dollars
```

**TAB** to the Footnote field.

**10.4.** In the Footnote field, type:

```
CHART INCLUDES PRODUCTS A, B, AND C
```

**TAB** to the Legend Text field.

**10.5.** In the Legend text field next to the one in which you typed PRODUCT B earlier, type:

```
PRODUCT C
```

**10.6.** Add the new data. Notice that you can only add 6 lines of data to this menu. How additional lines are added is discussed below.

Type in the values so that the first six lines of data look like this:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 1974 | 465 | 200 | 190 | | | |
| 2 | 1975 | 400 | 300 | 205 | | | |
| 3 | 1976 | 290 | 500 | 200 | | | |
| 4 | 1977 | 340 | 385 | 195 | | | |
| 5 | 1978 | 360 | 385 | 110 | | | |
| 6 | 1979 | 350 | 400 | 220 | | | |

At this point, you have entered all the data for which there is room. You can alter the screen to allow for more data.

**10.7.** Press Other Keys

This alters the functions of several of the function keys. Notice the labels for f2 and f3 have changed to Scroll Backward and Scroll Forward.

**10.8.** Press Scroll Forward

This gives you free area to add data. Notice that the last two entries made — for 1978 and 1979 — are present on the screen as reminders of where you were located and what format you were using.

Following the 1979 entry, add the new information for the years 1980 - 1982.

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | 1978 | 360 | 385 | 110 | | |
| 6 | 1979 | 350 | 400 | 220 | | |
| 7 | 1980 | 400 | 320 | 190 | | |
| 8 | 1981 | 330 | 408 | 323 | | |
| 9 | 1982 | 330 | 445 | 215 | | |
| 10 | | | | | | |

**10.9.** Press Scroll Backward

Your completed Chart Design Menu should look like the example in Figure 1-11.

**10.10.** Press Other Keys

**10.11.** Press Other Keys

You are ready for Step 11.

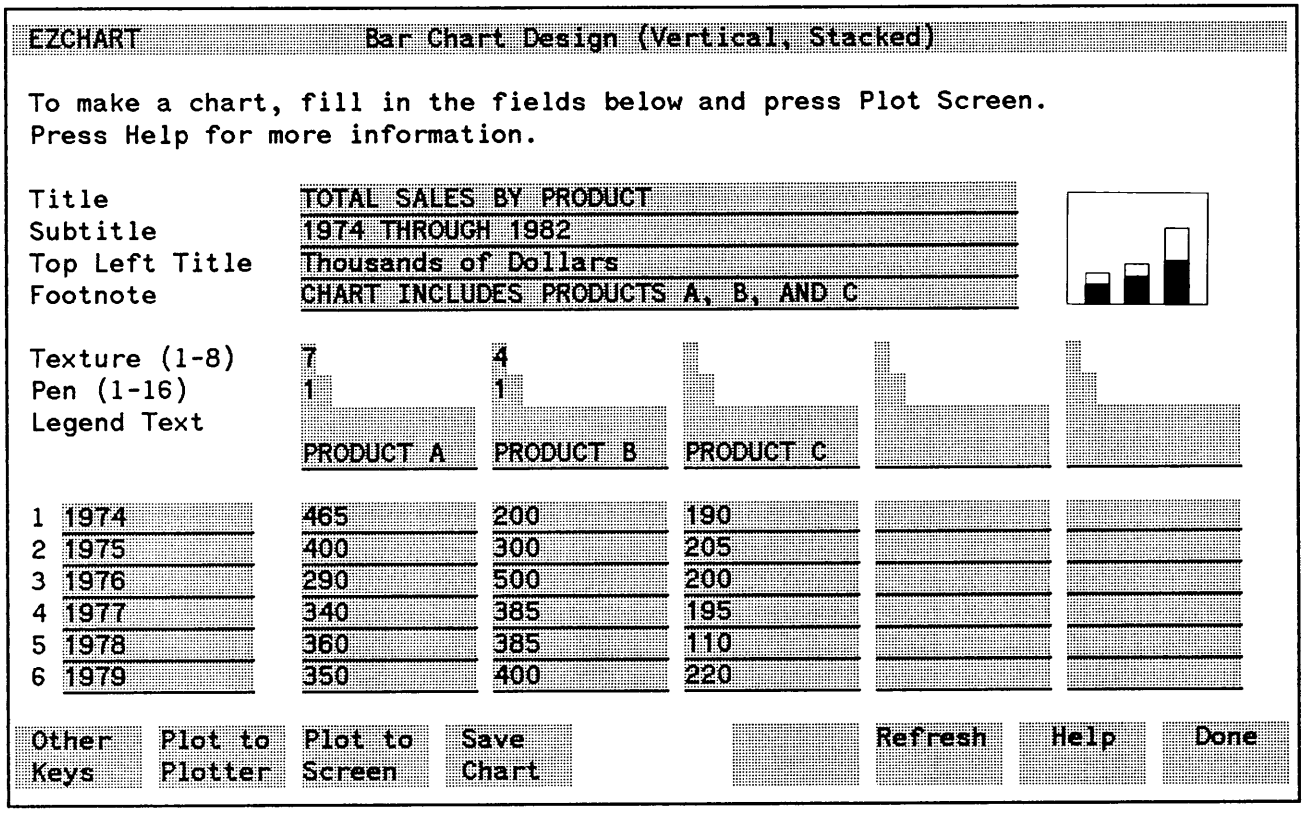



Figure 1-11. Your Modified Chart Design Menu

## Step 11. Save the Modified Chart

You recalled MYCHART to use it to learn how to make modifications to an existing chart. You could save your modified chart under the old name. It would then replace the first version — overwrite it — and the first version of MYCHART would be lost.

Suppose, instead, you want to save copies of both versions. To do so, you Save your modified MYCHART under a new name.

**11.1.** Press Save Chart

The Save Chart Menu is displayed on your screen. Notice the screen retains the name and description of MYCHART, which was recalled earlier. This can be changed to identify the new chart.

**11.2.** In the field under Chart name, type:
`CHART2`

**11.3.** Under description, type:

`This chart includes Product C.`

**11.4.** Press Save Chart

An execution message appears in the banner window:

`Saving chart. ***`

When the chart is saved, the message is replaced by:

`Your chart was successfully saved.`

---

**NOTE**

Anytime you instruct EZCHART to save a chart and a chart already exists with the same name, a message will ask you to repeat your instruction. This will give you time to reconsider and provide another name, or overwrite the existing file.

---

**11.5.** Press Done Done

You must press Done twice to return to the Main Menu.

---

**NOTE**

You could have skipped this step — saving the chart — and gone directly to the next — plotting it. You will probably plot unsaved charts frequently when you are an experienced chart maker. As mentioned earlier, saved charts do take up file space, and that should be considered before you use the Save Chart option.

---

You are now ready to plot your two charts to a single page.

## Step 12. Plot Two Charts to a Single Page

In order to plot two charts to a single sheet of paper, you will have to plot them one at a time. First you will plot the one you are currently working on. Then you will recall the second chart for plotting.

Take a moment now to make sure the plotter has paper and pen(s). The standard 8.5 by 11 inch paper should always be loaded lengthwise in the plotter. (See Appendix D for information about your plotter.)

**12.1.** Press `Plot to Plotter`

The Plot Chart Menu is displayed.

You can fill out most of this as you did before.

**12.2.** Enter your Device Model Number.

**12.3.** Retain the default (L) in the Text Size Field.

**12.4.** Retain the default T in the Page Medium field.

**12.5.** Retain the default A (for standard size paper) in the Page Size field.

**12.6.** Leave the Space for Holes field blank.

**12.7.** Enter R in the Chart Position field.

This means that CHART2 will appear on the right hand half of the page.

**12.8.** Make sure the plotter is turned on and loaded with paper and pen(s).

**12.9.** Press ENTER

The screen changes and an execution message appears:

```
Preparing data. ***
```

When the actual plotting begins, the messages becomes:

```
Plotting chart. ***
```

---

**NOTE**

At this point, you have finished with CHART2 and have to recall your first chart, MYCHART, in order to plot it next to CHART2. You must get back to the Main Menu so that you can use the Plot Chart function key.

---

**12.10.** Press Done

This takes you back to the Bar Chart Design Menu for Chart2.

**12.11.** Press Done

A message appears in the menu banner window asking you to repeat your instruction to leave this chart. Remember, each time you press Done to leave a Chart Design Menu and go to the Main Menu, you will be given the time to reconsider saving your chart data.

**12.12.** Press Done

The Main Menu is displayed.

**12.13.** Press Plot Chart

This brings the Plot Chart Selection Menu to your screen.

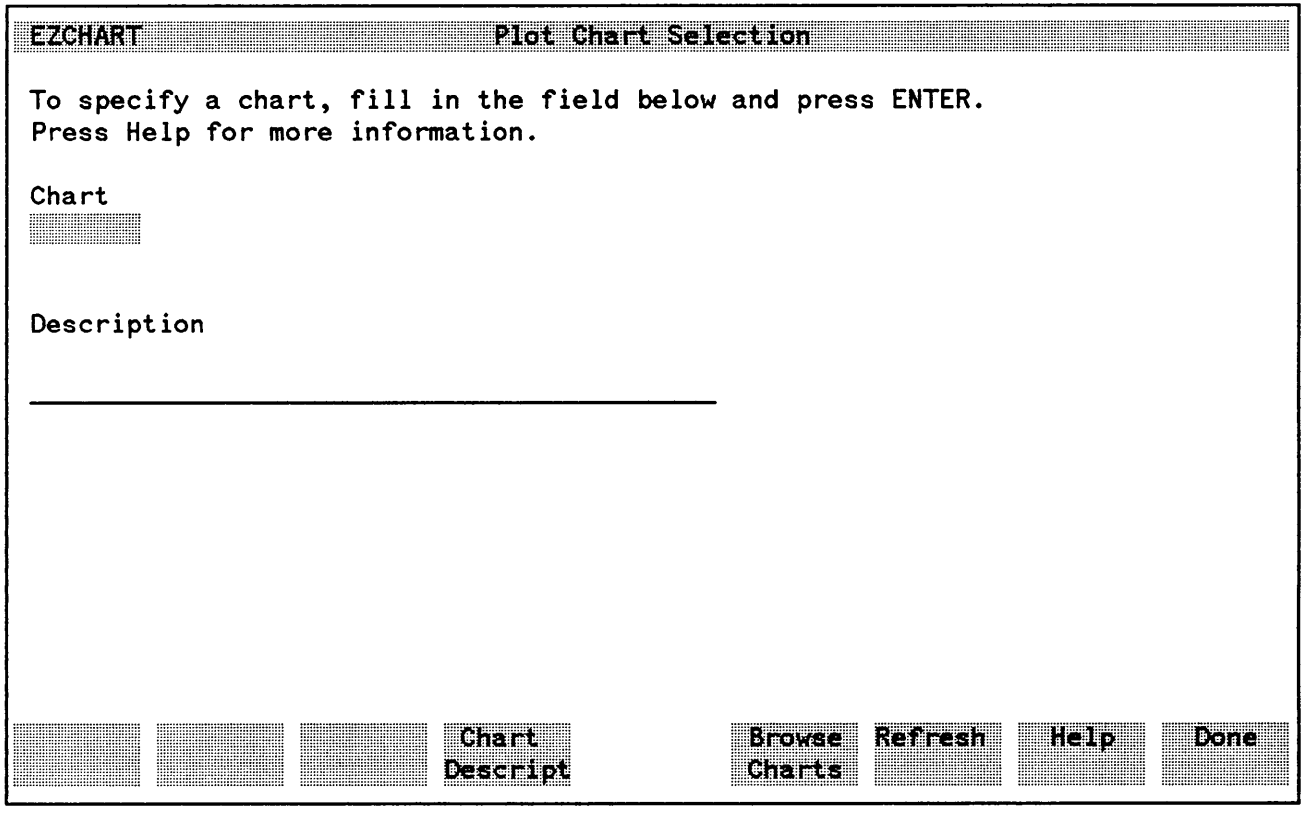



Figure 1-12. The Plot Chart Selection Menu

**12.14.** Type MYCHART in the Chart name field of the Plot Chart Selection Menu.

**12.15.** Press (ENTER)

**12.16.** The Plot Chart Menu will be displayed.

**12.17.** Check the Device Number. (If you haven't altered it or shut off power to your terminal, the device number will not have changed.)

**12.18.** Leave Text Size, Page Medium, Page Size, and Space for Holes untouched.

**12.19.** Type L in the Chart Position field so the plotter will plot on the left side of the page.

**12.20.** Press (ENTER)

When the plotting is finished, you are ready for the final step of the course.

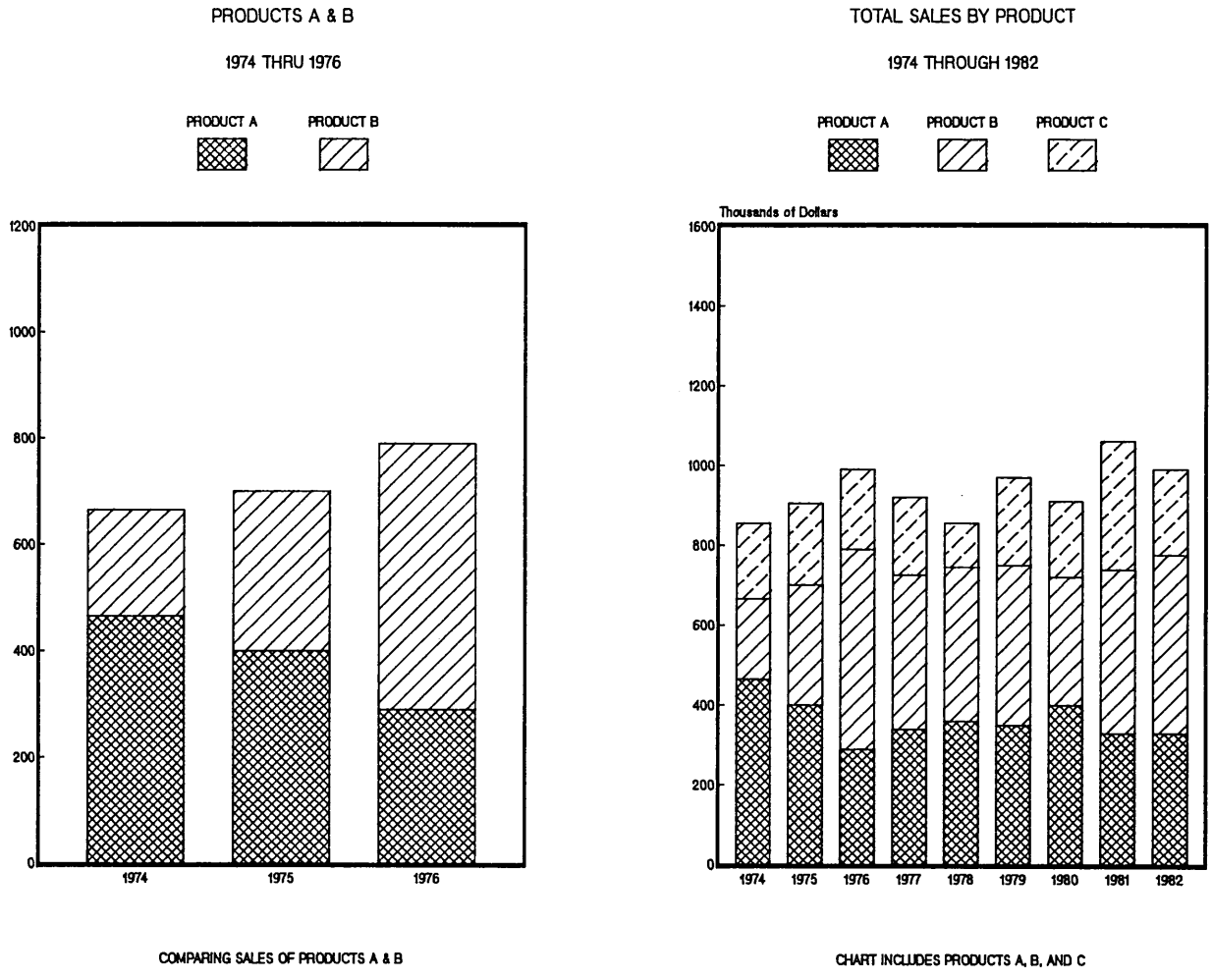



Figure 1-13. Two Charts Plotted on a Single Page

## Step 13. Exit from EZCHART

Remember that there is only one Exit from EZCHART, and that it is on the Main Menu. You are presently on the Plot Chart Menu.

**13.1.** Press Done

This will return you to the Main Menu.

**13.2.** Press Exit EZCHART

This will end your EZCHART session.

You have designed and plotted two charts, using many of the features of EZCHART. The skills you acquired here will transfer readily when you begin making other chart types.

# EZCHART Reference SECTION 2

HPEasyChart's program, EZCHART, provides the inexperienced user with the immediate capability of producing and plotting charts.

This reference section outlines the features of EZCHART, discusses what is required for it to run on your system, reviews how the EZCHART menus provide instructions and assistance on your terminal screen, and offers some suggestions on effective chart design.

EZCHART also enables the user to save charts in either of two file formats which are accessible by other HP office products' subsystems. This provides upward compatibility for EZCHART *chart files* which can be edited and enhanced using DSG/3000's interactive program GRAPH.

EZCHART can produce *figure files* which can be included in more complex presentations using HPDraw, and are accessible by TDP/3000's formatter and are printable on both Laser and Graphics Dot Matrix printing systems.

**Table of Contents**

# Features of EZCHART

- allows you to create, modify, and plot labeled and numbered line charts, scatter charts, pie charts, and bar charts with horizontal or vertical, stacked or clustered bars.
- enables you to produce a chart within minutes through the use of a few easily understood menus.
- provides a variety of options for plotting a chart — placing reduced charts in any quadrant of a page, allowing for different paper sizes, leaving room for ring_binder holes.
- provides the option of plotting charts with either light or medium bold titles and subtitles.
- uses an on-line Help facility to provide you with assistance on your terminal screen, so you will not have to turn to this reference guide for basic information once you become familiar with EZCHART.
- allows for more than one page of data to be entered on a single menu through the use of scrollable data.
- enables you to insert or delete individual lines of data.
- enables you to temporarily hold chart data, select another chart type, recall and review the presentation of data in the alternate chart format.
- enables you to access, browse, and select data items stored in Self-Describing (SD) files created by another HP office product, and allows you to create, modify, and plot a chart from this data.
- saves chart data as a chart file which can be accessed, edited and enhanced using DSG/3000's interactive program GRAPH.
- provides the option of saving charts as Figure Files which can be enhanced using HPDraw, included in HPWord and TDP/3000 documents, and printed on both Laser and Graphics Dot Matrix printing systems.

# Requirements for Running EZCHART

EZCHART runs on any hardware supported by DSG/3000. It runs best on a graphics terminal—the 2623A, 2627A, 2647A, 2647F, 2648A, and 2703—and a plotter connected to the HP3000 computer.

Non-graphics terminals may be used with EZCHART, but some of the features will be lost, such as the Main Menu's simple images of all graph types, and the ability to plot charts you have created on the terminal screen.

V/3000, which supports the presentation of menus and Help screens; and AGL/3000, which supports the charting graphics, are the only additional software requirements.

## Workfiles

EZCHART uses the following files for work space:

```
CFxxxxxx
DFxxxxxx
CLxxxxxx
DLxxxxxx
```

where xxxxxx is a time stamp.

If you BREAK out of the EZCHART program or your job is aborted, these files will be left on your account. There is a discussion on purging charts in this section.

## Plotters

The Plot Menu will ask for the device model number of your plotter. This number can be found on the device itself. Some common models are 7221C, 9872S, and 7220T.

It is recommended that you consult your plotter reference manual for information about loading pens and paper and turning the plotters on and off.

# Running EZCHART

## Logging On

Before you can run EZCHART you have to complete several basic steps. The first step is turning on your terminal.

The switch is located on the back. Find it and turn it to the ON position.

If you are using a 264X series terminal, you should also make sure that the REMOTE key, on the second row from the top, is depressed.

After a moment's pause, a short blinking line will appear on your screen. This line is called an alphanumeric cursor. It indicates where characters would appear on the screen if you began typing.

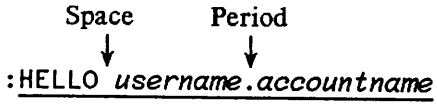
## Going to Work

The next step is to inform the computer that you wish to start working. To do this, you must identify yourself with a user name and account name.

First, press the RETURN key on your keyboard until a colon (:) appears on the screen.

Note that the cursor sits to the right of the colon, and that the colon appears in the upper left hand corner of the screen.

Type the following, substituting your user and account names:




Press the RETURN key.

After a brief pause, the computer acknowledges your hello with a message.

```
HP3000 / MPE IV C.DO.20.   SUN, JAN 30, 1983,  2:51 PM

:
```

This indicates that you have successfully logged on. When a colon (:) appears following the message, the computer is ready to accept your next instruction.

You are ready to tell it to run HPEasyChart's program, EZCHART. Type:

```
:RUN EZCHART.PUB.SYS
```

Press the RETURN key.

The first message you will see will identify the version of EZCHART available on your system displayed as follows:

```
EZCHART       (A.02.00)  HP32109  (c) COPYRIGHT Hewlett-Packard Co. 1983

   DSG/3000   (A.03.00)
   V/3000     (B.03.20)
   AGL/3000   (A.03.00)
```

The screen will blank out and display a brief welcome message:

```
Welcome to EZCHART
```

After a brief pause, the Main Menu will be displayed.

You are ready to start.

# EZCHART Menu Conventions

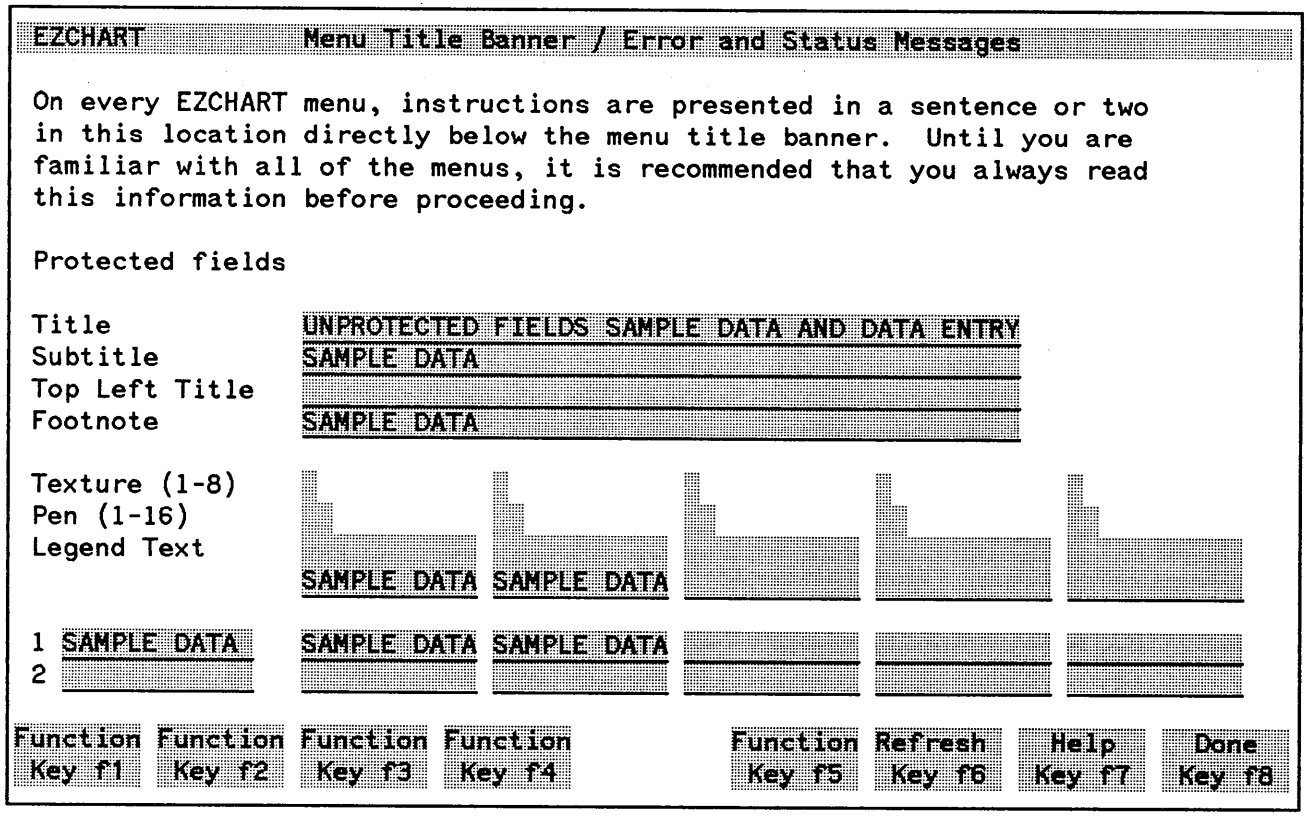



Figure 2-1. EZCHART Menu Conventions

To run EZCHART you follow instructions provided by menus and usually you fill in areas of menus called *unprotected fields.* Unprotected fields are highlighted areas in the midsection of the menu. You type over the highlighted area. The cursor is positioned by EZCHART at the first unprotected field available for data input. The instructions tell you what information should be entered in the fields.

Some unprotected fields are already filled in. The entries are parts of sample menus or they are pre-set values called defaults. You may type new values or data directly over anything that appears on a menu in an unprotected field.

On each menu, just below the menu title banner, is the menu's main instruction. This tells you how to perform the function of the menu. It should be read carefully before you begin entering information into the highlighted fields to find out how to proceed.

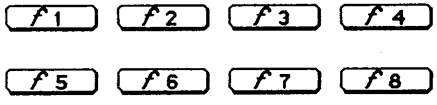
Not all of the areas are intended for your use. For example, the menu banner line, the instructions, and the function key labels are *protected fields.* You cannot overwrite or add text in these fields.

Messages appear in the menu banner line of each menu. They are there to tell you how EZCHART is responding to your commands.

## Using the Function Keys

Whatever type of terminal you have, you will be using the function keys extensively when you run EZCHART.

The function keys are labeled f1 through f8 and are located on the upper half of your keyboard. On some terminals they are spread across the top; on others they are placed in two rows of four keys each as follows: (See Appendix D for peripheral information.)




Every menu appearing on the screen has function key labels along the bottom. When you have questions, you can consult the Help Facility, or turn to Section 3 of this manual for additional information.

Some function keys change labels frequently. Some remain the same no matter which menu is being displayed on the screen. Below are definitions for those functions which you will see frequently. The others will be discussed as they relate to specific menus in Section 3 of this manual.

| Key Label | Function |
|---|---|
| Refresh | Press this key when you want to redisplay the screen. If the TERMINAL RESET key is accidentally pressed or in case of a power failure, press Refresh and the screen will be redisplayed with the last data or information that was entered. |
| Help | Press this key when you need help. Help may appear as Help Info, and will display examples or Help screens associated with that menu. |
| Done | You press f8 when you are finished with an operation — for example Plot, Browse, or Help — and you wish to return to the previously displayed menu. In instances where pressing Done would delete additions or changes to a Chart Design Menu, a warning message will appear to allow you time to reconsider pressing the key. |

| Key Label | Function |
|---|---|
| Exit EZCHART | Exit only appears on the Main Menu. It is the way you exit from the EZCHART program. To get to the Main Menu in order to exit, you can press the Done key until the Main Menu appears on the screen, at which time Exit EZCHART will appear as the f8 label. |
| Plot to Screen | Plot to Screen plots the current chart on your terminal screen if you are using a graphics terminal. It allows you to make sure that the chart communicates the information desired in an effective way, and lets you make any necessary changes before plotting. Plot to Screen only appears on the first level function keys of the Chart Design Menu as f3. |
| Plot to Plotter | The Plot to Plotter key takes you to the Plot Menu where you make preparations to have the chart drawn at the plotter. Plot to Plotter only appears on the first level function keys of the Chart Design Menu as f2. |

Experimenting with the function keys is the best way to become comfortable with the logical sequence of EZCHART Menus and how the Function Keys operate. The EZCHART Menu Map in Section 3 will guide you through the EZCHART program.

Don't worry if you get lost. You can always return "home" to the Main Menu by pressing Done. And, when you get there, pressing f8 once more — labeled Exit EZCHART on this menu — takes you out of EZCHART.

## Using the TAB Key

To move the cursor from field to field, press the **TAB** key. If you overshoot a field and wish to return to it, hold down the [CONTROL] (CNTL) key on the left of your keyboard and press the **TAB** key once for each field you want to pass through on the 264X series of terminals. If you are using a terminal from the 262X series, hold the [SHIFT] key down and press **TAB** to move the cursor backwards.

You can type over whatever has been previously entered in the *unprotected fields* to correct errors or modify the entry. If your cursor is still on the line where an error occurs, use the backspace key to move back and make corrections. You can also use the Cursor Control Keys, marked with arrows, to move the cursor to any position where you wish to retype an entry.

## Using the ENTER Key

When you press the [ENTER] key, several of the menu's main functions are performed, and the information on the menu is sent to the computer. The main instruction on the menu will tell you when to use the [ENTER] key. It is not one of the 8 designated function keys, but it is included in discussions of function keys and menu fields in Section 3 of this manual.

## Using the Help Facility

Every effort has been made to present menus that are self-explanatory and easily used. When additional information or examples pertaining to the menu will not fit on the screen, they are provided by the Help screens associated with that menu. Press the function key marked Help—it is always [f7] — and further explanations will be available. With some menus, the Help screen immediately replaces the menu when you press Help. With others, you press Menu Info, the new label for [f7], to see the information concerning that menu.

When you are filling out a Chart Design Menu for a chart type, pressing Help will change the function of several keys. Three examples of correctly filled-out menus will be made available when you press Help. You can use the examples for study, or you can type your own data over the data provided and save your chart (under a new name), draw it on your screen, or draw it at the plotter.

Help screens are presented in Section 3 of this manual along with the discussion of each menu.

## Chart Naming Conventions

When you save a chart you have created, using the Save Chart Menu, you are asked to give the chart a name. The name may have up to seven characters, and can be any letter followed by any letter or number. The name you enter on the menu is used to identify the chart, the chart file in which the chart is stored, and a data file containing the data associated with your chart. The chart and chart file names are the same as that entered on the menu. The data file has the same name with the letter Q added to it. Another chart, INFORMATION, containing miscellaneous information associated with the chart, is also created and kept in the chart file.

Suppose you name your chart MYCHART on the Save Chart Menu. When you do so, EZCHART automatically does the following:

- creates a chart file — MYCHART.
- creates the chart MYCHART and stores it in the chartfile MYCHART.
- creates a data file — MYCHARTQ.
- creates an additional, internally-used chart, INFORMATION, which is kept in the chart file, MYCHART.

You do not have to bother with chart file names, data file names, or the chart "INFORMATION." EZCHART provides these names so that charts developed by EZCHART will be accessible to people who wish to modify their charts using the DSG/3000 program GRAPH.

## Purging Charts

When you have finished using a chart, it is recommended that you purge it, to save file space. Purging follows the MPE conventions as discussed in the *MPE Commands Reference Manual (Part Number 30000-90009).*

You must purge both the chart name and the data filename in order to recover all the space. To purge MYCHART, for example, you would enter the following:

```
:PURGE MYCHART
:PURGE MYCHARTQ
```

# Using EZCHART with Other HP Office Products

If you compare EZCHART to the interactive use of DSG/3000, the major difference is the intended use of the two products. DSG/3000 is a powerful tool for discovering the best possible way to visually present information stored in a data file. Through its array of enhancement capabilities, DSG/3000 challenges the experienced user to improve upon basic chart design as well as manipulate data in a variety of ways.

EZCHART, on the other hand, is intended as a chart making tool, first and foremost. Ease of use is a fundamental feature of its design. The user focuses on the chart to be made. The Main Menu presents a visual sample of all chart types that can be created. When you select the chart type appropriate to your needs, the next menu you see will be the Chart Design Menu.

When correctly filled out, this menu will contain all the information necessary for you to plot a completed chart on the terminal screen. By filling in the Plot Chart Menu, you are ready to plot your chart to a plotter. Several additional steps are required by GRAPH, the DSG/3000 interactive program, before you have reached this stage.

EZCHART does not permit programmatic usage. All chart design information and data must be entered through the menus. However, the DSG/3000 intrinsics may be used on chart files built by EZCHART.

# Modifying Charts Using DSG/3000

If you create a chart named MYCHART using the EZCHART program and wish to modify or enhance it using GRAPH, you would enter MYCHART as the chart name and MYCHART as the chart filename on the Main Control Menu of GRAPH.

Charts made with EZCHART and subsequently modified using GRAPH may become incompatible with the EZCHART program after the modification. Modifications made by GRAPH which will leave charts unusable by EZCHART are:

- changing the data definition
- changing the names of the charts in the chart file
- changing the chart types
- purging the chart named INFORMATION

Note that GRAPH'S Data Prompt Menu can not be used to edit the EZCHART data files since these data files are standard ASCII MPE files. An EDIT/3000 file can be used instead, but care must be taken to maintain the same format.

## DSG/3000 Chart File Interface

1. Log On and Run GRAPH.

   ```
   :RUN GRAPH.PUB.SYS
   ```
   (The Main Control Menu will be displayed)

2. Type ED to edit your EZCHART specifications, then fill in Chart Name, and the Chart File Name.

3. On the Chart Design Menu, type TC to change the size of the characters and press [ENTER].

   You may make whatever changes you wish in your EZCHART specifications and use DSG/3000 to display or plot the resulting chart. Since DSG/3000 gives you more flexibility in formatting a chart than EZCHART, chart specifications that have been altered using DSG/3000 may no longer be compatible with EZCHART. Thus, chart specifications that have been altered in this way require the use of DSG/3000 to perform such actions as displaying and printing.

# Using EZCHART with HPDraw

You may use your EZCHART file with HPDraw in two ways:

- bring your EZCHART chart file into HPDraw through the HPDraw Chart File interface.
- bring your EZCHART figure file into HPDraw through the HPDraw Figure File interface.

A brief summary of each HPDraw interface is provided here which outlines the steps necessary to bring your EZCHART chart file or figure file into HPDraw. Refer to the *HPDraw Reference Guide (part number 32108-90001)* for complete instructions on using the HPDraw chart file and figure file interface.

You would use EZCHART chart files with HPDraw to incorporate the chart in a more complex illustration, add text or other annotations, or add line and arch graphics. The chart illustrations in this Reference Guide were boxed using HPDraw and the Chart Interface.

If you wish to modify your HPDraw illustration, keep your drawing which includes your EZCHART chart as a drawing file in HPDraw. While you cannot alter the chart image, you can add to or modify the other components of your HPDraw illustration saved as a drawing file. Composite figure illustration can not be modified when saved as a figure file.

## HPDraw Chart File Interface

1. Log On and Run HPDraw.

   ```
   :RUN HPDRAW.PUB.SYS
   ```
   (The Main Menu will be displayed)

2. Press `Create` to display the Task Selection Menu.

3. Press `Horizntl` or `Vertical` to select your drawing orientation.

4. Press `Chart` to select the chart interface and display the Chart Menu.

5. Enter your chart filename in both data entry fields.

   ```
   Chart Name
   MYCHART

   Chart File
   MYCHART
   ```

6. Use the graphics cursor to define a workarea as instructed on the menu and press (ENTER).

7. Define the diagonal corner of your work area and press (ENTER).

8. There will be a brief pause, and your chart will be displayed within the workarea on the Chart Menu screen.

If you wish to use an EZCHART figure file as one of a number of other figures, using the HPDraw figure file interface may be more suitable for your application.

Unlike EZCHART figure files, HPDraw figure files may contain more than one figure. This is useful when designing a number of chart illustrations for a single document. Since Figure Files require the same space whether they contain a single figure as with EZCHART figure files, or multiple figures as with HPDraw figure files, converting and/or merging your EZCHART files in HPDraw will save system resources.

In addition, you may add other figures, line and arch graphics, or other enhancements, and save the resulting illustration as a unique figure within a common figure file.

## HPDraw Figure File Interface

1. Log On and Run HPDraw.

   ```
   :RUN HPDRAW.PUB.SYS
   ```
   (The Main Menu will be displayed)

2. Press `Create` to display the Task Selection Menu.

3. Press `Horiznt1` or `Vertical` to select your drawing orientation.

4. Press `Figure` to select the figure interface and display the Figure Menu.

5. Enter your figure filename in both data entry fields.

   ```
   Figure Name
   MYCHART

   Figure File
   MYCHART
   ```

6. Use the graphics cursor to define a workarea as instructed on the menu and press (ENTER).

7. Define the diagional corner of your work area and press (ENTER).

8. There will be a brief pause, and your chart will be displayed within the workarea on the Figure Menu screen.

## Using EZCHART with HPListKeeper

Sometimes you may want to take a list that you have created using HPListKeeper and generate a chart from it. For example, suppose you keep a list of total sales for each salesman in your department. To get a pictorial representation of this data, you can use EZCHART to transfer the data from from HPListKeeper and chart it. Here's how.

### HPListKeeper Interface

1. Log On and Run EZCHART.

   ```
   :RUN EZCHART.PUB.SYS
   ```
   (The Main Menu will be displayed)

2. Find the chart type you want to use to display the data and press `Create Chart`.

3. When the Chart Design Menu appears, press `Other Keys` twice. (Function key 5 will be labeled `Data File`.)

4. Press `Data File`. The Data Selection Menu will appear.

5. Type in the Data File Name and press (ENTER).

6. Type in the Data Items you want charted. If you don't remember the field headings you used in HPListKeeper, you can use the function key `Browse Items` to look at them.

7. To return to the Chart Design Menu, Press (ENTER).

8. Press `Other Keys`. A new function key set will appear. You are now ready to plot the chart to a plotter or the screen, or to save it.

# Using EZCHART with TDP/3000

Users of the Text and Document Processor/3000 (TDP/3000) can merge EZCHART and HPDraw figures with the document text. Figures are merged with the text only when the document is finaled through the TDP/3000 formatter SCRIBE, which outputs through the LPS Interpreter to an HP LASER Printing System. You cannot change the figure, but you can rotate and scale the figure through the parameter string of TDP/3000 Formatter's \ILLUSTRATION command. The \ILLUSTRATION command is placed directly in your text file as a single line entry at the location where you want the illustration to appear. A brief description on how to merge your EZCHART figure with your TDP/3000 text file is provided in the adjacent example. Refer to the *TEXT and DOCUMENT PROCESSOR/3000 Reference Manual (Part Number 36578-90001)* for complete operating instructions.

## TDP/3000 Figure File Interface

The Formatter command used to include an EZCHART chart into a TDP/3000 file is as follows:

\ILLUSTRATION *filename*[:*figure*] [*n*]

Remember, if you are using an EZCHART figure file, the figure and figure filename are the same.

For example, if you saved your EZCHART chart, MYCHART, as a figure, your text file entry would be:

```
\ILLUSTRATION MYCHART:MYCHART 30
```

where, ILLUSTRATION is the Formatter command; MYCHART is the figure *filename*; MYCHART is the name of the figure is the figure file; and, 30 is the number of lines you are allocating for the chart when it is printed.

If you have added to your EZCHART figure and saved it in an HPDraw figure file named DRAWFIGS, your text entry would be:

```
\ILLUSTRATION DRAWFIGS:MYCHART 30
```

where, ILLUSTRATION is the Formatter command; DRAWFIGS is the figure *filename*; MYCHART is the *figure*; and, 30 is the number of lines you are allocating for the chart when the document is printed.

# Using Data Stored in Self-Describing Files

When you save a file in HPListKeeper, QUERY, INFORM/3000, and GRAPH, these subsystems create files which store data in a form that can be retrieved by EZCHART.

HPListKeeper, INFORM/3000, and GRAPH create Self-Describing Files (SD Files). SD files contain data as well as descriptions of the data within the file.

You are able to create a chart from data stored in one of these Self-Describing Files by pressing Data File on the Chart Development Menu. The Data Selection Menu will be displayed on your terminal screen. The Data Selection Menu is discussed in Section 3 of this manual.

Once this menu is displayed, you can press Browse Files to display all the SD files in you current group and account that can be used in EZCHART for chart development. When you select a file which contains data you wish to chart, enter its name in the Data File name field and press Browse Items. EZCHART will then display the names of items within the file available to chart. Item names are defined by the subsystem which created the file.

Enter the names of the items you wish to chart in the Data Items field along with the Data File Name. The item type of each item (textual or numeric) must be appropriate to the way in which it is to be charted. For example, Pie chart segment values must be numeric, whereas Pie chart segment labels can be numeric or textual. When you press (ENTER), EZCHART retrieves the data items associated with the SD file. It then displays the Chart Design Menu and places the data in the appropriate columns. If the length of the item values (which is defined by the subsystem that created the file) is greater than the EZCHART field length, EZCHART truncates the value and issues a warning message indicating that it had to do so.

Once the Chart Design Menu is filled with the retrieved data, you may proceed as if you had typed in the data. Note that EZCHART only reads the data in the SD file. You may modify, plot, and save the chart development data with no effect on the SD file.

If you know the SD filename and the items names when you first enter the Data Selection Menu, you do not need to use the browse functions.

## Using EZCHART with HPDeskManager

You can use HPDeskManager to mail charts. Be sure to mail both the chart file and the data file. HPDeskManager must be configured to 256Kbyte items.

### HPDeskManager Chart Interface

1. Log On and Run HPDeskManager.

   ```
   :HPDESK
   ```

2. At the prompt, type your name or, if you are in your group and account, press (RETURN).

3. At the IN TRAY prompt, type SEND.

4. At the Subject prompt, type a statement of the subject.

5. At the TO prompt, type the name of the person to whom you wish to send the chart.

6. At the Text prompt, type any message that you want to accompany the chart.

7. At the MESSAGE prompt type the following:

   ```
   MESSAGE > Copy from (chart file name)
   ```

   For example if your chart file name is MONDO3, you would type:

   ```
   MESSAGE > Copy from (MONDO3)
   ```

8. At the Subject prompt, you may type a description of the chart.

(Continued)

## HPDeskManager Chart Interface

**9.** When the message telling you that the copying is finished appears, you must fill in the data file name. At the MESSAGE prompt, type the following:

```
MESSAGE > Copy from (chart file nameq)
```

The "q" indicates the file named is a data file. For example, the data file for MONDO3 would be typed this way:

```
MESSAGE > Copy from (MONDO3Q)
```

**10.** At the Subject prompt, type a description.

**11.** After the copying is finished, the MESSAGE > prompt appears.

**12.** Type MAIL and press RETURN.

```
MESSAGE > MAIL
```

The chart is on its way.

## Taking Mailed Charts and Making it an MPE File

If you recieve an EZCHART chart through HPDeskManager, you can put the chart file and the data file into your own group and account for future use by following the steps given here.

### HPDeskManager Chart Interface

1. Log On and Run HPDeskManager.

2. At the IN TRAY prompt, type:

   ```
   IN TRAY > Copy item number to
   (MPE file name)
   ```

   For example, if you have received an EZCHART file called MONDO3, you would type the following to make it a permanent MPE file in your group and account:

   ```
   IN TRAY > Copy 4 to (MONDO3)
   ```

   where "4" is the item number of the chart in your in tray and "WORLD3" is the name given to the MPE file.

3. After making the chart file an MPE file you must make the data file an MPE file. Remember the data file is identified by a "q" at the end of the chart file name. So type the following:

   ```
   IN TRAY > Copy item numberq to
   (MPE file nameq)
   ```

   In the example above you would type:

   ```
   IN TRAY > Copy 4 to (MONDO3Q)
   ```

## Selecting a Chart Type

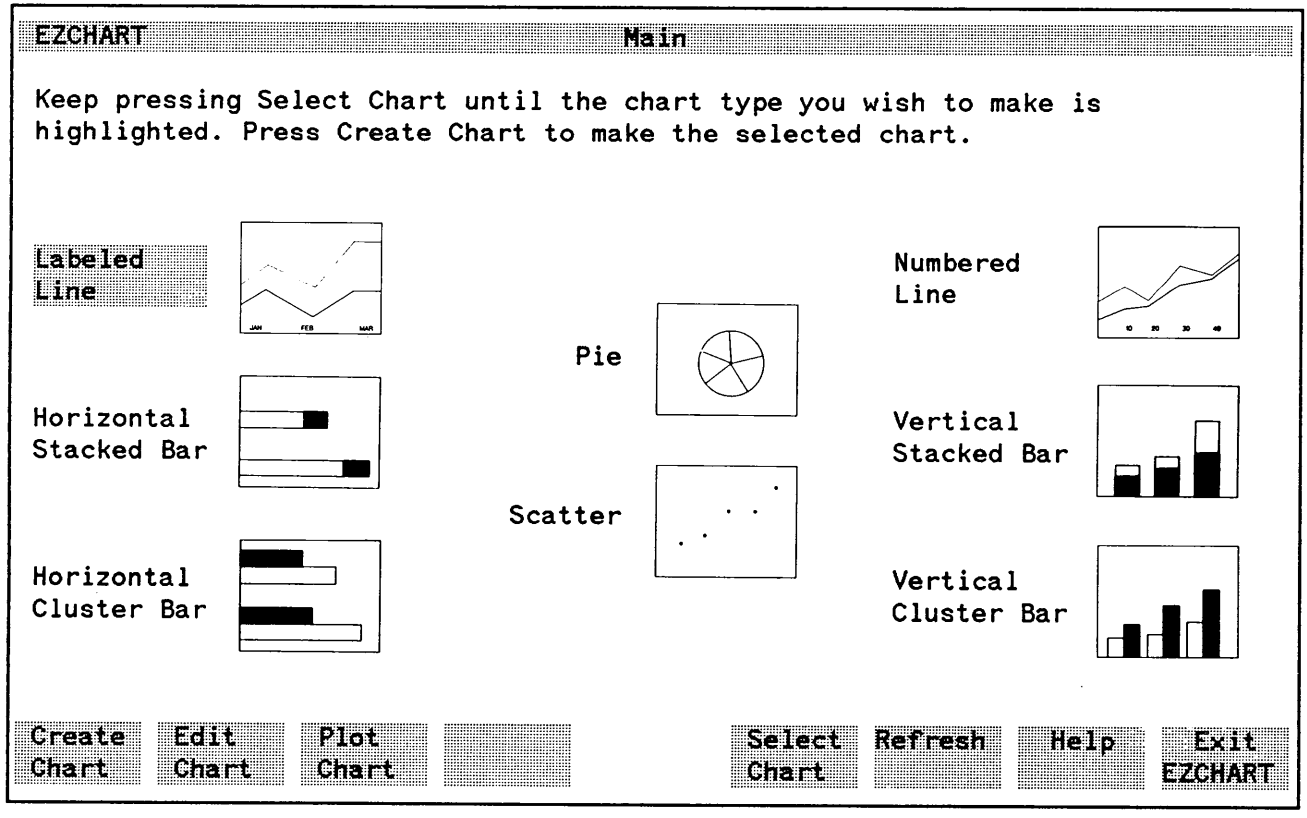



Figure 2-2. The Main Menu Chart Type Display

You can produce variations of bar charts, using horizontal or vertical bars and clustered bars. Line charts can be labeled line charts, numbered line charts, or scatter charts, which are line charts drawn without connecting lines. Pie charts can have slices sorted as well as selected slices exploded.

Some chart types are better suited to certain display purposes than others. If you know what kind of chart you need before you design it, you can save the time it would take to experiment with a variety of forms.

On the following pages are some hints for effective chart design.

## Hints for Effective Chart Design

Of course, what looks best for a particular purpose will be largely a matter of your own judgment. The Plot Screen option offers you the chance to have the chart plotted on your terminal screen before you plot it on a plotter. This ability allows you to experiment and modify freely, which can be very important to you when you are first beginning to make charts.

Below is a list of things to keep in mind when you are deciding which type of chart to choose.

1. If you are plotting data against time, use either a Numbered Line Chart, a Labeled Line Chart, or a Vertical Bar Chart with stacked or clustered bars. Do not use a Horizontal Bar Chart, Scatter Chart, or Pie Chart.

2. If you are plotting data against organizational entities such as cities, departments, or companies, use a Horizontal Bar Chart (with either clustered or stacked bars). Do not use a Line Chart or a Vertical Bar Chart since people often automatically associate the X-axis of a vertical chart with time.

3. If your data does not need to be plotted in any particular order, a Scatter Chart may be appropriate. Scatter Charts are effective in plotting heights against weights, salaries against length of service, and so forth.

4. If your Stacked or Clustered Bar Chart has only one bar, make it a Pie Chart instead.

5. Using capital letters on a chart makes it more attractive and easier to read.

6. Use colors with care. Too many colors can make a chart confusing. Use colors that go well together. For example, red, orange, and gold look better together than do red, green, and blue.

# Numbered Line Chart

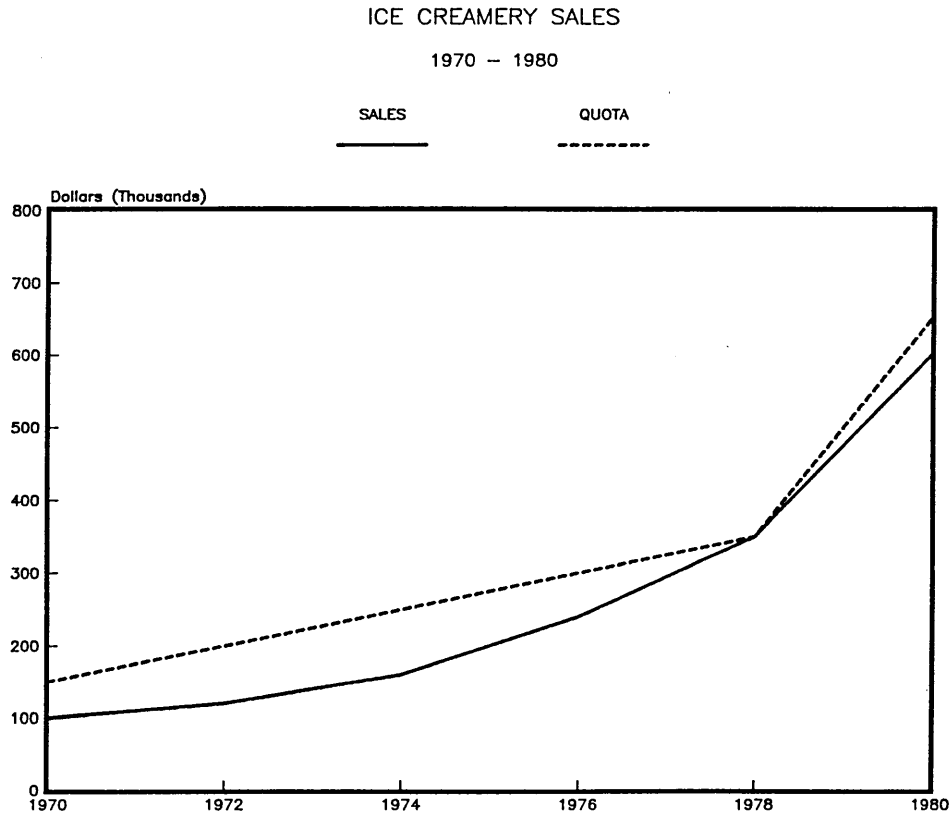



Figure 2-3. Numbered Line Chart

Line charts compare information that is displayed in a continuous flow. The X-axis (horizontal) frequently represents a period of time — for example, twelve months or ten years. The Y-axis (vertical) could contrast actual sales, drawn with a solid line, with sales quotas, drawn with a broken line.

Line charts show trends at a glance.

Line charts can be labeled numerically or textually. Note that the numbers were used along the X-axis (bottom axis) in Figure 2-3. In Figure 2-4, which is a Labeled Line Chart, months of the year are the X-axis values.

## Labeled Line Chart

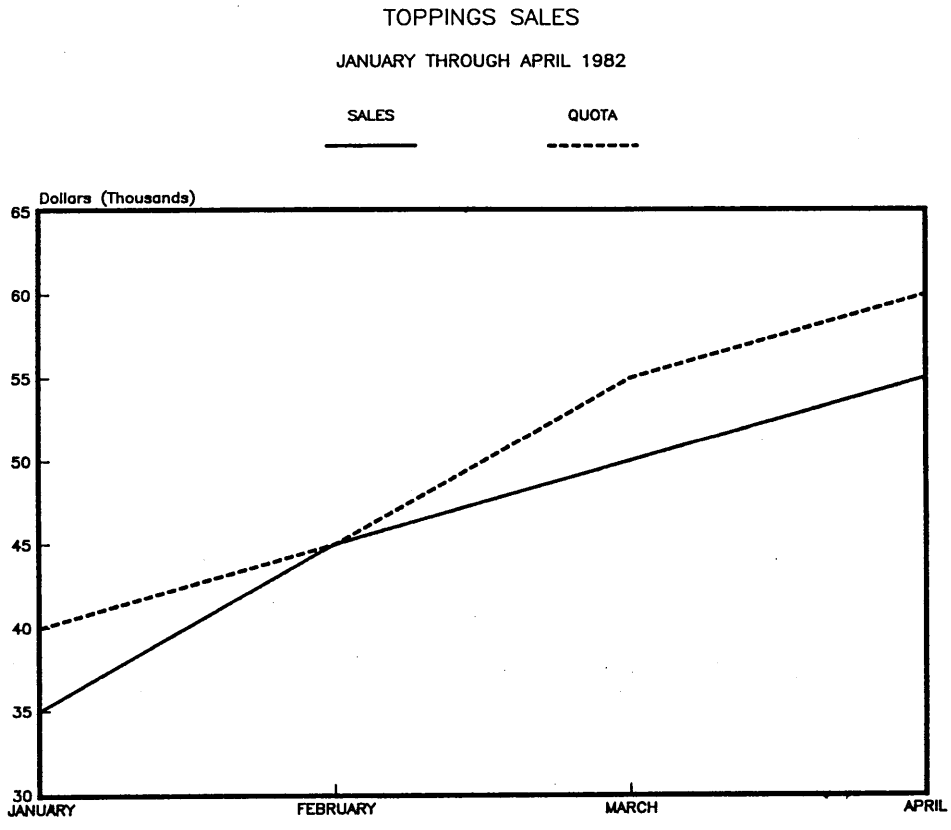



Figure 2-4. Labeled Line Chart

If your X-axis values were years — for example, 1971, 1972, 1975, 1977, and 1978 — and your chart type was a Numbered Line Chart, EZCHART would draw the chart so that the time intervals along the X-axis were evenly spaced and appropriately labeled — for example, 1970, 1972, 1974, etc.

If you are designing a Labeled Line Chart, using the same data, the X-axis values would appear on the chart as they were entered on the menu — 1971, 1972, 1975, 1977, and 1978. Typically, Labeled Line Charts are used when the X-axis represents time and units are textual (Qtr1, Qtr2, Qtr3, etc.; or Jan, Feb, Mar, etc.)

# Scatter Chart

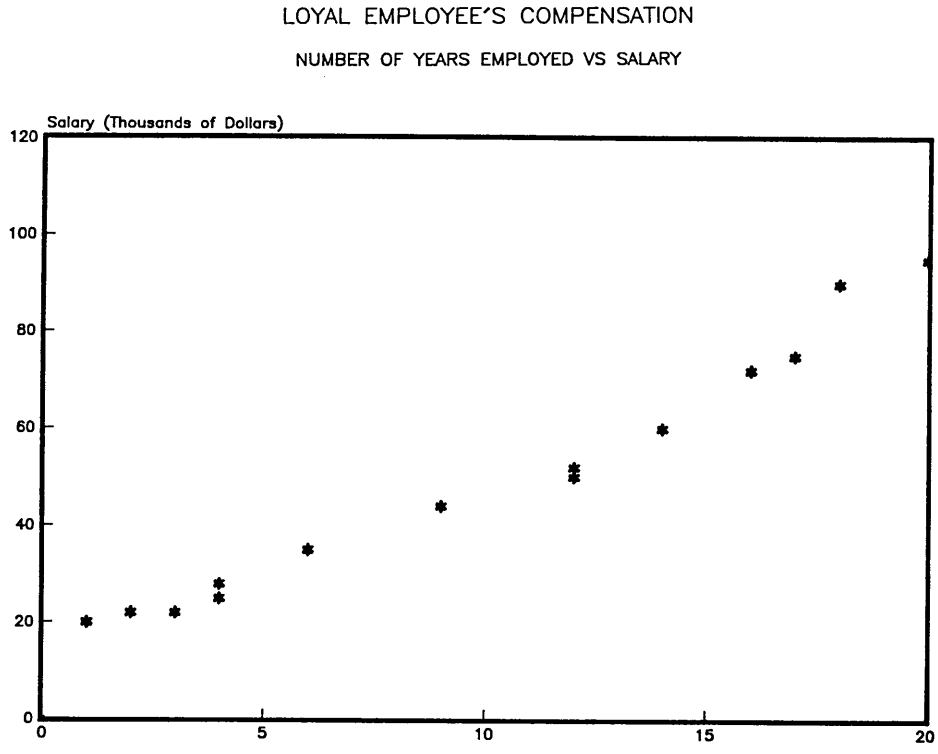



Figure 2-5. Scatter Chart

A Scatter Chart is the same as a Numbered Line Chart except the lines between data points are not drawn. Scatter charts are used to show how data points cluster to form patterns. For example, you might use the X-axis to show the number of years employees have worked for a company. The Y-axis could indicate the salaries of those employees. Your scatter chart would indicate the relationship between years of work and salary and show how experience and pay are related. If no clustering or patterns of of data occurred, the implication would be that no relationship exists. If an obvious cluster developed, the opposite would be true.

# Bar Chart

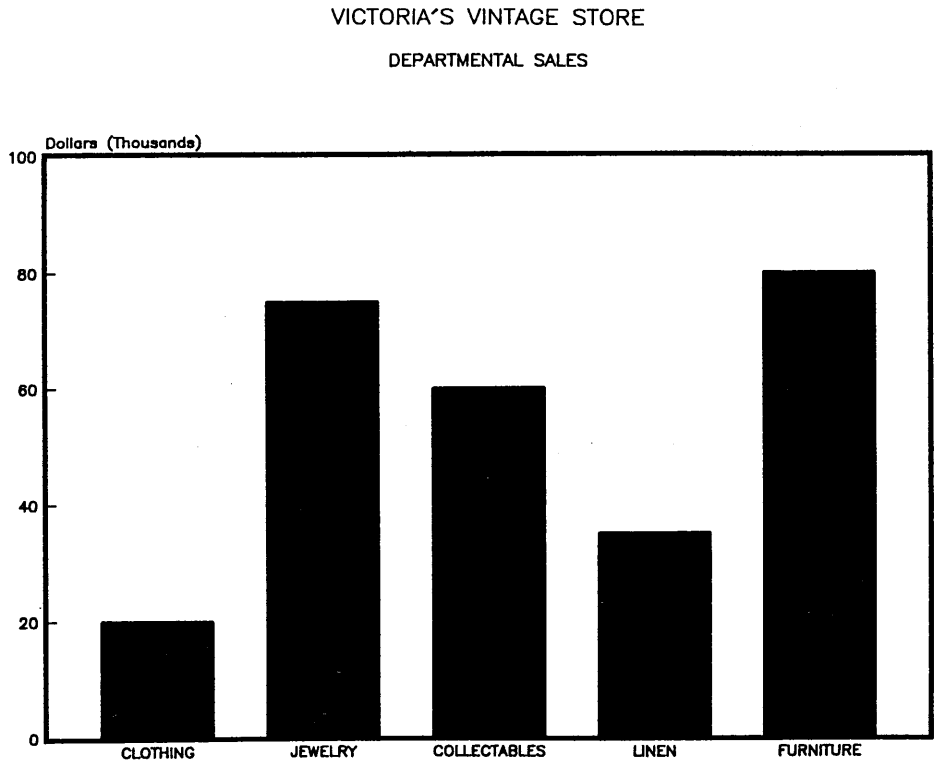



Figure 2-6. Bar Chart

Bar charts are used to compare size or parts of a total. The length of each bar is proportional to the quantity or amount being represented. The X-axis can represent continuous data (time, for example) like that used in a line chart, or discrete data (sales regions or departments, as in this example). The Y-axis is used to show the values of the data — sales, orders, forecasts, etc.

# Clustered Bar Chart

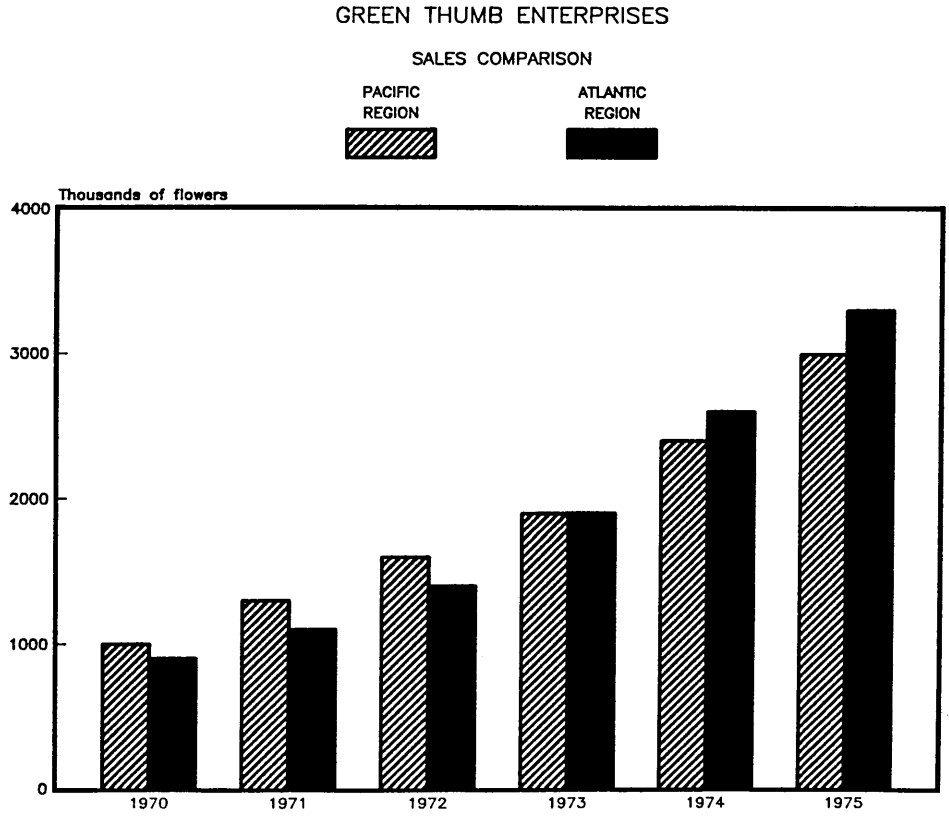



Figure 2-7. Clustered Bar Chart

Clustered Bar Charts allow you to show comparisons. For example, you could compare the sales volume of more than one region. In such an instance, you might again wish to use the X-axis to represent periods of time, have each bar represent a region or part, and have the Y-axis represent the volume.

## Bar Chart with Horizontal Bars

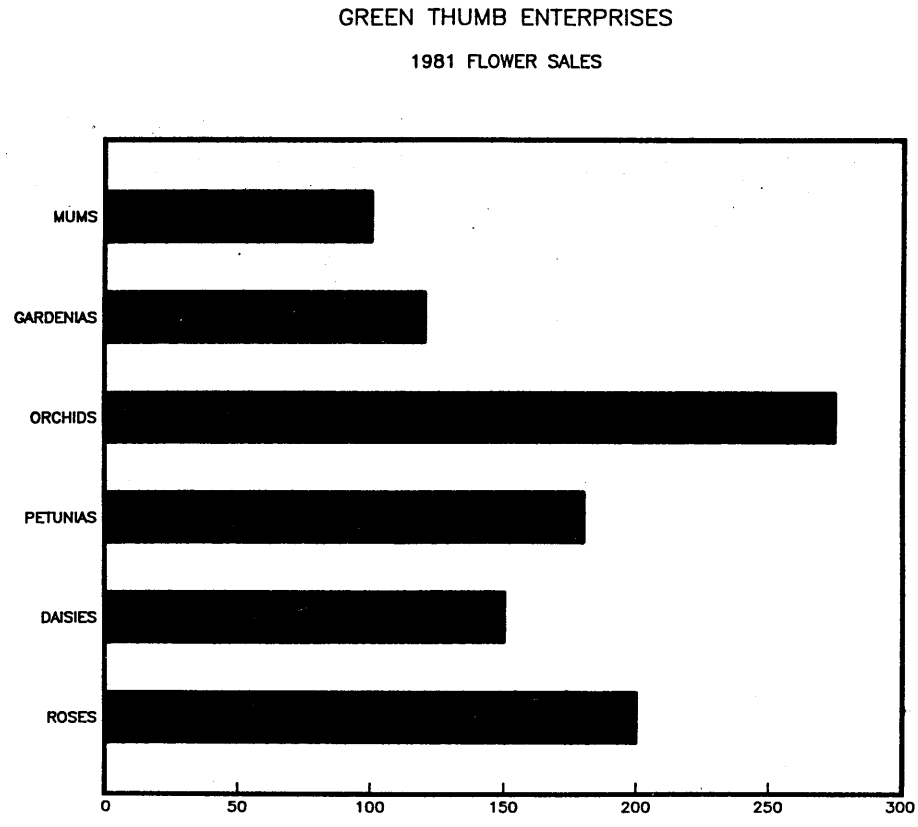



Figure 2-8. Bar Chart with Horizontal Bars

Usually the bars extend vertically. On some charts you can specify that they extend from their axis horizontally. Horizontal bars are often recommended for charts which do not use time as the X-axis value. Often people automatically interpret the X-axis of a Vertical Bar Chart as representing time if they do not study the chart carefully.

# Stacked Bar Chart

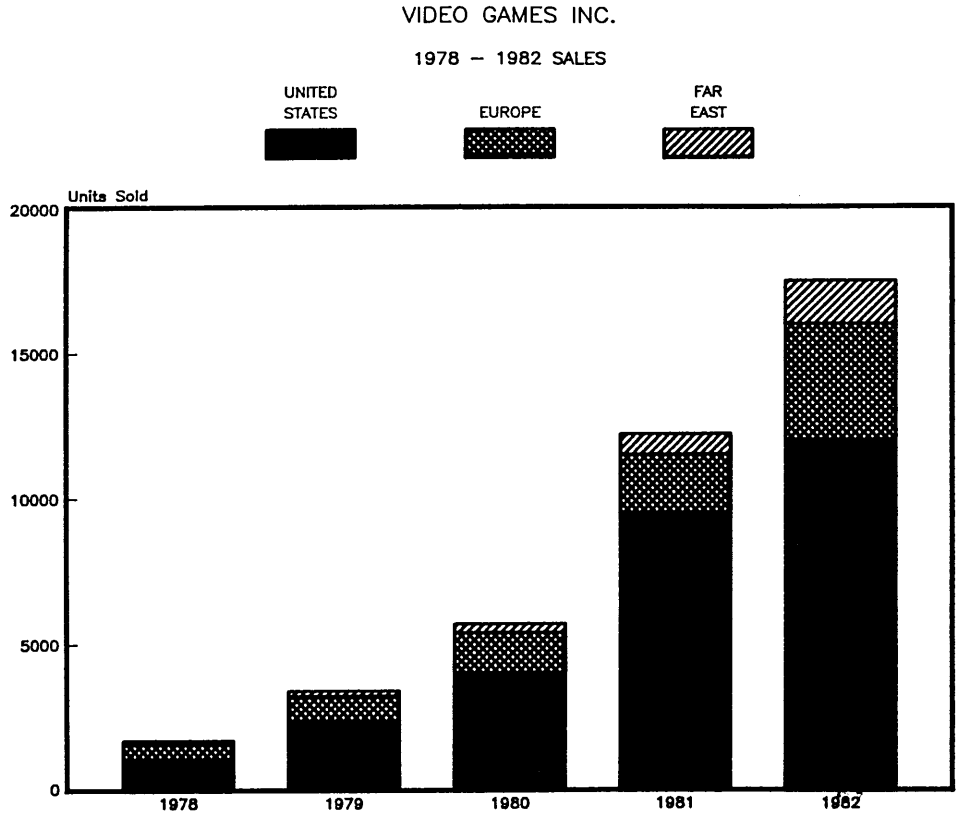



Figure 2-9. Stacked Bar Chart

Stacked Bar Charts emphasize totals rather than comparisons. For example, you could show total sales for all regions using a stacked bar chart. The performance of individual regions is still conveyed through the textures of the bars. (More will be said about textures later.)

## Pie Chart with Slice Exploded

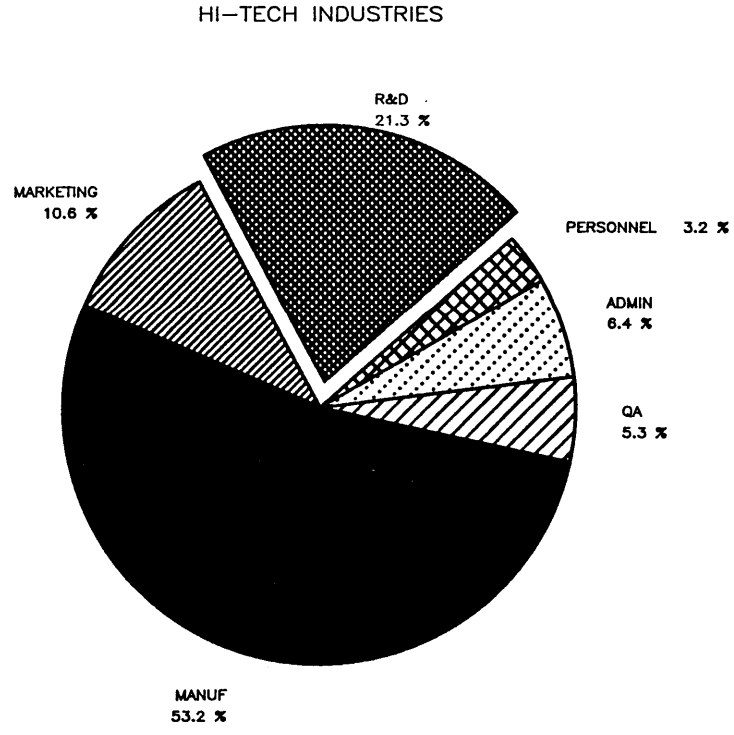



Figure 2-10. Pie Chart with Slice Exploded

A Pie Chart shows parts of the whole. For example, you might use the whole "pie" to indicate total employees in an organization. Each slice of the pie would then be used to show the total employees in each department in the organization, and would indicate that department's share of the total. You have the option of "exploding" one slice of the pie chart to give it particular emphasis.

# Using EZCHART Menus SECTION 3

HPEasyChart's program EZCHART, enables you to create, modify, plot, and save line, bar, scattergram and pie charts using only seven menus!

This Section provides:

- a Menu Map which illustrates the order in which these menus will appear on your terminal screen.
- a discussion of the purpose of each menu.
- a review of each menu's Function Keys; and how EZCHART uses them as instructions from you to make selections, perform tasks, and provide you with assistance on your terminal screen.
- a Field Discussion for each menu which describes what information to provide, and what EZCHART does with the data you enter in each menu's data entry fields.

## The EZCHART Menu Map

When you log on and `:RUN EZCHART.PUB.SYS`, you enter the program at the **Main Menu**.

Your next step depends on which task you wish to perform.

- You may select a chart type to create and proceed to the **Chart Design Menu** to enter, edit, and review your chart data. You may decide to use data stored in a Self-Describing File (SD File) created by another HP office product. You can retrieve SD File data through the **Data Selection Menu** and continue chart design on the Chart Design Menu. Once you are satisfied with your chart, you can continue on to the **Save Chart Menu** and save your chart, or continue on to the **Plot Chart Menu** and plot your chart.

- If the chart already exists and you want to change it, you need to proceed to the **Edit Chart Selection Menu** to recall your chart file before going to the Chart Design Menu to edit your chart.

- If you want to plot an existing chart without making any changes, you need to go to the **Plot Chart Selection Menu** to recall your chart file. Once your chart file is recalled, the Plot Chart Menu will enable you to enter your Plotting specifications and plot your chart to a plotter. Each of these selections will take you on a different route through the EZCHART program.

Since all of the functions do not appear on the Main Menu, you may need to choose an initial function which will lead you to the menu which supports the task you wish to perform.

The EZCHART Menu Map and the menu discussions which follow will help you identify each menu and your location within the EZCHART program.

In every EZCHART menu, instructions are presented in a sentence or two appearing immediately below the menu banner. Until you are familiar with all of the menus, it is recommended that you always read this information before proceeding.

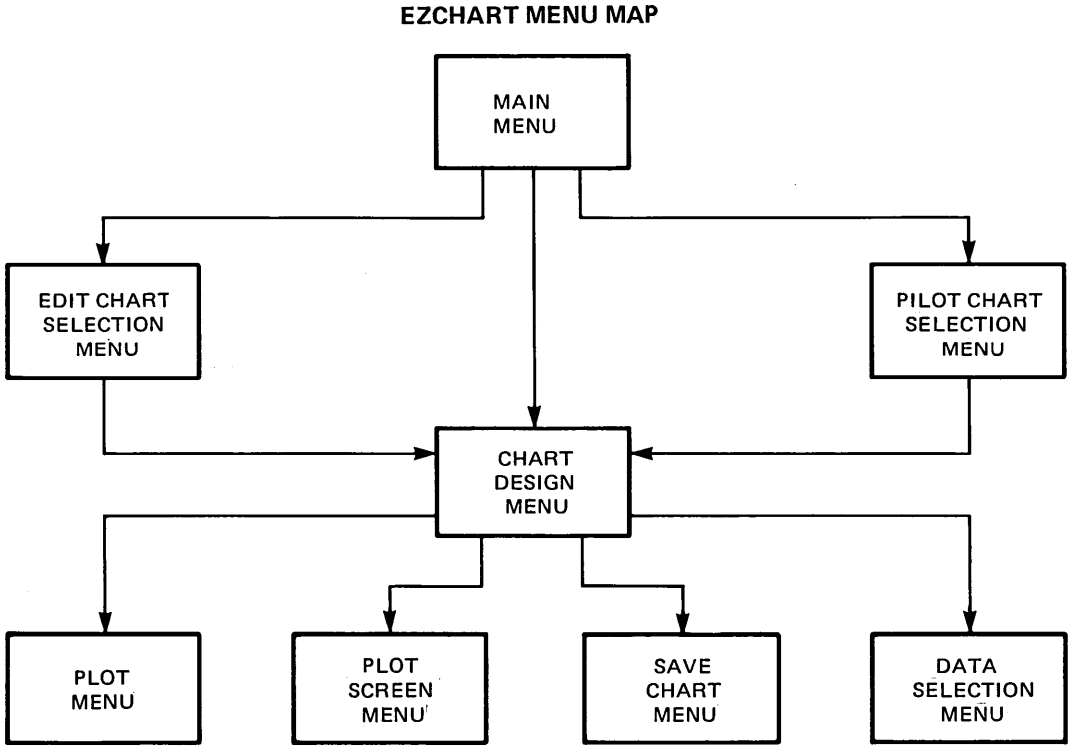



Figure 3-1. The EZCHART Menu Map

## The Main Menu

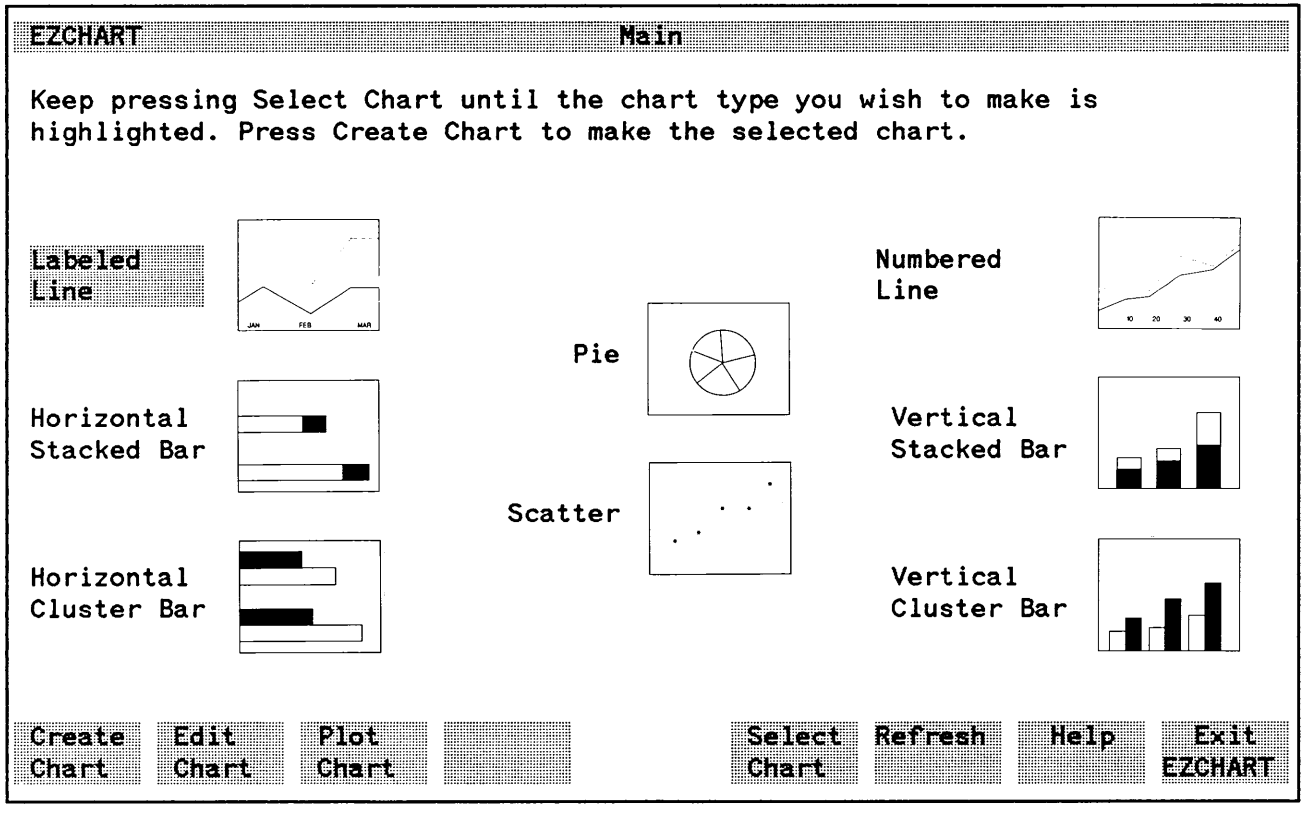


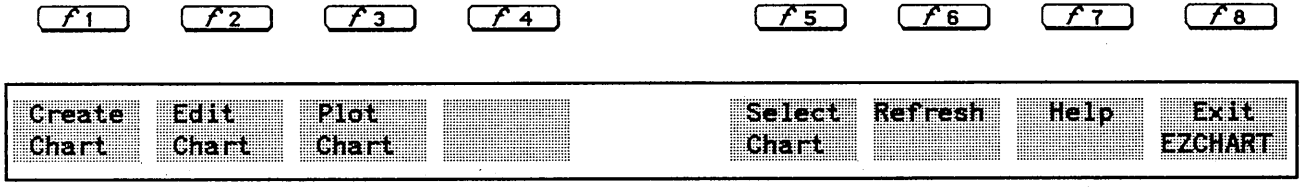

Figure 3-2. With Labeled Line Chart Highlighted

The Main Menu presents all eight of the available chart types in a single display. Its purpose is to enable you to make a chart type selection and direct you to the appropriate Chart Design Menu to create your chart. If your chart already exists and you wish to modify it, press the Edit Chart function key and you will proceed to the Edit Chart Selection Menu. If you wish to plot an existing chart, press Plot Chart and you will proceed to the Plot Chart Selection Menu.

There are no data entry fields on the Main Menu. You indicate what you wish to do by pressing the corresponding function key. EZCHART directs you to the next menu supporting that function, automatically.

## Main Menu Function Keys

The function keys appearing on this menu are defined as follows:




**Create Chart** — Press this key after you have made your chart type selection and its description is highlighted. After a pause, the Chart Design Menu for that chart type will appear on the screen.

**Edit Chart** — Press this key when you wish to recall a previously designed chart for editing, expanding, etc. When you press Edit Chart, the Edit Chart Selection Menu appears on your screen. Refer to the Edit Chart Selection Menu in this section.

**Plot Chart** — Press this key when you wish to plot a previously designed chart. When you press Plot Chart, the Plot Chart Selection Menu appears on your screen. Refer to the Plot Chart Selection Menu in this section.

**Select Chart** — Press this key to move the chart type selection highlight from its current position to the chart type desired. The highlight will advance to the next choice with each press of Select Chart.

**Refresh** — Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Help** — Press this key for additional information about this menu's instructions or function keys.

**Exit EZCHART** — Use this key to leave EZCHART. On all other menus, the key is labeled Done. Done always returns you to the previously displayed menu. You will need to repeat pressing Done to return to the Main Menu from a menu or screen which was reached from a menu other than the Main Menu.

The **Help** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without having to refer to this reference guide. Help replaces the Main Menu with the following Help screen.

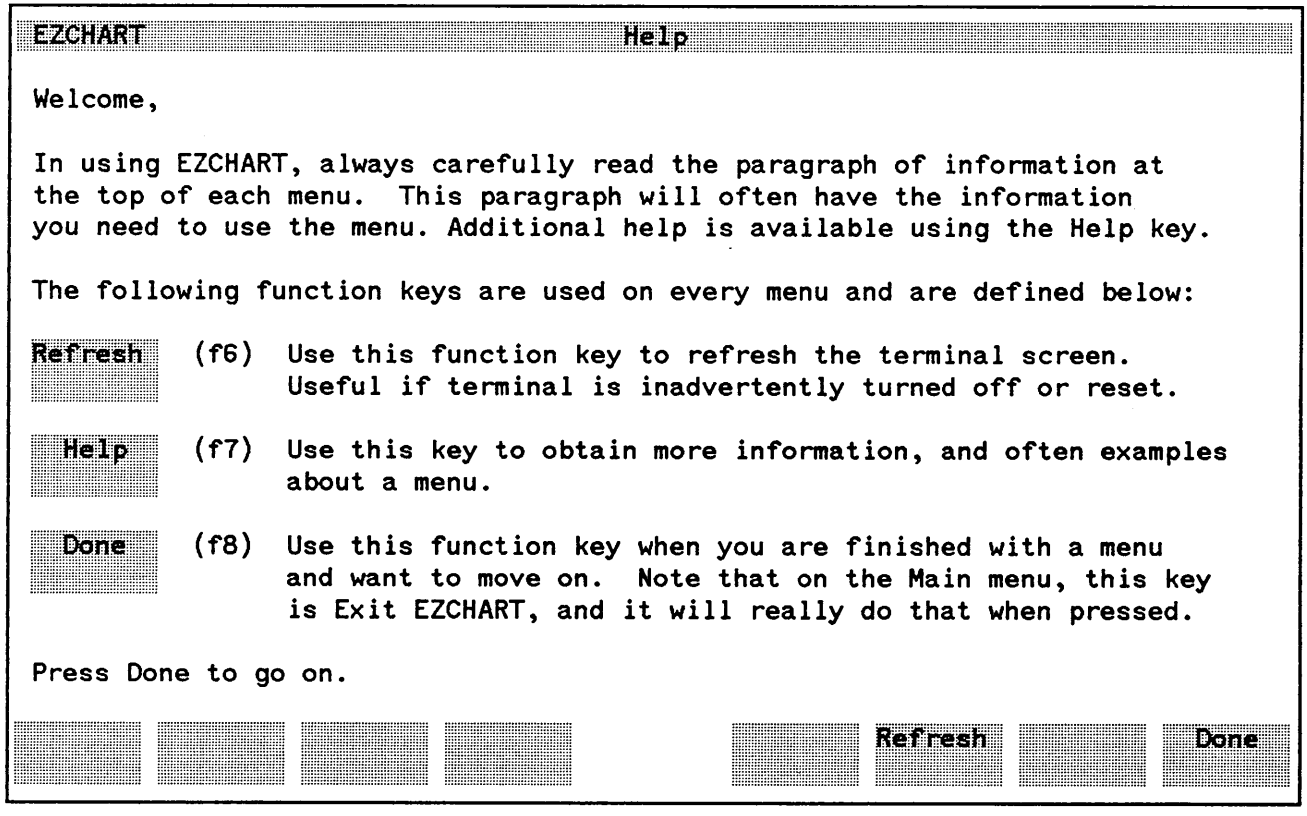



Figure 3-3. Main Menu Help Screen

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done always returns you to the previously displayed menu — the Main Menu in this instance.

## The Chart Design Menu

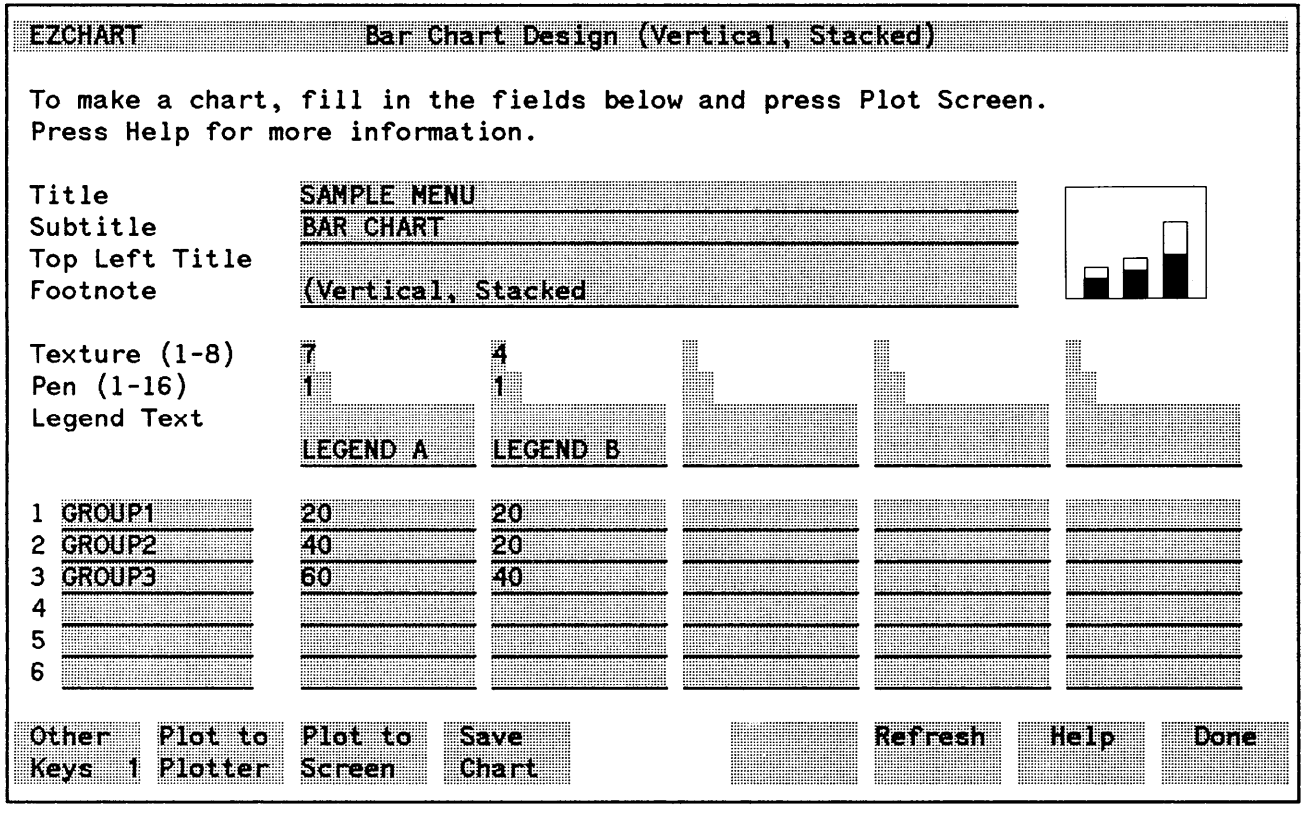



Figure 3-4. Bar, Line, & Scatter Chart Design Menu

There is a Chart Design Menu for each chart type. Its purpose is to enable you to enter chart design data; and to review, modify, plot, and save a chart designed with this data.

To provide these capabilities, the function keys are assigned to one of three levels: Level 1, Level 2, or Level 3.

Except for the Pie Chart Design Menu, all function keys appear in the same location and perform the same functions on all Chart Design Menus.

The function keys and data entry fields for the Chart Design Menus are discussed on the following pages. pages.

## The Pie Chart Design Menu

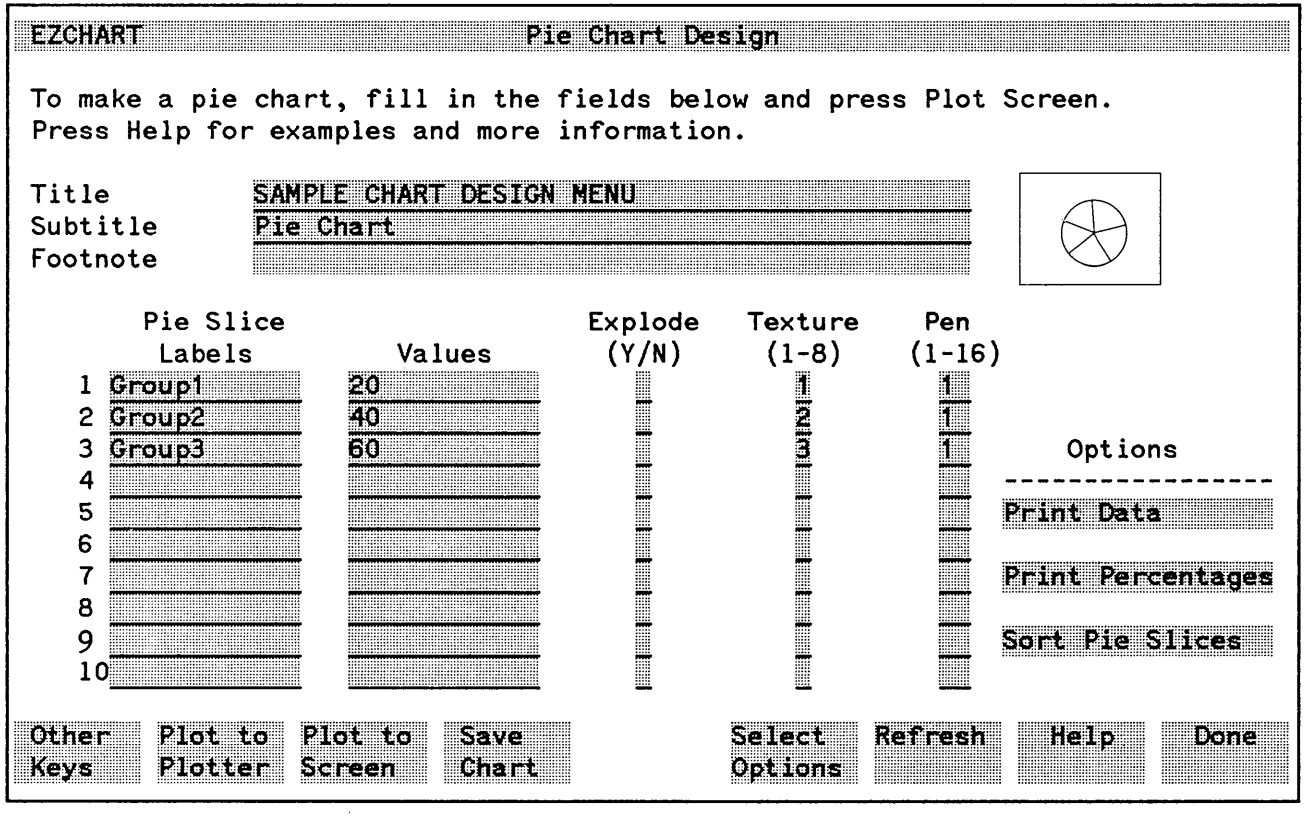



Figure 3-5. Pie Chart Design Menu

The data entry fields appear in a different order on the Pie Chart Design Menu. The Pie Chart Design Menu also provides the additional function of selecting graph display options unique to pie charts.

The Pie Chart data entry fields are discussed separately following the Bar, Line, and Scatter chart design field discussions in this section.

## Chart Design Data

There are three ways of providing data for chart design, and they are the same for all chart types.

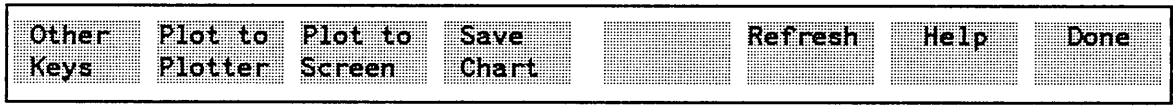
- If you select Create Chart on the Main Menu, you are presented with a Chart Design Menu to design your chart by entering new data in the data entry fields.

- If you selected Edit Chart on the Main Menu, and you recalled your chart file on the Edit Chart Selection Menu, the data you recalled will be presented on the Chart Design Menu for editing.

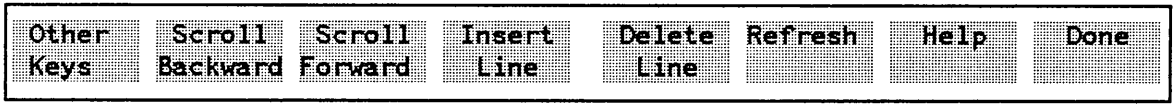
- You may wish to design a chart with data stored in a Self-Describing file created by another HP Office Product. The Chart Design Menu provides a function key labeled Data File which enables you to access compatible data files outside of EZCHART. Data File directs you to the Data Selection Menu where you can browse a file listing, select a data file, identify the items to be charted, and retrieve the associated data. Once you enter the data file name and the data item names, the data will be retrieved by EZCHART and presented on the Chart Design Menu where you continue designing your chart.

## The Chart Design Menu Function Keys

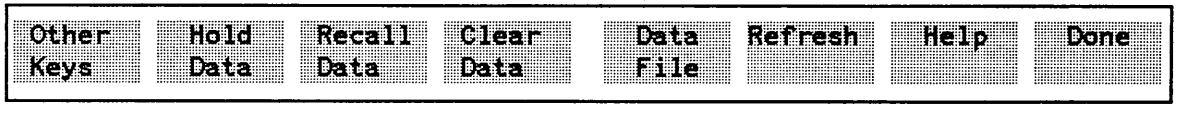
**Level 1** functions enable you to plot, review, and save your chart and chart data. You use Save Chart to create files for use with other HP office and graphics products such as DSG/3000, HPDraw, HPWord, TDP/3000, and the Laser Printer. The Plot Chart Menu or the Save Chart Menu will be presented automatically if you select one of these functions. Pressing Other Keys on Level 1 relabels the keys with Level 2 functions. Done returns you to the Main Menu.




**Level 2** functions provide editing capabilities. The scrolling functions enable you to scroll forward to access additional data entry space, and scroll backward to review the data scrolled off of the screen. The insert and delete functions enable you to add or remove entire lines of data. Pressing Other Keys on Level 2 relabels the keys with Level 3 functions. Done returns you to the Main Menu.



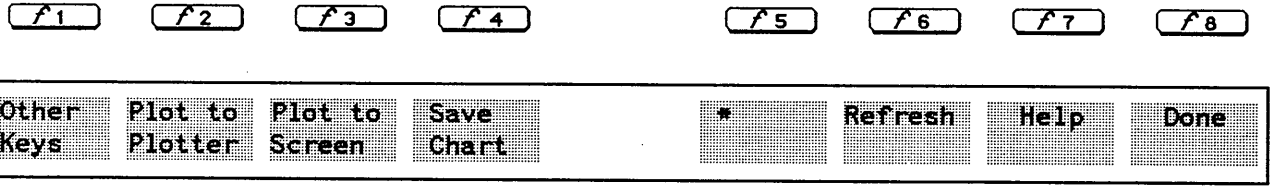

**Level 3** functions provide data transfer and data access capabilities. These functions enable you to use data stored in Self-Describing files created by another HP office product for chart design. Data File takes you to the Data Selection Menu to select an SD file, retrieves the data, returns you to the Chart Design Menu, and displays the data. You can also place your current chart data in a temporary hold file, return to the Main Menu, select another chart type, release the data from the hold file and continue chart design. Pressing Other Keys on Level 3 relabels the keys with Level 1 functions. Done returns you to the Main Menu.




Level 1, Level 2, and Level 3 function keys are reviewed in detail in the following Function Key discussions.

## Level 1 Function Keys

The Level 1 function keys appearing on the Chart Design Menu are defined as follows:




**Other Keys** Pressing this key on Level 1 relabels the keys with Level 2 functions. Pressing Other Keys a second time relabels Level 2 keys with Level 3 functions. Pressing Other Keys a third time relabels the keys with the original Level 1 functions.

**Plot to Plotter** This key displays the Plot Chart Menu where you provide specifications for plotting a permanent copy of your chart on a plotter.

**Plot to Screen** Press this key to plot a trial copy of your chart on the terminal screen so that you can review your chart before deciding to plot a permanent copy to a plotter.

**Save Chart** This key is used to display the Save Chart Menu where you can save your chart and chart data in a chart file, or save your chart as a figure in a figure file.

***** **Select Options** This key is defined on the Pie Chart Design Menu ONLY. It provides Pie Chart display options of printing data, printing percentages, or sorting pie slices. Continue pressing this key until all of the options desired are highlighted.

**Refresh** To redisplay the terminal screen, press this key. It is useful when the terminal is inadvertently turned off or reset.

**Help** Press this key for additional information about this menu's instructions or function keys.

**Done** Press this key to return to the Main Menu. A message is displayed in the menu banner window asking you to repeat the instruction as a reminder that the chart data has not been saved. Once you leave the Chart Design Menu, the chart data, if not saved using the Save Chart Menu, will be lost.

The **Help** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without having to refer to this reference guide. Help relabels the Chart Design Menu function keys with the following help functions.

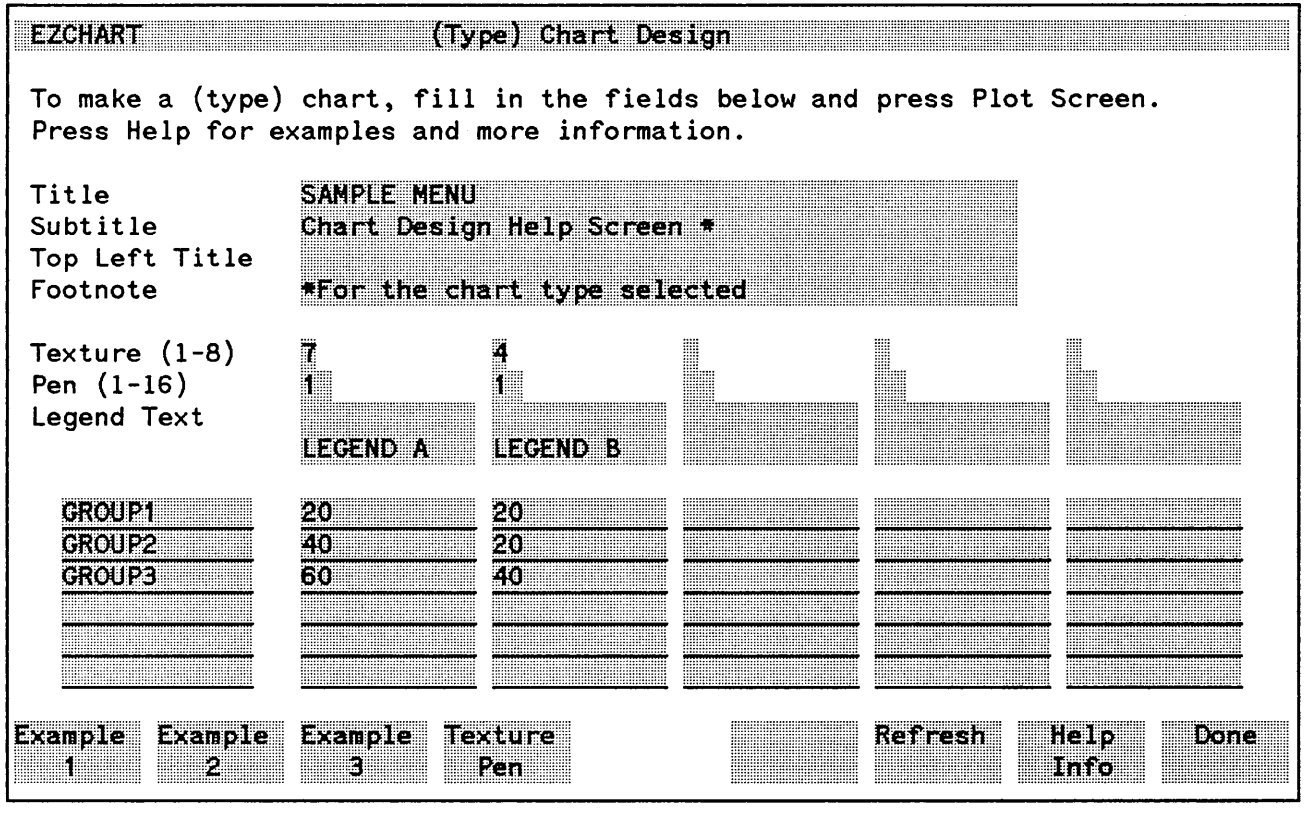



Figure 3-6. Chart Design Menu Help Screen

**Example 1, 2 & 3** — When you press one of these keys, the screen displays the Chart Design Menu filled with sample data for you to plot to the screen as a model for chart design.

**Texture Pen** — Press this key for texture and pen descriptions and information on specifying your selection by its numeric code.

The **Texture Pen** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without the need to refer to this reference guide. Texture Pen replaces the Chart Design Menu with the following Help screen.

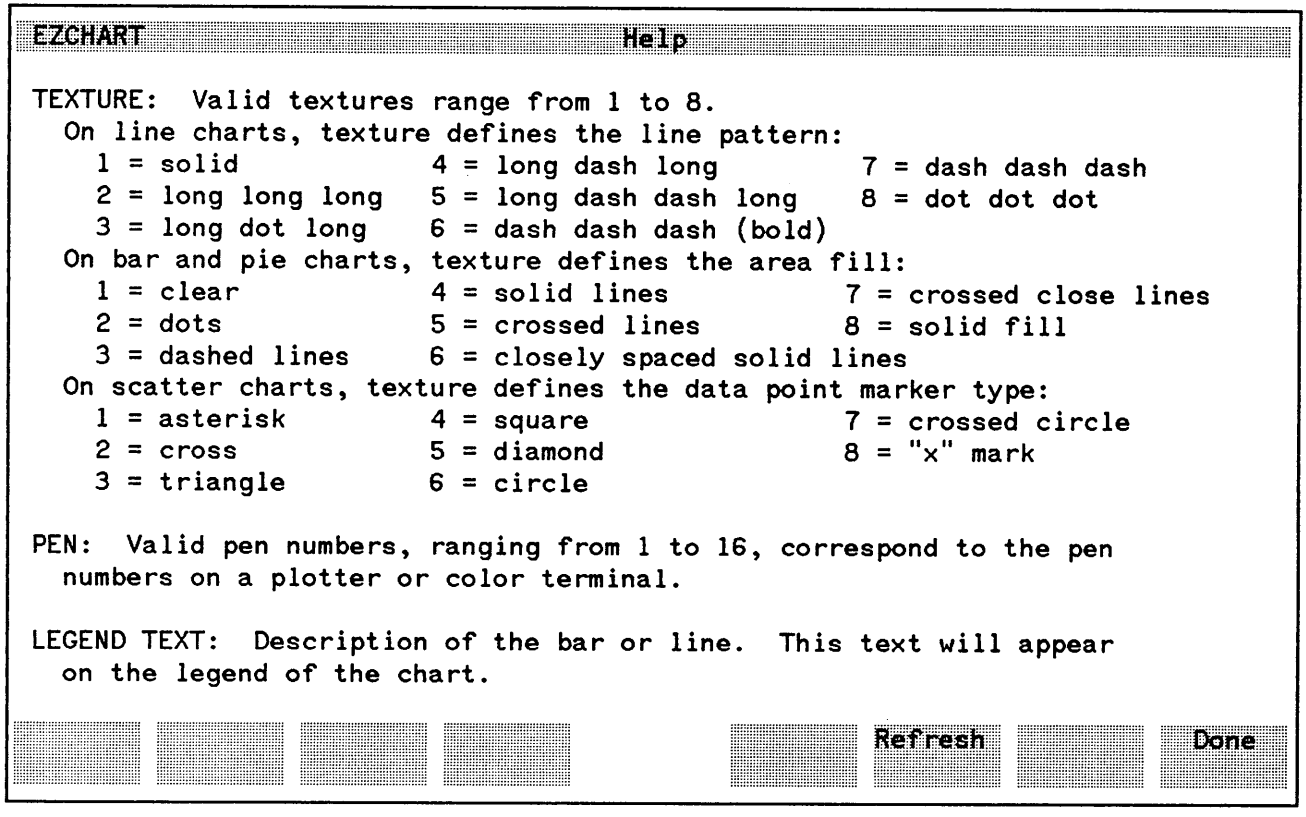



Figure 3-7. Texture Pen Help Screen

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Chart Design Menu.

The **Help Info** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without the need to refer to this reference guide. Help-Info replaces the Help-Example Screen with the following Help screen.

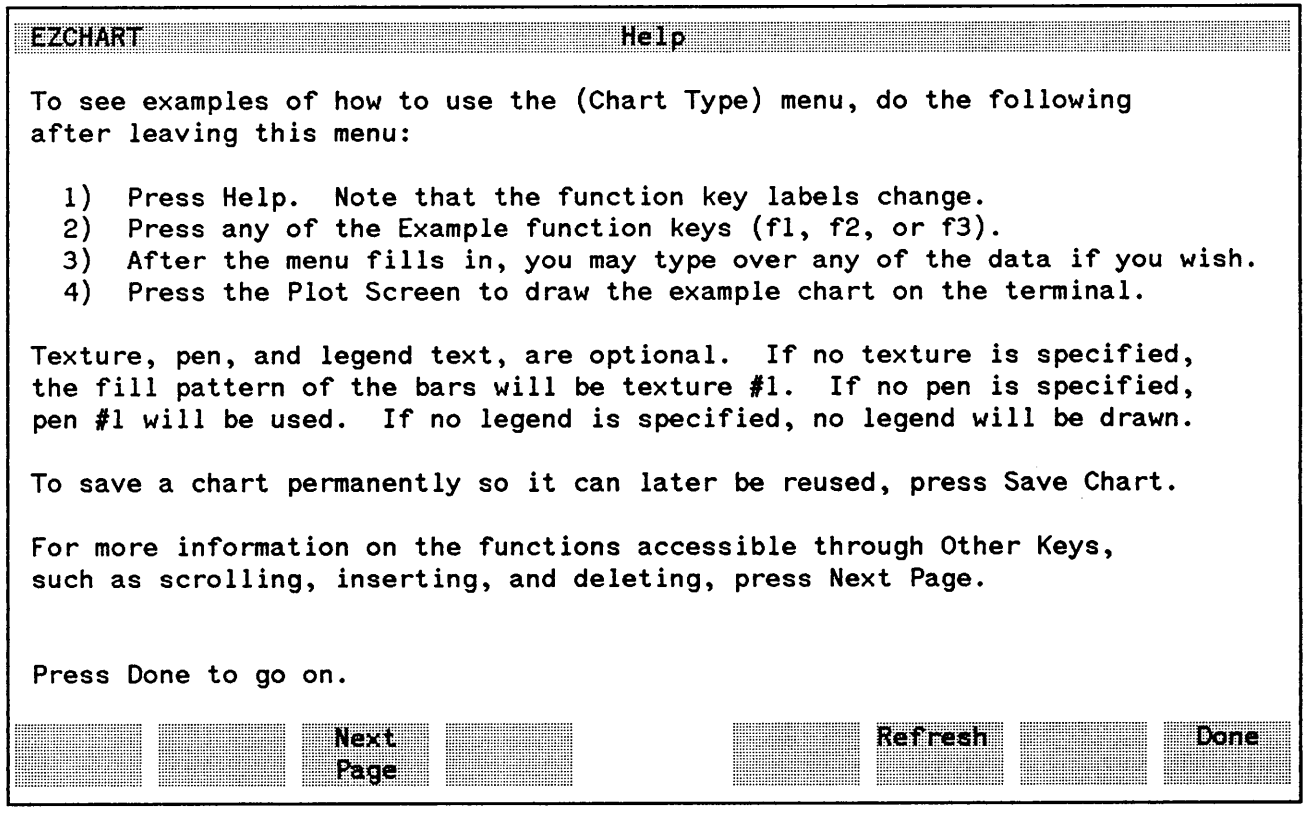



Figure 3-8. Chart Design Menu Help Screen

**Next Page** — Press this key for information on the scroll, insert, and delete editing capabilities; and the hold, recall, and clear data transfer capabilities.

**Done** — Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Chart Design Menu.

The **Next Page** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without the need to refer to this reference guide. Next Page continues the Help-Info screen with the following Help screen.

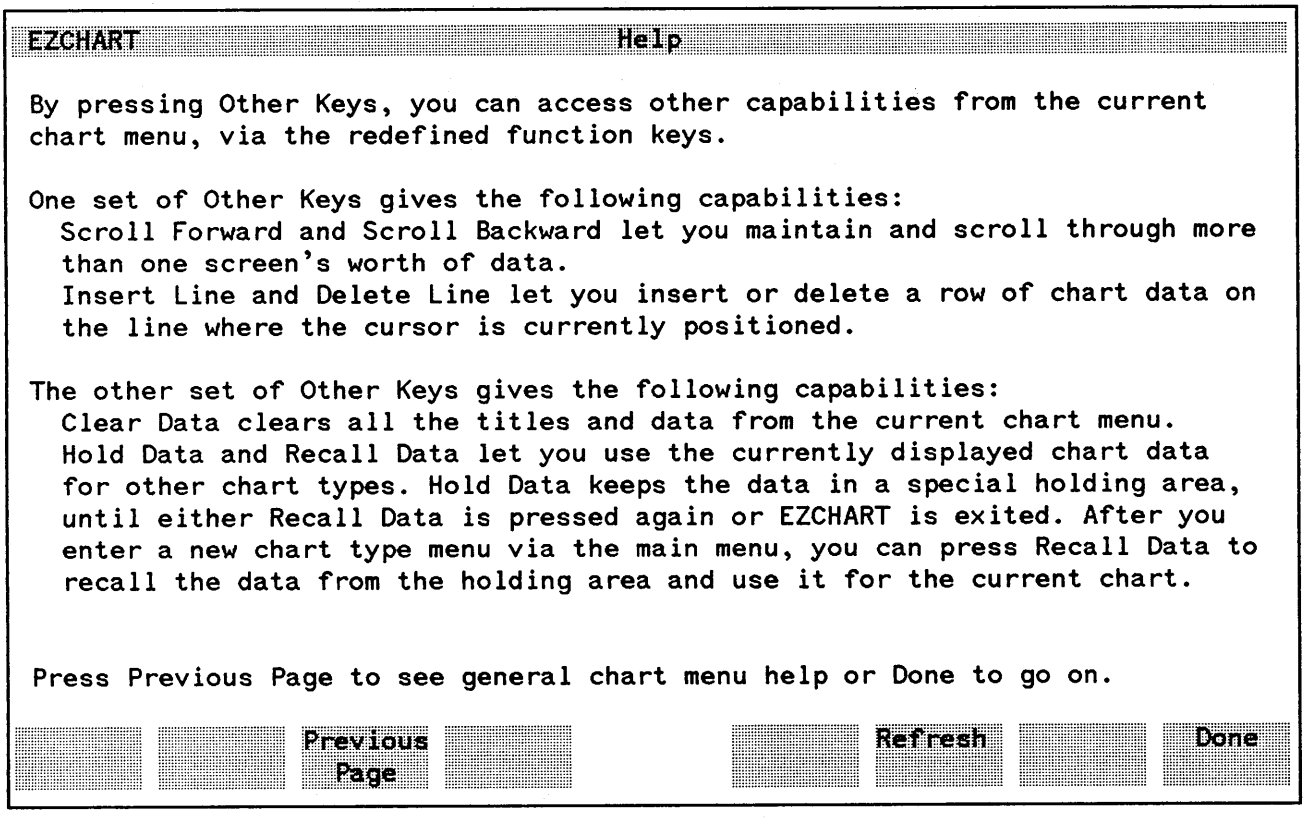


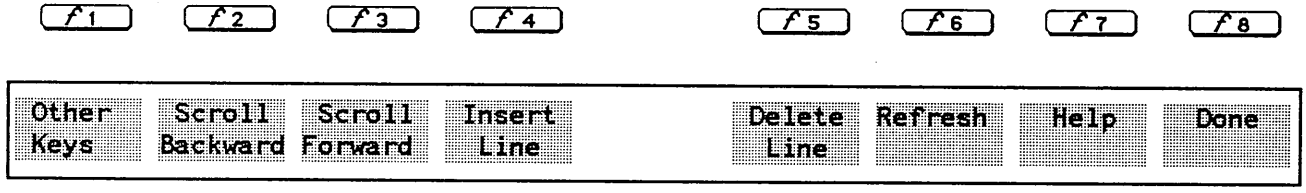

Figure 3-9. Help-Info Screen (Next Page)

**Previous Page** Press this key for instructions on plotting the example data to the terminal screen as a model for chart design.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Chart Design Menu.

## Level 2 Function Keys

The Level 2 Functions Keys appearing on the Chart Design Menus are defined as follows:




**Other Keys** — Pressing this key on Level 2 relabels the keys with Level 3 functions. Pressing Other Keys again relabels Level 3 keys with the original Level 1 functions.

**Scroll Backward** — Pressing this key enables you to scroll backwards through the data field in order to add, modify, or delete data which has been scrolled off of the menu and is out of view of the entry space available on the screen field.

**Scroll Forward** — Press this key to scroll forward through the data field in order to add, modify, or delete data when the number of entries needed exceeds the number of entry lines visable on the screen entry field.

**Insert Line** — When you move the cursor to a line of data, This key enables you to insert a new line of data between the preceeding line and the cursor position.

**Delete Line** — When you move the cursor to a line of data, pressing this key will delete that line of data.

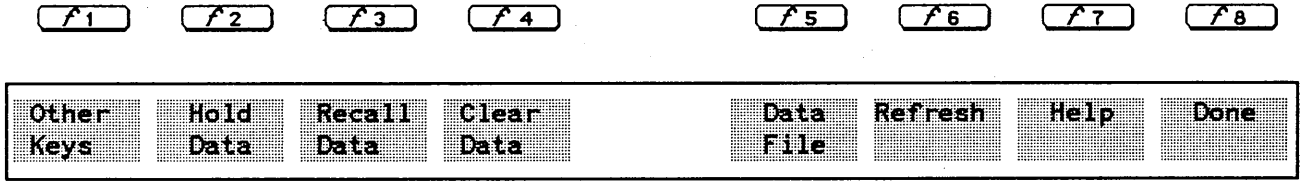
**Refresh** — To redisplay the terminal screen, press this key. It is useful when the terminal is inadvertently turned off or reset.

**Help** — Press this key for additional information about this menu's instructions or function keys.

**Done** — Press this key to return to the Main Menu. A message is displayed in the menu banner window asking you to repeat the instruction as a reminder that the chart data has not been saved. Once you leave the Chart Design Menu, the chart data, if not saved using the Save Chart Menu, will be lost.

## Level 3 Function Keys

The Level 3 Function Keys appearing on the Chart Design Menu are defined as follows:




**Other Keys** Pressing this key on Level 3 relabels the keys with the original Level 1 functions.

**Hold Data** Press this key to place the current Chart Design Menu data in a temporary holding area. This enables you to transfer the chart data to another chart type for review and/or development without having to reenter the data. In order to complete this function you need to return to the Main Menu by pressing Done twice, select the chart type desired, press the create function and proceed to the Chart Design Menu. You recall your chart data from the temporary holding area by pressing Recall Data on the Level 3 function keys.

**Recall Data** Press this key to recall data you placed in the temporary holding area. This function enables you to review chart data you entered on one chart type design menu on another chart type design menu without having to reenter the data. Once the data has been recalled, you may continue with chart editing and plotting in the new chart type as though you had just entered the data.

**Clear Data** To clear all data currently being displayed on the Chart Design Menu, press this key.

**Data File** Press this key if you wish to design a chart with data stored in a Self-Describing file created by another HP Office Product. You will be directed to the Data Selection Menu. Refer to the Data Selection Menu in this section. Once you are successful in accessing the desired data file, the data will be displayed on the Chart Design Menu. Refer to Section 2 for a discussion of Self-Describing data used for chart design.

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Help** Press this key for additional information about this menu's instructions or function keys.

**Done** To return to the Main Menu, press this key. A message is displayed in the menu banner window asking you to repeat the instruction as a reminder that the chart data has not been saved. Once you leave the Chart Design Menu, the chart data, if not saved using the Save Chart Menu, will be lost.

## Field Discussion

The Chart Design Menus provide nine input fields for entering chart data. These fields appear in the same location on each Chart Design Menu except the Pie Chart Design Menu. They enable you to input chart design information in the following areas.

**Bar, Line, and Scatter Chart Design Menus**

| Field | Provides |
|---|---|
| **1 - 4** | The chart title, subtitle, top left title and footnote. |
| **5 - 6** | Graph display specifications including the legend text, texture and color selections. |
| **8 - 9** | X and Y-axis data used by EZCHART to calculate the data comparison and create the graph display. |

The way EZCHART uses chart design data varies with each of these chart types for fields 8 and 9. All fields are described in the following discussions.

**Pie Chart Design Menu**

| Field | Provides |
|---|---|
| **1 - 4** | The chart title, subtitle, footnote, and pie slice description labels. |
| **5** | Pie slice data values used by EZCHART to calculate the data distribution and create the graph display. |
| **6 - 8** | Graph display specifications including exploding a pie slice, texture and color selections. |
| **9** | **Select Options**<br><br>This field provides display specifications unique to pie charts which are specified using the Select Options function key instead of typing in data. Your choices are none of the options, any combination, or all three. The highlight will move to these combinations as you continue to press Select Options. The specifications are presented in the Pie Chart field discussion following in this section. |

All fields are described in the following discussions.

## Field Discussion

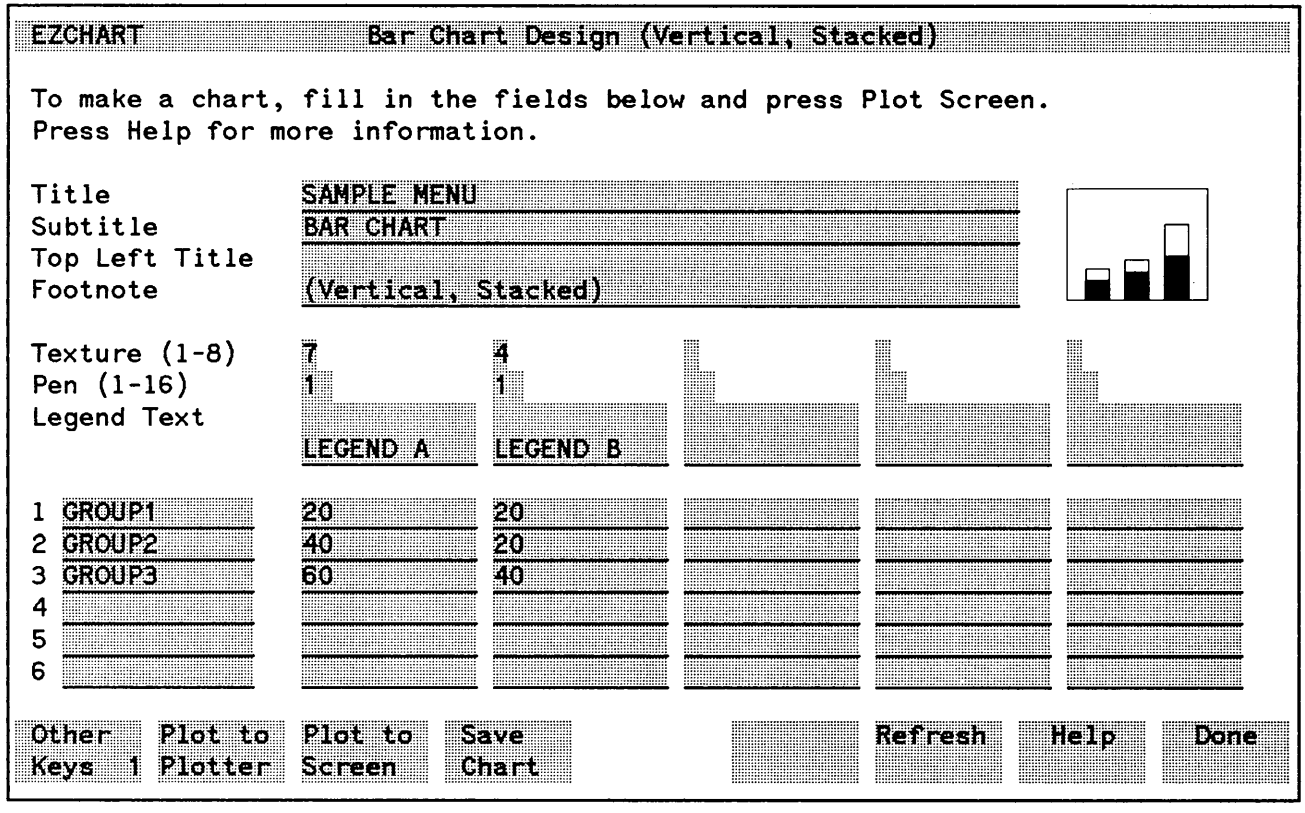



Figure 3-10. Chart Design Menu Fields

## 1. Main Title

**PURPOSE:**

Type the title of your chart here. It should briefly describe the purpose or content of the graph, telling the viewer what comparison to look for. For example, *Sales by Region* or *Regional Sales Comparison* would serve as titles.

**CHARTS AFFECTED:**

All chart types (including Pie Charts).

**INPUT FIELD LENGTH:**

Up to 45 letters, numbers, or special characters.

**SPECIAL CONSIDERATIONS:**

Be aware that long titles might upset the visual balance of the chart. The graph display should remain the main focus of the chart. When you plot your chart to a plotter, you have the additional option of selecting light or medium bold type for title and subtitle. You make this selection on the Plot Chart Menu at the time you plot your chart.

## 2. Subtitle

**PURPOSE:**

Type the subtitle of your chart in this field. It will appear beneath the main title in smaller type. It can be considered an extension of the main title. Specific information such as dates — 1980/1983 — may be appropriate subjects for subtitles.

**CHARTS AFFECTED:**

All chart types (including Pie Charts).

**INPUT FIELD LENGTH:**

Up to 45 letters, numbers, or special characters.

**SPECIAL CONSIDERATIONS**

The subtitle is most effective in directly naming the values compared (*what* is being compared) within the main title subject. When you plot your chart to a plotter, you have the additional option of selecting light or medium bold type for title and subtitle. You make this selection on the Plot Chart Menu at the time you plot your chart.

## 3. Top Left Title

**PURPOSE:**

Type the specific description of the item, value, unit, or amount in this field. The Top Left Title identifies the unit of measure(scale) on which the comparison range is plotted.

**INPUT FIELD LENGTH:**

Up to 45 letters, numbers, or special characters.

**CHARTS AFFECTED:**

All charts **except** Pie Charts (which use pie slice labels entered in field 4 on the Pie Chart Design Menu.)

**SPECIAL CONSIDERATIONS:**

Long titles might upset the visual balance of the chart. All you really need to do is specify what the measure of the comparison is. Three words or less is most effective. Examples would be *Dollars in Thousands*, *Thousands of Tons*, and *Number of Employees*.

## 4. Footnote

**PURPOSE:**

Type your footnote in this field. It will appear beneath the chart, centered. A footnote may identify the chartmaker, give the date the chart was created, number the chart if this is one of a series of charts, or display a response to the chart contents — for example, *Good Work, Region 3!*

**INPUT FIELD LENGTH:**

Up to 45 letters, numbers, or special characters.

**CHARTS AFFECTED:**

All chart types **except** Pie Charts (where you enter the footnote in field 3 on the Pie Chart Design Menu.)

**SPECIAL CONSIDERATOINS:**

The footnote could be a simple statement that helps focus the chart's emphasis for a specific audience.

## 5. Texture:

**PURPOSE:**

Type in the number associated with the desired texture. Textures make charts more easily understood by providing a different pattern or appearance for each value plotted on a graph. If you do not specify textures in this field, EZCHART will supply default textures when plotting your chart. The Plot Screen function will display your chart plotted with either defaults or textures of your choice.

**CHARTS AFFECTED:**

All chart types **except** Pie Charts (where you enter the texture specifications in field 7. Pie Charts use field five to enter data values.)

**SPECIAL CONSIDERATIONS:**

There are three types of textures and eight texture variations for each type. Line textures are used with line charts. Data point textures are used for scatter charts. Surface textures are used for bar and pie charts. EZCHART automatically uses the texture type associated with your chart type. Defaults are assigned in a specific order. This order is based on what provides the best contrast without distorting the overall appearance of your chart. You may change the defaults to suit your own preferences by simply typing the number of your selection in this field. Texture can distort proportions and unbalance your chart. On the other hand, they can add emphasis to a particular value on your chart. The Plot Screen function is a good way to experiment with the use of texture on your chart.

## 6. Pen

**PURPOSE:**

Type the number of the pen whose assigned color you wish to use. Color helps to identify elements in a chart in the same way textures do.

When you load a pen in your plotter, you determine the assignment of a color to a pen location. Since loading pens is not controlled by EZCHART, a list of standard pen locations associated with a color is provided in Appendix B.

**CHARTS AFFECTED:**

All chart types **except** Pie Charts (where you enter pen specifications in field 8. On the Pie Chart Design Menu, field 6 is used to specify exploding a pie slice.)

**SPECIAL CONSIDERATIONS:**

Colors also have visual associations, such as green (with money), red (with losses), and black (with profits). These associations should be kept in mind when selecting pens. Five pens (colors) may be selected for a single chart. If you leave this field blank, the pen number defaults to 1 (black). If you are using a color terminal, the Plot Screen function is a good way to experiment with the use of color on your chart.

## 7. Legend Text

**PURPOSE:**

Type in the legend text for each of the Y-axis values you have entered. Your legend should briefly label each value and identify which texture or color you have assigned to the value on your chart's graph display. EZCHART will print your legend text and place an example of your choice of texture or color directly below the Subtitle on your chart.

**INPUT FIELD LENGTH:**

Up to 11 letters, numbers, or special characters.

**CHARTS AFFECTED:**

All chart types **except** Pie Charts (which use pie slice labels to associate a pie slice with a description. Pie slice labels are entered in field 4 on the Pie Chart Design Menu and field 7 is used to specify texture specifications.)

**SPECIAL CONSIDERATIONS:**

In most cases, when you view a chart, you see the graph first and then look for the legend to see what a texture or color represents. The legend should do just that, as briefly as possible, so that it does not compete with other labels on the chart.

## 8. X-Axis data

**PURPOSE:**

EZCHART uses the data you type in this field to calculate a comparison with the data you enter in field 9. It produces a graph (picture) of this comparison which uses lines, data points, or bars to show the differences, distribution, proportions, or totals of the items compared.

**CHARTS AFFECTED:**

Your chart type determines how EZCHART uses and displays this data field. Field 8 is discussed by chart type on the following pages. (Pie Charts do not use field 8 for data value specification. See the Pie Chart field discussion on the following pages.)

**SPECIAL CONSIDERATIONS:**

It is easy to get confused when trying to "see" how the data you enter will appear on your chart. The sample data appearing on each Chart Design Menu is an example of how data should appear when you enter it on the menu. The Plot Screen function will show you how the sample data appears when EZCHART converts it to a chart. You may use this function to see how your data will be converted to a chart.

## 9. Y-Axis data

EZCHART uses the data you type in this field to calculate a comparison with the data you enter in field 8. It produces a graph (picture) of this comparison which uses lines, data points, or bars to show the differences, distribution, proportions, or totals of the items compared.

**CHARTS AFFECTED:**

Your chart type determines how EZCHART uses and displays this data field. Field 9 is discussed by chart type on the following pages. (Pie Charts do not use field 9 for data value specification. See the Pie Chart field discussion on the following pages.)

**SPECIAL CONSIDERATIONS:**

It is easy to get confused when trying to "see" how the data you enter will appear on your chart. The sample data appearing on each Chart Design Menu is an example of how data should appear when you enter it on the menu. The Plot Screen function will show you how the sample data appears when EZCHART converts it to a chart. You may use this function to see how your data will be converted to a chart.

## Labeled Line Charts

Line charts, whether labeled numerically or textually, are effective in indicating trends or patterns. The data is plotted in an uninterrupted flow, so that the chart reveals exactly when changes take place. Often two or more lines of information are plotted so that comparisons between them can easily be made.

Line charts also emphasize continuity and the way data is interrelated — for example, how profits are immediately affected by rising costs of material and transportation, and how these trends behave over periods of time or vary from one geographical region to another.

### 8. X-axis data

Type in your X-axis data. It will be used as labels on this chart, plotted horizontally, along the bottom of the chart. Type the labels in the order you want them to appear next to the numbers 1-6. (The TAB key moves your cursor from field 8 to field 9 (left to right) on each line. Therefore, it is more efficient to enter one X-axis label and then enter the Y-axis data values associated with it, before moving on to the next line.) The labels you use could be the time periods covered by the chart — the years, the months, abbreviations such as QTR1, QTR2, or WEEK1, WEEK2. The names or numbers you enter here will appear evenly spaced just below the bottom of the chart. If there are too many labels, or they are too long, they may be plotted too close together to be readable. Although it appears that only six X-axis labels can be entered, you can actually enter up to 60 for this chart type by pressing Scroll Forward on the Level 2 function keys.

### 9. Y-axis data

Type in your Y-axis data values. On this chart, Y-axis data values are plotted vertically, and measured against the left side of the chart.

These entries can be positive or negative numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter up to five Y-axis values for each X-axis value.

Maximum and minimum data values establish the range covered by the lines in your chart. If these values encompass an enormous range, it may be that the lowest values will be so small relative to the highest that they will not produce a significant image on the chart.

## Numbered Line Charts

A Numbered Line Chart is similar to a Labeled Line Chart except that the X-axis labels are plotted numerically. If, for example, your X-axis covered the years 1972, 1973, 1975, 1976, and 1977, the X-axes intervals would be spaced equally — 1972, 1974, 1976, 1978.

This is convenient when your X-axis data values are unevenly spaced because it tends to present the data in an orderly image in a Numbered Line Chart.

Except for the X-axis values, which must be numeric, the fields in both Labeled and Numbered Line Chart Menus are the same.

### 8. X-axis data

Type in your X-axis data. It must be numeric as it will be used to determine the interval size on the X-axis. EZCHART will label tick marks (along the bottom of the chart) with calculated values based on the range of numbers entered as X-axis values. The intervals between the ticks will be evenly spaced. If there are too many labels or they are too long, they may be too close together to be readable. (The TAB key moves your cursor from field 8 to field 9 (left to right) on each line. Therefore, it is more efficient to enter one X-axis label and then enter the Y-axis data values associated with it, before moving on to the next line.)

Although it appears that only six X-axis labels can be entered, you can actually enter up to 60 for this chart type by pressing Scroll Forward on the Level 2 function keys.

### 9. Y-axis data

Type in your Y-axis data values. On this chart, Y-axis data values are plotted vertically, and measured against the left side of the chart. These entries can be positive or negative numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter up to five Y-axis values for each X-axis value.

Maximum and minimum data values establish the range covered by the lines in your chart. If these values encompass an enormous range, it may be that the lowest values will be so small relative to the highest that they will not produce a significant image on the chart.

## Scatter Charts

Scatter charts are like Numbered Line Charts without the lines drawn between data points. Scatter charts show possible relationships between values when functional relationships are not immediately evident.

For example, a manufacturer might be interested in knowing the relationship of family income with number of children. Do wealthy people tend to have more children than people of medium or low incomes, or is there no connection?

A scatter chart could plot the average income on one axis and the number of children on another. If income did indeed influence the number of children, data point markers would concentrate in a pattern on the chart. The pattern might form along a straight line or curve. Or the markers may be scattered randomly, so that you could safely conclude that there is no relationship.

### 8. X-axis data

Type in your X-axis data. It must be numeric as it will be used to determine the interval size of the X-axis. EZCHART will label tick marks (along the bottom of the chart) with calculated values based on the range of numbers entered as X-axis values. The intervals between the ticks will be evenly spaced. (The TAB key moves your cursor from field 8 to field 9 (left to right) on each line. Therefore, it is more efficient to enter one X-axis label and then enter the Y-axis data values associated with it, before moving on to the next line.)

Although it appears that only six X-axis labels can be entered, you can actually enter up to 60 for this chart type by pressing Scroll Forward on the Level 2 function keys.

### 9. Y-axis data

Type in your Y-axis data values. On this chart, Y-axis data values are plotted vertically, and measured against the left side of the chart. These entries can be positive or negative numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter up to five Y-axis values for each X-axis value.

## Bar Chart (Horizontal, Stacked)

A stacked bar chart can be drawn with the bars running horizontally rather than vertically. The difference between horizontal and vertical clustered bars is as much one of preference as it is of effect. However, some people often interpret vertical bars as representing periods of time. For that reason, horizontal bars are preferred when the X-axis values is something other than time.

For example, you might wish to chart the sales of several products by part number as they were sold by different sales regions. Each stacked bar could represent the total sales volume. Each part or model's contribution to total sales could then be depicted by portions of the stacked bar. Along the Y-axis of the chart you could specify sales regions. You can specify as many as 60 bars for this chart, although more than 10 bars tends to clutter the chart.

### 8. X-axis data

Type in your X-axis data. It will be used as labels on this chart, plotted vertically, from bottom to top, along the left side of the chart. Type the labels in the order you want them to appear next to the numbers 1-6. (The TAB key moves your cursor from field 8 to field 9 (left to right) on each line. Therefore, it is more efficient to enter one X-axis label and then enter the Y-axis data values associated with it, before moving on to the next line.)

Although it appears that only six X-axis labels can be entered, you can actually enter up to 60 for this chart type by pressing Scroll Forward on the Level 2 function keys.

### 9. Y-axis data

Type in your Y-axis data values. On this chart, Y-axis data values are plotted horizontally, and measured along the bottom of the chart.

These entries can be positive or negative numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter up to five Y-axis values for each X-axis value.

Maximum and minimum data values establish the range covered by the bars in your chart. If these values encompass an enormous range, it may be that the lowest values will be so small relative to the highest that they will not produce a significant image on the chart.

## Bar Chart (Horizontal, Clustered)

Clustered Bar Charts (vertical or horizontal) allow you to compare elements as they change over a period of time, or from place to place, or from person to person. For example, how a certain item sold in different sales regions over a five-year period would be a suitable subject for a Clustered Bar Chart. Clustered Bar Charts emphasize differences. They do not show continuity or the flow of change, as do line charts.

Although you can have up to five bars, it is generally felt that the number of bars per cluster should not exceed three. When you have too many bars in a cluster, each cluster becomes a small graph in itself and requires concentrated attention. This defeats the purpose of graphing, which is to represent data visually in an interesting and readily comprehensible display.

### 8. X-axis data

Type in your X-axis data. It will be used as labels on this chart, plotted vertically, from bottom to top, along the left side of the chart. Type the labels in the order you want them to appear next to the numbers 1-6. (The TAB key moves your cursor from field 8 to field 9 (left to right) on each line. Therefore, it is more efficient to enter one X-axis label and then enter the Y-axis data values associated with it, before moving on to the next line.)

Although it appears that only six X-axis labels can be entered, you can actually enter up to 60 for this chart type by pressing Scroll Forward on the Level 2 function keys.

### 9. Y-axis data

Type in your Y-axis data values. On this chart, Y-axis data values are plotted horizontally, and measured against the bottom of the chart. These entries can be positive or negative numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter up to five Y-axis values for each X-axis value.

Maximum and minimum data values establish the range covered by the bars in your chart. If these values encompass an enormous range, it may be that the lowest values will be so small relative to the highest that they will not produce a significant image on the chart.

## Bar Chart (Vertical, Stacked)

Stacked Bar Charts, vertical or horizontal, allow you to compare parts of a whole. By assigning each portion of the bar a different color or texture, you set them apart from one another. The complete bar communicates the total. For example, you might wish to show sales volume by region over a period of several years. The individual bars could represent total sales volume for each year. The portions of each bar would indicate how much each region contributed to the volume for that year. Generally, the X-axis on a vertical bar chart represents time. If you have another value to be charted, it is recommended that you use a horizontal bar chart. You can specify as many as 60 bars for this chart, although more than 10 bars tends to clutter the chart.

### 8. X-axis data

Type in your X-axis data. It will be used as labels on this chart, plotted horizontally, along the bottom of the chart. Type the labels in the order you want them to appear next to the numbers 1-6. (The TAB key moves your cursor from field 8 to field 9 (left to right) on each line. Therefore, it is more efficient to enter one X-axis label and then enter the Y-axis data values associated with it, before moving on to the next line.) The labels you use could be the time periods covered by the chart — the years, the months, abbreviations such as QTR1, QTR2, or WEEK1, WEEK2. The names or numbers you enter here will appear evenly spaced just below the bottom of the chart. If there are too many labels or they are too long, they may be plotted too close together to be readable.

Although it appears that only six X-axis labels can be entered, you can actually enter up to 60 for this chart type by pressing Scroll Forward on the Level 2 function keys.

### 9. Y-axis data

Type in your Y-axis data values. On this chart, Y-axis data values are plotted vertically, and measured against the left side of the chart.

These entries can be positive or negative numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter up to five Y-axis values for each X-axis value. Maximum and minimum data values establish the range covered by the bars in your chart. If these values encompass an enormous range, it may be that the lowest values will be so small relative to the highest that they will not produce a significant image on the chart.

## Bar Chart (Vertical, Clustered)

Clustered Bar Charts (vertical or horizontal) allow you to compare elements as they change over a period of time, or from place to place, or from person to person. For example, how a certain item sold in different sales regions, or how total sales in those regions compared over a five-year period would be suitable subjects for a Clustered Bar Chart. Clustered Bar Charts emphasize differences. They do not show continuity or the flow of change, as do line charts.

Although you can have up to five bars, it is generally felt that the number of bars per cluster should not exceed three. When you have too many bars in a cluster, each cluster becomes a small graph in itself and requires concentrated attention. This defeats the purpose of graphing, which is to represent data visually in an interesting and readily comprehensible display.

**8. X-axis data**

Type in your X-axis data. It will be used as labels on this chart, plotted horizontally, along the bottom of the chart. Type the labels in the order you want them to appear next to the numbers 1-6. (The TAB key moves your cursor from field 8 to field 9 (left to right) on each line. Therefore, it is more efficient to enter one X-axis label and then enter the Y-axis data values associated with it, before moving on to the next line.) The labels you use could be the time periods covered by the chart—the years, the months, abbreviations such as QTR1,QTR2, or WEEK1,WEEK2. The names or numbers you enter here will appear evenly spaced just below the bottom of the chart. If there are too many labels or they are too long, they may be plotted too close together to be readable. Although it appears that only six X-axis labels can be entered, you can actually enter up to 60 for this chart type by pressing Scroll Forward on the Level 2 function keys.

**9. Y-axis data**

Type in your Y-axis data values. On this chart, Y-axis data values are plotted vertically, and measured against the left side of the chart. These entries must be positive or negative numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter up to five Y-axis values for each X-axis value.

Maximum and minimum data values establish the range covered by the bars in your chart. If these values encompass an enormous range, it may be that the lowest values will be so small relative to the highest that they will not produce a significant image on the chart.

## Pie Chart Design Menu Field Discussion

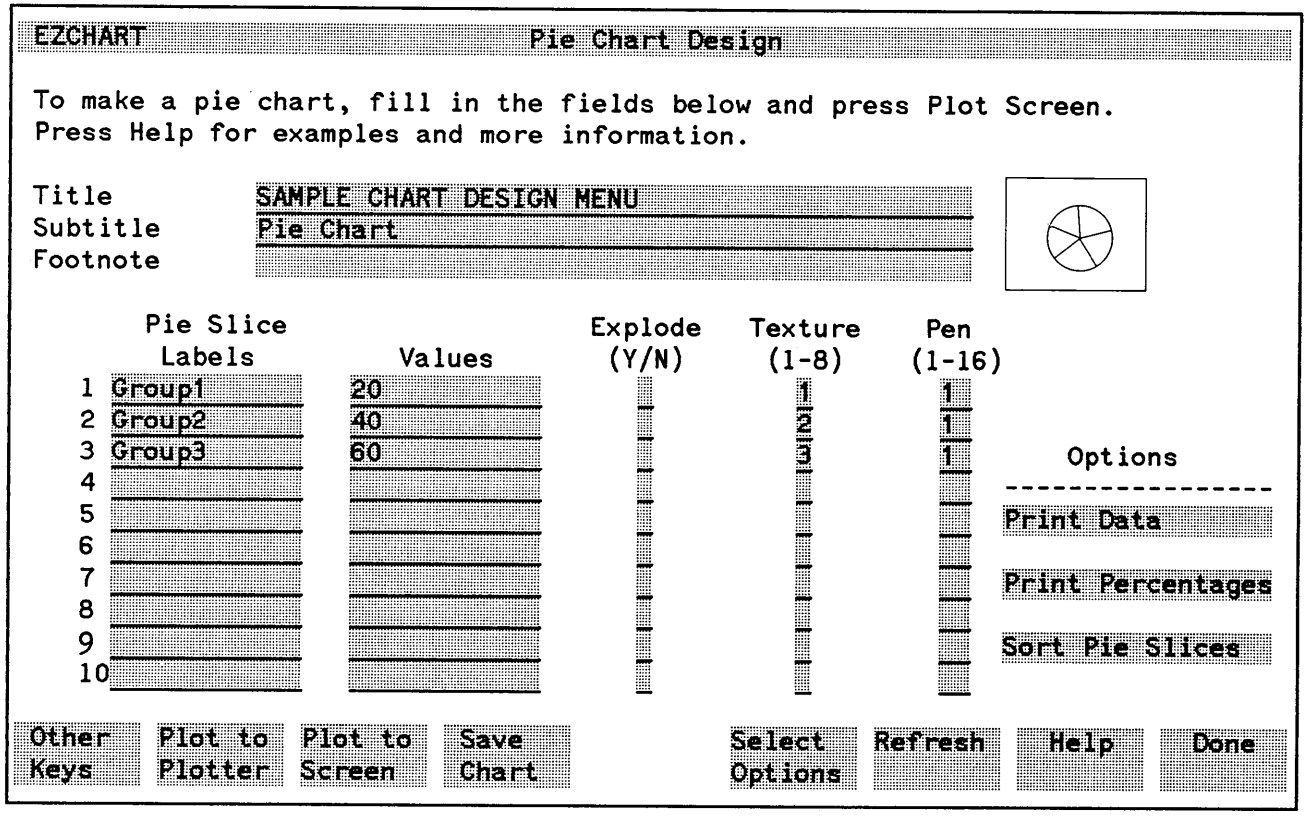



Figure 3-11. Pie Chart Design Menu Fields

## Pie Chart

Pie charts compare the size of parts to one another and to the whole. The unevenness of the slice sizes communicates the differences. The complete pie-shape represents the total entity, or 100%.

You can label each slice with a description of the data it represents and a percentage of the total represented by that data. You can set each slice off from the others using colors or textures, sort them so that they appear in order from smallest to largest, or explode a slice — detach it slightly from the whole — to give it special emphasis.

A pie chart would be useful if you wished to break down costs by division or department, or to depict how individual items contribute to total sales or how a company's earnings are divided between product lines.

Too many slices (more than six) or very small slices (less than three degrees) tend to lessen the effect of a pie chart. EZCHART does not accept slices which will be less than two degrees. Combining smaller slices (under a label such as Other, which can be defined in the Footnote) is an commonly used method of making sure the slices are a useful size.

**1. Main Title**

Type the title of your chart here. This field is the same for all chart types. See the Title discussion at the beginning of the field discussions for special considerations concerning titles.

**2. Subtitle**

Type the subtitle of your chart here. This field is the same for all chart types. See the Subtitle discussion at the beginning of the field discussions for special considerations concerning subtitles.

**3. Footnote**

Type your footnote in this field. It will appear beneath the chart, centered. See the Footnote discussion at the beginning of the field discussions for special considerations concerning footnotes.

**4. Pie Slice Labels**

Type labels for each of your pie slices here. Labels are not required. These labels will appear next to the associated slice. Type the labels next to the numbers 1-10. (The TAB key moves your cursor from field 4 to field 5 (left to right) on each line. Therefore, it is more efficient to enter one pie slice label and then enter the data value associated with it, before moving on to the next

line.) Lables can contain up to 12 characters or numbers.

Although it appears that only 10 pie slice labels can be entered, you can actually enter up to 30 for this chart type by pressing Scroll Forward on the Level 2 function keys.

**5. Data Values**

Type in your data values for the pie slices. The data values are plotted in their relationship to the whole pie, or a percentage of 100%. Field 9 enables you to sort by size, print the percentage, and print the label. These entries must be positive numbers with an optional decimal point. Numbers preceded by a dollar sign ($) are not allowed. You may enter only one data value for each pie slice label.

**6. Explode Slice**

N (No) is default for this field. To have a slice of the pie drawn slightly detached from the pie, type Y in this field. Exploding a pie slice gives it greater emphasis. It is not necessary to enter the default N (NO).

**7. Texture**

Type in the number associated with the desired texture. See Appendix B for samples. There are eight surface textures for the pie slices. If you assign the same texture to adjacent slices without using color to provide a distinction, the slices will appear as one slice with two labels. The order of specified textures are not sorted along with the associated data when you select the option of sorting pie slices.

**8. Pen**

Type the number of the pen(s) whose assigned color(s) you wish to use. Appendix B provides a discussion of color. If you assign the same pen (color) to adjacent slices without using texture to provide a distinction, the slices will appear as one slice with two labels. The order of specified pens (color) are not sorted along with the associated data when you select the option of sorting pie slices.

**9.** Select Options

The Select Options function key is used to specify which of the optional elements you wish to use in the display of your chart. The highlighted option indicates which option is in effect. Each press of the Select Options function key moves the highlight to the next option. You may continue to press the key until you have any combination of those listed, including all three at once.

The options are:

- Print Data — prints the data value entered for each slice of the pie.
- Print Percentages — prints the percentage of the whole represented by each slice.
- Sort Pie Slices — Automatically sorts the pie slices by order of size, starting with the smallest slice, which is situated approximately at the 2 o'clock position on the pie. When you use the Sort Pie Slices option, the order in which you enter your values does not affect the order in which they appear on the chart. However, textures and colors will appear in the order in which they were specified. A color or texture assigned to a data value may not be associated with that value after the sorting takes place. The Plot Screen function is a good way to experiment with the use of texture, color, and the sort option's effect on your chart.

## The Exit Chart Selection Menu

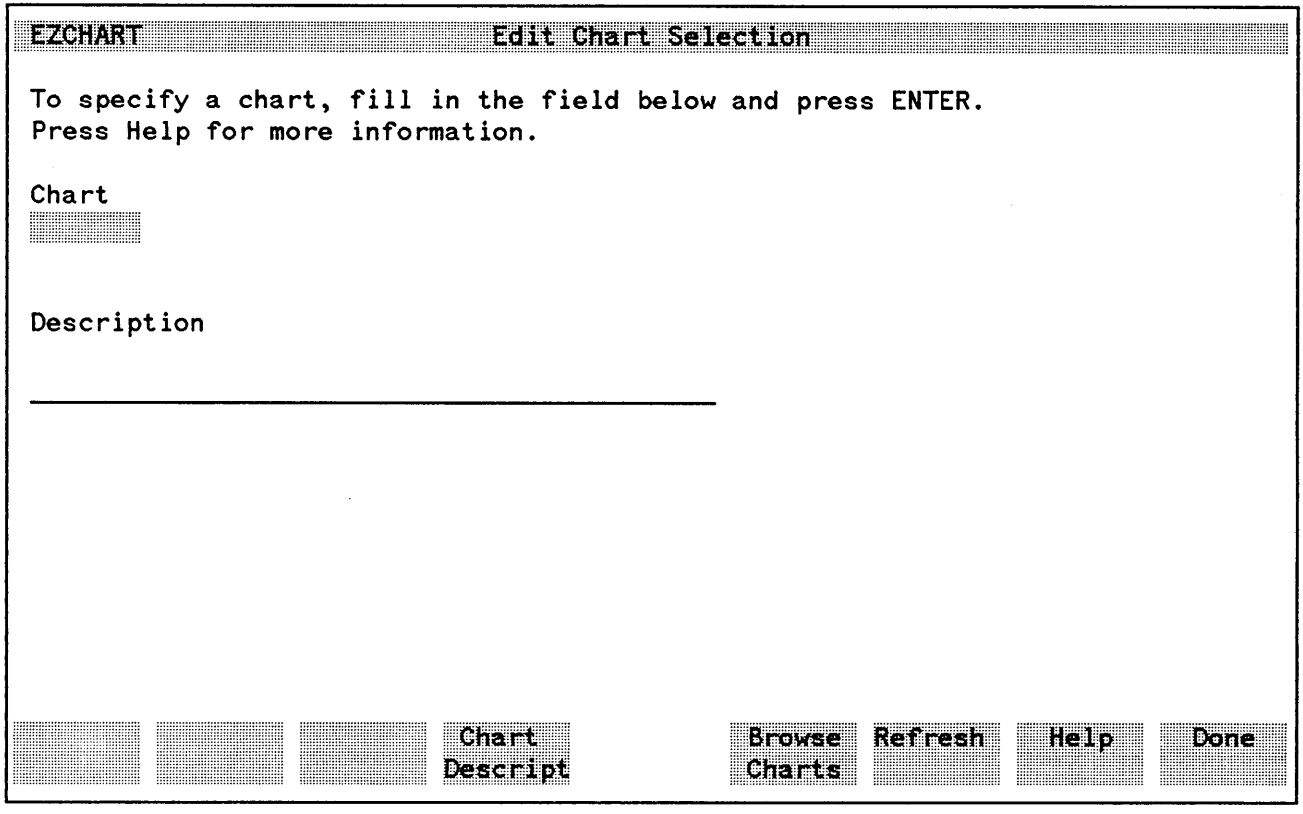


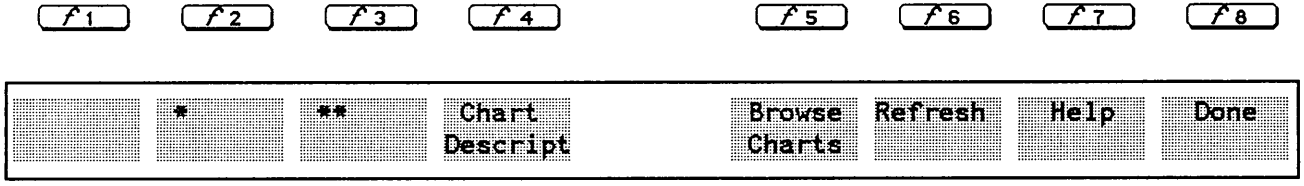

Figure 3-12. Edit Chart Selection Menu

When you press Edit Chart on the Main Menu, the Edit Chart Selection Menu is displayed. Its purpose is to identify the chart you wish to edit so that it can be recalled. Only those charts saved using the Save Chart Menu are recallable. It is not necessary to have the Select Chart highlight located at any particular position to recall a chart.

If you are uncertain which chart you wish to recall, the Browse Charts function will display all chart files for your current group and account. When you provide a chart name, Chart Descript will display the description you gave when you saved your chart. When you provide a chart name and press (ENTER), the Chart Design Menu for the chart type you recalled will be displayed filled with your recalled chart data.

## Edit Chart Selection Menu Function Keys

The function keys appearing on this menu are defined as follows:




*****

Scroll Backward This key will ONLY be labeled when the number of chart files exceeds the listing display space available on the menu. Press Scroll Backward to scroll items back within the viewing area which have been scrolled off of the screen with the Scroll Forward function.

******

Scroll Forward This key will ONLY be labeled when the number of chart files exceeds the listing display space available on the menu. Press Scroll Forward to scroll items to within the viewing area.

**Chart Descript**

Press this key to see the chart description for the chart name you entered on this menu. A description can only be recalled if one was provided when you saved your chart.

**Browse Charts**

Press this key if you are uncertain which chart you wish to recall. After a pause, the names of all the EZCHART charts in your current group and account will appear on this menu. Once you have selected a chart and typed its name on the menu, you may proceed with checking its chart description.

When you provide a chart name and press (ENTER), the Chart Design Menu for the chart type recalled will be displayed filled out with the recalled chart data.

**Refresh**

Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Help**

Press this key for additional information about this menu's instructions or function keys.

**Done**

Press this key to return to the Main Menu and select another function or Exit EZCHART.

## Field Discussion

There is only one data entry field on the Edit Chart Selection Menu. Its purpose is to enable you to identify the chart by name which you wish to recall for editing. If you are not sure which chart you wish to recall, the function keys enable you to list all chart files and recall the file descriptions. When you provide the name of the desired chart, this menu recalls the chart and directs you to the appropriate Chart Design Menu, automatically.

The **Help** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without the need to refer to this reference guide. Help replaces the Edit Chart Selection Menu with the following Help screen.

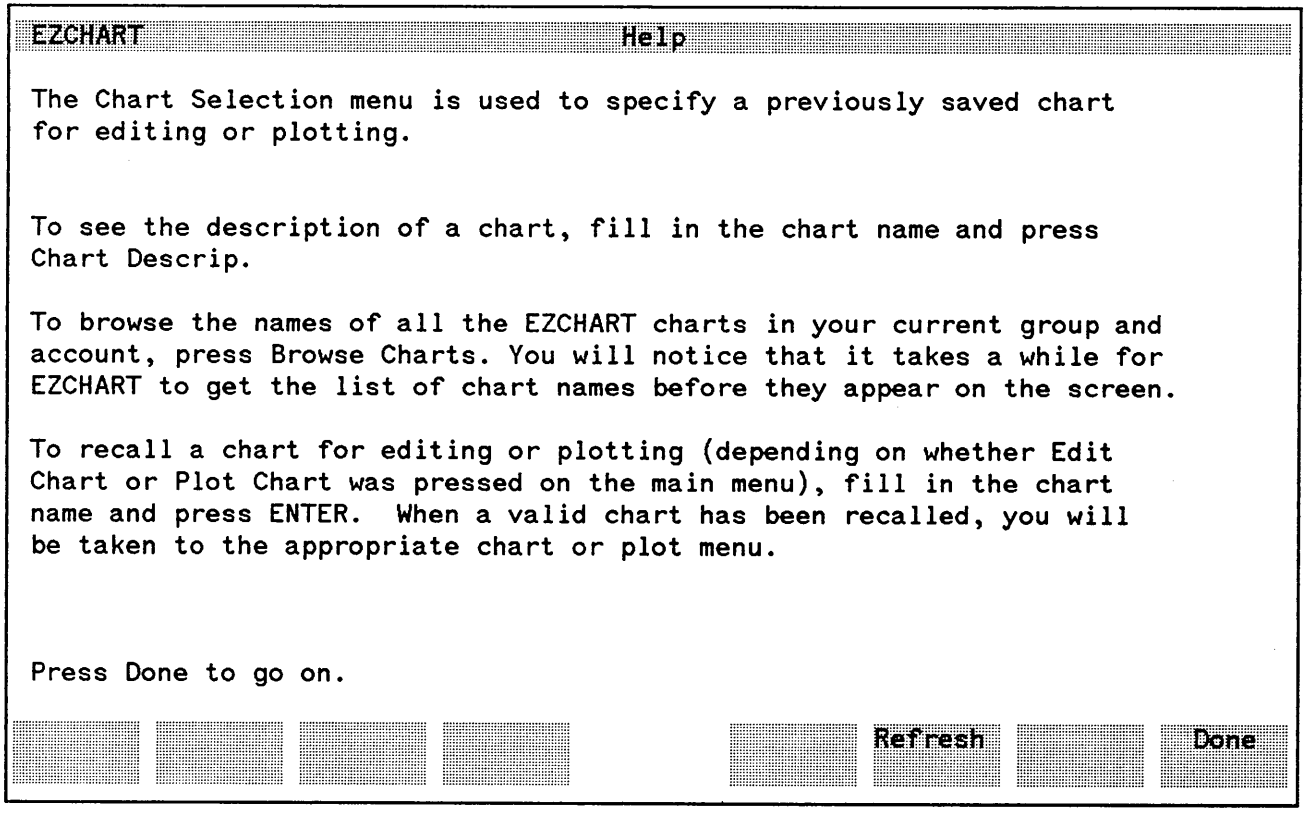



Figure 3-13. Edit Chart Selection Help Screen

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Edit Chart Selection menu.

The **Browse Charts** function key provides you with assistance on your terminal screen by listing all EZCHARTS in your current group and account. When you select a chart and type its name on the menu, you may check its chart description, or press (ENTER) and proceed to the Chart Development Menu where the chart data will be displayed for editing.

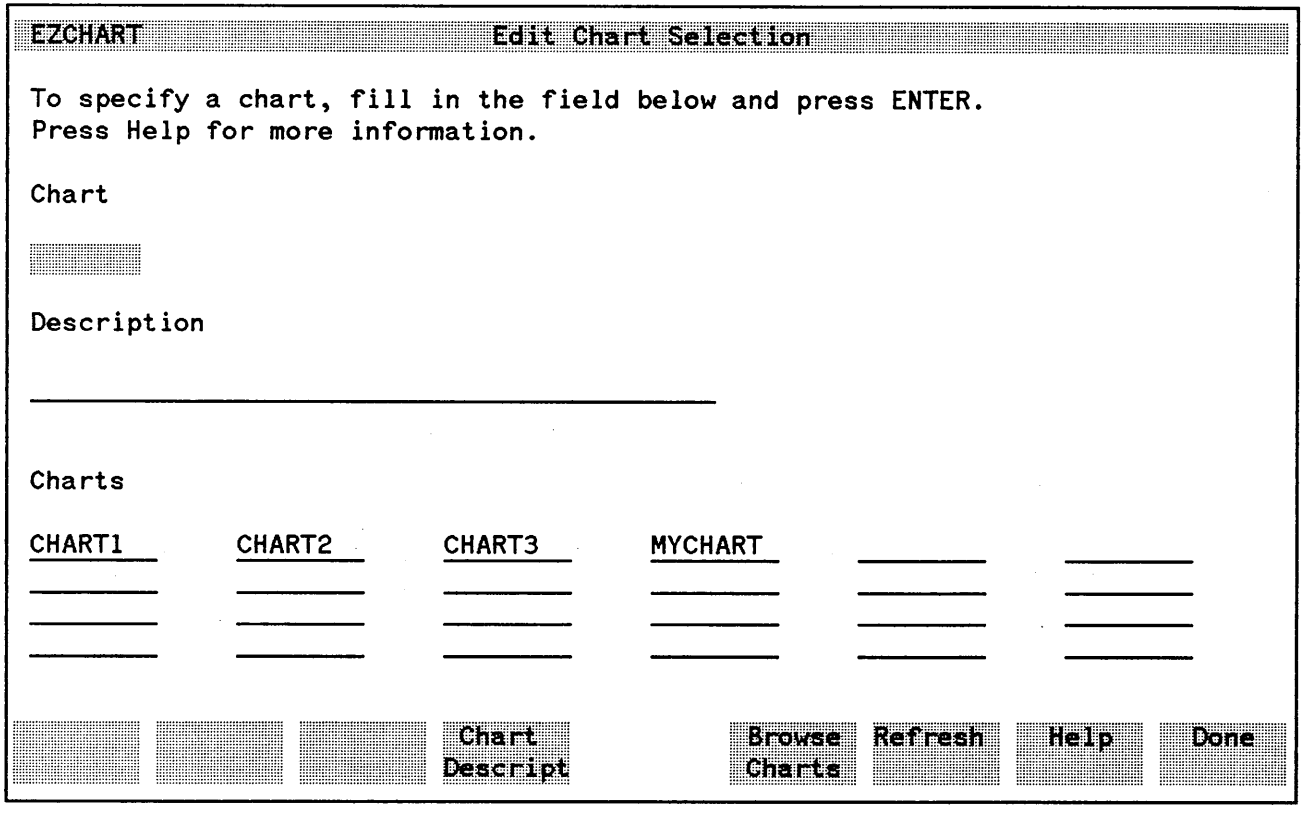



Figure 3-14. Browse Charts Screen Listing

**Chart Descript** Press this key to see the chart description of the chart name you selected from the EZCHART chart listing and typed on this menu.

(ENTER) When you specify the chart you wish to edit and press (ENTER) the chart data will be displayed on the Chart Design Menu for the chart type you recalled.

## The Plot Chart Selection Menu

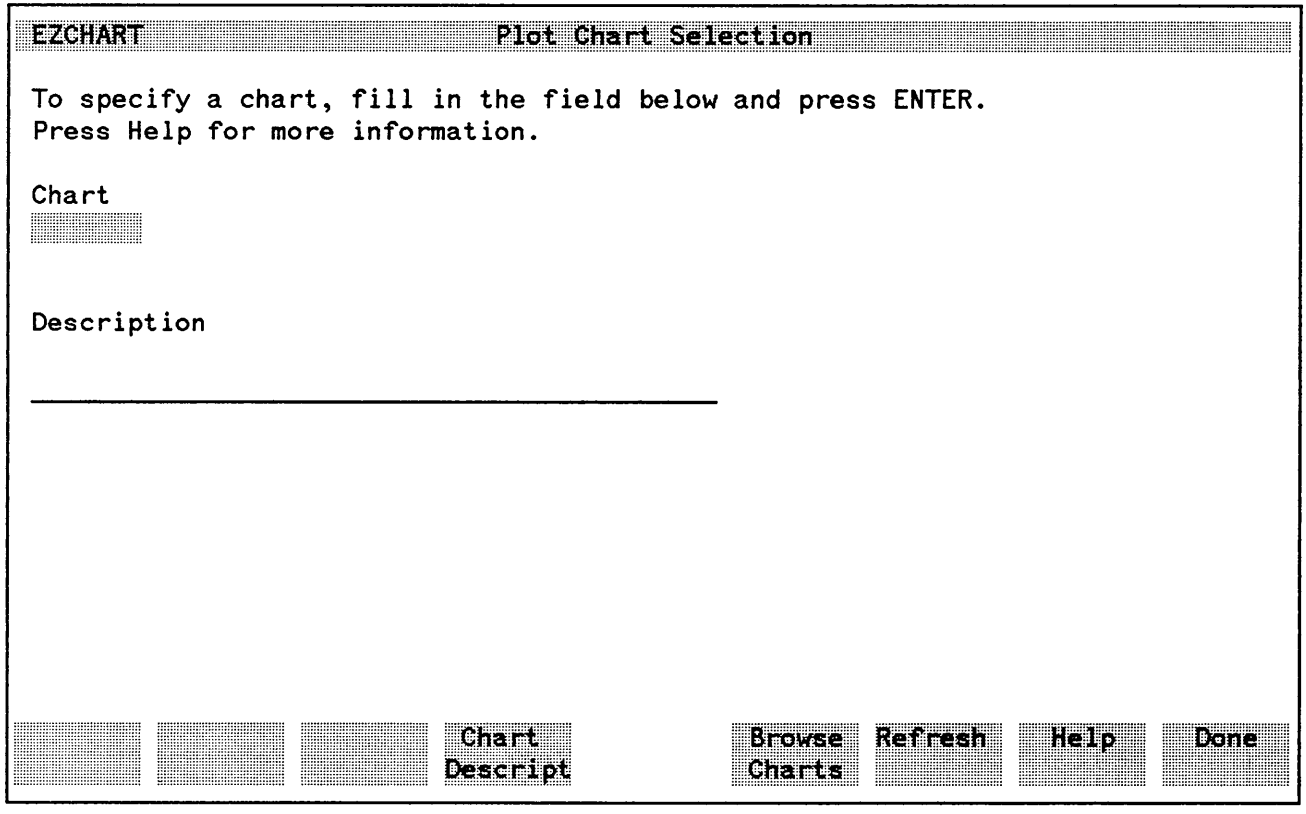


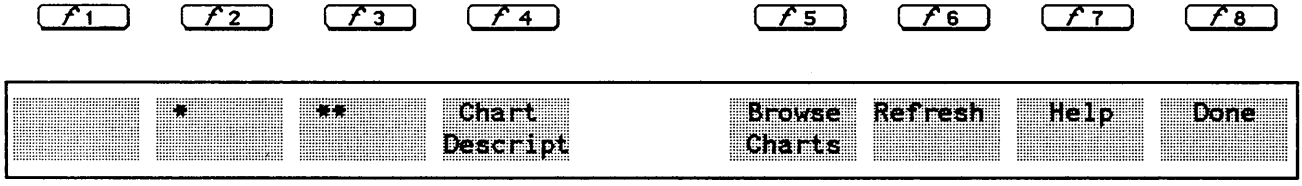

Figure 3-15. Plot Chart Selection Menu

When you press Plot Chart on the Main Menu, the Plot Chart Selection Menu is displayed. Its purpose is to identify the chart you wish to plot so that it can be recalled. Only those charts saved using the Save Chart Menu are recallable. It is not necessary to have the Select Chart highlight located at any particular position to recall a chart.

If you are uncertain which chart you wish to recall, the Browse Charts function will display all chart files for your current group and account. When you provide a chart name, Chart Descript will display the description you gave when you saved your chart. When you provide a chart name and press (ENTER), the Plot Chart Menu will be displayed where you enter you plotting specifications.

## The Plot Chart Selection Menu Function Keys

The function keys appearing on this menu are defined as follows:




*****

Scroll Backward This key will ONLY be labeled when the number of chart files exceeds the listing display space available on the menu. Press Scroll Backward to scroll items back within the viewing area which have been scrolled off of the screen with the Scroll Forward function.

******

Scroll Forward This key will ONLY be labeled when the number of chart files exceeds the listing display space available on the menu. Press Scroll Forward to scroll items to within the viewing area.

**Chart Descript**

Press this key to see the chart description of the chart name you entered on this menu. A description can only be recalled if one was provided when you saved your chart.

**Browse Charts**

Press this key if you are uncertain which chart you wish to recall. After a pause, the names of all the EZCHART charts in your current group and account will appear on this menu. Once you have selected a chart and typed its name on the menu, you may proceed with checking its chart description.

When you provide a chart name and press (ENTER), the Plot Chart Menu will be displayed for you to enter your plotting specifications and plot your chart to a plotter.

**Refresh**

Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Help**

Press this key for additional information about this menu's instructions or function keys.

**Done**

Press this key to return to the Main Menu and select another function or Exit EZCHART.

## Field Discussion

There is only one data entry field on the Plot Chart Selection Menu. Its purpose is to enable you to identify the chart by name which you wish to recall for plotting. If you are not sure which chart you wish to recall, the function keys enable you to list all chart files and recall the file descriptions. When you provide the name of the desired chart, this menu recalls the chart and directs you to the Plot Menu, automatically.

The **Help** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without the need to refer to this reference guide. Help replaces the Plot Chart Selection Menu with the following Help screen.

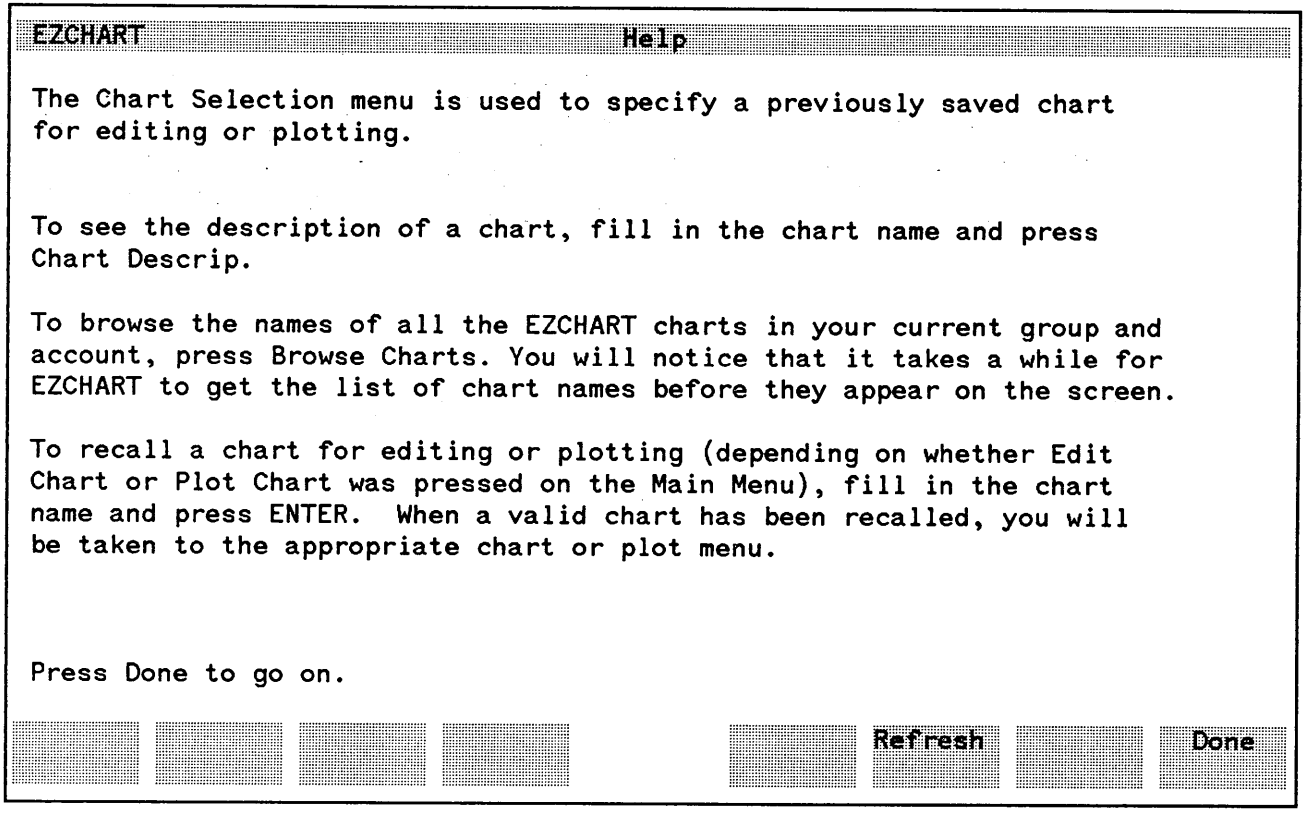



Figure 3-16. Plot Chart Selection Help Screen

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Plot Chart Selection Menu.

The **Browse Charts** function key provides you with assistance on your terminal screen by listing all EZCHARTS in your current group and account. When you select a chart and enter its name on the menu, you may check its chart description, or press (ENTER) and proceed to the Plot Chart Menu where you provide your plotting specifications.

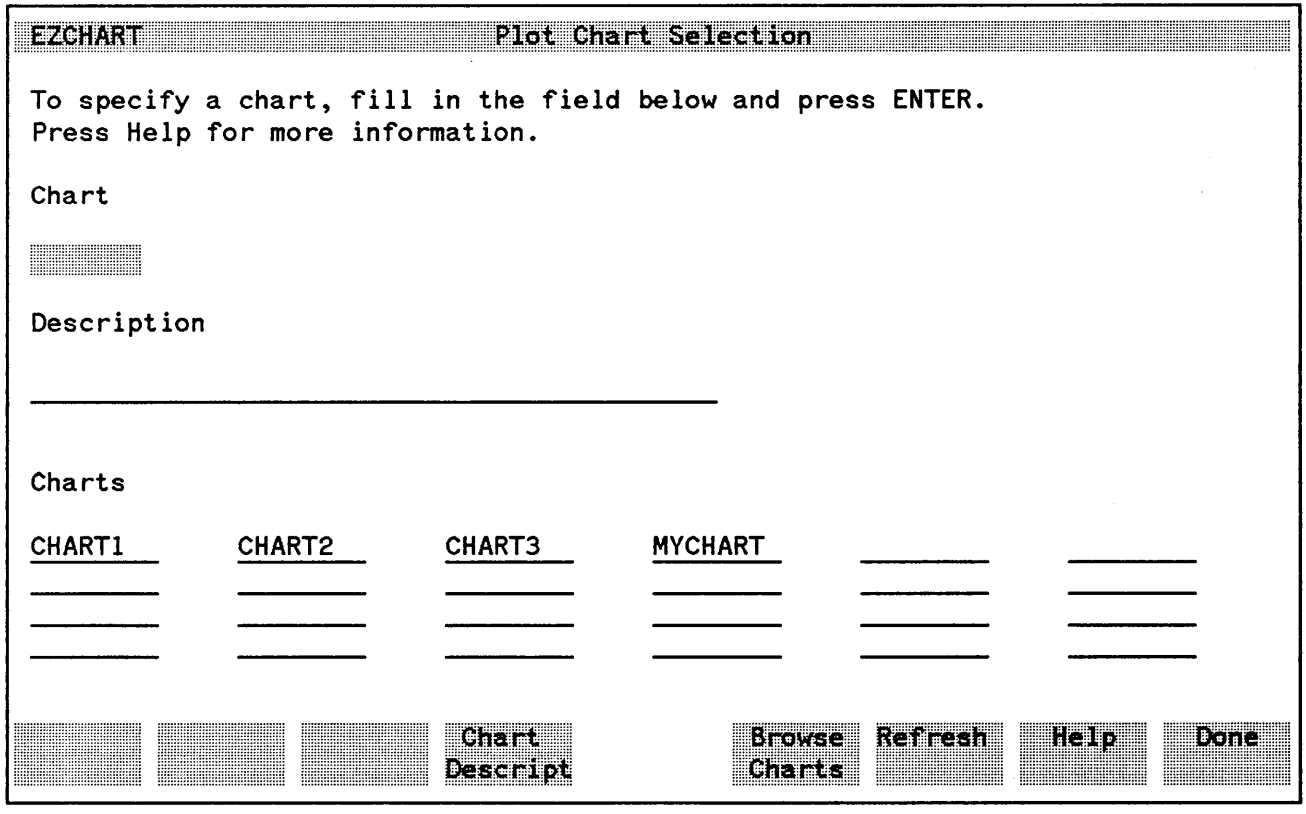



Figure 3-17. Browse Charts Screen Listing

**Chart Descript** — Press this key to see the chart description of the chart name you selected from the EZCHART chart listing and entered on this menu.

(ENTER) — When you specify the chart you wish to plot and press (ENTER), the Plot Chart Menu will be displayed where you provide your plotting specifications.

## The Plot Chart Menu

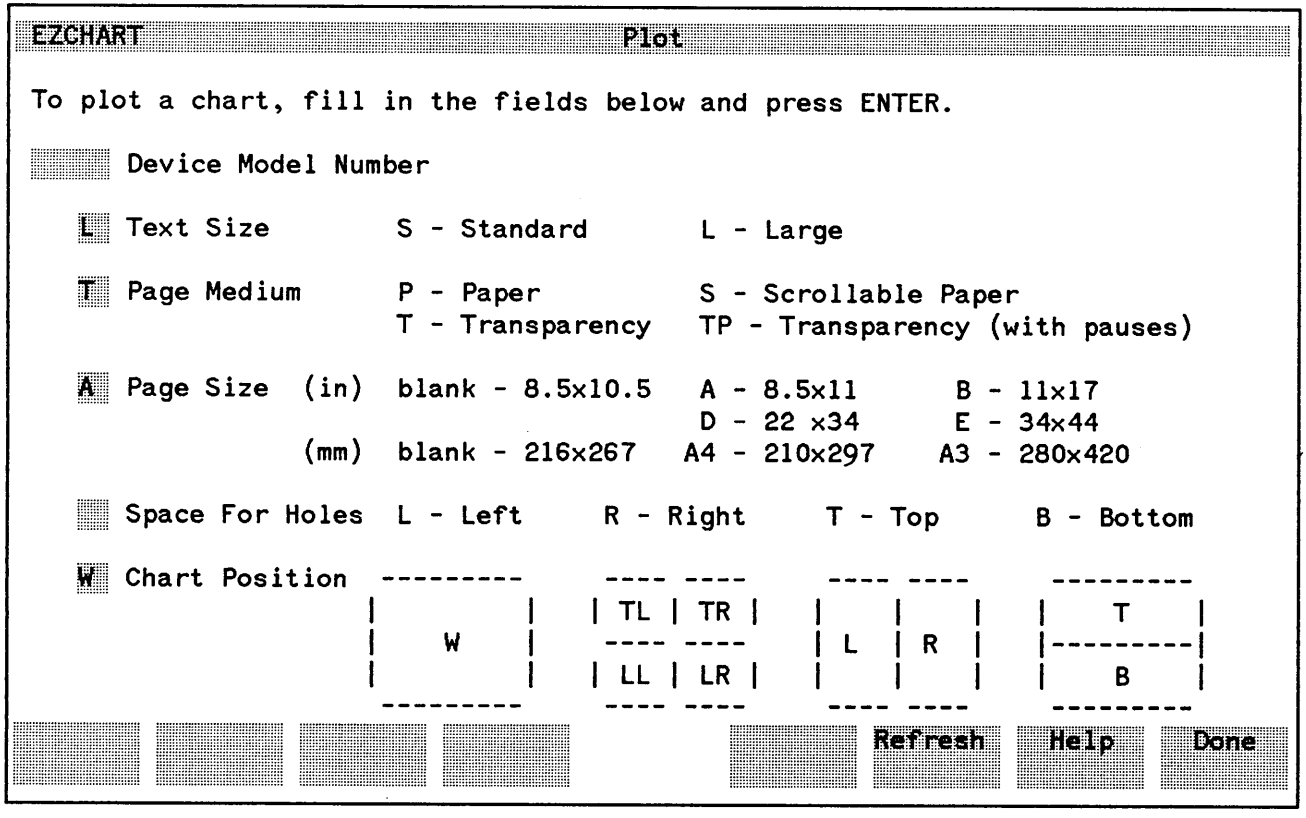



Figure 3-18. Plot Chart Menu

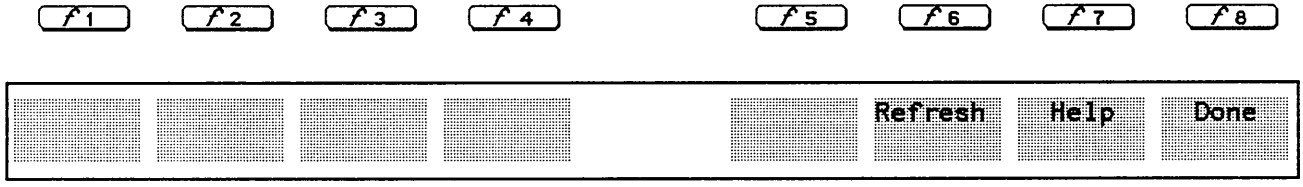
When you press Plot to Plotter on the Chart Design Menu, or ENTER on the Plot Chart Selection Menu, the Plot Chart Menu is displayed. Its purpose is to identify your specifications for the plotting process. It looks more complicated than it really is, but it does require certain information that you will want to acquire before sitting down to create charts.

For example, you need to know the model number of the plotter you are using.

All other specification options are listed on the menu screen. Notice that several of the fields on this menu are filled in with default values. You can type directly over the defaults to change them.

## The Plot Chart Menu Function Keys

The function keys appearing on this menu are defined as follows:




**Refresh** — Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Help** — Press this key for additional information about this menu's instructions or function keys.

**Done** — Use this key to return to the Main Menu and select another function or Exit EZCHART.

The **Help** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without having to refer to this reference guide. Help replaces the Plot Chart Menu with the following Help screen.

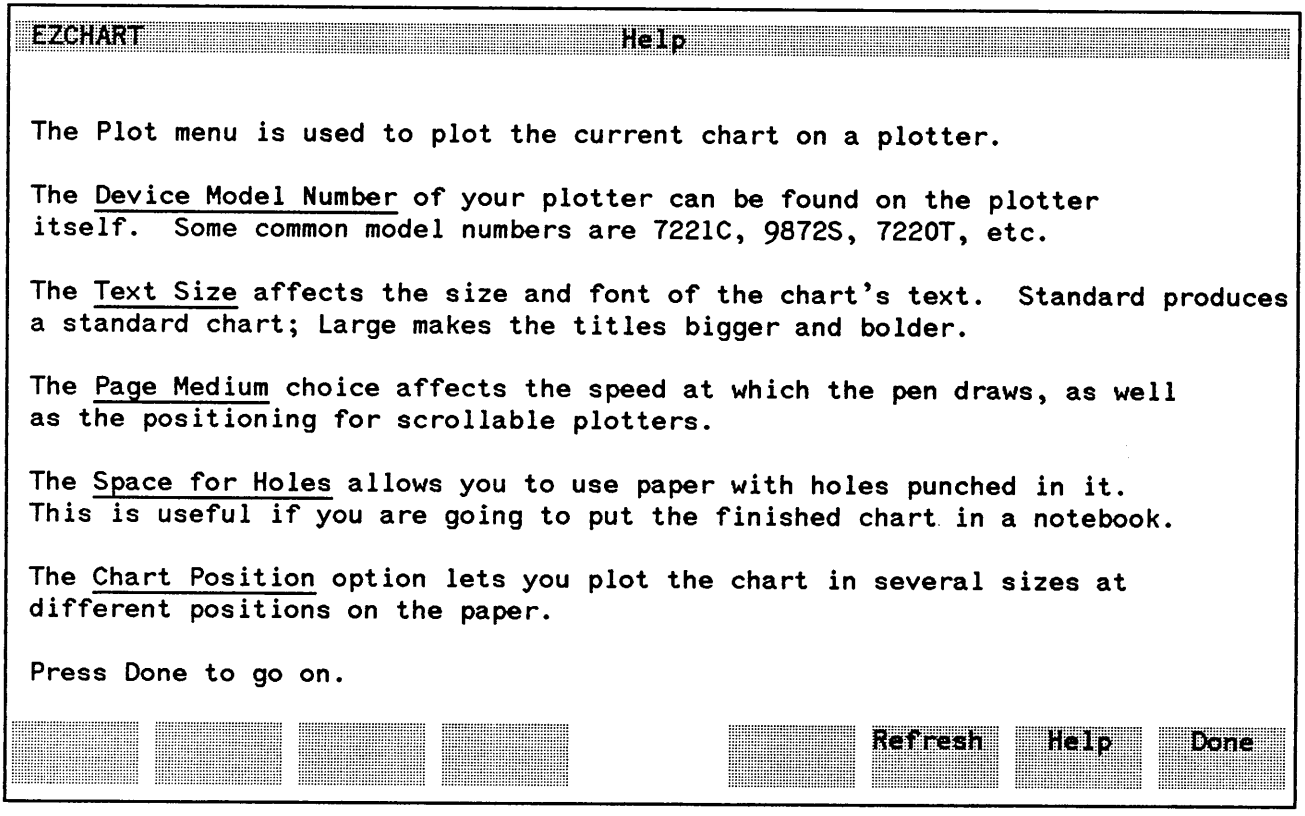



Figure 3-19. Plot Menu Help Screen

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Plot Chart Menu.

## Field Discussion

The six data entry fields on the Plot Chart Menu ask you to indicate your specifications for plotting the chart. With the exception of the output device model number, all other choices are listed directly on the menu screen.

You may elect to leave the default values which appear in the fields and enter only the output device model number. You can type directly over the defaults to change them.

(ENTER)

Press this key when you have entered all the values you wish to specify. Be sure that any default values left in the fields are compatible with your charting requirements.

**1. Device Model Number**

Type in the number of your plotting device here. Type in the full number, including any letters. If you are using the HP Laser printing system, for example, you would type 2680A. The default is set to the model number of your terminal.

**2. Text Size**
L

Type one of the following letters to specify text size.

```
S  =  Standard
L  =  Large (default value)
```

**3. Page Medium**
T

Enter one of the following letters which indicates the medium on which your chart will be plotted.

```
P  =  Paper
T  =  Transparency (default value) (slower pen speed)
S  =  Scrollable Paper (spaced for paper perforations)
TP =  Transparency with pauses. (15 minute pause between
      pen changes to permit ink to dry completely.)
```

**4. Page Size**
A

Enter one of the following letters, depending on the size of the page your chart will be plotted on:

```
A  =  8.5 by 11 inch  (default value)
B  =  11 by 17 inch
D  =  22 by 34 inch
```

```
E = 34 by 44 inch
A4 =  210 by 297 mm
A3 =  280 by 420 mm
Blank = 8.5 by 10.5 inch
```

**5. Space for Holes**

Enter one of the following letters to indicate where you want space left for ring binder holes. This is an optional entry. No default is specified.

```
L  =  On left side
R  =  On right side
T  =  On top
B  =  On bottom
```

If you leave this entry blank, no space will be left.

**6. Chart Position**

W

Enter one of the following letters to indicate the area on your transparency or paper where you want the chart to be plotted.

```
W  =  Whole page (default value)
T  =  Top half of page
B  =  Bottom half of page
R  =  Right half of page
L  =  Left half of page
TL =  Top left quarter of page
TR =  Top right quarter of page
LL =  Bottom left quarter of page
LR =  Bottom right quarter of page
```

## The Save Chart Menu

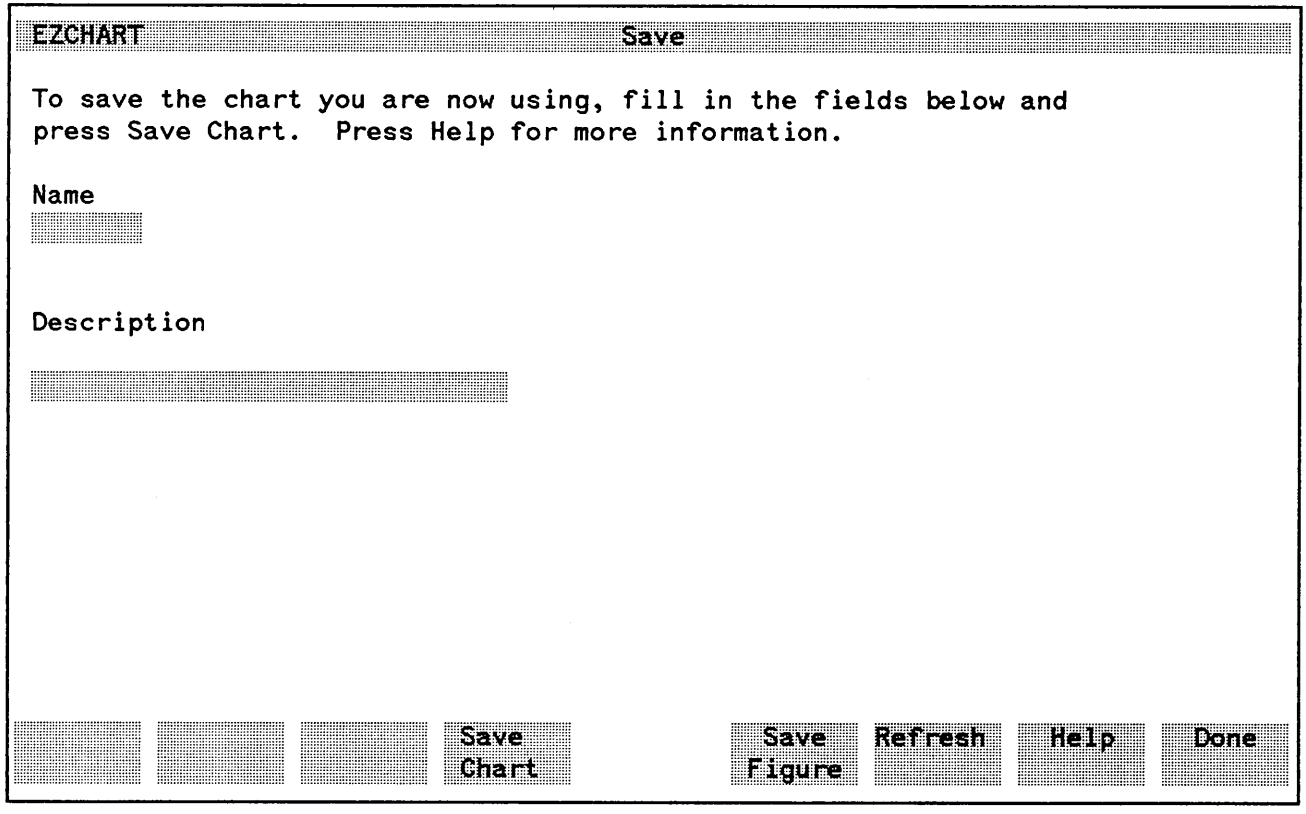



Figure 3-20. Save Chart Menu

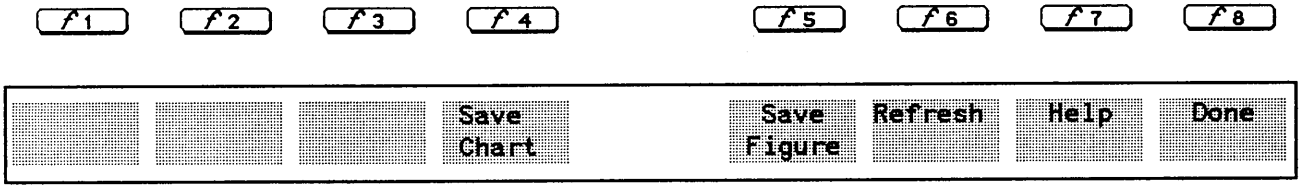
Usually, you save charts to plot, modify, or display them; to annotate or enhance them using DSG/3000 or HPDRAW; or to incorporate into an HPWord or TDP/3000 document.

When you save a chart, the EZCHART program creates a chart file containing the chart and a data file containing the chart data.

The chart file and data file are required when you wish to modify or enhance charts using the advanced capabilities of DSG/3000. You may also save a chart as a figure file. When you do, the data file is lost adn EZCHART cannot modify the chart. Section 2 discusses chart and figure files with other HP products.

## The Save Chart Menu Function Keys

The function keys appearing on this menu are defined as follows:




**Save Chart**

Press this key to save your chart and chart data as a chart file. Use this file format when you wish to recall you chart for editing or ploting within EZCHART, or to create a file accessible by DSG/3000. Section 2 reviews chart naming conventions and the use of chart files with other HP office products.

There will be a pause while the file is being created and a saving chart message will be displayed. You will be advised when the process is complete.

Note that when a chart is recalled and modified, saving the new version under the existing name will result in an overwrite inquiry. You must repeat your instruction to save the file under the same name and the old chart file will be overwritten, and is, therefore, no longer available.

**Save Figure**

Press this key to store your chart as a figure file. Figure files are created so that subsystems such as HPDraw, HPWord, TDP/3000, and the LPS Interpreter (Laser Printer support) will have access to the chart image to add annotations or include the chart in a document.

Although EZCHART has the option of creating figure files, it does not use them itself.

**Refresh**

Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Help**

Press this key for additional information about this menu's instructions or function keys.

**Done**

Use this key to return to the Main menu and select another function or Exit EZCHART.

The **Help** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without having to refer to this reference guide. Help replaces the Save Chart Menu with the following Help screen.

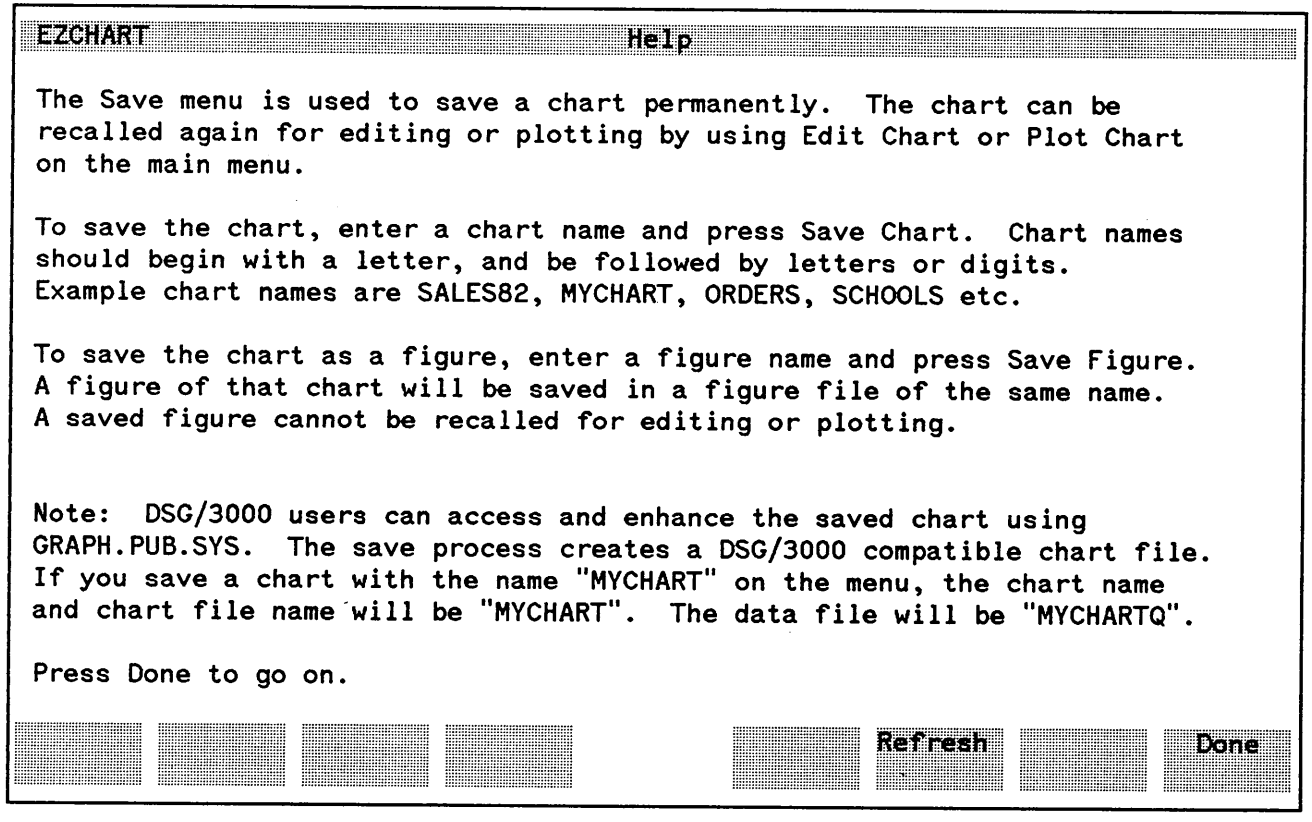



Figure 3-21. The Save Chart Menu Help Screen

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Save Chart Menu.

## Field Discussion

The two data entry fields on the Save Chart Menu are used to provide a name for the chart file and a description of the file contents. The name and description you enter here apply to the chart file and do not affect the chart. The name and description provided here will be displayed when you press Browse Charts and ask for the chart description when you use the Edit Chart Selection or Plot Chart Selection menus.

**1. Name**

Type in the name of the chart. The name should suggest the chart's contents or theme so that it will be easier to remember. Since you may use only 7 characters, you may have to use abbreviations such as TOTSLS (for TOTAL SALES) The name of the chart does not appear on the chart when it is drawn.

Chart names must begin with letters and may contain letters or numbers.

**2. Description**

Type a description of the chart if you think further identification is necessary. This is an optional entry. Your description only appears on the screen after you press Chart Description on either the Edit, or Plot Chart Selection Menu. The chart description does not appear on the chart itself.

## The Data Selection Menu

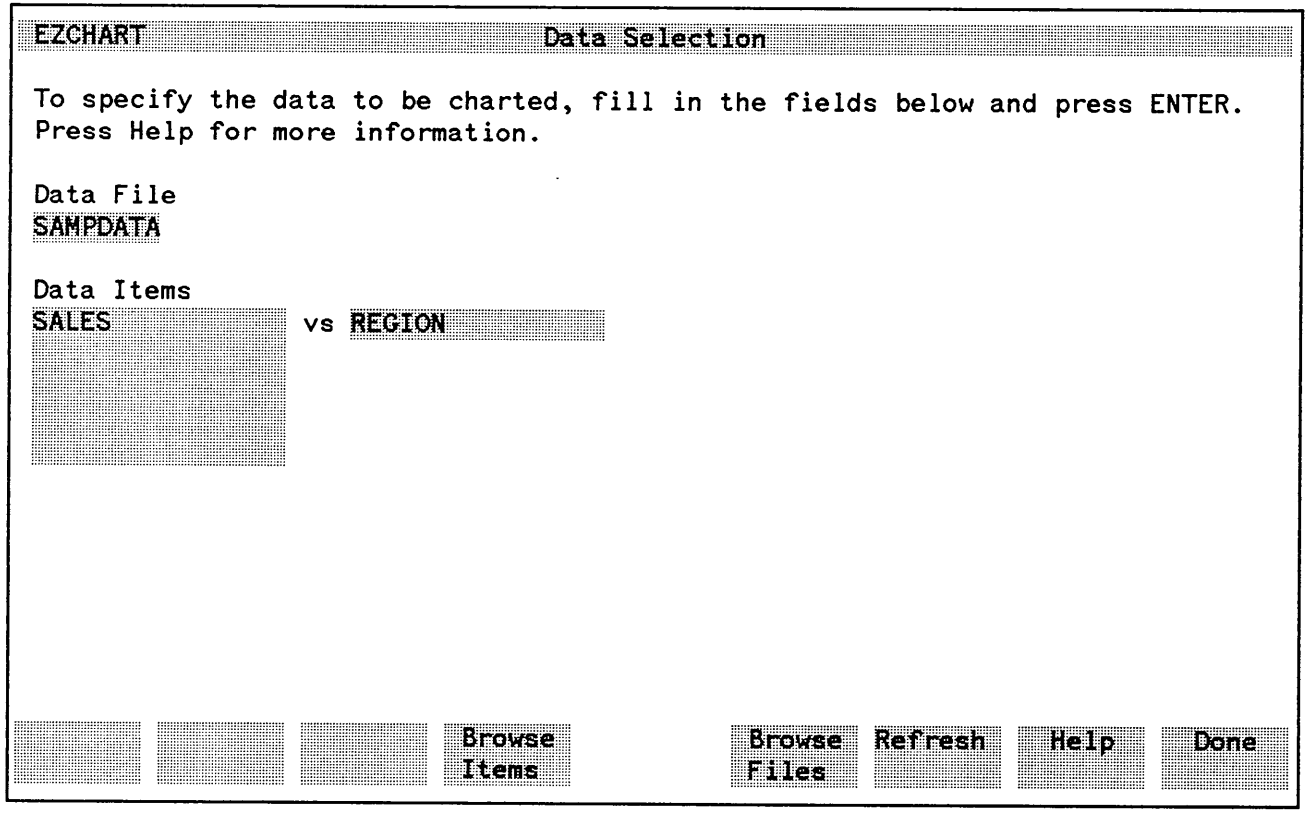



Figure 3-22. The Data Selection Menu

The purpose of this menu is to enable you to retrieve data saved in a a file created by another HP office product and use it to design a chart. This will save you the time it would take to reenter the data.

When you save a file in HPListKeeper or GRAPH, these subsystems store data by creating Self-Describing Files (SD Files). SD Files contain data as well as descriptions of the data items within the file. The Data Selection Menu enables you to select an SD file and retrieve data by specifying the data items within the file that you want to use.

You reach the Data Selection Menu by specifying Data File on Level 3 of Other Keys on the Chart Design Menu. When you press Data File, the Data Selection Menu will be displayed on your terminal screen.

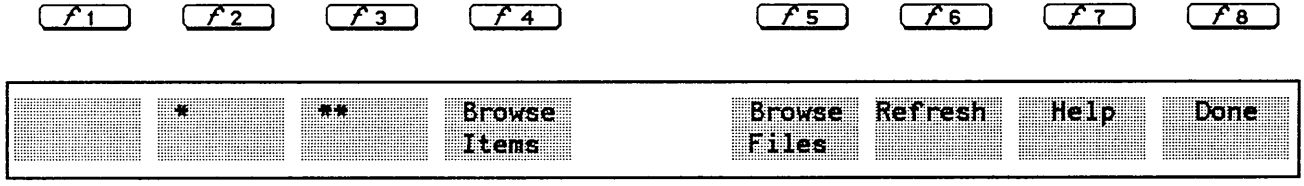
Once this menu is displayed, you can press Browse Files to display all the SD files in your current group and account that can be used in EZCHART for chart design. When you select a file which contains data you wish to chart, enter its name in the Data File name field and press Browse Items. EZCHART will then display the names of items within the file available to chart. Item names are defined by the subsystem which created the file.

Enter the names of the items you wish to chart in the Data Items fields along with the Data File Name. The item type of each item (textual or numeric) must be appropriate to the way in which it is to be charted. For example, Pie Chart slice values must be numeric, whereas Pie Chart slice labels can be numeric or textual.

When you press (ENTER), EZCHART reads the SD filename and the data item names, and retrieves the associated data. It then displays the Chart Design Menu with the retrieved data placed in the appropriate columns. If the length of the item values (which is defined by the subsystem that created the file) is greater than the EZCHART field length, EZCHART truncates the value and issues a warning message indicating that it had to do so. Once the Chart Design Menu is filled with the retrieved data, you may proceed as if you had typed in the data. Note that EZCHART only reads the data in the SD file. You may modify, plot, and save the chart design data with no effect on the SD file. If you know the SD file name and the item names when you first enter the Data Selection Menu, you do not need to use the browse function.

## The Data Selection Menu Function Keys

The function keys appearing on this menu are defined as follows:




*****

Scroll Backward This key will ONLY be labeled when the number of chart files exceeds the listing display space available on the menu. Press Scroll Backward to scroll items back within the viewing area which have been scrolled off of the screen with the Scroll Forward function.

******

Scroll Forward This key will ONLY be labeled when the number of chart files exceeds the listing display space available on the menu. Press Scroll Forward to scroll items to within the viewing area.

**Browse Items**

Press this key after you have selected a data file and typed its name on the menu. After a pause, a list of the data items in the file will appear above the function keys. Once you have provided a data file name and the names of the data items to be retrieved, press ENTER. The Chart Design Menu will be displayed filled out with the data items data.

**Browse Files**

Press this key if you are uncertain which file you wish to access. After a pause, the names of Self-Describing files in your current group and account will appear on this menu. Once you have selected a file and typed its name on the menu you may proceed with browsing the data items in the file.

**Refresh**

Use this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Help**

Press this key for additional information about this menu's instructions or function keys.

**Done**

Press this key to return to the Chart Design Menu.

The **Help** function key provides you with assistance on your terminal screen. This information is usually sufficient for you to continue without the need to refer to this reference guide. Help replaces the Data Selection Menu with the following Help screen.

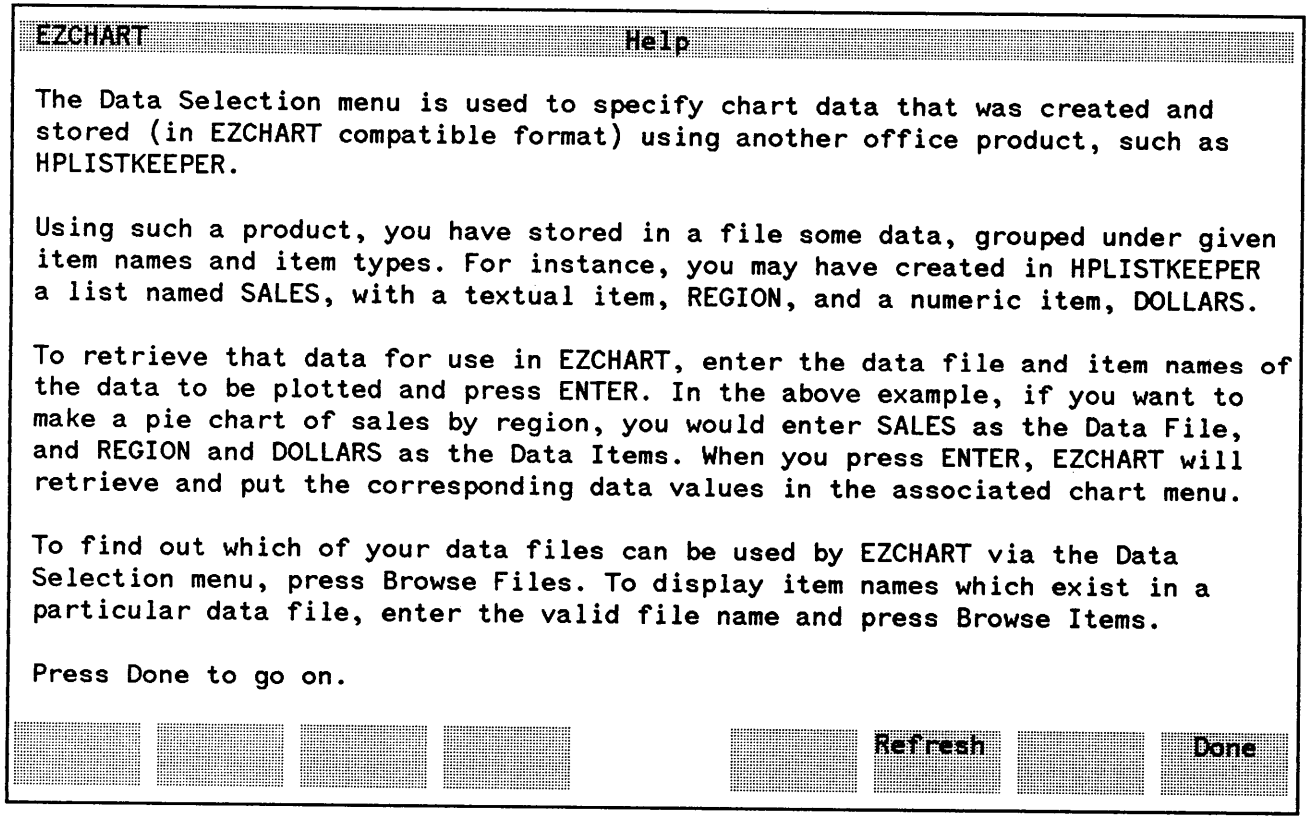



Figure 3-23. The Data Selection Menu Help Screen

**Refresh** Press this key to redisplay the terminal screen. It is useful when the terminal is inadvertently turned off or reset.

**Done** Press this key when you have finished reading the Help screen and are ready to continue. Done returns you to the Data Selection Menu.

The **Browse Files** function key provides you with assistance on your terminal screen by listing all Self-Describing (SD) files created by other HP office products in your current group and account. When you select a file and enter its name on the menu, you may check the data items in the file by pressing Data Items.

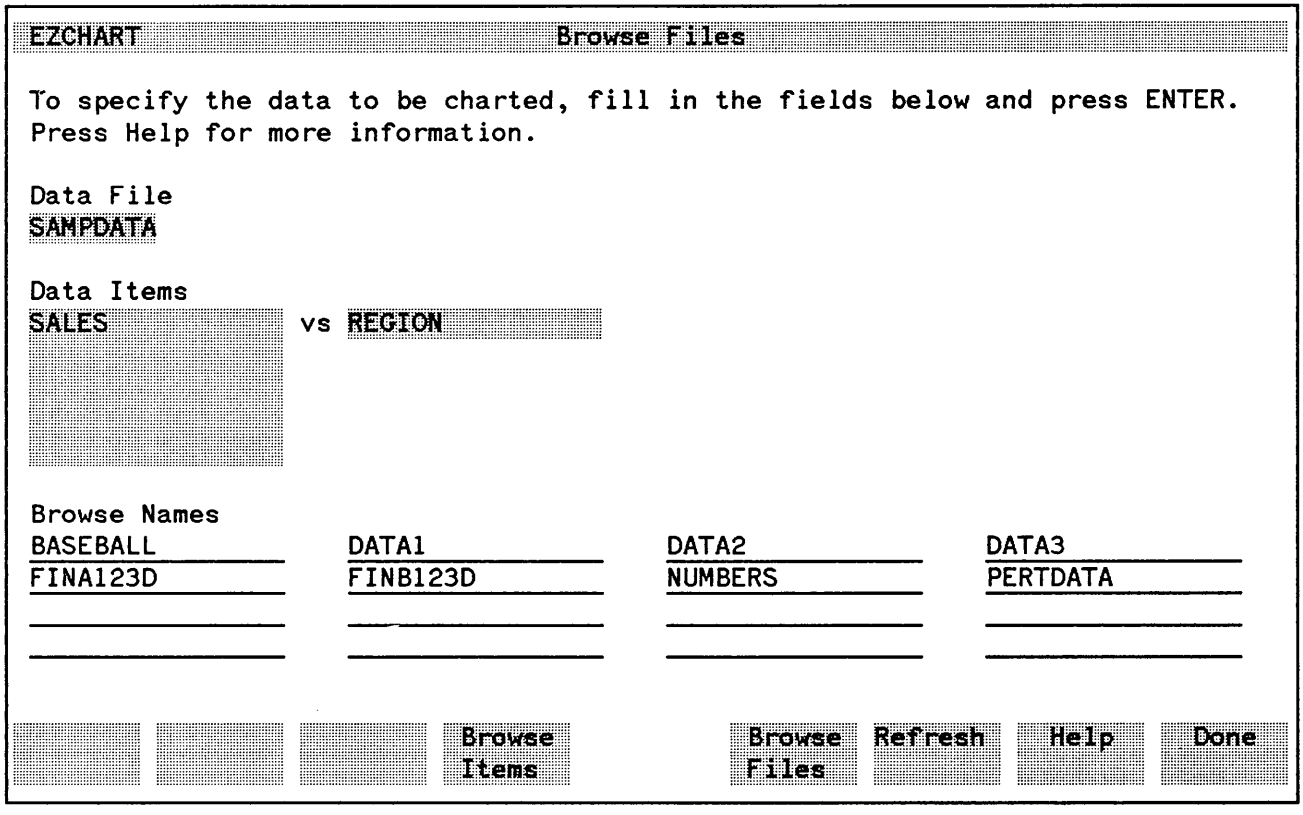



Figure 3-24. The Browse Files Screen Listing

**Browse Items** Press this key to review the data items in the data file you typed on the menu. After a pause, the names of the data items will appear on this menu.

**ENTER** When you specify the name of the data file and the data items and press ENTER, the Chart Design Menu will be displayed filled out with the data items data.

## The Data Selection Menu Field Discussion

The Data Selection Menu is used to specify chart data that was created and stored (in EZCHART compatible format) using another HP office product, such as HPListKeeper, HPInform, and GRAPH.

These products create Self-Describing (SD) files which provide separate names for the file and the data items it contains. To retrieve that data for use in EZCHART, enter the file name to identify the file selected, and enter the data item names to retrieve the text and numeric data to be plotted.

(ENTER) — Press this key when you have entered the Data File name and the Data Items. For Pie Charts, you enter the Data File Name and Data Items as Labels and Values. Once you press (ENTER) the Chart Design Menu will appear with the retrieved data inserted and you may continue with chart design.

**1. Data File** — Type in the name of the Data File you wish to to retrieve. If you are unsure of the Data File Name, the function keys enable you to list all compatible SD file names and recall the Item descriptions.

**2. Data Items** — Type in the name of the Data Items you wish to retrieve. On all chart types except pie charts, data items are plotted in comparison to each other. With pie charts, data items are plotted in comparison to their distribution in the whole pie. See the Field Discussion for the Chart Design Menu in this section for a review of chart design data.

# Info String APPENDIX A

The INFO string enables you to preset configuration values when invoking EZCHART such as device numbers and plotting specifications, or to specify a target chart file or Self-Describing data file. The INFO string is a series of 256 or less characters passed to the EZCHART program when you enter the MPE :RUN command. The general format is INFO="unit1;unit2;...;unitn". Each optional unit consists of a required reserved word, a required equal sign (=), and a required value. A semicolon is required between units when there is more than one unit in the INFO string.

## Syntax

```
:RUN EZCHART.PUB.SYS;INFO="[EZCHART=chartname][;SDFILE=sdfilename]
                          [;DEV=modelnumber][;LDEV=logicaldevicenumber]
                          [;PAGEMEDIUM=pagemedium][;PAGESIZE=pagesize]
                          [;POSITION=pageposition]"
```

## Parameters

EZCHART=
*chartname*

Reserved Word=
Enter the name of the EZCHART chart you wish to recall. *chartname* may contain up to 7 characters beginning with a letter. The chart you specify here will be presented on the Edit Chart Selection or Plot Chart Selection Menu when you reach one of these menus in the normal logical sequence. Refer to Section 3, Using EZCHART Menus.

SDFILE=
*sdfilename*

Reserved Word=
Enter the name of the Self-Describing data file you wish to use to design a chart. *sdfilename* may contain up to 8 characters begining with a letter.

The SD filename you specify here will be presented on the Data Selection Menu when you reach the menu in the normal logical sequence. Refer to Secion 3, Using EZCHART Menus.

DEV=
*devicemodelnumber*

Reserved Word=
Enter the model number for the device you wish to plot or print to. The *devicemodelnumber* may contain up to 6 numbers including a qualifying character. The model number you specify here will be presented on the Plot Chart Menu when you reach the menu in the normal logical sequence. Refer to Section 3, Using EZCHART Menus.

LDEV=
*logicaldevicenumber*

Reserved Word=
Enter your system configuration number for the *devicemodelnumber* you specified above. *logicaldevicenumber* is specified in by actual device number from 0 to 999.

**NOTE**

Once LDEV=*logicaldevicenumber* is set for EZCHART via the INFO string, it cannot be changed on any menu, and will be used for the entire EZCHART session.

PAGEMEDIUM=
*pagemedium*

Reserved Word=
Enter the letter code for the page medium you intend to use for plotting on a plotter. The *pagemedium* code may contain up to two characters. The medium you specify here will appear on the Plot Chart Menu when you reach the menu in the normal logical sequence. Refer to Section 3, Using EZCHART Menus.

PAGESIZE=
*pagesize*

Reserved Word=
Enter the code for the page size you intend to plot to on a plotter. The *pagesize* code may contain up to two characters. The page size you specify here will appear on the Plot Chart Menu when you reach the menu in the normal logical sequence. Refer to Section 3, Using EZCHART Menus.

| | |
|---|---|
| POSITION= *pageposition* | Reserved Word=<br>Enter the letter code which corresponds to the chart position desired on the page. The *pageposition* code may contain up to two characters. The position you specify here will appear on the Plot Chart Menu when you reach the menu in the normal logial sequence. Refer to Section 3, Using EZCHART Menus. |

## Discussion

When you invoke EZCHART with the INFO string option, EZCHART will set the default values on its menus to the values passed via the INFO string. If any of the values are invalid, a warning will be issued and the standard default values will be used. You may use the INFO string to configure as many values as you like as long the values passed are valid for EZCHART and the resulting INFO string is less than or equal to 256 characters in length.

You may use the INFO string within a UDC to invoke EZCHART so that you set your *devicemodelnumber* and *logicaldevicenumber* configuration. As indicated in the parameters explanations, you can not change the *logicaldevicenumber* once EZCHART has been invoked. Refer to the *MPE Commands Reference Manual (part number 30000-90010)* for more information on using UDCs to predefine configurations. Any of the other item values specified in the INFO string may be changed on the menus where they appear.

## Example

```
:RUN EZCHART.PUB.SYS;INFO="DEV=7225S;MEDIUM=P"
```

Where, the *devicemodelnumber* is specified as model number 7225S and the *pagemedium* is specified as paper: `INFO="DEV=7225S;Medium=P"`.

# Plotter Color and Texture: Samples and Defaults

# APPENDIX B

## Using Color

Color is generally used to emphasize a specific component of a chart. A single color highlight on a chart is the most dramatic. When you combine colors, you increase the competition between chart elements for conveying a simple message to the eye. When you combine color and texture, care should be taken not to defeat the purpose of a chart--presenting a static picture which conveys a summary or comparison at a glance.

You specify the use of color in your chart display on the Chart Design Menu by assigning a corresponding pen number to a chart compontent and by placing the specified pen in the corresponding pen position on your plotter.

Hewlett-Packard makes a variety of pen colors and pen widths. Your pen selection should be of the type specified for the page medium you are using to plot your chart, as well as the desired color. In addition, you may select colored transparencies and colored paper. This presents you with a variety of choices and the chance to experiment with the effects best suited to your charting needs.

HP plotters are available with 1-, 2-, 4-, 8-, and 16-pen holders. The maximum number of colors you would use in your chart would depend on the target plotter.

If you specify more colors (pens) than the target device, the colors will be rotated from lowest to highest pen position for those colors (pens) specified beyond the pen positions on the target plotter device. Generally, black is the color chosen for pen holder 1, because the pen in this position is used to frame your charts, draw axes, and write labels. Red is often used for elements in your chart that you wish to emphasize. Below is the standard pen holder location and corresponding pen number for the first four pen positions:

| Pen Holder | Standard Color |
|---|---|
| Pen 1 | Black |
| Pen 2 | Red |
| Pen 3 | Green |
| Pen 4 | Blue |

# Using Texture

Texture is used to distinguish between chart components without distorting the relative value of each component. EZCHART supplies the following textures and assigns a default order of use to maintain the best general appearance when combining textures. You may replace the default order of use with your preferences on the Chart Design Menu when designing your chart.

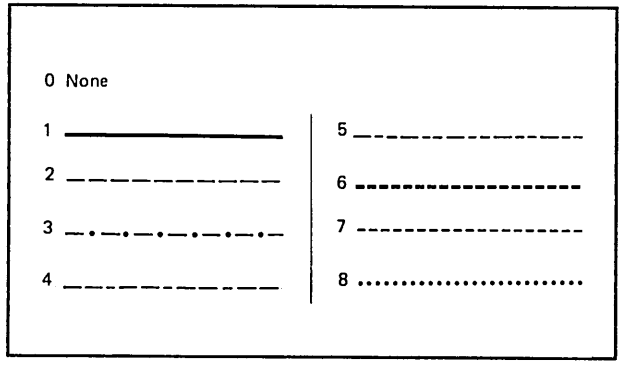
The type of texture used depends on the type of chart you are designing. There are three types of textures:

- Charts which display the graph image in the form of lines use line textures.
- Charts which display the graph image in the form of areas (such as bars or pie slices) use area textures.
- Charts which display the graph image in the form of data pointers use data point textures.

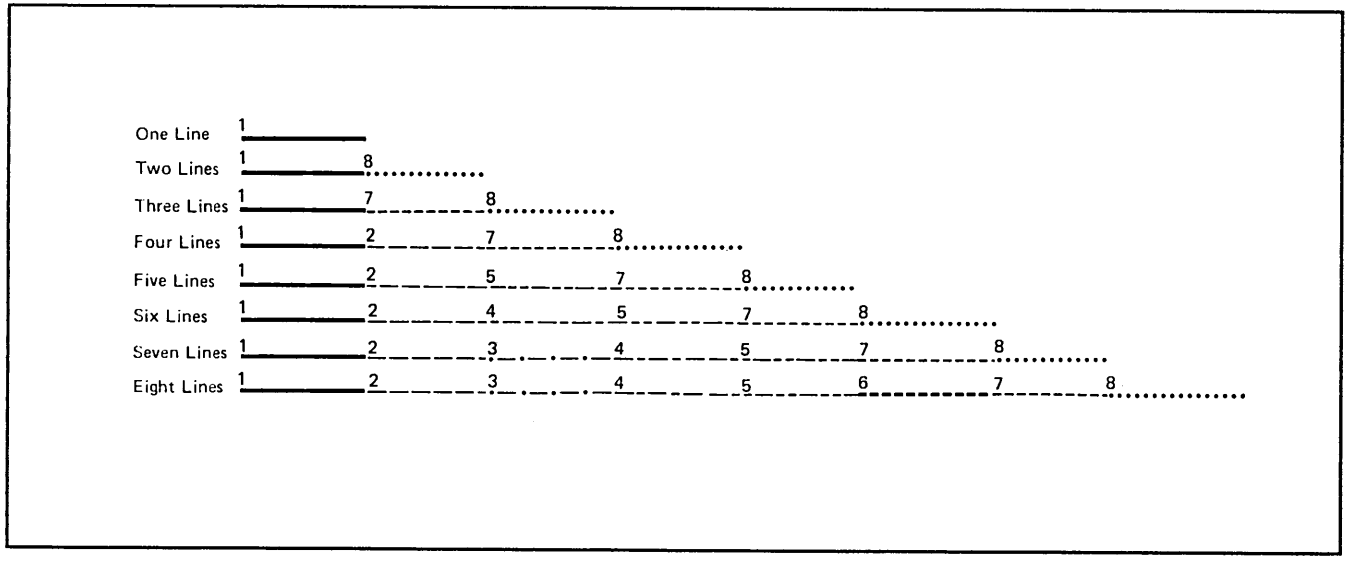
Line, Area, and Data Point textures, and their order of use are illustrated on the following pages.

## Line Textures

Line textures are used on Numbered and Labeled Line Charts. The following line textures are available:

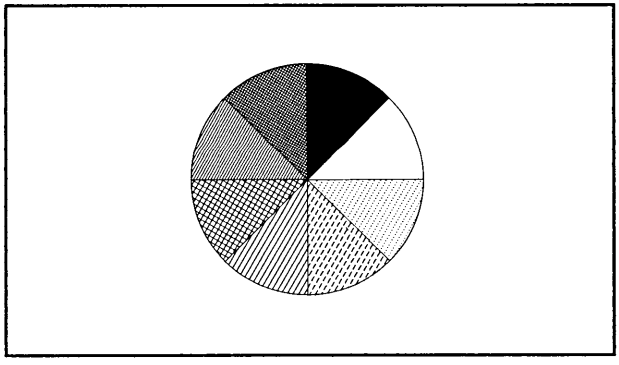



The default orders of use are:

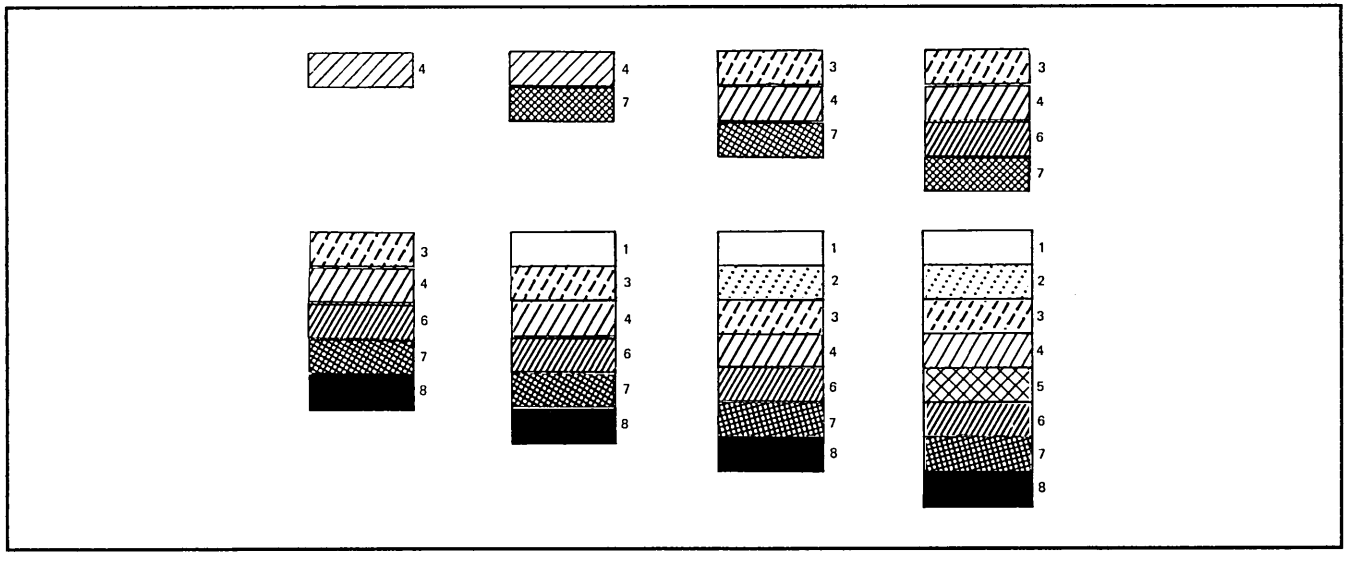


## Area Textures

Area textures are used on Horizontal and Vertical, Stacked or Clustered Bar Charts; and Pie Charts. The following area textures are available:



The default orders of use are:

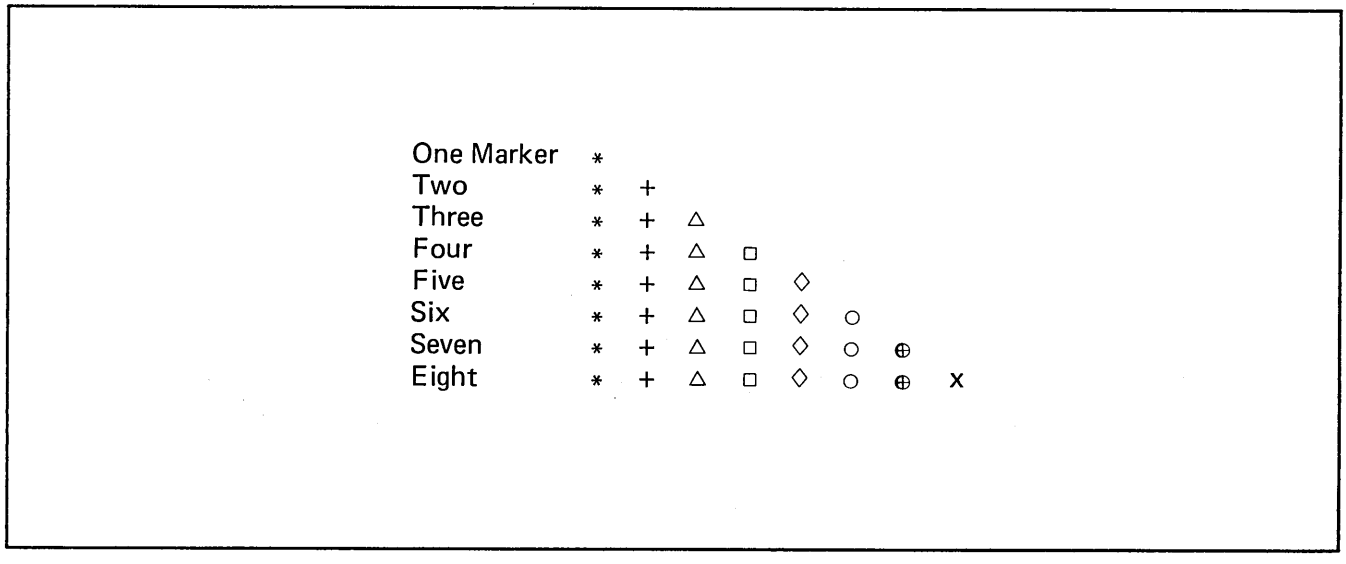


## Data Point Textures

Data point textures are used on Scatter Grams. The following data point textures are available:

0 = none
1 = *
2 = +
3 = △
4 = □
5 = ◇
6 = ○
7 = ⊕
8 = x

The default orders of use are:



# Data Entry Field Limitations APPENDIX C

This appendix supplies a summary of the data entry field lengths for two data entry characteristics:

- maximum number of entry lines available within the field per chart element (category).
- maximum number of characters per entry line.

| Chart Element | Maximum Number |
|---|---|
| Bars | 60 |
| Labeled lines | 54 |
| Numbered lines | 60 |
| Scatter points | 60 |
| number of colors | (device dependent) |
| Y-axis values | 5 |
| Number of textures | 8 |

| | Maximum Number Of Characters |
|---|---|
| Chart name | 7 |
| Figure name | 7 |
| Length of main title | 45 |
| Length of subtitle | 45 |
| Length of top left title | 45 |
| Length of foornote | 45 |
| Length of legend text 11 characters each | 2 lines |
| Length of X-axis label | 12 |
| Length of pie slice labels | 12 |
| Length of Y-axis data | 11 |
| Length of pie slice values | 12 |

# Plotters and Graphics Terminals

# APPENDIX D

On the following pages are some of the plotters and graphics terminals supported by EZCHART.

Included for each piece of equipment is how to turn it off and on, and how to load pens and paper for plotters. Also included is how to change address codes for HP-IB devices.

## HP-IB and Address Codes

Some plotters are connected to the HP2647 and HP2648 graphics terminals with an HP-IB cable. Each piece of equipment connected to these terminals has a unique address code that allows the terminals to recognize responses from that piece of equipment.

EZCHART recognizes a default address code of 5. If your plotter is not set to 5 you must change the plotter address code.

## RS-232-C Connectors

Two types of connectors are available for different terminals: HP-IB and RS-232-C. If you have any problems with connectors, see your System Manager.

## Plotter Pen Types

Three types of plotter pens are available: fiber tip (2 kinds), roller ball, and drafting. The roller ball and drafting pens are used only for the HP7580A and HP7585A Drafting plotters.

Fiber tip pens are used for all plotters. They are marked with a color matching the pen's ink and a two-character code.

The first character tells the kind of pen: P is for paper, T is for transparency. The second character gives the width of the pen tip in millimeters. For example, P3 is a pen with a 0.3 millimeter tip used with paper.

# HP7220 A, C, S, T Plotters

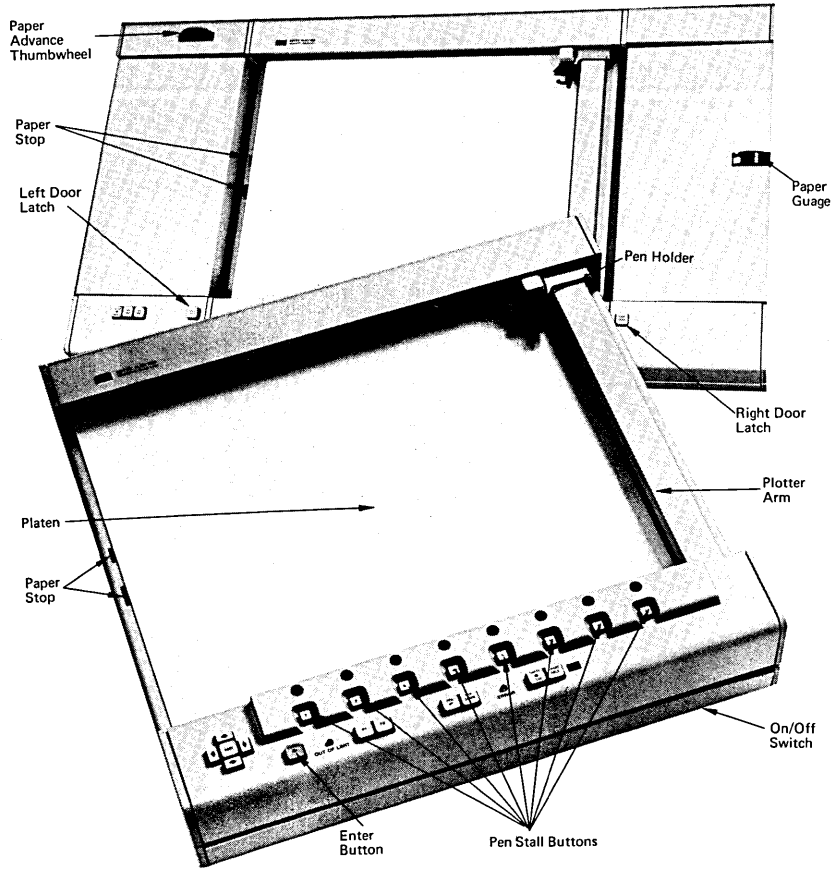



Figure D-1. Two Front Views 7220C and 7220T

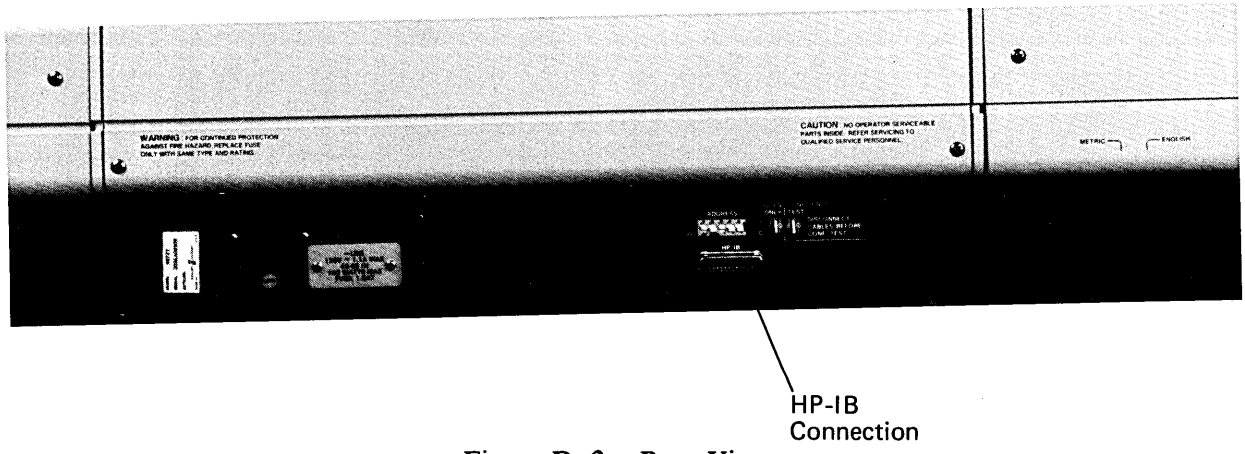



Figure D-2. Rear View

## Power ON/OFF

The on/off switch is located on the lower right front of the plotter.

1. Press the button in to turn the power on. Pressing the button a second time turns the power off.

2. When the switch is on, the pen holder on the plotter arm moves to the lower right corner.

## Loading Pens

1. Select a pen and remove its cap.

2. Place the tip of the pen into the rubber cap at the bottom of the stall you want to use. Push the pen in gently until it snaps into place. Repeat this procedure for any other pen stall.

3. To remove pen from the stall, press down on lever to the right of the pen. Grasp the pen firmly between thumb and forefinger and pull gently out of the pen stall.

## Loading Paper (7220T Four Pen)

1. Set the on/off switch to off. Remove pen from the pen holder so ink does not get on your paper.

2. Press down on the paper stop on the left side of the platen. Open both the left and the right paper supply modules by pressing the door latch buttons.

3. Position roll paper between hubs in right supply module and align hub tabs with roll notches. Paper should feed across top of roll.

4. Place paper sprocket holes on sprockets at end of roller. Hold paper while closing door. Make sure paper is not on top of paper guide at front edge of platen.

5. Advance paper with thumbwheel until taut.

6. Turn plotter switch to on and press ADV HALF button to advance the paper half a page.

## Loading Paper (7220C)

1. Set the on/off switch to on. Raise the paper stop on left side of the platen by pushing the upper portion of the stop with a pencil or pointed object.

2. Press the Chart Load button. The Chart Load and Out of Limit lights should go on and the plotter arm and pen holder is moved to the upper right corner of the platen.

3. Place a sheet of paper on platen with bottom under plastic lip and left side against the paper stop. Press Chart Hold push-button. The Chart Load light should go out and Out of Limit light stays on. Smooth paper down using back of your hand.

For more information on the 7220C/T plotter, refer to the Graphics Plotters Operating and Programming Manual, P/N 07220-90053.

# HP7221A, B, S Plotters

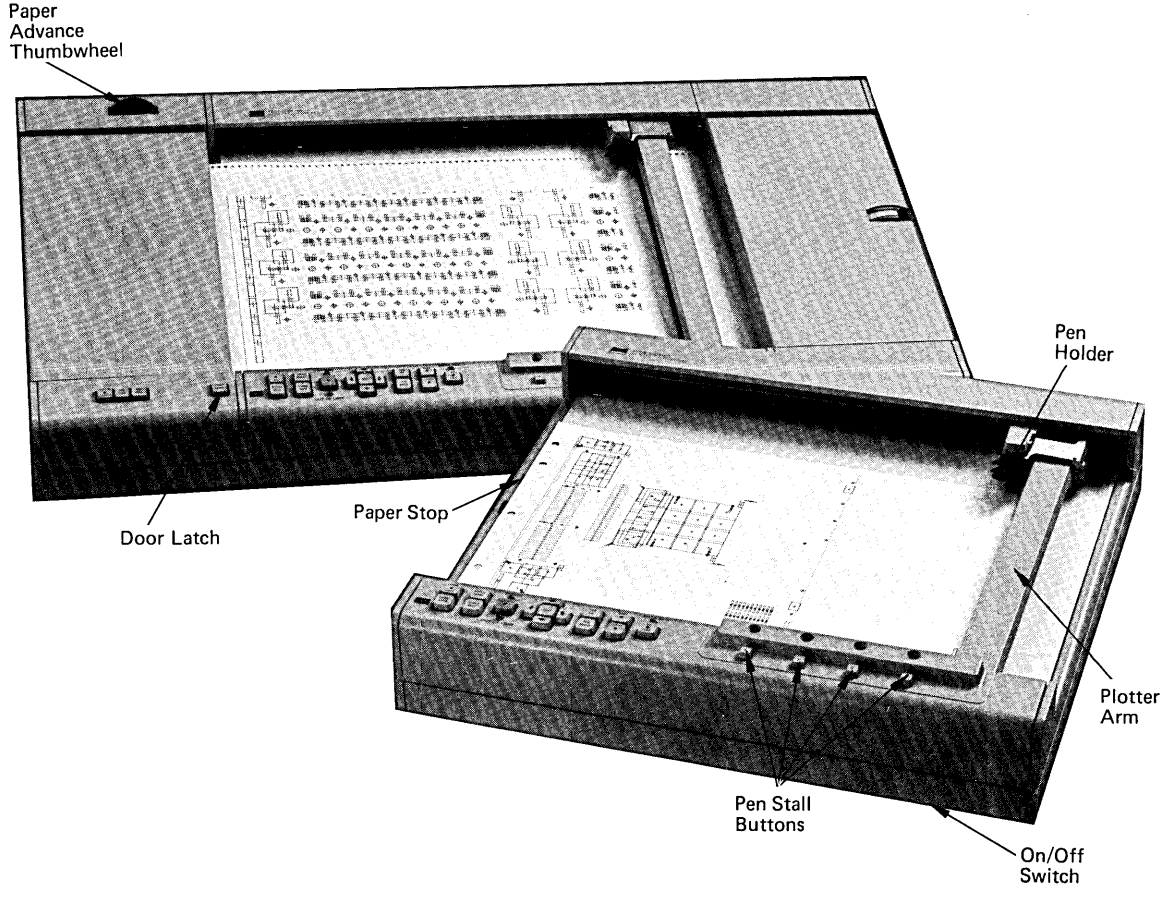



Figure D-3. Two Front Views 7221C and 7221T

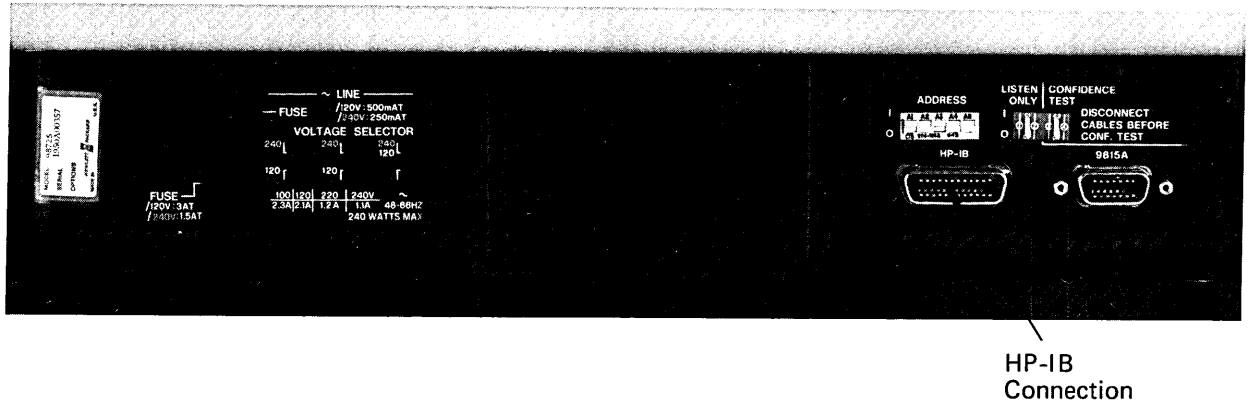



Figure D-4. Rear View

## Power ON/OFF

The on/off switch is located on the lower right front of the plotter.

1. Press the button in to turn the power on. Pressing the button a second time turns the power off.

2. When the switch is on, the following occurs: the On Line light and the Out of Limit light are now on and the fan motor starts running.

## Loading Pens

1. Select a pen and remove its cap.

2. Place the tip of the pen into the rubber cap at the bottom of the stall you want to use. Push the pen in gently until it snaps into place. Repeat this procedure for any other pen stall.

3. To remove pen from the stall, press down on lever to the right of the pen. Grasp the pen firmly between thumb and forefinger and pull gently out of the pen stall.

## Loading Paper (7221S)

1. Set the on/off switch to off. Remove pen from the pen holder so ink does not get on your paper.

2. Press down on the paper stop on the left side of the platen. Open both left and right paper supply modules by pressing the door latch buttons.

3. Position roll paper between hubs in right supply module and align hub tabs with roll notches. Paper should feed across top of roll.

4. Place paper sprocket holes on sprockets at end of roller. Hold paper while closing door. Make sure paper is not on top of paper guide at front edge of platen.

5. Advance paper with thumbwheel until taut.

6. Turn plotter switch to on, and press ADV HALF button to advance the paper half a page.

## Loading Paper (7221A, B)

1. Set the on/off switch to on. Raise the paper stop on left side of the platen by pushing the upper portion of the stop with a pencil or pointed object.

2. Press the Chart Load button. The Chart Load and Out of Limit lights should go on and the plotter arm and pen holder is moved to the upper right corner of the platen.

3. Place a sheet of paper on platen with bottom under plastic lip and left side against the paper stop. Press Chart Hold push-button. The Chart Load light should go out and Out of Limit light stays on. Smooth paper down using back of your hand.

For more information on the 7221A,B,S plotter, refer to the Graphics Plotter Operating and Programming Manual, P/N 07221-90014.

# HP7221C, T Plotters

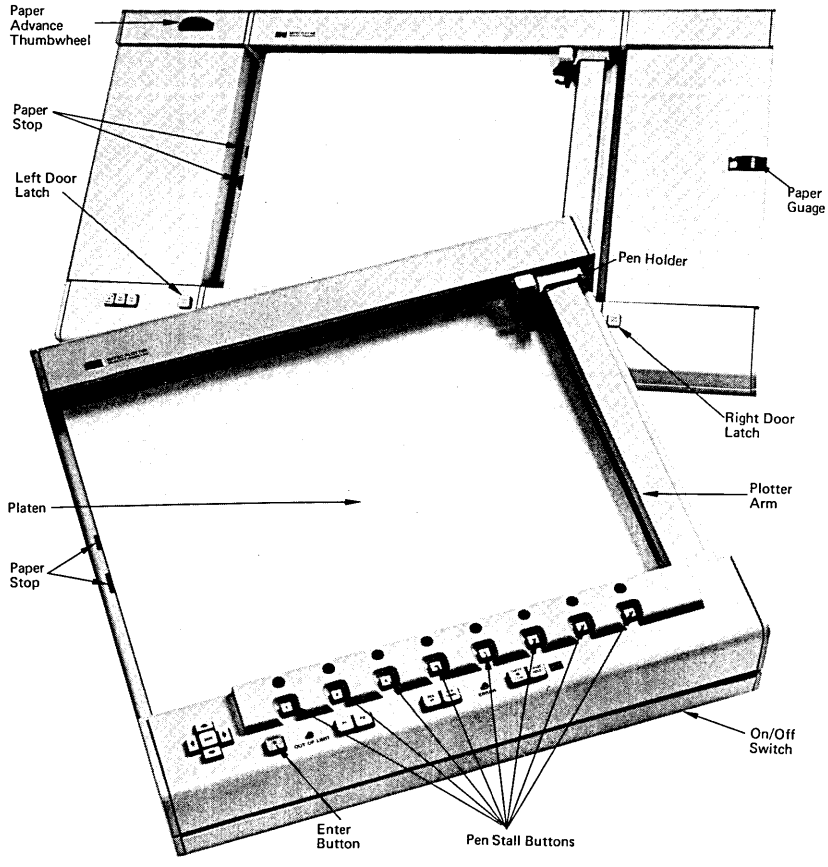



Figure D-5. Two Front Views 7221C and 7221T

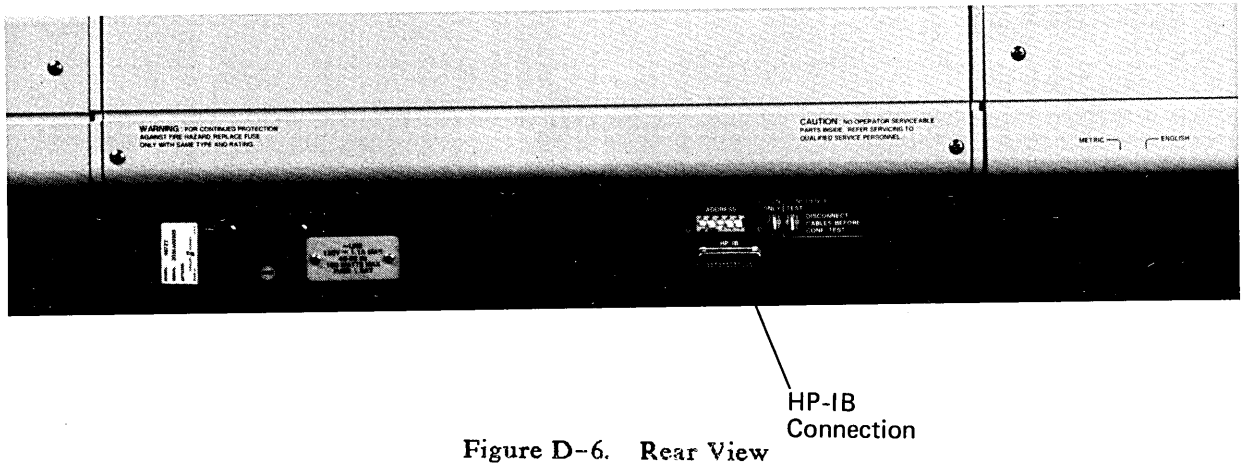



Figure D-6. Rear View

## Power ON/OFF

The on/off switch is located on the lower right front of the plotter.

1. Press the button in to turn the power on. Pressing the button a second time turns the power off.

2. When the switch is on, the following will occur: the On Line light and the Out of Limit light are now on and the fan motor starts running.

## Loading Pens

1. Select a pen and remove its cap.

2. Place the tip of the pen into the rubber cap at the bottom of the stall you want to use. Push the pen in gently until it snaps into place. Repeat this procedure for any other pen stalls.

3. To remove pen from the stall, press down on lever to the right of the pen. Grasp the pen firmly between your thumb and forefinger and pull gently out of the pen stall.

## Loading Paper (7221T)

1. Set the on/off switch to off. Remove pen from the pen holder so ink does not get on your paper.

2. Press down on the paper stop on the left side of the platen. Open both left and right paper supply modules by pressing the door latch buttons.

3. Position roll paper between the hubs in right supply module and align hub tabs with roll notches. Paper should feed across the top of roll.

4. Place paper sprocket holes on sprockets at end of roller. Hold paper while closing door. Make sure paper is not on top of paper guide at front edge of platen.

5. Advance paper with thumbwheel until taut.

6. Turn plotter switch to on, and press ADV HALF button to advance the paper half a page.

## Loading Paper (7221C)

1. Set the on/off switch to on. Raise the paper stop on left side of the platen by pushing the upper portion of the stop with a pencil or pointed object.

2. Press the Chart Load button. The Chart Load and Out of Limit lights should go on and the plotter arm and pen holder is moved to the upper right corner of the platen.

3. Place a sheet of paper on platen with bottom under plastic lip and left side against the paper stop. Press Chart Hold push-button. The Chart Load light should go out and Out of Limit light stays on. Smooth paper down using back of your hand.

For more information on the 7221C/T plotter, refer to the Graphics Plotter Operating and Programming Manual, P/N 07221-90024.

# HP7225A, B Plotter (17604A Personality Module)

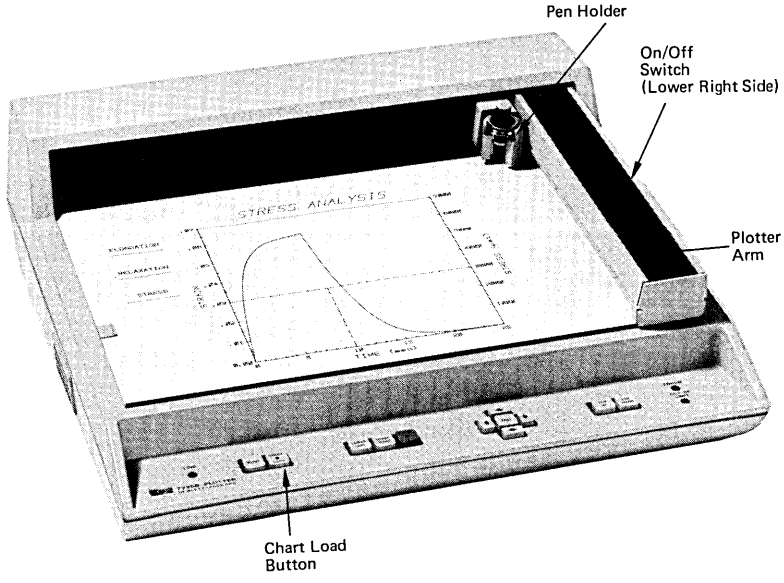



Figure D-7. Front View

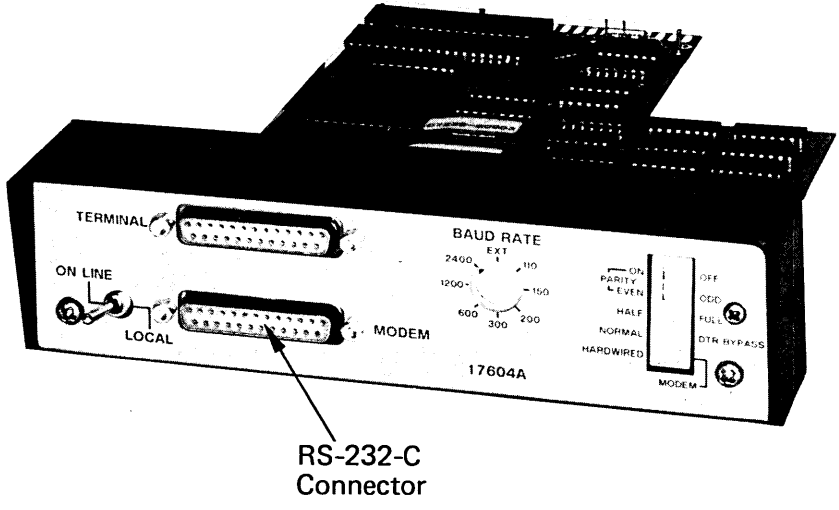



**Figure D-8. Rear View**

## Power ON/OFF

The on/off switch is located on the lower right side towards the rear of the plotter.

1. Press the button in to turn the plotter on. Pressing the button again turns the power off.

2. When the switch is on, the pen holder on the plotter arm moves to the upper right corner and Chart Hold is activated.

## Loading Pens

1. Select a pen and remove the cap.

2. When the plotter arm has stopped moving, hold the metal carrier ring up with one hand while pressing the pen into the holder with the other hand.

## Loading Paper

1. Press the Chart Load button. This releases the paper hold-down mechanism and moves the plotter arm to the upper right corner of the platen.

2. Position the paper squarely against the ridge at the bottom on the platen. Smooth out the paper with the back of your hand to avoid smearing the natural oil from your fingertips on the paper.

3. Press the Chart Hold button to activate the paper holddown mechanism.

For more information on the 7225A,B Graphics Plotter and 17604A Personality Module refer to the Operating and Programming Manual, P/N 17604-90000.

# HP7245A, B Plotter/Printer

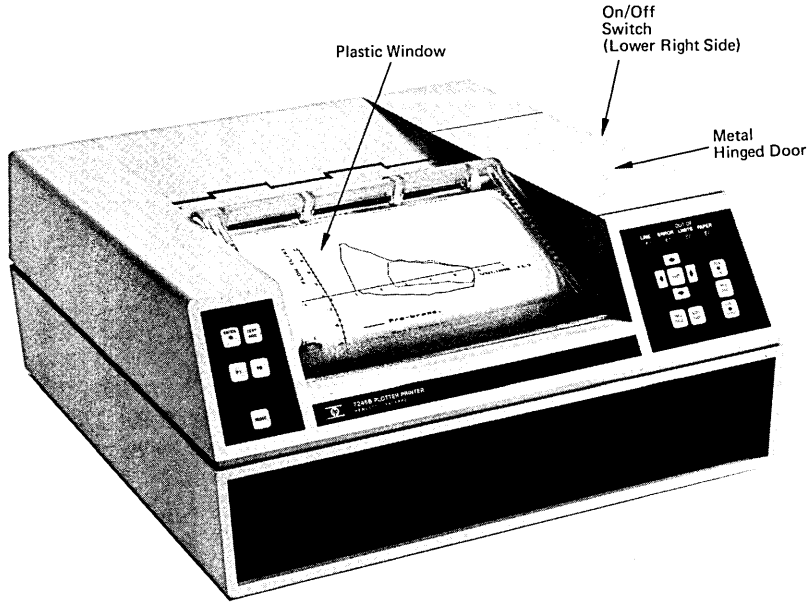



Figure D-9. Front View

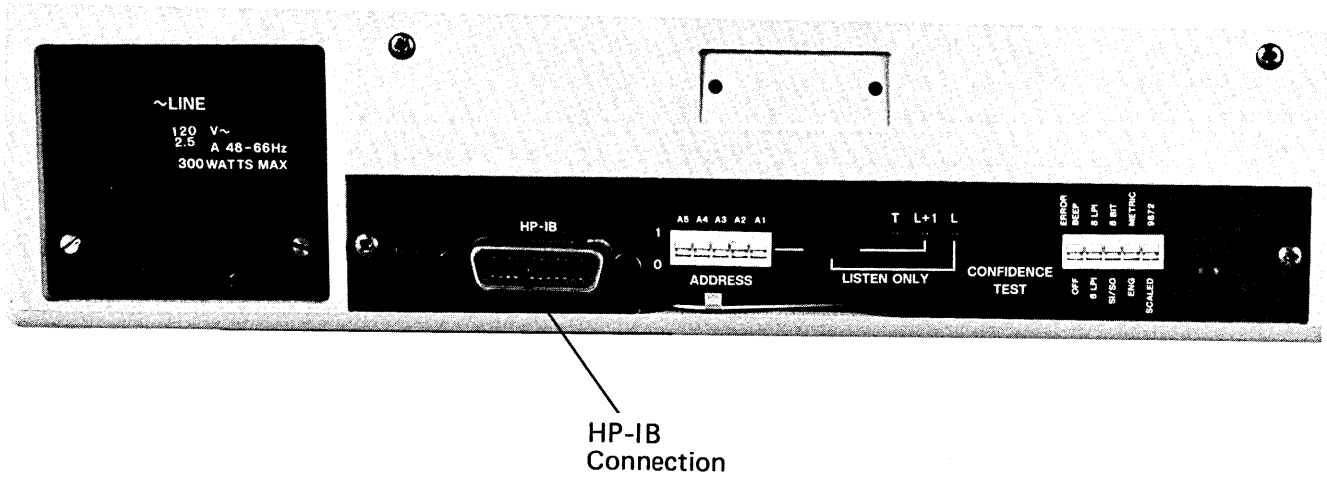



**Figure 3-10. Rear View**

## Power ON/OFF

The on/off switch is located to the right rear of the plotter.

1. To turn the plotter on set the switch to 1. Setting the switch to 0 turns the plotter off.

2. The Line indicator light remains on and the pen/print head moves to the left margin of the paper. The paper advances until it finds the paging hole.

## Changing the Pen/Print Head

1. The pen/print head is a long-life device. When it needs to be changed, refer to the 7245A Plotter/Printer Operating and Programming Manual, P/N 07245-90001 for instructions.

## Loading Paper

1. Open plastic window on front and metal hinged door on the top right side of the plotter.

2. Raise paper drive assembly all the way up, then pull lower idler assembly towards front of plotter.

3. Insert roller into paper roll, place paper roll into cradle with the proper side out and seat roller.

4. Pull paper up and over the paper drive with at least six inches of paper extending beyond sprockets. Place the paper holes on left and right sprockets on the platen and then with rear sockets.

5. Close and seat the drum protector, lower paper drive back into place, and close the window and door.

See the HP7245A Plotter/Printer Operating and Programming Manual, P/N 07245-90001, for additional information.

# HP7470A Plotter

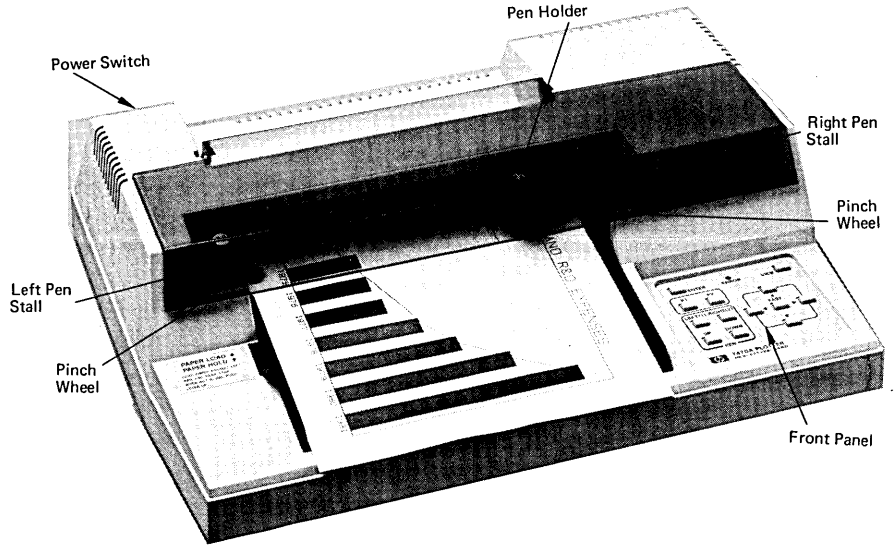



Figure D-11. Front View

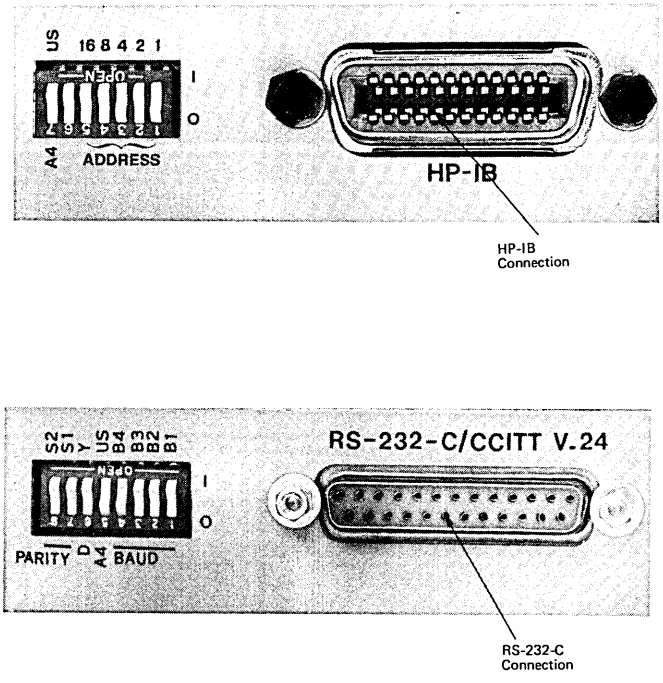



Figure D-12. Rear View

## Power ON/OFF

The on/off switch is located at the left rear of the plotter.

1. Set the switch to on.

2. The Error light comes on momentarily and the pen holder moves to the left pen stall. If there is no pen in the left stall, the pen holder moves to the right stall. When a pen is found, or if no pens are installed, the pen holder returns to a point near the right plotting limit.

## Loading Pens

1. Raise the protective cover to gain access to the pen stalls.

2. Select a pen and remove its cap.

3. Place the pen tip in the hole at the base of the stall and press down and in gently until the pen snaps into place. Repeat for the second pen.

4. Lower the protective cover.

## Loading Paper

1. Move the Paper Loading Lever (below the left pen stall) to the Paper Load position. This raises the pinch wheels and the paper stop and stores and caps the pen.

2. Place a sheet of paper on the platen surface so that it is against the paper stop and the left edge of the platen.

3. Move the Paper Loading Lever to the Paper Hold position. This lowers the pinch wheels and the paper stop to secure the paper.

4. Transparencies are loaded in the same way as paper.

For further information on the HP7470A plotter, refer to the Operator's Manual, P/N 07470-90002.

# HP 7475A Graphics Plotter

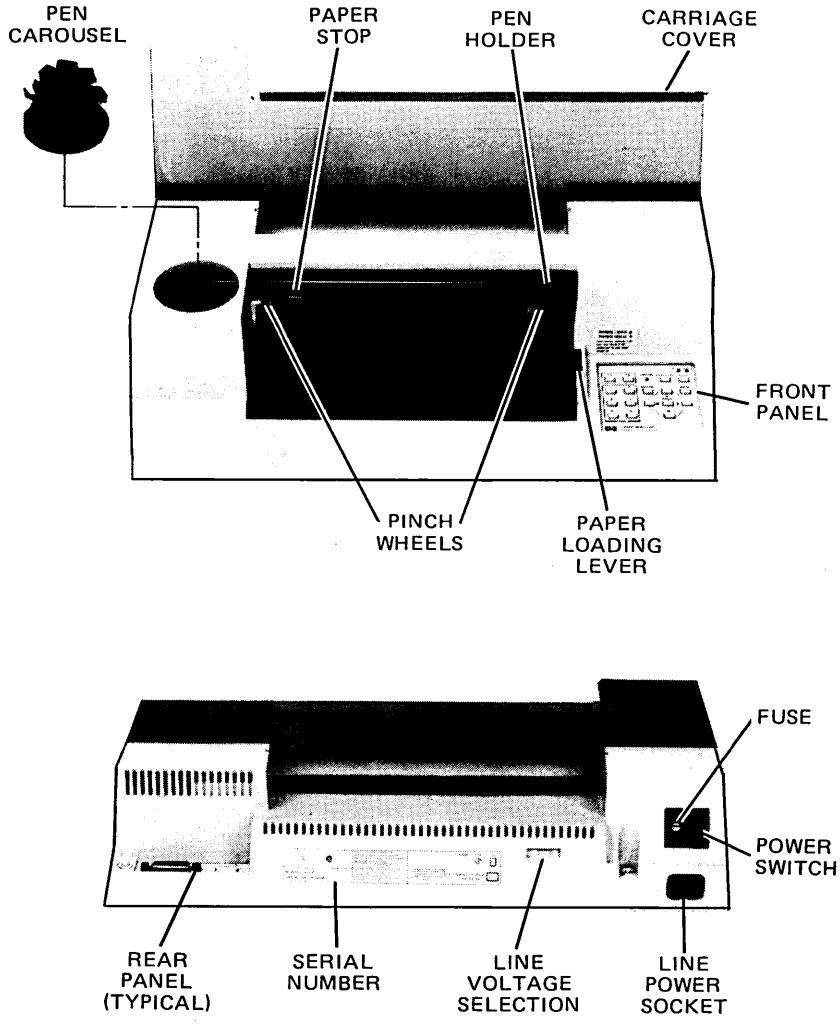



**Figure D-13. Front and Rear View**

## Power ON/OFF

The on/off switch is located at the left rear of the plotter.

1. Set the switch to on.

2. The Error light comes on momentarily. The plotter assumes a new piece of paper has been loaded, checks the settings of the paper size switches, and performs the necessary pen holder movements to initialize the X- and Y-coordinate axes.

## Loading Pens

1. Raise the protective cover to gain access to the pen carousel.

2. Select a pen and remove its cap.

3. Remove the carousel by lifting it straight up.

4. Hold the carousel and depress the pen-capping mechanism.

5. Position the pen collar just below the rounded notch and slide the pen straight into the pen-holding jaws.

6. Release the pen-capping mechanism.

7. Place the carousel on the spindle in the plotter. Rotate the carousel until it drops into position on the spindle. No force is required.

## Loading Paper

1. Move the Paper Loading Lever (black lever on the right side) to the Paper Load position. This raises the pinch wheels and the paper stop. It also stores and caps the pen to avoid getting ink on the new paper.

2. Lay a sheet of paper on the platen surface so the paper is against the paper stop and the left edge of the platen.

3. Move the paper loading lever to the Paper Hold position. This lowers the pinch wheels and the paper stop to secure the paper and allow it free movement.

For further information on the HP7475A plotter, refer to the Operation and Interconnection Manual, P/N 07475-90052.

# HP7580A/7585A,B Drafting Plotters

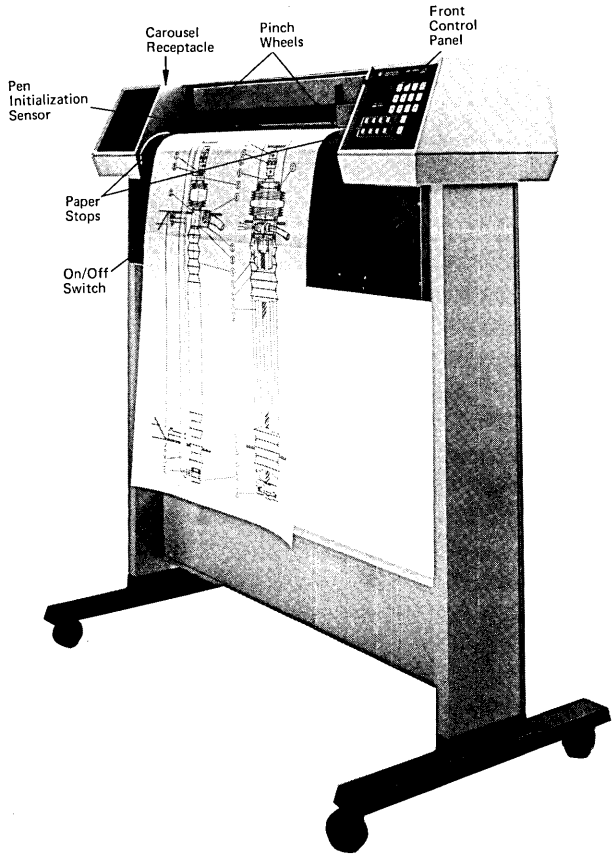



Figure D-14. Front View

## Power ON/OFF

The on/off switch is located on the front, lower left panel.

1. To turn the power on press the switch to 1 (ON) position. The 0 (OFF) position turns the power off.

2. When the switch is set to on, the Line and Chart Load lights come on and remain on. The pen moves approximately two inches to the right, then returns to pen initialization sensor at left end on the pen carriage arm.

## Loading Pens and Carousels

1. There are three types of pens available: fiber tip, roller ball, and drafting. A separate pen carousel is supplied for each type of pen.

2. Select the pen type and color to be loaded into the corresponding pen carousel and remove the cap.

3. Holding the carousel in one hand, place a pen so the tip flange is resting on the edge of the cap and the pen tip is over the opening.

4. Press the pen down as you straighten it. Be careful that the tip clears the cap and the pen collar fits snugly into the notch on the hub of the carousel.

5. Pull the plunger down and release it to assure the cap seals the pen tightly without binding.

6. Repeat this procedure for the remaining seven pens.

7. Insert pen carousel into carousel receptacle on the top left of the plotter. Rotate slightly until it drops into position on the spindle. No force is required.

## Loading Paper

1. Set the Line switch to on. Raise the carriage cover. Position the paper so that its left edge is flush against both the front and back paper stops and hold in this position.

2. Manually position the right pinch wheel to align its scribe mark with the right paper edge.

3. Close the carriage cover and press Chart Hold to lower the pinch wheels. (The plotter will not operate with the carriage cover raised.)

For more information on the 7580A Drafting Plotter refer to the Operating and Programming Manual, P/N 07580-90000 and Operators Manual, P/N 07580-90002.

# HP9872A/B/S Plotter

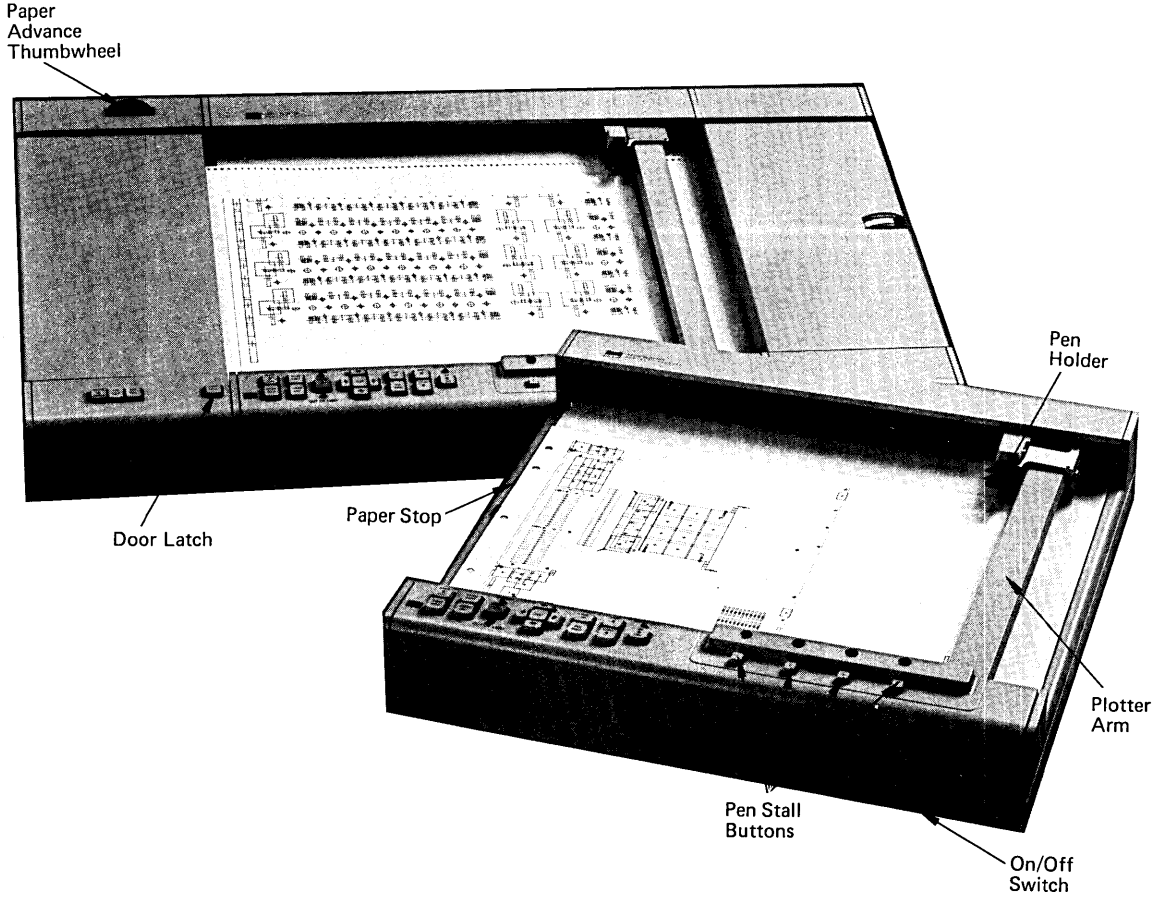



Figure D-15. Front View

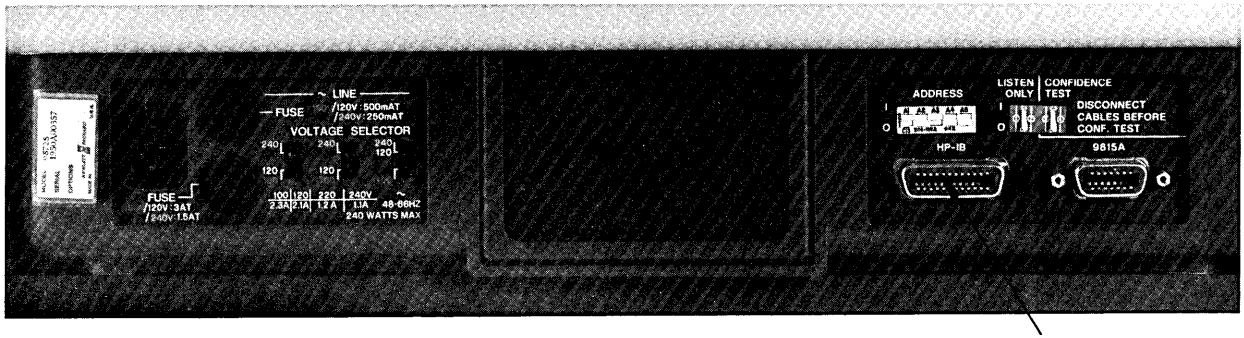



Figure D-16. Rear View

## Power ON/OFF

The on/off switch is located at the lower right front of the plotter.

1. Press the button in to turn the power on. Pressing the button a second time turns the power off.

## Loading Pens

1. Select a pen and remove its cap.

2. Place the tip of the pen into the rubber cap at the bottom of the stall you want to use. Push the pen in gently until it snaps into place. Repeat this procedure for any other pen stall.

3. To remove pen from the stall, press down on lever to the right of the pen. Grasp the pen firmly between thumb and forefinger and pull gently out of the pen stall.

**Note**

Make sure that you place the right color of pen in the pen slot that matches the pen number you selected in EZCHART.

## Loading Paper (9872B)

1. Press the Chart Load button to release the paper hold mechanism and move the plotter arm to the upper right corner of the platen. The Chart Load light comes on.

2. Place a sheet of paper on the platen surface so that it is against the ridge at the bottom of the platen and against the paper stop on the left side of the platen. Smooth the paper.

3. Press the Chart Hold button to activate the hold-down mechanism. The Chart Load light goes off. Again smooth the paper.

   Transparencies are loaded in the same way as paper.

## Loading Paper (9872S)

1. Store pens to avoid getting ink on the paper. Turn off the plotter.

2. Press down on the paper stop on the left side of the platen and open both the left and the right paper supply modules by pressing the door latch buttons.

3. Hold the paper roll in your left hand and load the roll between hubs in supply module with paper feeding across the top of the roll, aligning hub tabs with roll notches.

4. Feed paper across table and under arm.

5. Engage paper sprocket holes and sprockets at each end of take-up roller. Hold paper on roller while closing door.

6. Close supply module door. Make sure paper is not on top of front edge guide.

7. Advance paper with thumbwheel until taut. Turn plotter on and advance paper at least once with front panel buttons. The page advance option is automatically turned on when paper is loaded successfully.

For more information on the HP9872B/S plotter, refer to the Operating and Programming Manual, part number 09872-90008.

# HP9872C, T Plotter

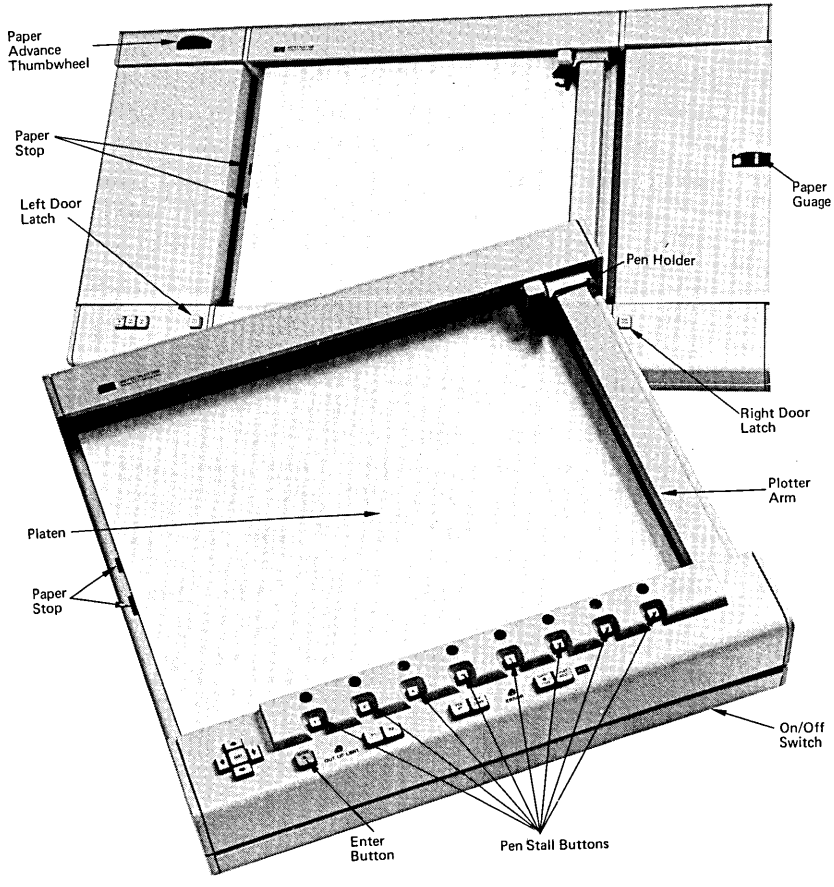



Figure D-17. Two Front Views 9872C and 9872T

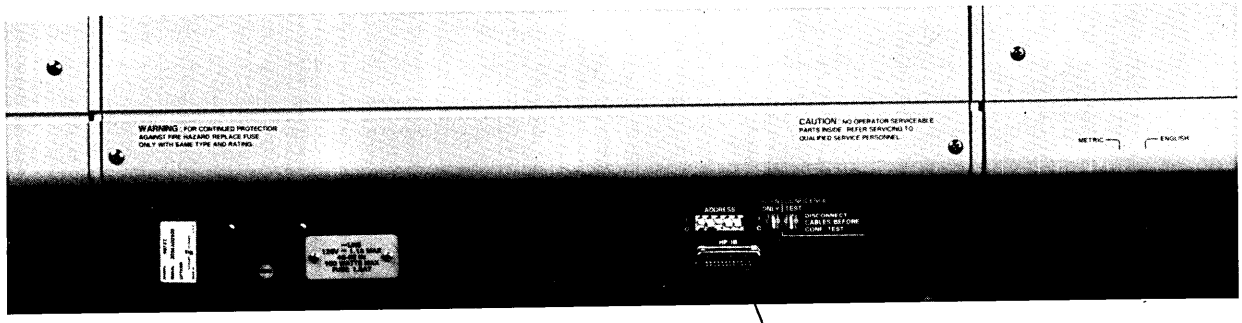



Figure D-18. Rear View

## Power ON/OFF

The on/off switch is located at the lower front of the plotter.

1. Press the button in to turn the plotter on. Pressing the switch again turns the plotter off.

2. When the switch is on, the pen holder on the plotter arm moves to the lower right corner.

## Loading Pens

1. Select a pen and remove its cap.

2. Place the tip of the pen into the rubber cap at the bottom of the stall you want to use. Push the pen in gently until it snaps into place. Repeat this procedure for any other pen stall.

3. To remove pen from the stall, press down on lever to the right of the pen. Grasp the pen firmly between your thumb and forefinger and pull gently out of the pen stall.

## Loading Paper (9872T)

1. Set the on/off switch to off. Remove pen from the pen holder so ink does not get on your paper.

2. Press down on the paper stop on the left side of the platen. Open both left and right paper supply modules by pressing the door latch buttons.

3. Position roll paper between hubs in right supply module and align hub tabs with roll notches. Paper should feed across top of roll.

4. Engage paper sprocket holes on sprockets at end of roller. Hold paper while closing door. Make sure paper is not on top of paper guide at front edge of platen.

5. Advance paper with thumbwheel until taut.

6. Turn plotter switch to on, and press ADV HALF button to advance the paper half a page.

## Loading Paper (9872C)

1. Set the on/off switch to on. Raise the paper stop on left side of the platen by pushing the upper portion of the stop with a pencil or pointed object.

2. Press the Chart Load button. The Chart Load and Out of Limit lights should go on and the plotter arm and pen holder is moved to the upper right corner of the platen.

3. Place a sheet of paper on platen with bottom under plastic lip and left side against the paper stop. Press Chart Hold push-button. The Chart Load light should go out and Out of Limit light stays on. Smooth paper down using back of your hand.

For more information on the 9872C/T plotter, refer to the Graphics Plotter Operating and Programming Manual, P/N 09872-90011.

# Graphics Terminals

The four graphics terminals discussed here are the HP2623A, HP2627A, HP2647A/F and the HP2648A Graphics Terminals. Many keys on the four keyboards are located in different positions; however the keyboards perform the same operations in EZCHART.

One of the major differences in the keyboards is the CTRL key on the HP2623A and HP2627A keyboard. This key is labelled CNTL on the HP2647 and HP2648 terminals. Also, the graphics control group is different on the HP2623 and HP2627 from the HP2647 and HP2648.

# HP2647A, F and HP2648A Graphics Terminals

Some of the basic features that you need to be familiar with of the HP2647 and HP2648 graphics terminals are illustrated below. Keys and functions that relate specifically to EZCHART are explained in Section 3.

For a complete explanation of using your terminal, refer to the HP2647A/F User Manual, P/N 02647-90001 or the HP2648A User Manual, P/N 02648-90001.

## Power ON/OFF

The on/off switch is located at the left rear of the terminal.

1. Set the switch to the on position and the TERMINAL READY message appears in the upper left corner of your screen.

2. Pressing the switch the opposite direction turns the terminal off.

3. The power cord is located at the left rear of the terminal next to the on/off switch.

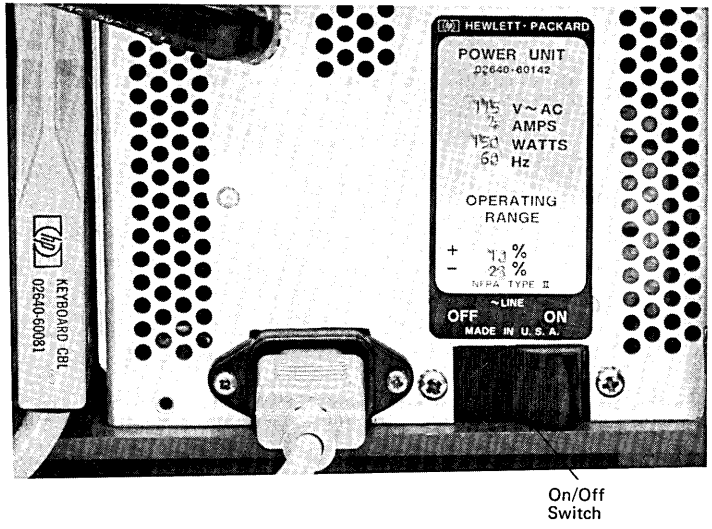



Figure D-19. HP264X Rear View

## HP2647A, F and 2648A Keyboards

The HP2647A,F and 2648A keyboards are made up of six groups: an alphanumeric keyboard, a terminal control group, function keys, edit group, display control group, and graphics control group. (See the photo for the location of each group for your specific terminal.)

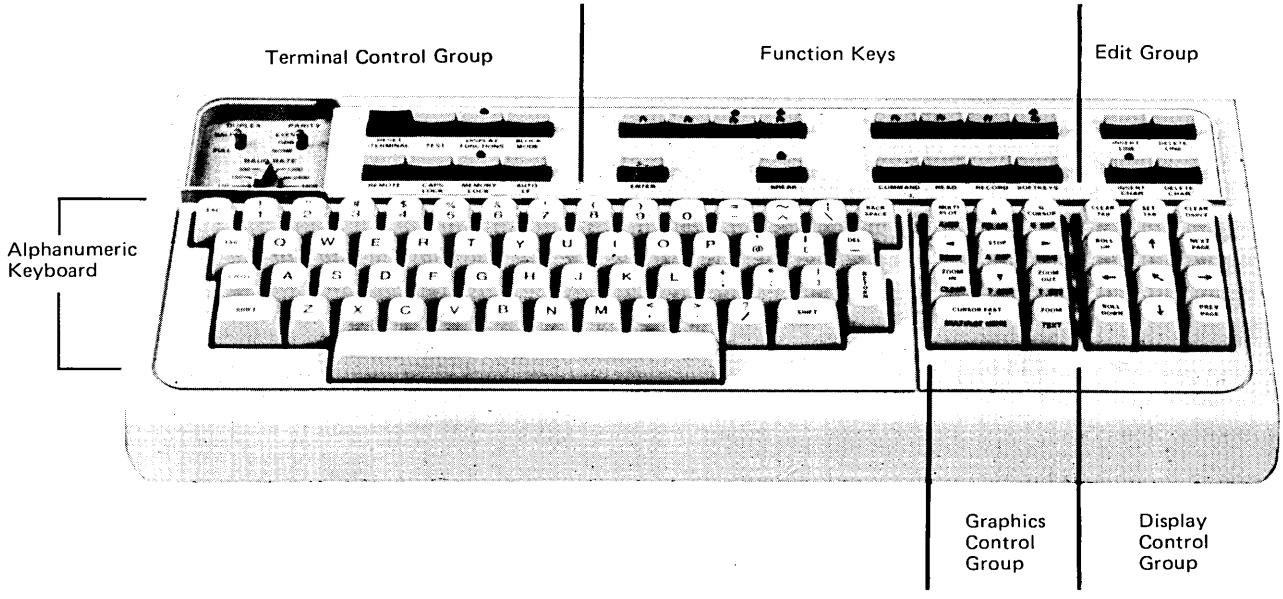



Figure D-20. HP2647A,F Keyboard

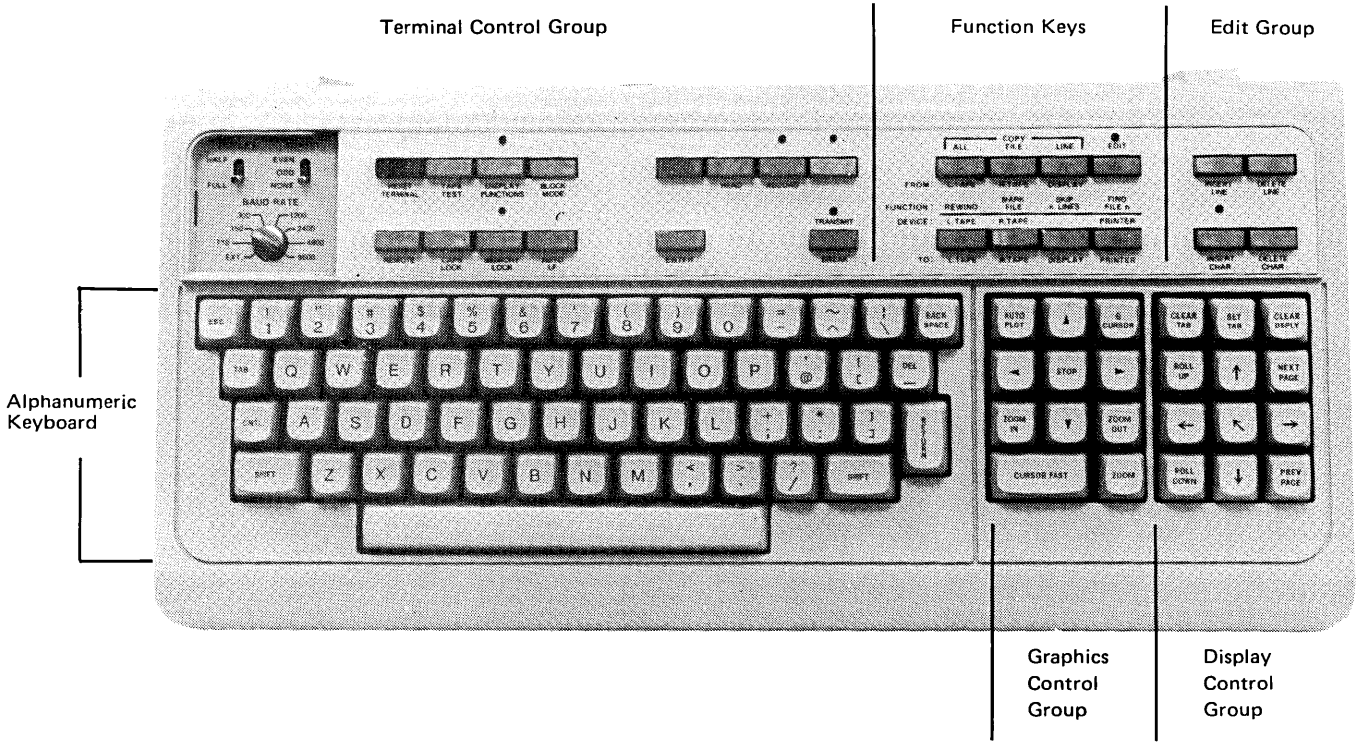



Figure D-21. HP2648A Keyboard

## Terminal Control Group

The REMOTE key is located in this group. The key is always pressed down to communicate with the computer.

The CAPS LOCK key can be either up or down. With the key down you can type all capital letters. With the key in the up position, you can type uppercase and lowercase letters.

The remaining keys should be in the up position.

## Function Keys

The function keys for the HP2647A and the HP2648A Graphics Terminals perform the same functions; however, the keys are located in different positions on the keyboards.

The function keys are numbered f1 through f8. These keys match the labels shown on the bottom of your terminal screen.

## Display Control Group

The keys marked with an arrow move the cursor in the direction the arrow is pointing. By pressing these keys you can move the alphanumeric cursor to any position on the screen.

The arrow in the center "homes" the cursor (puts it at the beginning of the first field).

## Graphics Control Group

The keys marked with an arrow move the graphics cursor (+) in the direction the arrow is pointing. Use these keys to place EZCHART objects in the location you choose.

Pressing CURSOR FAST with one of the arrow keys moves the graphics cursor faster.

## Alphanumeric Keyboard

The terminal keyboard works like a typewriter keyboard. See Section 1 for an explanation of the keys and how you use them with EZCHART.

# HP2623A and HP2627A Graphics Terminals

## Power ON/OFF

The on/off switch is located at the right rear of the terminal.

1. Set the switch to the on position and the cursor is displayed in screen column 1, row 1. Also, the primary function key labels are displayed across the bottom of the screen.

2. To turn the terminal off, set the power switch to the OFF position.

3. The power cord is located at the right rear, below the power switch.

## Connectors

The keyboard connector is located at the left rear of the terminal. There is a label above the connector which indicates "KYBD".

There are two additional port connectors. Port 1 is used to connect your terminal with the port that communicates with the computer.

Port 2 is used to connect another device such as a printer.

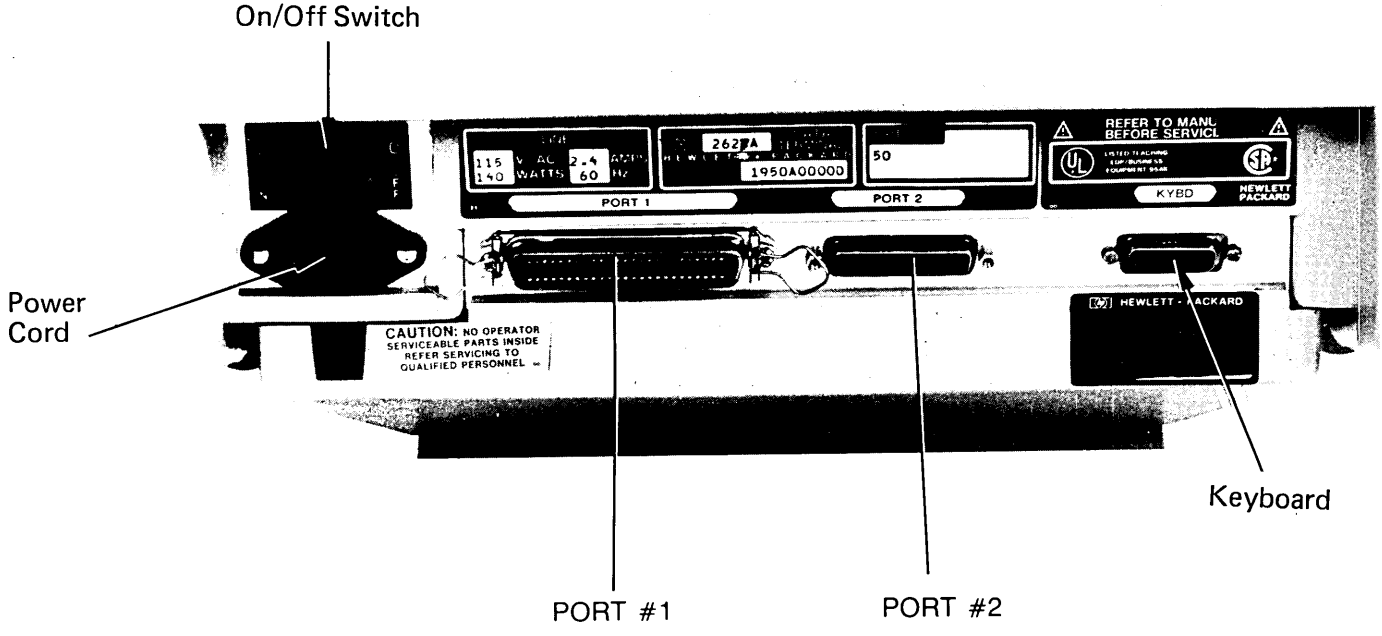



Figure D-22. HP2623A and HP2627A Rear View

# HP2623A and HP2627A Keyboard

The HP2623A and HP2627A keyboard consists of seven functional groups. The Character set, Graphics Control, Function Keys, Function Control Keys, and Edit group are briefly discussed here.

For additional information on the Terminal Control and Display Control groups, refer to the 2623A User Manual, P/N 02623-90001 or the 2627A User Manual, P/N 02627-90001.

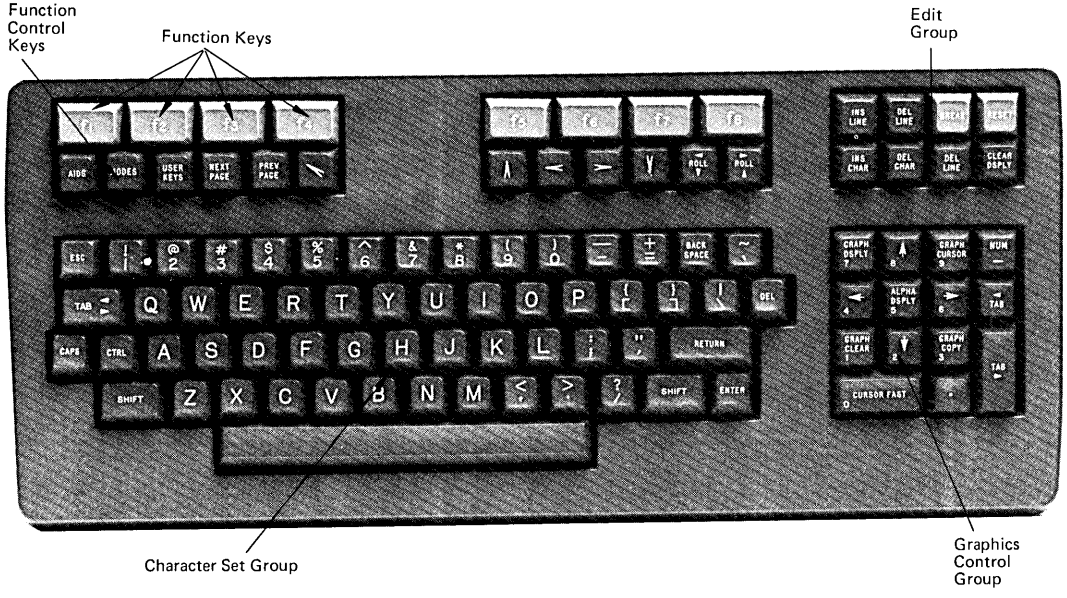



Figure D-23. HP2623A and HP2627A Keyboard

## Character Set Group

The Character Set Group is the largest group on the keyboard. It resembles a standard typewriter keyboard with additional keys for various terminal operations.

## Graphics Control Group

The Graphics Control keys are located at the right of the keyboard. They control the graphics cursor. The four keys with an arrow move the graphics cursor (+) in the direction the arrow is pointing. Use these keys to place text or drawings in the work area.

CURSOR FAST, when pressed simultaneously with one of the four cursor movement keys, moves the graphics cursor at a higher speed.

For the remaining Graphics Control keys functions, see Section 1 or the 2623A or the 2627A User Manual.

## Function Keys

The Function Keys Group consists of eight keys located across the top of the keyboard. They are labeled f1 through f8. These keys are associated with the eight function key labels across the bottom of your screen. For example, the second label from the left on your screen is associated with the f2 function key. You press f2 to perform the function of that label.

## Function Control Keys

This group consists of the AIDS, MODES, and USER KEYS. Use these keys to select the functions available to the function keys, including the REMOTE key. See the 2623A or 2627A User Manual for a list of the functions available.

## Edit Group

Information displayed in fields can be edited by using the Edit Keys. CLEAR DSPLY clears the display from the cursor position to the end of the last field. CLEAR LINE clears the field from the cursor to the end of the field.

INS CHAR allows you to insert characters without overwriting existing characters. Place your cursor to the right of where you want your character inserted. This shifts the existing characters to the right one position for each character inserted. DEL CHAR deletes the character you position the cursor under.

For a complete explanation of using your terminal, refer to the 2623A User Manual, P/N 02623-90001 or the 2627A User Manual, P/N 02627-90001.

# HP2625A and HP2628A Terminals

## Power ON/OFF

The off/off switch is located at the right rear of the terminal.

1. Set the switch to the on position and the cursor is displayed in screen column 1, row 1. Also, the primary function key labels are displayed across the bottom of the screen.

2. To turn the terminal off, set the power switch to the OFF position.

3. The power cord is located at the right rear, below the power switch.

## Connectors

The keyboard connector is located at the left rear of the terminal. There is a label above the connector which indicates "KYBD".

There are two additional port connectors. Port 1 is used to connect your terminal with the port that communicates with the computer.

Port 2 is used to connect another device such as a printer.

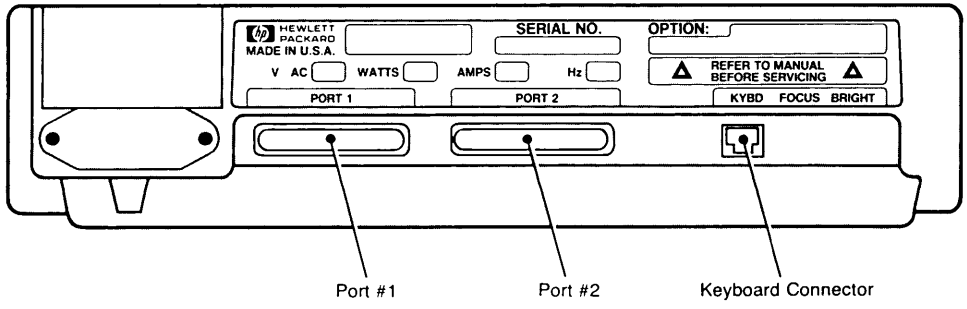



Figure D-24. HP2625A and HP2628A Rear View

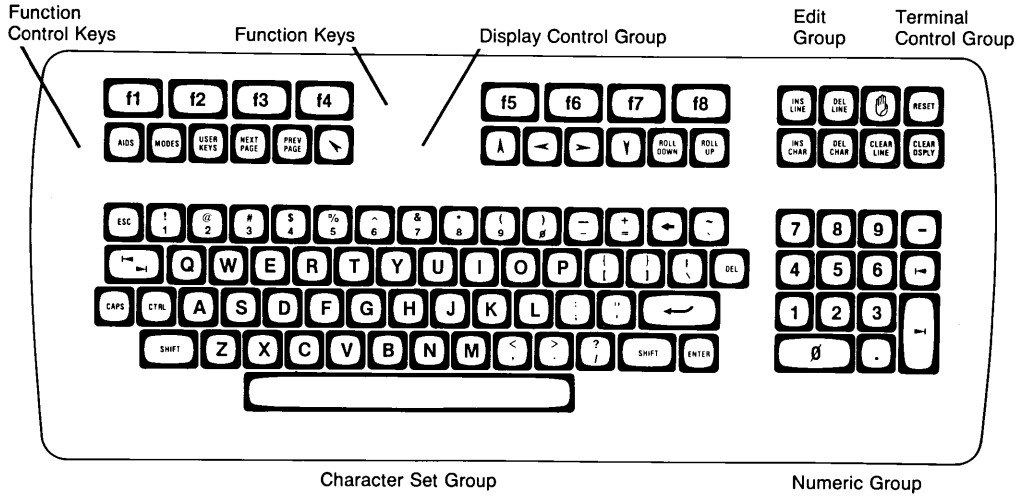



Figure D-25. HP2625A and HP2628A Keyboard

The HP2625A and HP2628A keyboard consists of seven functional groups. The Function Control Keys, Function Keys, Display Control Group, Edit Group, Terminal Control Group, Numeric Group and Character Set Group.

## Character Set Group

This group resembles a standard typewriter keyboard. You use these keys for entering information or for communicating with a host computer.

## Numeric Control Group

This group resembles a calculator keypad. These keys ease the entry of numeric data.

## Display Control Group

This group controls cursor movement and determines which portion of the workspace you see through the viewing window.

## Edit Group

This group modifies text through insert and delete operations.

## Terminal Control Group

This group resets ("initializes") the terminal or breaks ("interrupts") data communications.

## Function Keys Group

This group uses single keystrokes to accomplish complicated tasks. Most tasks are predefined (configuring the terminal, selecting devices, etc.), but you can also program these keys to do tasks of your choosing.

## Function Control Group

This group assigns one of three sets of labels to the function keys group.

For a complete explanation of using your terminal, refer to the User's Manual for HP2625A Dual-System Display Terminal and HP2628 Word-Processing Terminal, P/N 02625-90001.

# HP 150 Personal Computer

An HP 150 connected to an HP 3000 with a RS-232 cable supports EZCHART. Plotters can be accessed by using the Plot Chart Menu in EZCHART.

To act as an EZCHART graphics terminal, the HP 150 has three requirements:

1. An RS-232-C cable must be connected into the rear of the HP 150. Plug it into the HP 150's "DATACOMM (PORT 1)".

2. The HP 150 must be linked to the HP 3000 host.

3. The HP 150 must be configured to act as a terminal by pressing Terminal on the Personal Applications Manager (PAM) screen. To return to PAM, press SHIFT and STOP.

## Power ON/OFF

1. One end of the power cord must be plugged into the "AC INPUT" connector and the other end into an outlet.

2. Set the power switch to the "1" position. The power switch's location is shown in Figure D-27.

3. To turn the HP 150 off, set the switch to the "0" position.

## HP 150 Keyboard

This keyboard is shown in Figure D-26. Note that the ENTER key is in the bottom left corner of the keyboard. The graphics cursor keys, used to position annotations, are on the 10-key numeric keypad as follows: UP = 5 , DOWN = 2, LEFT = 1, and RIGHT = 3.

To activate function keys, touch the function key displayed on the screen.

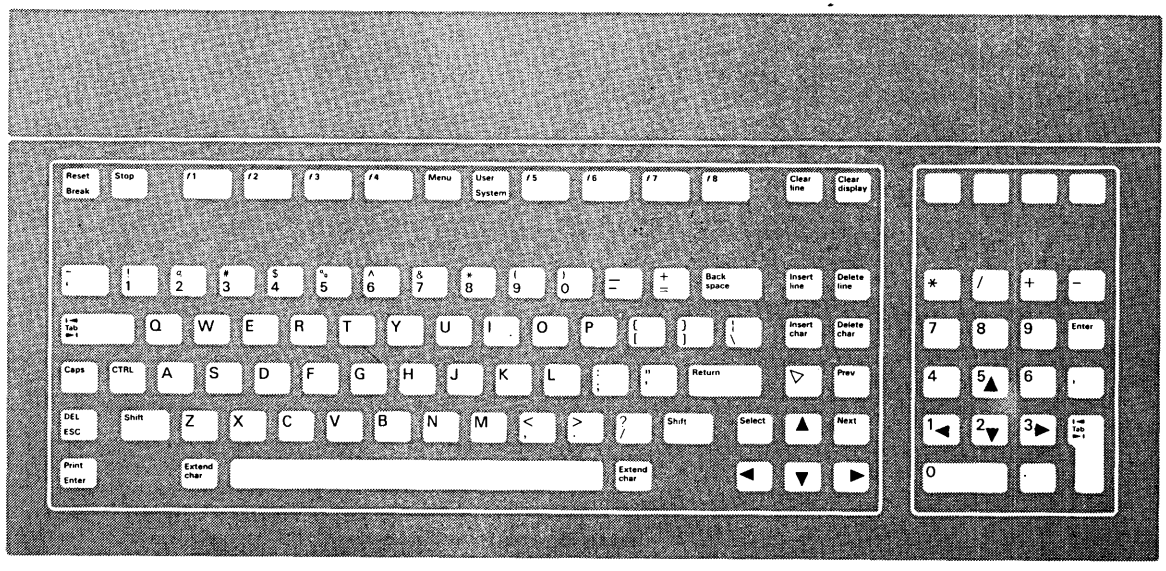



Figure D-26. The HP 150 USASCII Keyboard

## Connectors

The HP 150 rear panel is illustrated in Figure D-27. It shows the positions of the AC power connector, ON/OFF switch, and the positions of the RS-232 and HP-IB data cable connectors.

To connect a plotter to the HP 150, refer Section 2, Installing Your Equipment, in the HP 150 Personal Computer Owner's Guide.

For more information on the HP 150 Personal Computer, see the HP 150 Terminal User's Guide, P/N 45623-90001, and the HP 150 Personal Computer Owner's Guide, P/N 45621-90001.

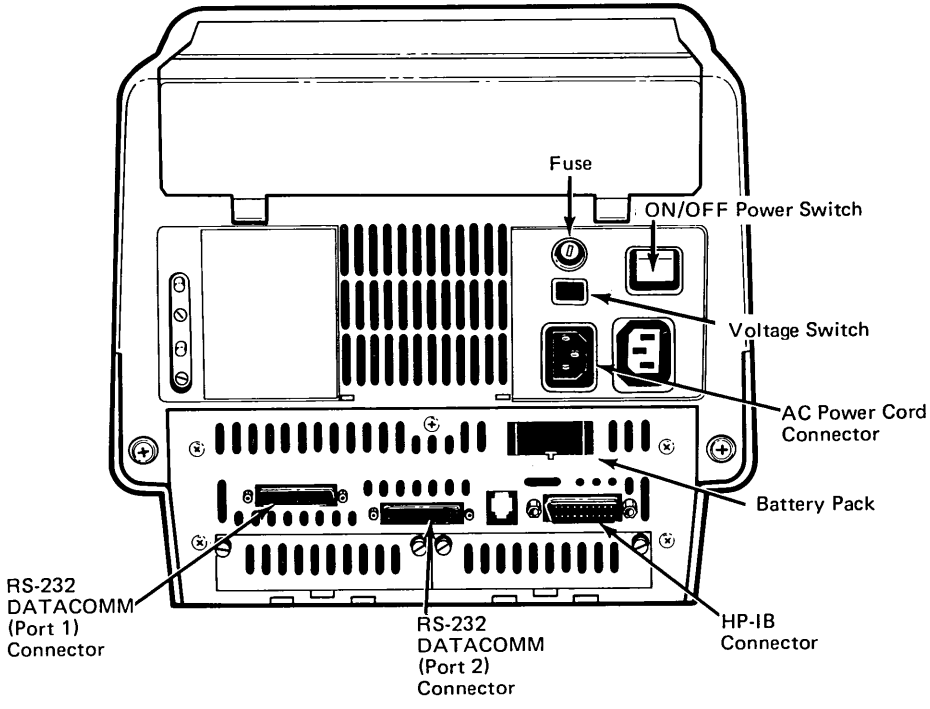



Figure D-27. HP 150 Rear View

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## R



## S

## T



## U



## V



## W,X,Y,Z

# READER COMMENT SHEET

**HP 3000 Computer Systems**

**HPEASYCHART**
**Reference Guide**

**32109-90001 Jan 1984**

We welcome your evaluation of this manual. Your comments and suggestions help us to improve our publications. Please explain your answers under Comments, below, and use additional pages if necessary.

Is this manual technically accurate? ☐ Yes ☐ No

Are the concepts and wording easy to understand? ☐ Yes ☐ No

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