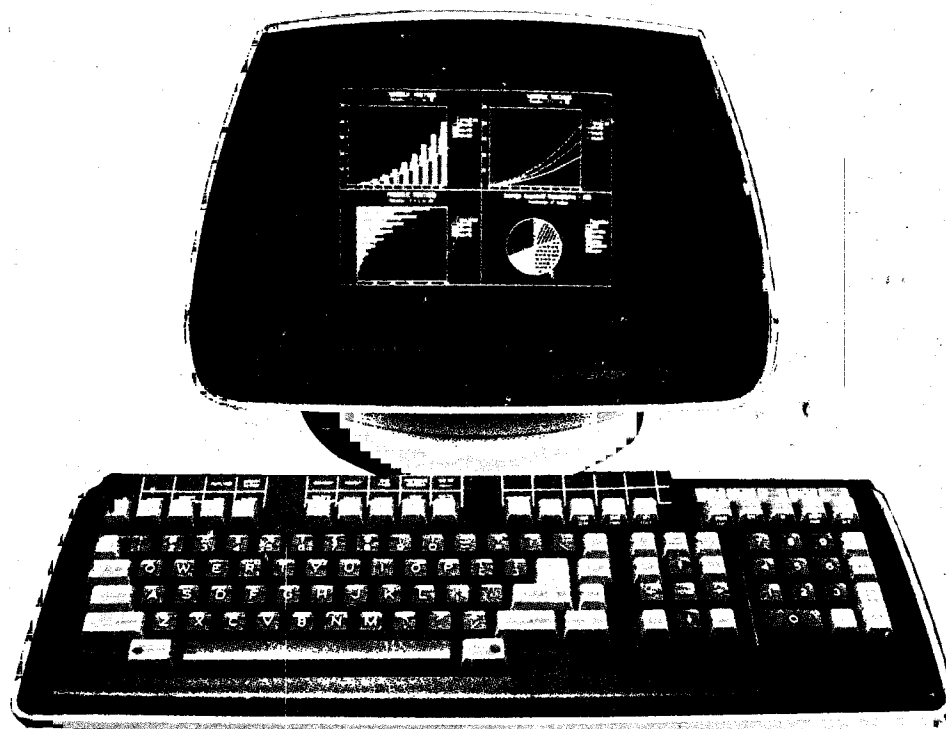


TRENDVIEW™ GRAPHICS CHARTING PACKAGE

USER'S MANUAL



Ordering No. 093-40014

 Data General

Trendview™ Graphics Charting Package

User's Manual

093-400014-00

For the latest enhancements, cautions, documentation changes, and other information on this product, please refer to the Release Notice (085-series) supplied with the software.

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Preface

INTRODUCTION

This manual provides instructions for using the TRENDVIEW™ Graphics Charting Package. This software package allows you to quickly and easily generate professional business graphics displays in the form of charts without detailed knowledge of your graphics terminal.

We do assume that you have some knowledge of the Command Line Interpreter (CLI) and your operating system (AOS or AOS/VS).

The TRENDVIEW Graphics Charting Package runs as a process under the AOS and AOS/VS Operating Systems. A single command executes the charting package and allows you to create charts interactively or to use stored chart definitions.

HOW TO USE THIS MANUAL

This manual is both a tutorial and a reference manual for the TRENDVIEW charting package. If you have never used the TRENDVIEW charting package, we suggest that you begin by reading the first two chapters of this manual. They will introduce you to the charting package and then lead you through a sample charting session. After the tutorial, you will be able to make charts using some of the chart formatting commands available.

If you are not familiar with charts, you will also need to read Appendix A: Introduction to Charting Terms to familiarize yourself with the terms we will be using throughout this manual.

If you are ready to use the charting package extensively, continue reading the rest of the manual to find out about:

- The chart formatting commands available with the charting package.
- The rules for creating a data table.
- The various ways you may create the data table and stored command files.

MANUAL ORGANIZATION

CHAPTER 1:

Product Overview — Introduces the operational features of the charting package.

CHAPTER 2:

TRENDVIEW Charting Package Tutorial — Leads you through a sample session using the charting package.

CHAPTER 3:

Using the TRENDVIEW Charting Package — Describes the general procedures for using the charting package.

CHAPTER 4:

Building a Data Table — Lists the rules on how to enter the data for the chart.

CHAPTER 5: Using Command Files — Describes how to create and use stored command files with the charting package.

CHAPTER 6:

General Chart Formatting Commands — Describes the formatting commands that are common to several chart types.

CHAPTER 7:

Bar Chart Commands — Describes the chart formatting commands that are unique to bar charts.

CHAPTER 8:

Line Chart Commands — Describes the chart formatting commands that are unique to line charts.

CHAPTER 9:

Pie Chart Commands — Describes the chart formatting commands that are unique to pie charts.

APPENDIX A:

Introduction to Charting Terms — Introduces the types of charts available with the charting package. Defines the charting terms used throughout the manual.

APPENDIX B:

Error Message Descriptions — Lists and describes the error messages generated by the charting package.

APPENDIX C:

SCREENEDIT Control Characters — Lists the cursor and line control characters available when using the TRENDVIEW Graphics Charting Package interactively.

APPENDIX D:

Commands and Defaults — Lists all the commands provided by the charting package and their defaults.

RELATED PRODUCTS

This manual is for the Data General software product TRENDVIEW Graphics Charting Package:

- Model 3977 For AOS Operating Systems
- Model 3978 For AOS/VS Operating Systems

SUGGESTED MANUALS

If you have never worked at a Data General terminal or need to brush up on your knowledge of the system, you will find it helpful to read the following documents:

- **Learning to Use Your Advanced Operating System (AOS)**, part number 069-000018.
- **Command Line Interpreter (CLI) (AOS and AOS/VS) User's Manual**, part number 093-000122.
- **DASHER® G300 Display Terminal User's Manual**, part number 014-000675.

READER, PLEASE NOTE:

We use these conventions for command formats in this manual:

KEYWORD required [optional] ...

Where **Means**

KEYWORD You must enter the keyword (or its accepted abbreviation) as shown. The keyword is required unless it appears in square brackets “[]”, in which case the keyword and any arguments associated with it are optional.

required You must enter some argument. Sometimes, we use:

$$\left\{ \begin{array}{l} \text{required}_1 \\ \text{required}_2 \end{array} \right\}$$

which means you must enter *one* of the arguments. Don't enter the braces; they only set off the choice.

[optional] You have the option of entering this argument. Sometimes, we use:

$$\left[\begin{array}{l} \text{optional}_1 \\ \text{optional}_2 \end{array} \right]$$

which means any one of the optional arguments from the set may be entered. Don't enter the brackets; they only set off what's optional.

... You may repeat the preceding entry.

NOTE: *All command formats are in shaded boxes for easy location.*

Contacting Data General

If you:

- Have any comments about this manual — Please send them to Data General Corporation, Software Documentation, Austin, TX 78741. You may use the form located in the back of this manual.
- Require additional manuals — Please contact your local Data General sales representative.
- Experience software problems — Please notify your local Data General systems engineer.

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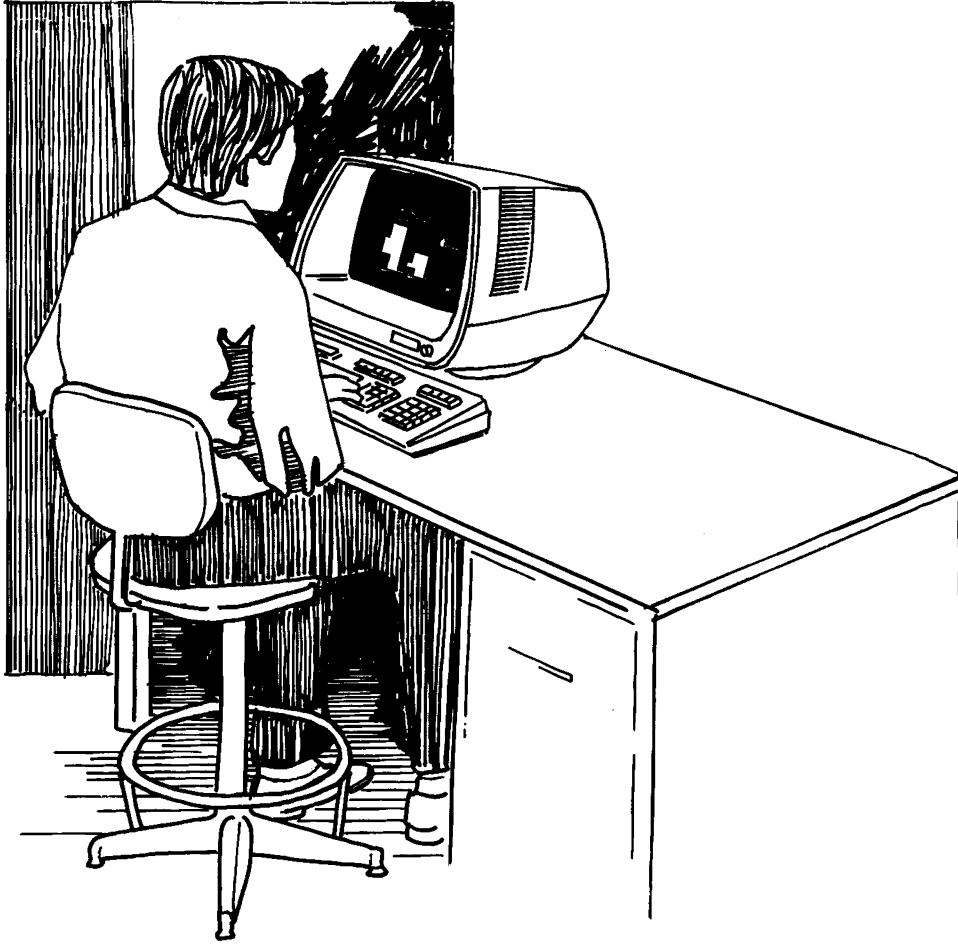
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Chapter 1

PRODUCT OVERVIEW

INTRODUCTION

This manual provides instructions on how to use the TRENDVIEW™ Graphics Charting Package developed by Data General Corporation. The TRENDVIEW Charting Package allows you, the AOS or AOS/VS DGC user, to generate charts with a minimal amount of knowledge about your graphics terminal.

OPERATIONAL OVERVIEW

The TRENDVIEW Graphics Charting Package runs as a separate process under the Advanced Operating System (AOS) or Advanced Operating System/Virtual Storage (AOS/VS). The charting package is called from the Command Line Interpreter (CLI) with a single CLI command.

The charting package allows you to enter charting commands and data for the charts interactively. Or, you may create and use stored disk files that contain charting commands and data. (See Figure 1-1).

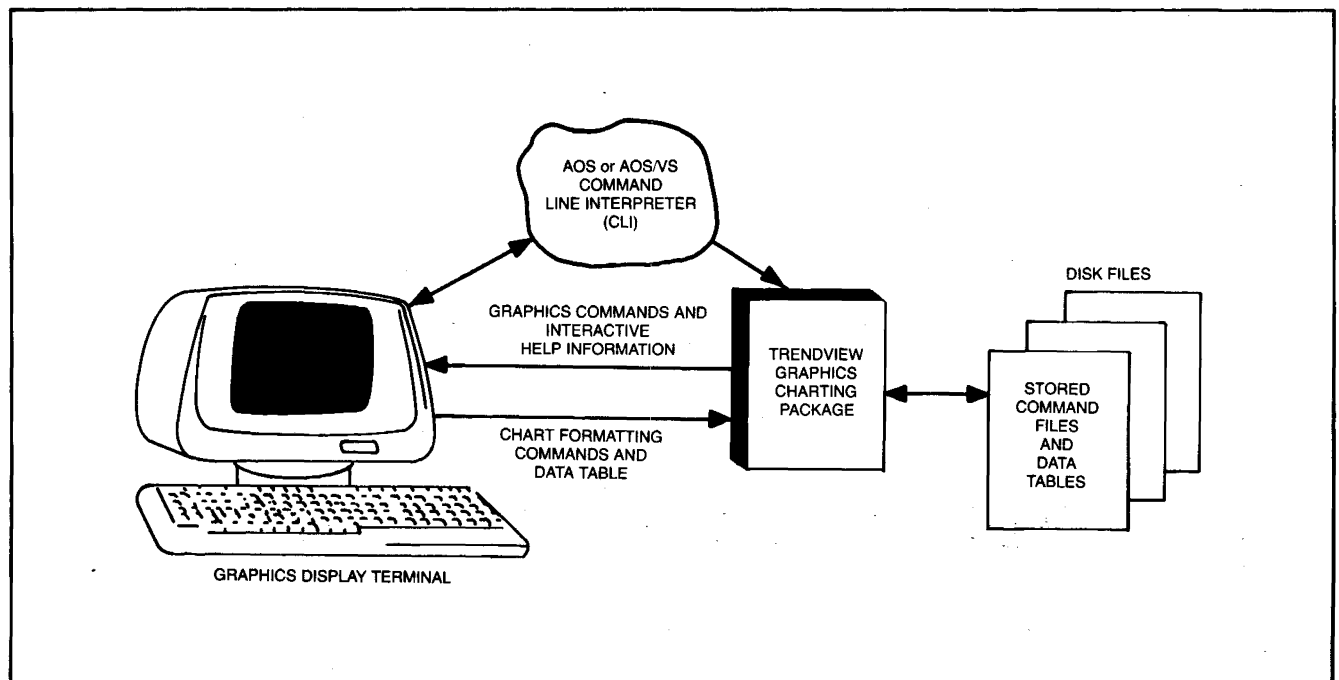


Figure 1-1. Operational Overview

GENERAL DESCRIPTION

The TRENDVIEW charting package accepts data and chart formatting commands to generate clear, concise charts. Charts can show in one picture trends and relationships that are not easily recognized in numerical data. Since charts are easier to examine and interpret, the charts generated by the TRENDVIEW charting package will add significant impact to any report.

There are three types of charts that you can make with the use of the charting package:

- BAR CHARTS
- LINE CHARTS
- PIE CHARTS

You will find that the commands used to create these charts are easy to understand and entering the data to be charted is simple. The data is entered in a data table which looks like a regular table of data that you would use in a report. Figure 1-2 shows a data table in the format you will use to enter data.

SEMI-ANNUAL REPORT SALES IN MILLIONS			
	"STORE 1"	"STORE 2"	"STORE 3"
JAN	1.5	2	3.5
FEB	1.3	2.2	4
MAR	1.6	2.2	3.65
APR	1.75	2.3	2.95
MAY	1.9	2.5	3.3
JUN	1.6	2.2	3.75

Figure 1-2. Sample Data Table

To draw a chart only one command is needed, the chart drawing command. The charting package will automatically format and instantly draw the chart for you. Figure 1-3 was drawn by entering the data table in Figure 1-2 and entering the bar chart drawing command.

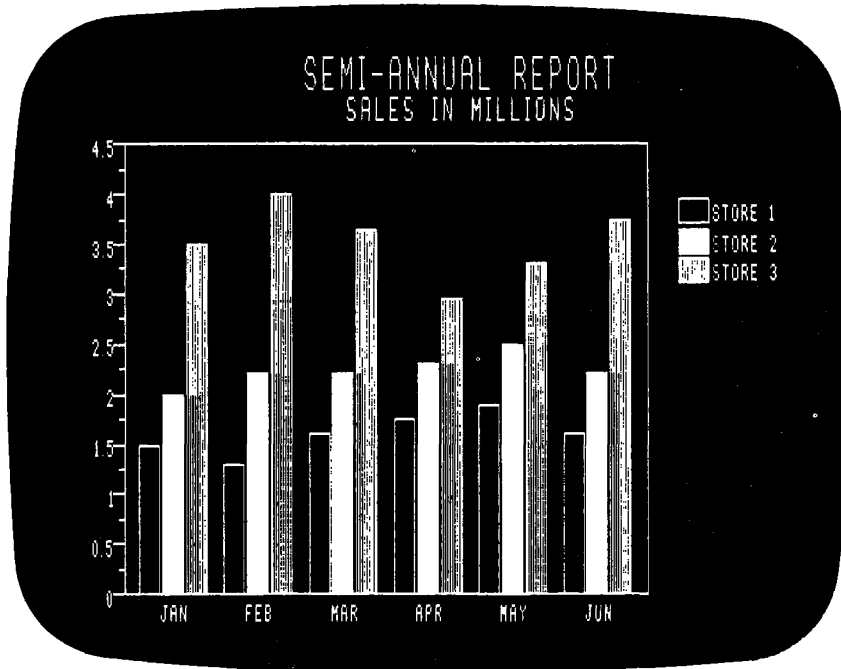


Figure 1-3. Bar Chart Using Data Table in Figure 1-2

If you would like to customize your chart, there are many chart formatting commands you can use. The commands are easy to use and remember. They let you change fill patterns, fonts for titles, legend titles, title placement and much more. Since the TRENDVIEW charting package is interactive, the result of a chart formatting command may be instantly viewed.

You can even define the area of the screen where the chart will be drawn. With this option, you may also draw more than one chart on the screen as shown in Figure 1-4.

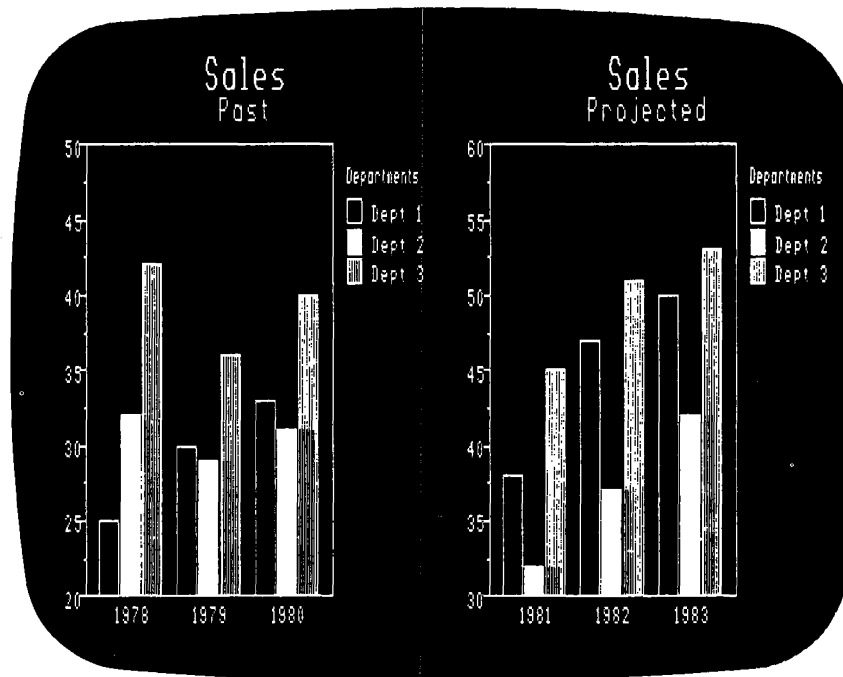


Figure 1-4. Multiple Charts on a Screen

The commands you use to customize a chart can be stored and used for future charts. This will allow you to produce the same type of chart for new data. For example, if you want a chart for sales each month, you can format the chart the way you want it and store the commands. Then each month you just enter stored command file and the new sales data to produce your monthly sales report chart.

The charting package can be used for accounting reports, payroll reports, and sales or cost reports. The charting package can be used to chart anything that can be expressed as numerical data. If you purchase the optional local printer for your terminal, the charts can be printed for distribution or used to produce transparencies for overhead projectors.

Stored command files and data tables can be created from any program or terminal and then displayed to your graphics terminal.

CHART TYPE OPTIONS

The charting package has several options for the three types of charts it generates.

Bar charts may be comparative bar charts, hidden bar charts or stacked bar charts. Figure 1-5 shows examples of these three types of bar charts.

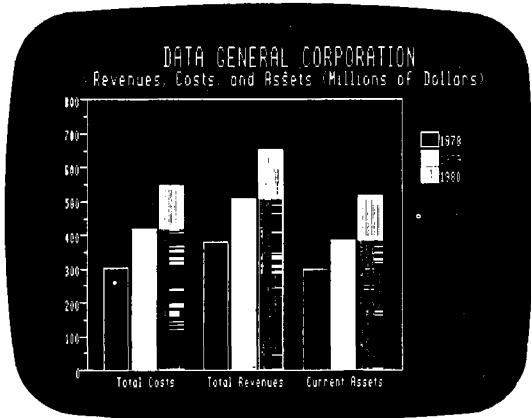


Figure 1-5A. Comparative Bar Chart

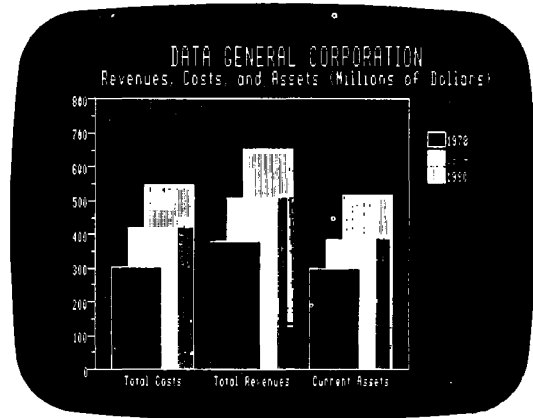


Figure 1-5B. Hidden Bar Chart

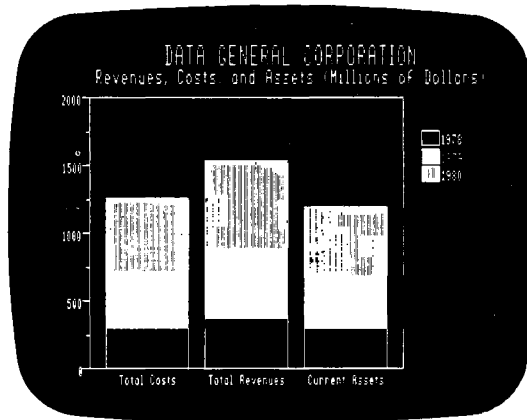


Figure 1-5C. Stacked Bar Chart

Types of Bar Charts

The axes of line charts may be scaled in one of three ways: linear, log or natural log. Figure 1-6 shows examples of these types of axis scaling.

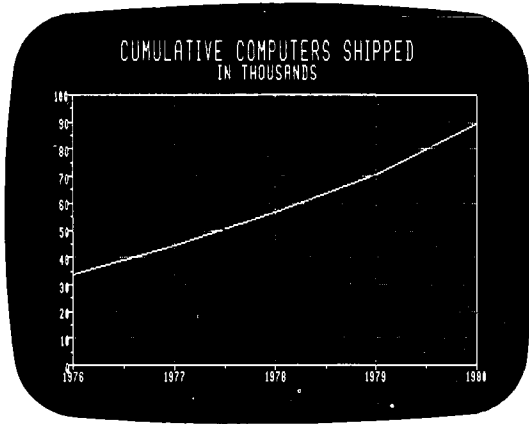


Figure 1-6A. Linear Axis Scaling

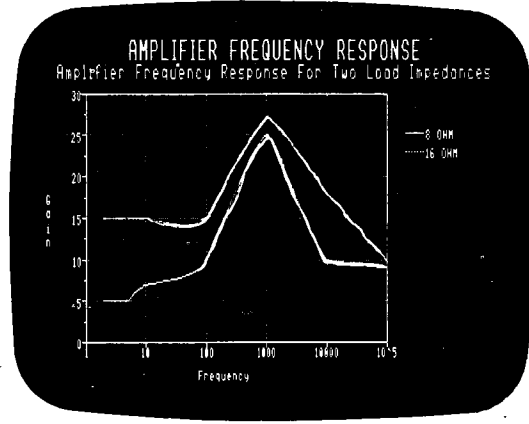


Figure 1-6B. Common Log Axis Scaling

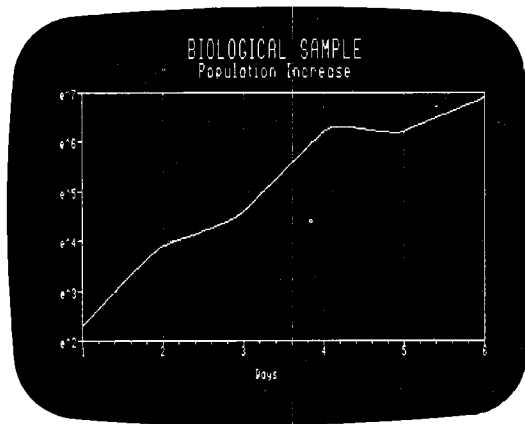


Figure 1-6C. Natural Log Axis Scaling

Types of Line Chart Axis Scaling

The data points of a line chart may be connected by line segments, curves, or they may not be connected at all which will result in a scatter plot chart. The average of all the data points may also be computed and shown as a straight line. Figure 1-7 shows the types of interpolation provided by the charting package.

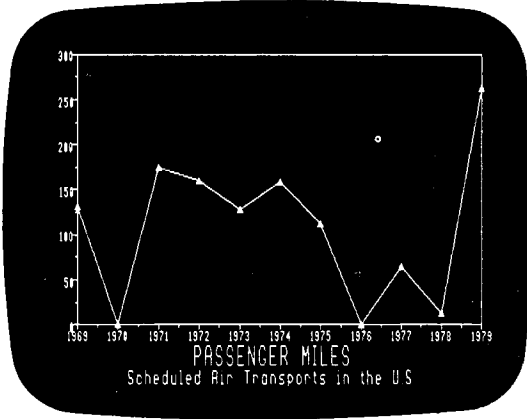


Figure 1-7A. Line Segment Connection

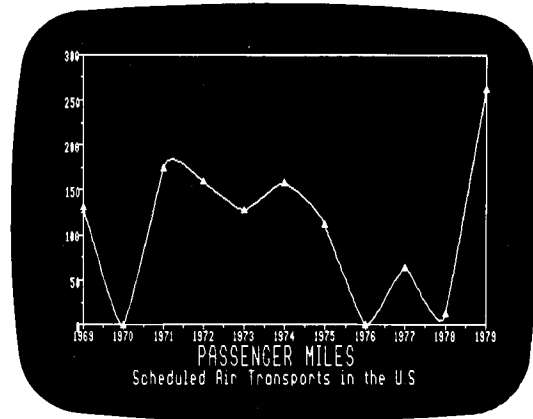


Figure 1-7B. Curve Connection

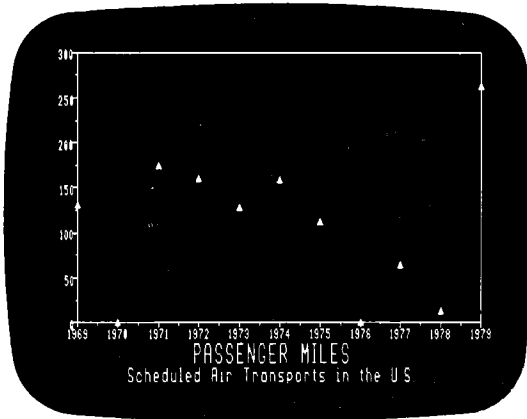


Figure 1-7C. Scatter Plot — No Connection

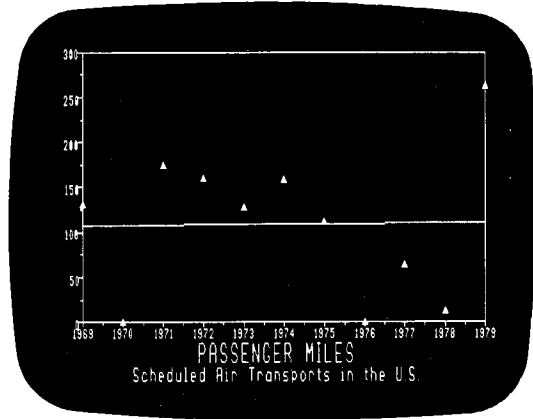


Figure 1-7D. Linear Regression

Types of Interpolation For Line Charts

Pie charts may have normal sectors, exploded sectors or invisible sectors. Figure 1-8 shows an example of each type of sector.



Figure 1-8A. Normal Sectors



Figure 1-8B. Exploded Sectors

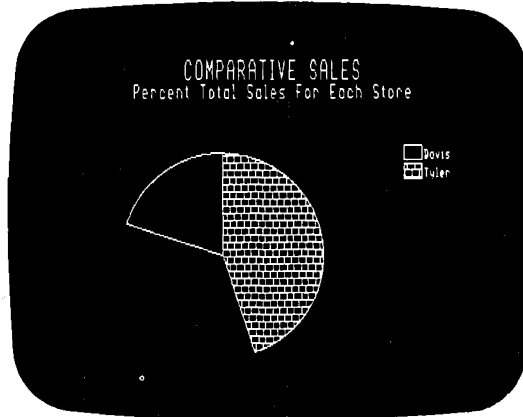


Figure 1-8C. Invisible Sector

Types of Pie Chart Sectors

MAJOR FEATURES

The major features of the charting package include:

- An easy to use set of chart formatting commands for bar, line and pie charts.
- Flexible selection of fill patterns, line styles, and chart formats.
- Extensive defaults for the chart formatting commands.
- Accepts tabular data and mnemonic commands as input and automatically converts them into graphics format.
- Graphics output may be stored on disk files.
- Permits storing of current chart commands and data table in a file for future use.
- Command files or data tables may be created from any applications program or terminal.
- Online "Help" feature that is useful for the new or occasional user of the charting package.
- Runs as a separate process permitting easy access under most programming environments.
- Comprehensive error checking/message display facility to help in the debugging of data and command files.
- With the optional local printer, charts may be printed for use in reports or to produce transparencies.

SYSTEM REQUIREMENTS

To use the TRENDVIEW Graphics Charting Package, you must have:

- An AOS or AOS/VS Operating System.
- A DASHER[®] terminal with graphics capabilities, like the DASHER[®] G300, and its downloaded Graphics Command Interpreter.

Chapter 2

TRENDVIEW CHARTING PACKAGE TUTORIAL

INTRODUCTION

This chapter is a tutorial that will lead you through a session using the TRENDVIEW charting package. The operating instructions in this chapter are general in nature. The remaining chapters in this manual provide more specific instructions on creating a data table and entering chart formatting commands.

We suggest that you enter the commands on your graphics terminal as shown in this chapter so that you get a feel for how the charting package performs.

If any of the charting terms are unfamiliar to you, you may look up their definition in Appendix A: Introduction to Charting Terms.

We are assuming that your system has the TRENDVIEW charting package available to you and that you have knowledge of AOS or AOS/VS CLI. If not, refer to the **Command Line Interpreter (CLI) (AOS and AOS/VS) User's Manual**, part number 093-000122.

EXECUTING THE TRENDVIEW CHARTING PACKAGE

To use the TRENDVIEW charting package, enter the CLI command

```
) TRENDVIEW
```

This command will call the charting package. The charting package will erase the screen and display an identifying message. When it is ready to accept your commands, it will respond with an asterisk prompt “*”.

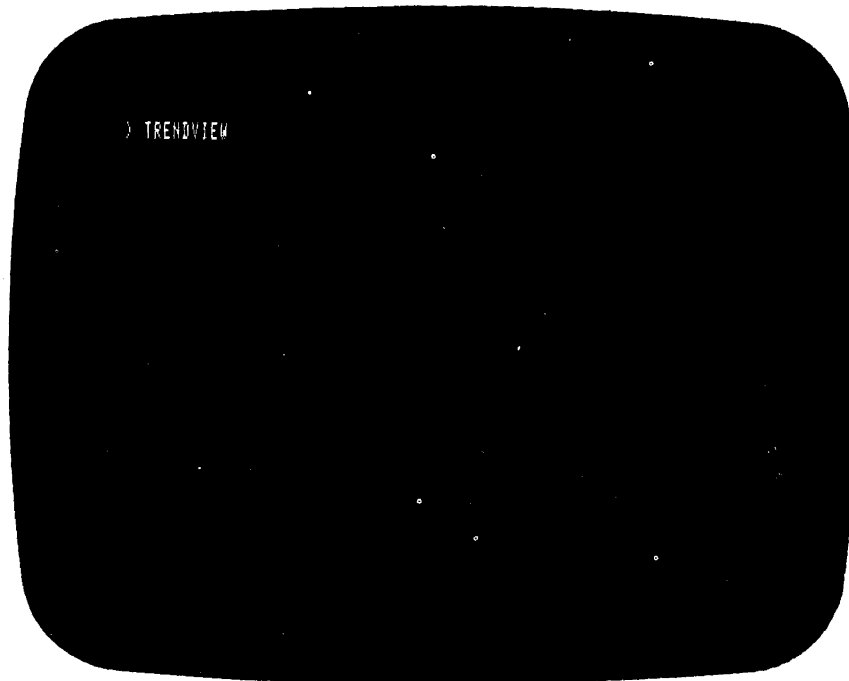


Figure 2-1. Execute the TRENDVIEW Charting Package



Figure 2-2. Identifying Message and Prompt

ENTERING A DATA TABLE

Let's start by entering the data for a chart in a data table. To tell the charting package that the following information is a data table, we enter the command:

TABLE

```
TRENDVIEW(tm) Charting Package (rev 1.00)
* TABLE
**
```

Figure 2-3. Enter TABLE Command

The charting package will respond with a double asterisk prompt “**” to indicate that it is accepting data table information. The first thing that we will enter is the major title for the chart. Enter the major title and press NEW LINE. Now do the same for the minor title.

```
TRENDVIEW(tm) Charting Package (rev 1.00)
* TABLE
**SENT-ANNUAL REPORT
**SALES IN MILLIONS
**
```

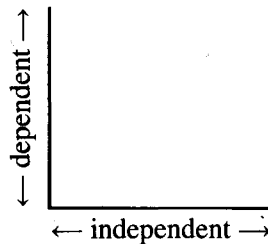
Figure 2-4. Enter the Major and Minor Titles

The third line of the data table consists of the component names for each column of dependent data to be entered. Because our component names contain more than one word, we must enclose them in quotation marks. Be sure to place at least one space between the component names.

```
TRENDVIEW(tm) Charting Package (rev 1.00)
* TABLE
**SEMI-ANNUAL REPORT
**SALES IN MILLIONS
** "STORE 1" "STORE 2" "STORE 3"
**
```

Figure 2-5. Enter the Component Names

Now we are ready to enter the data. The data consists of the independent value followed by the dependent value that corresponds with each component name.



In our example, we are entering each month of sales for three stores. We will first enter the independent value, the month number, and then the dependent values, the amount of sales for each store. Be sure to place at least one space between the values entered.

Note: *The dependent values do not have to be centered under the component names.*

```

TRENDVIEW(tm) Charting Package (rev 1.00)

* TABLE
**SEMI-ANNUAL REPORT
**SALES IN MILLIONS
** "STORE 1"      "STORE 2"      "STORE 3"
**1      1.5          2              3.5
**2      1.3          2.2            4
**3      1.6          2.2            3.65
**4      1.75         2.3            2.95
**5      1.9          2.5            3.3
**6      1.6          2.2            3.75
**

```

Figure 2-6. Enter the Data

The data table is now complete. To signal to the charting package that we are finished, we enter the command:

END_DATA

The charting package will respond with the single asterisk prompt.

```

TRENDVIEW(tm) Charting Package (rev 1.00)

* TABLE
**SEMI-ANNUAL REPORT
**SALES IN MILLIONS
** "STORE 1"      "STORE 2"      "STORE 3"
**1      1.5          2              3.5
**2      1.3          2.2            4
**3      1.6          2.2            3.65
**4      1.75         2.3            2.95
**5      1.9          2.5            3.3
**6      1.6          2.2            3.75
**END_DATA
*

```

Figure 2-7. Enter the END_DATA Command

DRAWING CHARTS

After entering a data table, we can draw charts. To draw a chart, we enter one of the chart drawing commands: **BAR**, **LINE**, or **PIE**. Let's try a bar chart first. Enter the command:

BAR

```

TRENDVIEW(tm) Charting Package (rev 1.00)

* TABLE
**SEMI-ANNUAL REPORT
**SALES IN MILLIONS
**  "STORE 1"      "STORE 2"      "STORE 3"
**1   1.5          2          3.5
**2   1.3          2.2          4
**3   1.6          2.2          3.65
**4   1.75         2.3          2.95
**5   1.9          2.5          3.3
**6   1.6          2.2          3.75
**END_DATA
* BAR
  
```

Figure 2-8. Enter the BAR Chart Drawing Command

After the charting package draws a chart, it displays a message asking you to press the **HOLD** key to continue or the **VIEW** key to view the chart without the message. The **HOLD** key and the **VIEW** key are located in the row of function keys along the top right corner of your keyboard. Pressing the **VIEW** key will bring the display down so that the message is hidden and the screen may be viewed at length. Pressing the **HOLD** key will return control back to the charting package and the asterisk prompt will appear.

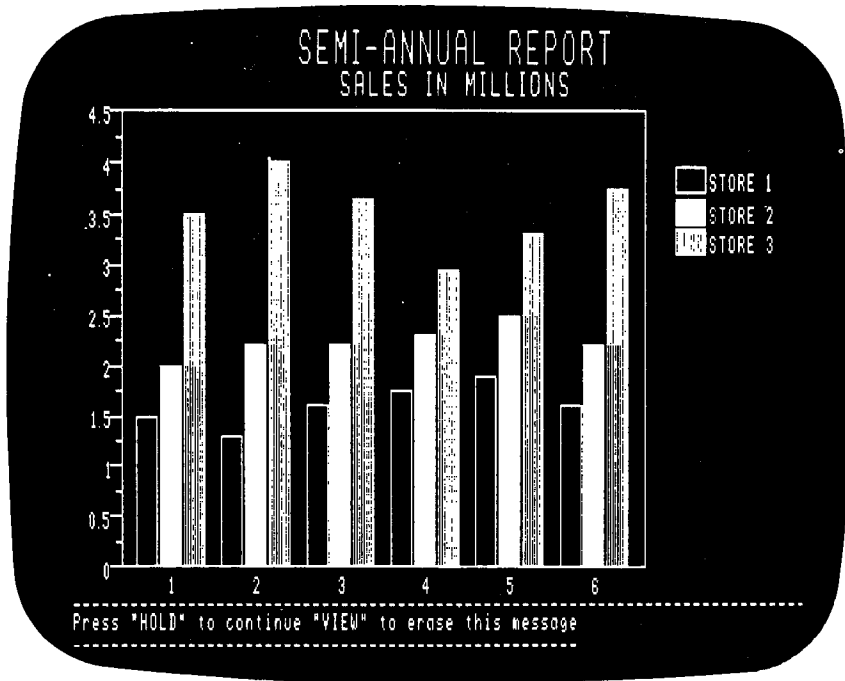


Figure 2-9. Bar Chart With the HOLD/VIEW Message

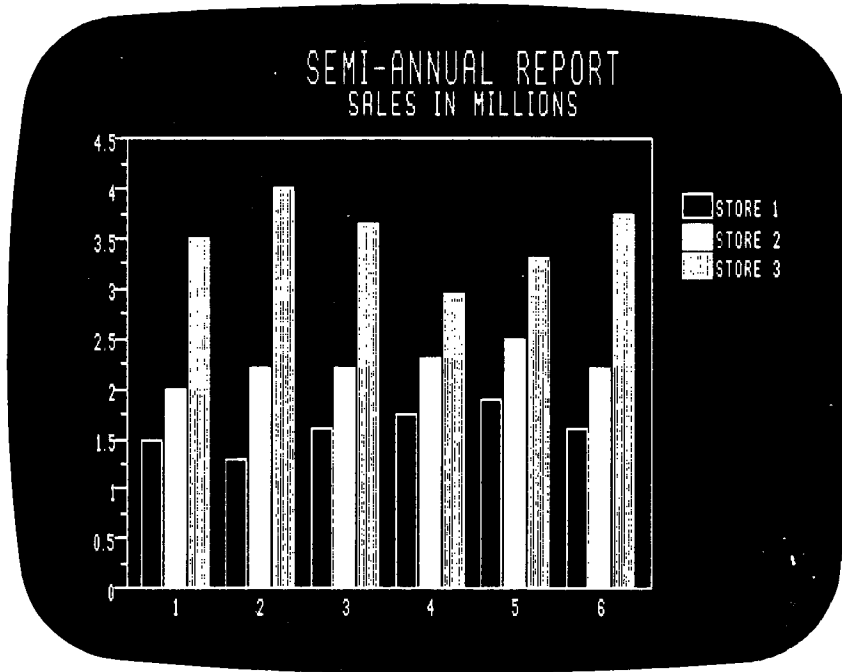


Figure 2-10. Bar Chart After Pressing the VIEW Key

After you press the HOLD key, the asterisk prompt will appear at the left margin. The chart is not erased before the prompt appears. You may now enter new chart formatting and chart drawing commands. You do not have to reenter the data table or any chart formatting commands because the charting package keeps a list of the current ones entered. This list is called your work space. To see how the information we have already entered will look in a line chart, enter the command:

LINE

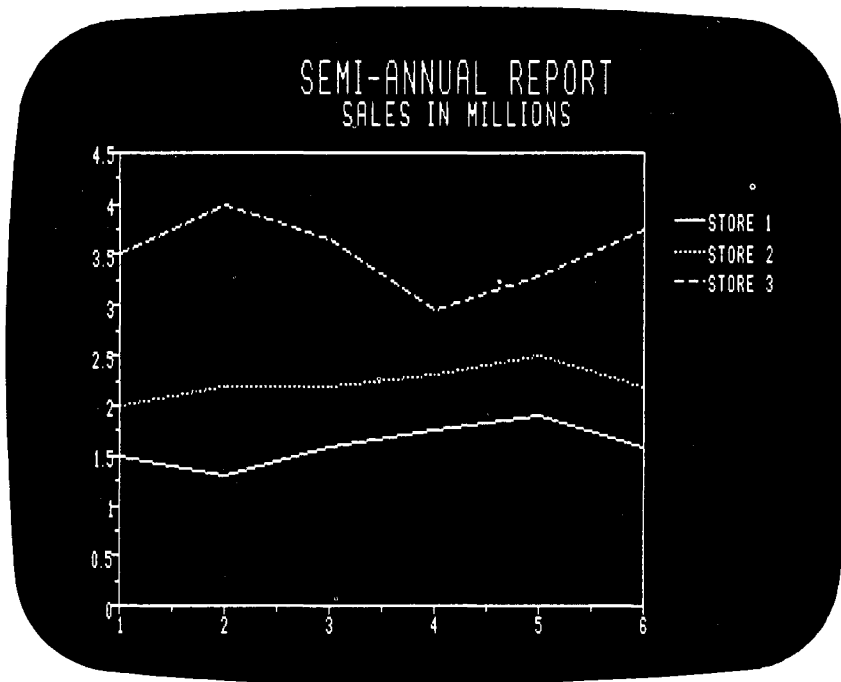


Figure 2-11. Line Chart

The PIE chart drawing command draws a pie chart for any one component in the data table. To see a pie chart of the sales for Store 1, enter the command:

PIE "STORE 1"

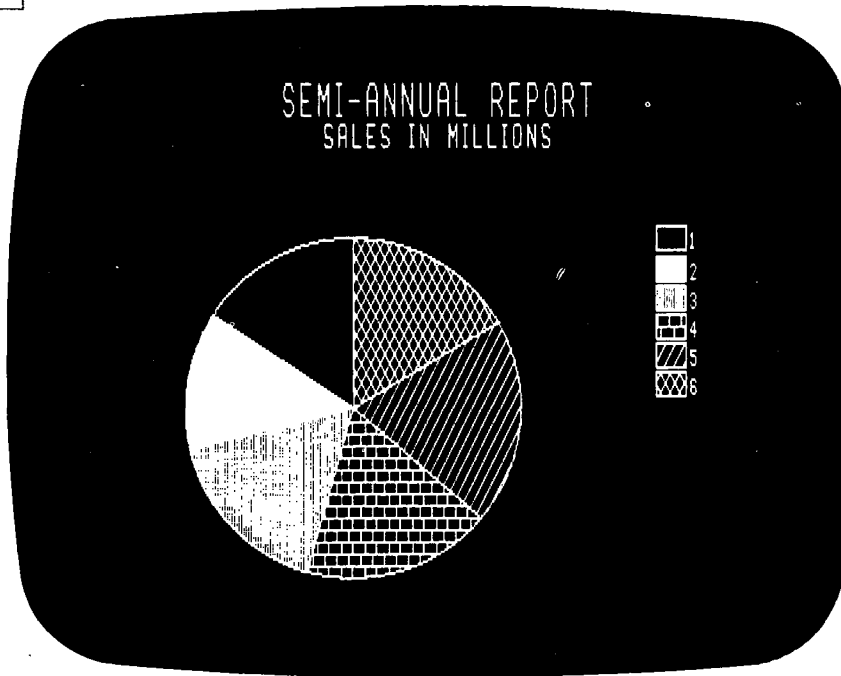


Figure 2-12. Pie Chart for Store 1

You may see a pie chart for Store 2 and Store 3 by entering the commands:

PIE "STORE 2" and **PIE "STORE 3"**

LEGEND TITLE

At this point, we decide that we like the line chart best for our Sales Report. However, we want to make the chart more self-explanatory by adding descriptive titles for the legend and independent axis.

Our chart is about the three stores in our company's eastern division so we will enter the legend title command:

```
LEGEND "EASTERN DIVISION"
```

Because our legend title contains more than one word, we must enclose it in quotation marks. To view the results of our legend title, we will enter the line chart drawing command:

```
LINE
```

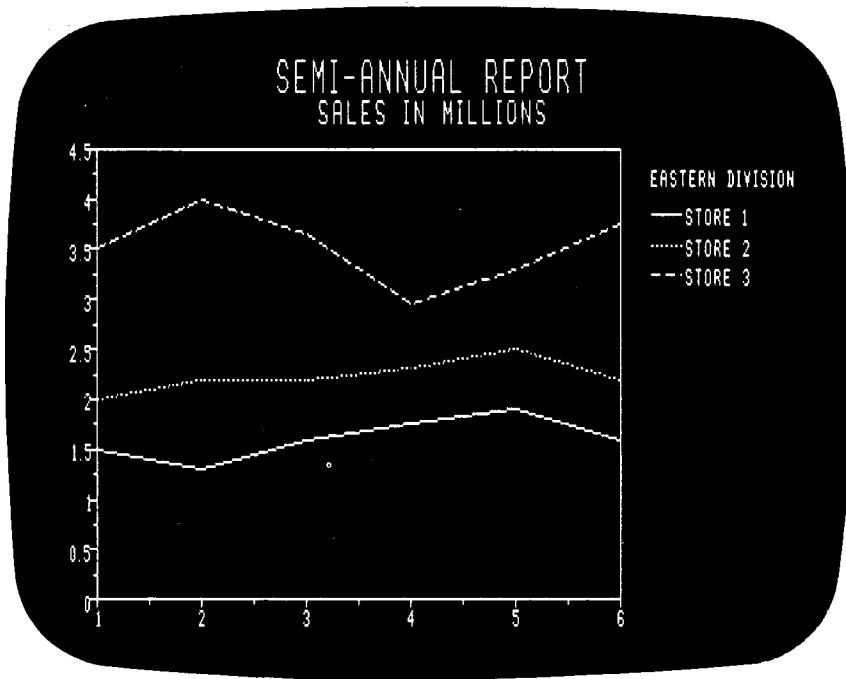


Figure 2-13. Line Chart With a Legend Title

AXIS TITLE

To clarify that the numbers on the independent axis specify months, we will enter an independent axis title. We will do this by entering the command:

```
IND_AXIS TITLE "MONTHS"
```

To see the results of this command, enter the chart drawing command for a line chart:

```
LINE
```

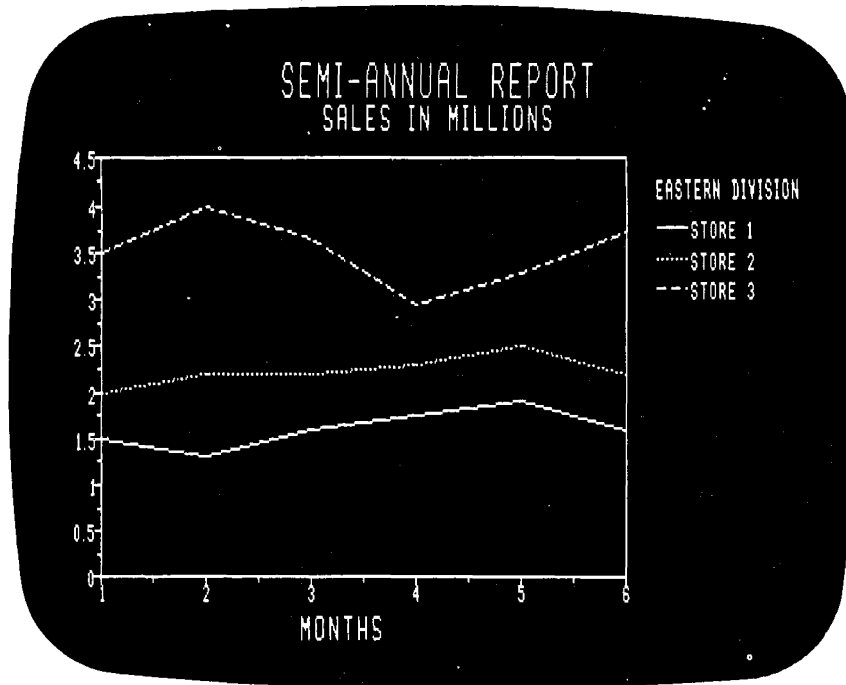


Figure 2-14. Line Chart With Independent Axis Title

SAVING COMMAND FILE

We now decide that the line chart in Figure 2-14 is the chart we want. We want to save the chart formatting commands we have entered and the data table we created for future use. We will place them in a disk file named "SALES_LINE_CHART". To do this, we enter the command:

```
SAVE SALES_LINE_CHART
```

USING A STORED COMMAND FILE

If you would like to draw the chart defined by the commands and data table saved above, you just enter the command:

```
NEW_CHART SALES_LINE_CHART
```

Enter this command now and watch how the charting package will instantly draw the chart.

EXITING THE TRENDVIEW CHARTING PACKAGE

To exit from the charting package, we must enter the command:

```
BYE
```

This will return us to CLI, which will respond with its right parenthesis ")" prompt.

EXECUTING THE CHARTING PACKAGE WITH STORED COMMAND FILES

You can execute the TRENDVIEW charting package with stored command files as arguments to produce charts without entering the charting package interactively. To view the chart generated by the command file SALES_LINE_CHART, enter the CLI command:

```
)TRENDVIEW SALES_LINE_CHART
```

The chart is drawn on the screen and the screen is then erased. We are returned to CLI and the CLI prompt appears.

To view the chart before the screen is erased, we must use a text editor to add the command:

```
PAUSE
```

after the chart drawing command. This command will display the HOLD/VIEW message at the bottom of your screen and will wait until you press the HOLD key.

Chapter 3

USING THE TRENDVIEW CHARTING PACKAGE

INTRODUCTION

The TRENDVIEW charting package is an interactive charting program. You may enter chart formatting commands and immediately view their influence on the chart by entering a chart drawing command. In this manner, you can custom tailor a chart during a session with the charting package and watch the effect of each command you enter.

This chapter provides you with an overview of what is required to use the charting package and how it acts. It will explain the data structure needed to draw a chart. It also provides an overview of the types of commands available with the charting package.

HOW TO EXECUTE THE TRENDVIEW CHARTING PACKAGE

To execute the TRENDVIEW charting package from CLI, enter the command:

```
) TRENDVIEW
```

The charting package will respond with an asterisk prompt “*”. You may now enter data tables and commands. You may also reference stored command files and data tables. Chapter 5 will discuss how to use stored files.

DATA TABLE STRUCTURE

Data must be provided to draw any chart. You will supply the data in the form of a data table. Its components consist of titles for the chart and rows and columns of data. It looks just like a table of data. (See Figure 3-1).

RAINFALL 1980	“REGION A”	“REGION B”
WINTER	2.5	2.0
SPRING	6.0	4.5
SUMMER	1.75	1.0
FALL	5.5	3.0

Figure 3-1. Data Table

You may enter the data table from the charting package, a text editor, CLI, or any applications program.

Chapter 4 will provide you with the specific instructions on the format and rules for entering the data table.

COMMANDS

The commands provided by the charting package may be divided into three types:

- Chart Formatting Commands
- Chart Drawing Commands
- Miscellaneous Commands

The chart formatting commands allow you to specify how you want a chart to look. These commands let you choose such options as:

- Where the chart titles should be placed.
- The title of the legend.
- How an axis is to look.
- The type of fill patterns to be used in bar and pie charts.

When you enter a chart drawing command, the charting package will instantly draw a chart using the data table and chart formatting commands that you supplied.

The miscellaneous commands allow you to choose options like:

- Erase the viewing screen.
- Save command files.
- Perform a CLI command.
- Print the screen to a local printer.

The chart formatting commands and miscellaneous commands may be entered in any order. However, before you enter a chart drawing command, you must have already entered a data table.

COMMAND DEFAULTS

If you do not enter any chart formatting commands, the charting package will automatically determine how the chart will look. Every chart formatting command has a default. The default is the value that the charting package will use if none is supplied. Therefore, you need only to enter a data table and a chart drawing command to receive a complete chart.

WORK SPACE

If you decide that you would like to change the value of a chart formatting command from the default, you just enter the chart formatting command and the arguments you want changed. The charting package keeps a list of the chart formatting commands you have entered along with the data table and the last chart drawing command entered. This list is called your work space. Your work space will override the defaults normally used.

NOTE: *The miscellaneous commands are not placed in the work place. The miscellaneous commands are:*

<i>BYE</i>	<i>NEW_CHART</i>	<i>PRINT</i>
<i>DO</i>	<i>NEW_CHART @NULL</i>	<i>SAVE</i>
<i>ERASE</i>	<i>PAUSE</i>	<i>SAVE @OUTPUT</i>
<i>HELP</i>		

If you enter a chart formatting command and an argument, the charting package will place it in your work space. If you reenter the same chart formatting command and a different value for same argument, it will replace the original command in your work space. If the command takes more than one argument, you can enter the command and an argument without affecting the other arguments.

EXAMPLE: You enter the following commands:

```
MAJOR_TITLE FONT BOLD
IND_AXIS GRID_LINES TITLE "MONTHS" FONT ITALICS
```

Your work space will contain:

```
MAJOR_TITLE FONT BOLD
IND_AXIS GRID_LINES TITLE "MONTHS" FONT ITALICS
```

You now decide that you want the font for the independent axis to be bold instead of italics, so you enter the following command:

```
IND_AXIS TITLE FONT BOLD
```

Your work space will now contain:

```
MAJOR_TITLE FONT BOLD
IND_AXIS GRID_LINES TITLE "MONTHS" FONT BOLD
```

The command to change the font argument for the independent axis command did not change any other arguments for that command.

A data table can be changed in the same way. When you first enter the charting package, there is no data table. When you enter the first data table, the charting package will place it in your work space. If you enter another data table, it will replace the first data table entered.

USING SCREENEDIT

When you are in the charting package, SCREENEDIT is ON. SCREENEDIT simplifies the modification of the current input line through the use of cursor control characters.

The screen edit features are the same as those allowed in CLI.

For example if we entered the command:

```
DEFAULT_COLOR 10
```

We would receive an error because the command is invalid. There should be a space between the 1 and the 0.

Rather than entering the entire command again, we can use the SCREENEDIT feature to quickly re-enter the command.

First we press CTRL-A, which will display the last command issued. The cursor is at the end of the line of text. We move it under the 0 and press CTRL-E to insert a character. We press the space bar once and press CTRL-E again to exit the insert mode.

```
DEFAULT_COLOR 1 0
```

Now our command line is correct and we can press NEW LINE.

For a description of the cursor and line control characters available, see Appendix C.

HELP

The charting package provides interactive help. To receive a list of subjects available for information, enter the following command without a subject parameter. If you have access to a terminal, try entering this command **NOW**,



HELP [subject]

If you would like to receive information on any of the subjects listed, just enter the command with the name of the subject. Example: **HELP BAR**

ERROR MESSAGES

The charting package provides extensive error checking. When you enter an incorrect command or data, the charting package will display an error message and ask you to press the HOLD button when you are ready to continue.

When you are using the charting package interactively, errors are non-fatal. They do not abort you from the charting package and no destructive action is taken.

See Appendix B for a list of the possible error messages and their meanings.

Chapter 4

BUILDING A DATA TABLE

INTRODUCTION

A chart is defined by the data you supply. The charting package requires that the data be in tabular form. The tabular data is entered exactly like a table and is called the data table.

This chapter outlines the rules for and methods that can be used in entering a data table.

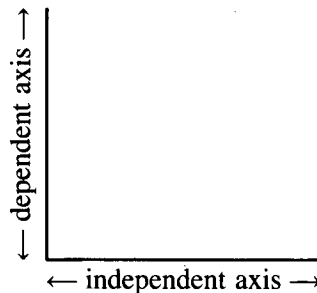
DATA TABLE FORMAT

The format for the data table looks exactly like a table of data you would use in a report. It contains the major title and minor title for the chart and the data to be used. The format for a data table is shown in Figure 4-1.

MAJOR TITLE				
MINOR TITLE				
	COMPONENT NAME1	COMPONENT NAME2	...	COMPONENT NAME _m
IND VALUE1	DEP VALUE	DEP VALUE	...	DEP VALUE
IND VALUE2	DEP VALUE	DEP VALUE	...	DEP VALUE
.
.
.
IND VALUE _n	DEP VALUE	DEP VALUE	...	DEP VALUE

Figure 4-1. Data Table Format

The COMPONENT NAME is a descriptive label for the column of data. This label will appear in the legend for bar and line charts. The IND VALUE is the value for the independent axis. It will appear in the legend for pie charts. The DEP VALUE is the value for the dependent axis or the sectors of a pie chart.



NOTE: You do not have to center the component names over the columns of data. If you do enter spaces before the first component name, the charting package ignores them when it examines the data table.

If you want to enter the quarterly sales for two department stores as listed in Figure 4-2, you can enter the data table in Figure 4-3 or Figure 4-4.

Store 1:	Quarter 1	\$250,000	Store 2:	Quarter 1	\$263,000
	Quarter 2	\$230,000		Quarter 2	\$222,000
	Quarter 3	\$244,000		Quarter 3	\$218,000
	Quarter 4	\$285,456		Quarter 4	\$275,000

Figure 4-2. Sample Data to Go Into a Data Table

QUARTERLY REPORT SALES IN THOUSANDS		
	"STORE 1"	"STORE 2"
1	250	263
2	230	222
3	244	218
4	285	275

Figure 4-3. Data Table

QUARTERLY REPORT SALES IN THOUSANDS				
	1	2	3	4
"STORE 1"	250	230	244	285
"STORE 2"	263	222	218	275

Figure 4-4. Data Table

DATA TABLE FORMATTING RULES

The rules pertaining to the format of a data table are as follows:

- The first line must be the mandatory major title.
- The second line is the optional minor title. If the minor title is omitted, a blank line must be entered.
- Blank lines may appear anywhere except between the major and minor title without affecting the chart generated by the charting package.
- The third line is the component names for each column of data. The component names are optional.
- At least one space must separate the component names.
- If the component name is alphanumeric and begins with a number or contains a space character within the name, the component name must be enclosed in quotes. Example: "1st" or "Dept. A"
- There may be no more than 8 component names in a data table.
- The independent values must be numeric and in ascending order if the data table is to be used for line charts. They may be alphanumeric or numeric for bar or pie charts.
- If the independent value is alphanumeric and begins with a number or contains a space character within the name, the independent value must be enclosed in quotes. Example: "1st" or "Dept. A"
- At least one space must separate the independent and dependent values.
- A dependent value must be specified for each component name.
- If there is no dependent value for a component, you may enter a tilde "~" as the value. The charting package treats a tilde as a no data entry.
- The dependent values for a pie chart must be positive.
- There may be no more than 100 dependent values per component in a data table.

HOW TO CREATE A DATA TABLE

Since the data table is just line oriented text, it may be entered in several ways. You may enter the data table by:

- Creating it using the charting package.
- Creating it interactively in CLI.
- Creating it in a text editor, such as SED.
- Writing to a disk file from any user's program.

We will discuss how to create a data table using the charting package in this chapter. Creating a data table by the other three methods will be discussed in Chapter 5.

Using the Charting Package

To create a data table using the charting package you must first call the charting package from CLI with the command:

```
TRENDVIEW
```

Once you are in the charting package, you may enter a new data table at any time. Remember however that you must have a data table present when using any of the chart drawing commands.

To indicate to the charting package that you are ready to enter a data table, enter the command:

```
TABLE
```

The charting package will respond with a double asterisk prompt “**” to indicate that it is ready to accept the data table.

You are now ready to enter the data table according to the rules and format discussed earlier in this chapter.

Once you have finished entering the data table, you must signal the charting package by entering the command:

```
END_DATA
```

The charting package is able to keep one data table in your work space. When you enter a data table, the previous data table from that charting session will be replaced.



Chapter 5

USING COMMAND FILES

INTRODUCTION

Once you have created a data table or have entered a set of chart formatting commands, you may want to save them for future use.

This chapter provides instructions for saving and using stored command files.

CREATING COMMAND FILES

A command file is a stored disk file that contains chart formatting commands. The command file may or may not contain a data table. The command file may contain any of the valid commands available with the charting package, except the **HELP** command.

Since a command file is just line oriented text, it may be created in several ways. You may create a command file by:

- Creating it using the charting package.
- Creating it interactively in CLI.
- Creating it in a text editor, such as SED.
- Writing to a disk file from any user's program.

Using the Charting Package

When you are using the charting package, it keeps a list that contains the commands and the data table that you have entered. This list is called your work space. You can save your work space in a command file by using the command:

```
SAVE pathname [NODATA]
```

If the file specified by `pathname` already exists, the **SAVE** command will append the contents of the work space to the end of the existing file.

If you use the keyword **NODATA**, the command will not save the data table. Only the charting commands will be saved.

If you save the data table along with the commands, the **TABLE** and **END_DATA** commands will also be saved. To save the data table only, you must enter the data table when you first enter the charting package or after the **NEW_CHART @NULL** command and then use the **SAVE** command. Otherwise, you will have to edit the command file with a text editor to delete the charting commands.

Interactively in CLI

You may enter a command file interactively in CLI. Just issue the CLI command to create a file interactively. The format is:

```
CREATE/I pathname
```

CLI will respond with the double right parenthesis prompt “))”. As shown in Figure 5-1, you may now enter the command file in the same manner as if you were using the charting package.

To signal CLI that you have finished entering the command file, enter a right parenthesis on a line by itself and then press NEW LINE.

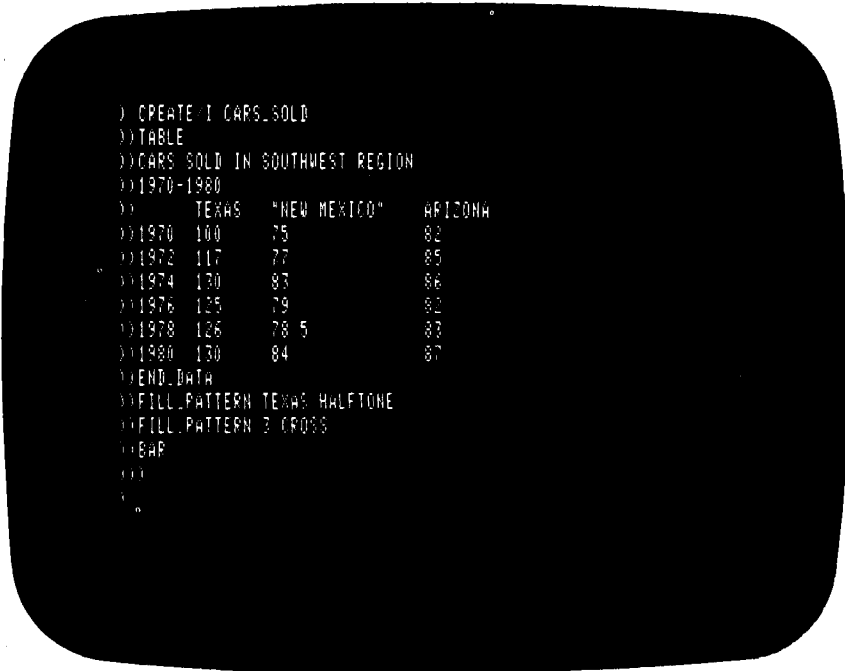


Figure 5-1. Creating a Command File Interactively in CLI

Using a Text Editor

You may create or edit a command file with a text editor. To create a command file with a text editor, you must create a file and then enter the chart formatting commands. In the following example, we will use SED. You may use any text editor and you should consult its User’s Manual for specific instructions on how to create a file.

First we will call the SED text editor from CLI with the command:

```
XEQ SED pathname
```

The pathname is the name for the new command file to be created. SED will respond with the question:

DO YOU WANT pathname TO BE CREATED?

We will answer:

```
YES
```

To enter the charting commands, we will enter the SED command:

APPEND

This will allow us to enter the charting commands in the file as shown in Figure 5-2.

To exit SED, press the BREAK ESC key and then enter the command:

BYE

```

APPEND
^BYE
16
1 LINE STYLE 2 LONG DASHED
2 INTERPOLATION SMOOTHING
3 MAJOR-TITLE FONT BOLDITALICS
4 IND.AXIS MAJOR-TICS 2
5 TABLE
6 PROFIT
7 SOUTHWEST REGION
8 TEXAS *NEW MEXICO* ARIZONA
9 1970 15 5 8
10 1972 18 6 9
11 1974 20 7 5 9
12 1976 17 6 7
13 1978 19 8 7 5
14 1980 21 9 8 5
15 END DATA
16 LINE
  
```

Figure 5-2. Entering a Command File Using SED

Using an Applications Program

You may create and send the command file to disk from any applications program. To write to the command file using your programming language, consult the User's Manual provided for that language.

In most languages, this normally involves creating a file, opening the file, writing text to the command file and closing the file.

USING STORED COMMAND FILES

You may use stored command files, with the TRENDVIEW charting package, in two ways:

- Interactively — Using the Charting Package
- Executing the Charting Package With Stored Command Files As Arguments

Interactively — Using the Charting Package

NEW_CHART Command

You may use stored command files at any time within the charting package. To use a stored file, enter the command:

```
NEW_CHART pathname [NODEFAULT]
```

WHERE: If the optional keyword NODEFAULT is used, the contents of your work space will not be deleted before reading the stored command file.

This command clears your work space and then reads in the command file. This command file may contain commands and/or data tables. If a chart drawing command is encountered, the chart is drawn on the screen.

If the optional keyword NODEFAULT is used, the charting package will not clear the work space before reading the file.

The following example uses two NEW_CHART commands to call two command files, CARS_SOLD and PROFIT. The contents of these files are listed in Figure 5-3.

Contents of CARS_SOLD	Contents of PROFIT
TABLE	LINE_STYLE 2 LONG_DASHED
CARS SOLD IN SOUTHWEST REGION	INTERPOLATION SMOOTHING
1970-1980	MAJOR_TITLE FONT BOLDITALICS
TEXAS "NEW MEXICO" ARIZONA	IND_AXIS MAJOR_TICS 2
1970 100 75 82	TABLE
1972 117 77 85	PROFIT
1974 130 83 86	SOUTHWEST REGION
1976 125 79 82	TEXAS "NEW MEXICO" ARIZONA
1978 126 78.5 83	1970 15 5 8
1980 130 84 87	1972 18 6 9
END_DATA	1974 20 7.5 9
FILL_PATTERN TEXAS HALFTONE	1976 17 6 7
FILL_PATTERN 3 CROSS	1978 19 8 7.5
BAR	1980 21 9 8.5
	LINE

Figure 5-3. Stored Command Files

We now enter the command:

```
NEW_CHART CARS_SOLD
```

Figure 5-4 will be drawn on the screen, with the message:

Press "HOLD" to continue "VIEW" to erase this message

We will press the VIEW button, view the screen, then press HOLD.

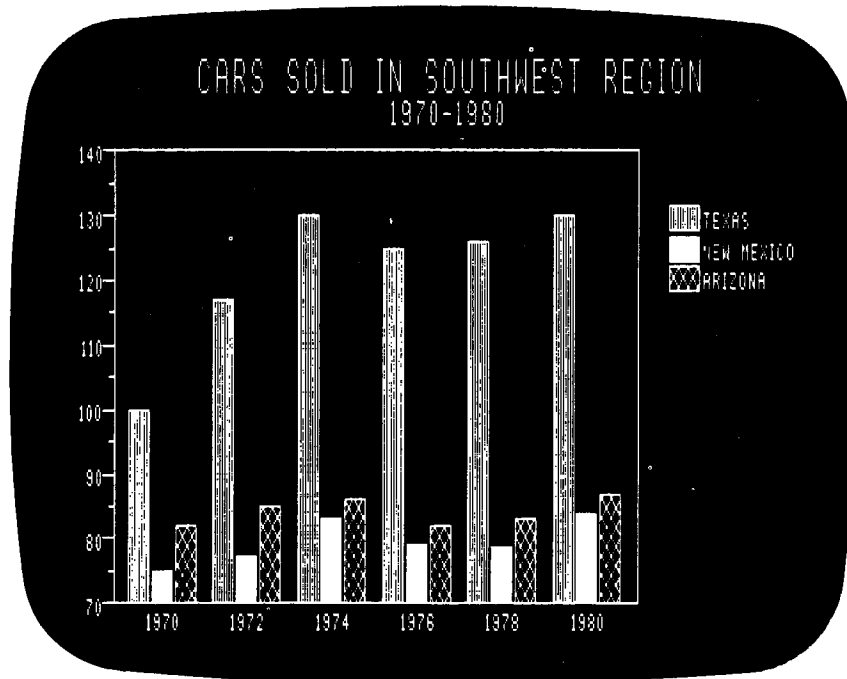


Figure 5-4. Chart Drawn by CARS_SOLD

Next we enter the command:

NEW_CHART PROFIT

The charting package will then draw Figure 5-5 with the same HOLD/VIEW message.

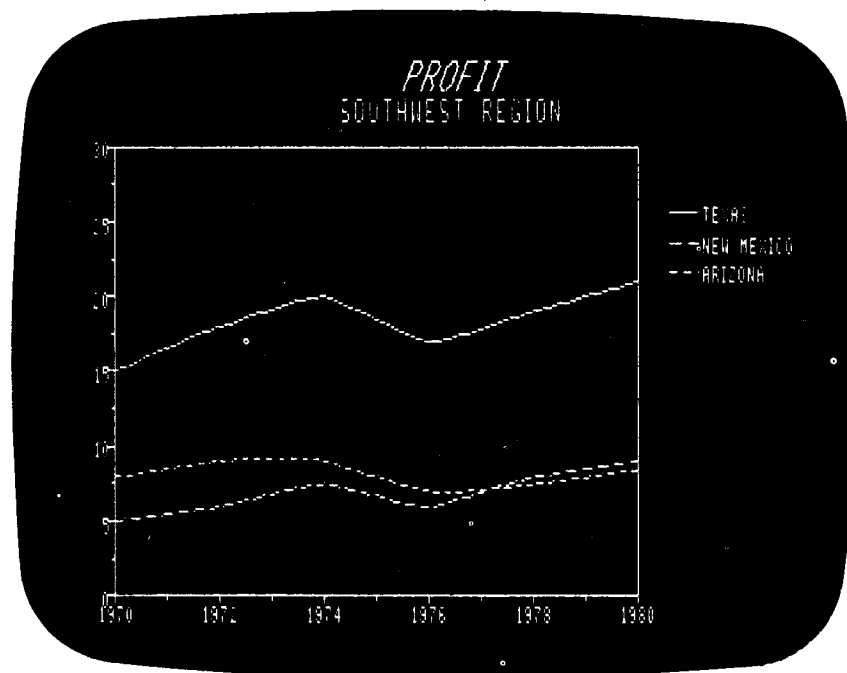


Figure 5-5. Chart Drawn by PROFIT

TABLE Command

To enter a stored data table, enter the command:

TABLE pathname

This command will replace the current data table within your work space with the data table stored in the file specified by pathname.

NOTE: *The stored data table must **not** contain the commands **TABLE** or **END_DATA**. The **TABLE pathname** command inserts these commands automatically.*

**This Stored Data Table
Can Be Used By The
TABLE pathname Command:**

COMPANY GROWTH RATE
ALPHA CORPORATION

	A	B	C
1975	100	200	300
1976	150	200	400
1977	200	250	450
1978	300	325	500

**This Stored Data Table
Can NOT Be Used With The
TABLE pathname Command:**

TABLE
COMPANY GROWTH RATE
ALPHA CORPORATION

	A	B	C
1975	100	200	300
1976	150	200	400
1977	200	250	450
1978	300	325	500

END_DATA

Executing the TRENDVIEW Charting Package With Stored Command Files As Arguments

If you would like to call the TRENDVIEW charting package with stored files, use the CLI command:

)TRENDVIEW pathname [pathname]...

This command will call the charting package and read the stored command files in the order listed. The files may contain commands and/or data tables. If a chart drawing command is encountered, the chart is drawn to the screen.

After the charting package has read in all the files, control is passed back to CLI.

You should note that the charting package behaves exactly as if the files were entered interactively. As each command is read in, it is placed in the work space. This means that if a file contains a chart drawing command, chart formatting commands from a previous file in the TRENDVIEW command could influence the drawing of the chart.

For this example we will use the command files listed in Figure 5-6.

```

Command File EXAMPLE_1:

TABLE
SEMI-ANNUAL REPORT
SALES IN MILLIONS
      "COMPANY A"  "COMPANY B"
1           1.5           2
2           1.3           2.2
3           1.6           2.2
4           1.75          2.5
5           1.9           2.3
6           1.6           2.2
END_DATA

Command File EXAMPLE_2:

MAJOR_TITLE FONT BOLD
MINOR_TITLE FONT ITALICS
BAR HIDDEN
PAUSE

Command File EXAMPLE_3:

LINE_STYLE 1 DOTTED
LINE_STYLE 2 DASHED
LINE
PAUSE

Command File EXAMPLE_4:

TITLE_POSITION BOTTOM
PIE_FILL_PATTERN 2 BRICK
TABLE
SEMI-ANNUAL REPORT
PROFIT
"COMPANY A" .16
"COMPANY B" .22
END_DATA
PIE
PAUSE

```

Figure 5-6. Stored Command Files

Notice that we entered the PAUSE command after each chart drawing command. When you execute the charting package with stored command files as arguments, the charting package erases the screen after each chart is drawn. To view the chart before the screen is erased, enter the PAUSE command after the chart drawing command.

We will enter the command:

```
)TRENDVIEW EXAMPLE_1 EXAMPLE_2 EXAMPLE_3 EXAMPLE_4
```

Figures 5-7 through 5-9 are the charts that will be drawn to the screen by this command.

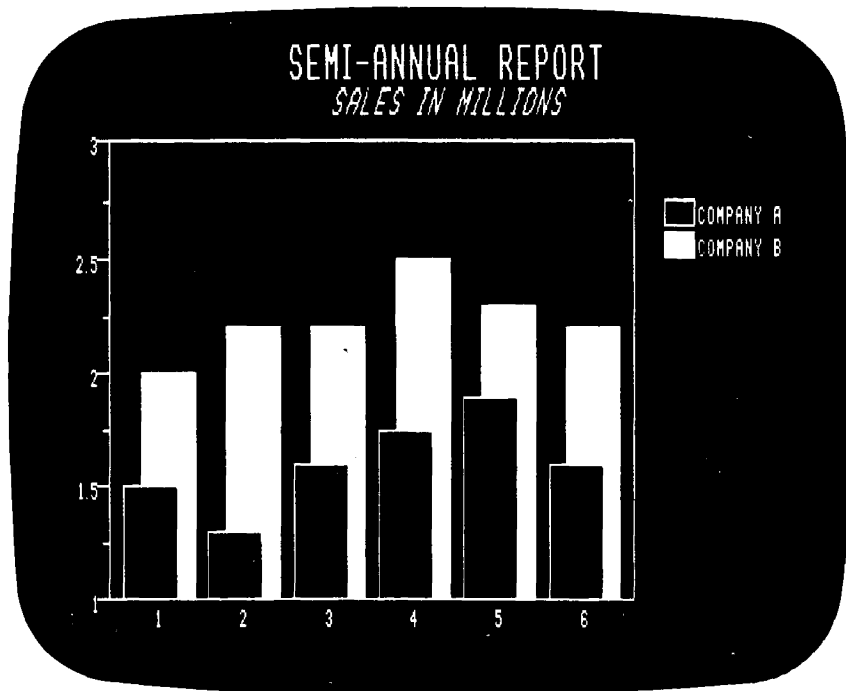


Figure 5-7. Chart Drawn by EXAMPLE_2

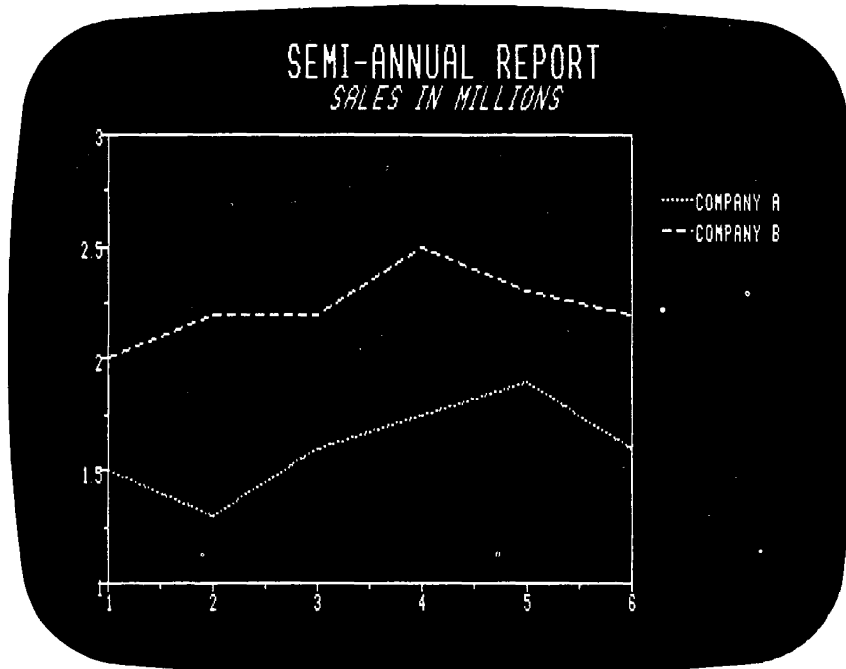


Figure 5-8. Chart Drawn by EXAMPLE_3

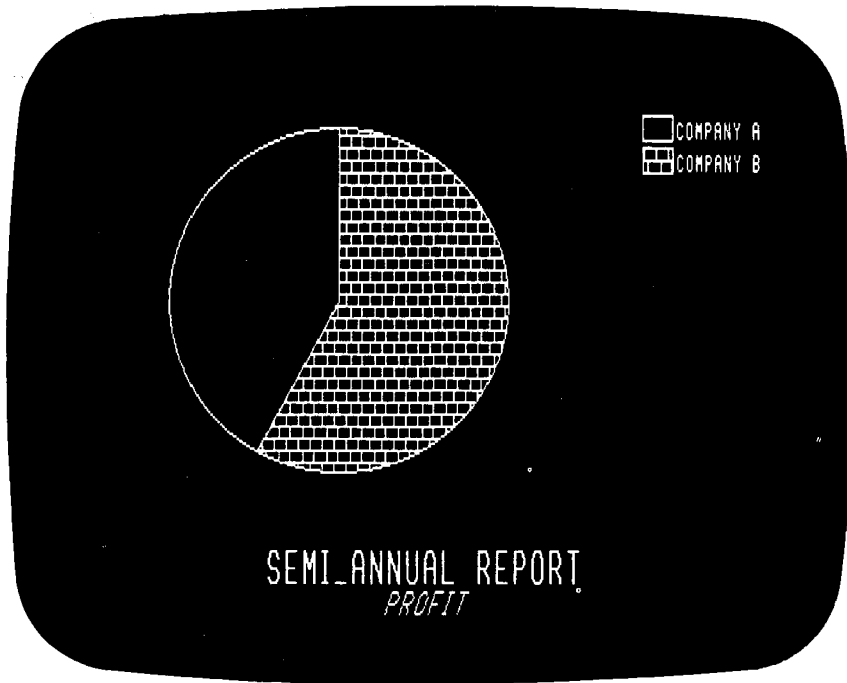


Figure 5-9. Chart Drawn by EXAMPLE_4



Chapter 6

GENERAL CHART FORMATTING COMMANDS

INTRODUCTION

This chapter describes the general chart formatting commands that are used in generating more than one type of chart. The commands are listed in alphabetical order.

BYE COMMAND

To exit the charting package, you enter the following command, which will place you back in CLI.

```
BYE
```

CHART_DIRECTION COMMAND

The `CHART_DIRECTION` command is used with bar and line charts to indicate either horizontal or vertical chart orientation.

A vertical chart consists of a horizontal independent axis and a vertical dependent axis. This will produce a bar chart with vertical bars or a line chart with horizontal lines. Figure 6-1 shows an example of a vertical chart.

A horizontal chart consists of a vertical independent axis and a horizontal dependent axis. This will produce a bar chart with horizontal bars or a line chart with vertical lines. Figure 6-2 shows an example of a horizontal chart.

```
CHART_DIRECTION { VERTICAL }  
                  { HORIZONTAL }
```

DEFAULT: VERTICAL

```
TABLE
MOTHER'S YUMMY PIE COMPANY
QUARTERLY REPORT
      APPLE      CHERRY      LEMON
1      100        75         50
2       95       150         60
3      113        80         46
4      104        78         55
END_DATA
CHART_DIRECTION VERTICAL
MAJOR_TITLE FONT BOLD
MINOR_TITLE FONT ITALICS
BAR HIDDEN
```

Command File

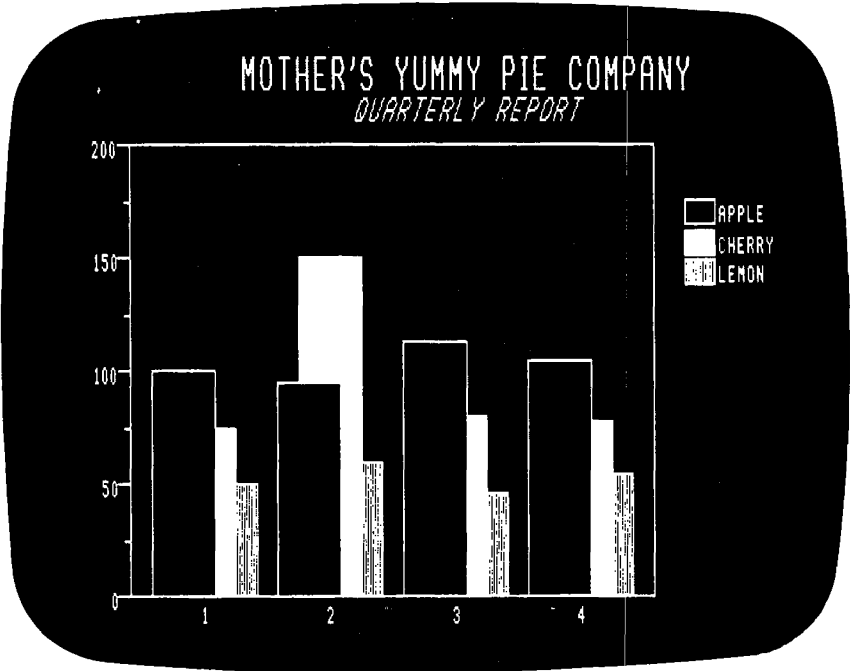


Figure 6-1. Vertical Bar Chart

```

TABLE
MOTHER'S YUMMY PIE COMPANY
QUARTERLY REPORT
      APPLE      CHERRY      LEMON
1      100        75         50
2       95        150        60
3      113        80         46
4      104        78         55
END_DATA
CHART_DIRECTION HORIZONTAL
MAJOR_TITLE FONT BOLD
MINOR_TITLE FONT ITALICS
BAR HIDDEN
    
```

Command File

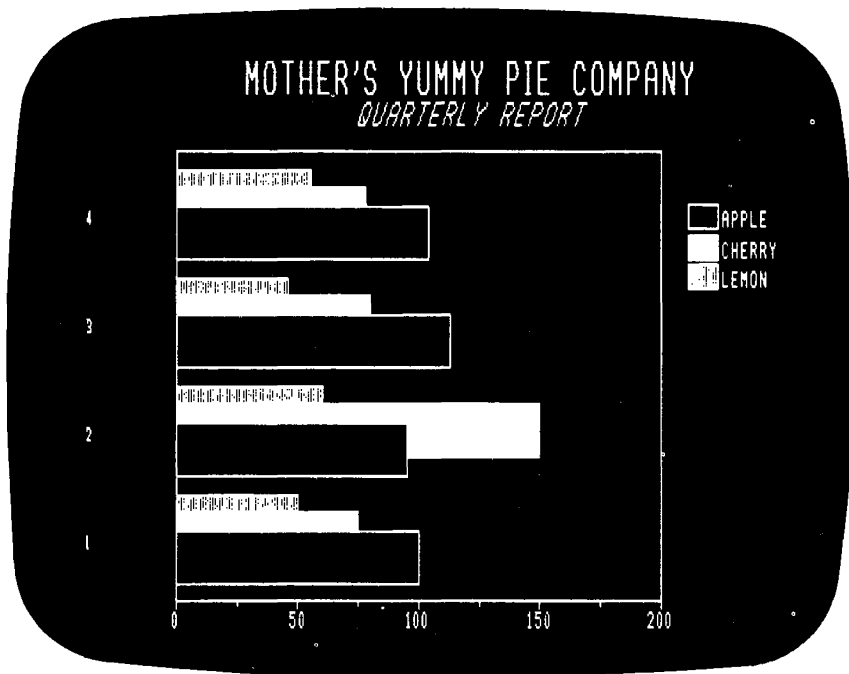


Figure 6-2. Horizontal Bar Chart

COMMENT COMMAND

Any command line that is prefaced by the COMMENT command will be ignored by the charting package. This feature allows you to add descriptive text to a command file without impacting the resulting chart.

COMMENT descriptive text

COMPONENT_NAME COMMAND

The COMPONENT_NAME command allows you to name or rename the component names from a command file. If a component name was specified in the data table, this command will replace that name.

COMPONENT_NAME component number component name

WHERE: Component number represents component's position in Data Table (numbered from 1 to a maximum of 8).

Component name is a string containing new component name. If the string contains more than one word, it must be enclosed in quotation marks.

For example, you enter the following data table without the optional component names.

```
DAILY SALES
September 14 - 18
14 200.85 491.13 103.00
15 210.36 544.10 98.06
16 246.14 610.81 101.01
17 209.06 546.00 111.31
18 314.04 603.80 111.13
```

You could enter the component names later with the charting package using the commands:

```
COMPONENT_NAME 1 "DEPT. A"
COMPONENT_NAME 2 "DEPT. B"
COMPONENT_NAME 3 "DEPT. C"
```


The data table will now look like:

```
DAILY SALES
September 14 - 18
  "DEPT. A" "DEPT. B" "DEPT. C"
14 200.85 491.13 103.00
15 210.36 544.10  98.06
16 246.14 610.81 101.01
17 209.06 546.00 111.31
18 314.04 603.80 111.13
```

NOTE: You do not have to enter component names for every component. You may enter component names for only part of the columns of data if you wish.

DEFAULT_COLOR COMMAND

The DEFAULT_COLOR command defines the default colors that will be used in generating a chart display.

The command accepts two arguments. The first argument specifies the foreground color. The foreground color is the color of anything that is written or drawn to the screen — text, lines, markers, etc. The second argument is the background color. The background color is the color of the screen before anything is written to it.

```
DEFAULT_COLOR foreground color background color
WHERE: Foreground color and background color are
integer numbers between 0 and 7. 0 will be
shown as black, 1-7 will be shown as green.
DEFAULT: 1 0
```

DEVICE COMMAND

The DEVICE command lets you choose the output device the graphics output will be sent to. The output device may be a disk file or a device (like @CONSOLE). If the disk file already exists, the charting package will append the graphics output to the end of the file.

If you send the graphics output to a disk file, you may type the file on your graphics screen and see the chart that was generated.

```
DEVICE pathname
WHERE: pathname is the pathname of the
destination terminal or disk file.
DEFAULT: @ CONSOLE
```

DO COMMAND

To issue a CLI command in the charting package, use the command:

DO CLI command

This is a very powerful feature of the charting package because it allows you to edit your command files or enter any of the other CLI commands you want to use. For example, you can save your work space with the SAVE command and then use the DO command to use a text editor to correct mistakes in the data table.

ERASE COMMAND

The ERASE command allows you to erase the entire screen when you are using the charting package.

ERASE

HELP COMMAND

To receive interactive help while in the TRENDVIEW charting package, enter the HELP command. If you enter the command without the subject argument, the charting package will display all the subjects available with information.

HELP [subject]

WHERE: Subject options include any commands listed in this manual.

LEGEND COMMAND

The individual components in a multicomponent chart are typically set apart through the use of different fill patterns or line styles. A legend consists of a series of rectangular boxes, each containing a sample of a component's fill pattern, or line styles followed by a label that describes the component.

The LEGEND command is used to define the legend title for a multicomponent chart or to inhibit the generation of a legend.

LEGEND { **"legend title"**
NONE }

WHERE: "Legend title" is an alphanumeric string. If the legend title contains more than one word, it must be enclosed in quotation marks. It may be up to 16 characters long.

NONE inhibits the drawing of a legend.

DEFAULT: Legend is printed with no title.

MAJOR_TITLE COMMAND

The MAJOR_TITLE command allows you to replace the major title you entered in the data table with a new major title for the chart. It also allows you to specify the color and font of the major title.

MAJOR_TITLE [**FONT type**] [**COLOR number**] [**"chart title"**]

WHERE: FONT type selections include: NORMAL, ITALICS, BOLD and BOLDITALICS

COLOR number is an integer number between 0 and 7. 0 will be shown as black; 1-7 will be shown as green.

"Chart title" is an alphanumeric string. If it contains more than one word, it must be enclosed in quotation marks.

DEFAULT: NORMAL 1

MINOR_TITLE COMMAND

The MINOR_TITLE command allows you to define a minor title. If a minor title was entered in the data table, this command will replace it. It will also allow you to specify the color and font of the minor title.

MINOR_TITLE [FONT type] [COLOR number] ["chart title"]

WHERE: FONT type selections include: NORMAL, ITALICS, BOLD, and BOLDITALICS.

COLOR number is an integer number between 0 and 7. 0 will be shown as black; 1-7 will be shown as green.

"Chart title" is an alphanumeric string. If it contains more than one word, it must be enclosed in quotation marks.

DEFAULT: NORMAL 1

NEW_CHART COMMAND

The NEW_CHART command allows you to read in a stored command file. This command file may contain data tables and/or charting commands. The NEW_CHART command will clear your work space, then read in the file. If a chart drawing command is present, a chart will be drawn to the screen.

NEW_CHART pathname [NODEFAULT]

WHERE: Pathname is the filename of a selected command file.

NODEFAULT prevents the charting package from deleting your work space. Therefore, the default values will not be reset.

NEW_CHART @NULL

The NEW_CHART @NULL command clears your work space. All the charting commands and the data table will be deleted from the work space.

NEW_CHART @NULL

PAUSE COMMAND

If more than one chart drawing command is issued from a stored command file, or if a command file is entered with the `TRENDVIEW pathname` command, the charting package will erase the screen after the chart is drawn. To allow time for viewing the chart before erasing the screen, use the PAUSE command after a chart drawing command.

The PAUSE command will display the message:

Press "HOLD" to continue "VIEW" to erase this message

The charting package will wait until you press the HOLD button to continue.



NOTE: The PAUSE command should only be used in a command file. If you enter the command interactively, the HOLD/VIEW message is displayed at the bottom of the screen and the charting package waits until you press the HOLD key.

PRINT COMMAND

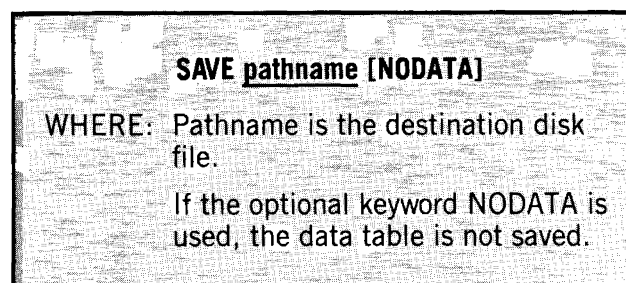
To print the chart generated by the charting package on a local printer, issue the following command after entering the chart drawing command.

NOTE: This command should only be used in a command file because if you use it interactively, the command will also be printed.



SAVE COMMAND

The SAVE command allows you to save the contents of your work space in a disk file for future use.



SAVE @OUTPUT COMMAND

The SAVE @OUTPUT command allows you to view the contents of your work space. Your work space contains the commands and data table the charting package would use if you entered a chart drawing command. The work space is displayed on your screen.



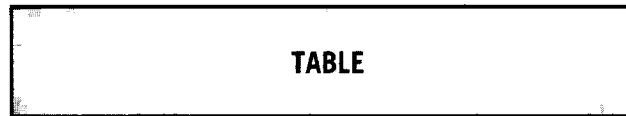
TABLE AND END_DATA COMMANDS

When you are in the charting package, you may enter data table two ways:

- Interactively
- Using Stored Data Table Files

Creating a Data Table Interactively

To create a data table interactively using the charting package enter the command:



The charting package will respond with a double asterisk prompt “**” to indicate that it is ready to accept data table information.

To signal to the charting package that you have finished entering data table information, you must enter the command:



The new data table will be placed on the work space. If a previous data table existed, it will be replaced by the new data table.

Using a Stored Data Table

To use a stored data table, enter the command:

```
TABLE pathname
```

Pathname is the name of the file that contains the data table. This file should **not** contain the **TABLE** and **END_DATA** commands.

The charting package will read the file and place the data table in your work space. If a previous data table existed, it will be replaced by the new data table.

TITLE_POSITION COMMAND

The **TITLE_POSITION** command allows you to specify the placement of the major and minor titles with respect to the chart. If the argument **NONE** is used, the drawing of the titles will be suppressed.

```
TITLE_POSITION { TOP
                BOTTOM
                NONE }
DEFAULT: TOP
```

TRENDVIEW CLI COMMAND

There are two ways to use the **TRENDVIEW** command from CLI. You may use it to execute the charting package so that you may interactively enter commands and data tables. The second way to use the **TRENDVIEW** command is to execute the charting package with stored command files as arguments.

Executing the TRENDVIEW Charting Package

To execute the **TRENDVIEW** charting package for interactive use, you enter the CLI command:

```
) TRENDVIEW
```

The **TRENDVIEW** charting package will respond with an asterisk prompt **“*”** to indicate that it is ready to accept any of the valid charting commands.

Executing the TRENDVIEW Charting Package With Stored Command Files

To execute the TRENDVIEW charting package with stored files, you enter the CLI command:

```
) TRENDVIEW pathname [pathname] . . .
```

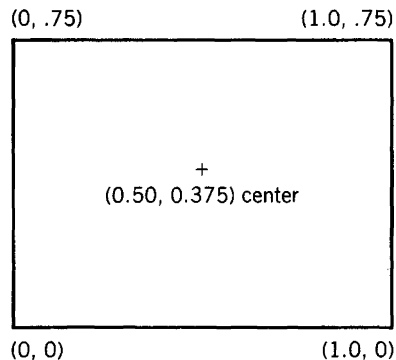
The charting package reads the command files in the order that they are entered. The charting package behaves exactly as if the commands were entered interactively. When a chart drawing command is encountered, a chart is drawn on the screen. After all the files are read, control is returned back to CLI.

NOTE: *When this command is used and a chart is drawn on the screen, the screen is erased immediately after the chart is drawn. To allow time to view the chart before the screen is erased, use the PAUSE command after the chart drawing command in your command file.*

VIEWPORT COMMAND

The VIEWPORT command allows you to define the area of the screen where a chart will be drawn. The charting package defaults to the full screen area for graphics displays. However, the charting package allows you to pick any subset of the total for your chart displays.

The screen is described in terms of normalized coordinates. Since the height of the screen is 3/4 the size of the width, the width is given a normalized value of 1.0 and the height is given a normalized value of .75. Using these values, the screen may be defined with the following dimensions:



FULL SCREEN VIEWPORT DIMENSIONS

For you to define a viewport, you will need to specify the lower left corner of the area desired and the height and width of that area. The command you will use is:

VIEWPORT horizontal position vertical position width height [NOERASE]

WHERE: Command parameters are entered as normalized device coordinates.

Horizontal position and vertical position define the lower left corner of the viewport (normalized device coordinates).

Width and height define the viewport size (normalized device coordinates).

The optional NOERASE keyword defeats the erasing of the viewport prior to drawing the chart.

DEFAULT: 0 0 1.0 .75

NOTE: *The total horizontal values must be less than 1.00.
The total vertical values must be less than .75.*

Example:

`VIEWPORT .1 0 .90 .75`

(Is a valid command.)

`VIEWPORT .1 0 .95 .75`

(Is invalid because the horizontal values total to more than 1.00)

If you want to use the VIEWPORT command to produce more than one chart on the screen, you must use stored command files. Interactively, the commands get in the way of the charts.

Example: You want to draw two charts to the screen side by side. You may do this with the following command file.

```
TABLE
Income
Us vs. Them
      1975      1976      1977
Us      25      32      42
Them    30      27      38
END_DATA
VIEWPORT 0 0 .50 .75
MAJOR_TITLE FONT BOLD
LEGEND "Fiscal Year"
BAR HIDDEN
TABLE
INCOME
Us vs. Them
      1978      1979      1980
Us      48      52      55
Them    47      42      53
END_DATA
VIEWPORT .50 0 .50 .75
BAR HIDDEN
```

The first VIEWPORT Command defines the left side of the screen.

```
VIEWPORT 0 0 .50 .75
```

The values 0 0 specify an area whose lower left corner is at the lower left corner of the screen. The width (.50) is half of the total width (1.0). The height (.75) is the full height of the screen.

The second VIEWPORT command defines the right side of the screen.

```
VIEWPORT .50 0 .50 .75
```

To specify an area whose lower left corner starts in the middle of the screen, you divide the total width by 2. This will give you the horizontal position of .50. The corner starts at the bottom of the screen so the vertical position is 0. Like the left side of the screen, the width of the area is half of the total available (.50). The height of the area is the full height of the screen (.75).

If you call the charting package with the command file listed above, the charts will be drawn as in Figure 6-3.

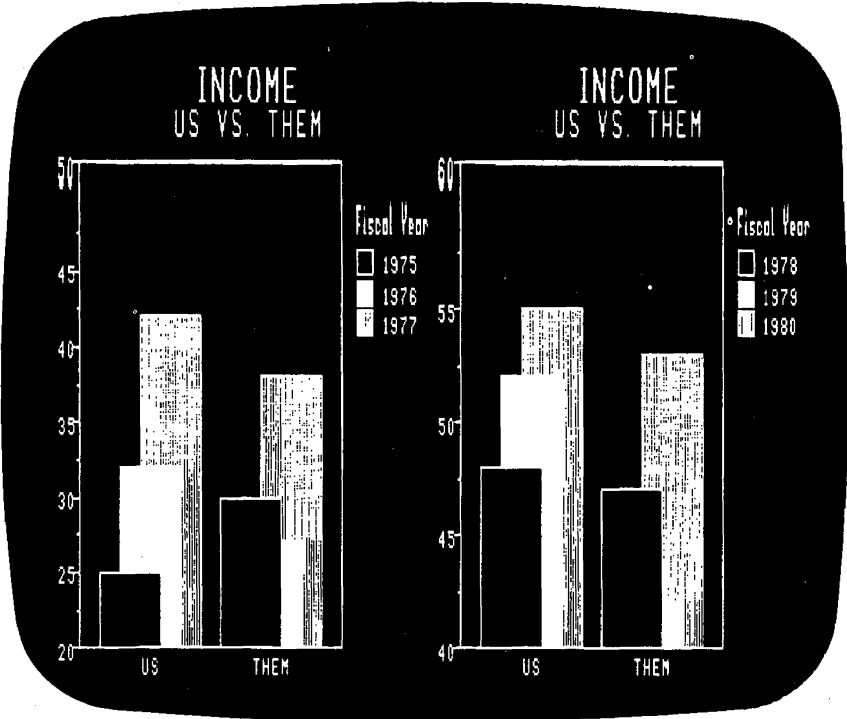


Figure 6-3. Charts Drawn Using the VIEWPORT Command



Chapter 7

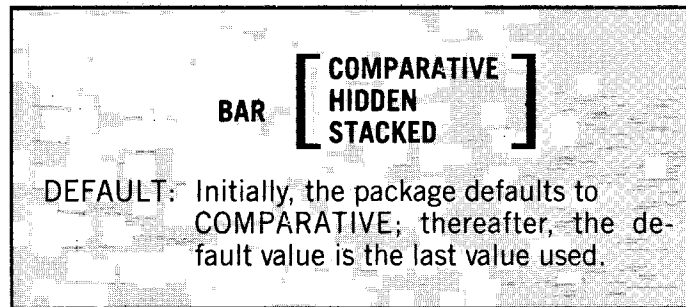
BAR CHART COMMANDS

INTRODUCTION

This chapter provides an alphabetized listing of the chart drawing and chart formatting commands that are used only for bar charts. The general chart formatting commands described in Chapter 6 can also be used with bar charts.

BAR CHART DRAWING COMMAND

The bar chart drawing command is the one command required to generate a bar chart.



The charting package supports three types of bar chart displays.

- Comparative Bar Charts
- Hidden Bar Charts
- Stacked Bar Charts

Comparative Bar Charts

The comparative bar chart contains a separate bar for each component at each independent value position. The command file in Figure 7-1 will produce the comparative bar chart in Figure 7-2.

```
TABLE  
Minicomputer Companies  
Earnings  
                1978  1979  "1980 Projected"  
"Company X"     20   40   60  
"Company Y"     10   15   30  
END_DATA  
BAR COMPARATIVE
```

Figure 7-1. Command File

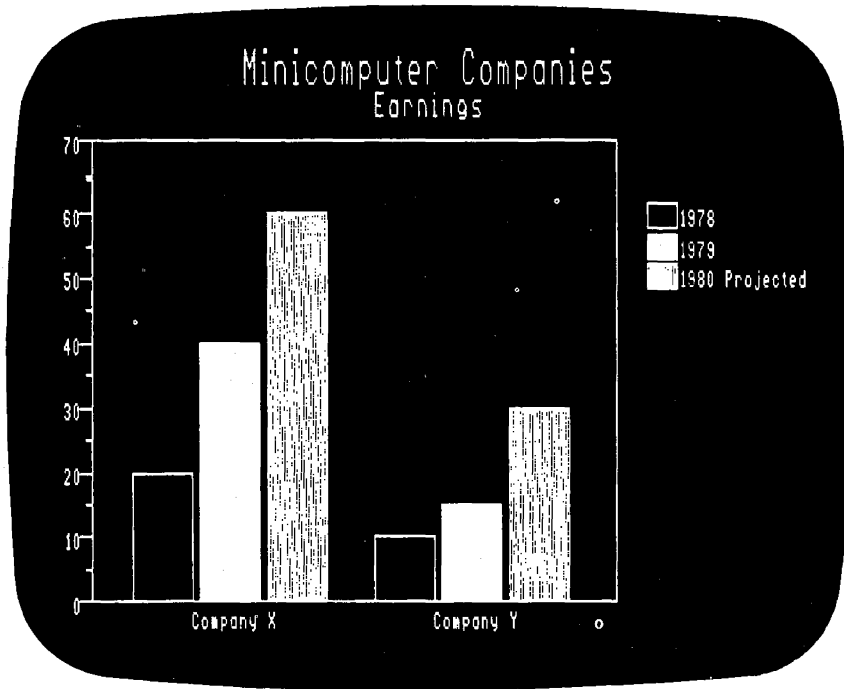


Figure 7-2. Comparative Bar Chart

Hidden Bar Charts

The hidden bar chart is similar to the comparative bar chart except that the bars are overlapping (slightly offset). For each independent value, the dependent value entered first on the data table is in front and the dependent value entered last is in the rear. If the command file in Figure 7-1 contained the command **BAR HIDDEN** instead of the comparative bar chart command, it would produce the hidden bar chart in Figure 7-3.

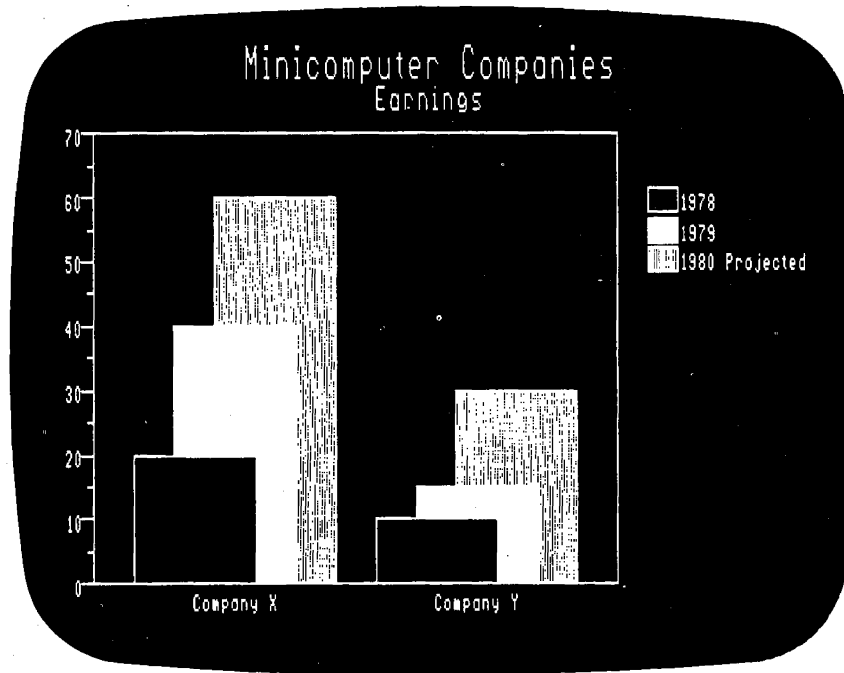


Figure 7-3. Hidden Bar Chart

Stacked Bar Charts

The stacked bar chart is constructed by stacking the components at each independent value. If the command file in Figure 7-1 contained the command **BAR STACKED** instead of the comparative bar chart command, it would produce the stacked bar chart in Figure 7-4.

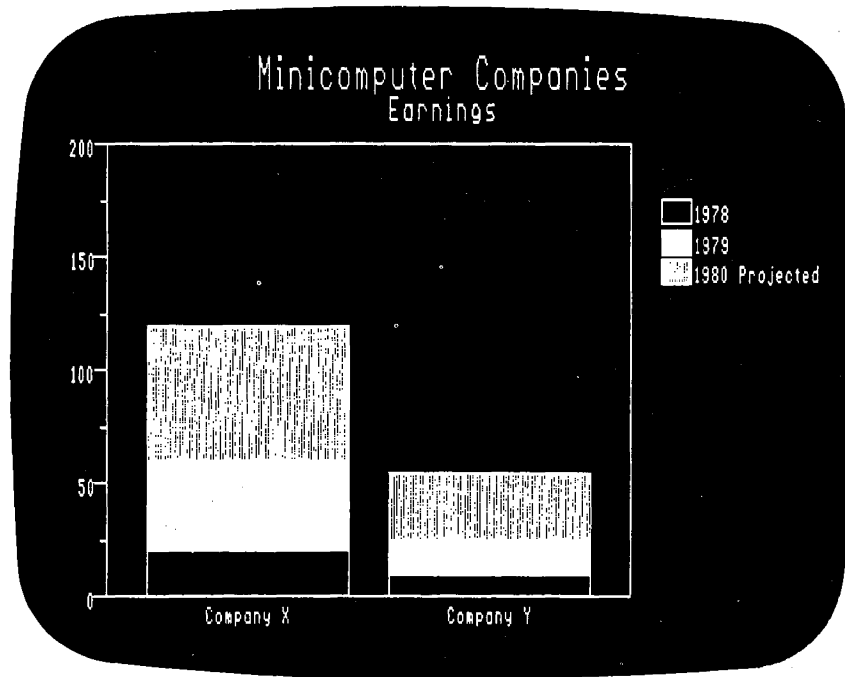


Figure 7-4. Stacked Bar Chart

DEP_AXIS COMMAND

The DEP_AXIS command allows you to custom tailor the dependent axis for bar charts.

NOTE: If you use the GRID_LINES option, grid lines will be used until you enter the DEP_AXIS command without the GRID_LINES argument.

NOTE: The DEP_AXIS command for line charts allows you to choose between LINEAR, LOG and LN axis scaling. LINEAR axis scaling is the only valid type of axis scaling for bar charts.

DEP_AXIS [scale options] [tick mark options] [TITLE title options]

WHERE: Scale options are defined as:

[RANGE { min max }] [INTERCEPT value]

RANGE specifies the minimum and maximum values on the dependent axis. You may either specify the min and max range or let the autoranging algorithm (AUTO) determine the values.

The INTERCEPT value is the real number value on the dependent axis where the independent axis intersects.

DEFAULT: RANGE AUTO, INTERCEPT determined by autoranging.

WHERE: Tick mark options are defined as:

[MAJOR_TICKS value] [MINOR_TICKS steps] [GRID_LINES]

MAJOR_TICKS value is the spacing between units on the axis. The major ticks value is a real number.

MINOR_TICKS steps indicate the integer number of minor tick marks between major ticks. Example: If you want 4 divisions between major ticks, specify 3 minor ticks.

GRID_LINES are the lines that are projected from the major ticks to the opposite border of the chart.

DEFAULT: MAJOR_TICKS determined by autoranging, MINOR_TICKS = 1, and GRID_LINES are not used.

WHERE: Title options include:

TITLE [CENTER MIN MAXIMUM] ["string"] [FONT type] [COLOR code]

CENTER centers the title string on the axis, MIN places the title at the bottom most or left most position depending on the chart direction, MAXIMUM places the title at the top most or right most position depending on the chart direction.

"String" is the title for the dependent axis. If the title contains more than one word, it must be enclosed in quotation marks.

FONT types include: NORMAL, ITALICS, BOLD and BOLDITALICS.

COLOR code is an integer number between 0 and 7. 0 will be shown as black; 1-7 will be shown as green.

DEFAULT: No dependent axis title is printed. If a title is specified in "string", the default is CENTER, FONT NORMAL, COLOR 1

FILL_PATTERN COMMAND

You may select the fill pattern for the components of a bar chart with the FILL_PATTERN command.

The fill patterns you may choose from are shown in Figure 7-5.

FILL_PATTERN component pattern name [fill color] [border color]

WHERE: Component may be a string containing the component name as used in the data table or a number starting at 1 that indicates the component's relative position in the data table. Example: "Store A" or 1

Pattern name is the name of a specific fill pattern (Options include: BACKGROUND, SOLID, HALFTONE, BRICK, RIGHTSLASH, CROSS, LEFTSLASH, VERTICAL, STARS, HORIZONTAL, WIDELEFT, WIDERIGHT, and POLKA_DOT.)

Fill color is the color of the background area of the fill pattern. It is an integer number between 0 and 7. 0 will be shown as black; 1-7 will be shown as green.

Border color is the color of the border around the bars and the design lines of the fill pattern. It is an integer number between 0 and 7. 0 will be shown as black; 1-7 will be shown as green.

DEFAULT: The first component is assigned the first fill pattern in the list above, the second component is assigned the second fill pattern in the list, etc. Fill color = 0
Border color = 1

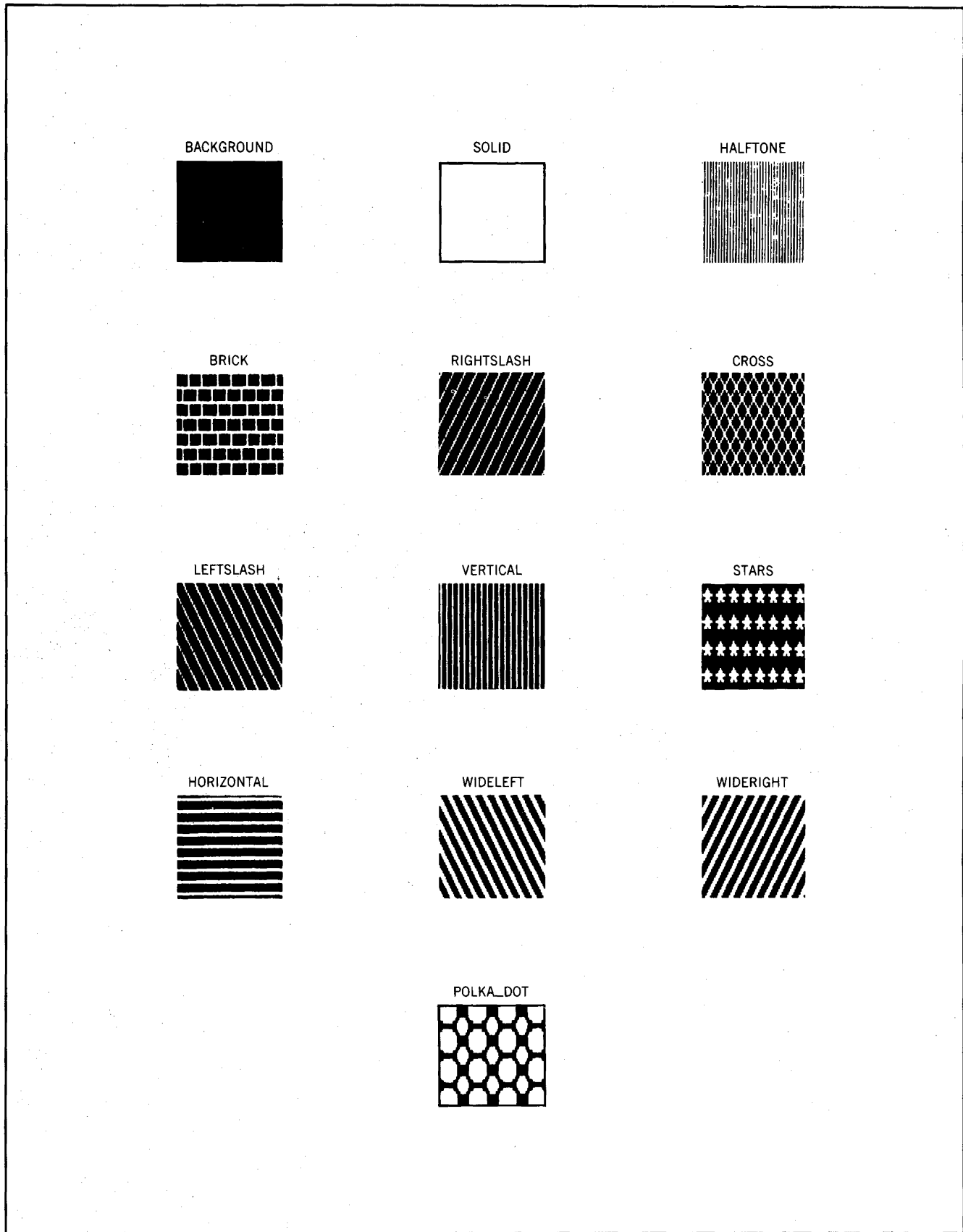


Figure 7-5. Fill Patterns

Chapter 8

LINE CHART COMMANDS

INTRODUCTION

This chapter provides an alphabetized listing of the chart drawing and chart formatting commands that are used only for line charts. The general chart formatting commands described in Chapter 6 can also be used with line charts.

DEP_AXIS COMMAND

The DEP_AXIS command allows you to custom tailor the dependent axis for line charts. This command allows you to specify the dependent axis title, choose the type of axis scaling, and specify the tick mark incrementation.

The types of axis scaling include:

- LINEAR
- LOG
- LN

A LINEAR axis uses a constant as the increment between major ticks. Most line charts use this type of axis scaling. The command file in Figure 8-1 will produce the linear chart in Figure 8-2.

A common log (LOG) axis uses the logarithmic scale base 10. This type of axis scaling is used to chart a wide range of data in a small amount of space. If the command file in Figure 8-1 contained the command DEP_AXIS LOG it would produce the line chart with the common log dependent axis in Figure 8-3.

A natural log (LN) axis uses the logarithmic scale base e . Like the common log scaling, it is used to chart a wide range of data in a small amount of space. If the command file in Figure 8-1 contained the command DEP_AXIS LN it would produce the line chart with the natural log dependent axis in Figure 8-4.

NOTE: If you use the DEP_AXIS command for bar charts, the only valid type of axis scaling is LINEAR.

NOTE: If you use the GRID_LINES option, grid lines will be used until you enter the DEP_AXIS command without the GRID_LINES argument.

DEP_AXIS [scale options] [tick mark options] [TITLE title options]

WHERE: Scale options are defined as:

**[LINEAR
LOG
LN] [RANGE { min max
AUTO }] [INTERCEPT value]**

LINEAR, LOG and LN axis scaling are defined above.

RANGE specifies the minimum values on the dependent axis. You may either specify the min and max range or let the autoranging algorithm (AUTO) determine the values.

The INTERCEPT value is the value on the dependent axis where the independent axis intersects.

DEFAULT: LINEAR, RANGE AUTO, INTERCEPT determined by autoranging.

WHERE: Tick mark options are defined as:

[MAJOR_TICKS value] [MINOR_TICKS steps] [GRID_LINES]

MAJOR_TICKS value is the spacing between units on the axis. The major ticks value is a real number.

MINOR_TICKS steps indicate the integer number of minor tick marks between major ticks. Example: If you want 4 divisions between major ticks, specify 3 minor ticks.

GRID_LINES are the lines that are projected from the major ticks to the opposite border of the chart.

DEFAULT: MAJOR_TICKS determined by autoranging, MINOR_TICKS = 1, GRID_LINES are not used.

WHERE: Title options include:

TITLE

CENTER
MIN
MAXIMUM

["string"] [FONT type] [COLOR code]

CENTER centers the title string on the axis, MIN places the title at the bottom most or left most position depending on the chart direction, MAXIMUM places the title at the top most or right most position depending on the chart direction.

"String" is the title for the dependent axis. If the title contains more than one word, it must be enclosed in quotation marks.

FONT types include: NORMAL, ITALICS, BOLD and BOLDITALICS.

COLOR code is an integer number between 0 and 7. 0 is shown as black; 1-7 is shown as green.

DEFAULT: No dependent axis title is printed. If a title is specified in "string", the default is CENTER, FONT NORMAL, COLOR 1

```

TABLE
LUMINOUS DECAY CHARACTERISTICS
INTENSITY VS. TIME

.1 1
.2 0.4
.3 0.1
.5 0.06
1 0.04
2.5 0.03
3 0.028
4 0.027
5 0.02
7 0.017
END_DATA
IND_AXIS RANGE 0 7 TITLE MICROSECONDS
DEP_AXIS TITLE INTENSITY
LINE

```

Figure 8-1. Command File

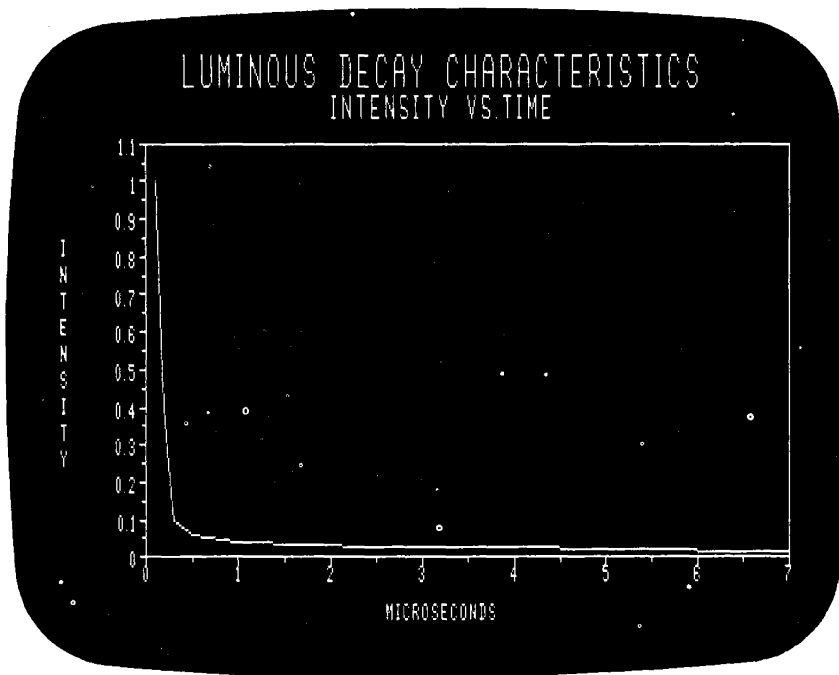


Figure 8-2. Line Chart With a Linear Independent and Dependent Axis

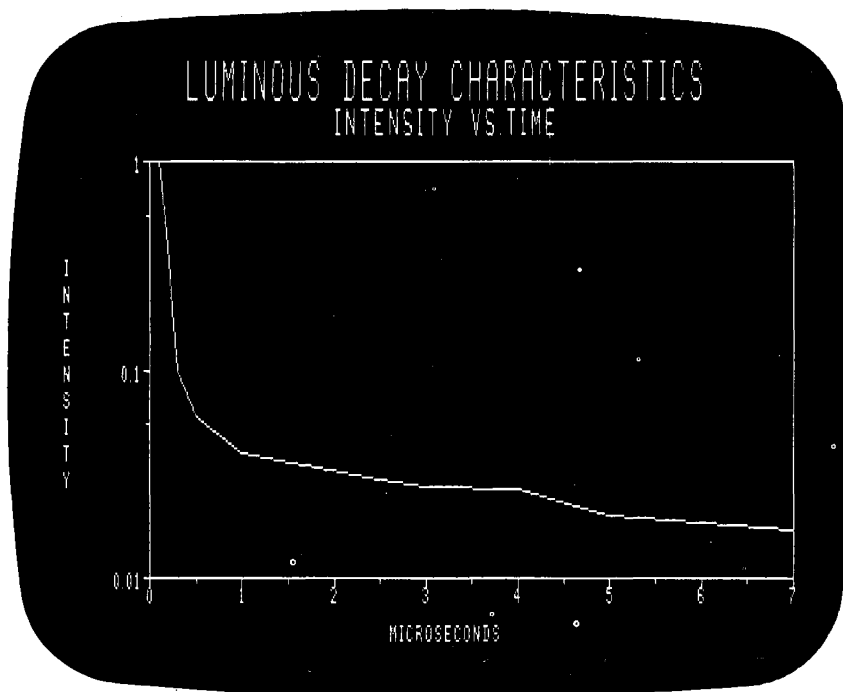


Figure 8-3. Line Chart With a Common Log Dependent Axis

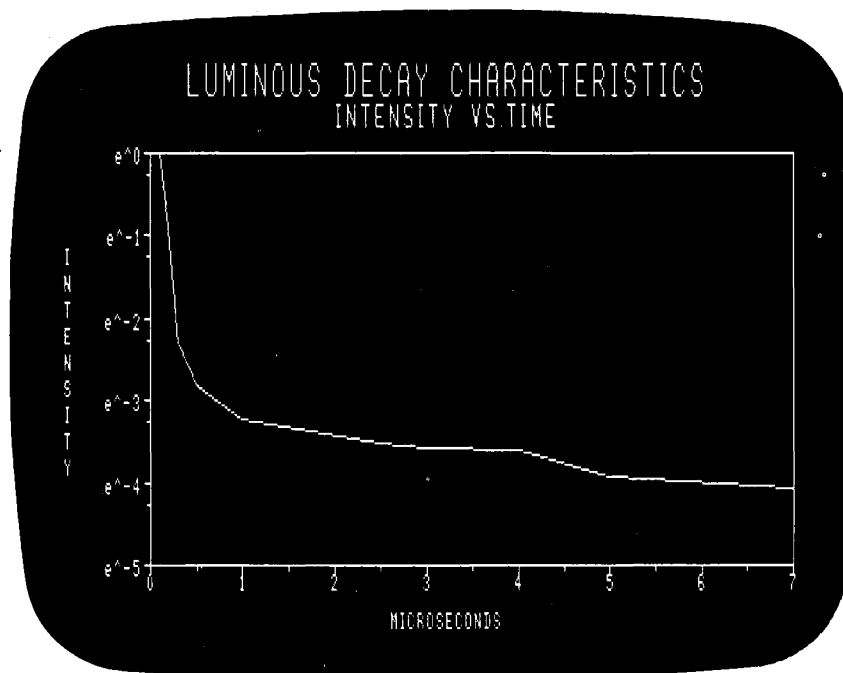


Figure 8-4. Line Chart With a Natural Log Dependent Axis

IND_AXIS COMMAND

The IND_AXIS command allows you to custom tailor the independent axis. You may specify the independent axis title, choose the type of axis scaling, and specify the tick mark incrementation.

See DEP_AXIS command, on page 8-1, for a description of the axis scaling options.

NOTE: If you use the GRID_LINES option, grid lines will be used until you enter the IND_AXIS command without the GRID_LINES argument.

IND_AXIS [scale options] [tick mark options] [TITLE title options]

WHERE: Scale options are defined as:

**[LINEAR
LOG
LN] [RANGE { min max
 AUTO }] [INTERCEPT value]**

LINEAR, LOG and LN axis scaling are defined on page 8-1.

RANGE specifies the maximum and minimum values on the independent axis. You may either specify the min and max range or let the autoranging algorithm (AUTO) determine the values.

The INTERCEPT value is the value on the independent axis where the dependent axis intersects.

DEFAULT: LINEAR, RANGE AUTO, INTERCEPT determined by autoranging.

WHERE: Tick mark options are defined as:

[MAJOR_TICKS value] [MINOR_TICKS steps] [GRID_LINES]

MAJOR_TICKS value is the spacing between units on the axis. The major ticks value is a real number.

MINOR_TICKS steps indicate the integer number of minor tick marks between major ticks. Example: If you want 4 divisions between major ticks, specify 3 minor ticks.

GRID_LINES are the lines that are projected from the major ticks to the opposite border of the chart.

DEFAULT: MAJOR_TICKS determined by autoranging, MINOR_TICKS = 1, GRID_LINES are not used.

WHERE: Title options include:

TITLE [CENTER
MIN
MAXIMUM] ["string"] [FONT type] [COLOR code]

CENTER centers the title string on the axis, MIN places the title at the left most or bottom most position depending on the chart direction, MAXIMUM places the title at the right most or top most position depending on the chart direction.

"String" is the title for the independent axis. If the title contains more than one word, it must be enclosed in quotation marks.

FONT types include: NORMAL, ITALICS, BOLD and BOLDITALICS.

COLOR code is an integer number between 0 and 7. 0 is shown as black; 1-7 is shown as green.

DEFAULT: No independent axis title is printed. If a title is specified in "string", the default is CENTER, FONT NORMAL, COLOR 1

INTERPOLATION COMMAND

The INTERPOLATION command allows you to specify how the data points are to be connected within a line chart. You may choose from:

- **LINE** — The data points are connected with straight line segments. The command file in Figure 8-5 will produce the line interpolation chart in Figure 8-6.
- **SMOOTH** — The data points are connected using a smooth curve (cubic spline). If the command file in Figure 8-5 contained the command **INTERPOLATION SMOOTH** instead of the line interpolation command, it would produce the chart in Figure 8-7.
- **LREGRESSION** — The average of all the points is shown as a straight line (linear regression). This method is used to show trends. If the command file in Figure 8-5 contained the command **INTERPOLATION LREGRESSION** instead of the line interpolation command, it would produce the chart in Figure 8-8.
- **NONE** — The data points are not connected. When this option is used with the **USE_MARKERS YES** command (page 8-12), you will receive a scatter plot chart. If the command file in Figure 8-5 contained the command **INTERPOLATION NONE** and the command **USE_MARKERS YES** instead of the line interpolation command, it would produce the chart in Figure 8-9.

INTERPOLATION line connection type

WHERE: Line connection type options include NONE, LINE, LREGRESSION, and SMOOTH.

DEFAULT: LINE


```

TABLE
STOCK PRICES
1980
"COMPANY A"  "COMPANY B"
1      28      42
2      25      36
3      28      40
4      22      36
5      18      40
6      29      51
7      22      41
8      18      30
9      28      47
10     21      44
11     22      50
12     25      53
END_DATA
INTERPOLATION LINE
IND_AXIS MAJOR_TICKS 1 MINOR_TICKS 0 TITLE MONTHS
LINE

```

Figure 8-5. Command File

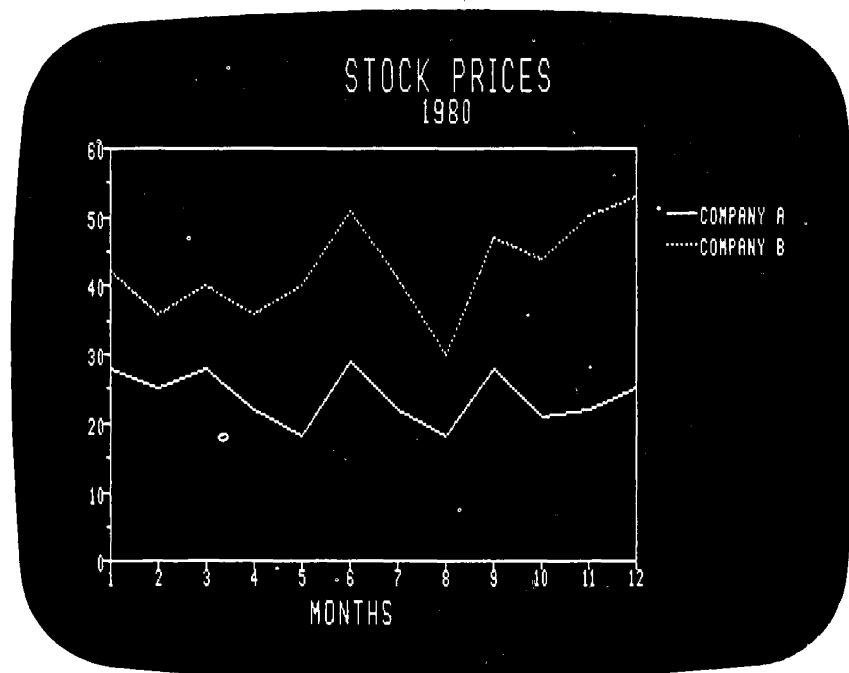


Figure 8-6. Interpolation — LINE

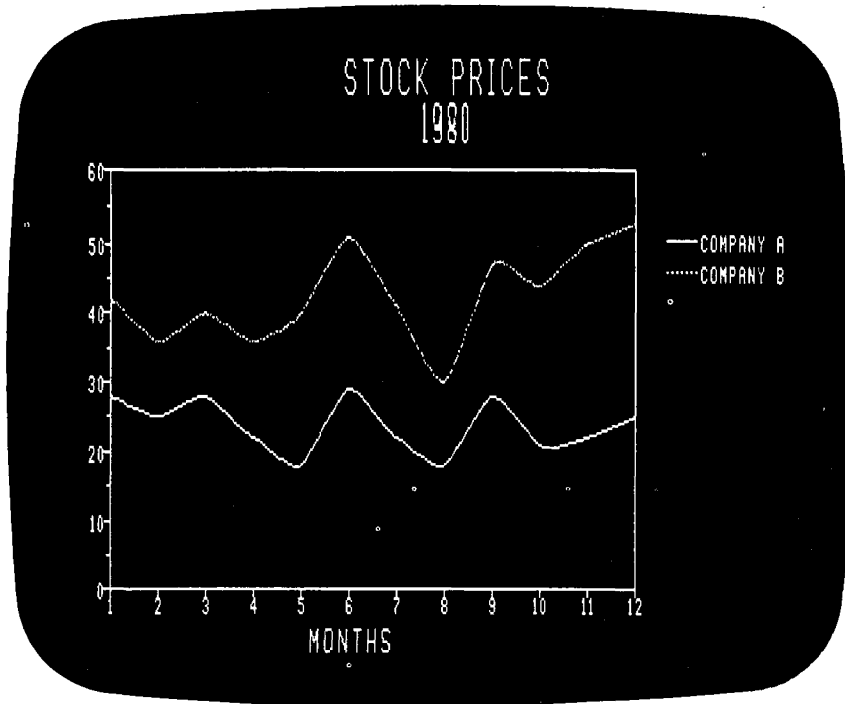


Figure 8-7. Interpolation — SMOOTHING

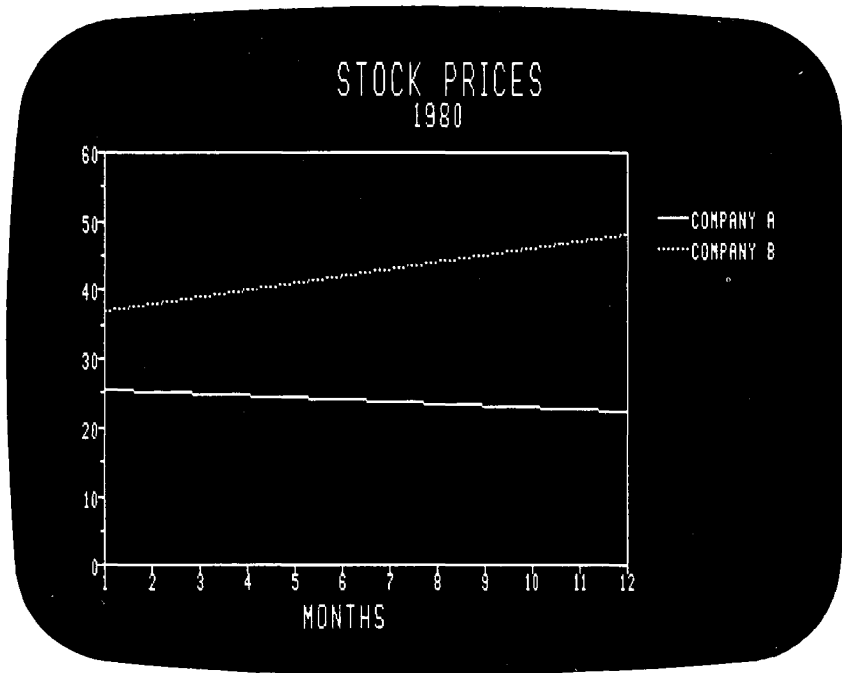


Figure 8-8. Interpolation — LREGRESSION

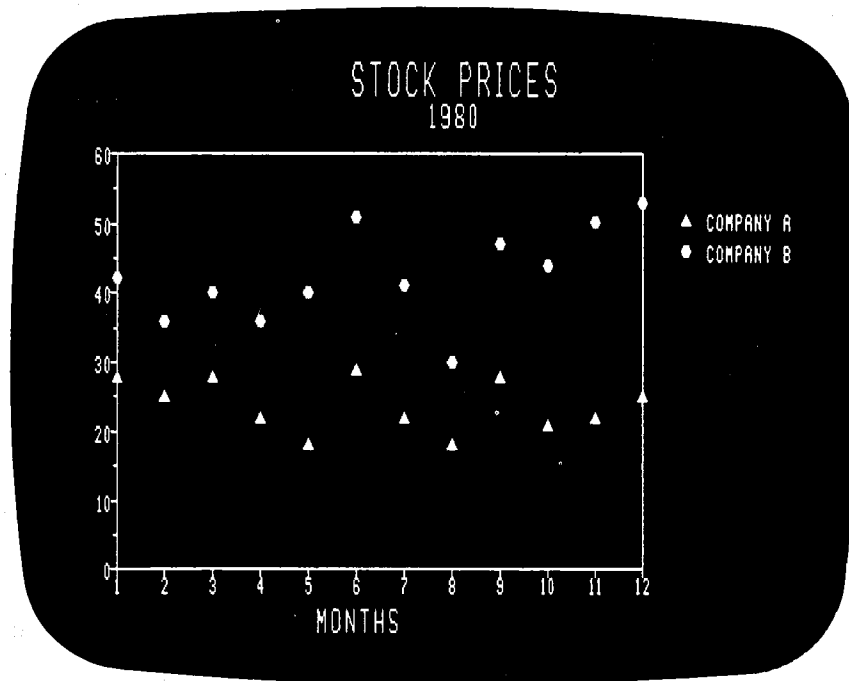


Figure 8-9. Interpolation — NONE

LINE CHART DRAWING COMMAND

Only one command is needed to generate a line chart, the LINE chart draw command.

LINE

LINE_STYLE COMMAND

The LINE_STYLE command allows you to specify a component's line style. The line styles available are shown in figure 8-10.

LINE_STYLE component line style [color]

WHERE: Component may be a string containing the component name as used in the data table or a number starting at 1 that indicates the component's relative position in the data table.

Line style options include: SOLID, DOTTED, DASHED, DASHED_DOTTED, LONG_DASHED, DASH_3DOTS, LONG_DASH_3DASHES AND DASH_DASH_DOT.

Color is an integer number between 0 and 7. 0 is shown as black; 1-7 is shown as green.

DEFAULT: The first component is assigned the first line style listed above, the second component is assigned the second line style listed, etc. Color = 1

SOLID

DOTTED

DASHED

DASHED_DOTTED

LONG_DASHED

DASH_3DOTS

LONG_DASH_3DASHES

DASH_DASH_DOT

Figure 8-10. Line Styles

MARKER COMMAND

A marker is a symbol that is used to locate the data values along a line of a line chart. The **MARKER** command allows you to specify the type of marker you want for a component. Figure 8-11 shows the marker symbols available.

MARKER component marker type [color]

WHERE: Component may be a string containing the component name as used in the data table or a number starting at 1 that indicates the component's relative position in the data table.

Marker type options include: TRIANGLE, CIRCLE, STAR, BOX, X, PLUS, DIAMOND, and POINT.

Color is an integer number between 0 and 7. 0 is shown as black; 1-7 is shown as green.

DEFAULT: The first component is assigned the first marker in the list above, the second component is assigned the second marker listed, etc. Color = 1

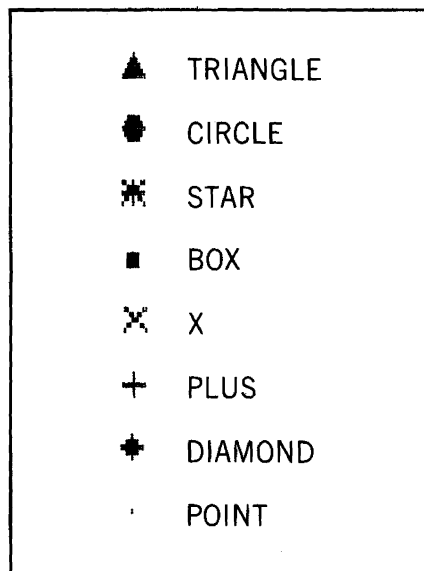
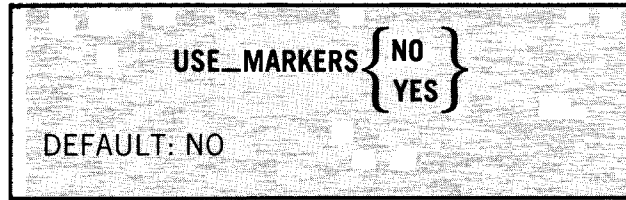


Figure 8-11. Marker Symbols

USE_MARKERS COMMAND

The USE_MARKERS command allows you to specify whether markers (symbols) will be placed at each data point on a line.



Chapter 9

PIE CHART COMMANDS

INTRODUCTION

This chapter provides an alphabetized listing of the chart drawing and chart formatting commands that are used only for pie charts. The general chart formatting commands described in Chapter 6 can also be used with pie charts.

EXPLODE SECTOR COMMAND

The EXPLODE command allows you to explode a sector of a pie chart for added emphasis. Figure 9-1 shows an example of an exploded sector.

EXPLODE sector [sector] ...

WHERE: Sector may be a string containing the independent value as used in the data table or a number starting at 1 that indicates the sector's relative position in the pie.

NOTE: *You can use only one of the following commands at a time per sector:* EXPLODE, INVISIBLE, NORMAL.

```
TABLE
ALPHA INSURANCE COMPANY
SOURCES OF INCOME

INVESTMENT 45
PREMIUMS_INDIV. 35
PREMIUMS_GROUP 27
OTHER 5
END_DATA
EXPLODE 1
PIE
```

Command File

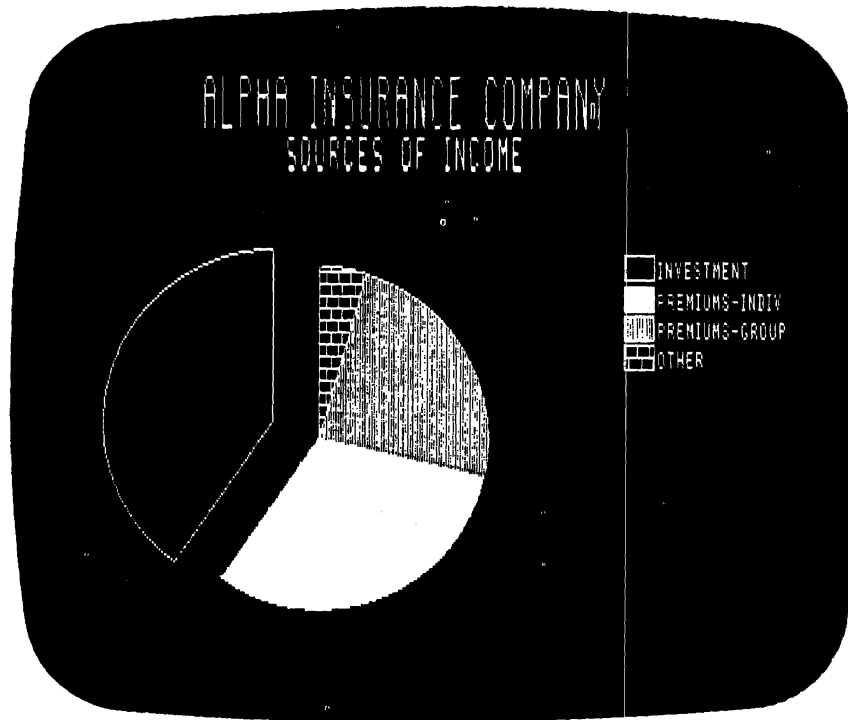


Figure 9-1. Pie Chart With An Exploded Sector

INVISIBLE SECTOR COMMAND

The **INVISIBLE** command allows you to suppress the drawing of a sector for added emphasis. Figure 9-2 shows an example of an invisible sector.

INVISIBLE sector [sector] ...

WHERE: Sector may be a string containing the independent value as used in the data table or a number starting at 1 that indicates to the sector's relative position in the pie.

NOTE: You can use only one of the following commands at a time per sector: **EXPLODE**, **INVISIBLE**, **NORMAL**.


```
TABLE  
ALPHA INSURANCE COMPANY  
SOURCES OF INCOME  
  
INVESTMENT 45  
PREMIUMS_INDIV. 35  
PREMIUMS_GROUP 27  
OTHER 5  
END_DATA  
INVISIBLE 4  
PIE
```

Command File

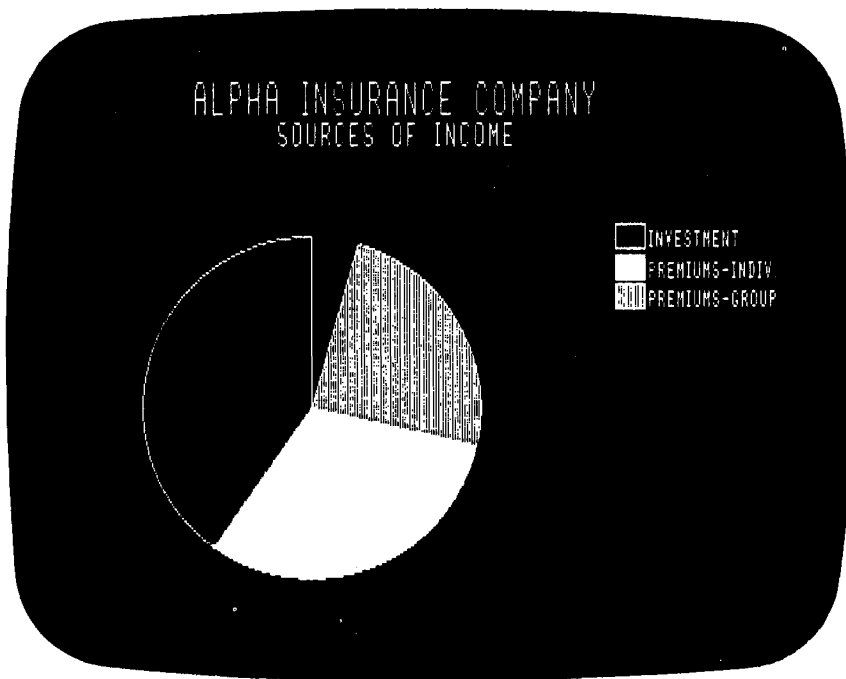


Figure 9-2. Pie Chart With An Invisible Sector

NORMAL SECTOR COMMAND

The **NORMAL** command reverses the effect of the **INVISIBLE** and **EXPLODE** commands.

NORMAL sector [sector] ...

WHERE: Sector may be a string containing independent value as used in the data table or a number starting at 1 that indicates the sector's relative position in the pie.

NOTE: You can use only one of the following commands at a time per sector: **EXPLODE**, **INVISIBLE**, **NORMAL**.

To change Figure 9-2 to a pie chart with all normal sectors, enter the command:

NORMAL 4

Figure 9-3 would be the result.

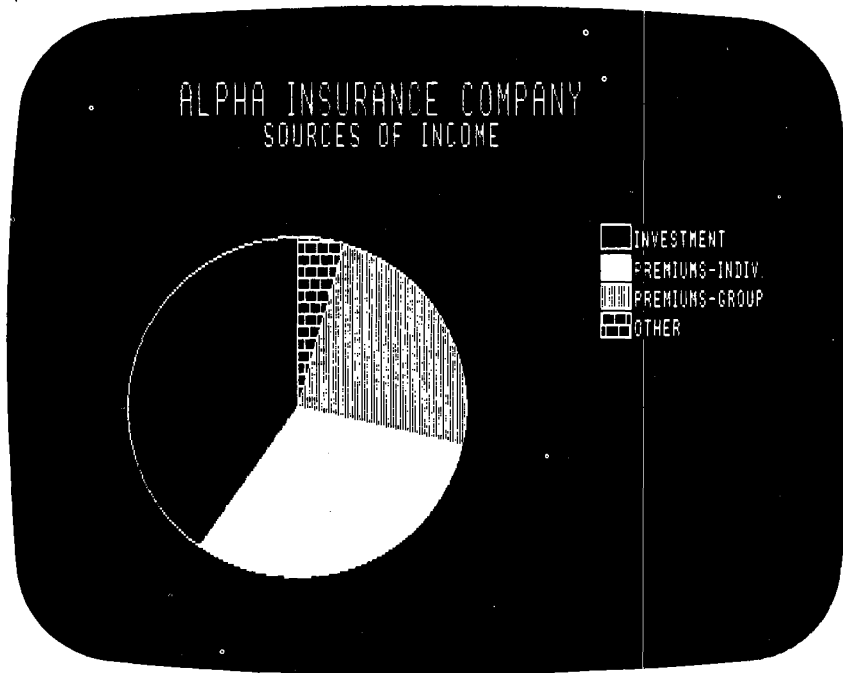


Figure 9-3. Pie Chart With All Normal Sectors

PIE CHART DRAWING COMMAND

Only one command is needed to generate a pie chart, the PIE chart drawing command. Since the charting package supports only one component pie charts, this command allows you to specify the component of the data table that will be used.

PIE [component]

WHERE: Component may be a string containing component name as used in the data table or a number starting at 1 that indicates the component's relative position within the data table.

DEFAULT: Initially, the package defaults to component = 1; thereafter, the default value is the last value used for this command.

PIE_FILL_PATTERN COMMAND

The PIE_FILL_PATTERN command allows you to select the fill pattern for a sector of a pie chart. The fill patterns you may choose from are shown in Figure 9-4.

PIE_FILL_PATTERN sector pattern name [fill color] [border color]

WHERE: Sector may be a string containing the independent value as used in the data table or a number starting at 1 that indicates the sector's relative position in the pie.

Pattern name is the name of a specific fill pattern. (Options include: BACKGROUND, SOLID, HALFTONE, BRICK, RIGHTSLASH, CROSS, LEFTSLASH, VERTICAL, STARS, HORIZONTAL, WIDELEFT, WIDERIGHT, and POLKA_DOT).

Fill color is the color of the background area of the fill pattern. It is an integer number between 0 and 7. 0 is shown as black; 1-7 is shown as green.

Border color is the color of the border around the sectors and the design lines of the fill pattern. It is an integer number between 0 and 7. 0 will be shown as black; 1-7 will be shown as green.

DEFAULT: The first sector is assigned the first fill pattern in the list above, the second sector is assigned the second fill pattern listed, etc.

Fill color = 0 Border color = 1

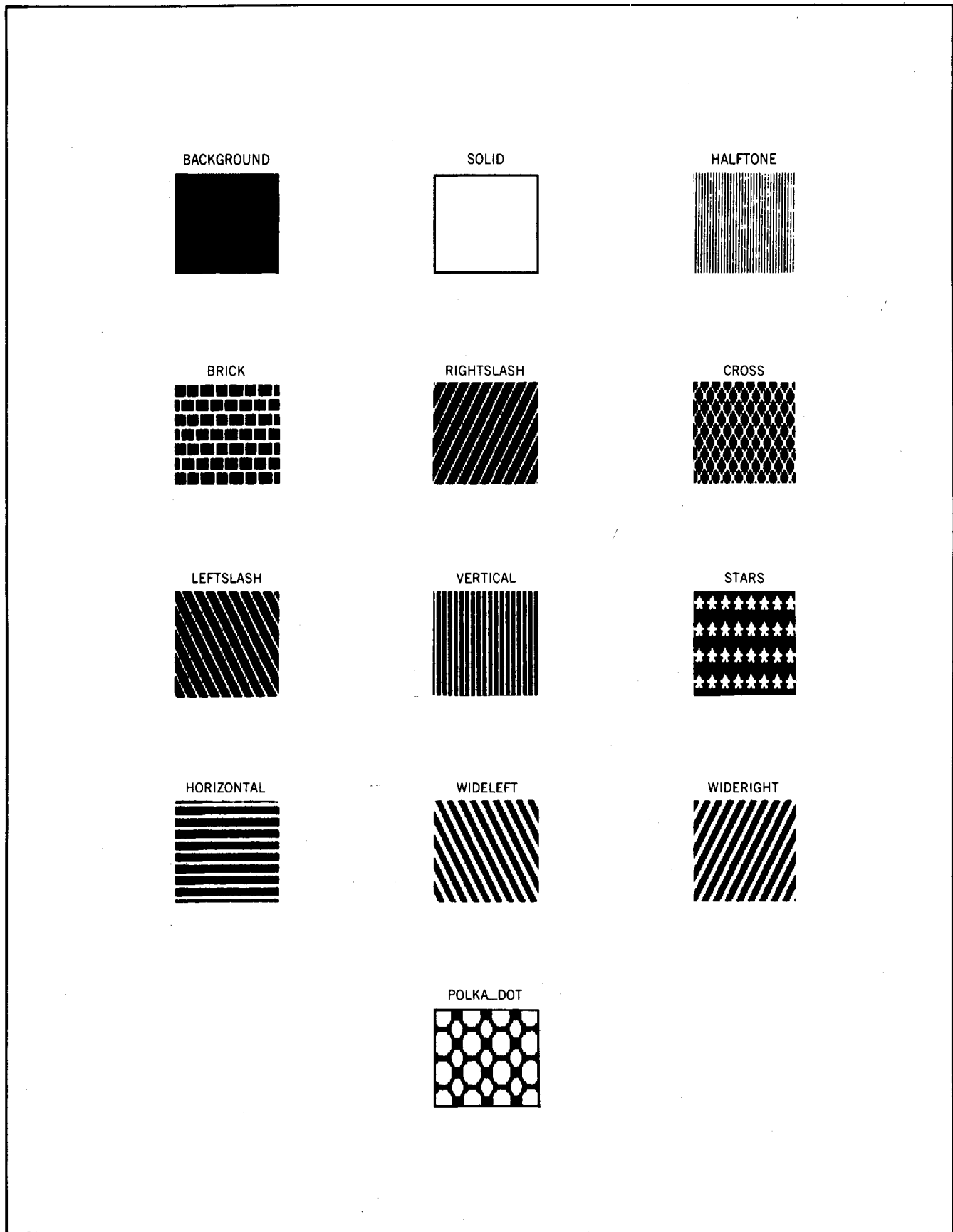


Figure 9-4. Fill Patterns

Appendix A

INTRODUCTION TO CHARTING TERMS

INTRODUCTION

This chapter defines all charting terms used throughout the manual. The terms are alphabetized according to general headings. Example: All titles (major title, independent axis title, etc.) will be found under the general heading "Titles".

AUTORANGING ALGORITHM

The autoranging algorithm is that part of the charting package that automatically calculates several division values for the axes of a bar or line chart. Unless you have specified a value, with the DEP_AXIS or IND_AXIS commands, the autoranging algorithm automatically computes the following:

- The range for each axis. The minimum and maximum data values are used as the range for the independent axis. For the dependent axis, the algorithm uses the minimum/maximum values of the data set and expands the range in both directions.

EXAMPLES:

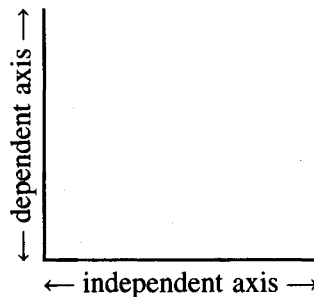
If the data values are between 300 and 800, the autoranging algorithm will set the dependent axis range from 0 to 1000.

If the data values are between 300 and 340, the autoranging algorithm will set the dependent axis range from 300 to 400.

- The number of major ticks for each axis.
- The axis intercept value for the independent and dependent axis. The dependent axis intercept for bar charts is always zero.

AXES

Axes are found on bar and line charts. The independent and dependent axes are used as a reference to plot the data points.



INDEPENDENT AXIS

The independent axis is used to plot the independent variable. The values along the independent axis of a line chart are seen as the cause of an event. Example: Time, Dates. The values along the independent axis of a bar chart are seen as logical data groupings. Example: Company Names.

DEPENDENT AXIS

The dependent axis is used to plot the dependent variable. The values along the dependent axis are seen as the effect of the independent variable. Example: Amount of Sales, Amount of Rain, Number of Cars Sold.

AXIS INTERCEPT

The axis intercept is the point of intersection of the independent axis and the dependent axis. The intercept point consist of two values, one for each axis. Unless you specify the axis intercept values, the autoranging algorithm will compute them. For a bar chart, the dependent axis intercept value is always zero.

BACKGROUND COLOR

The background color is the color of the screen before anything is drawn or written upon it. The background color is shown as black in the illustrations of this manual.

BORDER COLOR

Border color is the color of the border around the bars or sectors of a chart and the design lines of the fill pattern. The border color is shown as white in the illustrations of this manual.

CHART DIRECTION

A vertical chart consists of a horizontal independent axis and a vertical dependent axis. This will produce a bar chart with vertical bars or a line chart with horizontal lines. A horizontal chart consists of a vertical independent axis and a horizontal dependent axis. This will produce a bar chart with horizontal bars or a line chart with vertical lines. The charting package allows you to choose between either type of chart direction.

COMPONENT

Component refers to column dependent values in the data table. A component is referred to by its relative position in the data table or the component name associated with that column of data.

DATA POINT

A data point is the position on a line chart that results from plotting the independent and dependent values.

DEFAULT VALUE

The default value is used by the charting package when no value for an argument is specified. If the argument is underlined, this means that the argument is required and the charting package will not supply a default value.

FILL COLOR

The fill color is the background area of the fill pattern. It is the area that does not include the design lines or border of the fill pattern. The fill color is shown as black in the illustrations of this manual.

FILL PATTERN

The fill pattern is the design within the bars of a bar chart or the sectors of a pie chart. The fill pattern will be the same for all bars with the same component name in the data table.

FONT

Font is the type of lettering used to print text. The charting package allows you to use any of the following font types:

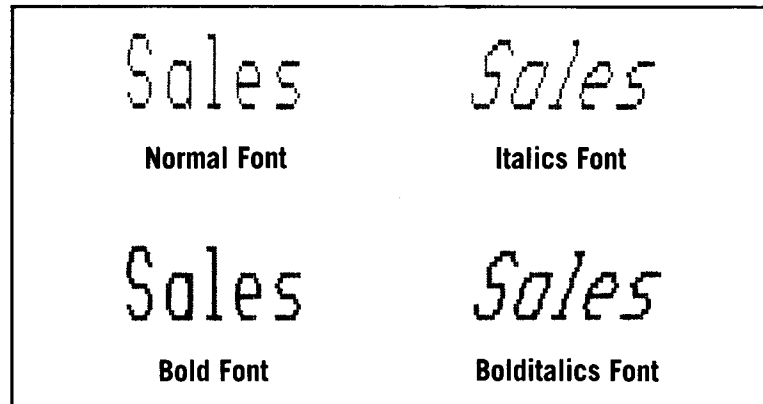


Figure A-1. Font Types

FOREGROUND COLOR

The foreground color is the color of anything that is written or drawn to the screen. The foreground color is shown as white in the illustrations of this manual.

GRID LINES

Grid lines are lines that are projected from the major ticks to the opposite border of the chart. For a line chart, the grid lines extend from both axes. On a bar chart, the grid lines extend only from the dependent axis.

LEGEND

The legend identifies the individual components of a multicomponent chart through the use of labels, fill patterns or different line styles.

BAR CHART LEGEND

The legend for a bar chart shows the component name and its associated fill pattern.

LINE CHART LEGEND

The legend for a line chart shows the component name and its associated line style and/or marker.

PIE CHART LEGEND

The legend for a pie chart shows the independent value and its associated fill pattern.

LINE STYLES

Line styles are used to differentiate between data lines of a line chart. Most line styles are composed of different types of segments. A line may be composed of long dashes, short dashes, dots or a combination of these. A solid line is also a line style.

MARKERS

Markers are geometric shapes used to locate the data points plotted on a line chart. To differentiate data, a different marker is assigned to each component.

PATHNAME

To specify where you want to store a command file or where you want to read a stored command file from, you must specify a pathname. Because a file can be in one of many directories, you must tell the charting package where to find it. You do this via the pathname of the file. The pathname includes the directoryname that holds the file, a colon, and the filename. For example:

```
directoryname:filename  
:UDD:DOE:SALES_LINE_CHART
```

If the file is in the working directory, you can omit the directoryname and colon. The file's pathname is then its filename. For example:

```
filename  
SALES_LINE_CHART
```

For more information on pathnames, see the **Command Line Interpreter (CLI) (AOS and AOS/VS) User's Manual**, part number 093-000122.

TICKS

A tick is the marking that identifies where the data divisions are along an axis. There are two types of tick marks.

MAJOR TICK

A major tick mark is a small mark on an axis that has a numeric label associated with it. The label indicates the value of the axis at that point. To specify a major tick spacing, indicate the incremental value wanted between major ticks.

Example: If you specify a major tick spacing of 1.5 and a minor tick mark spacing of 0, the axis will look like the one below.

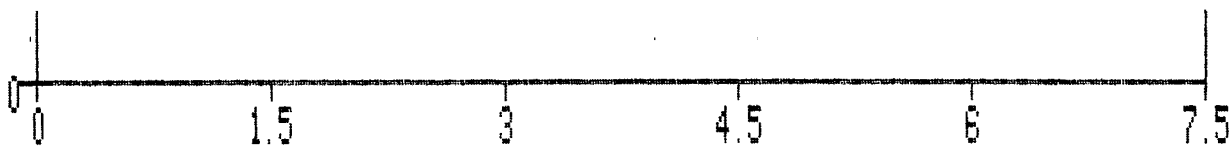


Figure A-2. Major Tick Spacing

MINOR TICK

A minor tick mark is a very small mark on an axis between major tick marks. The minor tick allows a more accurate inspection of a chart without crowding the axis with more labels. To specify a minor tick spacing for an axis, indicate the number of tick marks you want placed between the major ticks. The charting package defaults to a minor tick spacing of 1.

Example: If you specify a minor tick spacing of 5 for the example in Figure A-2, the axis will look like the one below:

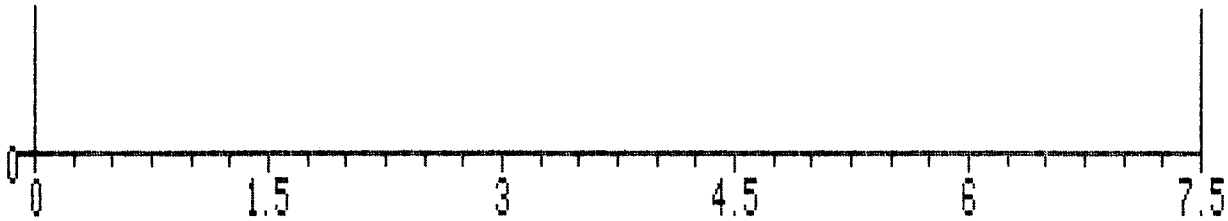


Figure A-3. Minor Tick Spacing

TITLE JUSTIFICATION

The title justification is the position in which a title is placed with respect to the chart.

TITLES

DEPENDENT AXIS TITLE

The dependent axis title is used only on bar and line charts. It is a descriptive label for the dependent axis. The dependent axis title usually describes the units for the dependent values. It may be up to 80 characters long.

INDEPENDENT AXIS TITLE

The independent axis title is used only on bar and line charts. It is a descriptive label for the independent axis. The independent axis title usually describes the units for the independent values. It may be up to 80 characters long.

LEGEND TITLE

The legend title is a descriptive label for the legend. It may be up to 16 characters long.

MAJOR TITLE

The major title is a descriptive label for the entire chart. It may be up to 80 characters long.

MINOR TITLE

The minor title is a descriptive subtitle for the entire chart. It may be up to 80 characters long.

NOTE: *The number of characters shown on the screen for the axis, major and minor titles depend upon the size of the characters in the title. Although 80 characters are allowed, some may be truncated.*

TRANSPARENCY

A transparency is a visual tool used with overhead projectors. A transparency uses a process where the contents of a sheet of paper are transferred onto a colored or clear transparent sheet of plastic. This sheet of plastic can then be used on an overhead projector.

By printing the chart screen to a local printer. Transparencies can be made of the charts generated by the TRENDVIEW charting package.

WORK SPACE

Your work space is the list the charting package keeps of the charting commands and the most recent data table that you have entered. When you enter a chart drawing command, the charting package examines the work space to generate the chart you have defined.

Appendix B

ERROR MESSAGE DESCRIPTIONS

<u>Error Message</u>	<u>Description</u>
ABBREVIATION NOT UNIQUE: _____	More than one command matches input.
CANNOT ACCESS FILE: _____	File does not exist or file access denied. Check the File Access Control List (ACL).
CANNOT OPEN HELP FILE FOR _____	Help file does not exist or file access is denied.
COLOR NUMBERS MUST BE IN THE RANGE 0 THRU 7 INCLUSIVE	Note: <i>On the DASHER® G300, colors 1-7 will appear as color 1.</i>
COMMAND LINE TOO LONG	Command line must be 136 characters or shorter.
COMMAND REQUIRES IDENTIFYING PIE CHART SECTOR NAME OR NUMBER	Required argument not included in command line.
COMMAND REQUIRES INTERACTIVE MODE OPERATION	The command cannot be used in stored command files. The TRENDVIEW charting package is aborted.
COMPONENT NAME REQUESTED IS UNKNOWN	Component name is misspelled or incorrect.
COMPONENT NUMBERS MUST BE IN THE RANGE [1,8] INCLUSIVE	Component numbers not within allowable range.
CURRENT VIEWPORT EXCEEDS DEVICE LIMITS	Arguments for the VIEWPORT command are out of range.
DATA FOR PIE CHART HAS A NEGATIVE VALUE	Only positive data is allowed for pie charts.
DATA FOR PIE CHART HAS A TOTAL OF ZERO	There must be at least one non-zero data value for the pie chart.
DATA FOR STACKED BAR CHART HAS A NEGATIVE VALUE	Data for a stacked bar chart must be positive.
DATA LINES IN TABLE DESCRIBE CONFLICTING NUMBER OF COMPONENTS	Each line of data must have one independent value and the same number of dependent values as there are component names.
DATA SET EXCEEDS GIVEN AXIS RANGE	The data exceeds the axis range defined in an IND_AXIS or DEP_AXIS command.
DEVICE PATHNAME MISSING FROM COMMAND LINE	No recognizable pathname in command line.
EXPECTED INTEGER MISSING	Required integer argument is missing.
EXPECTED NUMERIC VALUE	Argument must be a number.
EXTRANEIOUS TEXT FOLLOWS LOGICAL END OF THE COMMAND:	Unrecognizable command argument is detected.

ILLEGAL BACKGROUND COLOR SPECIFICATION	The background color parameter is missing or out of range in the DEFAULT_COLOR command.
ILLEGAL FOREGROUND COLOR SPECIFICATION	The foreground color parameter is missing or out of range in the DEFAULT_COLOR command.
INDEPENDENT VALUE IS OUT OF ORDER IN DATA SET	The independent values must be in ascending order for a line chart.
INTERNAL SOFTWARE ERROR	There is an error in the TRENDVIEW charting package. Please report this error to your local Data General systems engineer.
LEGEND TITLE TRUNCATED TO 16 CHARACTERS	The legend title entered in the LEGEND command is longer than 16 characters. The remaining characters are truncated.
LINEAR REGRESSION DATA IS IMPROPER	Data values are all zero or the data does not describe a function.
LOG AXIS SPECIFIED WITH ZERO OR NEGATIVE DATA	Range specified for a log axis must be positive.
LOG DEPENDENT AXIS SPECIFIED FOR BAR CHART	Only linear dependent axis allowed for bar charts.
MAXIMUM NUMBER OF PIE CHART COMPONENTS IS 12	More than 12 components specified for a pie chart.
MISSING REQUIRED KEYWORD OR PARAMETER	Required keyword is missing or misspelled.
NEGATIVE VALUE SPECIFIED FOR MAJOR TICK SPACING	Major tick spacing specified must be non-negative.
NO PARAMETERS SPECIFIED IN MAJOR/MINOR_TITLE COMMAND	Major and minor titles are required. Minor title may be a blank line.
NUMBER OF INDEPENDENT VALUES EXCEEDS IMPLEMENTATION LIMIT OF 100	The maximum number of data values in the data table is 100.
QUOTED STRING LACKS CLOSING QUOTE MARK	Strings composed of more than one word must be enclosed in quote marks.
STRING (NAME OR TITLE) MISSING FROM COMMAND LINE	String was expected (E.g. After a title command)
STRING'S LENGTH EXCEEDS IMPLEMENTATION LIMIT OF _____	A string's maximum length is 136 characters.
THE CURRENT DATA SET CONTAINS NO DATA TO BE CHARTED	Data table is not present.
THE NAME OR NUMBER OF A COMPONENT IS REQUIRED	The required name or number argument is missing.
THE NUMBER OF COMPONENTS EXCEEDS IMPLEMENTATION LIMIT OF 8	The maximum number of dependent components is 8.
UNKNOWN KEYWORD REQUESTED	Keyword is probably misspelled.
VIEWPORT DIMENSIONS MUST BE IN THE RANGE [0,1]	Viewport dimensions defined are out of range.

Appendix C

SCREENEDIT CONTROL CHARACTERS

The following is a list of SCREENEDIT cursor and line control characters available when using the charting package interactively. These control characters aid in the modification of the current input line.

Control Character What It Does

CTRL-A	Moves the cursor to the end of the line. In command mode, repeats the last command issued.
CTRL-B	Moves cursor backward to the last letter in each word.
CTRL-E	Lets you insert one or more characters before the cursor. Pressing NEWLINE or CTRL-E terminates the insert mode and displays the edited line.
CTRL-F	Moves the cursor forward to the first letter of each word.
CTRL-H HOME key	Moves the cursor to the beginning of the line.
CTRL-K	Erases all characters to the right of the cursor.
CTRL-X → key	Moves the cursor to the right one character.
CTRL-Y ← key	Moves the cursor to the left one character.
CTRL-U	Deletes all the characters in the line.
CTRL-I TAB key	Moves the cursor to the next tab stop. Tab stops are in columns: 9, 17, 25, 33, 41, 49, 57, 65, 73.
DEL	Erases the character to the left of the cursor and closes up the line.
CR	Enters the line up to the cursor position and erases the remainder of the line.

Appendix D

COMMANDS AND DEFAULTS

The following is a alphabetized list of the commands available with the charting package. The letters in bold print are the unique abbreviations for that keyword. The default value listed is the value that the charting package will use if no value for that command or command argument is supplied by you.

If the default value specified is “(autoranging)”, it means that the autoranging algorithm will determine the default for the argument.

<u>Command</u>	<u>Default</u>
BAR [COMPARATIVE HIDDEN STACKED]	BAR COMPARATIVE
BYE	
CHART_DIRECTION { VERTICAL HORIZONTAL }	CHART_DIRECTION VERTICAL
COMMENT <u>descriptive text</u>	
COMPONENT_NAME <u>component number</u> <u>component name</u>	
DEFAULT_COLOR <u>foreground color</u> <u>background color</u>	DEFAULT_COLOR 1 0
DEP_AXIS [scale options] [tick mark options] [TITLE <u>title options</u>]	DEP_AXIS LINEAR RANGE AUTO INTERCEPT (autoranging) MAJOR_TICKS (autoranging) MINOR_TICKS 1 TITLE CENTER FONT NORMAL COLOR 1
Scale Options: [LINEAR LOG LN] [RANGE { min max AUTO }] [INTERCEPT <u>value</u>]	
Tick Mark Options: [MAJOR_TICKS <u>value</u>] [MINOR_TICKS <u>steps</u>] [GRID_LINES]	
Title Options: TITLE [CENTER MIN MAXIMUM] [“string”] [FONT <u>type</u>] [COLOR <u>code</u>]	
DEVICE <u>pathname</u>	DEVICE @CONSOLE
DO <u>CLI command</u>	
END_DATA	
ERASE	
EXPLODE <u>sector</u> [sector] ...	

Command

Default

FILL_PATTERN component pattern name [fill color] [border color]

FILL_PATTERN (the first component will be assigned the first fill pattern listed on page 7-5, the second component will be assigned the second fill pattern listed on page 7-5, etc.)
0 1

HELP [subject]

IND_AXIS [scale options] [tick mark options] [**TITLE** title options]

IND_AXIS LINEAR RANGE AUTO INTERCEPT (autoranging)
MAJOR_TICKS (autoranging) MINOR_TICKS 1 TITLE
CENTER FONT NORMAL COLOR 1

Scale Options:

[LINEAR
LOG
LN **]** **[** RANGE { min max
AUTO **}** **]** (**INTERCEPT** value)

Tick Mark Options:

[**MAJOR_TICKS** value] [**MINOR_TICKS** steps] [**GRID_LINES**]

Title Options:

TITLE **[** CENTER
MIN
MAXIMUM **]** ["string"] [**FONT** type] [**COLOR** code]

INTERPOLATION line connection type

INTERPOLATION LINE

INVISIBLE sector [sector] ...

LEGEND { "legend title"
NONE }

LEGEND is drawn without a title.

LINE

LINE_STYLE component line style [color]

LINE_STYLE (the first component will be assigned the first line style listed on page 8-10, the second component will be assigned the second line style listed on page 8-10, etc.) 1

MAJOR_TITLE [**FONT** type] [**COLOR** number] ["chart title"]

MAJOR_TITLE FONT NORMAL COLOR 1

MARKER component marker type [color]

MARKER (the first component will be assigned the first marker symbol listed on page 8-11, the second component will be assigned the second marker symbol listed on page 8-11, etc.)
1

MINOR_TITLE [**FONT** type] [**COLOR** number] ["chart title"]

MINOR_TITLE FONT NORMAL COLOR 1

NEW_CHART pathname [**NODEFAULT**]

NEW_CHART @NULL

NORMAL sector [sector] ...

PAUSE

PIE [component]

PIE 1

PIE_FILL_PATTERN sector pattern name [fill color] [border color]

PIE_FILL_PATTERN (the first sector will be assigned the first fill pattern listed on page 9-5, the second sector will be assigned the second fill pattern listed on page 9-5, etc.) 0 1

<u>Command</u>	<u>Default</u>
PRINT	
SAVE <u>pathname</u> [NODATA]	
SAVE @OUTPUT	
TABLE	
TABLE <u>pathname</u>	
TITLE__POSITION { TOP BOTTOM NONE }	TITLE__POSITION TOP
TRENDVIEW	
TRENDVIEW <u>pathname</u> [<u>pathname</u>] ...	
USE__MARKERS { NO YES }	USE__MARKERS NO
VIEWPORT <u>horizontal position</u> <u>vertical position</u> <u>width</u> <u>height</u> [NOERASE]	VIEWPORT 0 0 1 .75

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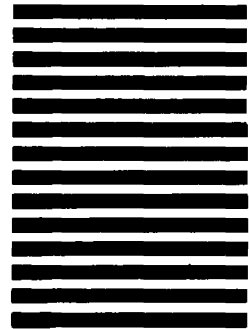
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 AP/130
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 (Specify) _____

Qty. Installed	Qty. On Order

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