BUSINESS GRAPHICS SOFTWARE BY COMPUTER SUPPORT CORPORATION

Picture Perfect™

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HEWLETT-PACKARD SERIES 150 PERSONAL COMPUTER

Product No. 45462A

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WELCOME TO PICTURE PERFECT!

Picture Perfect is a powerful, comprehensive graphics software system that is easy to learn and easy to use. Picture Perfect uses a simple "fill-in-the-blanks" approach to tell the computer how to display your data.

You can use Picture Perfect to transform your data into Pie, Vertical Bar, Horizontal Bar or Line Charts without knowing anything more about graphics and computers than will be presented in the next few pages. In the beginning let Picture Perfect make most of the decisions for you. Simply fill in your data and request a plot.

If you're wondering "Can it be that simple?" . . . it is!

HELP

One of the reasons Picture Perfect is so easy to use is that we have built in a HELP facility to answer your questions. Help screens are available by simply touching the HELP key. We've eliminated the need for a cumbersome reference manual and put the information at your fingertips.

By now, you're well aware of how the Touch Screen has added another dimension to the way we communicate with the HP 150. For information about a field on one of the menus, touch it and then touch HELP. There is also an Index of Help screens you can turn to by touching the INDEX key. Touch a topic listed in the Index and more Help is displayed.

**** HELP INDEX ****

What is Help?	More About P/Perfect	Primary Functions
Getting Started	Vertical Bar Charts	Interactive Functions
Picture Perfect Menus	Horizontal Bar Charts	Plot Options
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P/Perfect & HP Touch	Line Charts	User Aids
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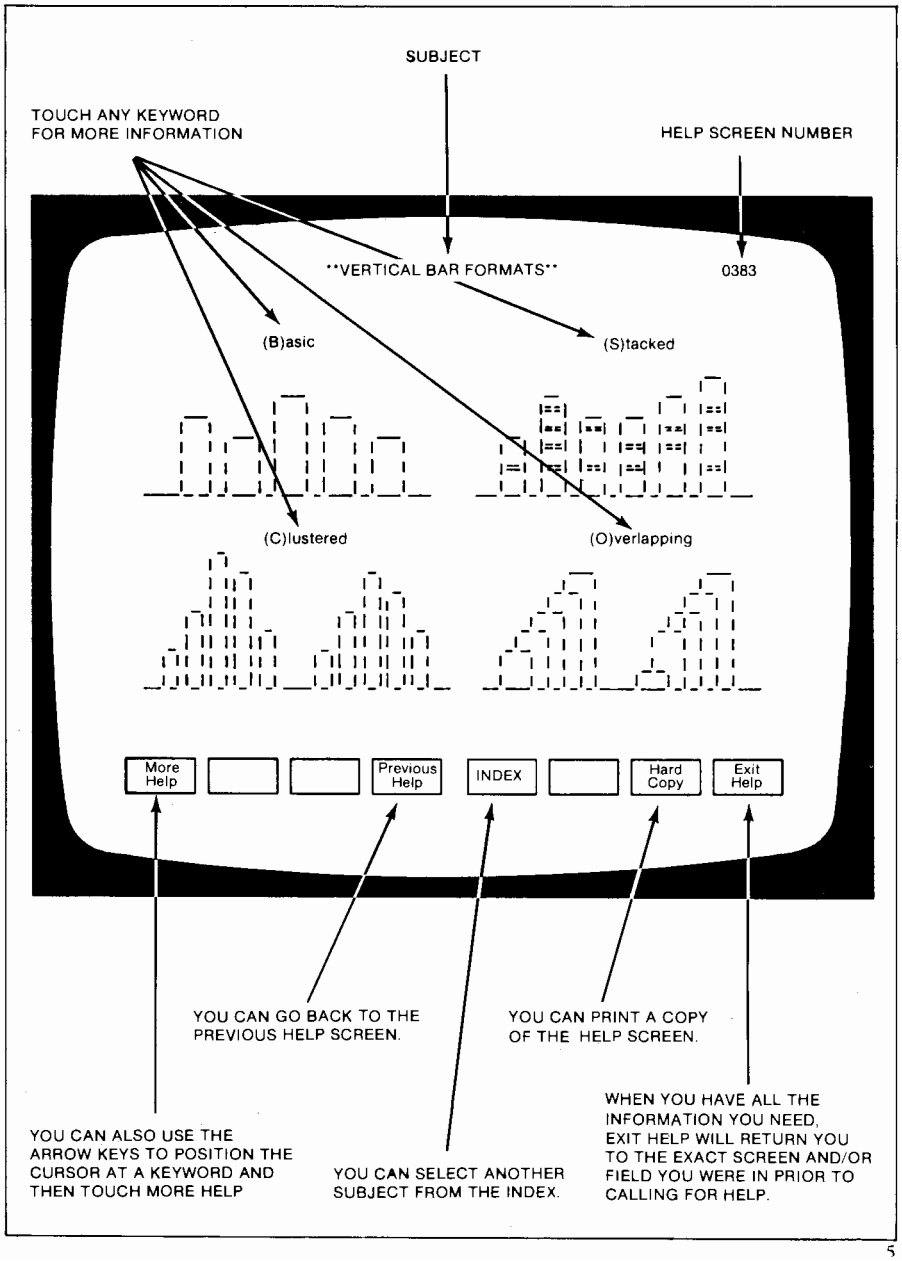
Helpful Hints	Coming Attractions	Visual Aids

Keywords, on related topics, are highlighted in many of the Help screens. For more information about the topic suggested by the keyword, touch the keyword. You can then return to the previous Help screen by touching Previous Help.



GETTING STARTED

Picture Perfect is supplied on either 5¼" flexible discs or 3½" micro-diskettes.

Each Picture Perfect product is recorded on a separate master disc. Once you have installed the products, as explained in the installation procedure that follows, store the master copies in a safe place.

Picture Perfect was designed for the HP 150 with 256K of memory. HP flexible and hard disc units are supported as are the 2, 4, 6 and 8 pen HP plotters (either HP-IB or serial).

THE SOFTKEY

Your Picture Perfect software is protected from unauthorized use by CSC's innovative SOFTKEY. Our approach to software security features a portable SOFTKEY which can be plugged in at the back of the computer or the plotter. Unlike some copy protection techniques, the SOFTKEY allows you to make archival copies of Picture Perfect and simplifies the installation of the software in a hard disc (Winchester type) environment.

The SOFTKEY has NO effect on the operation of the equipment or on other software products and the SOFTKEY can be left attached to the computer. To prevent unauthorized use of the software, simply remove the SOFTKEY. But remember, Picture Perfect will NOT operate unless the SOFTKEY is in place.

FORMATTING WORK DISCS

Before installing Picture Perfect, you must format four blank work discs, one for each product.

The formatting procedure is described in detail in Chapter 7 of your HP 150 Owner's Manual entitled "Formatting a Disc."

1. Insert the HP supplied operating system disc containing the FORMAT program in one of the disc drives. Press "Reread Discs". Touch FORMAT.
2. Touch "Start Applic".
3. Place a new, blank disc in one of the disc drives and specify the disc drive by touching the letter on the FORMAT menu.

4. You will be prompted to enter a "label" of up to 11 characters. We suggest you use "Graphics" for each of the four discs. Press the Return key.
5. Touch "Start Format". Do NOT use the "Copy System" option of FORMAT as there is not enough room on the disc for both Picture Perfect and the MS-DOS operating System.
6. When "Operation Complete" appears in the message line, remove the formatted disc, touch "Start Over" and repeat steps 3 thru 6.

INSTALLATION

Once you have formatted a work disc for each product, you are ready to install the products so they can be selected from the P.A.M. menu. You must install each of the products from the master discs.

The installation procedure is covered in detail in Chapter 6 of your HP 150 Owner's Manual, entitled "Applications".

1. Place a copy of the HP supplied DISC APPLICATIONS in one of the disc drives and touch "Start Applic".
2. A new set of function keys will appear on the screen. Touch "Install Applic".
3. Place one of the Picture Perfect master discs in one of the drives and the formatted work disc in another. You must then specify the letter of the TO and FROM drives. The FROM drive contains the Picture Perfect master and the TO drive the formatted work disc.
4. Touch "Show Applic" to display the name of the Picture Perfect program that is in the FROM drive. If the program name does not appear, touch "Reread Discs".
5. Touch the Picture Perfect program name and once it is highlighted, touch "Start Install".
6. When the "Install Complete" message appears, touch "Exit Select" and repeat steps 3 thru 6 for each of the other Picture Perfect products.

PICTURE PERFECT AND P.A.M.

Now that you have completed the installation of the Picture Perfect products, insert the system disc in drive "A" (left drive) and the installed version of Picture Perfect Vertical Bar Charts in any other drive. The P.A.M. menu lists all of the applications that are installed under P.A.M. Among them should be PPERFECT/Vbar (Vertical Bar). If PPERFECT/Vbar does not appear, touch "Reread Discs".

Touch PPERFECT/Vbar and then touch "Start Applic" to load the Vertical Bar Chart program. Once PPERFECT/Vbar has loaded, the message line will prompt you to:

"Please PRESS, then RELEASE the button on the SOFTKEY"

The computer will beep and unless the button is pressed within a reasonable period of time, the program will return to the P.A.M. menu.

Once the button on the SOFTKEY is pressed, Picture Perfect will load the default menus and then display a WELCOME screen with further instructions.

JUST FOR PRACTICE

The following is a brief exercise that will produce a simple chart after which we recommend that you browse through the HELP screens and complete the practice exercises for each of the four Picture Perfect products.

Having just loaded the Vertical Bar Chart program, the function key in the lower left hand corner of the screen should read MENUS.

TASK	*ACTION*
ENTER TITLES	Touch **MENUS**. The function keys will change. Touch **Titles**. The Titles menu will appear with the cursor positioned in the first title line. Type the name of **YOUR COMPANY**.
ENTER DATA	Touch **Data** and the Data menu will appear. Touch the first label and enter **MARCH**.

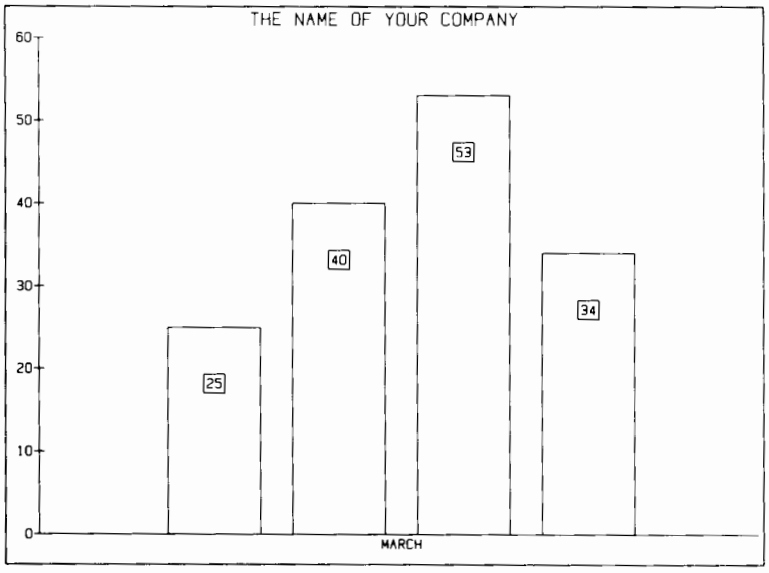
Tab over to the field under Bar #1 and type **25**, representing the sales of Product A. Tab to Bar #2 and type **40**, (Product B). Tab to Bar #3 and type **53** (Product C). Tab to Bar #4 and type **34** (Product D).

Labels	Bar #1	Bar #2	Bar #3	Bar #4
MARCH	25	40	53	34

PLOT

Touch **PRIMARY**. Touch **PLOT**. Touch **Plot to Screen**

The chart will appear on the screen as pictured below.



To return to the WELCOME screen, Touch **START OVER**.

READING AND WRITING FILES

Picture Perfect can create, display and save charts. Charts can be created by reading a pre-existing chart, graphic, or application file.

Chart Files:

Chart files contain the contents of all of the menu fields. Once saved, a chart can be reproduced by loading the chart file which restores the menu fields. You can then alter the data, plot the chart and save the updated version.

Data can be exchanged between any of the Picture Perfect products by loading only the data from the chart file of one product into the Data menu of another product.

Graphics Files

Graphics Files are used to store the image of the chart displayed on the screen. Like a photograph, the image cannot be changed once it has been saved. To redisplay the chart, load the file and the stored image is displayed instantly.

Charts saved in this format can be played back in rapid succession using the Picture Perfect Show utility program.

Application Files

Picture Perfect can read data files produced by most of the popular spreadsheet and data base products in any of the following formats:

- Data Interchange Files (DIF)*
- Fixed format Row/Column files
- Variable format Row/Column files

For more information about loading application files refer to the HELP screens and the Appendix at the back of this Handbook.

*DIF files must be in column format.

FEATURES

Picture Perfect allows you to create, modify, store and recall Vertical Bar Charts using the touch screen of the HP 150. Among the features available are:

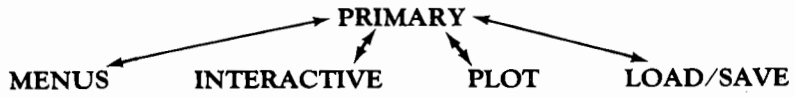
- Load data from any of the popular spreadsheet or data base products
- Basic, Stacked, Clustered, and Overlapping bar formats
- 24 clusters with up to 8 bars per stack/cluster
- Three title lines of up to 65 characters each may be used to caption a chart
- Nine blocks of general annotation text may be placed anywhere on a chart using the touch screen
- Top, bottom, left, and right margins may be set precisely, allowing multiple charts to be plotted on a single page
- A grid may be overlayed parallel to the X-axis
- 55 shading patterns are available for shading bars
- The size of the smallest and largest character can be specified in inches
- Two independent Y-axes
- Up to eight legends may be placed anywhere on a chart
- Numeric values may be placed at the base or top of bars, or windowed within bars
- Bars are automatically "broken" when they exceed the limit of the Y-axis
- The total of all the bars in a stack can be placed on top of the stack
- Percentages can be substituted for the data values in a stacked chart

Picture Perfect Function Tree for Vertical Bar Charts

Primary	MENUS	INTER-ACTIVE	PLOT	LOAD SAVE	START OVER	USER AIDS	EXIT	HELP
Menus	PRIMARY	Titles	Data	Legends	Text	Axes	Format	HELP
Interactive	PRIMARY	Alter Legends	Alter Text				Overlay Grid	HELP
Alter Legends	Move Legend	Size Legend	Align Legend	Set Align			Done	HELP
Move Legend	Step 1	Fine Touch	Align Legend	Next Legend	Size Legend		Done	HELP
Size Legend	Size 1	Smaller Legends	Larger Legends	Next Legend	Move Legend		Done	HELP
Alter Text	Move Text	Size Text	Align Text	Set Align			Done	HELP
Move Text	Step 1	Fine Touch	Align Text	Next Text	Size Text		Done	HELP
Size Text	Size 1	Smaller Text	Larger Text	Next Text	Move Text		Done	HELP
Plot	PRIMARY		Plot to Screen	Plot to Plotter	Test Plot	Trans-parency		HELP
Plot to Plotter	Stop Plot							Pause Plot
Pause Plot	Continue							
Load/Save	PRIMARY		Load Data	Load Chart	Save Chart		File Manager	HELP
Start Over				Yes	No			
User Aids	PRIMARY		List Files	Print Utility	Graphics Files	Load DIF Row/Col		HELP
Print Utility	PRIMARY			Print Graphics	Print Menus	Print Data		HELP
Print Menus	All Menus	Titles	Data	Legends	Text	Axes	Format	Exit Print
Graphics Files	PRIMARY			Save Graphics	Load Graphics		File Manager	HELP
Load DIF Row/Col	PRIMARY			Load Row/Col	Load DIF		File Manager	HELP
Exit				Yes	No			
Help	More Help				INDEX		Hard Copy	Exit Help

THE PICTURE PERFECT FUNCTION TREE

The organization of the Picture Perfect function keys is illustrated by the Function Key Tree. Functions are classified as primary or secondary. The Primary level, shown at the top of the tree, provides access to each of the Primary functions.



The Primary functions are organized, left to right, in a progression typical of the steps necessary to create, plot and save a chart.

To create a new chart, touch the **MENUS** key. The secondary functions for MENUS will now be displayed. These are also organized left to right in the order you might fill in the menus. To return to the primary level from any other level, touch the **PRIMARY** key. The **HELP** key is always on the right.

PRACTICE MAKES PERFECT

The following exercises will help you get started using your new Picture Perfect software.

Each is a simple step-by-step procedure, designed to familiarize you with the program's capabilities. The exercises are arranged to help you build new skills upon previously learned ones, so please do them in order. In completing the exercises, you can press the function keys on the keyboard or touch the screen. Function keys are indicated in **BOLD** type.

Make certain that you have configured your 150 for the type of plotter you are using, either HP-IB or serial (see Appendix A of the HP 150 Owner's Guide entitled "Configuration"). You will also need a blank, formatted work disc to save your chart files.

To begin Exercise #1, select PPERFECT/Vbar from the P.A.M. menu. The P.A.M. menu will be replaced after a moment by the Picture Perfect copyright notice. Once the program has loaded, the message line will prompt you to:

"Please PRESS, then RELEASE the button on the SOFTKEY"

When the button is pressed, Picture Perfect will load the default menus and display a WELCOME screen and the Primary function keys.

VERTICAL BAR CHARTS EXERCISE #1

— ADD TITLES —

1. Touch **MENUS** . Touch **Titles** . The Titles menu will appear with the cursor positioned in the first 'Title' field.
2. Type the name of **YOUR COMPANY** in the 'Title 1' field.

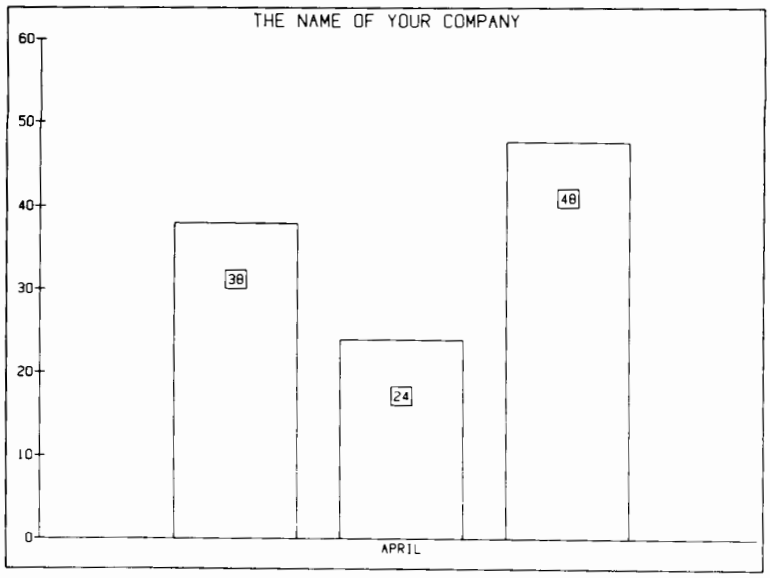
— ENTER DATA —

3. Touch **Data** . The Data menu will appear with the cursor positioned in the first 'Pen' field.
4. Touch line 1 of the 'Labels' field and type **APRIL**, as shown below. Tab over to the field under Bar #1 and type the value **38**, representing the sales of Product A in April. Tab to Bar #2 and type the value **24**, (Product B). Tab to Bar #3 and type the value **48**, (Product C). Bar #4 should be blank.

Labels		Bar #1	Bar #2	Bar #3	Bar #4
APRIL		38	24	48	

— PLOT —

5. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The chart will appear on the screen as pictured below.



THE PICTURE PERFECT FUNCTION TREE

The organization of the Picture Perfect function keys is illustrated by the Function Key Tree. Functions are classified as primary or secondary. The Primary level, shown at the top of the tree, provides access to each of the Primary functions.

The Primary functions are organized, left to right, in a progression typical of the steps necessary to create, plot and save a chart.

To create a new chart, touch the **MENUS** key. The secondary functions for MENUS will now be displayed. These are also organized left to right in the order you might fill in the menus. To return to the primary level from any other level, touch the **PRIMARY** key. The **HELP** key is always on the right.

PRACTICE MAKES PERFECT

The following exercises will help you get started using your new Picture Perfect software.

Each is a simple step-by-step procedure, designed to familiarize you with the program's capabilities. The exercises are arranged to help you build new skills upon previously learned ones, so please do them in order. In completing the exercises, you can press the function keys on the keyboard or touch the screen. Function keys are indicated in **BOLD** type.

Make certain that you have configured your 150 for the type of plotter you are using, either HP-IB or serial (see Appendix A of the HP 150 Owner's Guide entitled "Configuration"). You will also need a blank, formatted work disc to save your chart files.

To begin Exercise #1, select PPERFECT/Vbar from the P.A.M. menu. The P.A.M. menu will be replaced after a moment by the Picture Perfect copyright notice. Once the program has loaded, the message line will prompt you to:

"Please PRESS, then RELEASE the button on the SOFTKEY"

When the button is pressed, Picture Perfect will load the default menus and display a WELCOME screen and the Primary function keys.

VERTICAL BAR CHARTS EXERCISE #1

— ADD TITLES —

1. Touch **MENUS** . Touch **Titles** . The Titles menu will appear with the cursor positioned in the first 'Title' field.

2. Type the name of **YOUR COMPANY** in the 'Title 1' field.

— ENTER DATA —

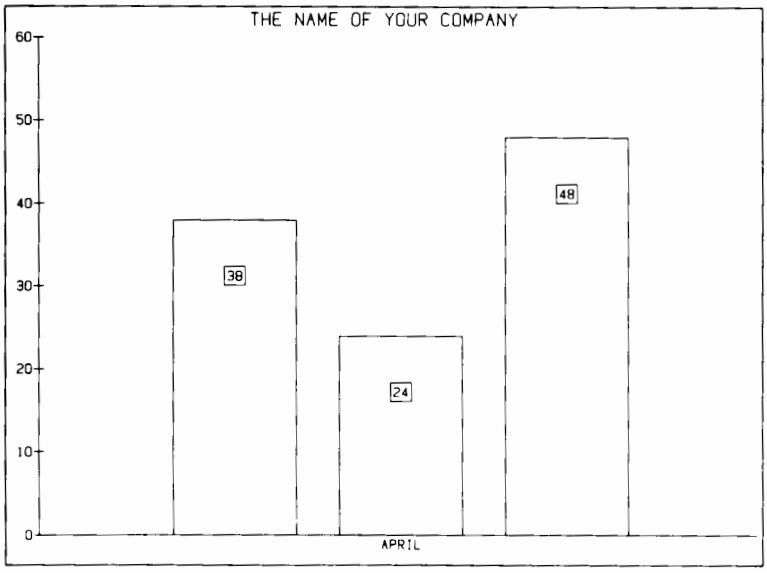
3. Touch **Data** . The Data menu will appear with the cursor positioned in the first 'Pen' field.

4. Touch line 1 of the 'Labels' field and type **APRIL**, as shown below. Tab over to the field under Bar #1 and type the value **38**, representing the sales of Product A in April. Tab to Bar #2 and type the value **24**, (Product B). Tab to Bar #3 and type the value **48**, (Product C). Bar #4 should be blank.

Labels		Bar #1	Bar #2	Bar #3	Bar #4
APRIL		38	24	48	

— PLOT —

5. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The chart will appear on the screen as pictured below.

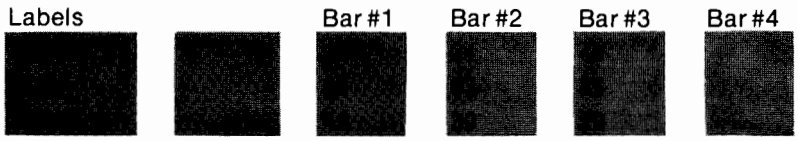


VERTICAL BAR CHARTS EXERCISE #2

In Exercise #1 you plotted the unit sales of products A, B, and C for the month of April as currently displayed on the screen. In Exercise #2 you will add two more months of data and save the chart.

— ENTER DATA —

1. Touch **MENUS**. Touch **Data**. Touch line 2 of 'Labels', and enter the data for May and June as shown below.

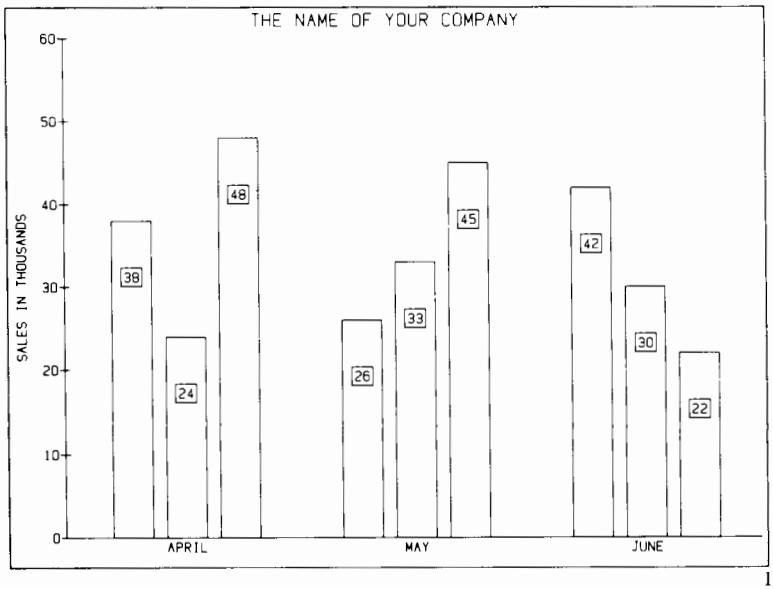


— ADD Y-AXIS DESCRIPTION —

2. Touch **Axes**. The cursor will be positioned in the 'Left Y-Axis Description' field. Type the words **SALES IN THOUSANDS**.

— PLOT —

3. Touch **PRIMARY**. Touch **PLOT**. Touch **Plot to Screen**. The chart will appear on the screen as pictured below.



— SAVE THE CHART —

4. Touch **LOAD SAVE**. The menu shown below will appear on the screen.

Drive/Directory

B:

Filename

VBAR#2 .CSC

5. Insert a blank, formatted work disc in drive B. Type **B:** in the 'Drive/Directory' field. Touch the 'Filename' field and type **VBAR#2**.

6. Touch **Save Chart**. A message will indicate that the chart is being saved. When the chart has been saved, the Primary function keys will be displayed.

— LOAD THE CHART —

7. To load the chart you just saved, touch **LOAD SAVE**. The menu shown above will appear on the screen. The Drive and Filename entered in step 5 are now used to load the chart file. Touch **Load Chart**. A message will ask you to confirm the load operation as loading a file replaces the information in the menus. Touch **Yes** to proceed.

— PLOT —

8. Touch **PLOT**. Touch **Plot to Screen**. The saved chart will be reproduced on the screen as pictured in step 3.

VERTICAL BAR CHARTS EXERCISE #3

In Exercise #2, you added two months of data and plotted the sales of products A, B, and C as currently displayed on the screen. In Exercise #3, you will add legends and text, change the format, use the Interactive mode to move text and plot the chart.

— SELECT SHADING PATTERNS —

1. Touch **MENUS**. Touch **Data**. Touch the 'Pattern' field located between the Pen and Axis fields and then touch **HELP**. The HELP screen that is displayed will describe the available shading patterns. Touch **Exit Help** to return to the Data menu. Enter a different pattern number in the 'Pattern' field for each bar. We suggest **4** for Bar #1, **3** for Bar #2, and **5** for Bar #3.

— ADD LEGENDS —

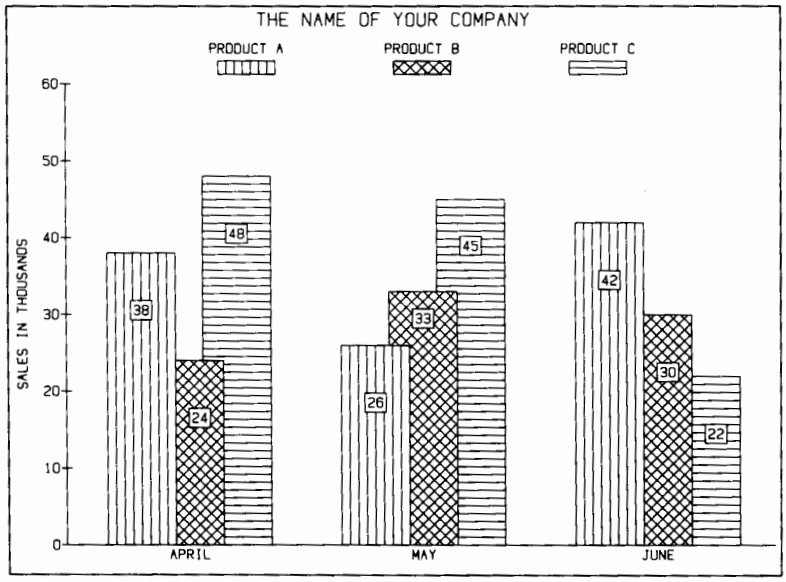
2. Touch **Legends** . Touch the first line of Legend 1 and type **PRODUCT A**. Tab to Legend 2 and type **PRODUCT B**. Tab to Legend 3 and type **PRODUCT C**.

— CHANGE CHART FORMAT —

3. Touch **Format** . Touch the 'Bar Format' field and type the letter **O** for Overlapping bars.

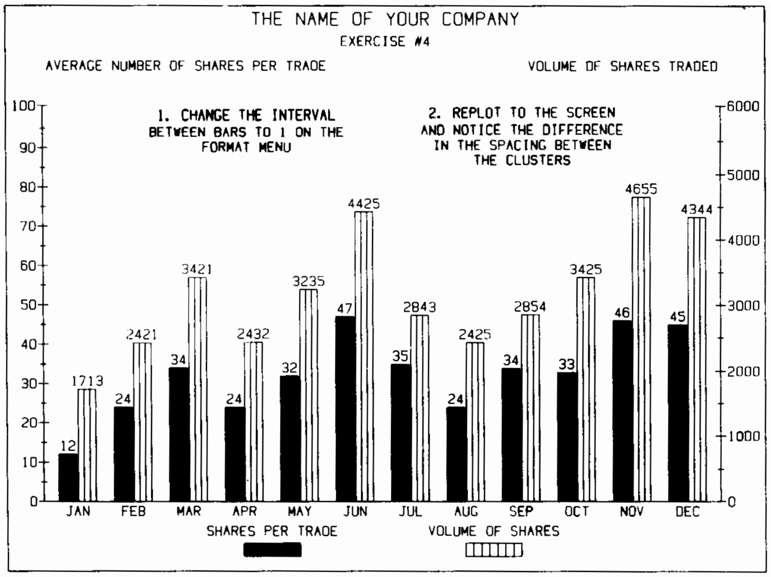
— PLOT —

4. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The legends for Products A, B, and C will correspond to the shading patterns selected for each of the bars in step 1. The chart will appear on the screen as pictured below.



Enter the data, plot the chart to the screen and follow the directions that appear on the screen as part of the chart.

Following Exercise #4, three sample charts are shown that further illustrate the capabilities and versatility of Picture Perfect.



TITLES

	PEN	SIZE	BOLD
TITLE 1: [illegible] OF YOUR COMPANY	P	6	N
TITLE 2: [illegible]	P	4	N
TITLE 3:	P	4	N

CHART-ID	LOCATION	SIZE
	BR	3

DATA

	LABELS	BAR VALUES	PATTERN	PATTERN	PATTERN	PATTERN
	PEN SIZE SLANT?	PEN SIZE LOC	PEN I AXIS	PEN I AXIS	PEN I AXIS	PEN I AXIS
	P 4 N	P 4 [illegible]	P 9 L	P 4 R	P 0 L	P 0 L

	<------------ LABELS ------------>		-BAR #1-	-BAR #2-	-BAR #3-	-BAR #4-
1	[illegible]		12	1713		
2	[illegible]		24	2421		
3	[illegible]		34	3421		
4	[illegible]		24	2432		
5	[illegible]		32	3235		
6	[illegible]		47	4425		
7	[illegible]		35	2843		
8	[illegible]		24	2425		
9	[illegible]		34	2854		
10	[illegible]		33	3425		
11	[illegible]		46	4655		
12	[illegible]		45	4344		
13						
14						
15						
16						
17						
18						

LEGENDS

PEN [P] SIZE OF LEGENDS [4]

XB [ ] Y [ ] LEGEND <------- 1 ------->	XB [ ] Y [ ] LEGEND <------- 2 ------->	XT [ ] Y [ ] LEGEND <------- 3 ------->	XT [ ] Y [ ] LEGEND <------- 4 ------->
SHARES PER TRADE	VOLUME OF SHARES		

TEXT

PEN [P] SIZE [4] X [4] Y [100] <---------- 1 ---------->	PEN [P] SIZE [4] X [9] Y [100] <---------- 2 ---------->	PEN [P] SIZE [4] X [ ] Y [ ] <---------- 3 ---------->
1. CHANGE THE INTERVAL BETWEEN BARS TO 1 ON THE FORMAT MENU	2. REPLOT TO THE SCREEN AND NOTICE THE DIFFERENCE IN THE SPACING BETWEEN THE CLUSTERS	

PEN [P] SIZE [4] X [ ] Y [ ] <---------- 4 ---------->	PEN [P] SIZE [4] X [ ] Y [ ] <---------- 5 ---------->	PEN [P] SIZE [4] X [ ] Y [ ] <---------- 6 ---------->

AXES

LEFT Y-AXIS DESCRIPTION: AVERAGE NUMBER OF SHARES PER TRADE

PEN [P] SIZE [4] BOLD? [N] ORIENTATION [H]

LEFT AXIS PARAMETERS

[100]	MAXIMUM VALUE	PEN	[P]
[10]	LABEL INTERVAL	SIZE	[4]
[5]	TIC INTERVAL	STYLE	[1]
[0]	MINIMUM VALUE		

RIGHT Y-AXIS DESCRIPTION: VOLUME OF SHARES TRADED

PEN [P] SIZE [4] BOLD? [N] ORIENTATION [H]

RIGHT AXIS PARAMETERS

[P]	PEN	MAXIMUM VALUE	[6000]
[4]	SIZE	LABEL INTERVAL	[1000]
[1]	STYLE	TIC INTERVAL	[500]
		MINIMUM VALUE	[0]

X-AXIS DESCRIPTION

PEN [P] SIZE [4] BOLD? [N]

FORMAT

BAR FORMAT (C,O,B,S) [C]

SIZE OF INTERVAL:

- BETWEEN BARS [2]
- BETWEEN CLUSTERS [0]
- BETWEEN STACKS [1]

STACK OPTIONS:

- STACK TOTAL ON TOP? [N]
- STACK VALUE AS A %? [N]

PRIMARY PEN [1]

OUTLINE PEN [S]

BOLD OUTLINE? [N]

BASELINE? [Y]

FRAME? [N]

BORDER? [Y]

GRID? [N]

HEIGHT [8.5] WIDTH [11.0]

PAPER SIZE AND MARGINS

TOP MARGIN [0.6]

LEFT MARGIN [0.6]

DIMENSIONS ARE IN INCHES

RIGHT MARGIN [0.6]

BOTTOM MARGIN [0.6]

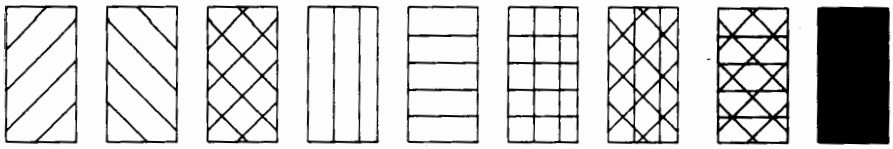
SIZE OF CHARACTERS

SMALLEST - SIZE 0 [.07]

LARGEST - SIZE 9 [.25]

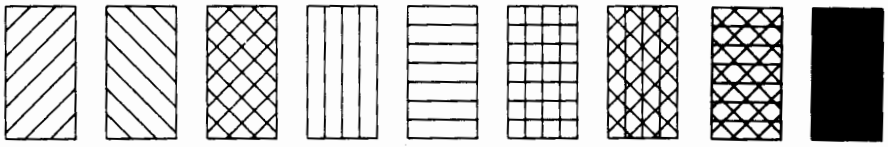
Bar Shading Patterns

LOW DENSITY PATTERNS



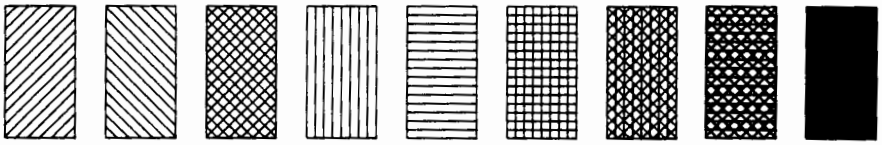
10 20 30 40 50 60 70 80 90

MEDIUM DENSITY PATTERNS



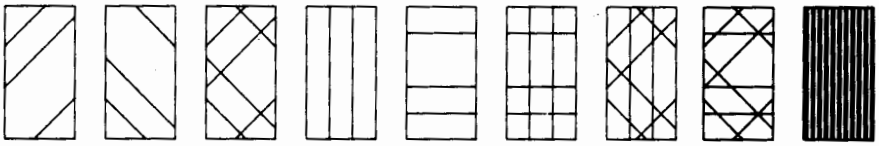
11 21 31 41 51 61 71 81 91

HIGH DENSITY PATTERNS



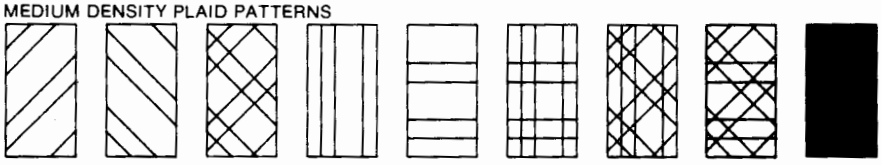
12 22 32 42 52 62 72 82 92

LOW DENSITY PLAID PATTERNS



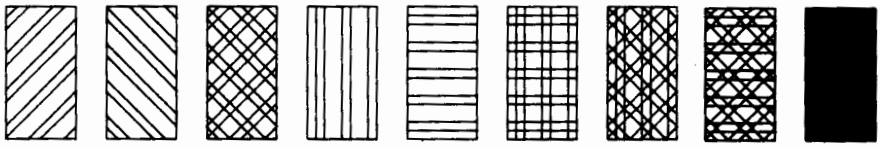
13 23 33 43 53 63 73 83 93

MEDIUM DENSITY PLAID PATTERNS



14 24 34 44 54 64 74 84 94

HIGH DENSITY PLAID PATTERNS

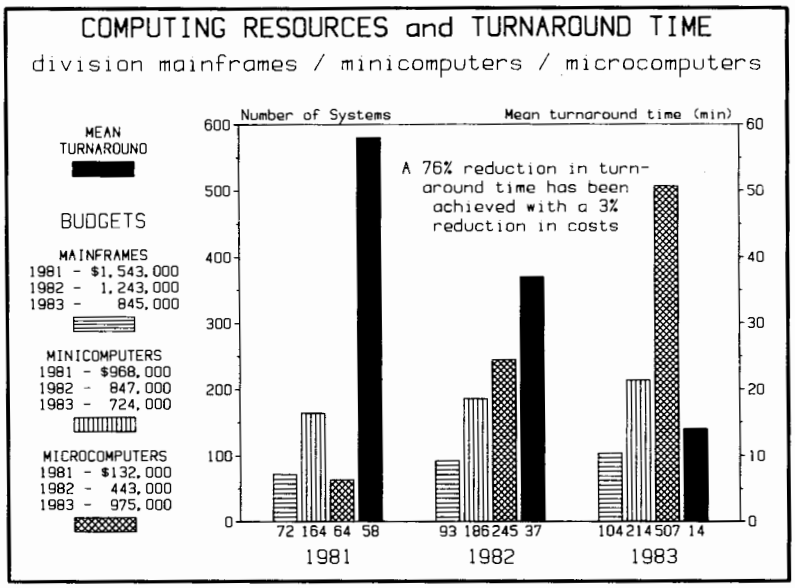


15 25 35 45 55 65 75 85 95

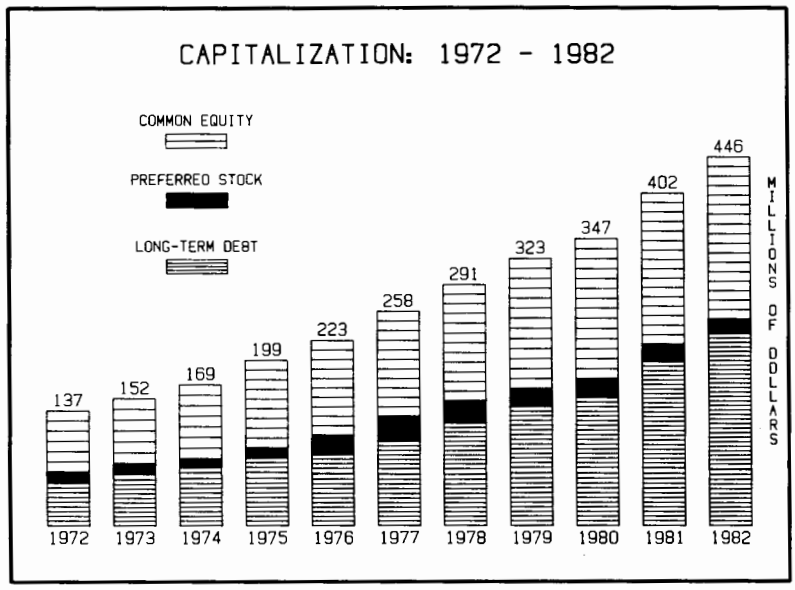
SAMPLE CHARTS

Three sample charts have been included on the program diskette so you can compare the data and menus with the charts reproduced below.

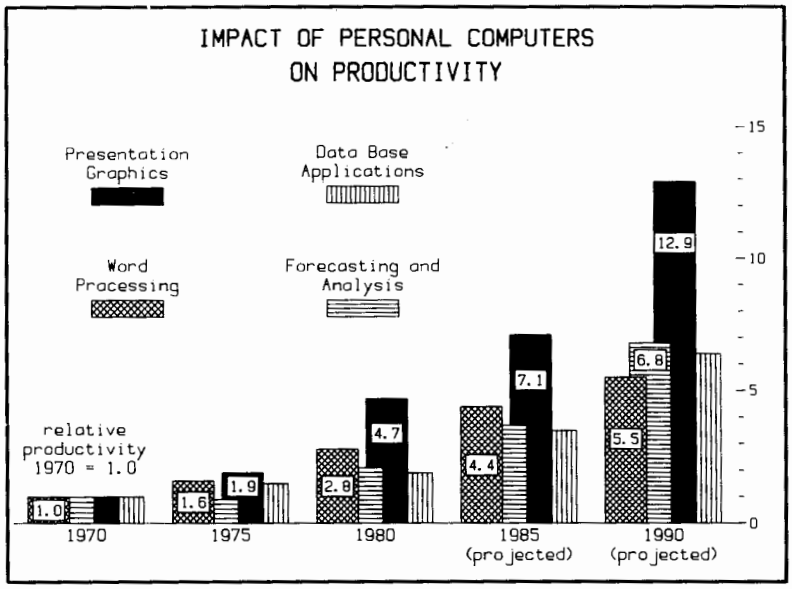
SAMPLE #1 - Filename is 'VSAMPLE1'



SAMPLE #2 - Filename is 'VSAMPLE2'



SAMPLE #3 - Filename is 'VSAMPLE3'



Load the chart files and plot them to the screen. Review the menus and options selected to see how each chart was developed. If you have any questions, touch **HELP** .

Picture Perfect is a fully supported product. If you have any questions or need assistance, call 800-FOR-HPPC.

PICTURE PERFECT™ HORIZONTAL BAR CHARTS

FEATURES

Picture Perfect allows you to create, modify, store and recall Horizontal Bar Charts using the touch screen of the HP 150. Among the features offered are:

- Load data from any of the popular spreadsheet or data base products
- Basic, Stacked, Clustered, and Overlapping bar formats
- 24 clusters with up to 8 bars per stack/cluster
- Three title lines of up to 65 characters each may be used to caption a chart
- Nine blocks of general annotation text may be placed anywhere on a chart using the touch screen
- Top, bottom, left, and right margins may be set precisely, allowing multiple charts to be plotted on a single page
- A grid may be overlayed parallel to the Y-axis
- 55 shading patterns are available for shading bars
- The size of the smallest and largest characters can be specified in inches
- Two independent X-axes
- Up to eight legends may be placed anywhere on a chart
- Numeric values may be placed at the base or top of bars, or windowed within bars
- Bars are automatically "broken" when they exceed the limit of the X-axis
- Bi-directional axes
- The total of all the bars in a stack can be placed at the end of the stack
- Percentages can be substituted for the data values in a stacked chart

Picture Perfect Function Tree for Horizontal Bar Charts

Primary	MENUS	INTER-ACTIVE	PLOT	LOAD SAVE	START OVER	USER AIDS	EXIT	HELP
Menus	PRIMARY	Titles	Data	Legends	Text	Axes	Format	HELP
Interactive	PRIMARY	Alter Legends	Alter Text				Overlay Grid	HELP
Alter Legends	Move Legend	Size Legend	Align Legend	Set Align			Done	HELP
Move Legend	Step 1	Fine Touch	Align Legend	Next Legend	Size Legend		Done	HELP
Size Legend	Size 1	Smaller Legends	Larger Legends	Next Legend	Move Legend		Done	HELP
Alter Text	Move Text	Size Text	Align Text	Set Align			Done	HELP
Move Text	Step 1	Fine Touch	Align Text	Next Text	Size Text		Done	HELP
Size Text	Size 1	Smaller Text	Larger Text	Next Text	Move Text		Done	HELP
Plot	PRIMARY		Plot to Screen	Plot to Plotter	Test Plot	Trans-parency		HELP
Plot to Plotter	Stop Plot							Pause Plot
Pause Plot	Continue							
Load/Save	PRIMARY		Load Data	Load Chart	Save Chart		File Manager	HELP
Start Over				Yes	No			
User Aids	PRIMARY		List Files	Print Utility	Graphics Files	Load DIF Row/Col		HELP
Print Utility	PRIMARY			Print Graphics	Print Menus	Print Data		HELP
Print Menus	All Menus	Titles	Data	Legends	Text	Axes	Format	Exit Print
Graphics Files	PRIMARY			Save Graphics	Load Graphics		File Manager	HELP
Load DIF Row/Col	PRIMARY			Load Row/Col	Load DIF		File Manager	HELP
Exit				Yes	No			
Help	More Help				INDEX		Hard Copy	Exit Help

THE PICTURE PERFECT FUNCTION TREE

The organization of the Picture Perfect function keys is illustrated by the Function Key Tree. Functions are classified as primary or secondary. The Primary level, shown at the top of the tree, provides access to each of the Primary functions.

The Primary functions are organized, left to right, in a progression typical of the steps necessary to create, plot and save a chart.

To create a new chart, touch the **MENUS** key. The secondary functions for MENUS will now be displayed. These are also organized left to right in the order you might fill in the menus. To return to the primary level from any other level, touch the **PRIMARY** key. The **HELP** key is always on the right.

PRACTICE MAKES PERFECT

The following exercises will help you get started using your new Picture Perfect software.

Each is a simple step-by-step procedure, designed to familiarize you with the program's capabilities. The exercises are arranged to help you build new skills upon previously learned ones, so please do them in order. In completing the exercises, you can press the function keys on the keyboard or touch the screen. Function keys are indicated in **BOLD** type.

Make certain that you have configured your 150 for the type of plotter you are using, either HP-IB or serial (see Appendix A of the HP 150 Owner's Guide entitled "Configuration"). You will also need a blank, formatted work disc to save your chart files.

To begin Exercise #1, select PPERFECT/Hbar from the P.A.M. menu. The P.A.M. menu will be replaced after a moment by the Picture Perfect copyright notice. Once the program has loaded, the message line will prompt you to:

"Please PRESS, then RELEASE the button on the SOFTKEY"

When the button is pressed, Picture Perfect will load the default menus and display a WELCOME screen and the Primary function keys.

HORIZONTAL BAR CHARTS EXERCISE #1

— ADD TITLES —

1. Touch **MENUS** . Touch **Titles** . The Titles menu will appear with the cursor positioned in the first 'Title' field.
2. Type the name of **YOUR COMPANY** in the 'Title 1' field.

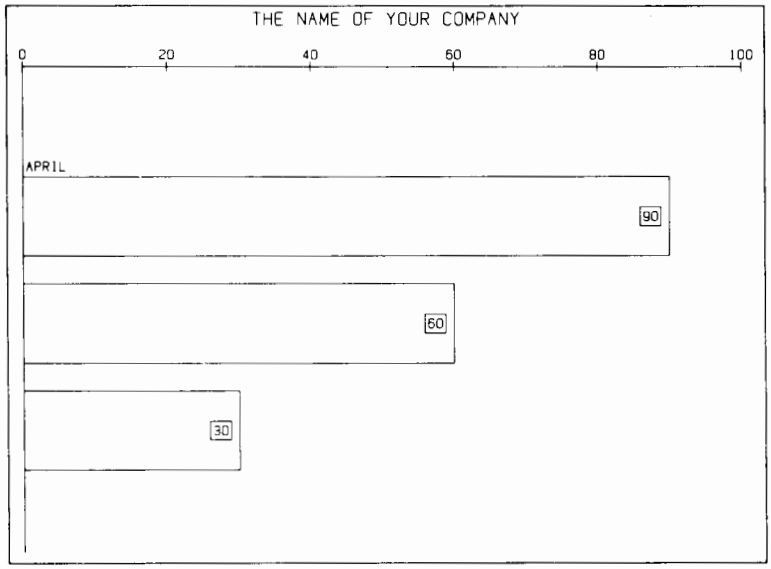
— ENTER DATA —

3. Touch **Data** . The Data menu will appear with the cursor positioned in the first 'Pen' field.
4. Touch line 1 of the 'Labels' field and type **APRIL**, as shown below. Tab over to the field under Bar #1 and type the value **90**, representing Revenue for April. Tab to Bar #2 and type the value **60**, (Expense). Tab to Bar #3 and type the value **30**, (Net Income).

Labels	Bar #1	Bar #2	Bar #3	Bar #4
APRIL	90	60	30	

— PLOT —

5. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The chart will appear on the screen as pictured below.



HORIZONTAL BAR CHARTS EXERCISE #2

In Exercise #1 you plotted Revenue, Expense and Net Income for the month of April as currently displayed on the screen. In Exercise #2 you will add two more months of data and save the chart.

— ENTER DATA —

1. Touch **MENUS**. Touch **Data**. Touch line 2 of 'Labels', and enter the data for May and June as shown below.

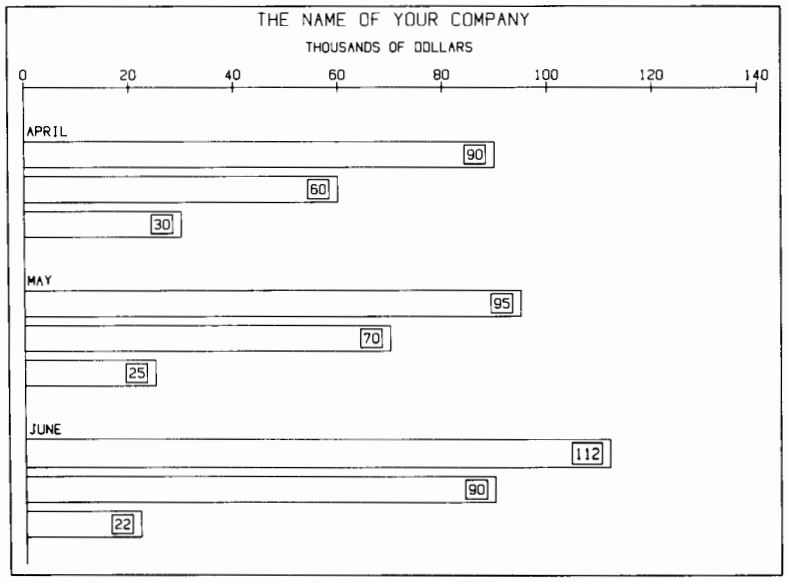
Labels	Bar #1	Bar #2	Bar #3	Bar #4
APRIL	90	60	30	
MAY	95	70	25	
JUNE	112	90	22	

— ADD X-AXIS DESCRIPTION —

2. Touch **Axes**. The cursor will be positioned in the 'Top X-Axis Description' field. Type the words **THOUSANDS OF DOLLARS**.

— PLOT —

3. Touch **PRIMARY**. Touch **PLOT**. Touch **Plot to Screen**. The chart will appear on the screen as pictured below.



— SAVE THE CHART —

4. Touch **LOAD SAVE** . The menu shown below will appear on the screen.

Drive/Directory

Filename

 .CSC

5. Insert a blank, formatted work disc in drive B. Type **B:** in the 'Drive/Directory' field. Touch the 'Filename' field and type **HBAR#2**.

6. Touch **Save Chart** . A message will indicate that the chart is being saved. When the chart has been saved, the Primary function keys will be displayed.

— LOAD THE CHART —

7. To load the chart you just saved, touch **LOAD SAVE** . The menu shown above will appear on the screen. The Drive and Filename entered in step 5 are now used to load the chart file. Touch **Load Chart** . A message will ask you to confirm the load operation as loading a file replaces the information in the menus. Touch **Yes** to proceed.

— PLOT —

8. Touch **PLOT** . Touch **Plot to Screen** . The saved chart will be reproduced on the screen as pictured above.

HORIZONTAL BAR CHARTS EXERCISE #3

In Exercise #2, you added two months of revenue, expense and net income data and plotted the chart currently displayed on the screen. In Exercise #3, you will add legends, use the Interactive mode to move the legends, change the chart format and plot the chart.

— SELECT SHADING PATTERNS—

1. Touch **MENUS** . Touch **Data** . Touch the 'Pattern' field located between the Pen and Axis fields for Bar #1 and type **41**. Touch the 'Pattern' field for Bar #2 and type **31**. Touch the 'Pattern' field for Bar #3 and type **51**.

— ADD LEGENDS —

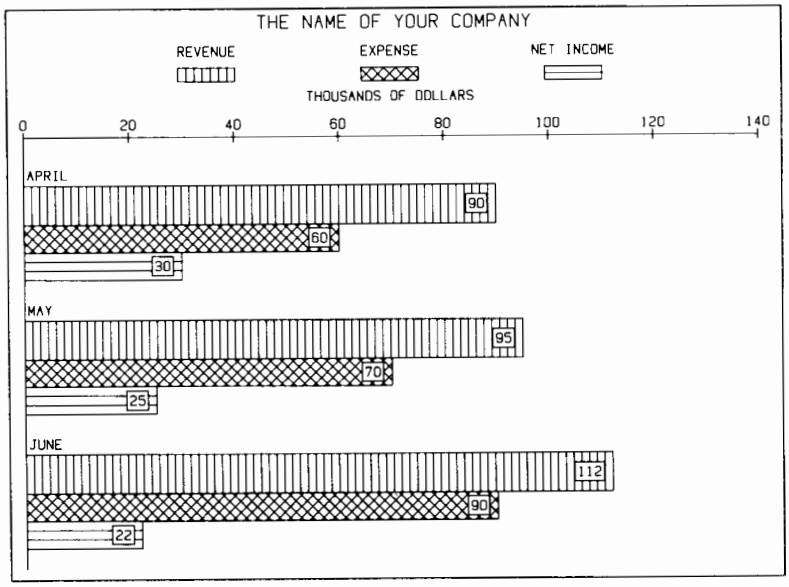
2. Touch **Legends**. Touch the first line of 'Legend 1' and type **REVENUE**. Tab to 'Legend 2' and type **EXPENSE**. Tab to 'Legend 3' and type **NET INCOME**.

— CHANGE CHART FORMAT —

3. Touch **Format**. Touch the 'Bar Format' field and type the letter **O** for Overlapping bars.

— PLOT —

4. Touch **PRIMARY**. Touch **PLOT**. Touch **Plot to Screen**. The legends for REVENUE, EXPENSE and NET INCOME will correspond to the shading patterns selected for each of the bars in step 1. The chart will appear on the screen as pictured below.



— MOVE LEGENDS —

5. To relocate the legends on the chart, touch **INTERACTIVE**. Touch **Alter Legends**. A frame surrounding the legend REVENUE will blink.

6. Touch **Move Legends** and touch the screen to the right of the top most bar. The frame around the legend will reappear at the new location. The computer will beep and display a message that you have crossed a boundary (the top axis).

7. Fine Touch can be used to make minor adjustments in the position of the legends. Touch **Fine Touch** to activate the touch pads at the top, bottom, left and right of the screen. An * will appear in the function key. Touch the right side of the screen to move the legend slightly to the right.

8. Touch **Next Legend** to select the legend for EXPENSE. When the EXPENSE legend blinks, touch the screen below the REVENUE legend and use Fine Touch to position the EXPENSE legend if necessary.

9. Touch **Next Legend** to select the legend for NET INCOME. When the NET INCOME legend blinks, touch the screen below the EXPENSE legend and use Fine Touch to position the NET INCOME legend if necessary. Touch **Done** and the NET INCOME legend will reappear.

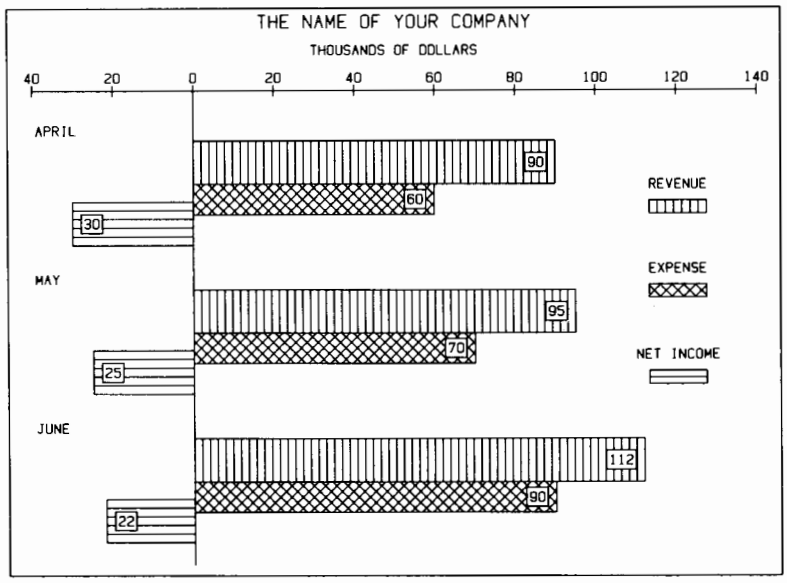
10. Touch **Done** again and then Touch **PRIMARY** to return to the Primary level. As you have changed the chart by moving the legends to the right of the bars, Picture Perfect will automatically replot the chart to the screen, eliminating the extra space above the top axis that had been allocated to the legends.

— CHANGE TO A BI-DIRECTIONAL AXIS —

11. Touch **MENUS** . Touch **Axes** . Touch the field 'Are Axes Bi-Directional?' and change **N** to **Y** for Yes.

12. As a Bi-Directional axis extends to the right and left, you must re-assign the data to the right or left side of the axis. Touch **Data** . Touch the 'Axis' field above Bar #1 and change T to **R** for Right. Touch the 'Axis' field for Bar #2 and change T to **R** for Right. Touch the 'Axis' field for Bar #3 and change the T to **L** for Left.

13. Touch **PRIMARY** . Touch **PLOT** . Make certain your plotter is turned on and loaded with pens and paper. Touch **Plot to Plotter** . The chart produced on your plotter will appear as pictured below.



EXERCISE #4

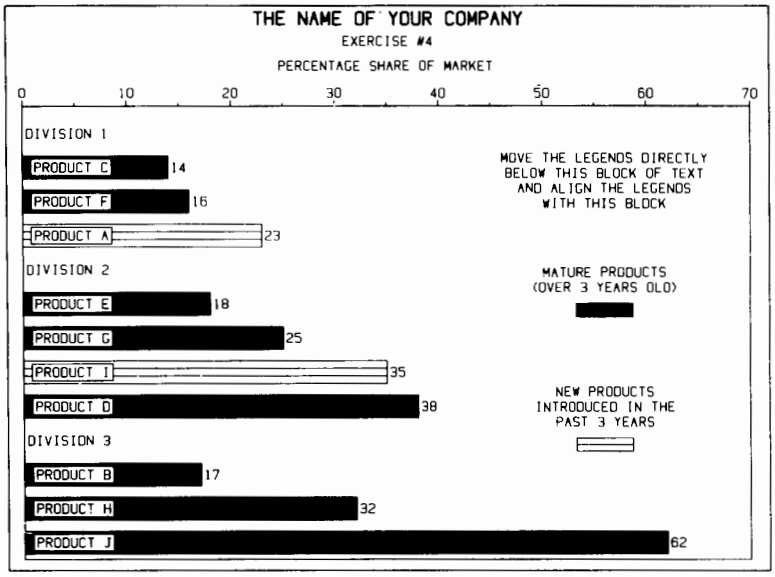
In each of the first three exercises, you completed a series of tasks in a specific sequence, step-by-step. You have performed all of the functions that are necessary to create, update, save, load and plot a chart.

Exercise #4 is presented in a different format that ties together the experience you gained in the first three exercises. In Exercise #4, you will produce the chart pictured on the next page working from a representation of the menus that follow the chart. The highlighted fields contain the information and data you should enter as a first step. The other fields contain default entries and should not be changed.

Touch **START OVER** to erase the data entered in the fist three exercises. A message will ask you to confirm this operation. Touch **Yes** to load the default menus. Touch **Menus** .

Enter the data, plot the chart to the screen and follow the directions that appear on the screen as part of the chart.

Following Exercise #4, three sample charts are shown that further illustrate the capabilities and versatility of Picture Perfect.



TITLES

		PEN	SIZE	BOLD
TITLE 1	THE NAME OF YOUR COMPANY	P	6	Y
TITLE 2	EXERCISE #4	P	4	N
TITLE 3		P	4	N

CHART-ID	LOCATION	SIZE
	BR	3

DATA

	LABELS				BAR VALUES			PATTERN			PATTERN			PATTERN			PATTERN		
	PEN	SIZE	LOC	BAR#	PEN	SIZE	LOC	PEN	I	AXIS	PEN	I	AXIS	PEN	I	AXIS	PEN	I	AXIS
	P	4	10	0	P	4	6	P	9	T	P	5	T	P	0	T	P	0	T
	<---------- LABELS ---------->							-BAR #1-			-BAR #2-			-BAR #3-			-BAR #4-		
1	DIVISION 1																		
2	PRODUCT C							14											
3	PRODUCT F							16											
4	PRODUCT A										23								
5	DIVISION 2																		
6	PRODUCT E							18											
7	PRODUCT G							25											
8	PRODUCT I										35								
9	PRODUCT D							38											
10	DIVISION 3																		
11	PRODUCT B							17											
12	PRODUCT H							32											
13	PRODUCT J							62											
14																			
15																			
16																			
17																			
18																			

LEGENDS

PEN [P] SIZE OF LEGENDS [4]

XT	Y	XT	Y	XT	Y	XT	Y

LEGEND 1	LEGEND 2	LEGEND 3	LEGEND 4
MATURE PRODUCTS (OVER 3 YEARS OLD)	NEW PRODUCTS INTRODUCED IN THE PAST 3 YEARS		

TEXT

PEN [P] SIZE [4] X	Y	PEN [P] SIZE [4] X	Y	PEN [P] SIZE [4] X	Y

1	2	3
MOVE THE LEGENDS DIRECTLY BELOW THIS BLOCK OF TEXT AND ALIGN THE LEGENDS WITH THIS BLOCK.		

AXES

TOP X-AXIS DESCRIPTION — PEN [P] SIZE [4] BOLD? [N]

PERCENTAGE SHARE OF MARKET

MINIMUM VALUE	LABEL INTERVAL	TIC INTERVAL	MAXIMUM VALUE
0	10	5	0

TOP AXIS PEN [P] SIZE [4] STYLE [5]

ARE AXES BI-DIRECTIONAL? [N]

BOTTOM AXIS PEN [P] SIZE [4] STYLE [1]

MINIMUM VALUE	LABEL INTERVAL	TIC INTERVAL	MAXIMUM VALUE
0	10	5	0

BOTTOM X-AXIS DESCRIPTION — PEN [P] SIZE [4] BOLD? [N]

FORMAT

BAR FORMAT (C.O.B.S) [S] PRIMARY PEN [1] HEIGHT [8.5] WIDTH [11.0]

SIZE OF INTERVAL:

BETWEEN BARS [3] BOLD OUTLINE? [N]

BETWEEN CLUSTERS [1] OUTLINE PEN [S]

BETWEEN STACKS [1] BASELINE? [Y]

STACK OPTIONS:

STACK TOTAL AT END? [N] FRAME? [Y]

STACK VALUE AS A %? [N] BORDER? [Y]

GRID? [N]

PAPER SIZE AND MARGINS

TOP MARGIN [0.6]

LEFT MARGIN [0.6]

DIMENSIONS ARE IN INCHES

RIGHT MARGIN [0.6]

BOTTOM MARGIN [0.6]

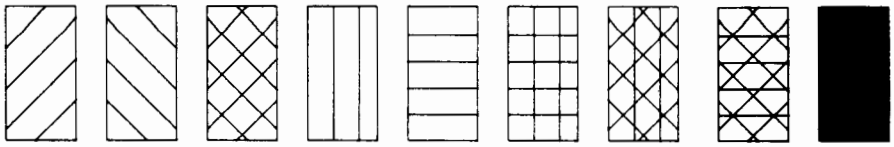
SIZE OF CHARACTERS

SMALLEST - SIZE 0 [.07]

LARGEST - SIZE 9 [.25]

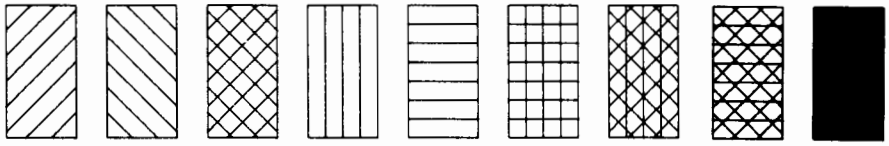
Bar Shading Patterns

LOW DENSITY PATTERNS



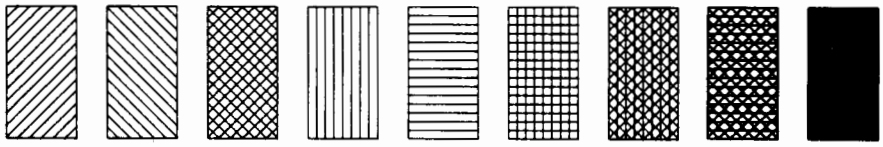
10 20 30 40 50 60 70 80 90

MEDIUM DENSITY PATTERNS



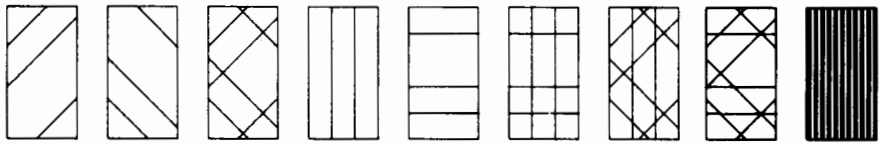
11 21 31 41 51 61 71 81 91

HIGH DENSITY PATTERNS



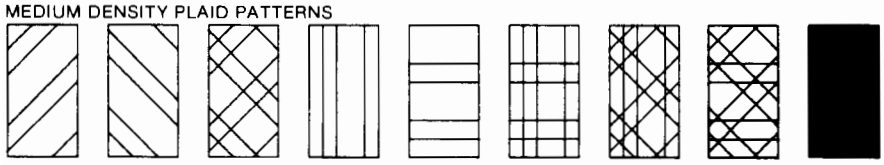
12 22 32 42 52 62 72 82 92

LOW DENSITY PLAID PATTERNS



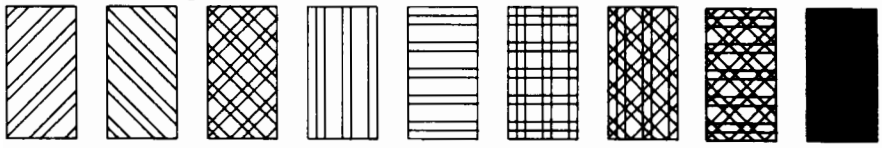
13 23 33 43 53 63 73 83 93

MEDIUM DENSITY PLAID PATTERNS



14 24 34 44 54 64 74 84 94

HIGH DENSITY PLAID PATTERNS

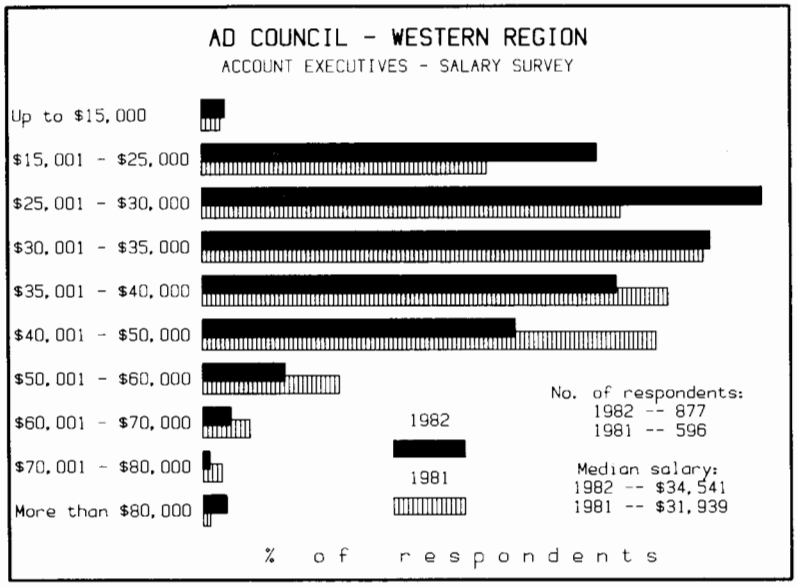


15 25 35 45 55 65 75 85 95

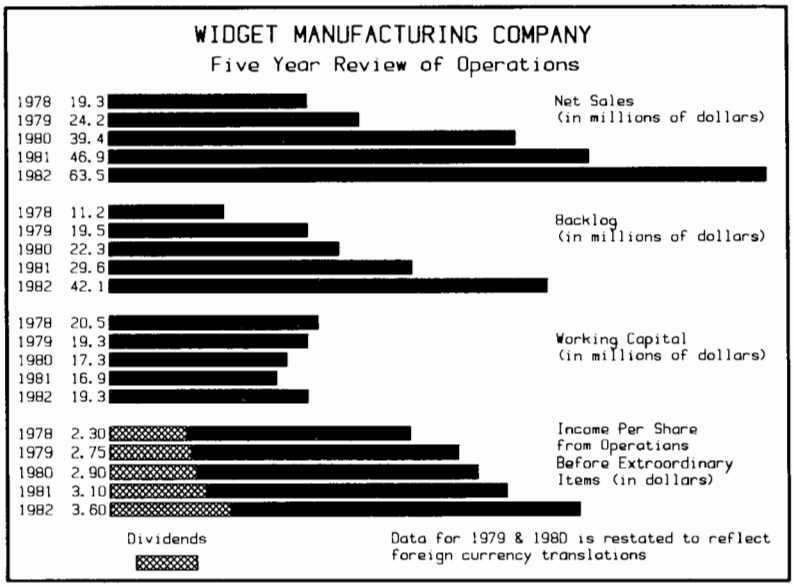
SAMPLE CHARTS

Three sample charts have been included on the program diskette so you can compare the data and menus with the charts reproduced below.

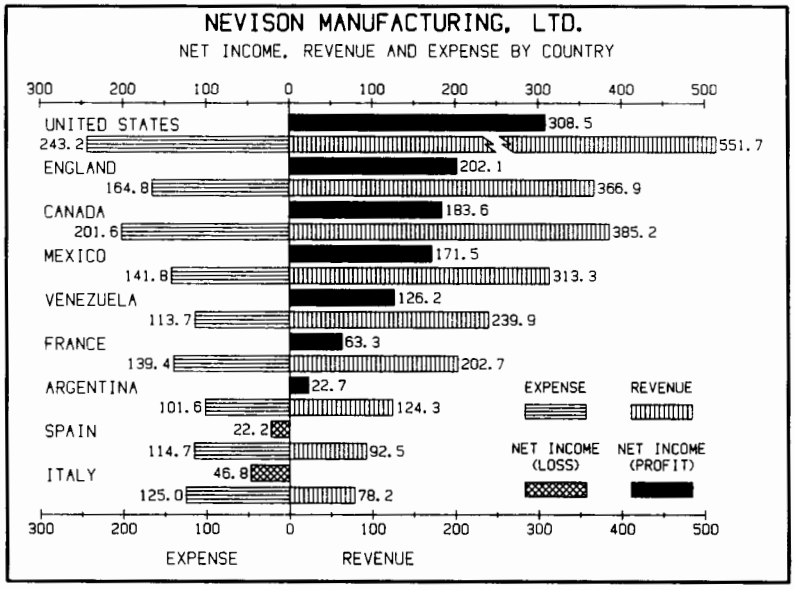
SAMPLE #1 - Filename is 'HSAMPLE1'



SAMPLE #2 - Filename is 'HSAMPLE2'



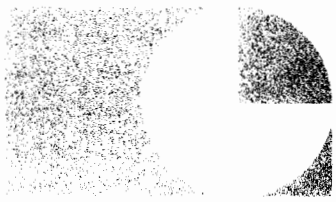
SAMPLE #3 - Filename is 'HSAMPLE3'



Load the chart files and plot them to the screen. Review the menus and options selected to see how each chart was developed. If you have any questions, touch **HELP** .

Picture Perfect is a fully supported product. If you have any questions or need assistance, call 800-FOR-HPPC.

PICTURE PERFECT™ PIE CHARTS



FEATURES

Picture Perfect allows you to create, modify, store and recall Pie Charts using the touch screen of the HP 150. Among the features offered are:

- Load data from any of the popular spreadsheet or data base products
- A pie of up to 16 pie segments can be rotated to start at a given angle
- Five lines of titles and/or footnotes of up to 70 characters each may be used to caption a chart
- Text can be plotted in italics and any one of three fonts; standard, compressed, or extended
- The size and location of the pie can be modified interactively
- Six blocks of text may be placed anywhere on a chart using the touch screen
- 58 shading patterns are available for shading pie segments
- Segments may be separated in a "V" like fashion or exploded
- Each segment label includes a two line description, the percentage and value of the segment
- Labels may be positioned and aligned, using the touch screen
- A "Dynamic Pointer" connects the pie segment to its label wherever the label is moved
- Top, bottom, left, and right margins may be set precisely, allowing multiple charts to be plotted on a single page
- The size of the smallest and largest characters can be specified in inches

Picture Perfect Function Tree for Pie Charts

Primary	MENUS	INTER-ACTIVE	PLOT	LOAD SAVE	START OVER	USER AIDS	EXIT	HELP
Menus	PRIMARY	Titles	Data	Text	Format			HELP
Interactive	PRIMARY	Alter Labels	Alter Text	Alter Pie			Overlay Grid	HELP
Alter Labels	Move Label	Size Label	Align Label	Position Label	Update Pointer	Set Align	Done	HELP
Move Label	Step 1	Fine Touch	Position Label	Update Pointer	Next Label	Size Label	Done	HELP
Size Label	Size 1	Larger Smaller	Position Label	Update Pointer	Next Label	Move Label	Done	HELP
Update Pointer	Dynamic Pointer	Smaller Radial	Larger Radial	No Radial	Reset Pointer	Done		HELP
Alter Text	Move Text	Size Text	Align Text	Set Align	Done			HELP
Move Text	Step 1	Fine Touch	Align Text	Next Text	Size Text	Done		HELP
Size Text	Size 1	Smaller Text	Larger Text	Next Text	Move Text	Done		HELP
Alter Pie	Move Pie	Size Pie			Done			HELP
Move Pie	Step 1	Fine Touch		Size Pie	Done			HELP
Size Pie	Step 1	Smaller Pie	Larger Pie	Move Pie	Done			HELP
Plot	PRIMARY		Plot to Screen	Plot to Plotter	Test Plot	Trans-parency		HELP
Plot to Plotter	Stop Plot							Pause Plot
Load/Save	PRIMARY		Load Data	Load Chart	Save Chart		File Manager	HELP
Start Over				Yes	No			
User Aids	PRIMARY		List Files	Print Utility	Graphics Files	Load DIF Row/Col		HELP
Print Utility	PRIMARY			Print Graphics	Print Menus			HELP
Print Menus	All Menus	Titles	Data	Text	Format			Exit Print
Graphics Files	PRIMARY			Save Graphics	Load Graphics		File Manager	HELP
Load DIF Row/Col	PRIMARY			Load Row/Col	Load DIF		File Manager	HELP
Exit				Yes	No			
Help	More Help				INDEX		Hard Copy	Exit Help

THE PICTURE PERFECT FUNCTION TREE

The organization of the Picture Perfect function keys is illustrated by the Function Key Tree. Functions are classified as primary or secondary. The Primary level, shown at the top of the tree, provides access to each of the Primary functions.

The Primary functions are organized, left to right, in a progression typical of the steps necessary to create, plot and save a chart.

To create a new chart, touch the **MENUS** key. The secondary functions for MENUS will now be displayed. These are also organized left to right in the order you might fill in the menus. To return to the primary level from any other level, touch the **PRIMARY** key. The **HELP** key is always on the right.

PRACTICE MAKES PERFECT

The following exercises will help you get started using your new Picture Perfect software.

Each is a simple step-by-step procedure, designed to familiarize you with the program's capabilities. The exercises are arranged to help you build new skills upon previously learned ones, so please do them in order. In completing the exercises, you can press the function keys on the keyboard or touch the screen. Function keys are indicated in **BOLD** type.

Make certain that you have configured your 150 for the type of plotter you are using, either HP-IB or serial (see Appendix A of the HP 150 Owner's Guide entitled "Configuration"). You will also need a blank, formatted work disc to save your chart files.

To begin Exercise #1, select PPERFECT/Pie from the P.A.M. menu. The P.A.M. menu will be replaced after a moment by the Picture Perfect copyright notice. Once the program has loaded, the message line will prompt you to:

"Please PRESS, then RELEASE the button on the SOFTKEY"

When the button is pressed, Picture Perfect will load the default menus and display a WELCOME screen and the Primary function keys.

PIE CHARTS EXERCISE #1

— ADD TITLES —

1. Touch **MENUS**. Touch **Titles**. The Titles menu will appear with the cursor positioned in the first 'Title/Footnote' field.
2. Type the name of **YOUR COMPANY** in the 'Title/Footnote 1' field.

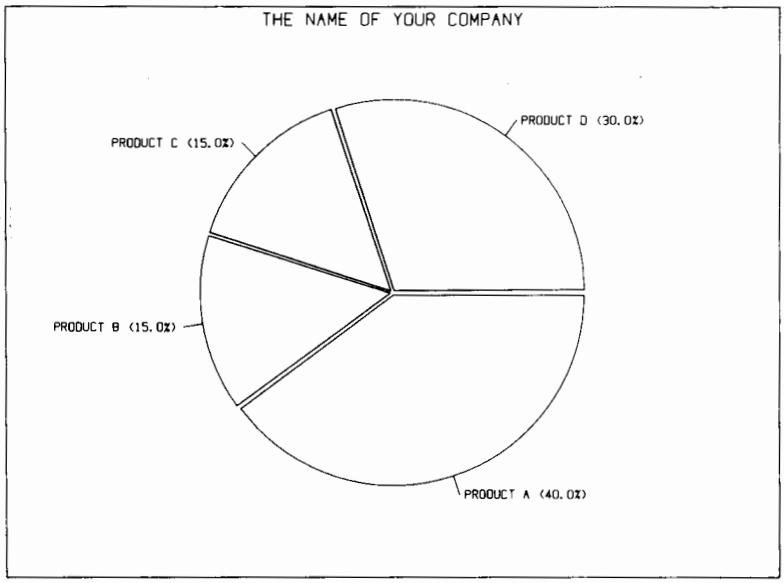
— ENTER DATA —

3. Touch **Data**. Touch the first Pie label field and enter the data as shown below.

<----1st line---->	<----2nd line---->	Value
Product A		40
Product B		30
Product C		30
Product D		60

— PLOT —

4. Touch **PRIMARY**. Touch **PLOT**. Touch **Plot to Screen**. The chart will appear as pictured below.



PIE CHARTS EXERCISE #2

In Exercise #1, you plotted the data for products A, B, C, and D as currently displayed on the screen. In Exercise #2, you will highlight (shade and explode) one of the pie segments, change the size of a label and save the pie chart.

— ALTER LABELS —

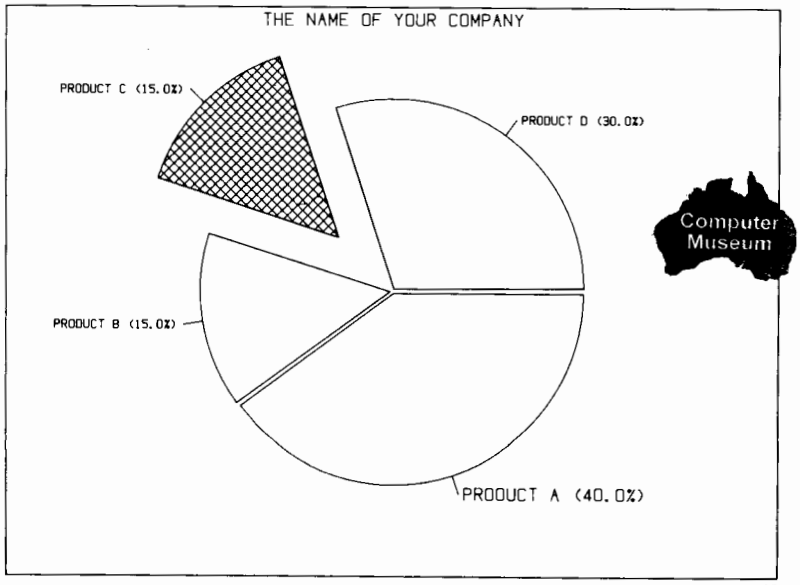
1. Touch **INTERACTIVE** . Touch **Alter Labels** . Notice that the frame around the label for PRODUCT A (lower right) is blinking. The blinking indicates that you can now move or change the size of the label.
2. Touch **Size Label** . Touch the **Size** key twice to change the size from 4 to **6**.
3. Touch **Done** to conclude the sizing procedure. Touch **Done** again to return to the Interactive level.

— HIGHLIGHT PRODUCT C —

4. Touch **PRIMARY** . Touch **MENUS** . Touch **Data** . Touch the 'Pattern' field for Product C and change the shading pattern from 0 to **3**.
5. Touch the 'Explode?' field for Product C and change the N to **Y**. Explode will pull the segment out from the pie, highlighting Product C.

— PLOT —

6. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The chart will appear as pictured below.



— SAVE THE CHART —

7. Touch [LOAD SAVE]. The menu shown below will be displayed.

Drive/Directory

Filename

 .CSC

8. Insert a blank, formatted work disc in drive B. Type **B:** in the 'Drive/Directory' field. Touch the 'Filename' field and type **PIE#2**.

9. Touch [Save Chart]. A message will indicate that the chart is being saved. When the chart has been saved, the PRIMARY function keys will be displayed.

— LOAD THE CHART —

10. To load the chart you just saved, touch [LOAD SAVE]. The menu shown above will appear on the screen. The Drive and Filename entered in step 8 are now used to load the chart file. Touch [Load Chart]. A message will ask you to confirm the load operation as loading a file replaces the information in the menus. Touch [Yes] to proceed.

11. Touch [PLOT]. Touch [Plot to Screen]. The saved chart will be reproduced on the screen as pictured in step 6 above.

PIE CHARTS EXERCISE #3

In Exercise #2, you highlighted one of the pie segments using the explode option. You also changed the size of one of the labels and plotted the chart currently displayed on the screen. In Exercise #3, you will add text, use the Interactive mode to move it to a specific location on the chart, move a label and plot the chart.

— ADD TEXT —

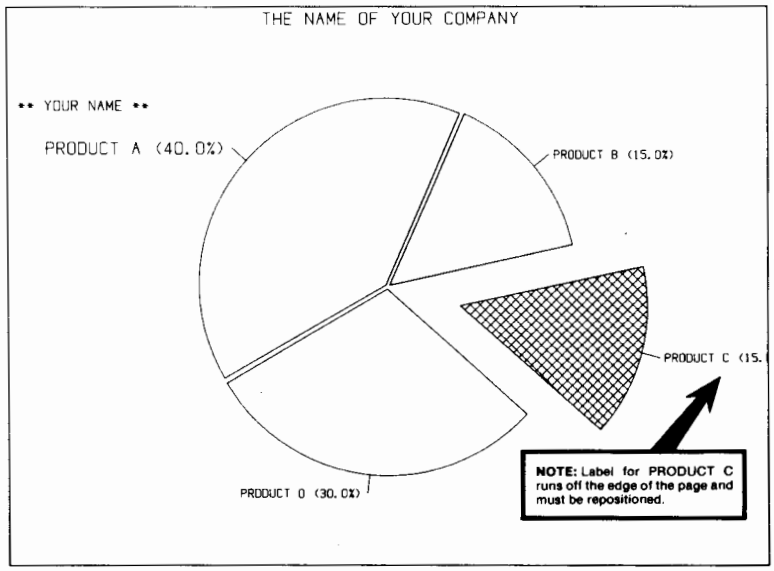
1. Touch [MENUS]. Touch [Text]. The Text menu will be displayed on the screen with the cursor positioned in the 'Pen' field. Touch the first text block field and enter **YOUR NAME**.

— CHANGE START PIE —

2. Touch [Format]. Touch the 'Start Pie at Hrs:Min' field and change the value from 3:00 to **8:00**.

— PLOT —

3. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The chart will appear as pictured below.



Each label is initially positioned around the pie with a short radial pointing to the label. Complex pointers, including vertical and horizontal extensions, allow you to place labels anywhere on the chart.

— MOVE LABEL —

4. Touch **INTERACTIVE** . Touch **Alter Labels** . The frame surrounding PRODUCT A will blink. To select PRODUCT C, touch the label. When it blinks, touch **Move Label** . Touch a spot below the exploded segment so that the label fits inside the right margin of the chart.

Whenever you move a label by touching the screen, the program constructs a "Dynamic Pointer" that represents the most direct path between the label and the segment. The most direct path in this case omits the radial portion of the pointer.

— UPDATE POINTER —

5. To restore the radial portion of the pointer, touch **Update Pointer** and then touch **Larger Radial** several times to extend the radial. Touch **Done** when you are finished.

   You can adjust the position of the label using the arrow keys or Fine Touch. However, if you now touch the screen to position the label, the pointer will revert to the dynamic mode eliminating the radial component.

6. Move the label slightly to the right and down using the Arrow keys until the label is just above the bottom of the chart. Touch **Done** to return to the Interactive level.

— ALIGN LABELS —

7. To align the label for PRODUCT C with PRODUCT D, touch PRODUCT D. When the frame around PRODUCT D blinks, touch **Set Align** . Touch PRODUCT C. When it blinks, touch **Align Label** . The label for PRODUCT C will be aligned with PRODUCT D. To return to the Interactive level, touch **Done** .

— MOVE TEXT —

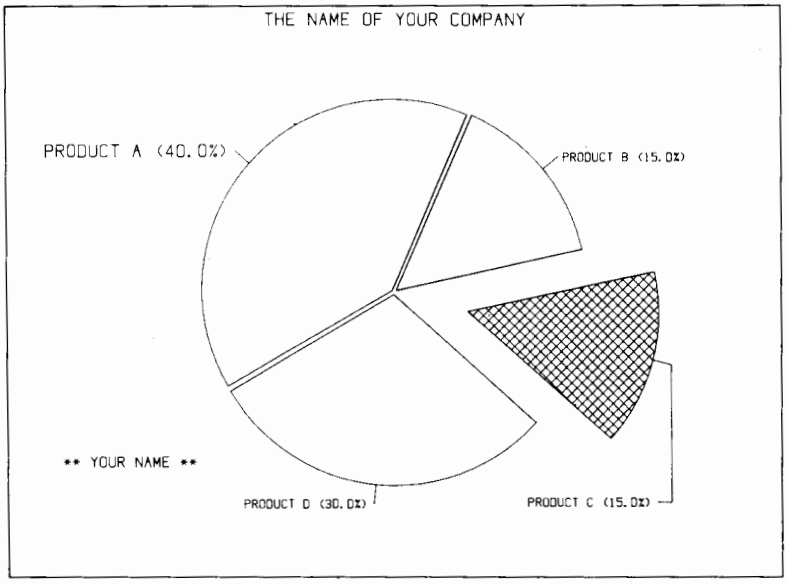
8. Touch **Alter Text** . The frame surrounding your name will blink.

9. Touch **Move Text** . Your name is temporarily deleted from the frame. You can move the frame anywhere on the chart by touching the screen. Touch a location near the lower left hand corner of the chart. The frame will move to that location.

10. Fine Touch is used to make minor adjustments in the position of text and labels. Touch **Fine Touch** to activate the touch pads at the top, bottom, left and right of the screen. Touch the left side of the screen and notice how the frame moves slowly to the left. Now touch the right side of the screen to move the frame to the right.

11. Touch **Done** when you have completed moving the text. Your name will reappear in the frame. Touch **Done** again to return to the Interactive level.

12. Touch **PRIMARY** . Touch **PLOT** . Make certain your plotter is turned on and loaded with pens and paper. Touch **Plot to Plotter** . The chart produced on your plotter will appear as pictured below.



EXERCISE #4

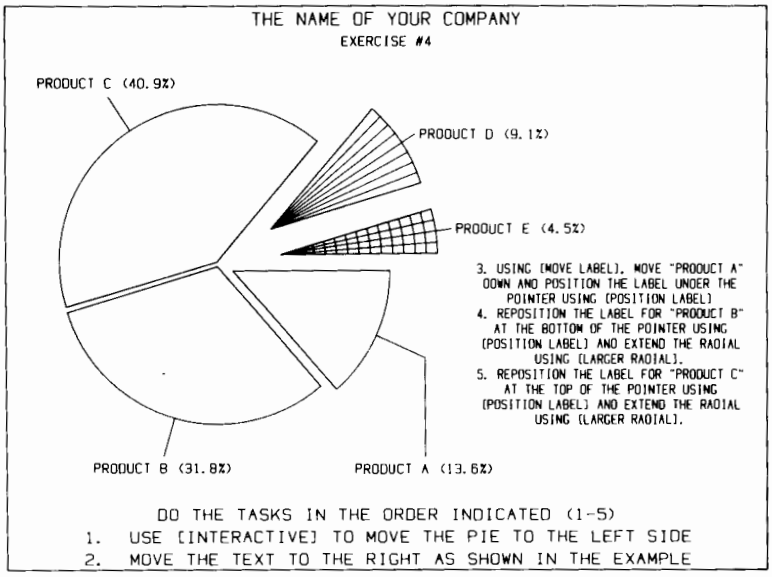
In each of the first three exercises, you completed a series of tasks in a specific sequence, step-by-step. You have performed all of the functions that are necessary to create, update, save, load and plot a chart.

Exercise #4 is presented in a different format that ties together the experience you gained in the first three exercises. In Exercise #4, you will produce the chart pictured on the next page working from a representation of the menus that follow the chart. The highlighted fields contain the information and data you should enter as a first step. The other fields contain default entries and should not be changed.

Touch **START OVER** to erase the data entered in the fist three exercises. A message will ask you to confirm this operation. Touch **Yes** to load the default menus. Touch **MENUS** .

Enter the data, plot the chart to the screen and follow the directions that appear on the screen as part of the chart.

Following Exercise #4, three sample charts are shown that further illustrate the capabilities and versatility of Picture Perfect.



TITLES

TITLE/FOOTNOTE		T/F	PEN	SIZE	BOLD	FONT
1	THE NAME OF YOUR COMPANY	T	P	6	N	S
2	EXERCISE #4	T	P	4	N	S
3	DO THE TASKS IN THE ORDER INDICATED(1-5)	T	P	4	N	E
4	1. USE (INTERACTIVE) TO MOVE THE PIE TO THE LEFT SIDE	F	P	3	N	E
5	2. MOVE THE TEXT TO THE RIGHT AS SHOWN IN THE EXAMPLE	F	P	3	N	E

CHART-ID	LOCATION	SIZE
	BR	3

DATA

LABELS AND VALUES						SEGMENTS			
PEN P FONT S ITALICS? N			LOCATION				PATTERN		
<---- 1ST LINE ---->	<---- 2ND LINE ---->	VALUE	#	%	SIZE	PEN	: EXPLODE?		
PRODUCT A		13	N	Y	4	P	0	3	
PRODUCT B		35	N	Y	4	P	0	N	
PRODUCT C		45	N	Y	4	P	0	N	
PRODUCT D		10	N	Y	4	P	14	Y	
PRODUCT E		5	N	Y	4	P	26	Y	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	
			N	Y	4	P	0	N	

TEXT

PEN[P] SIZE[4] FONT[C] ITALICS[N] X[ ] Y[ ]
<---------- 1 ---------->
3. USING (MOVE LABEL), MOVE 'PRODUCT A' DOWN AND POSITION THE LABEL UNDER THE POINTER USING (POSITION LABEL).

PEN[P] SIZE[4] FONT[S] ITALICS[N] X[ ] Y[ ]
<---------- 2 ---------->

PEN[P] SIZE[4] FONT[S] ITALICS[N] X[C] Y[ ]
<---------- 3 ---------->
4. REPOSITION THE LABEL FOR 'PRODUCT B' AT THE POSITION OF THE POINTER USING (POSITION LABEL) AND EXTEND THE RADIAL USING (LARGER RADIAL).

PEN[P] SIZE[4] FONT[S] ITALICS[N] X[ ] Y[ ]
<---------- 4 ---------->

PEN[P] SIZE[4] FONT[S] ITALICS[N] X[C] Y[ ]
<---------- 5 ---------->
5. REPOSITION THE LABEL FOR 'PRODUCT C' AT THE TOP OF THE POINTER USING (POSITION LABEL) AND EXTEND THE RADIAL USING (LARGER RADIAL).

PEN[P] SIZE[4] FONT[S] ITALICS[N] X[ ] Y[ ]
<---------- 6 ---------->

FORMAT

PIE PARAMETERS

SORT PIE PIECES? [N]

SEPARATE PIECES? [Y]

START PIE AT HRS:MIN [3 :00]

PIE CENTER (X) [ ]

PIE CENTER (Y) [ ]

RADIUS OF PIE [ ]

PENS

PRIMARY PEN [1]

OUTLINE PEN [5]

BORDER? [Y]

LABEL OPTIONS (PARENTHESES

[(] VALUE [)]

[(] PERCENT [)]

SIZE OF PAPER

HEIGHT [8.5] WIDTH [11.0]

TOP MARGIN [0.6]

LEFT MARGIN [0.6]

DIMENSIONS ARE IN INCHES

RIGHT MARGIN [0.6]

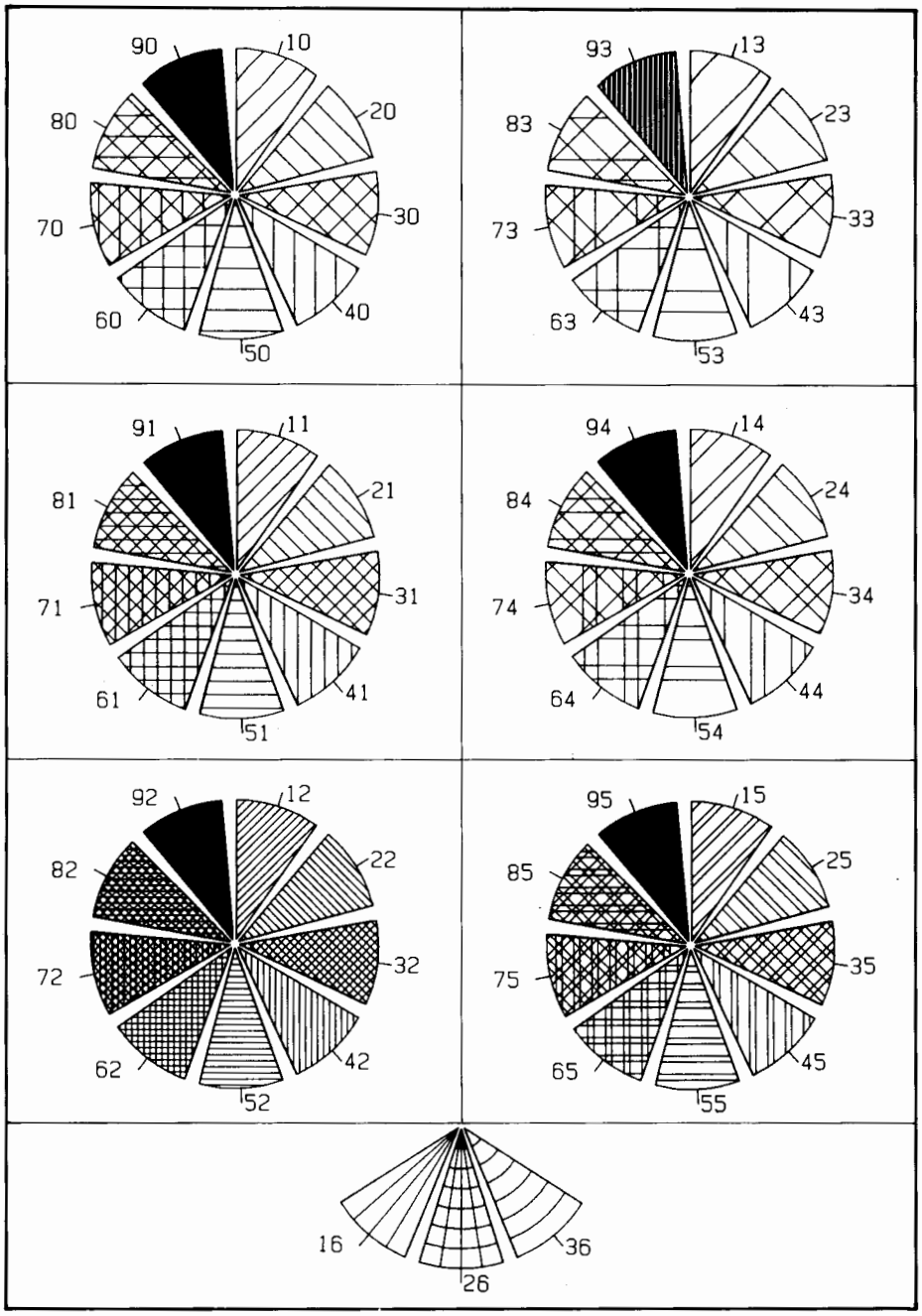
BOTTOM MARGIN [0.6]

SIZE OF CHARACTERS

SMALLEST - SIZE 0 [.07]

LARGEST - SIZE 9 [.25]

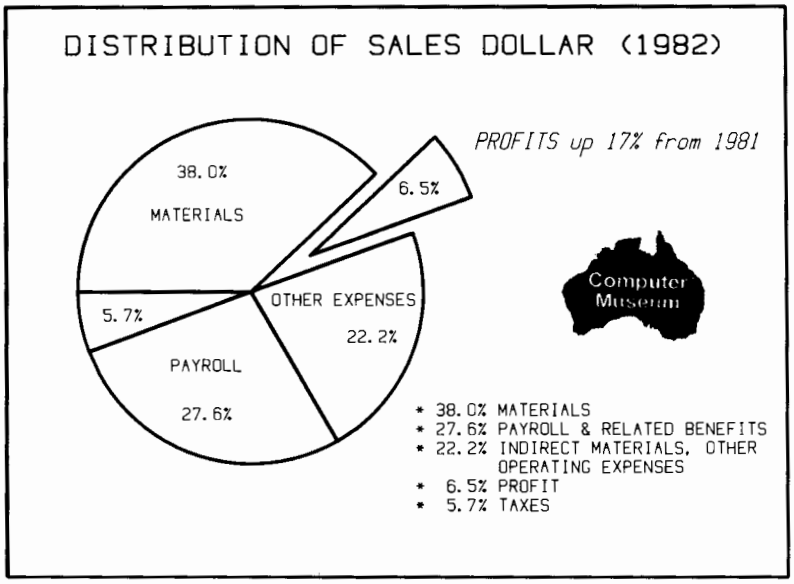
Pie Shading Patterns



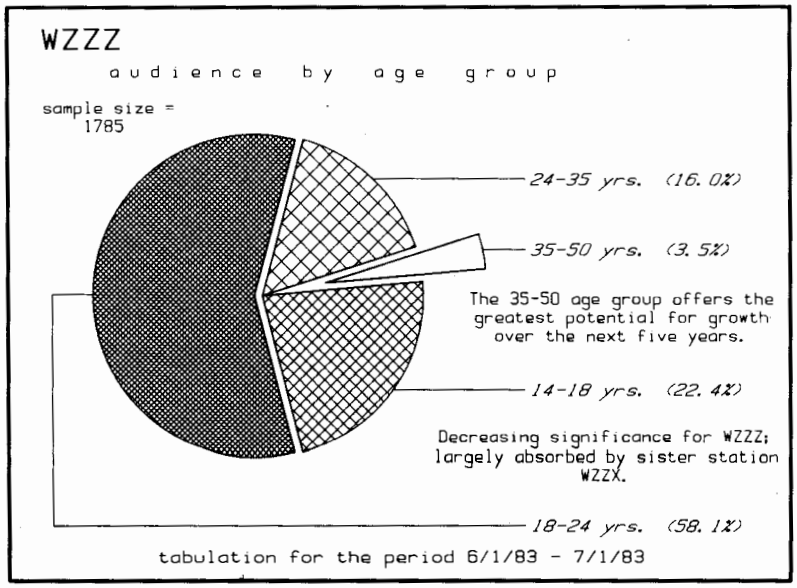
SAMPLE CHARTS

Three sample charts have been included on the program diskette so you can compare the data and menus with the charts reproduced below.

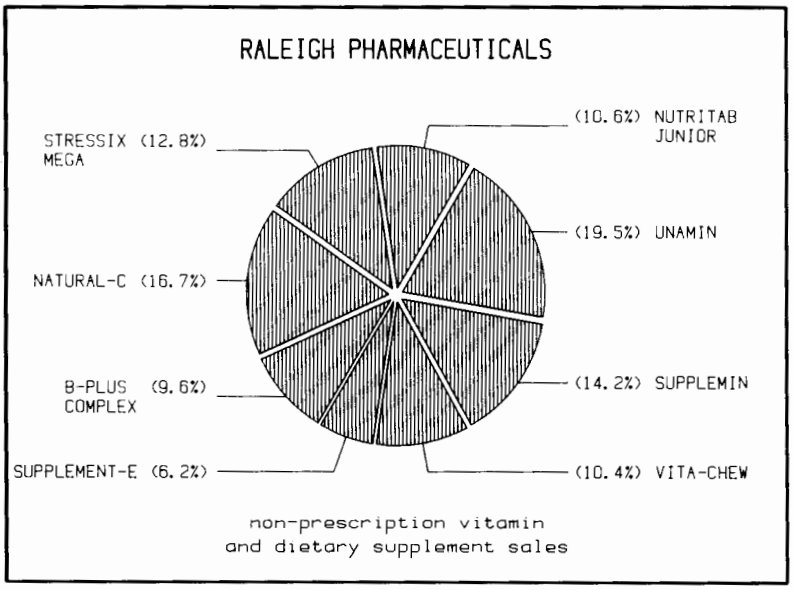
SAMPLE #1 - Filename is 'PSAMPLE1'



SAMPLE #2 - Filename is 'PSAMPLE2'



SAMPLE #3 - Filename is 'PSAMPLE3'



Load the chart files and plot them to the screen. Review the menus and options selected to see how each chart was developed. If you have any questions, touch **HELP**.

Picture Perfect is a fully supported product. If you have any questions or need assistance, call 800-FOR-HPPC.

PICTURE PERFECT™ LINE CHARTS

FEATURES

Picture Perfect allows you to create, modify, store and recall Line Charts using the touch screen of the HP 150. Among the features offered are:

- Load data from any of the popular spreadsheet or data base products
- Eight lines of 99 data points can be plotted at one time
- Any keyboard character can be plotted at any data point
- Nine line types. Lines may be suppressed producing a scattergram
- Data values can be plotted at any of eight positions around individual data points
- Missing data values are acceptable and will cause a break in the line
- Two independent Y-axes
- Three title lines of up to 65 characters can be used to caption the chart
- Six blocks of text can be placed anywhere on the chart using the touch screen
- Eight legends can be placed anywhere on the chart
- You can add text at any of nine data points on the chart
- Log/log and semi-log axes are available
- A grid may be overlayed parallel to the X and/or Y axes
- X-axis labels may be numeric or alphanumeric; labels may be staggered along the X-axis to conserve space
- Top, bottom, left, and right margins may be set precisely, allowing multiple charts on a single page

Picture Perfect Function Tree for Line Charts

Primary	MENUS	INTER-ACTIVE	PLOT	LOAD SAVE	START OVER	USER AIDS	EXIT	HELP
Menus	PRIMARY	Titles	Data	Legends	Text	Axes	Format	HELP
Interactive	PRIMARY	Alter Legends	Alter Text	Alter Pt. Text			Overlay Grid	HELP
Alter Legends	Move Legend	Size Legend	Align Legend	Set Align			Done	HELP
Move Legend	Step 1	Fine Touch	Align Legend	Next Legend	Size Legend		Done	HELP
Size Legend	Size 1	Smaller Legends	Larger Legends	Next Legend	Move Legend		Done	HELP
Alter Text	Move Text	Size Text	Align Text	Set Align			Done	HELP
Move Text	Step 1	Fine Touch	Align Text	Next Text	Size Text		Done	HELP
Size Text	Size 1	Smaller Text	Larger Text	Next Text	Move Text		Done	HELP
Alter Pt. Text	Position Pt. Text	Size Pt. Text	Next Pt. Text				Done	HELP
Size Pt. Text	Size 1	Smaller Pt. Text	Larger Pt. Text	Next Pt. Text			Done	HELP
Plot	PRIMARY		Plot to Screen	Plot to Plotter	Test Plot	Trans-parency		HELP
Plot to Plotter	Stop Plot							Pause Plot
Pause Plot	Continue							
Load/Save	PRIMARY		Load Data	Load Chart	Save Chart		File Manager	HELP
Start Over				Yes	No			
User Aids	PRIMARY		List Files	Print Utility	Graphics Files	Load DIF Row/Col		HELP
Print Utility	PRIMARY			Print Graphics	Print Menus	Print Data		HELP
Print Menus	All Menus	Titles	Data	Legends	Text	Axes	Format	Exit Print
Graphics Files	PRIMARY			Save Graphics	Load Graphics		File Manager	HELP
Load DIF Row/Col	PRIMARY			Load Row/Col	Load DIF		File Manager	HELP
Exit				Yes	No			
Help	More Help				INDEX		Hard Copy	Exit Help

THE PICTURE PERFECT FUNCTION TREE

The organization of the Picture Perfect function keys is illustrated by the Function Key Tree. Functions are classified as primary or secondary. The Primary level, shown at the top of the tree, provides access to each of the Primary functions.

The Primary functions are organized, left to right, in a progression typical of the steps necessary to create, plot and save a chart.

To create a new chart, touch the **MENUS** key. The secondary functions for MENUS will now be displayed. These are also organized left to right in the order you might fill in the menus. To return to the primary level from any other level, touch the **PRIMARY** key. The **HELP** key is always on the right.

PRACTICE MAKES PERFECT

The following exercises will help you get started using your new Picture Perfect software.

Each is a simple step-by-step procedure, designed to familiarize you with the program's capabilities. The exercises are arranged to help you build new skills upon previously learned ones, so please do them in order. In completing the exercises, you can press the function keys on the keyboard or touch the screen. Function keys are indicated in **BOLD** type.

Make certain that you have configured your 150 for the type of plotter you are using, either HP-IB or serial (see Appendix A of the HP 150 Owner's Guide entitled "Configuration"). You will also need a blank, formatted work disc to save your chart files.

To begin Exercise #1, select PPERFECT/Line from the P.A.M. menu. The P.A.M. menu will be replaced after a moment by the Picture Perfect copyright notice. Once the program has loaded, the message line will prompt you to:

"Please PRESS, then RELEASE the button on the SOFTKEY"

When the button is pressed, Picture Perfect will load the default menus and display a WELCOME screen and the Primary function keys.

LINE CHARTS EXERCISE #1

— ADD TITLES —

1. Touch **MENUS** . Touch **Titles** . The Titles menu will appear with the cursor positioned in the first 'Title' field.

2. Type the name of **YOUR COMPANY** in the 'Title 1' field.

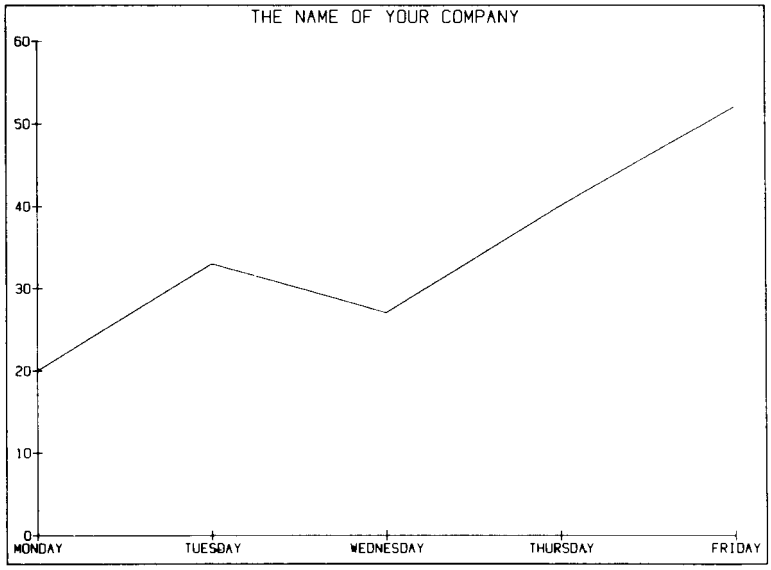
— ENTER DATA —

3. Touch **Data** . The Data menu will appear with the cursor positioned in the 'Stagger Labels?' field. Touch the first row of the 'X-Axis Data or Labels' field and enter the data as shown below.

X-Axis Data or Labels	Line #1	Line #2	Line #3	Line #4
MONDAY	20			
TUESDAY	33			
WEDNESDAY	27			
THURSDAY	40			
FRIDAY	52			

— PLOT —

4. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The chart will appear on the screen as pictured below.



LINE CHARTS EXERCISE #2

In Exercise #1, you plotted the number of units produced per hour over five days as currently displayed on the screen. In Exercise #2, you will add two more products and save the chart.

— ADD Y-AXIS DESCRIPTION —

1. Touch **MENUS** . Touch **Axes** . The cursor will be positioned in the 'Left Y-Axis Description' field. Enter the description **UNITS PRODUCED PER HOUR**.

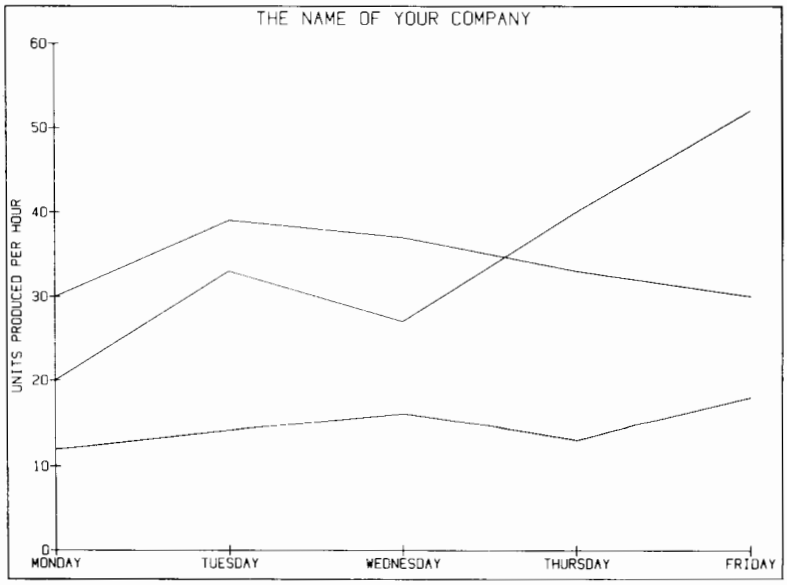
— ENTER DATA —

2. Touch **Data** . Touch the first field in line #2 and enter the data shown below.

X-Axis Data or Labels	Line #1	Line #2	Line #3	Line #4
MONDAY	20	30	12	
TUESDAY	24	35	14	
WEDNESDAY	27	42	15	
THURSDAY	40	48	16	
FRIDAY	52	30	13	

— PLOT —

3. Touch **PRIMARY** . Touch **PLOT** . Touch **Plot to Screen** . The chart will appear on the screen as pictured below.



— SAVE THE CHART —

4. Touch **LOAD SAVE** after reviewing the chart. The menu shown below will appear on the screen.

   Drive/Directory

   B:

   Filename

   LINE#2 .CSC

5. Insert a blank, formatted work disc in drive B. Type **B:** in the 'Drive/Directory' field. Touch the 'Filename' field and type **LINE#2.**

6. Touch **Save Chart** . A message will indicate that the chart is being saved. When the chart has been saved, the Primary function keys will be displayed.

— LOAD THE CHART —

7. To load the chart you just saved touch **LOAD SAVE** . The menu shown above will appear on the screen. The Drive and Filename entered in step 5 are now used to Load the chart file. Touch **Load Chart** . A message will ask you to confirm the load operation as loading a file replaces the information in the menus. Touch **Yes** to proceed.

— PLOT —

8. Touch **PLOT** . Touch **Plot to Screen** . The saved chart will be reproduced on the screen as pictured in step 3 above.

LINE CHARTS EXERCISE #3

In Exercise #2, you added two new products and a Y-Axis description to the chart currently displayed on the screen. In Exercise #3, you will add legends, text, point text, data values and plot the chart.

— SELECT LINE PATTERNS —

1. Touch **Data** . Touch the 'Pattern' field and type a **2** for Line #1. Tab over to 'Pat' field for Line #2 and type a **4.** Tab over to the 'Pat' field for Line #3 and type a **6.**

— ADD LEGENDS —

2. Touch **Legends**. Touch the first legend field and type **DIVISION A**. Tab to the next legend field and type **DIVISION B**. Tab to the next legend field and type **DIVISION C**.

— ADD TEXT —

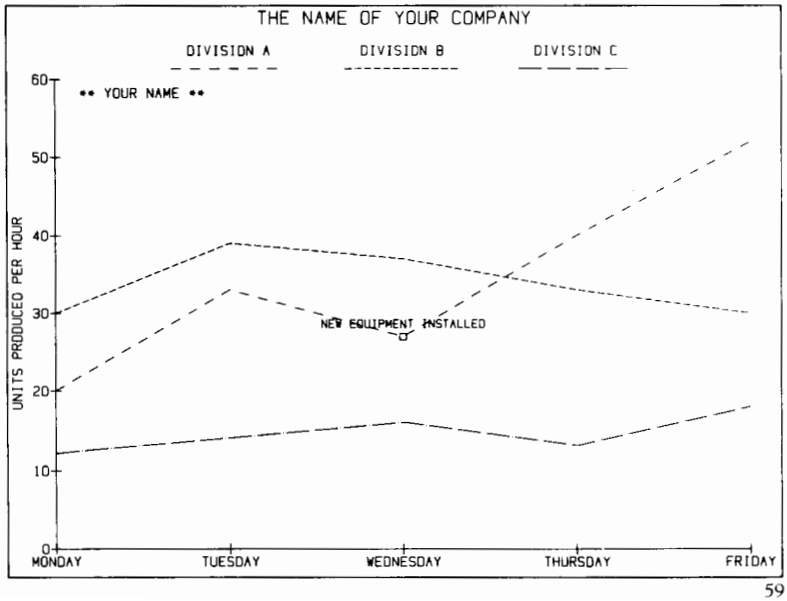
3. Touch **Text**. Touch **Text Blocks**. The Text menu will be displayed on the screen with the cursor positioned in the 'Pen' field. Touch the top line of the first text block and type **YOUR NAME.**

— ADD POINT TEXT —

4. Touch **Point Text**. The cursor will be positioned in the 'Line' field. Type a **1.**
5. Touch the 'Point' field and type a **3.**
6. Touch the top line of the first text field and type **NEW EQUIPMENT INSTALLED.**

— PLOT —

7. Touch **PRIMARY**. Touch **PLOT**. Touch **Plot to Screen**. The chart will appear on the screen as pictured below.



— MOVE TEXT —

8. Touch **INTERACTIVE** . Touch **Alter Text** . The frame surrounding your name will blink.

9. Touch **Move Text** . Your name is temporarily deleted from the frame. You can now move the frame anywhere on the chart by touching the screen.

10. Fine Touch is used to make minor adjustments in the position of text and labels. Touch **Fine Touch** to activate the touch pads at the top, bottom, left and right of the screen. Touch the left side of the screen and notice how the frame moves slowly to the left. Now touch the right side of the screen to move the frame to the right.

    Touch **Done** when you have completed moving the text. Your name will reappear in the frame. Touch **Done** to return to the Interactive level.

— MOVE POINT TEXT—

11. Touch **Alter Pt. Text** . The blinking frame indicates that you now can position the point text.

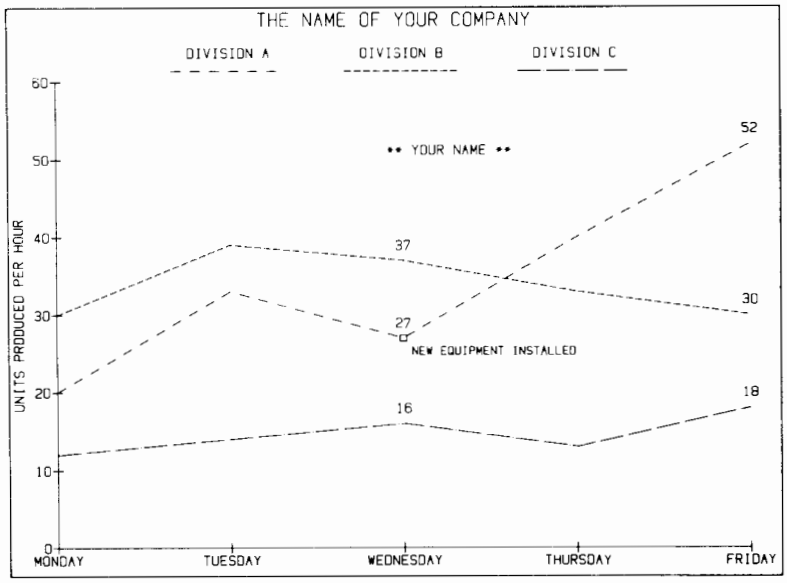
12. Touch **Position Pt. Text** . The frame will move to the next position. Repeat until the frame is below and to the right of the point.

13. Touch **Done** to return to the Interactive level.

— POSITION DATA VALUES —

14. Touch **PRIMARY** . Touch **MENUS** . Touch **Data** . To the right of each value entered in the Data menu you will find the letter N in the 'P' (Position) field. The position field is used to select those data values you want to appear on the chart. Touch the 'P' field for Line #1 on the third row (Wednesday). Change N to **T** to place the value on Top of the line. Tab over to Line #2 and change N to **T**. Tab over to Line #3 and change N to **T**. Repeat the procedure for Friday's data on the fifth row.

15. Touch **PRIMARY** . Touch **PLOT** . Make certain your plotter is turned on and loaded with pens and paper. Touch **Plot to Plotter** . The chart produced on your plotter will appear as pictured below.



EXERCISE #4

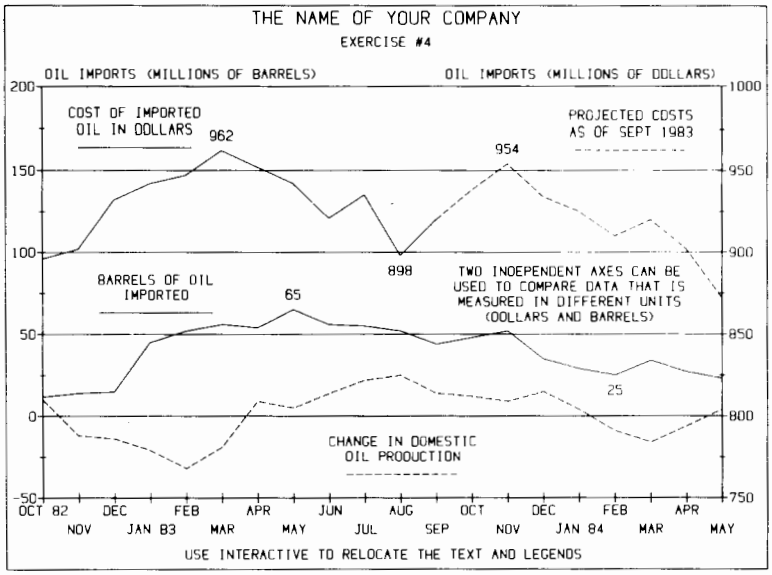
In each of the first three exercises, you completed a series of tasks in a specific sequence, step-by-step. You have performed all of the functions that are necessary to create, update, save, load and plot a chart.

Exercise #4 is presented in a different format that ties together the experience you gained in the first three exercises. In Exercise #4, you will produce the chart pictured on the next page working from a representation of the menus that follow the chart. The highlighted fields contain the information and data you should enter as a first step. The other fields contain default entries and should not be changed.

Touch **START OVER** to erase the data entered in the fist three exercises. A message will ask you to confirm this operation. Touch **Yes** to load the default menus. Touch **MENUS** .

Enter the data, plot the chart to the screen and follow the directions that appear on the screen as part of the chart.

Following Exercise #4, three sample charts are shown that further illustrate the capabilities and versatility of Picture Perfect.



TITLES

	PEN	SIZE	BOLD
TITLE 1	P	6	N
TITLE 2	P	4	N
TITLE 3	P	4	N

CHART-ID	LOCATION	SIZE
	BR	3

DATA

	STAGGER LABELS?	DATA PEN	POINTS SIZE	PAT BOLD? PEN|AXIS|CHR		PAT BOLD? PEN|AXIS|CHR		PAT BOLD? PEN|AXIS|CHR		PAT BOLD? PEN|AXIS|CHR	
		P	4	P 1 L N		P 4 L N		P 1 R N		P 4 R N	
1	X-AXIS DATA OR LABELS			LINE #1	P	LINE #2	P	LINE #3	P	LINE #4	P
1				32	N	10	N	896	N		N
2				14	N	-12	N	902	N		N
3				15	N	-14	N	932	N		N
4				45	N	-21	N	942	N		N
5				52	N	-32	N	947	N		N
6				56	N	-19	N	962	T		N
7				54	N	9	N	952	N		N
8				65	T	5	N	942	N		N
9				56	N	14	N	921	N		N
10				55	N	22	N	935	N		N
11				52	N	25	N	898	B		N
12				44	N	14	N	920	N	920	N
13				48	N	12	N		N	938	N
14				52	N	9	N		N	954	T
15				35	N	15	N		N	934	N
16				29	N	4	N		N	925	N
17				25	B	-9	N		N	910	N
18				34	N	-16	N		N	920	N
19				27	N	-6	N		N	902	N
20				23	N	4	N		N	872	N

LEGENDS

PEN [P] SIZE OF LEGENDS [4] INCLUDE LINE PATTERN? [Y]

1	2	3	4
XT [ ] Y [ ]	XT [ ] Y [ ]	XT [ ] Y [ ]	XT [ ] Y [ ]
BARRELS OF OIL IMPORTED	CHANGE IN DOMESTIC OIL PRODUCTION	COST OF IMPORTED OIL IN DOLLARS	PROJECTED COSTS AS OF SEPT 1983

TEXT

PEN[P] SIZE[4] X[ ] Y[ ] — 1

TWO INDEPENDENT AXES CAN BE USED TO COMPARE DATA THAT IS MEASURED IN DIFFERENT UNITS (DOLLARS AND BARRELS)

PEN[P] SIZE[4] X[ ] Y[ ] — 2

PEN[P] SIZE[4] X[ ] Y[ ] — 3

PEN[P] SIZE[4] X[ ] Y[ ] — 4

AXES

LEFT Y-AXIS DESCRIPTION: OIL IMPORTS (MILLIONS OF BARRELS)

PEN [P] SIZE [4] BOLD? [N] ORIENTATION [H]

200	MAX VALUE	TYPE [N]		
50	LABELS	STYLE [1]		
25	TICS	PEN [P]		
-50	MIN VALUE	SIZE [4]	GRID? [Y]	

RIGHT Y-AXIS DESCRIPTION: OIL IMPORTS (MILLIONS OF DOLLARS)

PEN [P] SIZE [4] BOLD? [N] ORIENTATION [H]

		[N] TYPE	MAX VALUE	1000
		[1] STYLE	LABELS	50
		[P] PEN	TICS	25
		[N] GRID? [4] SIZE	MIN VALUE	750

X-AXIS

TYPE	MINIMUM	LABELS	TICS	MAXIMUM	PEN	SIZE
[A]	[0]	[10]	[5]	[0]	[P]	[4]

LOCATION [B] X-AXIS DESCRIPTION: [USE INTERACTIVE TO RELOCATE THE TEXT AND LEGENDS] GRID? [N]

PEN [P] SIZE [4] BOLD? [N]

FORMAT

PENS

PRIMARY PEN [1]

ZERO BASELINE? [Y]

FRAME? [Y]

BORDER? [Y]

SIZE OF PAPER

HEIGHT [8.5]

WIDTH [11.0]

TOP MARGIN [0.6]

LEFT MARGIN [0.6]

DIMENSIONS ARE IN INCHES

RIGHT MARGIN [0.6]

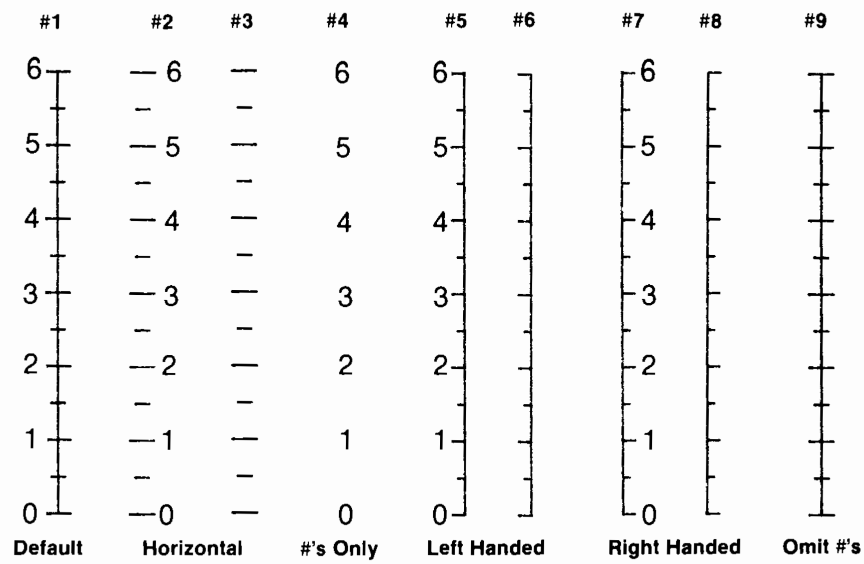
BOTTOM MARGIN [0.6]

SIZE OF CHARACTERS

SMALLEST - SIZE 0 [.07]

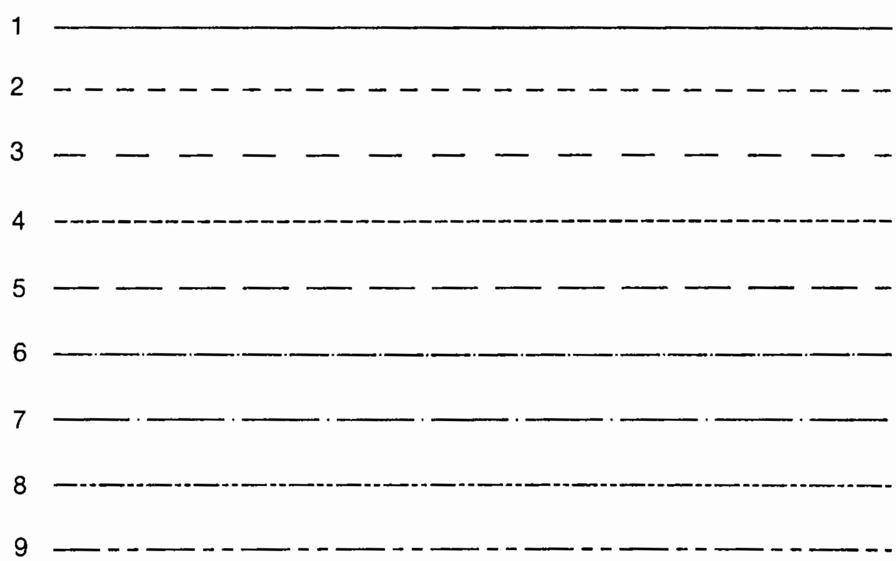
LARGEST - SIZE 9 [.25]

STYLE OF AXIS



Line Patterns

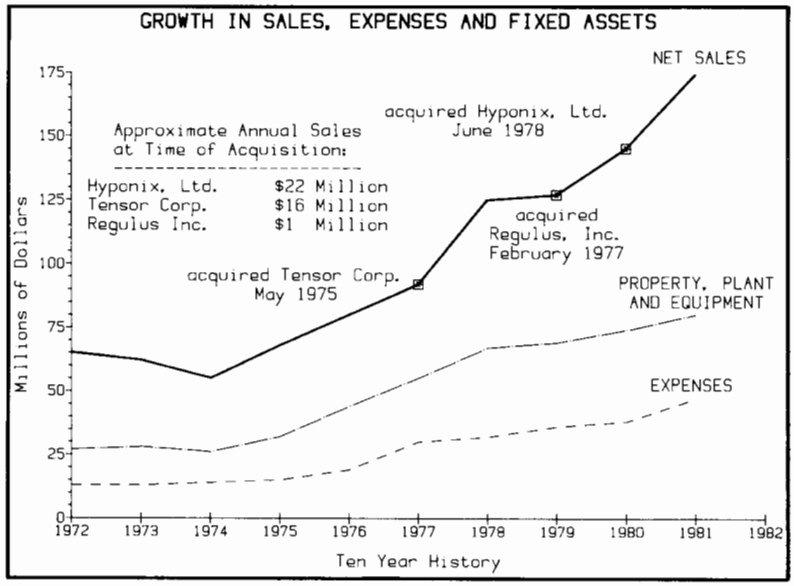
0 Null Line Type (used for scattergrams)



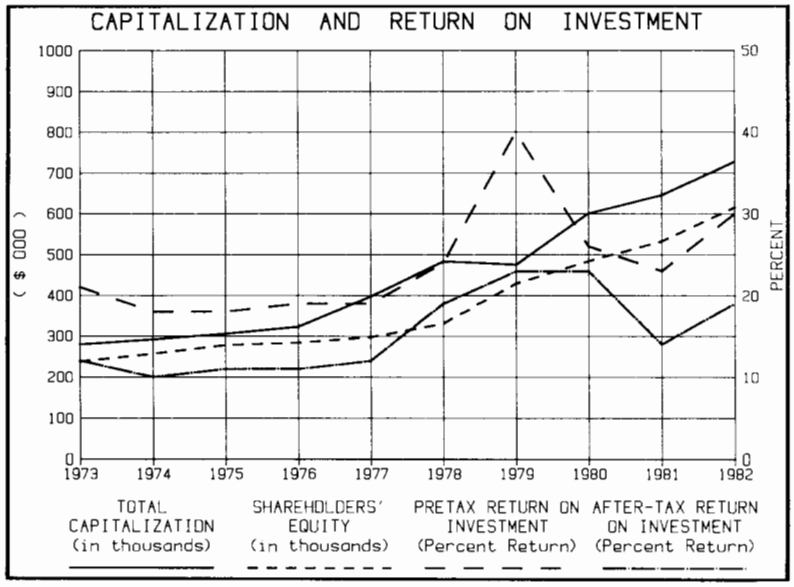
SAMPLE CHARTS

Three sample charts have been included on the program diskette so you can compare the data and menus with the charts reproduced below.

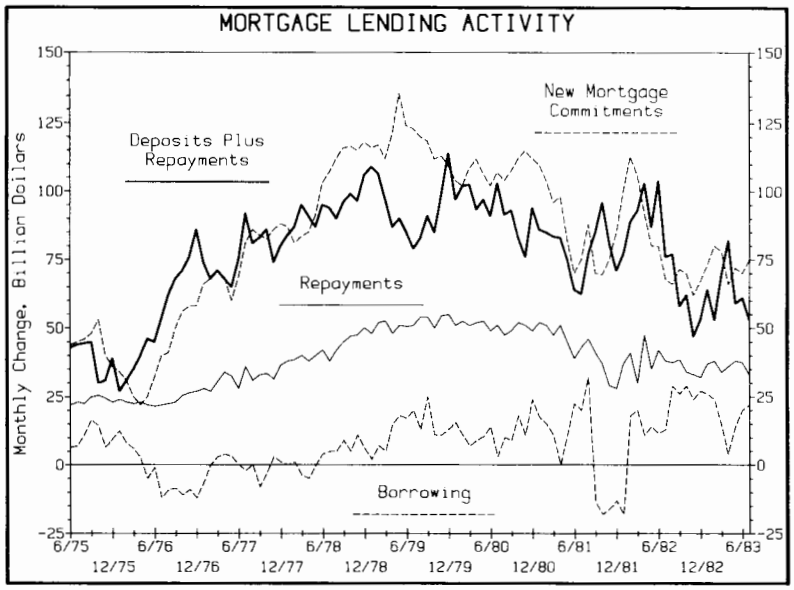
SAMPLE #1 - Filename is 'LSAMPLE1'



SAMPLE #2 - Filename is 'LSAMPLE2'



SAMPLE #3 - Filename is 'LSAMPLE3'



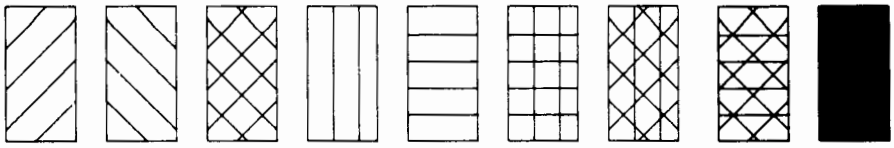
Load the chart files and plot them to the screen. Review the menus and options selected to see how each chart was developed. If you have any questions, touch **HELP** .

Picture Perfect is a fully supported product. If you have any questions or need assistance, call 800-FOR-HPPC.

APPENDIX

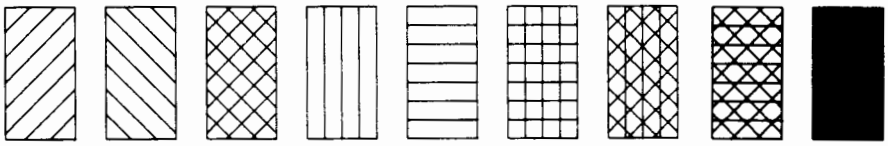
Bar Shading Patterns

LOW DENSITY PATTERNS



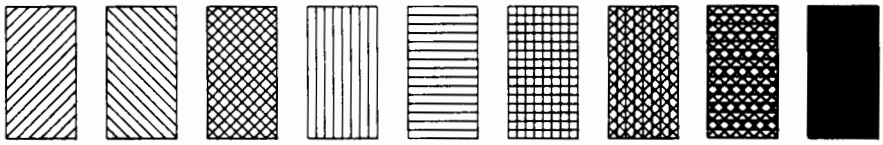
10 20 30 40 50 60 70 80 90

MEDIUM DENSITY PATTERNS



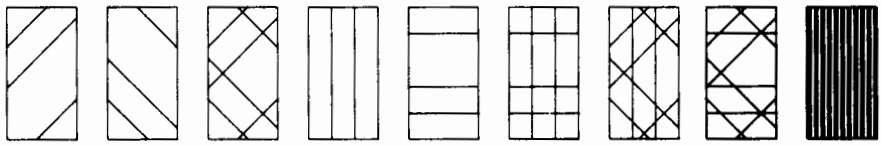
11 21 31 41 51 61 71 81 91

HIGH DENSITY PATTERNS



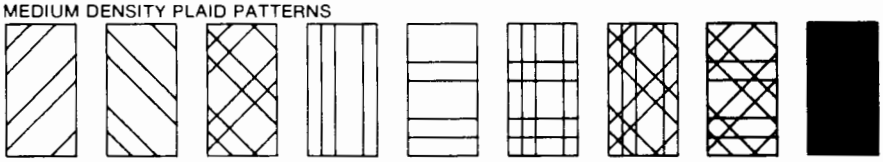
12 22 32 42 52 62 72 82 92

LOW DENSITY PLAID PATTERNS



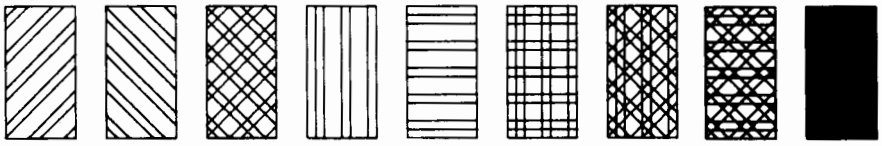
13 23 33 43 53 63 73 83 93

MEDIUM DENSITY PLAID PATTERNS



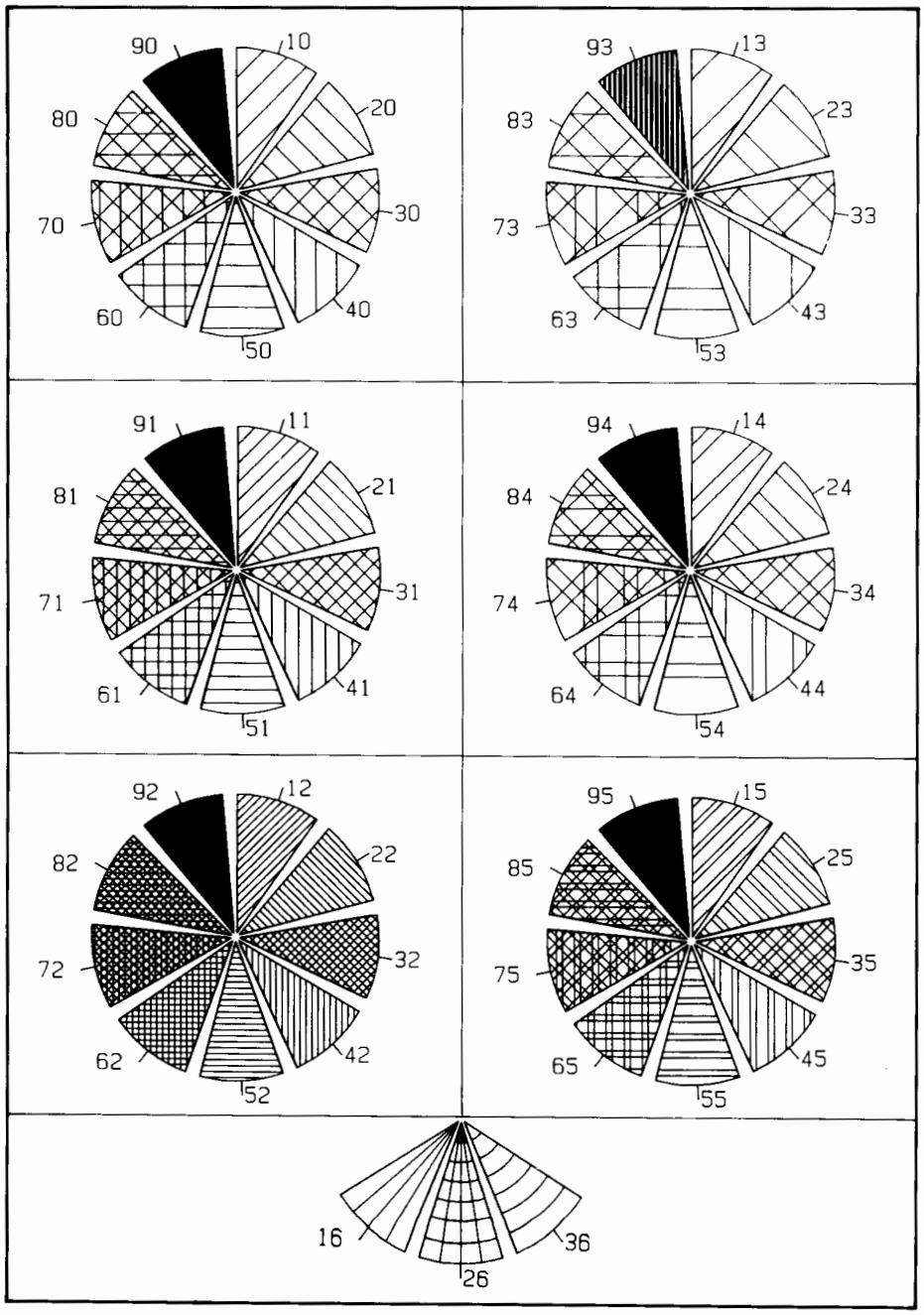
14 24 34 44 54 64 74 84 94

HIGH DENSITY PLAID PATTERNS



15 25 35 45 55 65 75 85 95

Pie Shading Patterns



LOADING DATA FROM SPREADSHEETS

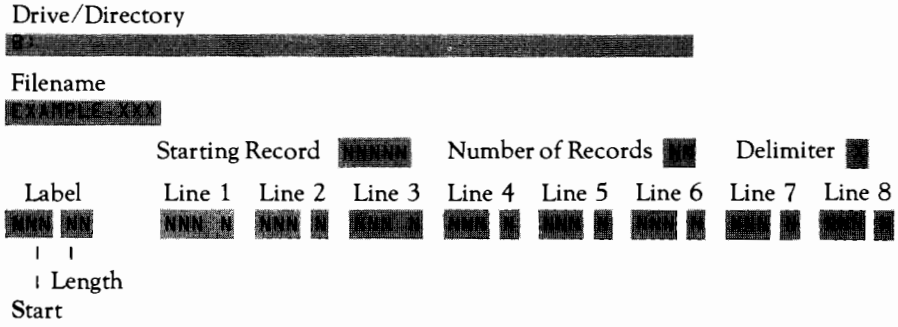
You can use Picture Perfect to read files produced by most of the popular spreadsheet and data base products. The Data Access Facility provides a convenient interface to external files in any of the following formats:

- Fixed-format Row/Column files
- Variable-format Row/Column files
- Data Interchange Format (DIF) files in Column format

Access to external files is provided through the **Load DIF-Row/Col** function which is invoked from the **USER AIDS** level.

The Data Access Menu

When you touch **Load DIF-Row/Col**, the Data Access menu is displayed as shown below for Line Charts. The Data Access Menu is used to specify the external filename and the parameters that describe the file so the data can be transferred to the Data Menu.



Drive/Directory

Enter the Drive and/or Directory designation of the DIF or Row/Column file to be loaded. Both the drive designation and directory path are optional. They are unnecessary if the file to be accessed resides on the currently-logged drive and in the current directory. If given, they must occur in the order 'drive-letter: path'. Consult the HP 150 Owner's Manual for further information regarding directories and directory pathnames.

Filename

Enter the filename of the DIF or Row/Column file to be loaded. The filename must conform to MS-DOS conventions.

Starting Record

Enter the number of the first record of the Row/Column file to be loaded into the Data menu.

This field is not applicable to DIF files.

Number of Records

Enter the number of records to be read from a DIF or Row/Column file into the Data Menu. As data extracted from a single record is loaded into a single row in the Data Menu, the number of rows of data in the Data menu should equal the Number of Records.

Delimiter (Data Separator)

For variable format Row/Column files, enter the character used as the Delimiter (field separator). The Delimiter can be one or more blanks as indicated by the notation "Sn" where n is the number of blanks up to a maximum of nine. For example, S2 indicates that two blanks are used as the Delimiter.

This field does not apply to fixed format Row/Column or DIF files.

Start (Starting Position of the Field)

You must define the relative location of the fields to be loaded into the Data menu from external records.

The fields in a fixed format Row/Column file occupy a fixed location within the record defined by their starting position and length. Enter the starting position of each field to be loaded into the Data Menu. As the maximum length of a record is 255 bytes, the Start field cannot be greater than 255.

For variable format Row/Column files, the Start field contains the number of the field calculated by counting the fields in the record from left to right. As each field is separated by a Delimiter, it is not necessary to enter the length.

DIF files are similar to variable format Row/Column files. The Start field for a DIF file is the number of the field in the record (DIF tuple). Unlike variable format Row/Column files, you do not have to specify a Delimiter as it is a standard character for all DIF files.

Length (Length of the Field)

For fixed format Row/Column files, enter the Length of the field of data to be loaded into the Data menu. The position of the first character of the field is specified in the Start field.

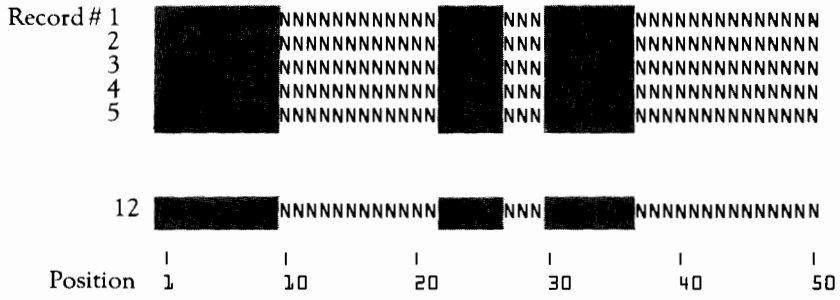
The Length field is left blank for DIF and variable format Row/Column files.

READING ROW/COLUMN FILES (Fixed Format)

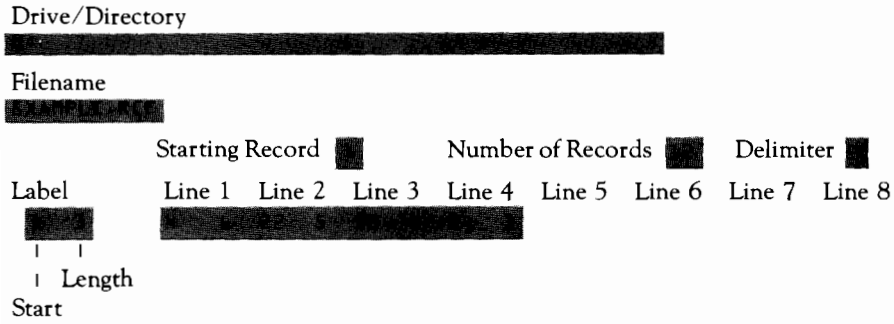
Enter the Drive/Directory and Filename of the Row/Column file to be loaded. Specify the number of the first record in the file, the number of records to be read, the position and length of each field used as a label or data value. A Delimiter is not used.

The following is an example of a fixed format Row/Column file and the Data Access menu entries necessary to load the data into the Data Menu as shown below.

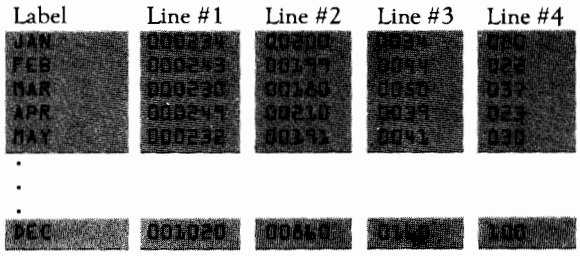
ROW/COLUMN FILE - Fixed Format



DATA ACCESS



DATA MENU



READING ROW/COLUMN FILES (Variable Format)

Enter the Drive/Directory and Filename of the Row/Column file to be loaded. Specify the number of the first record in the file to be loaded, the number of records to be read, the Delimiter character and the number of each field used as a label or data value. The Length field is left blank.

The Delimiter can be any keyboard character. The entry "Sn", where n is a digit, indicates that n spaces are to be recognized as the Delimiter. For example, "S4" means that four successive blanks are the Delimiter. Each field is identified by a number that represents the position of the field in the record. The Length field is left blank. The Delimiter character marks the start and end of each field.

The following is an example of a variable format Row/Column file and the Data Access menu entries necessary to load the data into the Data Menu as shown below.

ROW/COLUMN FILE - Variable Format

```
Record #  1    XXX,NNNN,NNNNN,NNNNN,NNNN,NN,N,NNNN,NNN,NNN,NNNN,N
          2    XXX,NN,NNNN,NNNN,N,NNNN,NNNNN,NN,N,N,NN,NNN
          3    JAN,234,NNN,NNNNNN,N,200,NNN,34,20,NN,NNN,NNN
          4    FEB,243,NNNNN,N,NNN,199,NN,44,22,NN,NNNNN,NNNN
          5    MAR,230,N,NN,NN,180,NN,50,37,NNN,NNNN,NNNN
          6    APR,249,NNN,NNNN,NNNN,210,NNN,39,23,NNNN,NNNN,NNNN
          7    MAY,232,NNNNN,NNNNN,NNNN,191,NN,41,30,NNN,NNNN,NNNN
          .                                   .
          .                                   .
          .                                   .
         12      DEC,1020,NNNNN,N,NNNNNN,860,NNNNN,160,100,NN,NN,NNN
```

DATA ACCESS

Drive/Directory

```
B:
```

Filename

```
EXAMPLE.DIF
```

Starting Record 3 Number of Records 12 Delimiter

Label	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8
1	2	6	8	9				

1 1
1 Length
Start

DATA MENU

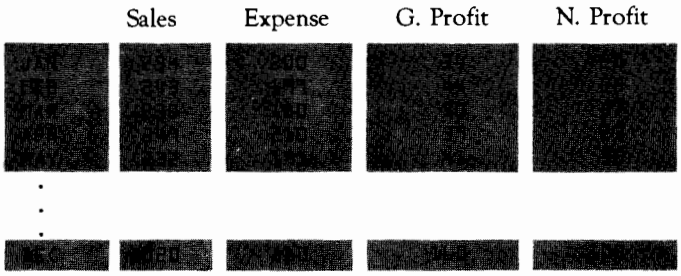
Label	Line #1	Line #2	Line #3	Line #4
JAN	234	200	34	20
FEB	243	199	44	22
MAR	230	180	50	37
APR	249	210	39	23
MAY	232	191	41	30
.				
.				
.				
DEC	1020	860	160	100

READING DIF FILES

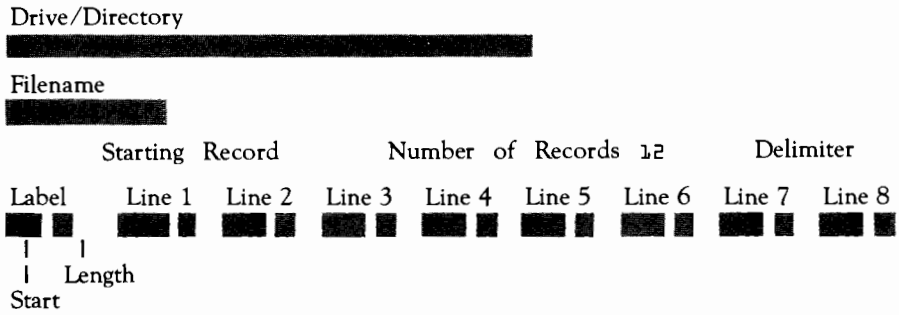
Enter the Drive/Directory and Filename of the DIF file to be loaded. Specify the number of records (DIF tuples) to be read and the number of each field used as a label or data value. DIF files are similar to variable format Row/Column files except that the Delimiter for DIF files is a standard character that is already known to the program. Note that the DIF file should be in Column format and you cannot specify a Starting Record number.

The following is an example of a Spreadsheet and the Data Access menu entries necessary to load the data in DIF format into the Data menu as shown below.

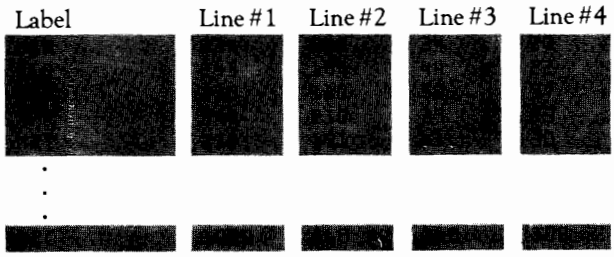
SPREADSHEET



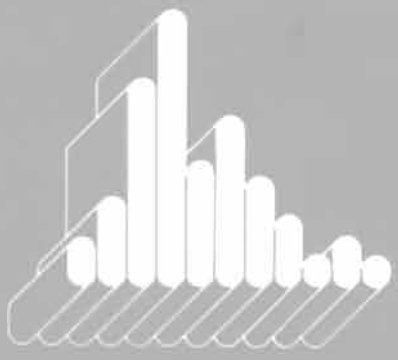
DATA ACCESS



DATA MENU



Printed in U.S.A.



Computer Support Corporation

Dallas, Texas