Xerox 860 IPS Software

Graphs
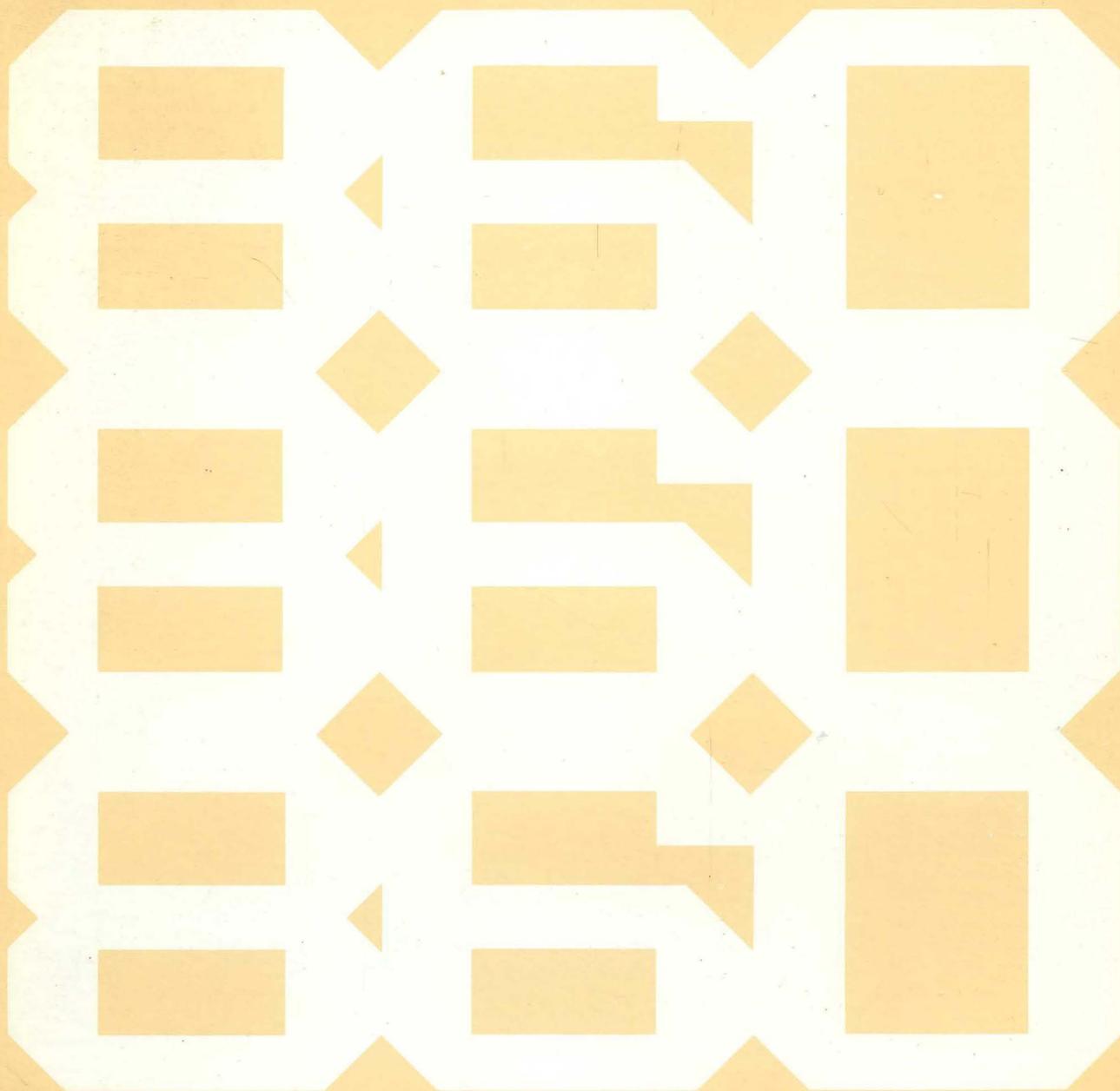
XEROX

GRAPHS

USER'S MANUAL
XEROX 860

TO THE USER

GRAPHS is a program that turns columns of figures into graphs. You can use GRAPHS with current Word Processing versions 6.2, 6.3, 6.310.

The instructions in this manual are for the Phoenix version. When you unlock the Phoenix version, you can still use this manual. All the instructions remain the same except that the Command Line will no longer display how many trials you have left or ask for the unlocking code.

We recommend that you first read the entire manual and then go back and follow the step-by-step instructions as you begin to work with the program. The manual also has an index at the back to help you find topics and details quickly.

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List of Graph Illustrations

1

PROGRAM OVERVIEW

GRAPHS is a program that turns columns of figures into graphs.

THE PHOENIX VERSION

The Phoenix version of GRAPHS is a complete program that you can use on a trial basis. After you add the Phoenix version to your system disc, you can load GRAPHS twelve times. After the twelfth time, the program "locks" and you cannot use it again. (All the other software on your system disc functions normally.)

If you purchase GRAPHS, you receive an unlocking code. You type the code onto your system disc to unlock the program. After you unlock the program, it becomes a permanent part of your system disc and you can use it indefinitely.

WHAT IS A GRAPH?

In a broad and basic sense, a graph is simply a picture of number relationships. It shows the relationships in a visual way so that a viewer can quickly and easily understand them.

You use GRAPHS to make a standard graph called a *bar graph*. On a bar graph, columns (bars) show quantities on a framework formed by intersecting axes: a vertical axis (Y axis) and a horizontal axis (X axis). The bars start at one axis and are measured against the other axis, which is scaled (with *tics*) and numbered. For example, the illustration on page 4 shows a simple bar graph. The columns show the Net Profits 1980-1984 for Haverford's Department Store. Each column stands for a year. The numbers on the Y axis form the ruler that measures how much profit each column represents. Thus, in 1980, Haverford earned over $7,000,000. However, profits fell during 1982. In that year, Haverford earned less. But 1984 was an excellent year.

THE THREE TYPES OF BAR GRAPHS

Each of the three types is named after the construction of it's bars. The types are

1. Simple bar.
2. Segmented bar.
3. Cluster bar.

Simple Bar

In a simple bar graph, each bar represents one number. The graph on page 4 is a simple bar graph.

Segmented Bar

In a segmented bar graph, each bar is divided into segments. Each segment represents one number. The bar's total is the sum of its segments. For example, look at the graph on page 5 (top). Here the Haverford totals for 1982-1984 have been segmented by departments. The patterns in the key on the right side of the graph tell you which department each segment represents. Thus, you can see that in 1982, most of the profit was earned in the Women's Department.

Cluster Bar

In a cluster-bar graph, the segments of each bar are "clustered" together to form a unit rather than stacked one on top of the other. You can present the same information in a cluster-bar graph or a segmented bar graph, but each graph emphasizes a different aspect of the data. For example, the graph on page 5 (bottom) is a cluster-bar graph using the same information as the segmented bar graph you just looked at.

A cluster-bar graph emphasizes the numbers *in* a total. A segmented bar graph emphasizes the total. For example, in the Haverford segmented bar graph, you are first aware of how the total profits rose and fell each year. In the cluster-bar graph, you tend to first compare the sales of the various departments *within* each year. You see clearly that the Women's Department accounts for most of Haverford's income. However, the Men's Department is clearly on the rise. Men's fashions seem to be increasing in popularity, and Haverford may therefore want to expand the Men's Department and increase its advertising to take advantage of this trend.

Vertical or Horizontal?

You can form bar graphs vertically or horizontally. If you run the bars up from the X axis, the graph is *vertical*. (All of the graphs you have seen so far are vertical.) If you run the bars left to right from the Y axis, the graph is *horizontal*. (For an example of a horizontal graph, see page 19.) Note that whether the bars are vertical or horizontal, the Y axis is always the vertical and the X axis is always horizontal.

WORKING WITH THE PROGRAM

After you have added GRAPHS to your system disc, it becomes part of the word processing option. (You can learn how to add GRAPHS in Section 2.) You can use GRAPHS to create, store, and print all the different types of bar graphs.

Creating a Graph

You start a graph the same way you start a word processing document: you name it and bring it to the Active List. Then you press **CODE + 5**. The program displays the Graph Questionnaire. It has three pages:

• The first page is called the *Format Page*. Here you enter specifications for the layout of the graph.

• The second page is called the *Text Page*. Here you enter the text you want to print on the graph.

• The third page is called the *Data Page*. Here you enter the data you want the graph to represent.

When you finish, you tell the program to assemble all this information. It then shows you the graph. To check the graph and revise the format, text, or data, you can switch back and forth from the Questionnaire to the graph display.

Storing a Graph

You store a graph in the same way you store a word processing document. The graph will appear in the same index and as the same type, WP. You can edit, move, copy, rename, or delete graphs from the index just as you do with your word processing documents.

Printing a Graph

You can print a graph in three ways:

• You can print a graph directly from the screen when you create it. You simply press **CODE + PARA**.

• You can print a graph after you have stored it. You move it to the Active List, display it on the screen, and print it.

• You can print a graph as an illustration in a document. You insert a code containing the graph's name into the document. When you print the document, the printer stops at the graph code, finds the graph in the index, prints it, and then continues printing the document.

THE VOCABULARY OF GRAPHS

All bar graphs are made from the same basic parts. The graph on page 6 is a vertical, segmented bar graph with the basic parts labeled. Take a little time to become familiar with the following list of parts and their definitions.

Bar	A rectangular block. The bar height (on a vertical graph) or length (on a horizontal graph) represents a value.
Bar label	Text that labels a bar. On a vertical graph, bar labels appear along the X axis under each bar. On a horizontal graph, they appear to the left of the Y axis before each bar.
Header	Text over the graph. Usually, the title of the graph.
Icon	A labeled box that shows a ''sample'' of the pattern in a segment of a segmented bar graph or a bar in a cluster-bar graph.
Icon label	Text next to an icon. The icon and its label form a key to a segment or a bar.
Notes	Explanatory text under a graph. Notes tell how to read the data or they give the source of the data.
Scale	The division of one of the axes into increments. In the illustration, the Y axis is scaled from 0.0 to 3.0.
Scale label	Number on the scaled axis. In the illustration, the scale labels are 0.0, 0.5, 1.0, through 3.0.

Segment	Section of a bar. A segment represents a quantity that contributes to the total value of the bar.
Tic	The mark that notes the division of the scaled axis. The program shows a tic with each scale label and halfway between each label.
X axis	The horizontal line that forms the base of the graph.
X-axis title	Text that prints under the X axis. It tells what the divisions along the axis represent: for example, fiscal years.
Y axis	The vertical line that forms the left side of the graph.
Y-axis title	Text that prints at the head of the Y axis. It tells what the divisions along the axis represent: for example, billions of dollars.

HAVERFORD'S DEPARTMENT STORE
NET PROFITS 1980-1984

Millions of dollars
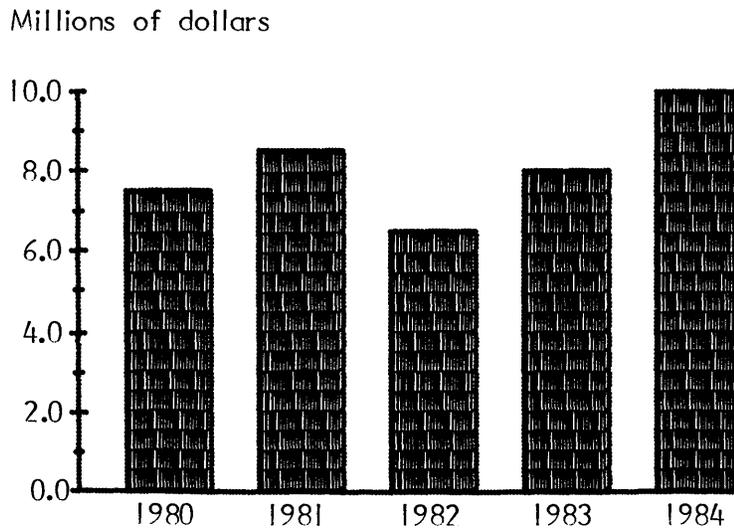
Simple Bar Graph

HAVERFORD'S DEPARTMENT STORE
NET PROFITS 1982-1984
BY DEPARTMENT

Millions of dollars

Children's
Women's
Men's
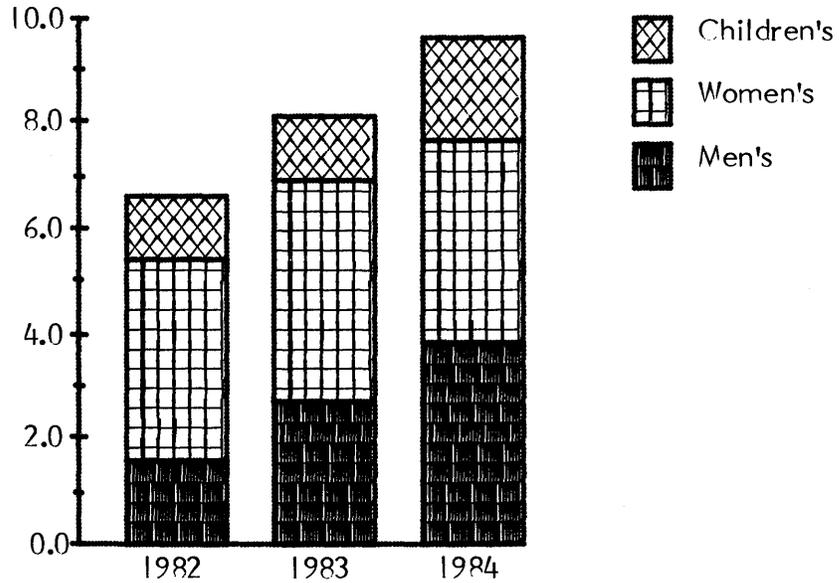
Segmented Bar Graph

HAVERFORD'S DEPARTMENT STORE
NET PROFITS 1982-1984
BY DEPARTMENT

Millions of dollars

Children's
Women's
Men's

Cluster Bar Graph

CAPITAL REQUIREMENTS

Header———————SHOW REVERSAL IN HOUSING TREND

CONSTRUCTION IS UP

Y axis title ➜ Billions of dollars   Bar   Icon   Icon label

3.0 —

Y axis ————————➜   ☐ Construction

2.50

                                                                    ■ Other

2.0

Tic ————————————➜

1.50

1.0

                                                                    ◄————Segment

Scale label ————— 0.50

                                                                    ◄————Segment

0.0

        1979   1980   1981

                Fiscal Year ◄————————————— X-axis title

X axis   Bar label
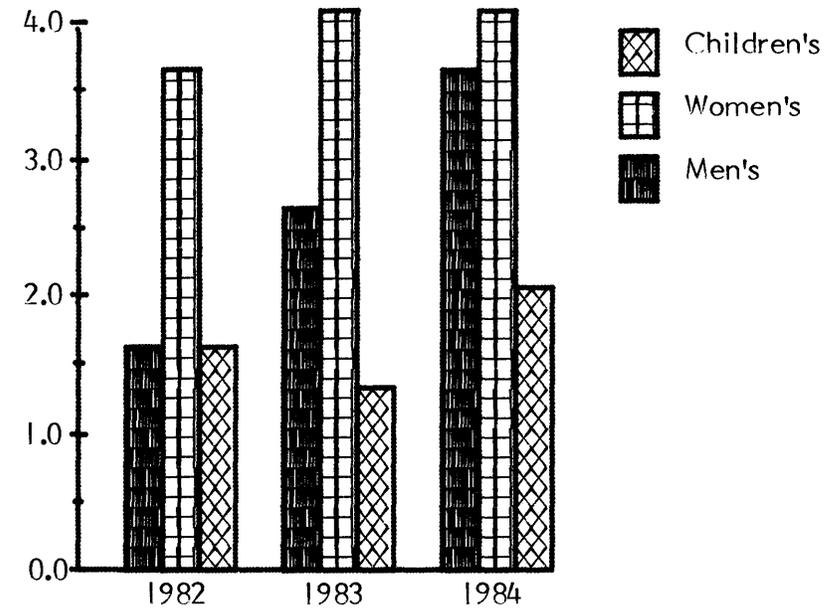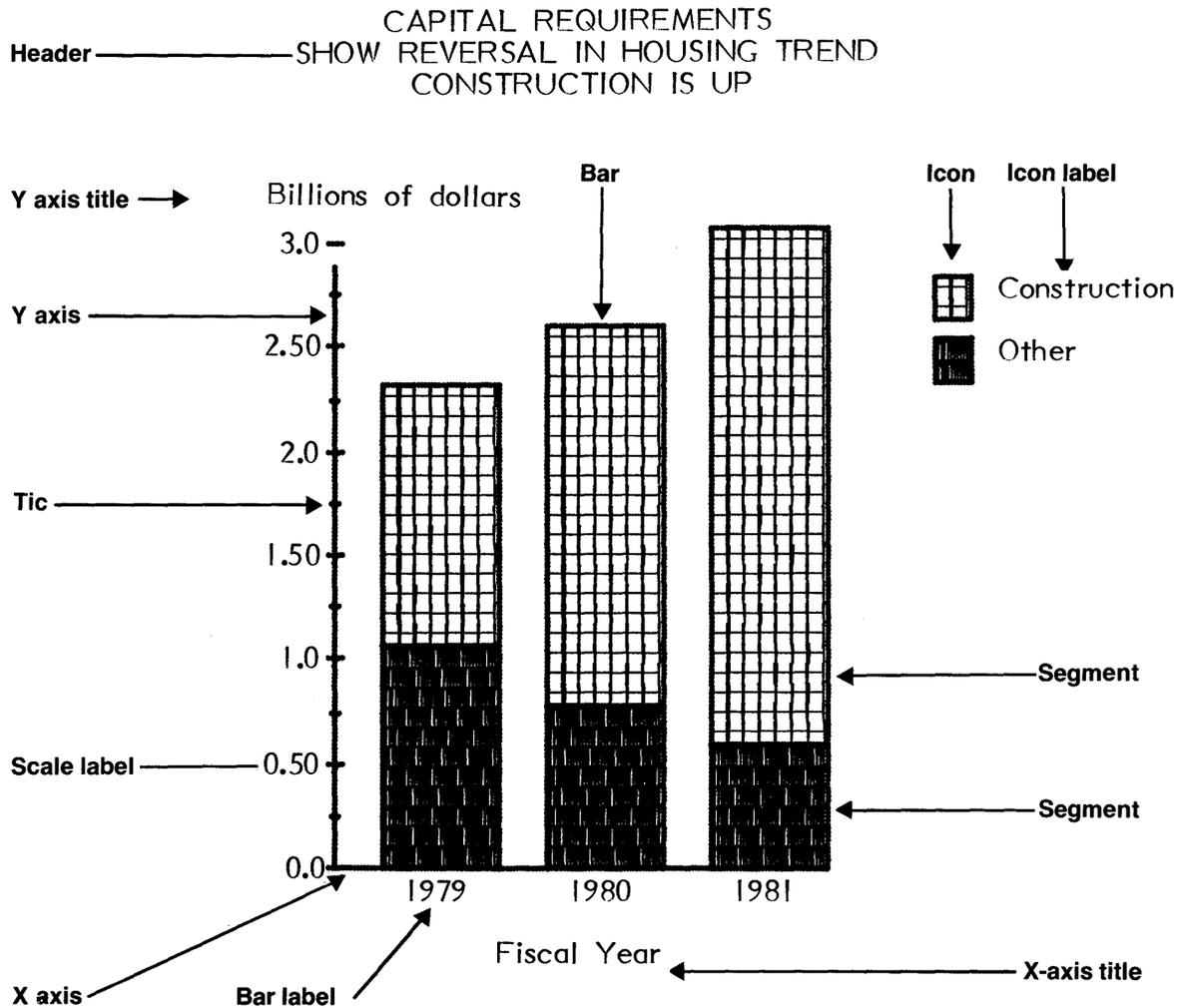
Notes——————— Figures show combined capital requirements
              for major area developers.
              Source: Boston Department of Housing

Vertical, Segmented Bar Graph

2

ADDING GRAPHS
TO YOUR SYSTEM DISC

You must add GRAPHS to your system disc. It will take up 56 sectors on the disc. If your 860 uses double-sided discs, you will probably have room for GRAPHS. However, if your 860 uses single-sided discs, you must create a new system disc using only the following options and utilities from the word processing master:

> Operating system
> Word processing
> Initialize
> Duplicate
> Backup index

If you need help in creating a system disc, see the instructions in Section 8.

BEFORE YOU BEGIN

You will need three discs:

• Your 6.2, 6.3, or 6.310 current Word Processing master disc

• GRAPHS master disc

• Your system disc

Make sure that the write-protect notch is covered on each disc and that you are using the discs on the correct 860. As with other software, GRAPHS locks to your 860 when you add it to your system disc and will not work on any other machine.

THE STEPS

1. **Insert the Word Processing master disc into the right station.**

2. **Turn on your 860. (If it is already on, press RESTART.)**

   The 860 displays:

                                    XEROX

   Next, the Command Line displays this message:

                          LOADING — PLEASE WAIT

   Then this message:

              INSERT DISC TO BE CREATED OR MODIFIED — THEN ACCPT

3. **Insert the system disc into the left station and press ACCPT.**

    You see the Disc Creation and Modification Page with the highlighting on DATE FORMAT. The Command Line displays:

    ENTER DATE FORMAT

ENTER DATE FORMAT	
LEFT: SYSTEM DISC NAME	RIGHT #####
DATE FORMAT:	MM/DD/YY
DATE:	MM/DD/YY
SYSTEM DISC NAME:	SYSTEM DISC
MACHINE SERIAL NUMBER:	### ######
CONFIGURATION:	
DISPLAY	— FULL PAGE (or PARTIAL PAGE)
DISC TYPE	— SINGLE SIDED (or DOUBLE SIDED)
PRINTER	— STANDARD (or WIDE BED or NONE)
PRINTER ACCESSORY	— NONE (or AUTOMATIC PAPER FEEDER)
SHARED PRINTER INTERFACE	— NONE (or YES)
COMMUNICATIONS MODE	— NONE (or YES or ETHERNET)
PROCEDURE:	
COPY ENTIRE MASTER DISC TO SYSTEM DISC	
SELECT OPTIONS OR UTILITIES TO BE COPIED	
ADD OPTIONS/UTILITIES FROM ANOTHER DISC	
REPLACE CONFIGURATION	

4. **Use LINE to highlight DATE. Then enter today's date.**

5. **Use LINE to highlight the procedure ADD OPTIONS/UTILITIES FROM ANOTHER DISC. Press ACCPT.**

    The Command Line displays:

    REMOVE MASTER DISC

6. **Remove the Word Processing master disc.**

    The Command Line displays:

    INSERT NEXT MASTER DISC — ACCPT TO CONTINUE

7. **Insert the GRAPHS master disc into the right station and press ACCPT.**

    After a few seconds, the Command Line displays:

    CHECKING OPTIONS/UTILITIES — PLEASE WAIT

Then you see the Option and Utility Selection Page. It lists the system disc software on the right side. On the left side, you see **INTERNATIONAL**. The Command Line asks:

RECORD OPTIONS/UTILITIES ON SYSTEM DISK?

OPTION AND UTILITY SELECTION					
MASTER DISC: GRAPHS			SYSTEM DISC: GR SYS		
OPTION & UTILITY NAMES	REVISION LEVEL	SECTORS	OPTION & UTILITY NAMES	REVISION LEVEL	SECTORS
INTERNATIONAL	H1.10	61	OPERATING SYSTEM	H6.200	145
			WORD PROCESSING	H6.200	242
			INITIALIZE	H6.200	14
			DUPLICATE	H6.200	13
			RECONSTRUCT	H6.200	18
			RENAME	H6.200	11
			BACKUP INDEX	H6.200	19
			CONVERT	H6.200	62
			RECOVER	H6.200	15
LINE + MARK OPTIONS/UTILITIES TO BE COPIED					
SYSTEM DISC SECTORS AVAILABLE: ###					

Look at the bottom of the screen and check how many system disc sectors are available. If there are less than 56 sectors, then GRAPHS will not fit. You have to create a new system disc. (You can follow the instructions in Section 8.) If there are more than 56 sectors, then continue adding GRAPHS.

8. Press STOP to remove the question in the Command Line.

Highlighting appears on **INTERNATIONAL**. (If highlighting does not appear, use **LINE** to high-light **INTERNATIONAL**.)

9. Press MARK to select INTERNATIONAL.

The Command Line displays:

CHECKING OPTIONS/UTILITIES — PLEASE WAIT

When the message clears, **INTERNATIONAL** starts to flash. Then the Command Line asks:

RECORD OPTIONS/UTILITIES ON SYSTEM DISC?

10. Press ACCPT.

The 860 starts to add GRAPHS to your system disc. The Command Line displays:

RECOVERING DISC SPACE — PLEASE WAIT

And then:

CREATING SYSTEM DISC — PLEASE WAIT

When the 860 has finished adding GRAPHS to the system disc, the Command Line asks:

ADD OPTIONS/UTILITIES FROM ANOTHER DISC?

11. **Press STOP.**

   The Command Line asks:

   <div align="center">CONTINUE USING THE MASTER DISC?</div>

12. **Press STOP.**

   The Command Line displays:

   <div align="center">REMOVE MASTER DISC</div>

13. **Remove the GRAPHS master disc from the right station.**

   The Command Line displays:

   <div align="center">PRESS RESTART</div>

14. **Remove the system disc from the left station, insert it into the right station, and then press RESTART.**

   The 860 displays:

   <div align="center">XEROX</div>

   Next, the Command Line displays:

   <div align="center">LOADING — PLEASE WAIT</div>

   Then you see the System Disc Page. The Command Line displays:

   <div align="center">ENTER DATE</div>

   Notice that GRAPH INSTALL is now in the list of options.

15. **Type today's date.**

16. **Use LINE to highlight GRAPH INSTALL. Then press ACCPT.**

   The Command Line displays:

   <div align="center">LOADING — PLEASE WAIT</div>

   Then the message:

   <div align="center">INSERT PHOENIX MASTER INTO LEFT DRIVE</div>

17. **Insert the GRAPHS master disc into the left drive and then press ACCPT.**

   The Command Line displays the serial number of your GRAPHS master disc and asks:

   <div align="center">Ser #: 6P071-XXXXX   ENTER UNLOCKING CODE NOW?</div>

18. **Press STOP.**

   The Command Line displays:

   <div align="center">MODIFYING SYSTEM DISC — PLEASE WAIT</div>

   Then it displays:

   <div align="center">INSTALL COMPLETE — REMOVE MASTER   continue?</div>

19. Press ACCPT.

The Command Line displays:

LOADING — PLEASE WAIT

Then you see the System Disc Page.

You have added GRAPHS to your system disc. Put the GRAPHS master disc away for safekeeping. The next time you select the word processing option, you will see **860 GRAPHS** in Instruction Block 5. After that, **GRAPH INSTALL** will no longer appear on the System Disc Page.

3

CREATING GRAPHS

PLANNING A GRAPH

To make an effective graph, you should plan it before you create it. Start by deciding which type of graph you want to use.

What Is the Graph About?

Begin your plan with this question. What is the theme? The focus? You may find it helpful to title your graph before you make other decisions. For example, look at these figures:

U.S. WINE SALES (millions of bottles)

	1982	1983	1984
Domestic	102	246	350
Imported	395	425	437
Totals:	497	671	787

You could emphasize the figures in three ways:

Wine sales are up! Americans are drinking more wine.
Imported wine still outsells domestic wine.
Domestic wine is making rapid and dramatic gains in the market.

Which argument do you want the graph to support? Choose the graph that best illustrates your purpose.

Simple Bar, Segmented Bar, or Cluster Bar?

If you have one figure for each category, you can use a simple bar graph. For example, let's say you are emphasizing holiday retail sales by years. Here's your list:

HOLIDAY RETAIL SALES

1981 $98 million
1982 $107 million
1983 $82 million
1984 $126 million

You can use a bar for each year. Your graph would look like the graph on page 15 (top). If you have more than one figure for each category, you can use either a segmented bar graph or a cluster-bar graph. Your decision depends on what you want to stress. The segmented bar emphasizes a total, while the cluster bar emphasizes the parts of a total. For example, here is a table that shows the profits of a restaurant chain:

<div align="center">

CHEZ SWANN
PROFITS FOR 1981-1984

</div>

	1981	1982	1983	1984
New York	$126,781,000	$138,942,000	$142,168,000	$146,237,000
Paris	$113,120,000	$112,168,000	$102,347,000	$ 98,761,000
Los Angeles	$120,386,000	$167,427,000	$192,235,000	$209,753,000
Totals:	$360,287,000	$418,637,000	$436,750,000	$454,751,000

If your main point is that profits for Chez Swann are climbing, you would choose a segmented bar graph. It would emphasize the yearly total and look like the graph on page 15 (bottom).

If your main point is that Chez Swann in Los Angeles is doing well while profits are falling for Chez Swann in Paris, you would choose a cluster-bar graph. Like the graph on page 16, it would emphasize the contrast between the profits for the three branches of the restaurant.

If the bars must represent both positive and negative numbers, you *must* use a cluster-bar graph. Since a segmented bar represents the sum of its parts by stacking them one on top of the other, it cannot represent both positive and negative values. It shows only all positive or all negative numbers. However, a cluster-bar graph can show both positive and negative numbers since all the segments start from the same line. (See the illustration on page 17.)

Vertical or Horizontal?

You can present most data in either a horizontal or vertical graph. However, keep in mind that

• A left-to-right progression of bars in a vertical graph suggests chronological order along the X axis.

• Bars in a horizontal graph suggest a list that you read down the Y axis.

You use a horizontal graph to compare data for a list of items. For example, the graph on page 19 shows the profits for Chez Swann as a horizontal graph. Notice that the bars now represent New York, Paris, and Los Angeles (a list of items that could appear in any order), instead of years (a list of items in chronological order).

Arranging Your Data

Once you have decided whether your graph will be vertical or horizontal, arrange your data in a table so that the columns of data are organized vertically by bar and horizontally by segment. (You will see why when you learn about the Data Page of the Questionnaire on page 25.)

For example, here is the same data for Chez Swann that we showed you earlier. We used it to make the vertical segmented-bar and cluster-bar graphs on pages 15-16. Notice that each *year* became a bar, and each *city* became a segment in the bar.

<div align="center">

CHEZ SWANN
PROFITS FOR 1981-1984

</div>

	1981	1982	1983	1984
New York	$126,781,000	$138,942,000	$142,168,000	$146,237,000
Paris	$113,120,000	$112,168,000	$102,347,000	$ 98,761,000
Los Angeles	$120,386,000	$167,427,000	$192,235,000	$209,753,000

HOLIDAY RETAIL SALES

Millions of dollars
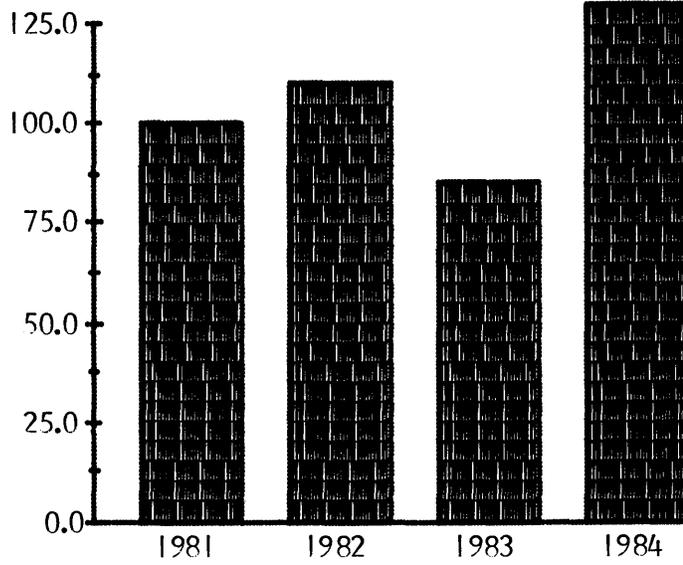
Simple Bar Graph

CHEZ SWANN
PROFITS FOR 1981-1984

Millions of dollars

Fiscal Years
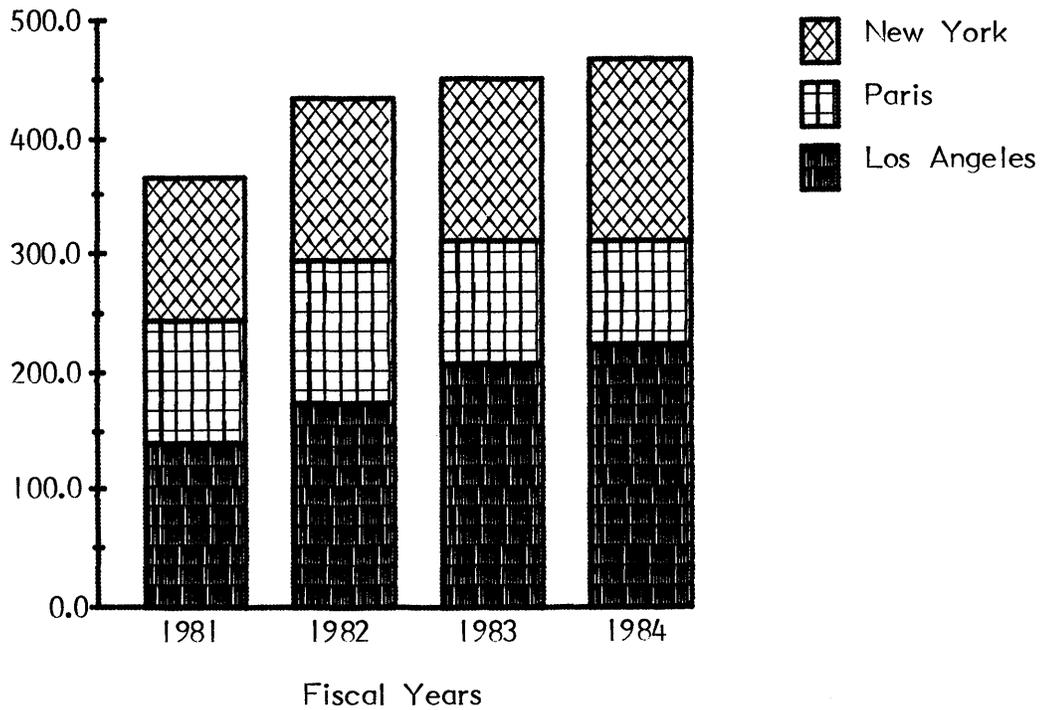
Segmented Bar Graph

CHEZ SWANN
PROFITS FOR 1981-1984

Millions of dollars

Fiscal Years
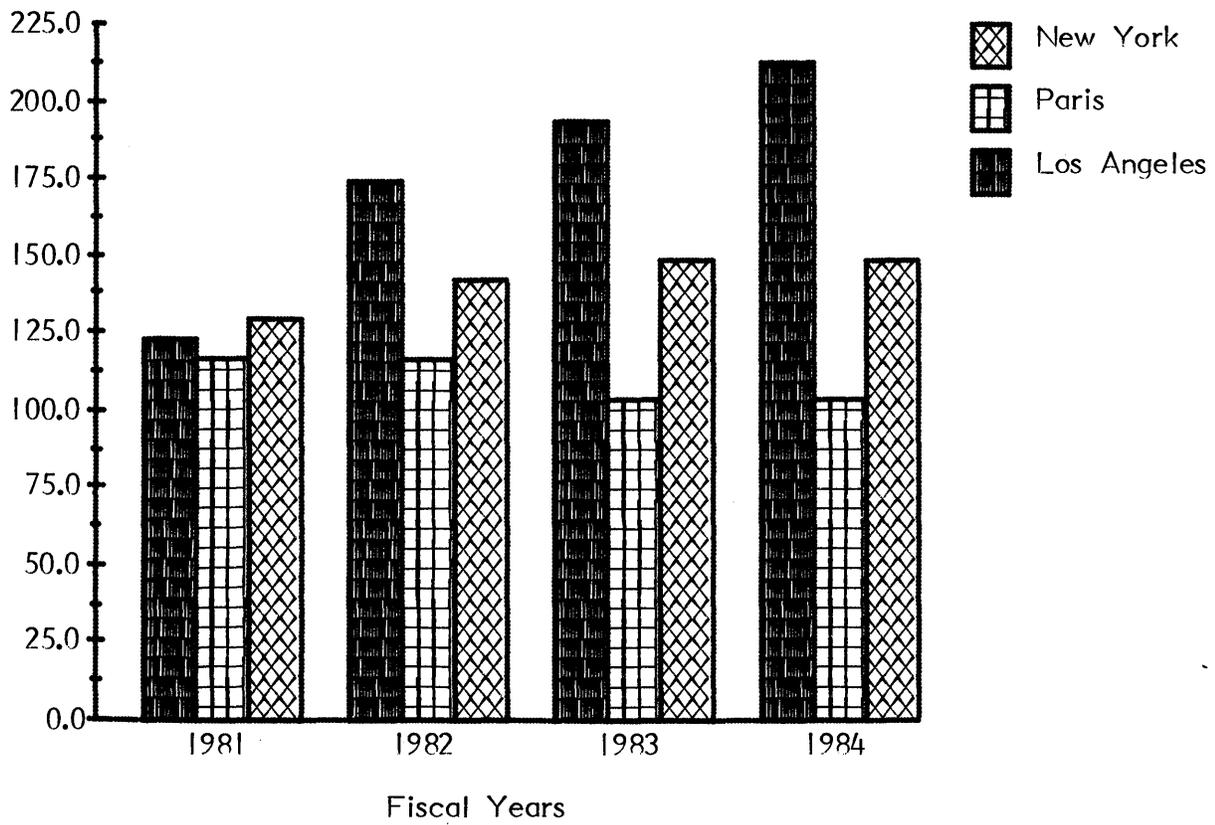
Cluster Bar Graph

CHEZ SWANN
PROFITS FOR 1981-1984

Millions of dollars

Fiscal Years
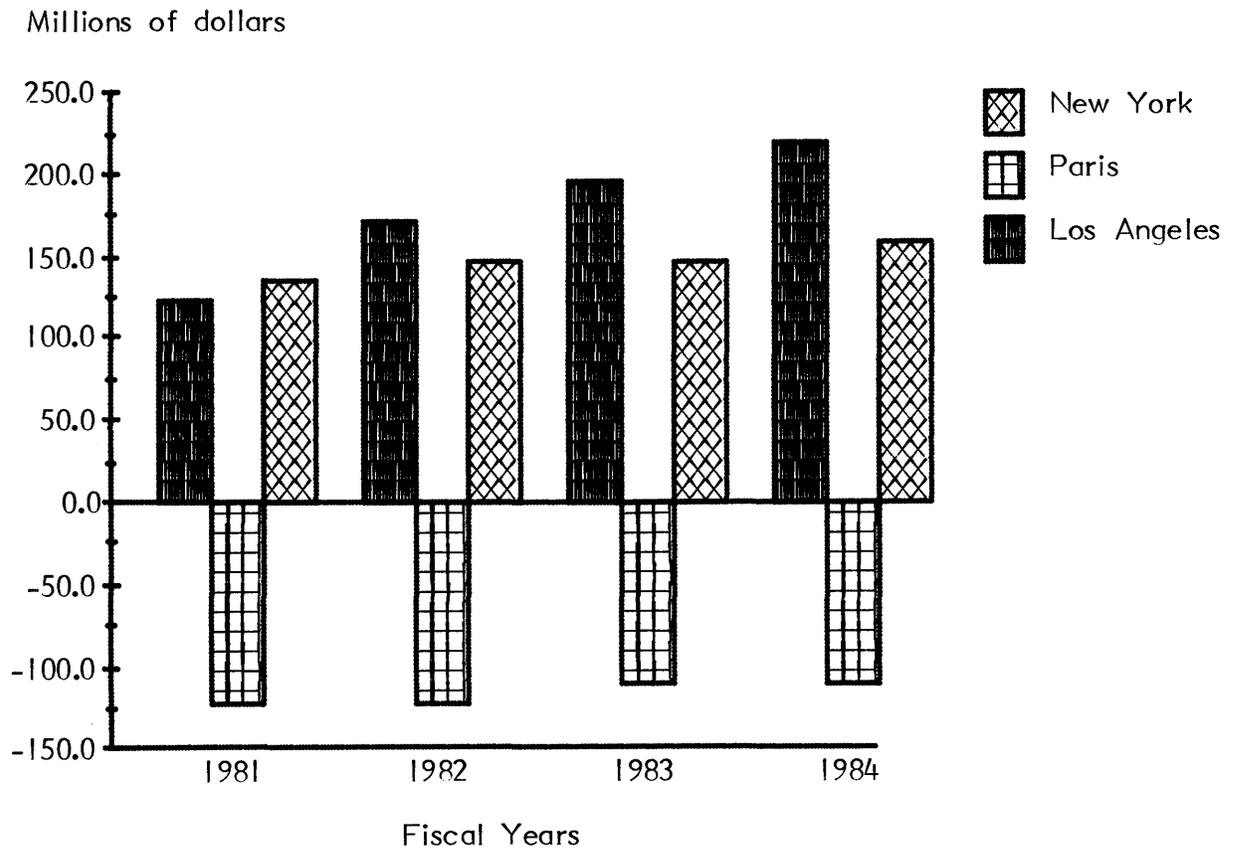
Cluster Bar Graph With Negative Values

Now here is the same data rearranged to make the horizontal cluster bar graph on page 19. Each *city* has become a bar, and each *year* has become a segment in the bar.

CHEZ SWANN
PROFITS FOR 1981-1984

	New York	Paris	Los Angeles
1981	$126,781,000	$113,120,000	$120,386,000
1982	$138,942,000	$112,268,000	$167,427,000
1983	$142,168,000	$102,347,000	$192,235,000
1984	$146,237,000	$ 98,761,000	$209,753,000

STARTING A GRAPH

Once you have planned your graph, you are ready to create it. The first steps are the same as those you follow when you create a word processing document: you type the name of the graph on the Activity Page and then press **ACCPT** to bring it to the Active List.

You can name a graph with letters and numbers. You have the same 20-character limit that you have in word processing. But keep in mind that a graph is listed in the same index as your word processing documents and is coded WP. Because of this, give a graph a name that you can easily distinguish from the name of a word processing document. For example, include the suffix GR after all graph names. Or, if you will be inserting the graph into a particular document, name it after the document and then include the suffix: for example, STOCK REPORT GR 1. Here is how you start a graph. The steps bring you to the Graph Questionnaire.

1. **Start up your 860 as usual. Insert the System Disc with GRAPHS on it and load the word processing software.**

2. **Insert your work disc into the other station and bring the Activity Page to the screen.**

   Notice that 860 GRAPHS now appears in Instruction Block 5.

3. **Type the name of your graph and then press ACCPT.**

   The name of the graph appears in the Command Line as you type. Then this question replaces it:

   NEW DOCUMENT?

4. **Press ACCPT.**

   You see the Active List with the new graph name highlighted.

5. **Type CODE + 5 to select Instruction Block 5, GRAPHS.**

   The Command Line displays:

   LOADING — PLEASE WAIT

   Then the Command Line asks:

   Ser #: 6P071-XXXXX   ENTER UNLOCKING CODE NOW?

6. **Press STOP.**

   The Command Line displays the number of trials you have left and asks a question:

   TRIALS REMAINING — 12   continue?

CHEZ SWANN
PROFITS FOR 1981-1984
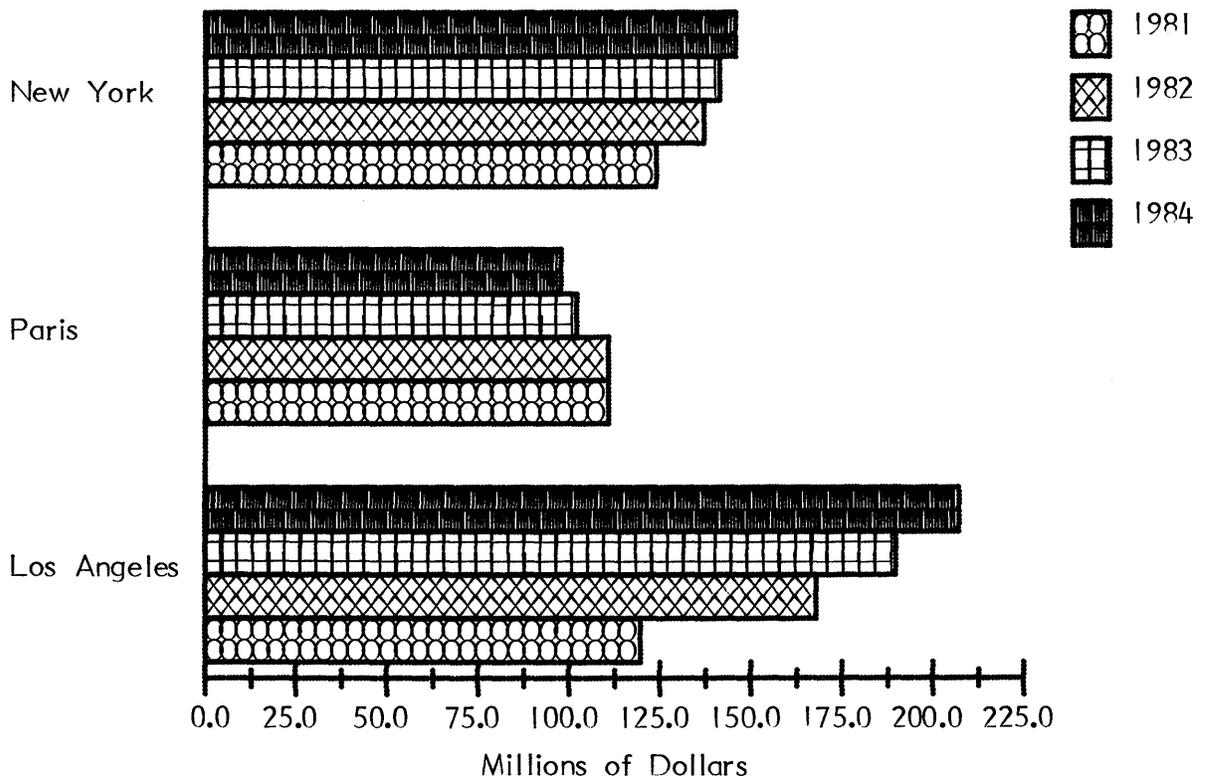
Horizontal Cluster Bar Graph

7. **Press ACCPT.**

Now you see the Format Page of the Graph Questionnaire. (If you do not want to continue, press **STOP** instead of **ACCPT**. The Command Line displays APPLICATION RUN CANCELLED. Press ACCPT.)

FILLING OUT THE GRAPH QUESTIONNAIRE

The Graph Questionnaire has three pages: the Format Page, the Text Page, and the Data Page. When the program displays the Questionnaire, all three pages are already filled out, either with the program defaults (standard responses) or with the responses for the graph you last created. You see the default responses each time you load GRAPHS. (If you make more than one graph in a work session, the program starts the Questionnaire for the new graph with the responses you used for the preceding graph.)

To create your graph, you fill out the pages, changing defaults or previous responses to fit your new graph. Then you press **PROGRAM** and the program assembles the graph and displays it on the screen.

THE FORMAT PAGE

The Format Page looks like this:

```
GRAPH AREA
   LEFT MARGIN              6
   RIGHT MARGIN             100
   GRAPH SIZE              61
   GRAPH TOP MARGIN         3
   GRAPH BOTTOM MARGIN      3
   X AXIS MARGIN            3
   ICON MARGIN             4
   ICON LABEL MARGIN       3
   GRAPH PITCH            PS

GRAPH TYPE
   TYPE OF BAR             SEGMENTED BAR
   SCALED AXIS             VERTICAL

SCALE
   MINIMUM VALUE          0.0
   MAXIMUM VALUE         +8,000.0
   LABEL INTERVAL       +1,000.0
   NOTATION MULTIPLE      ONE

BARS
   NUMBER OF BARS          8
   NUMBER OF SEGMENTS      8
   BAR WIDTH              5
   BAR MARGIN             3
```

Look at the underlined headings on the left. You see GRAPH AREA, GRAPH TYPE, SCALE, and BARS.

- With the *area* specifications, you tell the program the size of the graph, where to print it, and how to arrange some of its parts.

- With the *type* specifications, you tell the program which type of graph you want.

- With the *scale* specifications, you tell the program how to set up the scaled axis.

- With the *bars* specifications, you tell the program how many bars and segments you want.

To fill in the Format Page, you use **LINE** and **RVRSE + LINE** to move the highlighting to the specification you want. You can also use **PARA** as in word processing to move quickly to the first specification of the next group (for example, from LEFT MARGIN to TYPE OF BAR).

- If the specification must be a number, type a number. The number you type will automatically replace the number already in the column.

- If the specification must be a word (for example, SEGMENTED BAR), use **CHAR** to flip through the available responses and set the one you want.

Now let's look at each specification. Most of them are shown in the illustration on page 23.

Graph Area

By setting the area specifications, you create a rectangular field for your graph. The graph area is a guideline. The program will extend the area if all of your graph will not fit. (You will learn later how to adjust it yourself when you view the graph.)

LEFT MARGIN	Characters from the left edge of the page to the left border of the graph area.
RIGHT MARGIN	Characters from the left edge of the page to the right border of the graph area.
GRAPH SIZE	The height of the graph area in lines.

You use the next two specifications to establish how the program will insert the graph area into a document. Imagine that you are pasting down the graph area in a document. The area will have a top and bottom margin of its own *within* the text area.

GRAPH TOP MARGIN	Blank lines between the last line of a document and the top of the graph area. (If you are going to print the graph on a page of its own, the top margin is the number of blank lines after the TOP MARGIN on your Master Format Page to the top of the graph area.)
GRAPH BOTTOM MARGIN	Blank lines between the bottom of the graph area and the first line of the document. (If you are going to print the graph on a page of its own, you don't need a bottom margin. You can leave the default 3.)

After you have filled out these specifications, you can picture the graph area like the illustration on page 23. The gray field would contain your graph. There are margins for inserting it into a document.

Now you start building the graph itself. You use the next three specifications to define the placement of some graph parts *within* the graph area. (Again, see the illustration on page 23.)

|	
X AXIS MARGIN	Characters from the left border of the graph area to the beginning of the X axis. On a vertical graph, enter the length of the longest scale label plus one. On a horizontal graph, enter the length of the longest bar label plus one.
ICON MARGIN	On a vertical graph, character spaces between the last bar and the icons. On a horizontal graph, character spaces between the end of the X axis and the icons.
ICON LABEL MARGIN	Character spaces between the icon and its label.
GRAPH PITCH	Pitch of the print wheel you will use to print the graph. Use **CHAR** to set the pitch at PS, 10, or 12.

Graph Type

TYPE OF BAR	Use **CHAR** to set the response at either SEGMENTED BAR or CLUSTER BAR.
SCALED AXIS	Use **CHAR** to set the response at either VERTICAL or HORIZON-TAL. The scaled axis is vertical on a vertical graph and horizontal on a horizontal graph.

Scale

MINIMUM VALUE	Lowest number on the scaled axis. For example, the minimum value for the graph on page 23 is zero.
MAXIMUM VALUE	Highest number on the scaled axis. For example, the maximum value for the graph on page 23 is 12. On a segmented bar graph, the scale maximum must at least equal the value represented by the largest bar. On a cluster-bar graph, it must at least equal the value represented by the largest segment. Be sure that you can divide the maximum into even increments for the scale labels.
LABEL INTERVAL	Establishes how often the program will place a scale label between the minimum and maximum values. For example, the label interval for the graph on page 23 is 2. Use an interval that divides the maximum value evenly. If not, the program will extend the axis from the highest possible label to where the maximum would be, but it won't print the maximum. For example, if the label interval for the graph on page 23 were 5, the program would plan a label at 5 and 10. It would extend the Y axis up to where 12 would be, but it would not print 12. You can have up to ten labels. So choose your label interval with this in mind. For example, if your scale goes from zero to 100 and you choose a label interval of 5, the program will stop printing labels at 50.
NOTATION MULTIPLE	The value indicated by the labels. For example, the notation multiple for the graph on page 23 is 1 billion. The program divides the data you enter for the graph by the notation multiple. For example, on the

DOCUMENT

Graph Area

Graph Top Margin

THE USES OF NATURAL GAS

Cubic feet (in billions)

Left
Margin

Icon
Label
Bar   Icon   Margin
Margin   Margin

Bar
Width

12.0   Residential

10.0   Industrial &
8.0   Commercial
6.0   Other
4.0
2.0
0.0
        1981   1982   1983

X-Axis
Margin   Fiscal Years

Source: United States Department of Energy

Graph
Size

Right Margin

Graph Bottom Margin
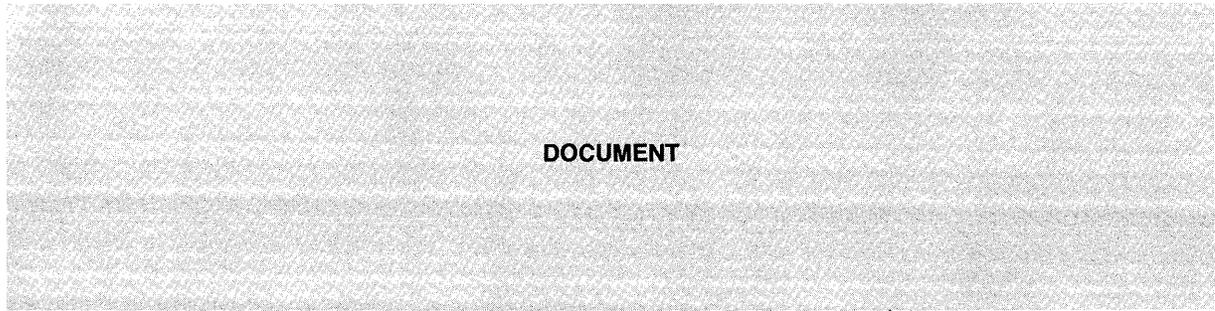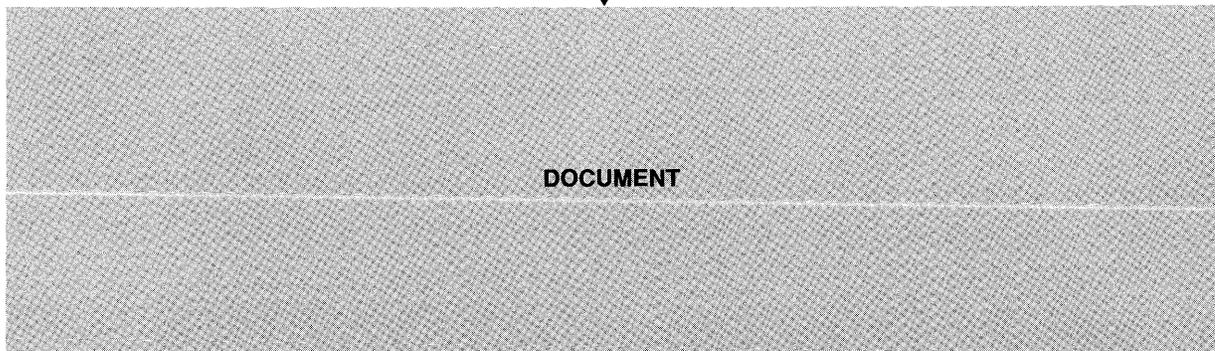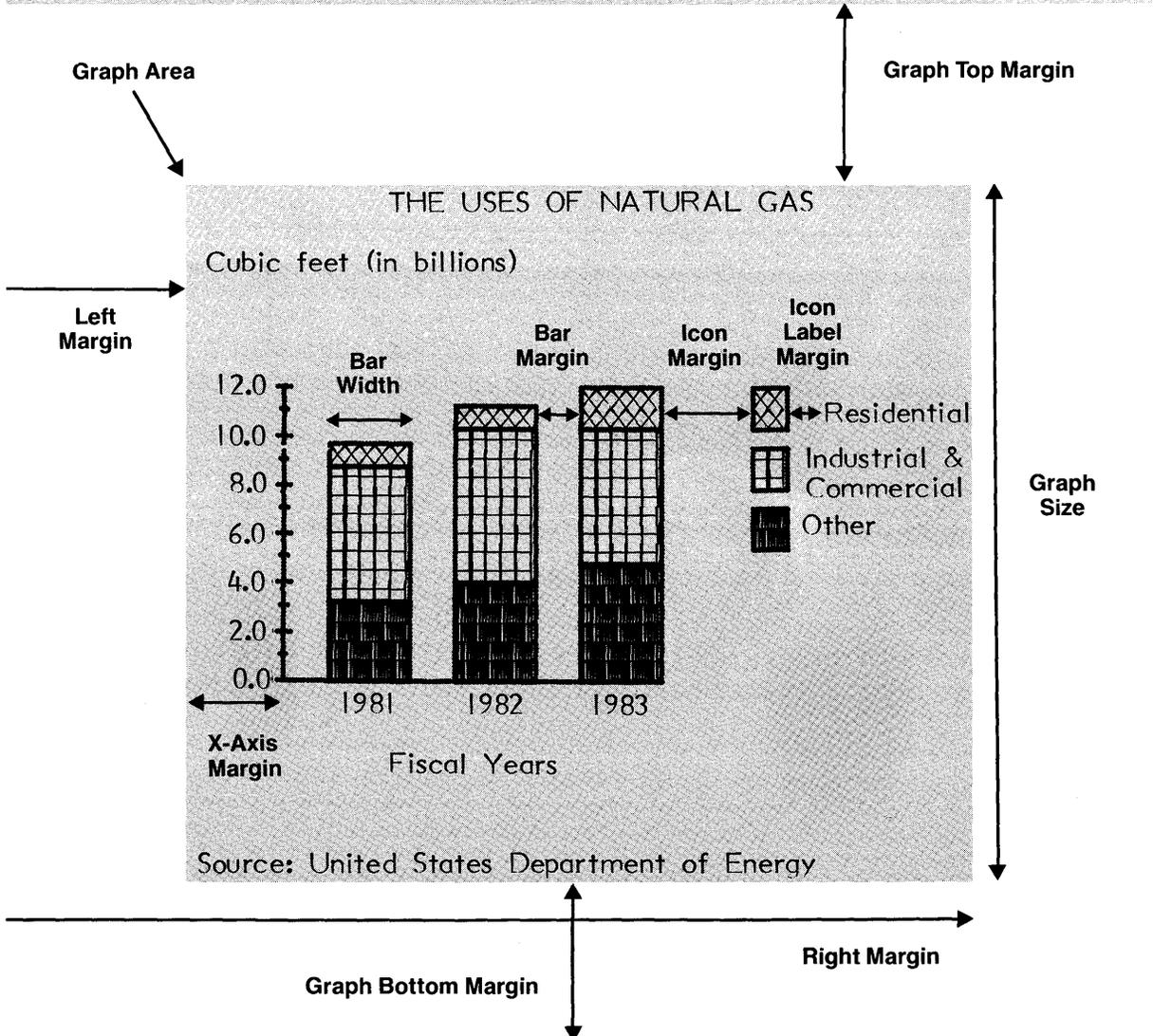
DOCUMENT

graph on page 23, the first column total is 9,700,000,000 but the program plotted it as 9.7. Use **CHAR** to set the notation multiple at one, ten, and multiples of ten up to one trillion. Make it clear on the graph what the notation multiple is. For example, the Y-axis label for the graph on page 23 reads "Cubic feet (in billions)."

Bars

NUMBER OF BARS — You can have up to eight bars.

NUMBER OF SEGMENTS — You can have up to eight segments in each bar. For example, for the graph on page 23, the number of segments is 3. (If you are making a simple bar graph, you type 1 for the number of segments.)

BAR WIDTH — On a vertical graph, you measure the bar width in characters. On a horizontal graph, you measure the bar width in lines. On a vertical, segmented bar graph, you must make the bar width at least as wide as the longest bar label. If you are making a cluster-bar graph, the bar width is the width of each *segment*. So for the actual width of the "cluster," multiply the bar width by the number of segments.

BAR MARGIN — Space between bars. On a vertical graph, you measure the space in characters. On a horizontal graph, you measure the space in lines.

After you have filled out the Format Page, you press **PAGE** to display the Text Page.

THE TEXT PAGE

You use the Text Page to enter the graph header, the X-axis title, the Y-axis title, and any notes you want below the graph. The Text Page looks like this:

```
HEADER
1>4HEADER LINE 1
2>4HEADER LINE 2
3>4HEADER LINE 3

Y AXIS TITLE >4Y AXIS TITLE

X AXIS TITLE >4X AXIS TITLE

NOTES
1>NOTES LINE 1
2>NOTES LINE 2
3>NOTES LINE 3
```

You see four underlined specifications (HEADER, Y AXIS TITLE, X AXIS TITLE, and NOTES) and the default text for each specification (for example, HEADER LINE 1). As with the Format Page, you use **LINE** and **RVRSE LINE** to move the highlighting to each specification.

You have three options at each line of default text. You can

- Type the text you want. It appears after the "greater than" prompt and replaces the default text. (For the header lines, Y-axis title, and X-axis title, the Code 4 before the line marker tells you that the program will center the line. The code stays visible even after you type in your text so that you can always tell which lines are centered. If you want to cancel the centering so that the line is flush left, press **CODE + 4** before you type a header line or the axis title).

- Press **RETURN** if you want a blank line on the graph.

- Press **DEL** if you don't want to use the line and you don't want a blank line.

You *must* take one of the three options for each line. Otherwise, the program will print the default text on your graph. Here are some points to remember about typing on the Text Page:

- Wraparound does not work on these lines. So you must use **LINE** to move to a new line, even if you are continuing a sentence.

- You cannot bold, underline, or justify the text.

- You can use **BACKSPACE** to correct errors as you type. But you can't use any editing techniques that require highlighting (such as **MOVE** or **RPLCE**). If you want to change a line after you have typed it, you must start again. As you type, the new text replaces the old text. (After you finish, you can use **DEL** to delete any remaining text.)

- If you un-center or re-center a line and type new text, it will no longer replace the default text. Instead it pushes the default text ahead of it. After you enter the text, you can use **DEL** to delete the marker character by character.

Let's look at each specification.

HEADER | You can type three lines, each with up to 80 characters. But the line length is limited by the margins you set in the graph area specifications. You usually use header lines for the graph title. (See the graph illustrations for examples.) The program centers header lines unless you enter **CODE + 4** before you type the header.

Y AXIS TITLE | You can type 25 characters. The program centers the title over the axis unless you enter **CODE + 4** before you type the text. (Then it starts the title at the left margin of the graph area. The program will also start the title at the left margin if the title is more than twice as long as the X-axis margin, even if the center code is on.)

X AXIS TITLE | You can type 25 characters. The program centers the title under the axis unless you enter **CODE + 4** before you type the text. (Then it starts the title at the left margin of the graph area.)

NOTES | You can type three lines, each with up to 80 characters. But the line length is limited by the margins you set in the graph area specifications. The program starts each line at the left margin of the graph area. You can center a line by entering **CODE + 4** before you type it.

When you have filled out the Text Page, you press **PAGE** to display the Data Page.

THE DATA PAGE

You use the Data Page to enter bar labels, icon labels, and the data on which the program constructs the bars. The program displays defaults only for the number of bars and segments you specified on the Format Page. There is room on the screen for four bars of eight segments each. If you specified more

than four bars, then the rest of the defaults appear on a second Data Page. (You press **PAGE** to see it.) Here is the Data Page you would see if you specified four bars of five segments each:

Press FORMAT to enter Data				
	4LAB1	4LAB2	4LAB3	4LAB4
ICON LABEL 5	+1,000.0	+1,000.0	+1,000.0	+1,000.0
ICON LABEL 4	+1,000.0	+1,000.0	+1,000.0	+1,000.0
ICON LABEL 3	+1,000.0	+1,000.0	+1,000.0	+1,000.0
ICON LABEL 2	+1,000.0	+1,000.0	+1,000.0	+1,000.0
ICON LABEL 1	+1,000.0	+1,000.0	+1,000.0	+1,000.0
TOTALS	+5,000.0	+5,000.0	+5,000.0	+5,000.0

Notice that the program arranges the Data Page exactly like the table you made when you planned your graph. (See the table on page 13.) To fill out the Data Page, you simply replace the defaults with your table. You type a column head from your table to replace each bar label default (LAB1, etc.). You type a segment label on the left side to replace each icon label default (ICON LABEL 1, etc.) You type the data to replace the default figures in the columns. The program constructs the bars from the data. It puts the column heads on the graph as bar labels. It puts the segment labels on the graph as icon labels.

When the program displays the Data Page, it highlights LAB1. As on the Text Page, the text you type replaces the default. You can correct mistakes by using **BACKSPACE**, but you cannot use any editing techniques that require highlighting. If you want to change a line, you must retype it.

When you fill out the Data Page, you type in the bar labels first (across the top). Then you type the icon labels (down the left side). Then you fill in the columns. To move the highlighting between the labels and the columns, you press **FORMAT**.

Here are the steps:

1. **Type the name of your first bar label (LAB 1).**

   You can use 15 characters. On a vertical graph, you cannot have a label wider than a bar. The program centers a label under a bar. If you are making a horizontal graph, press **CODE + 4** to uncenter each label before you type it. (The program then starts each label at the left margin of the graph area.)

2. **Press WORD.**

   The program moves the highlighting to LAB2. Continue across the row, entering the text for the labels. Then

3. **Press LINE.**

   The program moves the highlighting left and down and onto the top icon label.

4. **Type the first line of the top icon label.**

   You can type two 15-character lines for each icon label. Under ICON LABEL, you see the code for a return. If you want the second line blank, you don't have to press **RETURN**. Simply use **LINE** to skip the highlighting over the second line and on to the next label. The program does not center icon labels. It positions them next to the icons according to the icon margin specification

on the Format Page. If you do not want an icon to appear at all (for example, on a simple bar graph), delete *both* icon label lines. The program will not print an icon.

5. **Press LINE once if you want to type a second line. Press LINE twice if you want to go to the next label.**

   Continue down the column until you have typed all the icon labels. Then

6. **Press FORMAT.**

   The program moves the highlighting to the top number of the first column in the data area. To move the highlighting in the data area, you use these commands.

   WORD or **TAB** (⬛➡)\to move the highlighting *across* a row to the adjacent entry.

   LINE to move the highlighting *down* a column.

   RETURN to move the highlighting from the last entry on one row to the first entry of the next row.

   So, to fill in the data,

7. **Enter the figure for the top segment of Bar 1.**

   You don't have to type + for a positive number or a decimal (.0) if you are entering a whole number. But you must type a minus sign if the number is negative.

8. **Press WORD.**

   The program moves the highlighting across to the first segment of the second bar. Continue across the line, typing a figure for the top segment of each bar. Then

9. **Press RETURN.**

   The program moves the highlighting to the second segment of the first bar. Type a figure for each segment. Use **WORD** to move across and **RETURN** to move back and down until you have filled in the data area. (Or you can use **LINE** to move down each column in order to enter all the figures for one bar at a time.) The program will adjust the totals at the bottom of the columns as you go.

- If your graph contains more than four bars, press **PAGE** when you have filled in the Data Page. The program displays a second Data Page for the other bars. Fill in this page. Then view your graph.

- If your graph contains four bars or fewer, you have finished creating it. Now you view it.

VIEWING A GRAPH

To view the graph you have created, press **PROGRAM**. The screen goes blank and the Command Line displays:

<p align="center">PLEASE WAIT</p>

while the program converts all the information you have given it into a graph. After a short time, the program displays the graph. Now you can look it over for changes.

What to Look For

The first thing you will notice is that the graph is elongated. The bars are wider and longer than they will be when you print the graph. You will also notice that the scaled axis does not seem to be evenly

divided and that the scale labels are not next to the tics. This is normal.

You will also notice this prompt at the top of the screen just *below* the Command Line:

Press FORMAT to Edit or CODE + PARA to Print

The prompt will not appear on your graph when you print it. It appears on the screen only so that the Command Line can be free to display error messages.

If the entire graph does not appear on your screen (and it probably won't), use **SCROLL** and **RVRSE + SCROLL** to scroll into view the parts not on the screen. If it's a long horizontal graph, you may need to use **CODE + SCROLL** and **CODE + RVRSE + SCROLL** to move your view right and left.

Check the scaled axis: do all the numbers appear? If not, the program is telling you that you don't have room for them. Remember that the program tries to fit all the parts of the graph into the area you specified on the Format Page. It puts the header at the top of the graph area and the notes at the bottom. It positions the bars, bar margins, bar labels, axis titles, icons, and icon labels according to your specifications. Text, widths, and margins are all *givens*. The program places them first and *then* fits the scaled axis into whatever room is left over. If there isn't enough room, the scale labels won't all appear on the screen. If you printed the graph, the scale labels would all print, but they would overlap. (The screen can't show that.)

- On a vertical graph, the scaled axis is vertical. If the labels don't all appear, it means that the graph area is not *tall* enough. Increase the graph size on the Format Page.

- On a horizontal graph, the scaled axis is horizontal. If all the labels don't appear, it means that the graph area is not *wide* enough. Make the right margin and left margin farther apart on the Format Page.

The graph area may also be not *wide* enough for a vertical graph or *tall* enough for a horizontal graph. If this is the case, the Command Line will display an error message. You may see:

ERROR — RIGHT MARGIN REPLACED

This message occurs with a vertical graph if the graph area is not wide enough for the header, scale labels, Y axis, bars, bar margins, icons, and icon labels. (You have specified all of these in character spaces.) The program has changed (*replaced*) the specification. Press **FORMAT** to recall the Questionnaire. Look to see what the new right margin specification is. You can accept it (and perhaps equalize both margins so that the new width is centered), or you can cut back an element that is too wide.

You may also see:

ERROR — GRAPH SIZE REPLACED

This message occurs with a horizontal graph area if the graph is not tall enough for the headers, bars, bar margins, scale labels, and notes. (You specify all of these in character spaces.) The program has changed (*replaced*) the specification. Press **FORMAT** to recall the Format Page. Look to see what the new graph size specification is. You can accept it or cut back any of the parts that make the graph too tall.

You may also see:

ERROR: TEXT AREA EXCEEDS BOUNDARY

This message appears if

- Notes do not fit in the graph area.

- Bar label on a vertical graph is wider than a bar and will overlap another label when printed.

- X axis margin on a vertical graph is so small that scale labels run over the Y axis.

- X axis margin on a horizontal graph is so small that bar labels run over the Y axis.

When you see the error message, scroll through the graph. The error area will be flashing. As before, press **FORMAT** to recall the Questionnaire. Then either change the text entries to fit, widen the margins, or increase the bar width.

Also consider the aesthetics.

- Does the graph seem balanced?

- Are the bar labels crowded?

- Should you shorten or lengthen the Y axis?

- Should you make the bars wider? Narrower? Closer together?

- Should you move the icon farther from the graph?

MAKING CHANGES

You can't make changes directly on the graph. You must go back to the Questionnaire and change specifications. Press **FORMAT** to recall the Graph Questionnaire. Then you see the Format Page. Use **PAGE** to flip through the Questionnaire. Change the specifications. Remember that you cannot edit the text entries with word processing commands that use highlighting. To change text, you must type over it.

After you have made changes, press **PROGRAM** to see the modified graph. When you are satisified with the way the graph looks, print a paper copy from the screen and proof it. Since the screen distorts the graph, printing it is the only sure way to see what the graph will really look like.

PRINTING A GRAPH FROM THE SCREEN

To print your graph, press **CODE + PARA**. The Command Line displays:

INSERT PAPER

Insert a piece of paper into the printer. Press **CODE + PARA** again or the **STOP/START** button on the front of the printer.

That's all there is to it. You can print a graph from any page of the Questionnaire or from the screen. if you want to make more changes after you proof the graph, go ahead. If not, you are ready to store it.

STORING A GRAPH

You store a graph the same way you store a word processing document.

1. **Press STORE.**

    You see the Active List with the graph name highlighted. The Command Line asks:

    ### STORE DOCUMENT?

2. **Press ACCPT.**

> The graph name disappears from the Active List. You can press **PAGE** to see the graph name at the top of the Index on the Activity Page.

You can store a graph from any page of the Questionnaire or from the screen. You can also store an unfinished graph at any time while you are creating it. *However*, when you press **STORE**, the program puts together the graph specifications you have entered so far. If they don't fit together, you may see one of the same error messages that can occur when you press **PROGRAM** to view a graph:

> UNACCEPTABLE NUMBER
> ERROR: TEXT AREA EXCEEDS BOUNDARY
> IMPORTANT: GRAPH SIZE REPLACED
> IMPORTANT: RIGHT MARGIN REPLACED

You can stop and fix the error, or go ahead and store the graph anyway.

LETTING THE PROGRAM DO THE WORK

The only problem filling out the Questionnaire is setting the margins for the graph area so that everything will fit. The solution is simple: don't. Let the program do it for you.

- When making a vertical graph, make a simple estimate of how wide the graph will be. Then make the margins a little narrower than you think you will need. When you view the graph, the Command Line will tell you that the program has extended the right margin. Go back to the Questionnaire. Subtract the left margin from the *new* right margin. This is the exact width of your graph. Reset both margins to center the new width.

- For a horizontal graph, treat the graph size specification in the same way. Make a simple estimate of how many lines the graph will take and enter fewer. Fill in the rest of the Questionnaire. When you view the graph, the Command Line will tell you that the program has changed the graph size. The graph size is now as big as you need it.

If you make several graphs in one session, the program retains the Questionnaire specifications from the previous graph. (You won't see the defaults unless you leave the program and then come back to it, either by switching to word processing or resetting your 860.) You can turn this to your advantage: if you have several similar graphs to make, do them in the same session. You will save time by modifying the responses from the previous graph instead of having to start over.

If you have a certain kind of graph you often make, store a pattern of it. Call it Graph Pattern. Every time you have to make a similar graph, call up the pattern, make your changes in the Questionnaire, and store your new graph under a different name.

Remember that you don't always have to start the scale at zero. If you want greater definition of numbers that are close in value, start the scale just below the lowest value. For example, if the differences between 90, 92, 88, and 94 are important for your graph, set the scale from 85 to 95. Remember that you don't specify a length for the scaled axis in the Questionnaire. The program stretches or compresses it depending on how much space there is. If you want more accuracy in the bar length, increase the graph area (the graph size for a vertical graph or the left and right margins for a horizontal graph). The program will stretch the scaled axis to fit.

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PRINTING GRAPHS

You can print a graph from the Index. Or you can insert a graph into a document you are going to print. Note that different print wheels give different results. The graphs in this manual were printed using Gothic PS (9R21106). You may want to experiment with different print wheels until you find one that you like. (Do not use any print wheel that substitutes symbols for letters. Examples are Scientific 10 or APL 10.)

PRINTING A GRAPH FROM THE INDEX

You cannot print a graph from the Active List. To print a graph you have stored, you must first bring it to the screen. (Printing a graph uses one trial of the Phoenix version.)

1. **Highlight the name of the graph in the Index. Press ACCPT.**

   You see the Active List with the graph's name highlighted.

2. **Press CODE + 5.**

   The Command Line displays:

   LOADING — PLEASE WAIT

   Then the Command Line asks:

   Ser #: 6P071-XXXXX ENTER UNLOCKING CODE NOW?

3. **Press STOP.**

   The Command Line displays the number of trials you have left and asks a question:

   TRIALS REMAINING — 12 continue?

4. **Press ACCPT.**

   The graph appears on the screen. (If you don't want to continue, press **STOP** instead. The Command Line displays APPLICATION RUN CANCELLED. Press ACCPT.)

   On the top line of the screen, just below the Command Line, you see the prompt Press FORMAT to edit or CODE + PARA to print.

5. **Press CODE + PARA.**

   The Command Line displays:

   INSERT PAPER

   Insert paper into the printer. Then

6. **Press CODE + PARA or the START/STOP button on the front of the printer.**

Note that since you don't see the Print Menu before the printing starts, you cannot order multiple copies. You must start the printer again for every copy you want. When you have printed the graph.

7. **Press STORE.**

You see the Active List with the graph's name highlighted. The Command Line asks:

STORE DOCUMENT?

8. **Press ACCPT.**

PRINTING A GRAPH IN A DOCUMENT

First you insert into the document a code that identifies the graph you want. Then you repaginate the document. When you print the document, the printer will print the graph where the code appears.

Inserting the Graph Code

1. **Bring the document to the screen and find the place where you want to insert the Graph Code.**

You'll probably want it between two paragraphs. So

2. **Insert a blank line between the two paragraphs by highlighting the Return Code on the last line of the first paragraph and pressing RETURN.**

Note that a Graph Code must be preceded by a Return Code. If you are inserting a Graph Code in the middle of a paragraph, you must enter a Return Code first. Then insert the Graph Code in the new line.

If you have already left a blank line for the graph, type a letter in it to get the Next Character Mark on the screen. Then use **BACKSPACE** to erase the letter.

3. **Use the spacebar to move the Next Character Mark to the middle of the blank line and then press CODE + MARK.**

You don't have to move to the middle, but it will make it easier for you to find a graph later if you always insert the code in the middle of a blank line. Do *not* use **CODE + 4** to center a Graph Code.

The Command Line displays:

ENTER GRAPH NAME: " "

4. **Type the graph name.**

It appears in the Command Line.

5. **Press ACCPT to enter the code into the document,**

The graph name disappears from the Command Line. To see the Graph Code,

6. **Press the spacebar.**

You see a small inverted triangle. Like all codes, you won't see it after you leave this line. But you can see it if you highlight the line or turn the Code Display on.

If you type the wrong graph name or change your mind about where you want the graph to appear, you can press **STOP** instead of pressing **ACCPT** (Step 5). Then you can either press **CODE + MARK** again and type a different name or find another place for the graph. If you change your mind *after* you have inserted the Graph Code, you must delete the code and start again.

Paginating a Document That Contains a Graph Code

The Graph Code takes only one line. Automatic pagination will treat the code as one line (the blank line the code is on). To keep the graph from breaking between pages when you print the document, you insert a Required Page End Code before and after it.

- If you want the graph to appear on a full page, insert a Required Page End Code to mark the beginning of the page. Then type **RETURN**s to enter blank lines down from the top of the page to where you want the graph to start. Insert the Graph Code. Then insert a Required Page End Code on the line after it.

- If you want some of the document to appear on the same page as the graph, insert a Required Page End Code before the text, insert the Graph Code after the text, and then insert a Required Page End Code after the graph or after text that you want to follow the graph.

- If you want to include *several* graphs with text in a document, the best way is to paginate the document first. Then insert the graphs one at a time. Insert the first graph, protecting it with Required Page End Codes. Re-paginate the remaining part of the document. Then insert the next graph. Protect it. Continue in this way until you have included all the graphs.

Note that to include text from a document on the same page as a graph, you must know how many lines the graph takes up. Find this by adding the Graph Top Margin, Graph Size, and Graph Bottom Margin from the Format Page of the graph's Questionnaire.

Printing a Document That Contains a Graph Code

You print a document that contains a graph just as you print any other document.

1. **Highlight the document in the Index.**
2. **Press CODE + 7.**
3. **Check the print options.**
4. **Press ACCPT.**
5. **Start the printer.**

When the program comes to a Graph Code, it stops printing and searches for the graph in the indexes of *both* discs in the 860. First it checks the index of the disc it is printing the document from. Then it checks the index of the disc in the other drive. If the program finds the graph, it prints the graph and then continues printing the document. If it does *not* find the graph, you will see this message in the Command Line:

CANNOT FIND GRAPH FILE: (NAME)

1. **Find the disc with the graph on it. Insert that disc in place of the disc the document is being printed from and press ACCPT.**

   The 860 finds the graph and prints it. Then you will see the standard 860 message:

   INSERT DISC "DISC NAME"

2. Re-insert the disc that contains the document and continue printing.

To switch from word processing to GRAPHS, the System Disc *must* be in the drive. If your graph is not stored on the same disc as the document, you can copy the graph onto the document disc for printing and then delete it from the Index after you have finished printing.

If you can't find the graph but you want to print the rest of the document anyway, press **STOP** to remove the message and then continue printing.

If the graph is not available and you decide you don't want to continue printing the document, press **STOP** to clear the message. The printer will resume printing the document. You can stop the printing by pressing the **STOP/START** button on the front of the printer.

Moving, Deleting, Copying, or Replacing a Graph Code

You can use **MOVE, DELETE** or **COPY** to edit Graph Codes in a document. However, all Graph Codes look alike. You cannot ''open'' a Graph Code to see the graph. So if you have inserted several graph codes in a document, it would be safer to move or copy them by deleting them and inserting new codes rather than by using the edit commands. To replace a graph, simply delete the Graph Code and insert a new one.

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MANAGING YOUR GRAPH FILE

As you know, graphs are stored with your word processing documents and listed in the Index with WP. You can edit, display, copy, delete, move or rename a graph just as you would any word processing document.

EDITING A GRAPH

Editing a graph is similar to creating a graph: you change the specifications in the Questionnaire. (Editing a graph uses one trial run of the Phoenix version.)

1. **In the Index, highlight the name of the graph you want to edit and then press ACCPT.**

    The 860 brings the graph name to the Active List and highlights it.

2. **Press CODE + 5.**

    The Command Line displays:

    > LOADING — PLEASE WAIT

    Then the Command Line asks:

    > Ser #: 6P071-XXXXX ENTER UNLOCKING CODE NOW?

3. **Press STOP.**

    The Command Line displays the number of trials you have left and asks a question.

    > TRIALS REMAINING — 12 continue?

4. **Press ACCPT.**

    The graph appears on the screen. (If you do not want to continue, press **STOP** instead. The Command Line displays APPLICATION RUN CANCELLED. Press ACCPT.)

5. **Press FORMAT to display the Graph Questionnaire.**

    You can use **PAGE** to flip through the Graph Questionnaire. Make your changes. You can press **PROGRAM** from any place in the Questionnaire to view the graph as you have changed it.

6. **When you have finished editing, press STORE.**

    You see the Active List with the graph's name highlighted. The Command Line asks:

    > STORE DOCUMENT?

7. **Press ACCPT.**

    The Command Line asks:

    > STORE OVER ORIGINAL?

As with word processing, you can store the revised graph over the earlier version or store it under a new name as a separate document.

8. To store the graph over the earlier version, press ACCPT. To store it as a new document, type its new name and then press ACCPT.

Because your graphs are listed in the same index as word processing documents, you might confuse the two. If you bring a graph name to the Active List and press **ACCPT** *without* first having pressed **CODE + 5**, the screen will fill with rows of numbers. This is the graph file being displayed as a word processing document. Above the numbers you will see this message:

<p align="center">***WARNING! GRAPH DATA FILE VI.1O DO NOT MODIFY!***</p>

Do not edit these numbers. If you do, you will ruin your graph. Press **STORE** to return the graph to the Active List. The Command Line asks:

<p align="center">STORE DOCUMENT?</p>

You can press **ACCPT** to store the graph or you can press **STOP** and then **CODE + 5** to display the graph.

If, on the other hand, you bring a word processing document title to the Active List and then press **CODE + 5**, the screen will go blank. Then the Command Line will display this message:

<p align="center">FILE IS NOT A GRAPH FILE — Press ACCPT to exit</p>

Press **ACCPT** and you will return the document to the Active List. The Command Line asks:

<p align="center">STORE DOCUMENT?</p>

You can press **ACCPT** to store the document, or you can press **STOP** and then **ACCPT** to bring it to the screen for editing.

DISPLAYING A GRAPH

Displaying a graph you have stored uses one trial of the Phoenix version.

1. Highlight the graph name in the Index. Then press ACCPT.

2. Press CODE + 5.

The Command Line displays:

<p align="center">LOADING — PLEASE WAIT</p>

Then the Command Line asks:

<p align="center">Ser #:   6P071-XXXXX   ENTER UNLOCKING CODE NOW?</p>

3. Press STOP.

The Command Line displays the number of trials you have left and asks a question:

<p align="center">TRIALS REMAINING — 12   continue?</p>

4. Press ACCPT.

The graph appears on the screen. (If you do not want to continue, press **STOP** instead. The Command Line displays APPLICATION RUN CANCELLED. Press ACCPT.)

COPYING A GRAPH

As in word processing. Insert the disc that contains the graph into one drive and the disc you want to copy it to into the other drive.

1. **Highlight the name of the graph in the Index. Press COPY.**

    The Command Line displays:

    COPY DOCUMENT TO (DISC NAME)

2. **Press ACCPT.**

    The Command Line displays:

    COPYING (GRAPH NAME)

    When the message disappears, the graph has been copied.

DELETING A GRAPH

As in word processing.

1. **Highlight the name of the graph in the Index. Press DEL.**

    The Command Line asks:

    DELETE DOCUMENT?

2. **Press ACCPT.**

    The graph name disappears from the Index.

As with any document, the graph you deleted is still in the Backup Index for the disc. You can delete or recover it from the Backup Index the same way you would a word processing document.

MOVING A GRAPH

As in word processing.

1. **Highlight the name of the graph in the Index. Press MOVE.**

    The Command Line asks:

    CHANGE INDEX ORDER?

2. **Press ACCPT.**

    The graph name disappears from the Index.

RENAMING A GRAPH

As in word processing.

1. **Highlight the name of the graph in the Index. Press RPLCE.**

    The Command Line displays the message:

    ENTER TITLE   " "

2. **Type the new name. Press ACCPT.**
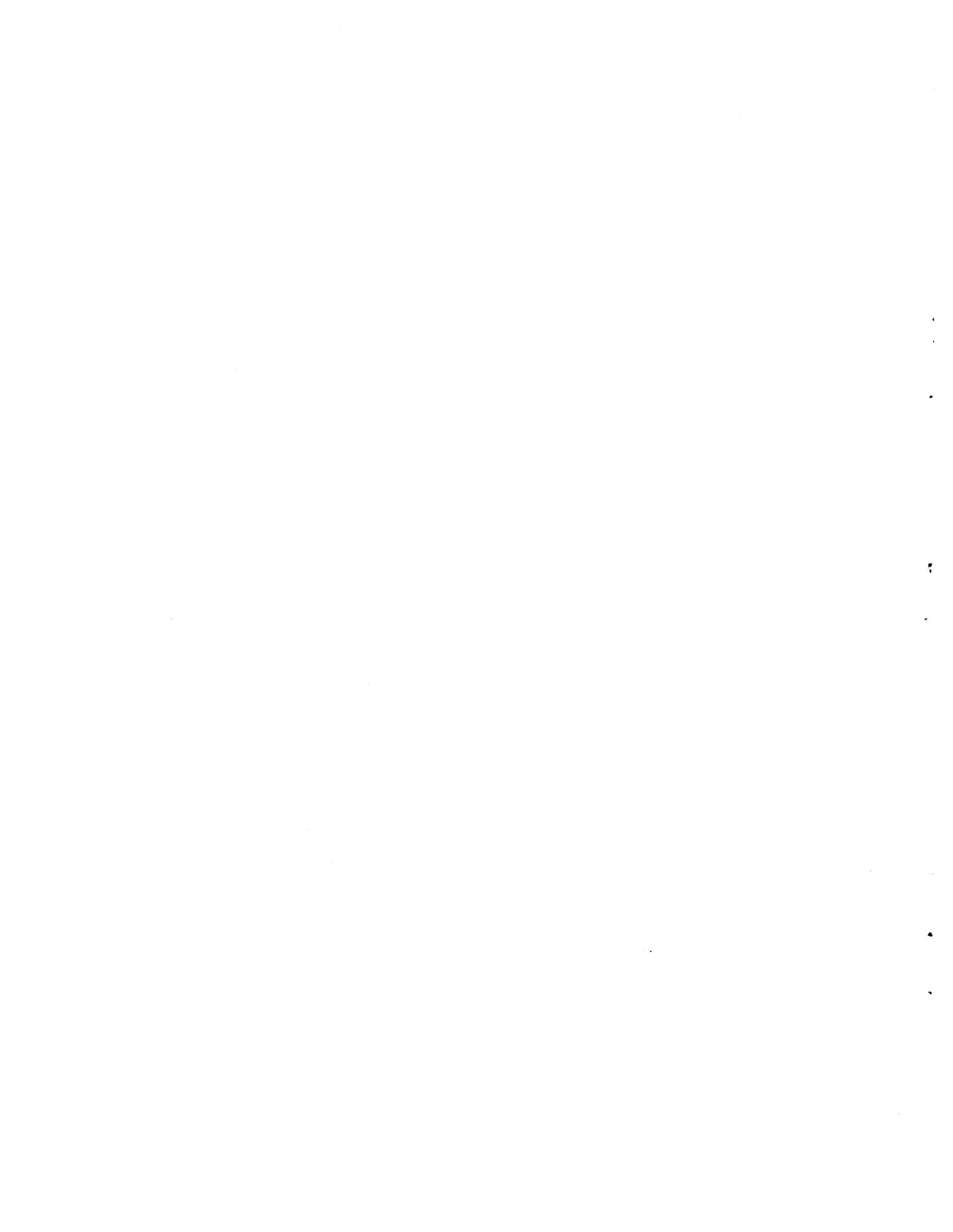
6

ERROR MESSAGES

This section divides error messages into five groups based on *when* the message occurs. The groups are:

1. When you are filling out the questionnaire
2. When you press **PROGRAM** to assemble a graph
3. When you view a graph
4. When you are working from the index
5. When you are printing a graph

WHEN YOU ARE FILLING OUT THE QUESTIONNAIRE

ERROR — UNACCEPTABLE NUMBER

You have entered a number that is outside the acceptable range for a specification on the Format Page. The message appears not when you *type* the number, but when you press **LINE** to move to the next entry. Entering zero for any specification other than Scale Minimum or Scale Maximum causes this message to appear. Maximum values for the specifications on the Format Page are:

RIGHT MARGIN	255
LEFT MARGIN	254
GRAPH BOTTOM MARGIN	30
GRAPH TOP MARGIN	30
GRAPH SIZE	255
NUMBER OF BARS	8
BAR WIDTH	30
BAR MARGIN	30
NUMBER OF SEGMENTS	8
X AXIS MARGIN	30
ICON MARGIN	30
ICON LABEL MARGIN	30

Re-enter the number within the parameters listed above.

WHEN YOU PRESS PROGRAM TO ASSEMBLE A GRAPH

ERROR — UNACCEPTABLE NUMBER

You have entered a Left Margin larger than the Right Margin.

Either enter a larger number for the Right Margin or a smaller number for the Left Margin. Press **PRO-GRAM** again.

ERROR — SCALED AXIS RANGE TOO SMALL

You have entered the same number for the Scale Maximum and Scale Minimum.

Raise the Scale Maximum or lower the Scale Minimum. Press **PROGRAM** again.

ERROR — All segments in a bar must have same sign

You have used both positive and negative signs for segments in a segmented bar graph. The message will also appear if you enter zero for a segment value.

You have three choices:

1. If you want to keep the positive and negative numbers, change the Type of Bar specification on the Format Page to Cluster Bar.

2. If you entered the conflicting values by mistake, use **PAGE** to flip to the Data Page to fix the error.

3. If you need one segment of a bar to equal zero, enter 1. Such a small value will not appear on the printed graph, and you will bypass the error message.

WHEN YOU VIEW A GRAPH

ERROR — TEXT AREA EXCEEDS BOUNDARY

You have made

• Bar Labels wider than a Bar Width on a vertical graph.

• Bar Labels longer than the X Axis Margin on a horizontal graph.

• Scale Labels longer than the X Axis Margin on a vertical graph.

• X Axis Title longer than the X Axis.

• Note Lines too long to fit in the Graph Area.

The text that won't fit flashes on the graph. Scroll through the graph until you find it. Then press **FOR-MAT** to recall the Questionnaire. Either enter a shorter line of text, a larger X Axis Margin, or widen the Bar Labels or Graph Area Margins.

ERROR: GRAPH SIZE REPLACED

This message appears only with horizontal graphs. The Graph Size is not large enough. The program has changed the Graph Size specification on the Format Page.

Press **FORMAT** to recall the Questionnaire. See what the new Graph Size is. You can

• Accept the new Graph Size. Press **PROGRAM** or **STORE**.

• Enter your original Graph Size. Then reduce the size of any graph part that contributes to the height of the graph. These parts are number of Header Lines, Bar Width, Bar Margin Width, number of Note Lines. Then press **PROGRAM** to see if you have trimmed the graph down enough.

ERROR — RIGHT MARGIN REPLACED

This message appears only with vertical graphs. The Graph Area is not *wide* enough to fit all the bars, margin, and labels. The program has extended the right margin.

Press **FORMAT** to recall the Questionnaire. See what the new Right Margin is. You can

- Accept the new Right Margin. Press **PROGRAM** or **STORE**. (If you accept the new margin, you might want to re-calculate both margins so the new graph width is centered on the page.)

- Enter your original Right Margin. Then reduce any part that contributes to the horizontal total of the graph. These parts are: Header Lines, Scale labels (and X Axis Margin), Bar Width (and Bar Label Width), Bar Margin, Icon Margin, Icon Label Margin, Icon Label.

Then press **PROGRAM** to see if you have trimmed the graph down enough.

WHEN YOU ARE WORKING FROM THE INDEX

FILE IS NOT A GRAPH FILE — Press ACCPT

You have brought a word processing document to the Active List and pressed **CODE + 5** to enter GRAPHS.

Press **ACCPT** to return to the Index and start again.

WARNING: insufficient disc space — view graph only

You have tried to view or edit a graph and you have less than 25 sectors left on your disc. The program is warning you that it will not be able to store any changes you make. The message appears in the Command Line over the graph display and will stay on the screen as long as you are working with that graph.

If you only want to view the graph, ignore the message. If you want to edit the graph, you can copy it to another disc or delete some documents from your Backup Index.

ERROR — INSUFFICIENT DISC SPACE — ACCPT to exit

You have tried to create a graph on a disc that has less than 25 sectors free.

Press **ACCPT** to return to the Index. Free up some space on the disc or use another disc.

WRITE PROTECTED DISC — ACCPT to try again

You are trying to modify a disc on which the write protect notch is not covered.

Cover the write protect notch, re-insert the disc, and press **ACCPT** to try again. Or press **STOP** to get back to the Index.

WHEN YOU ARE PRINTING A GRAPH

CANNOT FIND GRAPH FILE (NAME)

The printer has come to the Graph Code in a document, searched the index of both discs in the drives, and cannot find the graph.

Find the disc that contains the graph. Insert it into the drive in place of the disc the word processing document is on (not in place of the system disc). Then press **ACCPT**. The 860 will search the file, find the graph, and print it. When the 860 has finished printing the graph, the Command Line will display this message: INSERT DISC (DISC NAME). Re-insert the document disc and continue printing the document.

- If you can't find the graph file but want to continue printing the document anyway, press **STOP** to clear the message. Then start the printer.

- If you can't find the correct graph file and don't want to print the document, press **STOP** to clear the message. Then press the **STOP/START** button on the front of the printer to cancel the printing.

FILE IS NOT A GRAPH FILE — ACCPT to try again

The printer has come to a Graph Code in the document and has found the file name, but it is not a graph file.

Insert the disc with the correct file in place of the document disc and press **ACCPT**. When the printer has finished printing the graph, the Command Line will display this message: INSERT DISC (DISC NAME). Put the document disc back into the drive and continue printing.

- If you can't find the correct graph file but want to print the document anyway, press **STOP** to clear the message and continue printing.

- If you can't find the correct graph file and don't want to print the document, press **STOP** to clear the message. Then press the **STOP/START** button on the front of the printer to cancel the printing.

PRINTER BUSY

You are trying to print a graph from the screen while the printer is printing another document.

PRINTER NOT READY

You are trying to print a graph from the screen but there is something wrong with the printer.

Press **STORE** to return the graph to the Active List and check the printer status line to see what the problem is.

7

UNLOCKING THE PHOENIX VERSION

To unlock the Phoenix version of GRAPHS, you need three disks:

- Your 6.2, 6.3, or 6.310 Word Processing master disc
- Your system disc with the Phoenix version of GRAPHS on it
- The GRAPHS master disc
- The unlocking code

Make sure that the write-protect notch is covered on each disc and that you are using the discs on the correct 860.

THE STEPS

1. **Insert the Word Processing master disc into the right station.**

2. **Turn on the 860. If it is already on, press RESTART.**

    The 860 displays:

    > XEROX

    Next, the Command Line displays the message:

    > LOADING — PLEASE WAIT

    Then it displays the message:

    > INSERT DISC TO BE CREATED OR MODIFIED — THEN ACCPT

3. **Insert the system disc with the Phoenix version of GRAPHS on it into the left station and press ACCPT.**

    You see the Disc Creation and Modification Page with the highlighting on DATE FORMAT. The Command Line displays:

    > ENTER DATE FORMAT

```
┌─────────────────────────────────────────────────────────────────────────┐
│                           ENTER DATE FORMAT                               │
├─────────────────────────────────────────────────────────────────────────┤
│  LEFT: SYSTEM DISC NAME                              RIGHT #####          │
│                                                                           │
│    DATE FORMAT:                      MM/DD/YY                             │
│                                                                           │
│    DATE:                             MM/DD/YY                             │
│                                                                           │
│    SYSTEM DISC NAME:                 SYSTEM DISC                          │
│                                                                           │
│    MACHINE SERIAL NUMBER:            ### ######                           │
│                                                                           │
│    CONFIGURATION:                                                         │
│                                                                           │
│      DISPLAY                         — FULL PAGE (or PARTIAL PAGE)        │
│      DISC TYPE                       — SINGLE SIDED (or DOUBLE SIDED)     │
│      PRINTER                         — STANDARD (or WIDE BED or NONE)     │
│      PRINTER ACCESSORY               — NONE (or AUTOMATIC PAPER FEEDER)   │
│      SHARED PRINTER INTERFACE        — NONE (or YES)                      │
│      COMMUNICATIONS MODE             — NONE (or YES or ETHERNET)          │
│                                                                           │
│    PROCEDURE:                                                             │
│      COPY ENTIRE MASTER DISC TO SYSTEM DISC                               │
│      SELECT OPTIONS OR UTILITIES TO BE COPIED                             │
│      ADD OPTIONS/UTILITIES FROM ANOTHER DISC                             │
│      REPLACE CONFIGURATION                                                │
└─────────────────────────────────────────────────────────────────────────┘
```

4. **Use LINE to highlight DATE. Then type today's date.**

5. **Use LINE to highlight the procedure** ADD OPTIONS/UTILITIES FROM ANOTHER DISC. **Press ACCPT.**

   The Command Line displays:

   <div align="center">REMOVE MASTER DISC</div>

6. **Remove the Word Processing master disc from the right station.**

   The Command Line displays:

   <div align="center">INSERT NEXT MASTER DISC — ACCPT TO CONTINUE</div>

7. **Insert the GRAPHS master disc into the right station and press ACCPT.**

   After a few seconds, the Command Line displays:

   <div align="center">CHECKING OPTIONS/UTILITIES — PLEASE WAIT.</div>

   Then you see the Option and Utility Selection Page. It lists the system disc software on the right side. On the left side, you see INTERNATIONAL. The Command Line asks:

   <div align="center">RECORD OPTIONS/UTILITIES ON SYSTEM DISK?</div>

OPTION AND UTILITY SELECTION					
MASTER DISC: GRAPHS			SYSTEM DISC: GR SYS		
OPTION & UTILITY NAMES	REVISION LEVEL	SECTORS	OPTION & UTILITY NAMES	REVISION LEVEL	SECTORS
INTERNATIONAL	H1.10	61	OPERATING SYSTEM	H6.200	145
			WORD PROCESSING	H6.200	242
			INITIALIZE	H6.200	14
			DUPLICATE	H6.200	13
			RECONSTRUCT	H6.200	18
			RENAME	H6.200	11
			BACKUP INDEX	H6.200	19
			CONVERT	H6.200	62
			RECOVER	H6.200	15
			INTERNATIONAL	H1.10	44

8. Press STOP to remove the message in the Command Line.

Highlighting appears on INTERNATIONAL. (If the highlighting does not appear, use LINE to highlight INTERNATIONAL.

9. Press MARK to select INTERNATIONAL.

The Command Line displays:

CHECKING OPTIONS/UTILITIES — PLEASE WAIT

Then it asks:

DELETE OBSOLETE OPTIONS/UTILITIES FROM SYSTEM DISC?

10. Press ACCPT.

The 860 deletes the Phoenix version of GRAPHS and begins to add the new GRAPHS software to the system disc. The Command Line displays:

RECOVERING DISC SPACE — PLEASE WAIT

And then:

CREATING SYSTEM DISC — PLEASE WAIT

When the 860 has finished adding GRAPHS to the system disc, the Command Line asks:

ADD OPTIONS/UTILITIES FROM ANOTHER DISC?

11. Press STOP.

The Command Line asks:

CONTINUE USING THE MASTER DISC?

12. Press STOP.

The Command Line displays:

REMOVE MASTER DISC

13. Remove the GRAPHS master disc from the right station.

The Command Line displays:

PRESS RESTART

14. Remove the system disc from the left station and insert it into the right station.

15. Press RESTART.

The 860 displays:

XEROX

Then the Command Line displays:

LOADING — PLEASE WAIT

Then the 860 displays the System Disc Page and the message:

ENTER DATE

16. Type today's date.

17. Use LINE to highlight GRAPH INSTALL in the list of options. Then press ACCPT.

The Command Line displays:

INSERT PHOENIX MASTER INTO LEFT DRIVE

18. Insert the GRAPHS master disc into the left station. Then press ACCPT.

The Command Line asks:

Ser #:   6P071-XXXXX   ENTER UNLOCKING CODE NOW?

19. Press ACCPT.

The Command Line displays:

PLEASE ENTER UNLOCKING CODE then "ACCPT"

20. Type the unlocking code you received from Software Concepts. Then press ACCPT.

The Command Line displays:

MODIFYING SYSTEM DISC — PLEASE WAIT

Then the Command Line displays:

INSTALL COMPLETE — REMOVE MASTER   continue?

21. Remove the GRAPHS master disc. Then press ACCPT.

The Command Line displays:

LOADING — PLEASE WAIT

Then you see the System Disc Page.

You have unlocked GRAPHS and installed it on your system disc.

8

CREATING A NEW SYSTEM DISC

If you are creating a new *double-sided* system disc, you can add to it all the options and utilities from the Word Processing master disc. Follow the instructions below.

If you are creating a new *single-sided* system disc, you need to select only some of the utilities from the Word Processing master disc. Follow the instructions that start on page 49.

BEFORE YOU BEGIN

For this procedure, you need either the 6.2, 6.3, or 6.310 Word Processing master disc and an initialized disc. Make sure the write-protect notch is covered on each disc and that there are no discs in the controller.

CREATING A NEW DOUBLE-SIDED SYSTEM DISC

1. **Insert the Word Processing master disc into the right station.**

2. **Turn on the 860. (If it is already on, press RESTART.)**

    The 860 displays:

    <div align="center">XEROX</div>

    Next, the Command Line displays this message:

    <div align="center">LOADING — PLEASE WAIT</div>

    Then this message:

    <div align="center">INSERT DISC TO BE CREATED OR MODIFIED — THEN ACCPT</div>

3. **Insert an initialized disc into the left station and press ACCPT.**

    You see the Disc Creation and Modification Page with the highlighting on DATE FORMAT. The Command Line displays:

    <div align="center">ENTER DATE FORMAT</div>

```
                        ENTER DATE FORMAT

LEFT: SYSTEM DISC NAME                              RIGHT #####

  DATE FORMAT:                    MM/DD/YY

  DATE:                           MM/DD/YY

  SYSTEM DISC NAME:               SYSTEM DISC

  MACHINE SERIAL NUMBER:          ### ######

  CONFIGURATION:

    DISPLAY                       — FULL PAGE (or PARTIAL PAGE)
    DISC TYPE                     — SINGLE SIDED (or DOUBLE SIDED)
    PRINTER                       — STANDARD (or WIDE BED or NONE)
    PRINTER ACCESSORY             — NONE (or AUTOMATIC PAPER FEEDER)
    SHARED PRINTER INTERFACE      — NONE (or YES)
    COMMUNICATIONS MODE           — NONE (or YES or ETHERNET)

  PROCEDURE:
    COPY ENTIRE MASTER DISC TO SYSTEM DISC
    SELECT OPTIONS OR UTILITIES TO BE COPIED
    ADD OPTIONS/UTILITIES FROM ANOTHER DISC
    REPLACE CONFIGURATION
```

4. Use the first four lines of the Disc Creation and Modification Page to provide the system disc with information about your system.

Using **LINE** to move the highlighting down the first four lines.

1. Change the DATE FORMAT if you want to.

2. Type in today's date.

3. Type GR SYS DISC (or any name you want) for the SYSTEM DISC NAME.

4. Type in the serial number of your 860.

5. You can use the next six lines to change any information about the configuration of your 860 if necessary. Use LINE to move down the list and CHAR to change the option.

If you are not sure about any of the configuration options, see the 860 Reference Manual.

6. When you have finished with the configuration options, press LINE to highlight the procedure COPY ENTIRE MASTER DISC TO SYSTEM DISC. Then press ACCPT.

The Command Line asks:

RECORD OPTIONS/UTILITIES ON SYSTEM DISC?

7. **Press ACCPT.**

The 860 copies the word processing master disc software onto your new system disc. The Command Line briefly displays:

RECOVERING DISC SPACE — PLEASE WAIT

Then it displays:

CREATING SYSTEM DISC — PLEASE WAIT

When the 860 has finished adding the word processing software to your new system disc, the Command Line displays:

REMOVE MASTER DISC

Your new system disc is finished. You can now add the GRAPHS software to it.

CREATING A NEW SINGLE-SIDED SYSTEM DISC

1. **Insert the Word Processing master disc into the right station.**

2. **Turn on the 860. (If it is already on, press RESTART.)**

The screen displays:

XEROX

Next, the Command Line displays this message:

LOADING — PLEASE WAIT

Then this message:

INSERT DISC TO BE CREATED OR MODIFIED — THEN ACCPT

3. **Insert an initialized disc into the left station and press ACCPT.**

You see the Disc Creation and Modification Page with the highlighting on DATE FORMAT. The Command Line displays:

ENTER DATE FORMAT

```
                    ENTER DATE FORMAT

LEFT: SYSTEM DISC NAME                              RIGHT #####

   DATE FORMAT:                    MM/DD/YY

   DATE:                           MM/DD/YY

   SYSTEM DISC NAME:               SYSTEM DISC

   MACHINE SERIAL NUMBER:          ### ######

   CONFIGURATION:

      DISPLAY                      — FULL PAGE (or PARTIAL PAGE)
      DISC TYPE                    — SINGLE SIDED (or DOUBLE SIDED)
      PRINTER                      — STANDARD (or WIDE BED or NONE)
      PRINTER ACCESSORY            — NONE (or AUTOMATIC PAPER FEEDER)
      SHARED PRINTER INTERFACE     — NONE (or YES)
      COMMUNICATIONS MODE          — NONE (or YES or ETHERNET)

   PROCEDURE:
      COPY ENTIRE MASTER DISC TO SYSTEM DISC
      SELECT OPTIONS OR UTILITIES TO BE COPIED
      ADD OPTIONS/UTILITIES FROM ANOTHER DISC
      REPLACE CONFIGURATION
```

4. **Use the first four lines of the Disc Creation and Modification Page to provide the system disc with information about your system.**

   Using **LINE** to move the highlighting down the first four lines,

   1. Change the DATE FORMAT if you want to.

   2. Type in today's date.

   3. Type GR SYS DISC (or any name you want) for the SYSTEM DISC NAME.

   4. Type in the serial number of your 860.

5. **You can use the next six lines to change any information about the configuration of your 860 if necessary. Use LINE to move down the list and CHAR to change the option.**

   If you are not sure about any of the configuration options, see the 860 Reference Manual.

6. **When you have finished with the configuration options, press LINE to highlight the procedure SELECT OPTIONS OR UTILITIES TO BE COPIED. Then press ACCPT.**

   The Command Line displays:

                    CHECKING OPTIONS/UTILITIES — PLEASE WAIT

   The Option and Utility lists appear on the screen. The master disc software is listed on the left side of the screen and the system disc on the right. The program has highlighted OPERATING SYSTEM and listed the name in the system disc list.

OPTION AND UTILITY SELECTION					
MASTER DISC: ######			SYSTEM DISC: GR SYS DISC		
OPTION & UTILITY NAMES	REVISION LEVEL	SECTORS	OPTION & UTILITY NAMES	REVISION LEVEL	SECTORS
OPERATING SYSTEM	H6.200	145	OPERATING SYSTEM	H6.200	145
WORD PROCESSING	H6.200	242			
INITIALIZE	H6.200	14			
DUPLICATE	H6.200	13			
RECONSTRUCT	H6.200	18			
RENAME	H6.200	11			
BACKUP INDEX	H6.200	19			
CONVERT	H6.200	62			
RECOVER	H6.200	15			

The Command Line asks:

RECORD OPTIONS/UTILITIES ON SYSTEM DISC?

7. **Press STOP to remove the message.**

8. **Use LINE to highlight WORD PROCESSING and press MARK.**

    The Command Line displays:

    CHECKING OPTIONS/UTILITIES — PLEASE WAIT

    Then the 860 re-lists all the options and utilities, adding WORD PROCESSING to the system disc list. When the message disappears, WORD PROCESSING flashes in the master disc list.

9. **Using LINE and MARK, highlight and select in turn INITIALIZE, DUPLICATE, and BACKUP INDEX.**

    After the last CHECKING OPTIONS/UTILITIES message disappears, the Command Line asks:

    RECORD OPTIONS/UTILITIES ON SYSTEM DISC?

10. **Press ACCPT.**

    The 860 copies the word processing master disc software onto your new system disc. The Command Line briefly displays:

    RECOVERING DISC SPACE — PLEASE WAIT

    Then it displays:

    CREATING SYSTEM DISC — PLEASE WAIT

    When the 860 has finished adding the word processing software to your new system disc, the Command Line asks:

    ADD OPTIONS/UTILITIES FROM ANOTHER DISC?

11. **Press STOP.**

The Command Line asks:

<div align="center">CONTINUE USING THE MASTER DISC?</div>

12. **Press STOP.**

The Command Line displays:

<div align="center">REMOVE MASTER DISC</div>

Your new system disc is finished. You can now add GRAPHS to it.

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