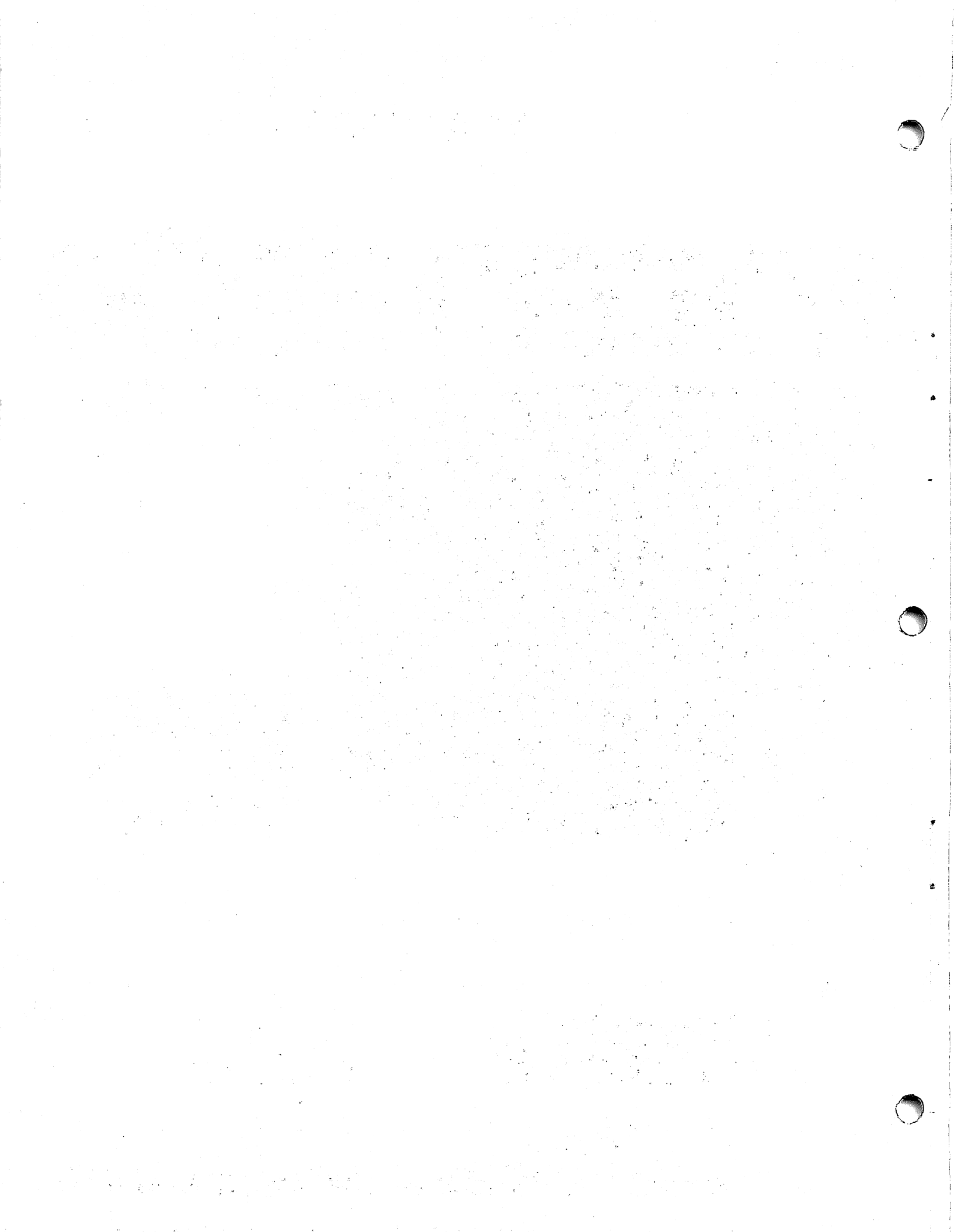


WANG

2202, 2212, 2232A
PLOTTER DEMO
OPERATING INSTRUCTIONS

SYSTEM 2200





2202, 2212, 2232A

Plotter Demo Operating Instructions

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LABORATORIES, INC.

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HOW TO USE THIS MANUAL

This manual has been written to provide operating instructions for demonstrations of each of the plotters, Model 2202 Plotting Output Writer, Model 2212 Analog Flatbed Plotter, and the Model 2232A Digital Flatbed Plotter.

These demonstrations are designed for users who are already familiar with the System 2200B and the BASIC language. Refer to the 2200A/B Reference Manual for information regarding the System 2200A/B and BASIC.

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Introductory Narrative

The demo program tapes you have received with these instructions are general demonstrations of the plotters available with the System 2200B. These demos illustrate the plotting capabilities of each plotter, the Model 2202, Model 2212, and the Model 2232A.

In order to operate any of the plotter demos, you need a 12K System 2200B, a CRT display with a cassette tape drive, a keyboard, and a plotter (Model 2202, 2212, or 2232A). Along with the three (3) plotter demo tapes (2202 Tape #701-0206, 2212 Tape #701-0207, and 2232A Tape #701-0208), the "dummy" Special Function Key strip (#700-3376) that you received with the 2200 Technical Demo Operating Instructions is needed.

As you are familiar with the operation of the 2200 Technical Demo, you should be able to operate these demos with no difficulty. Again, before showing any of these demos to a customer, be sure to run through the demos a few times yourself to become confident in the operation of each.

If you wish to stop a demo tape at any time, touch HALT/STEP; this does not affect the operation of the demo, but it does allow you time to explain any unclear concepts to your customer.

To continue with the demo, simply touch CONTINUE, followed by RETURN (EXEC). This allows the demo to continue with program execution, starting with the point where it was stopped.

The remainder of this Instruction Sheet contains operating instructions for each of the plotters, along with explanations.

GOOD LUCK!

Step 1

Mount the desired 2200B plotter demo program tape in the tape drive. Make sure it is rewound.

Step 2

<u>Key</u>	<u>Explanation</u>
CLEAR	This clears the memory of the System 2200B and loads the first module of the plotter demo tape. The demo continues without user interruption until the graphing example module is shown.
RETURN (EXEC)	
LOAD	
RETURN (EXEC)	
RUN	
RETURN (EXEC)	

Narrative

The beginning of each plotter demo tape is identical. An illustrative and brief history of Wang Laboratories, Inc. begins each tape. The tape then describes each of the plotters: Model 2212 Flat Bed Plotter (10" x 15"), Model 2232A Digital Flat Bed Plotter (31" x 48"), and the Model 2202 Plotting Output Writer (12" x unlimited).

When the graphing example module is shown, the user must inform the System 2200B which graph is to be drawn. The graphs are the same on each plotter demo; however, the Models 2212 and 2232A have an additional example in the demo. Please see Step 3 for operating instructions for each plotter.

Step 3 (For Model 2202)

MODEL 2202 PLOTTING OUTPUT WRITER (12" x UNLIMITED)

When the graphing example module appears, the following information is shown on the CRT:

<u>KEY</u>	<u>GRAPH</u>
0	BAR CHART
1	LINEAR REGRESSION
2	COMPUTER ART
3	PLOTTED COMPUTED FUNCTIONS
4	THREE DIMENSIONAL DRAWING
5	CONFIGURATION & COST OF SYSTEM

NOTE:

Function Key 5 does not appear in the table until after the first example has been run.

Before doing any plotting on the Model 2202, a few steps must be followed to assure proper operation of the Plotting Output Writer:

1. Set the ON/OFF switch (on the Output Writer) to ON.
2. Position paper so that the typing element is located at the top of the sheet.
3. Set the MANUAL/AUTO switch to AUTO.

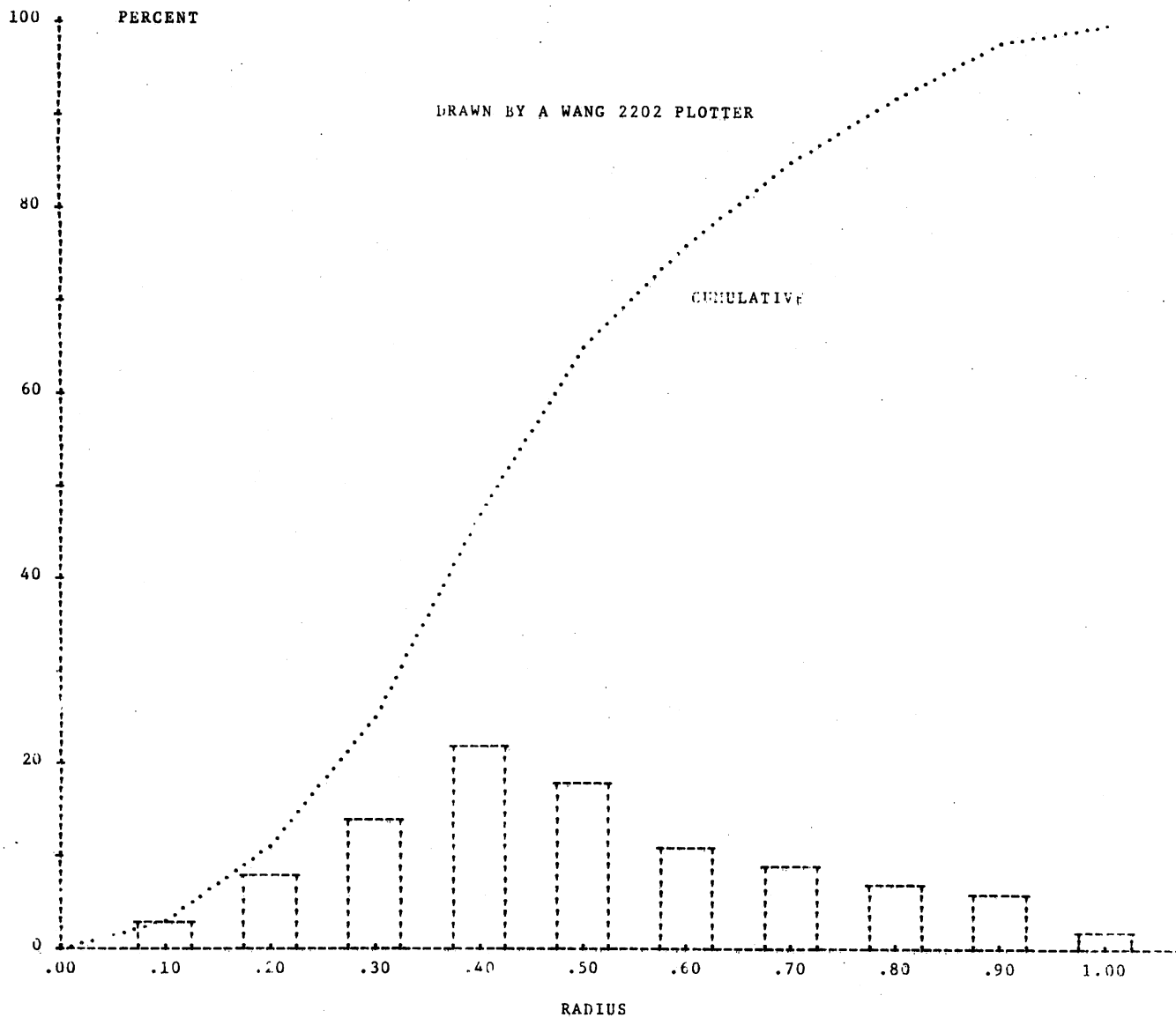
Now you are ready to plot. To view any desired plot, simply depress the Special Function Key associated with it, and the rest is done automatically. After the graph is complete, the END OF PROGRAM message appears on the CRT and the tape rewinds and reloads the graphing example module.

The table showing the Special Function Keys with their associated graphs appears again; pick another graph, or depress Special Function Key 5 to continue with the demo tape.

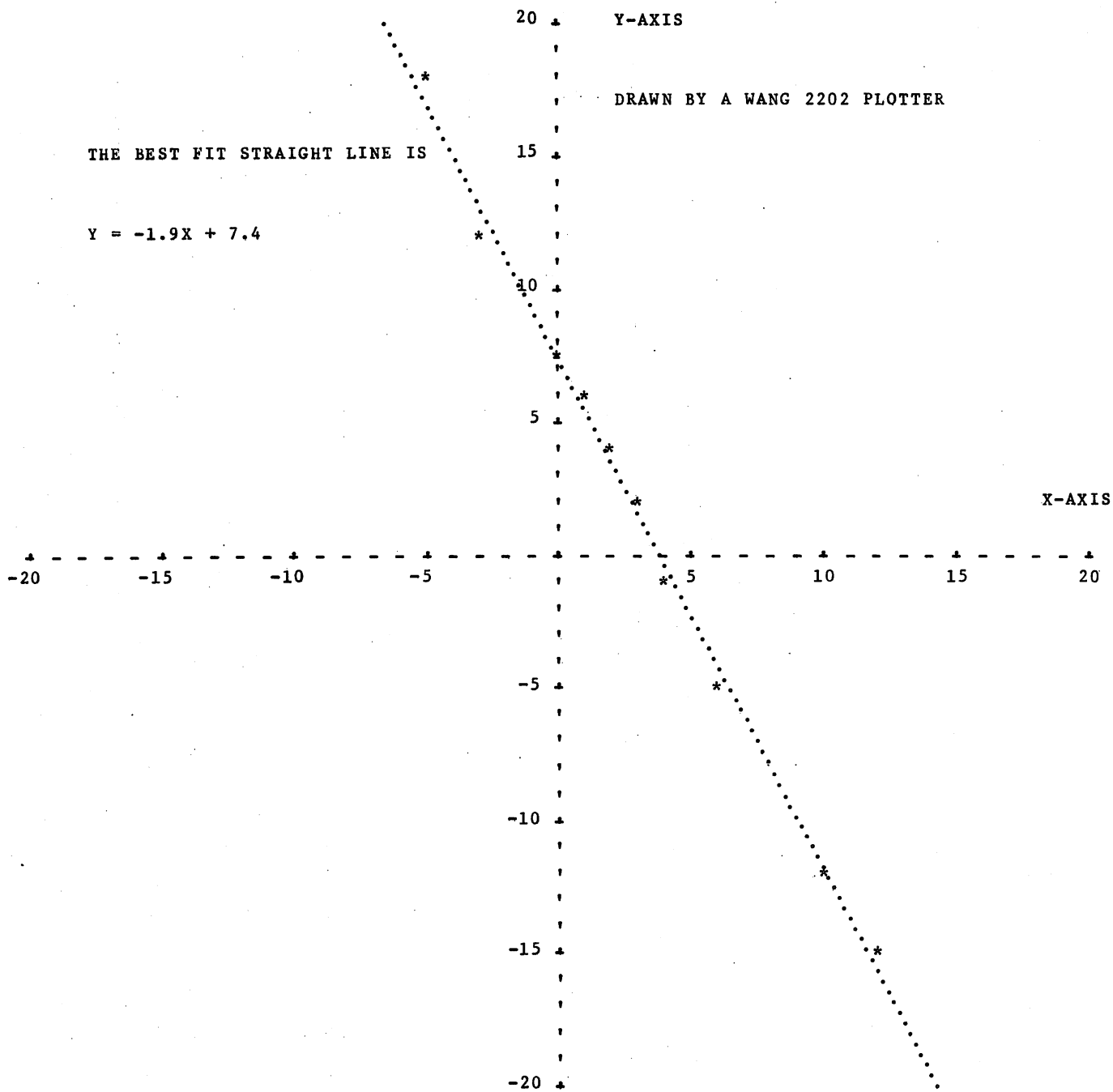
The graphs on the following pages represent those obtained on the 2202.

If you depress Function Key 5 to continue with the demo, proceed to Step 4, which explains the configuration module. In the configuration module, the user is allowed to build his own custom designed System 2200.

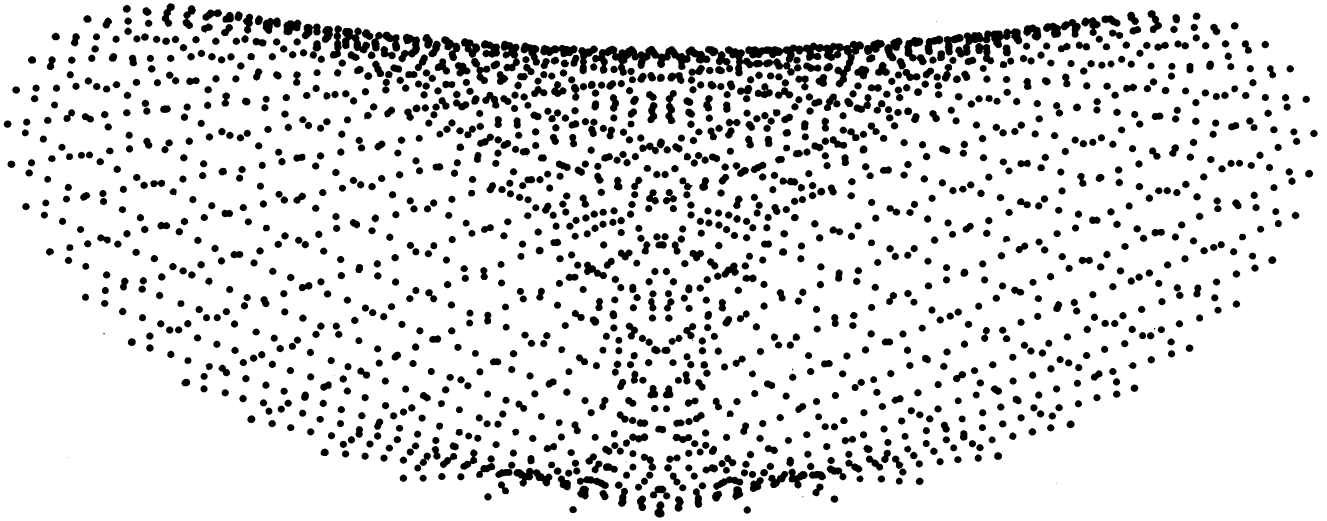
PARTICLE SIZE DISTRIBUTION



LINEAR REGRESSION ANALYSIS

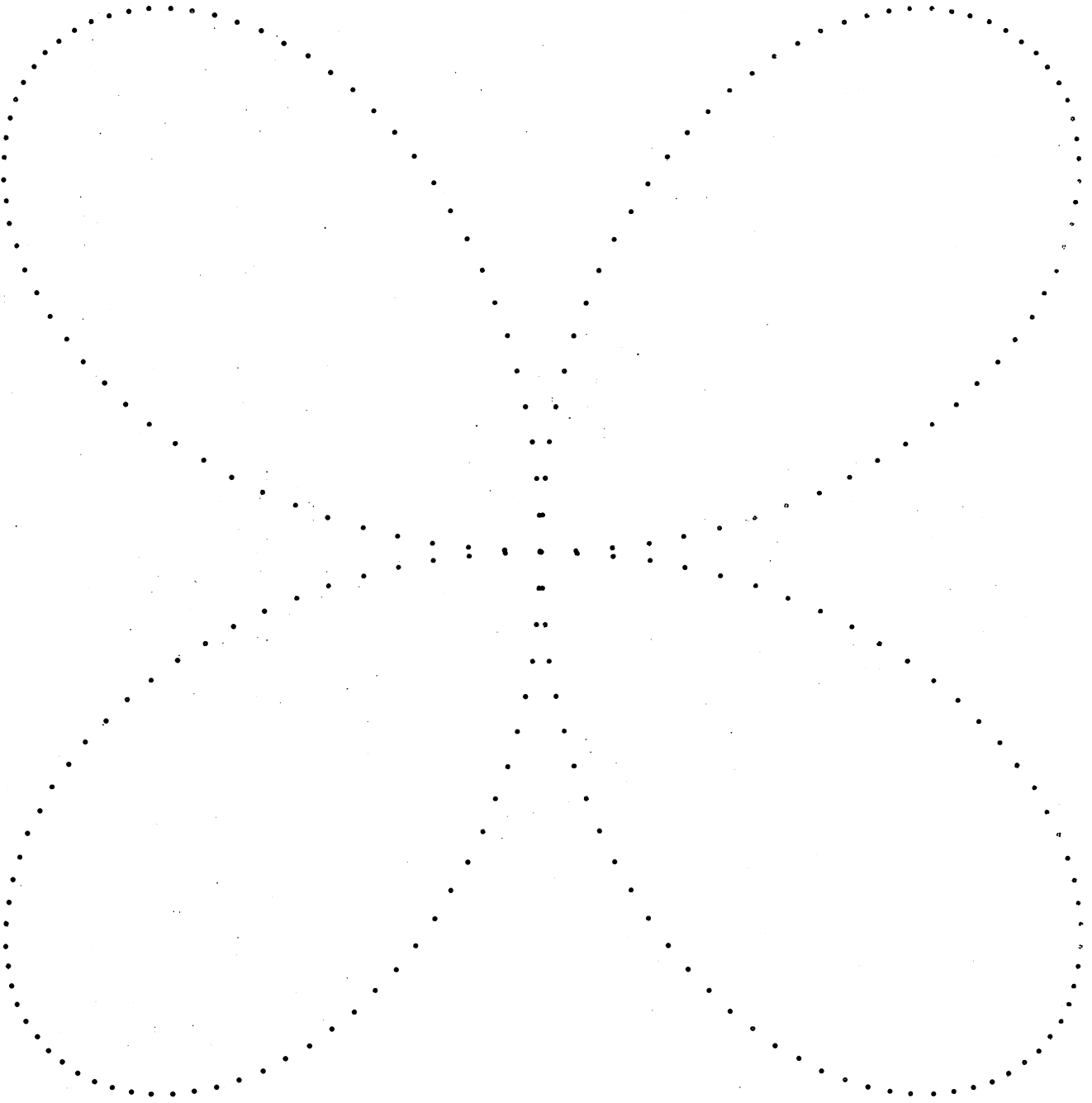


VARIATION ON A BIFOLIUM



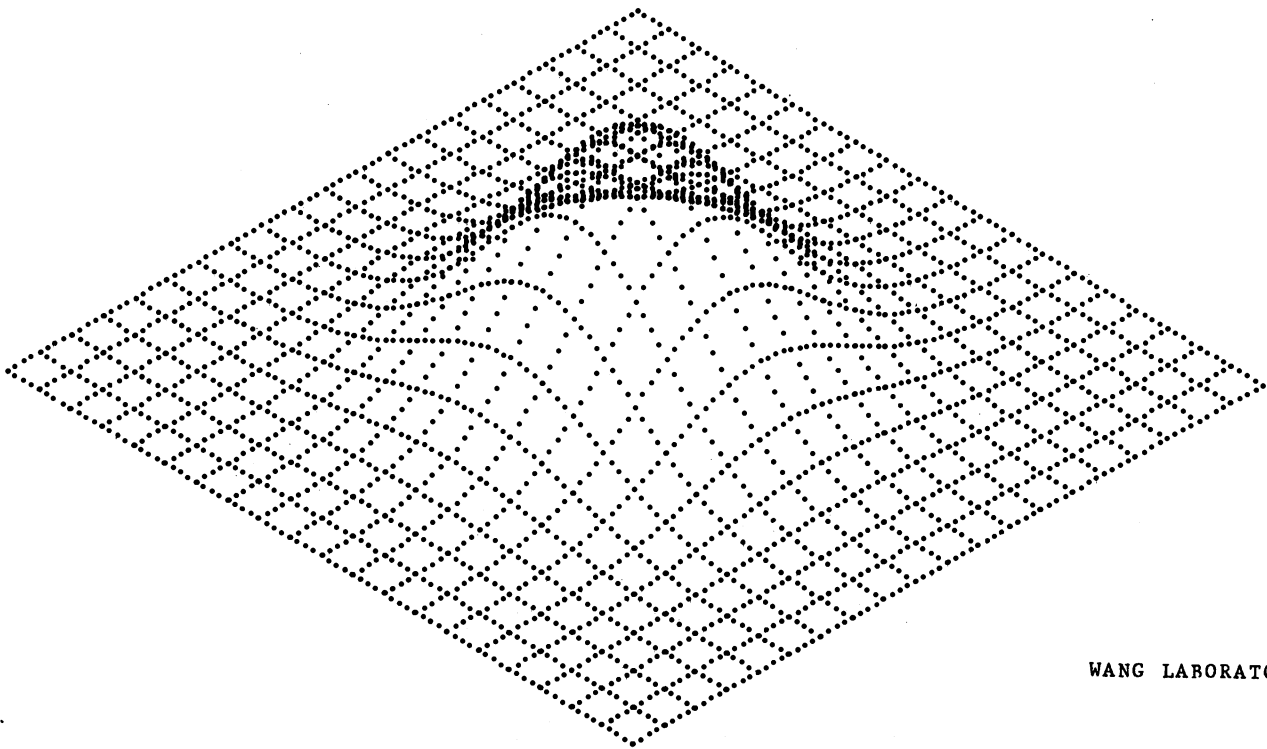
DRAWN BY A WANG 2202 PLOTTER

FOUR LEAVED ROSE



DRAWN BY A WANG 2202 PLOTTER

3-DIMENSIONAL DRAWING



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Step 3 (For Model 2212)

MODEL 2212 FLAT BED PLOTTER (10" x 15")

When the graphing example module appears, the following information is shown on the CRT:

<u>KEY</u>	<u>GRAPH</u>
0	BAR CHART
1	LINEAR REGRESSION
2	ALPHANUMERIC LABELING
3	COMPUTER ART
4	PLOTTING COMPUTED FUNCTIONS
5	THREE DIMENSIONAL DRAWING
6	CONFIGURATION & COST OF SYSTEM

NOTE:

Function Key 6 does not appear in the table until after the first example has been run.

Before doing any plotting on the 2212, follow these few steps to assure proper operation of the plotter:

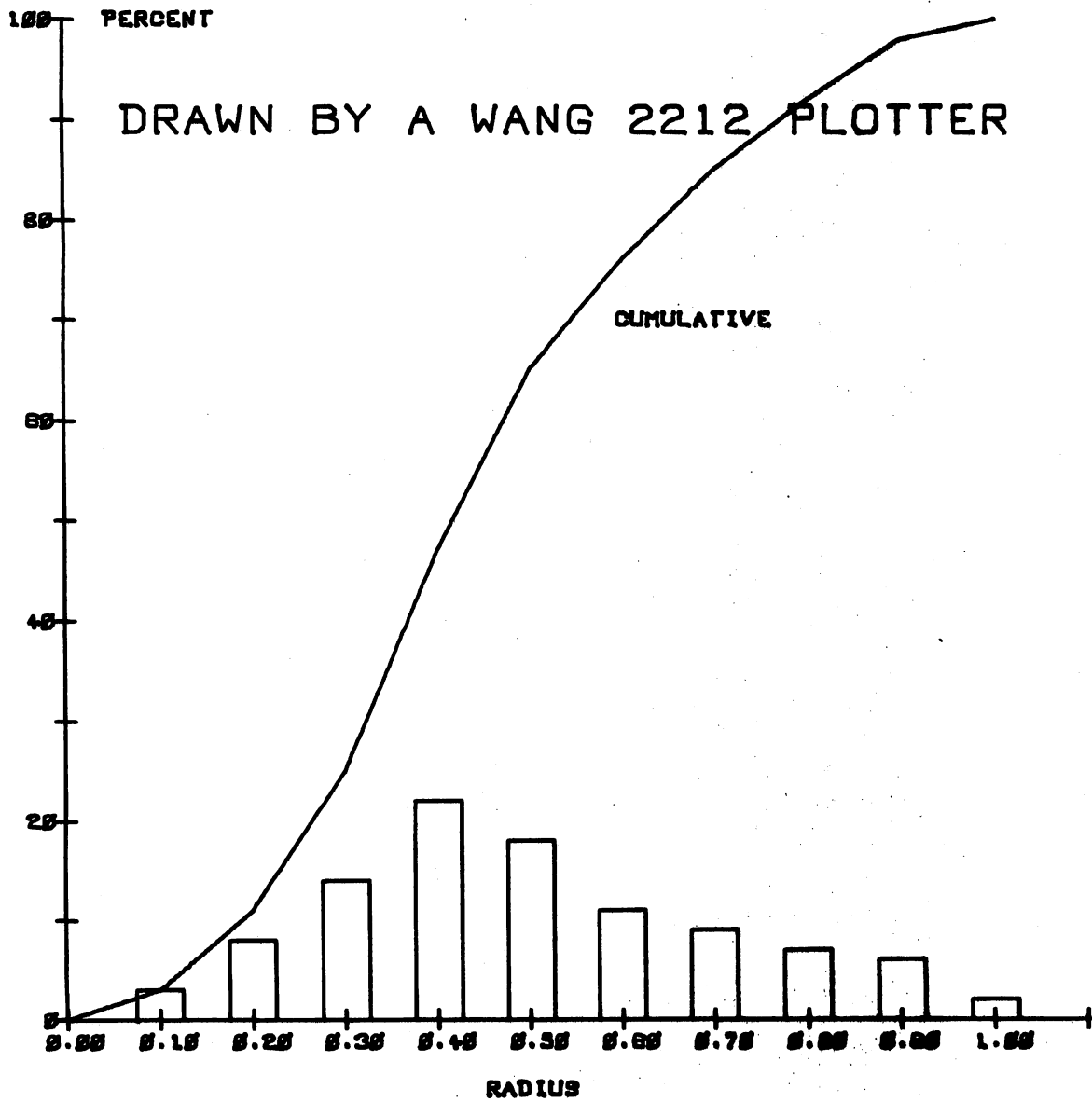
1. Make sure the PEN UP/DOWN switch is set to UP.
2. Insert the paper.
3. Set the CHART RELEASE/HOLD switch to HOLD.
4. Now, turn the POWER ON/OFF switch to ON (the plotter pen "jumps" to the zero reference point).
5. Depress the ZERO REFERENCE CHECK button. Using the respective X and Y knobs, adjust the plotter pen to the point you wish as the lower left point of the graph.
6. Depress the SCALE ADJUST CHECK button. Again, use the respective X and Y knobs to position the plotter pen to the upper right point of the graph.
7. Now that you have scaled the graph, set the PEN UP/DOWN switch to DOWN.

Now you are ready to plot. To view any plot, simply key the respective Function Key and the plot is drawn and labeled automatically. The following pages illustrate the graphs obtained on the 2212.

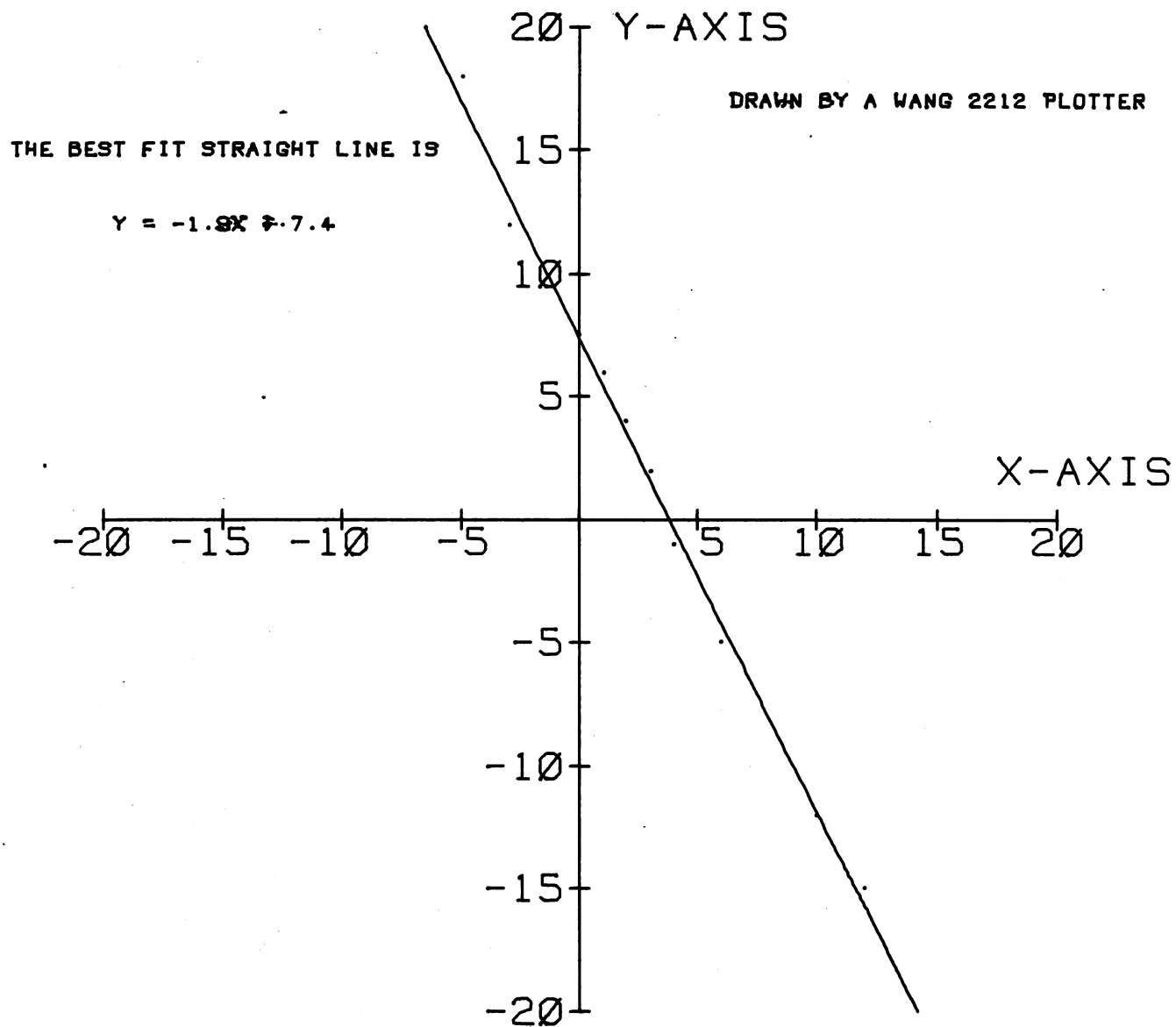
After the example is completed the demo tape rewinds and reloads the graphing example module. The table showing the Function Keys with their respective graphs appears again on the CRT. To view another graph, depress the Function Key associated with it; to continue with the demo, depress Function Key 6, which brings you to the configuration module.

The configuration module allows you to custom design your own System 2200; for details concerning this module, proceed to Step 4.

PARTICLE SIZE DISTRIBUTION

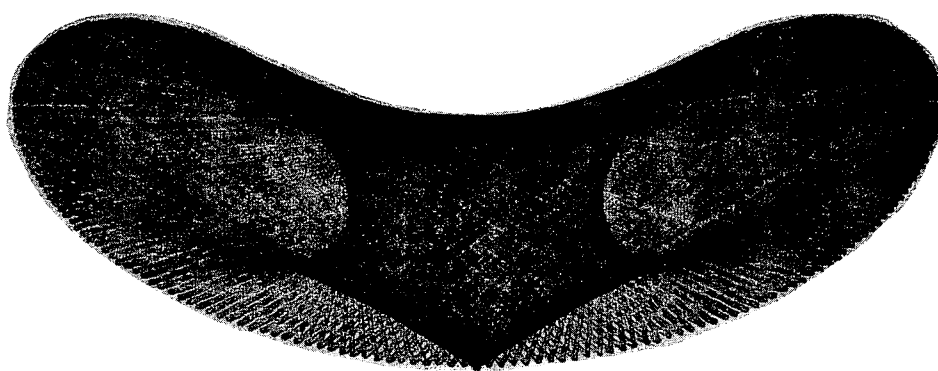


LINEAR REGRESSION ANALYSIS



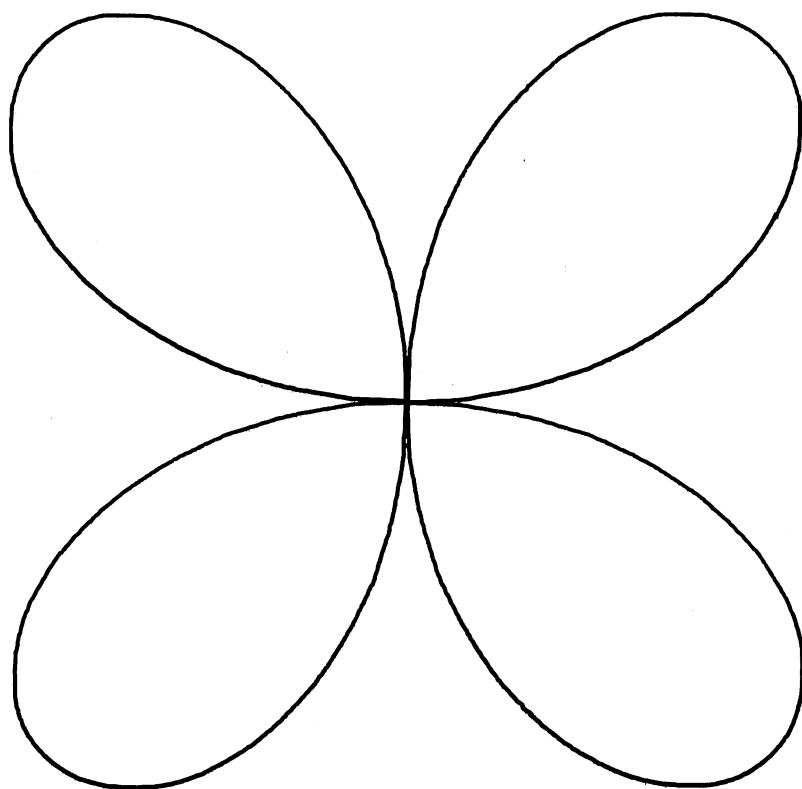
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2212 DEMO
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VARIATION ON A BIFOLIUM



DRAWN BY A WANG 2212 PLOTTER

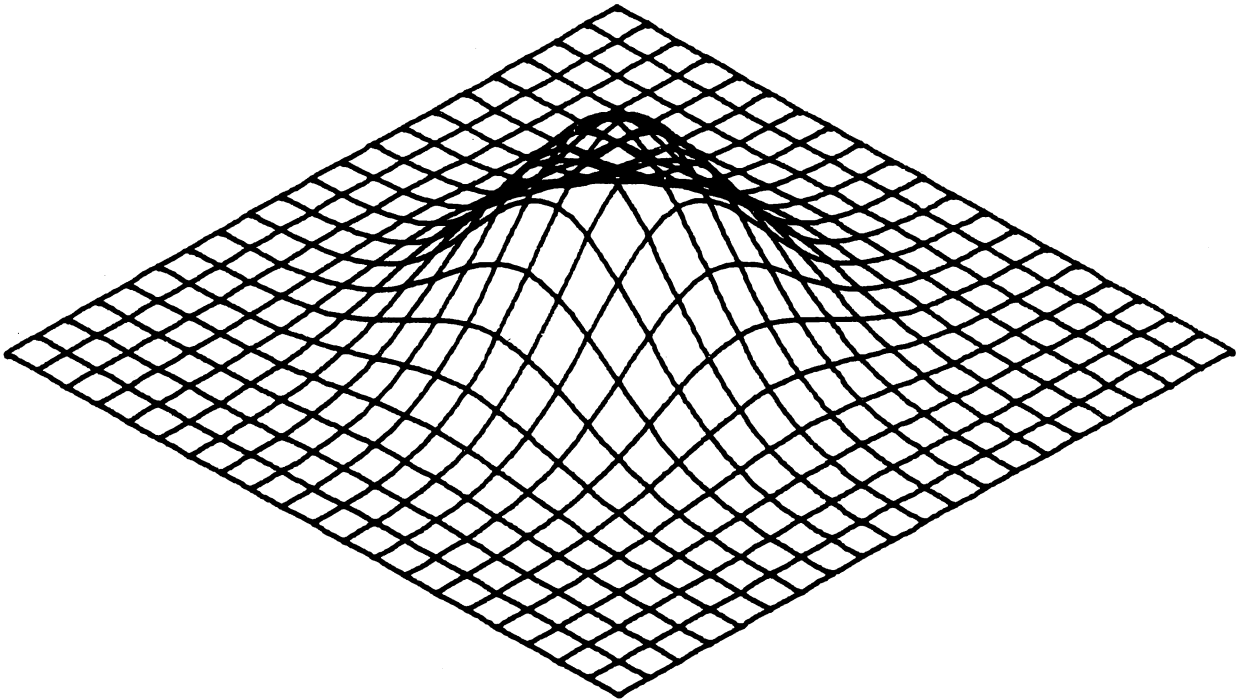
FOUR LEAVED ROSE



DRAWN BY A WANG 2212 PLOTTER

3-DIMENSIONAL DRAWING

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Step 3 (For Model 2232A)

MODEL 2232A DIGITAL FLAT BED PLOTTER (31" x 48")

When the graphing example module appears, the following information is shown on the CRT:

<u>KEY</u>	<u>GRAPH</u>
0	BAR CHART
1	LINEAR REGRESSION
2	ALPHANUMERIC LABELING
3	COMPUTER ART
4	PLOTTING COMPUTER FUNCTIONS
5	THREE DIMENSIONAL DRAWING
6	CONFIGURATION & COST OF SYSTEM

NOTE:

Function Key 6 does not appear in the table until the first example has been run.

Before doing any plotting with the 2232A, a few steps should be followed to assure proper operation of the plotter:

1. Place the paper on the plotting area, using the magnets to hold it securely.
2. Turn the main power switch ON.
3. Make sure the plotter pen is held tightly in its holder.

NOTE:

The demo program for the Model 2232A also can be run on the old Model 2232.

Now you are ready to plot. To view any plot, simply key the Function Key associated with it; the plot is then drawn and labeled automatically.

After the example is finished, the tape rewinds and reloads the graphing example module. The table of Function Keys and their respective graphs again appears on the CRT.

When you have finished plotting any desired examples, depress Function Key 6 to proceed with the demo. As the graphs for the Model 2232A are very similar to those drawn by the Model 2212, refer to the graphs given with Step 3, MODEL 2212 FLAT BED PLOTTER (10" x 15").

When the demo continues, the configuration module is shown. This module allows you to custom design your own System 2200. For further details concerning the configuration module, proceed to Step 4.

Step 4

The configuration module allows the user to custom design his own System 2200. You should use the Special Function Key strip, provided with the 2200 Technical Demo, at this point to aid you in choosing desired peripherals for your System 2200. As each peripheral is entered, the price of that unit is automatically tabulated in a running total, which can be viewed by depressing Function Key 31.

Instruction

Explanation

When the configuration module is reached, the CRT displays empty boxes in which the 2200 configuration can be "built" and

DEPRESS FUNCTION KEY 3

Key function key 3.

The CRT now displays:

2200 CPU
ENTER A or B?

Enter A or B.
Key RETURN (EXEC).

This depends on whether you want a System 2200A or a 2200B.

OR

Key RETURN (EXEC).

This ignores the question entirely and allows you to enter another function key.

If A or B is entered, the CRT displays:

2200 CPU
ENTER SIZE (1-8)?

Enter the number of 4K memory modules you want.
Key RETURN (EXEC).

Step 5

Key desired Function Keys from 4-29.

Function Keys 4-29 are related to different peripherals. As a key is depressed, the peripheral associated with it appears in the upper left corner of the CRT, along with instructions for entering specific information. (See Narrative section below.)

Narrative

Any or all of these peripherals can be attached to the System 2200, depending on the needs of your customer. These additions do not change the central processing of the System 2200. Configuring the system with your customer allows for re-emphasizing the special features and benefits of the System 2200.

During the configuration, if a peripheral has been called that is not desired, simply key RETURN (EXEC) or enter 0, then key RETURN (EXEC).

Once a peripheral is accepted and a quantity other than 0 has been entered, the price of that entry is automatically tabulated in a running total which is displayed at the end of the demo.

Once a peripheral with a quantity other than 0 has been accepted, you cannot delete it. If you wish to change it, you must depress Function Key 0, which erases the configuration you have just built and allows you to build another one.

The peripherals associated with Function Keys 3-9 are displayed in the center box; all other peripherals (10-29) are displayed, one in each of the 9 boxes along the sides of the configuration.

The Function Keys can be depressed in any order. If all 9 side boxes are filled, no new boxes are displayed. If another device is entered, the price of that entry is reflected in the total.

If you wish to add on peripherals, you can by recalling the corresponding Function Key and entering the number of additional units your customer wishes to purchase. If the added unit(s) correspond to keys 3-9, then only the number of units to be added is reflected in the configuration diagram. However, the total number of units is reflected in the total price. If the added unit(s) correspond to keys 10-29, then an additional box along the side of the configuration diagram is taken up every time a key is depressed (with a quantity other than 0).

<u>Function Key</u>	<u>Explanation</u>
<u>Function Key 0</u>	This erases the total configuration and allows you to start again with a new configuration.
<u>Function Key 1</u>	This redisplay the configuration screen if you wish to refer to it after keying Function Key 2 or 31. None of the data is altered.
<u>Function Key 2</u>	This rewinds the demo program tape and displays a monthly and daily charge for your desired configuration.
<u>Function Key 3</u> CRT displays: 2200 CPU ENTER A or B?	This key has already been discussed above (see Step 4, page 17).
<u>Function Key 4</u> CRT displays: CRT ENTER CRT (ENTER 1) OR CRT/ TAPE (ENTER 2)? Enter a 1 for the CRT only or a 2 for a CRT with a tape drive. Key RETURN (EXEC). <u>OR</u> Key RETURN (EXEC). If 1 or 2 has been entered, CRT displays: CRT or CRT/TAPE (depending on your selection). ENTER QTY? Enter a number from 0 to 9. Key RETURN (EXEC).	This ignores the question.

Function Key

Explanation

Function Key 5

CRT displays:

OPTIONS

ENTER OPT #(1, 2, 3, 4)?

Enter a number from 1 to 4.

Key RETURN (EXEC).

1 = Matrix ROM

2 = I/O ROM

3 = Edit ROM

4 = Audio ROM

To obtain more than 1 option, enter an option number, key RETURN (EXEC), then press Function Key 5, followed by another option number.

OR

Key RETURN (EXEC).

This ignores the question.

Function Key 6

CRT displays:

I/O EXTENDER

ENTER QTY?

Enter a number from 0 to 9.

Key RETURN (EXEC).

OR

Key RETURN (EXEC).

This ignores the question.

Function Keys 7 - 29 (except 19 and 21)

For Function Keys 7 - 18, 20, 22 -29, follow the same procedure as given for Function Key 6. Function Keys 19 and 21 are shown after the following table and have slightly different procedures.

Table of Function Keys 7 - 29

FUNCTION KEY	CRT DISPLAY
7	CPU STAND
8	BASIC KEYWORD KEYBOARD
9	ALPHA-NUMERIC KEYBOARD
10	MARK SENSE CARD READER
11	PUNCHED CARD READER
12	PUNCHED TAPE READER
13	OUTPUT WRITER
14	LINE PRINTER (132-COLUMN)
15	LINE PRINTER (80-COLUMN)
16	THERMAL PRINTER (80-COLUMN)
17	SINGLE TAPE CASSETTE DRIVE
18	DUAL TAPE CASSETTE DRIVE
19	SEE BELOW
20	SINGLE FLEXIBLE DISK DRIVE
21	SEE BELOW
22	TRIPLE FLEXIBLE DISK DRIVE
23	PLOTTING OUTPUT WRITER
24	ANALOG FLATBED PLOTTER (10 x 15)
25	DIGITAL FLATBED PLOTTER (31 x 48)
26	I/O INTERFACE CONTROLLER (RS-232-C)
27	TELECOMMUNICATIONS CONTROLLER
28	I/O INTERFACE CONTROLLER (8-BIT-PARALLEL)
29	INPUT INTERFACE (BCD 10-DIGIT-PARALLEL)

Function Key

Explanation

Function Key 19

CRT displays:

DISK DRIVE
ENTER QTY?

Enter a number from 0 to 9.
Key RETURN (EXEC).

OR

Key RETURN (EXEC).

This ignores the question.

If a positive quantity is entered, CRT displays:

DISK DRIVE
ENTER SIZE (1, 2, OR 3)?

1 = 1.2M bytes
2 = 2.4M bytes
3 = 5.0M bytes

Enter a number from 1 to 3.
Key RETURN (EXEC).

Function Key 21

CRT displays:

DUAL FLEXIBLE DISK DRIVE
ENTER QTY?

Enter a number from 0 to 9.
Key RETURN (EXEC).

OR

Key RETURN (EXEC).

This ignores the question.

If a positive quantity is entered, CRT displays:

DUAL FLEXIBLE DISK DRIVE
ENTER SIZE (1, 2)?

1 = 256K bytes
2 = 512K bytes

Enter a 1 or a 2.
Key RETURN (EXEC).

Function Key

Explanation

Function Key 30

This has no peripheral associated with it; it merely returns for the next function key.

Function Key 31

CRT displays:

TOTAL COST OF THE SYSTEM IS _____

The blank is the total cost of the configuration you have just built.

Conclusion:

As Wang salesmen, you are the men on the front line and are always with the customers. These demo tapes are valid until the financial figures for Fiscal Year 1973-1974 are announced, at which time this demo tape should be updated. Instructions for updating the tape can be found in Appendix A.

We would like to incorporate any constructive feedback that you may have concerning these demo programs. What would make these demonstrations easier to use or more effective in closing a sale with your customer? Please send your criticisms to your sales coordinator here in Tewksbury, Massachusetts. Thank you!

Appendix A

Configuration Price Changes Procedure

1. Mount 2200 demo program tape in tape drive. Make sure it is rewound.
2. Key CLEAR
 RETURN (EXEC)
3. Key SKIP 5F
 RETURN (EXEC)
4. After machine has skipped the first five files, load the configuration module:

Key LOAD
 RETURN (EXEC)
5. All prices are listed from statement lines 55 to 595.

Key LISTS
 RETURN (EXEC)

This begins listing the statement lines; if you do not see the Model number you wish to change, key RETURN (EXEC) and the next section is displayed. Continue this procedure until the desired Model number is found.

6. When you find the Model number you want, simply retype the line just as you see it, changing only the price. When the entire line is retyped, key RETURN (EXEC).

Example:

340 A (20) = 2300: REM 2218

If you wish to change the price of the Dual Tape Cassette Drive (Model 2218) to \$2450, type:

340 A (20) = 2450: REM 2218

then key RETURN (EXEC).

7. When you have completed all desired changes,

Key BACKSPACE IF
 RETURN (EXEC)

This rewinds the tape to the beginning of the configuration module.

8. Key SAVE, RETURN (EXEC)
9. Press REWIND
and remove tape from the tape drive.

To help us to provide you with the best manuals possible, please make your comments and suggestions concerning this publication on the form below. Then detach, fold, tape closed and mail to us. All comments and suggestions become the property of Wang Laboratories, Inc. For a reply, be sure to include your name and address. Your cooperation is appreciated.

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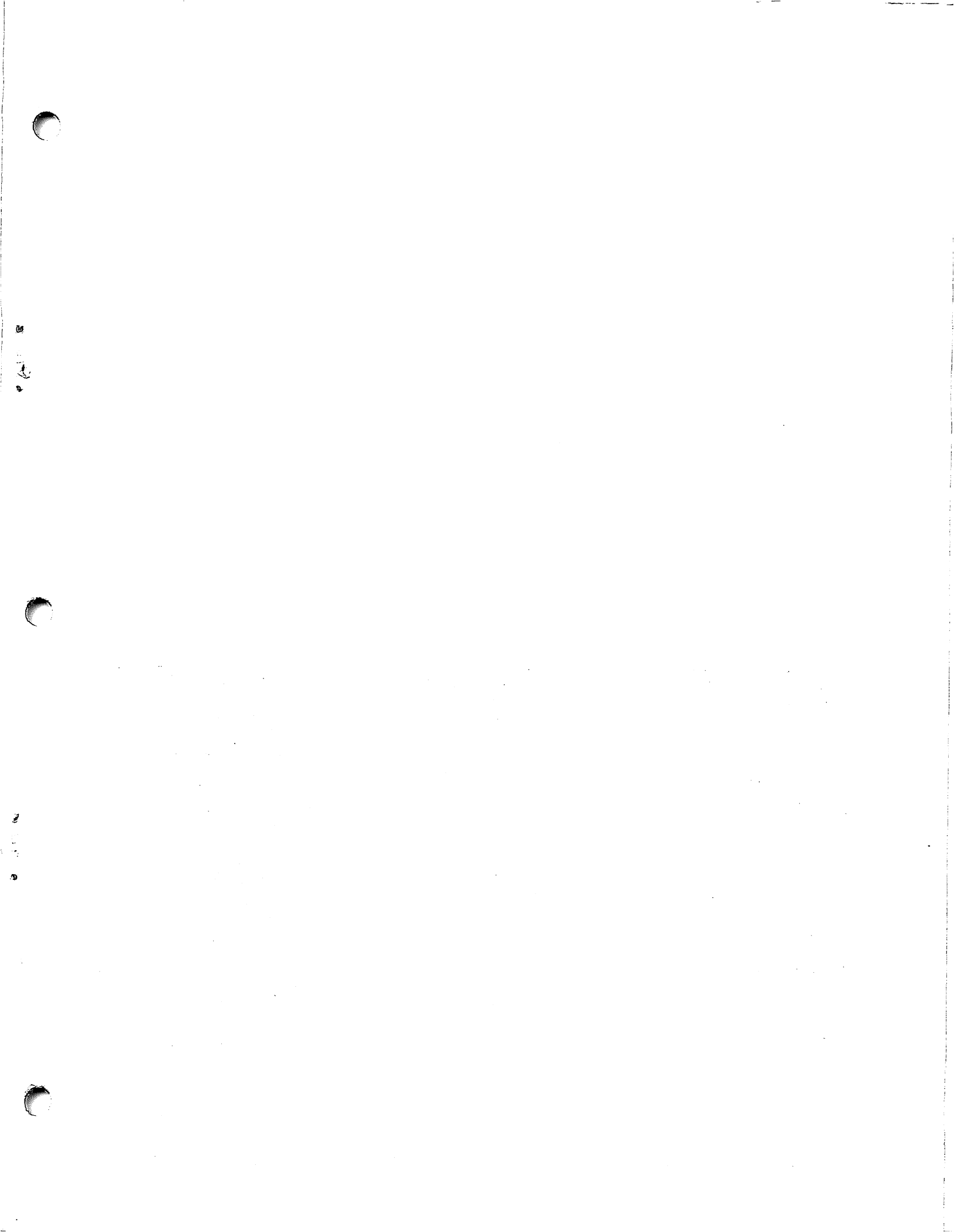
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