

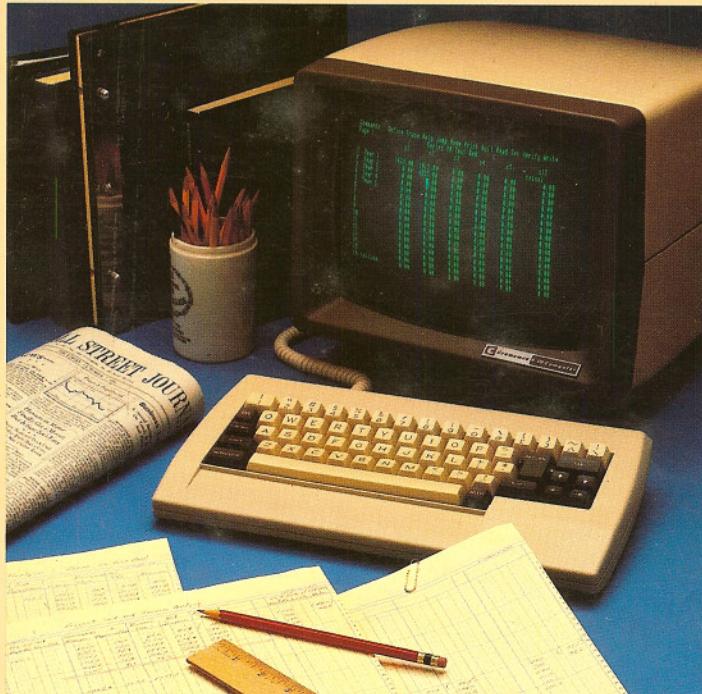
Cromemco C-10 Personal Computer

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# PlanMaster

Financial Planning Package

C





*Cromemco*<sup>®</sup>

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*C-10 PlanMaster<sup>®</sup> Manual*

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**Cromemco C-10 PlanMaster Manual**



## *Chapter One*

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1

### *Introduction*

*I*

PlanMaster, Cromemco's powerful financial planning package, is the answer to your accounting, calculating, and recordkeeping needs. With the PlanMaster program, your C-10 personal computer can help you project sales, plan production, or even evaluate scientific data. Your spreadsheets can be printed and/or filed on disk for continued use.

The PlanMaster program is easy to learn and to use. Once familiar with PlanMaster's basic features, you can instruct the program to perform your own, specialized tasks. If you need assistance, you can consult the program's comprehensive help file.

Because the program automatically calculates your spreadsheet with each new entry, no time is wasted refiguring data. You get a clean, finished product with a minimum of paperwork. In fact, your original spreadsheet *becomes* the finished product as you enter and edit data on the C-10 computer.

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**1**

## *Chapter Two*

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2

### *Moving Around the Plansheet*

*The PlanMaster Plansheet  
Scrolling Down the Plansheet  
Using the TAB Key to Scroll Right or Left  
Changing the Window without Scrolling—  
the Jump Command*

In this chapter, you will display a blank plansheet and experiment with different methods of moving to selected locations within that plansheet. To do so, you will use the ARROW keys, the **TAB** key, and the Jump command.

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### The PlanMaster Plansheet

Call up the PlanMaster program by selecting **2** from the C-10 menu of functions. The plansheet shown in Figure 2-1A is displayed. The display represents a small section of a PlanMaster plansheet. Each plansheet is composed of 10 pages. As shown in Figure 2-1B, the screen display shows the top left portion of page 1 of the plansheet.

The video screen displays different sections of the plansheet. Each time you call up the program, the window displays the top left section of the plansheet. This is called the *default window*.

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2

	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write								
Page 1	>	<	c1	c2	c3	c4	c5	c13	totcol
1			0.00	0.00	0.00	0.00	0.00	0.00	0.00
2			0.00	0.00	0.00	0.00	0.00	0.00	0.00
3			0.00	0.00	0.00	0.00	0.00	0.00	0.00
4			0.00	0.00	0.00	0.00	0.00	0.00	0.00
5			0.00	0.00	0.00	0.00	0.00	0.00	0.00
6			0.00	0.00	0.00	0.00	0.00	0.00	0.00
7			0.00	0.00	0.00	0.00	0.00	0.00	0.00
8			0.00	0.00	0.00	0.00	0.00	0.00	0.00
9			0.00	0.00	0.00	0.00	0.00	0.00	0.00
10			0.00	0.00	0.00	0.00	0.00	0.00	0.00
11			0.00	0.00	0.00	0.00	0.00	0.00	0.00
12			0.00	0.00	0.00	0.00	0.00	0.00	0.00
13			0.00	0.00	0.00	0.00	0.00	0.00	0.00
14			0.00	0.00	0.00	0.00	0.00	0.00	0.00
15			0.00	0.00	0.00	0.00	0.00	0.00	0.00
31 totline			0.00	0.00	0.00	0.00	0.00	0.00	0.00

Figure 2-1A

	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31 totline			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Figure 2-1B

### Scrolling Down the Plansheet

The key moves the window down the plansheet one line at a time. This is called *scrolling*.

Press the key until the cursor reaches the bottom of the screen display. Press the key again, and the window moves down one line. Press this key several more times to scroll a few more lines down the plansheet. If you continue to press the key, you can display line 30 of page 1. The portion of the plansheet viewed by scrolling down from the default window to line 30 is highlighted in Figure 2-2.

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	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	Total(c1)
1	0.40	0.00	0.80	0.40	0.00	2.00	0.40	1.40	0.00	0.40	0.10	0.00	0.00	0.00
2	0.40	0.00	0.80	0.40	0.00	2.00	0.40	1.40	0.00	0.40	0.05	0.00	0.00	0.00
3	0.40	0.05	0.80	0.40	0.05	1.60	0.40	1.20	0.02	0.40	0.05	0.05	0.00	0.00
4	0.40	0.00	0.80	0.40	0.00	2.00	0.40	1.40	0.00	0.40	0.05	0.05	0.00	0.00
5	0.00	1.00	0.80	0.40	0.00	3.50	0.00	2.00	0.00	0.40	0.10	0.05	0.00	0.00
6	0.00	1.00	0.80	0.40	0.00	3.50	0.00	2.00	0.00	0.40	0.10	0.05	0.00	0.00
7	0.00	1.00	0.80	0.40	0.00	3.50	0.00	2.00	0.00	0.40	0.10	0.05	0.00	0.00
8	0.00	1.00	0.80	0.40	0.00	3.50	0.00	2.00	0.00	0.40	0.10	0.05	0.00	0.00
9	0.00	0.80	0.80	0.40	0.01	0.80	0.05	1.00	1.00	0.00	0.05	0.00	0.00	0.00
10	0.00	0.80	0.80	0.40	0.01	0.80	0.05	1.00	1.00	0.00	0.05	0.00	0.00	0.00
11	0.00	0.80	0.80	0.40	0.01	0.80	0.05	1.00	1.00	0.00	0.05	0.00	0.00	0.00
12	0.00	0.80	0.80	0.40	0.01	0.80	0.05	1.00	1.00	0.00	0.05	0.00	0.00	0.00
13	0.01	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.01	0.40	0.05	0.00	0.00	0.00
14	0.01	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.01	0.40	0.05	0.00	0.00	0.00
15	0.01	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.01	0.40	0.05	0.00	0.00	0.00
16	0.01	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.01	0.40	0.05	0.00	0.00	0.00
17	0.01	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.01	0.40	0.05	0.00	0.00	0.00
18	0.01	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.01	0.40	0.05	0.00	0.00	0.00
19	0.00	0.40	0.80	0.40	0.01	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
20	0.00	0.40	0.80	0.40	0.01	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
21	0.00	0.40	0.80	0.40	0.01	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
22	0.00	0.40	0.80	0.40	0.01	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
23	0.01	0.40	0.80	0.40	0.01	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
24	0.01	0.40	0.80	0.40	0.01	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
25	0.00	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
26	0.00	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
27	0.00	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
28	0.00	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
29	0.00	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
30	0.00	0.40	0.80	0.40	0.00	1.80	0.40	1.20	0.00	0.40	0.05	0.00	0.00	0.00
31 totaline	0.00	0.00	0.80	0.40	0.01	9.00	0.01	6.00	0.00	0.40	1.00	0.10	1.00	0.00

**Figure 2-2**

### *Using the TAB Key to Scroll Right or Left*

The **►** and **◀** keys do not scroll the plansheet. To scroll right or left, use the **TAB** key.

From your current position in the plansheet, press the **TAB** key to move the cursor to column 5. Press the **TAB** key again. Column 6 moves into the window, and column 1 is no longer displayed.

Each time you press the **TAB** key, a new column scrolls into the window. Press the **TAB** key until columns 8 through 12, the rightmost portion of the plansheet, are displayed. The portion of the plansheet viewed by scrolling right from the default window to column 12 is highlighted in Figure 2-3.

To scroll the plansheet to the left, use CONTROL-TAB (simultaneously press the **CONTROL** key and the **TAB** key). Press CONTROL-TAB until columns 1 through 5 are redisplayed in the window.

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	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13
1	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
2	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
3	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
4	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
5	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
6	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
7	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
8	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
9	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
10	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
11	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
12	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
13	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
14	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
15	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
16	\$0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.02
17	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
18	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
19	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
20	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
21	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
22	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
23	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
24	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
25	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
26	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
27	\$1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$1.00
28	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
29	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
30	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00
31 Setline	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00

Figure 2-3

### Changing the Window Without Scrolling—the Jump Command

As shown in Figure 2-4, the Jump command moves the window directly to another area of the plansheet. If you want to move the cursor many lines or columns from its current position, using the Jump command is faster than scrolling. *You must use the Jump command if you want to move to another page in the plansheet.*

Use the following procedure to move the cursor to any location within the current page:

1. Press the **ESCAPE** key to move the cursor to the command line.
2. Enter **j** for *jump*.
3. The command line displays:  

```
Jump: to Line # (1,30)=> Column # (1,12) Page # (1,10)
```
4. Type a line number from 1 to 30, and press the **RETURN** key. If the cursor is already on the right line, press the **RETURN** key to bypass the line-number prompt.
5. Type a column number from 1 to 12, and press the **RETURN** key. If the cursor is already in the right column, press the **RETURN** key to bypass the column-number prompt.
6. Press the **RETURN** key to bypass the page-number prompt.

The cursor moves to the selected line and column within the current page. Enter the Jump command again and return the cursor to line 1, column 1.

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	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	total
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.10	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
26	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31 Totaline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Figure 2-4



## *Chapter Three*

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3

### *The Plansheet and How to Use It*

# 3

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- The Plansheet Markers*
- The PlanMaster Command Line*
- The Title Area*
- The Label Area*
- Typing Column Labels*
- Typing Line Labels*
- The Data Area*
- Entering Integers*
- Entering Decimal Numbers*
- Making Additional Entries*

This chapter introduces the different parts of a plansheet as you prepare an expense report with the PlanMaster program.

You will enter information in three areas of the plansheet, the data area, the label area, and the title area. These areas are discussed in detail in the following pages.

Also discussed are the program markers, which indicate your position in the plansheet, and the command line, where you enter all PlanMaster commands.

---

### *The Plansheet Markers*

As you move to different locations in a plansheet, the page number, column number, and line number notations in the window change accordingly. Since an entire plansheet is too large to be displayed, the markers indicate your position on the plansheet.

The page, column, and line markers are shown in Figure 3-1. You cannot enter information in areas reserved for plansheet markers. Although they are displayed on your screen, only the page number appears on the printed plansheet.

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	c1	c2	c3	c4	c5	c13	total
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-1

### The PlanMaster Command Line

The PlanMaster command line, shown in Figure 3-2, is displayed at the top of your screen. Before entering a command, move the cursor to the command line by pressing the **ESCAPE** key. Then select any command by entering the first letter of the command name, as you did for the Jump command in Chapter 2.

As an exercise, move the cursor to the command line and enter **h** for *help*. The first screen of the PlanMaster help file is displayed. If you want to study the help file, press the **RETURN** key to view successive pages.

Do this now. When you have viewed the help file to your satisfaction, redisplay the plansheet by pressing the **ESCAPE** key.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	<	c1	c2	c3	c4
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-2

### The Title Area

You are now going to title your plansheet.

Use the ARROW keys to position the cursor in the title area, between the “>” and “<” symbols, as shown in Figure 3-3A. Type **EXPENSE REPORT**, and press the **RETURN** key. If you make a mistake, place the cursor on the error and type over it. If you need to delete a character, press the **SPACE** bar.

Your plansheet now appears as shown in Figure 3-3B.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > | <

	c1	c2	c3	c4	c5	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-3A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > EXPENSE REPORT <

	c1	c2	c3	c4	c5	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-3B

### The Label Area

The label area, shown in Figure 3-4, is reserved for line and column headings (or labels). Unlike the column and line markers, labels appear on your printed plansheet.

As shown, the PlanMaster program provides two labels for you. Column 13, labeled **totcol**, is reserved for the **total of column 1 through 12**. Line 31, **totline**, is reserved for the **total of line 1 through 30**. To rename either label, simply type over it.

To enter column labels, tab to the appropriate column, press the **SPACE** bar, and type the label. In the program's default (or preset) setting, you can type up to eight characters. The largest allowable setting is 12 characters.

Line labels are typed to the right of the line number marker. The default setting is 12 characters, which is the maximum allowed. Default settings can be changed as explained in Chapter 8.

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The image shows a screenshot of the Cromemco C-10 PlanMaster software. At the top, a menu bar displays the following commands: Define, Erase, Help, Jump, Mode, Print, Quit, Read, Set, Verify, and Write. Below the menu, the text "Page 1" is visible. The main area contains a table with 16 rows, indexed from 1 to 15, followed by a row labeled "31 totline". The columns are labeled c1, c2, c3, c4, c5, and totcol. Each cell in the table contains a numerical value of 0.00. The "totcol" column also contains 0.00.

	c1	c2	c3	c4	c5	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

3

Figure 3-4

### Typing Column Labels

You are now going to label the columns for the expense report. If you make a mistake, position the cursor on the error and type over it. If you need to delete a character, press the **SPACE** bar. Use an underscore or an apostrophe to separate words in a column label—do not use a space or a hyphen.

A column label can be up to eight characters long. In this exercise, abbreviate **Wednesday**, since it exceeds the eight-character limit.

Now move the cursor to the blank line below column 1, as shown in Figure 3-5A, and type **Monday**. Tab to column 2 and type **Tuesday**. Continue in this manner until columns 1 through 5 are labeled with the days of the work week.

The last column to be labeled is column 13, to be renamed “Item\_Totals.” Since you cannot tab to column 13 without scrolling the window to the right, use the **↓** key to position the cursor one space to the left of *totcol*. Type **Item\_Totals**, and press the **RETURN** key. The expense report is now as shown in Figure 3-5B, opposite.

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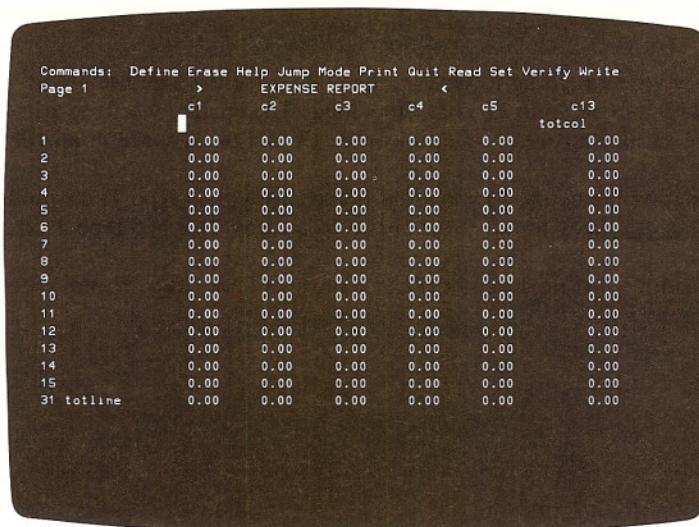


Figure 3-5A

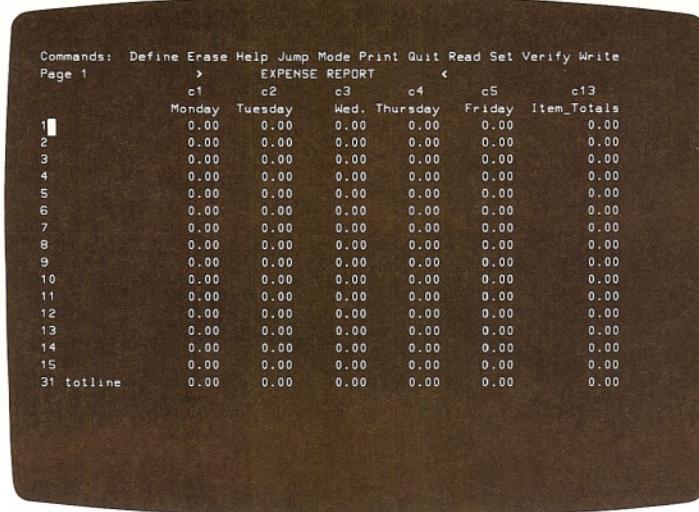


Figure 3-5B

### *Typing Line Labels*

Now you are going to type the line labels for the expense report. Line labels can be up to 12 characters long. To separate words in a line label, use an underscore or an apostrophe. Do not use a space or a hyphen.

Position the cursor as shown in Figure 3-6A, and type **Transport**. Press the **RETURN** key to move the cursor to the next line and type **Taxi-limo**.

Continue this process until your plansheet looks like the one shown in Figure 3-6B.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-6A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	0.00	0.00	0.00	0.00	0.00	0.00
2Taxi_limo	0.00	0.00	0.00	0.00	0.00	0.00
3Hotel	0.00	0.00	0.00	0.00	0.00	0.00
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	0.00	0.00	0.00	0.00	0.00
6Dry_vallet	0.00	0.00	0.00	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	0.00	0.00	0.00
8Tips_chkng	0.00	0.00	0.00	0.00	0.00	0.00
9Postage	0.00	0.00	0.00	0.00	0.00	0.00
10Misc_gift	0.00	0.00	0.00	0.00	0.00	0.00
11Entertain	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-6B

### *The Data Area*

The data area is the portion of the plansheet used for numerical data. As you work on the expense report, you will type the expenditures in this area.

Each group of zeroes (0.00) that appears on the screen is a place for your PlanMaster entries. You can place the cursor in any one of these groups and enter numerical data. In doing so, you have made an **entry**.

Each entry area contains two fields: an integer field and a decimal field.

The two places to the right of the decimal point (.00) are reserved for decimal numbers. The decimal field is shown in Figure 3-7A.

The place to the left of the decimal point (0.) is for non-decimal numbers, or integers. The integer field is shown in Figure 3-7B.

**Cromemco C-10 PlanMaster Manual**

The screenshot shows a software application window titled "Cromemco C-10 PlanMaster Manual". At the top, a menu bar lists "Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write". Below the menu, it says "Page 1". The main area displays a table with columns labeled "c1", "c2", "c3", "c4", "c5", "c13", and "totcol". The rows are numbered 1 through 15, and a final row labeled "31 totline". All values in the table are "0.00".

	c1	c2	c3	c4	c5	c13	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Figure 3-7A**

The screenshot shows a software application window titled "Cromemco C-10 PlanMaster Manual". At the top, a menu bar lists "Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write". Below the menu, it says "Page 1". The main area displays a table with columns labeled "c1", "c2", "c3", "c4", "c5", "c13", and "totcol". The rows are numbered 1 through 15, and a final row labeled "31 totline". All values in the table are "0.00".

	c1	c2	c3	c4	c5	c13	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Figure 3-7B**

### Entering Integers

Before making the first entry in the data area, move the cursor to line 1, column 1, of the plansheet, as shown in Figure 3-8A. You will enter the number *123* at this location.

Type **1**. The number *1* is under the cursor. Now type **2**. The *2* is under the cursor, and the *1* moves one place to the left. Type **3**, and the process is repeated. Each digit you type moves the previously typed digit one place to the left. The plansheet now appears as shown in Figure 3-8B.

In its normal setting, you can enter up to five digits in the integer field. To enter a negative number, type a minus sign to the left of the first digit. (The minus sign counts as a digit.) The size of the integer field can be adjusted as described in Chapter 8.

## Cromemco C-10 PlanMaster Manual

	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
Page 1	>	EXPENSE REPORT <				
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	0.00	0.00	0.00	0.00	0.00	0.00
2Taxi_limo	0.00	0.00	0.00	0.00	0.00	0.00
3Hotel	0.00	0.00	0.00	0.00	0.00	0.00
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	0.00	0.00	0.00	0.00	0.00
6Ldry_valet	0.00	0.00	0.00	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	0.00	0.00	0.00
8Tips_chk	0.00	0.00	0.00	0.00	0.00	0.00
9Postage	0.00	0.00	0.00	0.00	0.00	0.00
10Misc_gift	0.00	0.00	0.00	0.00	0.00	0.00
11Entertain	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-8A

	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
Page 1	>	EXPENSE REPORT <				
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	128.00	0.00	0.00	0.00	0.00	0.00
2Taxi_limo	0.00	0.00	0.00	0.00	0.00	0.00
3Hotel	0.00	0.00	0.00	0.00	0.00	0.00
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	0.00	0.00	0.00	0.00	0.00
6Ldry_valet	0.00	0.00	0.00	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	0.00	0.00	0.00
8Tips_chk	0.00	0.00	0.00	0.00	0.00	0.00
9Postage	0.00	0.00	0.00	0.00	0.00	0.00
10Misc_gift	0.00	0.00	0.00	0.00	0.00	0.00
11Entertain	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-8B

### Entering Decimal Numbers

Now you will type the decimal portion of the entry. With the cursor positioned as shown in Figure 3-9A, type a period (.). The cursor automatically moves to the decimal field.

Type **196**, and watch as your entry is rounded to **.20**, as shown in Figure 3-9B. Although the program automatically rounds the number you type, it “remembers” the original number. When the plansheet is calculated, the program uses the original, *unrounded* number.

The default setting allows you to enter up to eight digits in this field. Normally, only two decimal places are displayed or printed. If desired, you can reduce the size of the decimal field, or increase the number of displayed decimal places. Adjusting the default settings is discussed in detail in Chapter 8.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT <				
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	123.00	0.00	0.00	0.00	0.00	0.00
2Taxi_limo	0.00	0.00	0.00	0.00	0.00	0.00
3Hotel	0.00	0.00	0.00	0.00	0.00	0.00
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	0.00	0.00	0.00	0.00	0.00
6Ldry_valet	0.00	0.00	0.00	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	0.00	0.00	0.00
8Tips_chkng	0.00	0.00	0.00	0.00	0.00	0.00
9Postage	0.00	0.00	0.00	0.00	0.00	0.00
10Misc_gift	0.00	0.00	0.00	0.00	0.00	0.00
11Entertain	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-9A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT <				
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	123.20	0.00	0.00	0.00	0.00	0.00
2Taxi_limo	0.00	0.00	0.00	0.00	0.00	0.00
3Hotel	0.00	0.00	0.00	0.00	0.00	0.00
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	0.00	0.00	0.00	0.00	0.00
6Ldry_valet	0.00	0.00	0.00	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	0.00	0.00	0.00
8Tips_chkng	0.00	0.00	0.00	0.00	0.00	0.00
9Postage	0.00	0.00	0.00	0.00	0.00	0.00
10Misc_gift	0.00	0.00	0.00	0.00	0.00	0.00
11Entertain	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-9B

### *Making Additional Entries*

In this exercise, enter the rest of the expenditures on the expense report. The entries to be made are shown in Figure 3-10, opposite.

Use the ARROW keys to position the cursor for the first entry, at line 2, column 1. Make this entry and the remaining entries on line 2. When you have done so, use CONTROL-TAB and/or the ARROW keys to position the cursor for the first entry in line 3. Continue in this manner until all entries are made, and the expense report looks like Figure 3-10.

## Cromemco C-10 PlanMaster Manual

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT <				
	c1	c2	c3	c4	c5	c13
1Transport	123.20	0.00	0.00	0.00	0.00	0.00
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	0.00
3Hotel	75.42	75.42	75.42	75.42	0.00	0.00
4Meals	33.00	29.47	32.90	20.40	18.55	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	0.00
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	2.00	12.00	0.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	0.00
9Postage	0.00	0.00	1.20	0.00	0.00	0.00
10Misc_gift	0.00	15.00	0.00	0.00	0.00	0.00
11Entertain	0.00	150.00	0.00	35.70	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31_totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 3-10

### *Quitting the PlanMaster Program*

After filling out the expense report, you may wish to leave the PlanMaster program. The Quit command is used to leave the program. The procedure for using the Quit command is given in Figure 3-11, opposite.

Follow this procedure now. When the program asks if you want to save the plansheet, type **y** for yes. Store the plansheet under the file name **expense**.

*Procedure for Quitting the PlanMaster Program and  
Saving the Plansheet*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **q** for *quit*
- PlanMaster displays: Save data & format? YES NO ESC
- You type: **y** for *yes*
- PlanMaster displays: Enter filename
- You enter:
  1. The name of the file, **expense**.
  2. Press the **RETURN** key.
- The system displays: The C-10 menu of functions.

*Figure 3-11*

**Cromemco C-10 PlanMaster Manual**

3

## *Chapter Four*

---

**4**

### *Doing Simple Calculations*

- Using the Read Command to Display the Expense Report Plansheet*
- Doing Automatic Calculations—the Mode Command*
- Moving the Cursor with the Mode Command—Autotab*
- Calculating a Page or an Entire Plansheet—the Verify Command*
- A Few General Rules*
- Printing the Plansheet—the Print Command*
- Writing Out the Plansheet*

## Cromemco C-10 PlanMaster Manual

In this chapter, you will learn the use of several new PlanMaster commands. The Read command is used to display the data and labels from the expense report on a new plansheet. The Mode and Verify commands are used to calculate the plansheet.

### *Using the Read Command to Display the Expense Report Plansheet*

Call up the PlanMaster program once again by selecting **2** from the C-10 menu of functions. An empty or blank plansheet is displayed on the screen.

Use the procedure given in Figure 4-1 to read the data and format (labels) from the saved plansheet, **expense**, to the current plansheet. Do this now.

When you enter the Read command, the four command options are displayed:

**Data   Format   Both   List (saved files)**

Entering **d** for *data* displays only the data from a saved plansheet. Entering **1** for *list* displays a list of all saved plansheets on your disk. (Press the **ESCAPE** key to redisplay the plansheet.)

When you want to display the title and labels of a saved plansheet, enter **f** to select the *format* option.

*Procedure for Using the Read Command to Display the Data and Format of a Saved Plansheet on the Current Plansheet*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **r** for *read*
- PlanMaster: Asks if you want to display:
  - Data Format Both
  - or a list of saved files.
- You enter: **b** for *both* data and format
- PlanMaster displays: Enter filename
- You enter: The name of the saved plansheet.
- PlanMaster displays: The data and format of the saved plansheet on the current plansheet.

*Figure 4-1*

### Doing Automatic Calculations—the Mode Command

Now that you have displayed the expense report plansheet, you will use the **automatic calculation**, or **autocalc**, feature of the Mode command to sum a portion of the plansheet and display the results.

With autocalc on, the PlanMaster program automatically sums the data in the line and column where the cursor is located. For instance, with the cursor at line 1, column 1, the sum of entries in column 1 is displayed in *totline*, and the sum of the entries in line 1 is displayed in *totcol*.

Use the following procedure to activate the autocalc feature of the Mode command:

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **m** for *mode*.
3. Type **y** for *yes* in response to the program prompt.
4. Press the **RETURN** key twice.

With the cursor positioned as shown in Figure 4-2A, press the **RETURN** key to sum the entries in the current line and column. The result is displayed in *totline* and *totcol*, as shown in Figure 4-2B.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	125.20	0.00	0.00	0.00	0.00	0.00
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	0.00
3Hotel	75.42	75.42	75.42	75.42	0.00	0.00
4Meals	33.00	29.47	32.90	20.40	18.55	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	0.00
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	2.00	12.00	0.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	0.00
9Postage	0.00	0.00	1.20	0.00	0.00	0.00
10Misc_gift	0.00	15.00	0.00	0.00	0.00	0.00
11Entertain	0.00	150.00	0.00	35.70	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

Figure 4-2A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	125.20	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	0.00
3Hotel	75.42	75.42	75.42	75.42	0.00	0.00
4Meals	33.00	29.47	32.90	20.40	18.55	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	0.00
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	2.00	12.00	0.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	0.00
9Postage	0.00	0.00	1.20	0.00	0.00	0.00
10Misc_gift	0.00	15.00	0.00	0.00	0.00	0.00
11Entertain	0.00	150.00	0.00	35.70	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	0.00	0.00	0.00	0.00	262.37

Figure 4-2B



## Moving the Cursor with the Mode Command—Autotab

The Mode command has a second feature called **automatic tabulation**, or **autotab**. Autotab advances the cursor for you. You can move the cursor to the right one column at a time, or move the cursor down a line at a time.

You have already turned autocalc on. Use the following procedure and set the autotab feature to automatically move the cursor to the right:

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **m** for *mode*.
3. Press the **RETURN** key to leave autocalc on.
4. Type **r** for *right*.
5. Press the **RETURN** key.

The cursor is now positioned as shown in Figure 4-3A. Press the **RETURN** key twice, and watch as new entries are added to those in *totcol* and *totline*. Press the **RETURN** key again, and column 3 is calculated. The plan-sheet now appears as shown in Figure 4-3B.

In a similar manner, pressing the **RETURN** key with autotab set to down moves the cursor to the next line in the same column. *Totcol* and *totline* are adjusted accordingly. To set autotab to move the cursor down, type **d** for *down* in step 4 above.

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	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	123.20	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	0.00
3Hotel	75.42	75.42	75.42	75.42	0.00	0.00
4Meals	33.00	29.47	32.90	20.40	18.55	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	0.00
6Dry_valet	0.00	0.00	4.15	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	2.00	12.00	0.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	0.00
9Postage	0.00	0.00	1.20	0.00	0.00	0.00
10Misc_gift	0.00	15.00	0.00	0.00	0.00	0.00
11Entertain	0.00	150.00	0.00	35.70	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	0.00	0.00	0.00	0.00	262.37

Figure 4-3A

	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wednesday	Thursday	Friday	Item_Totals
1Transport	123.20	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	0.00
3Hotel	75.42	75.42	75.42	75.42	0.00	0.00
4Meals	33.00	29.47	32.90	20.40	18.55	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	0.00
6Dry_valet	0.00	0.00	4.15	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	2.00	12.00	0.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	0.00
9Postage	0.00	0.00	1.20	0.00	0.00	0.00
10Misc_gift	0.00	15.00	0.00	0.00	0.00	0.00
11Entertain	0.00	150.00	0.00	35.70	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	0.00	0.00	700.98

Figure 4-3B



### Calculating a Page or an Entire Plansheet—the Verify Command

The expense report plansheet now appears as shown in Figure 4-4A, opposite. To total the plansheet, you could use autocalc to sum the entries in the remaining columns. The Verify command is a faster method of summing the plansheet.

To total the current plansheet page, use the following procedure:

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **v** for *verify*.
3. Type **c** for *current page*.

The program calculates the total, line by line, column by column. The status line at the bottom lefthand corner of the screen displays the number of the line and column being calculated. The results of the calculation are displayed in *totline* and *totcol*. The plansheet is now as shown in Figure 4-4B.

The Verify command lets you calculate the current page or all 10 pages of the plansheet. If you wish to calculate the entire plansheet, enter **a** at step 3, and *all* pages are calculated.

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The screenshot shows a terminal window titled "EXPENSE REPORT". The window has a menu bar at the top with options: Define, Erase, Help, Jump, Mode, Print, Quit, Read, Set, Verify, Write. Below the menu is a header "Page 1 > EXPENSE REPORT <" and a table with columns: c1, c2, c3, c4, c5, c13. The table lists various expense items with their amounts for each day of the week, followed by a total row.

	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wednesday	Thursday	Friday	Item.Totals
1Transport	123.20	0.00	0.00	0.00	0.00	123.20
2Taxi limo	25.00	12.00	12.00	30.00	25.00	0.00
3Hotel	75.42	75.42	75.42	75.42	0.00	0.00
4Meals	33.00	29.47	32.90	20.40	18.55	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	0.00
6Dry_valet	0.00	0.00	4.15	0.00	0.00	0.00
7Other_auto	0.00	0.00	0.00	2.00	12.00	0.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	0.00
9Postage	0.00	0.00	1.20	0.00	0.00	0.00
10Misc_gift	0.00	15.00	0.00	0.00	0.00	0.00
11Entertain	0.00	150.00	0.00	35.70	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	0.00	0.00	700.98

Figure 4-4A

The screenshot shows a terminal window titled "EXPENSE REPORT". The window has a menu bar at the top with options: Define, Erase, Help, Jump, Mode, Print, Quit, Read, Set, Verify, Write. Below the menu is a header "Page 1 > EXPENSE REPORT <" and a table with columns: c1, c2, c3, c4, c5, c13. The table lists various expense items with their amounts for each day of the week, followed by a total row.

	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wednesday	Thursday	Friday	Item.Totals
1Transport	123.20	0.00	0.00	0.00	0.00	123.20
2Taxi limo	25.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	33.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Dry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 4-4B

### A Few General Rules

There are a few general rules that apply to all PlanMaster commands, explained below and summarized in Figure 4-5.

Press the **ESCAPE** key to move the cursor to the PlanMaster command line before selecting a command.

Press the **ESCAPE** key to cancel a command. This can be done at any point during command *selection*; however, once a command begins execution, pressing the **ESCAPE** key does not abort the command.

*PlanMaster Commands*

- Press the **ESCAPE** key to move the cursor to the PlanMaster command line before selecting a command.
- Press the **ESCAPE** key to cancel a command during selection.

*Figure 4-5*

### Printing the Plansheet—the Print Command

Before printing, make sure the printer is turned on, the paper properly inserted, and the printer ribbon in place. For information on setting up your printer, refer to the Cromemco C-10 manual.

You are now going to print the expense report plansheet. The procedure is given in Figure 4-6, opposite.

The Print command has four options. You *cannot* bypass an option by pressing the **RETURN** key. To exit from the Print command at any time before the last option is displayed, press the **ESCAPE** key.

The first option:

**Display Definitions?**

Asks if you want to print the definitions (equations) used by the Plan-Master program in calculating the plansheet.

The second option:

**Zero fields print as blanks?**

asks if you want unused entry fields printed as zeroes (0.00) or as blanks.

The third option asks if you want negative numbers printed in brackets, the fourth option, if you want the numbers in the data field to be printed with commas.

*Procedure for Using the Print Command to Print the Plansheet*

- ▶ You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- ▶ You enter: **p** for *print*
- ▶ PlanMaster displays: Print Definitions?
- ▶ You type: **y** for *yes*
  - if you want to print the definitions (equations) used to calculate the plansheet.
  - n** for *no*
    - if you do not want to print the definitions (equations).
- ▶ PlanMaster displays: Zero fields print as blanks?
- ▶ You type: **y** for *yes*; **n** for *no*
- ▶ PlanMaster displays: Negative numbers in brackets?
- ▶ You type: **y** for *yes*; **n** for *no*
- ▶ PlanMaster displays: Add commas?
- ▶ You type: **y** for *yes*; **n** for *no*

*Figure 4-6*

*Writing Out the Plansheet*

Now use the Write command to save the updated expense report plansheet. The procedure is given in Figure 4-7, opposite.

As you follow this procedure, the PlanMaster program will ask you to enter a file name. If you enter the existing file name, **expense**, the program asks if you want to delete the existing version. In this exercise, create a new file, **expensel**.

*Procedure for Using the Write Command to Save the Data and Format of a Plansheet*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **w** for *write*
- PlanMaster: Asks if you want to write:  
Data Format Both Table
- You enter: **b** for *both* data and format
- PlanMaster displays: enter filename
- You enter: The name of the file, **expensel**.

*Figure 4-7*

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**4**

## *Chapter Five*

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### *Removing and Replacing Data and Labels*

- Removing an Integer—the DELETE Key*
- Removing a Decimal—the DELETE Key*
- Deleting an Entry—CONTROL-SHIFT-DELETE*
- Removing Data from a Line, a Column, or the Entire Page—the Erase Command*
- Replacing Data*
- Removing a Plansheet Label, Heading, or Title*
- Removing all Column Headings and Line Labels—the Erase Command*
- Removing Data and Labels Together—the Erase Command*

In this chapter, you will learn to remove and/or replace data and labels on the plansheet. You can use the DELETE key to remove one digit at a time or a complete entry. The Erase command deletes data from a column or line, or removes data from an entire plansheet page.

As you will not need the automatic calculation feature of the program in this chapter, enter the Mode command now and turn autocalc off.

---

### *Removing an Integer—the **DELETE** Key*

To remove an integer on the plansheet, place the cursor just to the left of the decimal point and press the **DELETE** key. The **DELETE** key removes digits from right to left. Each deleted integer is replaced with a zero (0).

As an exercise, place the cursor over the number 3 in line 1, column 1, of the expense report plansheet, as shown in Figure 5-1A. Press the **DELETE** key and delete the number 3. The entry should now read 12.20, as shown in Figure 5-1B.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
1Transport	12 <del>8</del> .20	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	33.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkng	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-1A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
1Transport	12 <del>8</del> .20	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	33.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkng	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-1B

*Removing a Decimal—the **DELETE** Key*

To remove a decimal number from the plansheet, place the cursor on the rightmost digit in the decimal portion of the entry, and press the **DELETE** key. Decimals numbers are deleted from right to left. Invisible digits are removed first.

As an exercise, position the cursor over the *0* in the number *12.20*, as shown in Figure 5-2A. When you entered the decimal portion of this number in Chapter 4, you typed **.196**. The program rounded the number to *12.20*, but “remembered” the original entry.

Now press the **DELETE** key. The invisible digit is deleted, and the number is again *20.19*. Press the **DELETE** key once more, and the *9* is deleted. The entry now appears as shown in Figure 5-2B.

You cannot use the **DELETE** key to remove the totals on line 31. Instead, use CONTROL-SHIFT-DELETE or the Erase command, as described in the following pages.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
		Monday	Tuesday	Wed.	Thursday	Friday
1Transport	12.20	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	33.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	35.70	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-2A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
		Monday	Tuesday	Wed.	Thursday	Friday
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	33.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-2B

***Deleting an Entry—CONTROL-SHIFT-DELETE***

An entry is the digit or digits displayed at a line and column intersection, for example, 25.00 at line 2, column 1. To delete an entire entry, press the **DELETE** and **SHIFT** keys simultaneously, press the **DELETE** key, then release all keys. This operation is called CONTROL-SHIFT-DELETE.

Now position the cursor as shown in Figure 5-3A, opposite, and press CONTROL-SHIFT-DELETE. The entry is deleted, as shown in Figure 5-3B.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
		Monday	Tuesday	Wed.	Thursday	Friday
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	25.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	33.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-3A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
		Monday	Tuesday	Wed.	Thursday	Friday
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	33.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-3B

### *Removing Data from a Line, a Column, or the Entire Page—the Erase Command*

The Erase command removes all data from a line, a column, or an entire plansheet page, depending on the command option selected. The Erase command options apply only to the current plansheet page. To erase a multi-page plansheet, enter the command for each page.

In this exercise, you are going to delete all data on line 4 of the expense report. Position the cursor as shown in Figure 5-4A, opposite. Now use the following procedure to delete the data on this line.

Press the **ESCAPE** key to return the cursor to the PlanMaster command line, and enter **e** for *erase*. The command line reads:

**Erase: Data Labels All**

Because you want to erase *data*, not labels or the entire plansheet page (all), type **d**. The command line now reads:

**Data: Line Col All**

Typing **c** removes data in *column* 1. Typing **a** erases *all* data. Because you want to erase only the data in line 4, type **1** for *line*. The plansheet is now as shown in Figure 5-4B.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	38.00	29.47	32.90	20.40	18.55	134.32
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Dry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkng	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	35.70	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-4A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Dry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkng	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-4B



### Replacing Data

To replace a digit, type over it—except when the digit to be replaced is immediately to the left of the decimal point. Typing a number here adds an integer and pushes existing integers to the left. To replace a digit at this location, place the cursor on the integer just to the left of the digit you wish to replace. Retype it. The cursor moves one space to the right. Now type over the number to make the substitution.

As an exercise, place the cursor over the 7 in the entry 75.42, as shown in Figure 5-5A. Type 7. The cursor moves one space to the right, over the 5. Type 3. The entry now reads 73.42, as shown in Figure 5-5B, opposite.

You may need to replace a decimal digit. If all eight decimal places (visible or invisible) are filled, you will be unable to do so. If this happens, use the DELETE key to free a decimal place. Then type the replacement.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > EXPENSE REPORT <

	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	35.70	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-5A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > EXPENSE REPORT <

	c1	c2	c3	c4	c5	c13
	Monday	Tuesday	Wed.	Thursday	Friday	Item_Totals
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	75.42	75.42	75.42	75.42	0.00	301.68
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-5B

### Removing a Plansheet Label, Heading, or Title

To remove a single column heading, line label, or the plansheet title, use the **SPACE** bar or CONTROL-SHIFT-DELETE.

The **SPACE** bar removes the character under the cursor and replaces it with a blank space. Use the **SPACE** bar in column headings, line labels, or in the title. This method is especially useful in removing extra characters in a label or title.

CONTROL-SHIFT-DELETE removes an entire column heading or line label. For this method, position the cursor within the label or heading you wish to delete. Press CONTROL-SHIFT-DELETE, and the label or heading is removed.

To replace a character in a label or title, type over it.

In this exercise, you will change the title of the plansheet to “EXPENSES” and remove the label for line 4.

First move the cursor to the title area, as shown in Figure 5-6A, and press the **SPACE** bar to delete the word *REPORT*. Now position the cursor on the space after the word *EXPENSE* and type S. Finally, place the cursor in the line label *Meals*, and press CONTROL-SHIFT-DELETE. The line label is removed, and the plansheet is as shown in Figure 5-6B.

## Cromemco C-10 PlanMaster Manual

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSE REPORT				<
	c1	c2	c3	c4	c5	c13
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	73.42	75.42	75.42	75.42	0.00	301.68
4Meals	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chk	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-6A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	EXPENSES				<
	c1	c2	c3	c4	c5	c13
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	73.42	75.42	75.42	75.42	0.00	301.68
4	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chk	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-6B

### *Removing all Column Headings and Line Labels— the Erase Command*

Earlier in this chapter, you learned to use the Erase command to delete all data from a selected line, column, or an entire plansheet page. You can also use the Erase command to remove all line labels, all column labels, or all labels of any kind. Use the following procedure to erase the column labels on the expense report plansheet.

The plansheet is now as shown in Figure 5-7A. Press the **ESCAPE** key to return the cursor to the PlanMaster command line, and enter **e** for *erase*. The command line reads:

**Erase: Data Labels All**

Type **I** for *labels*. The command line now reads:

**Labels: Line Col All**

Typing **I** erases all *line labels*. Typing **a** erases *all labels* of any type. You type **c** for *column*. The column labels are erased, and the plansheet is as shown in Figure 5-7B.

Remember, the Erase command options apply only to the current plansheet page. To erase a multi-page plansheet, enter the command for each page.

## Cromemco C-10 PlanMaster Manual

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > EXPENSES <

	c1	c2	c3	c4	c5	c13
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	73.42	75.42	75.42	75.42	0.00	301.68
4	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chk	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-7A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > EXPENSES <

	c1	c2	c3	c4	c5	c13
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	73.42	75.42	75.42	75.42	0.00	301.68
4	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_valet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chk	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	59.40	928.05

Figure 5-7B

### *Removing Data and Labels Together—the Erase Command*

If you wish to delete all data and labels on a plansheet page in one step, use the Erase command with the All option.

The plansheet is now as shown in Figure 5-8A, opposite. Enter the Erase command once again, and type **a** for *all*.

The data, column headings, line labels, and title are removed from the current page of the plansheet. A blank plansheet is displayed, as shown in Figure 5-8B.

Now you may wish to quit the PlanMaster program. If so, enter **q** for *quit*, and type **n** for *no* when asked if you want to save the current plansheet. The original, calculated plansheet, **expensel**, is still saved on disk.

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The screenshot shows a terminal window with the following command prompt and menu:

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > EXPENSES <

	c1	c2	c3	c4	c5	c13
1Transport	12.10	0.00	0.00	0.00	0.00	123.20
2Taxi_limo	0.00	12.00	12.00	30.00	25.00	104.00
3Hotel	73.42	75.42	75.42	75.42	0.00	301.68
4	0.00	0.00	0.00	0.00	0.00	0.00
5Telephone	0.00	5.00	16.80	1.15	0.85	23.80
6Ldry_vaiet	0.00	0.00	4.15	0.00	0.00	4.15
7Other_auto	0.00	0.00	0.00	2.00	12.00	14.00
8Tips_chkg	5.75	4.30	4.95	3.00	3.00	21.00
9Postage	0.00	0.00	1.20	0.00	0.00	1.20
10Misc_gift	0.00	15.00	0.00	0.00	0.00	15.00
11Entertain	0.00	150.00	0.00	35.70	0.00	185.70
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	262.37	291.19	147.42	167.67	\$9.40	928.05

**Figure 5-8A**

The screenshot shows a terminal window with the following command prompt and menu:

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write

Page 1 > <

	c1	c2	c3	c4	c5	c13
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

**Figure 5-8B**



## *Chapter Six*

---

### *Saving the Plansheet*

*Naming Your Plansheets*

*Plansheets as Files*

*Saving the Plansheet and Leaving the  
Program—the Quit Command*

*Saving the Plansheet Without Leaving the  
Program—the Write Command*

*Creating a Print File—the Write Command*

*Leaving the Program Without Saving the  
Plansheet—the Quit Command*

This chapter reviews methods you have learned for quitting the PlanMaster program and for saving a plansheet. Also discussed are general rules for naming plansheets, and how plansheets are stored on your disk as files.

---

### *Naming Your Plansheets*

When naming a plansheet, select a name that is suggestive of its contents. For the expense report, the name selected makes it readily identifiable. Plansheet names cannot contain more than eight characters. They must be composed of letters and numbers. No embedded periods, symbols, or nonprint characters are allowed.

It is important to give each plansheet a new name, as you did with **expense** and **expenses1**. Affix a letter or number to the plansheet name to make it distinctive.

Rules for naming files are summarized in Figure 6-1, opposite.

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### *Plansheet Names*

- Cannot be longer than eight characters.
- Can contain only letters and/or numbers.
- Cannot contain embedded periods, symbols, or nonprint characters.
- Each name must be unique.

**Figure 6-1**

### *Plansheets as Files*

As files are stored in a filing cabinet, your plansheets are stored on your disk. Each plansheet is automatically stored as three files—a data file, a label file, and an equation file. The files are distinguished by the file-name extensions supplied by the PlanMaster program.

The data file has the extension **.da0**. Labels are stored in a file having the extension **.fm0**. The define formulas (or equations) used by the PlanMaster program to calculate the plansheet are stored in a file having the extension **de0**. Define formulas are discussed at length in Chapters 9 and 10.

You can display an entire plansheet, or one of its three component files. This gives you flexibility for creating new plansheets from existing files. For example, you can use the labels of a plansheet with new data, or use the labels from a plansheet with the data from another.

The expense report, **expensel**, is currently stored as shown in Figure 6-2.

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### *Plansheets as Files*

The expense report, **expensel**, is now stored on disk as:

**expensel.da0** = data file  
**expensel.fm0** = format file  
**expensel.de0** = definitions (equations) file

*Figure 6-2*

*Saving the Plansheet and Leaving the Program—  
the Quit Command*

Use the Quit command to leave the PlanMaster program and save the current plansheet on disk. The procedure is shown in Figure 6-3, opposite.

After quitting the program, you can select the PlanMaster program, or any other program, from the C-10 menu of functions.

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### *Procedure for Using the Quit Command to Save the Plansheet and Leave the Program*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **q** for *quit*
- PlanMaster displays: Save data and format?
- You type: **y** for *yes*
- PlanMaster displays: enter filename
- You enter:
  1. A file name.
  2. Press the **RETURN** key.

*Figure 6-3*

### Saving the Plansheet Without Leaving the Program— the Write Command

The Write command saves a plansheet without leaving the PlanMaster program. You can save the data, the labels, or both the data and labels of a plansheet.

A fourth option, table, saves the plansheet as a *print file*, with the file-name extension **.prt**. The table option is discussed in detail in the following pages.

The Write command is particularly useful when you want to save the labels of a plansheet for use with other plansheets. The Read command copies labels, data, or both from one plansheet to another, so plansheet data and labels are easily interchanged.

The procedure for using the Write command to save a plansheet without leaving the PlanMaster program is given in Figure 6-4.

*Procedure for Using the Write Command to Save the Plansheet  
Without Leaving the Program*

- You press: The [ESCAPE] key to return the cursor to the PlanMaster command line.
- You enter: w for *write*
- PlanMaster: Asks if you want to write:  
Data Format Both Table
- You enter: b for *both* data and format
- PlanMaster displays: enter filename
- You enter: The name of the file.

*Figure 6-4*

### *Creating a Print File—the Write Command*

If you want to save the plansheet and print it later, use the Write command to create a *print file*. The table option of the Write command stores the plansheet on your disk with the file-name extension **.prt** for *print*. To print the plansheet, use the spooler program explained in the instruction manual for your operating system. The procedure for creating a print file is given in Figure 6-5, opposite.

Print files are also useful because they can be input to WriteMaster or Screen Editor files. Suppose you want to delete the plansheet page number or use longer line or column labels than those allowed by the PlanMaster program. Once you have transferred the contents of the print file to a WriteMaster or Screen Editor file, you can edit the plansheet as you would any other file.

#### *To Input the Print File to a WriteMaster File:*

1. Select the WriteMaster program.
2. Rename the file to delete the file-name extension by entering the command:

```
rename [file.prt] to [new file name]
```

3. Enter the command:

```
edit [new file name]
```

4. Type **c** for *convert* in response to the screen message:

```
[file name] does not seem to be a WriteMaster text file.
```

#### *To Input the Print File to a Screen Editor File:*

1. Select the Screen Editor program, and enter the Read command.
2. When the program asks for a file name, enter the name of the print file, including the file-name extension **.prt**.

*Procedure for Using the Write Command to Save the Plansheet  
Without Leaving the Program*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **w** for *write*
- PlanMaster: Asks if you want to write:
  - Data Format Both Table
- You enter: **b** for *both* data and format
- PlanMaster displays: enter filename
- You enter: The name of the file.

*Figure 6-4*

### ***Creating a Print File—the Write Command***

If you want to save the plansheet and print it later, use the Write command to create a *print file*. The table option of the Write command stores the plansheet on your disk with the file-name extension .prt for *print*. To print the plansheet, use the spooler program explained in the instruction manual for your operating system. The procedure for creating a print file is given in Figure 6-5, opposite.

Print files are also useful because they can be input to WriteMaster or Screen Editor files. Suppose you want to delete the plansheet page number or use longer line or column labels than those allowed by the PlanMaster program. Once you have transferred the contents of the print file to a WriteMaster or Screen Editor file, you can edit the plansheet as you would any other file.

#### ***To Input the Print File to a WriteMaster File:***

1. Select the WriteMaster program.
2. Rename the file to delete the file-name extension by entering the command:

```
rename [file.prt] to [new file name]
```

3. Enter the command:

```
edit [new file name]
```

4. Type **c** for *convert* in response to the screen message:

```
[file name] does not seem to be a WriteMaster text file.
```

#### ***To Input the Print File to a Screen Editor File:***

1. Select the Screen Editor program, and enter the Read command.
2. When the program asks for a file name, enter the name of the print file, including the file-name extension .prt.

*Procedure for Using the Write Command to Create a Print File*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **w** for *write*
- PlanMaster displays: Enter filename
- You enter: 1. The name of the file.  
2. Press the **RETURN** key.
- PlanMaster: Asks if you want to write:  
Data Format Both Table
- You type: **t** for *table*
- PlanMaster displays: Print Definitions?
- You type: **y** for *yes*  
if you want to print the definitions (equations) used to calculate the plansheet.
- You type: **n** for *no*  
if you do not want to print the definitions (equations).
- PlanMaster displays: Zero fields print as blanks?
- You type: **y** for *yes*; **n** for *no*
- PlanMaster displays: Negative numbers in brackets?
- You type: **y** for *yes*; **n** for *no*
- PlanMaster displays: Add commas?
- You type: **y** for *yes*; **n** for *no*
- PlanMaster: Stores the plansheet on disk as:  
**filename.prt**  
and returns the cursor to the plansheet.

Figure 6-5



*Leaving the Program Without Saving the Plansheet—the Quit Command*

The procedure for using the Quit command to leave the PlanMaster program without saving the plansheet is given in Figure 6-6. After quitting the program, you can select the PlanMaster program, or another program, from the C-10 menu of functions.

If you do not wish to save the plansheet, but you do want to stay in the PlanMaster program, use the Erase All command to clear the plansheet.

*Procedure for Using the Quit Command to Leave the Program  
Without Saving the Plansheet*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **q** for *quit*
- PlanMaster displays: Save data and format?
- You type: **n** for *no*

*Figure 6-6*





## *Chapter Seven*

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7

### *Displaying the Plansheet*



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*Entering the Program and Displaying the  
Plansheet*

*Entering the Program and Displaying Only the  
Plansheet Labels*

*Entering the Program and Displaying Only the  
Plansheet Data*

*Displaying the Plansheet After Entering the  
Program—the Read Command*

*Displaying Only the Plansheet Labels After  
Entering the Program—the Read Command*

*Displaying Only the Plansheet Data After  
Entering the Program—the Read Command*

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In Chapter 4 you entered the PlanMaster program and used the Read command to display a saved plansheet. In this chapter, you will learn how to enter the PlanMaster program and display a saved plansheet in one operation. The Read command is also reviewed.

*Entering the Program and Displaying the Plansheet*

You can display a saved plansheet as you enter the PlanMaster program. To do so, use the procedure given in Figure 7-1, opposite.

The first time you type the plansheet name, you instruct the program to display the title and labels of the saved plansheet. The second time you type the plansheet name, you tell the program to display the data as well.

After you press the **RETURN** key, the saved plansheet is displayed in the window.

*Procedure for Entering the Program and Displaying  
the Plansheet*

1. Select the PlanMaster program by entering **planmast**, followed by a space, in response to the menu prompt:

*Enter choice and press RETURN →*

2. Enter the name of the plansheet, for example, **expensel**.
3. Press the **SPACE** bar once.
4. Enter the name of the plansheet a second time.
5. Press the **RETURN** key.

*Figure 7-1*

*Entering the Program and Displaying Only the Plansheet Labels*

As you enter the PlanMaster program, you may want to display only the labels from a saved plansheet. The procedure is given in Figure 7-2, opposite.

Turn the page to learn how to display only the plansheet data.

*Procedure for Entering the Program and Displaying Only the  
Plansheet Labels*

1. Select the PlanMaster program by entering **planmast**, followed by a space, in response to the menu prompt:

*Enter choice and press RETURN →*

2. Enter the name of the plansheet, for example, **expensel**.
3. Press the **RETURN** key.

*Figure 7-2*

*Entering the Program and Displaying Only the Plansheet Data*

To display only the data from a saved plansheet as you enter the PlanMaster program, use the procedure given in Figure 7-3.

The procedure is similar to that used to display the plansheet labels.

*Procedure for Entering the Program and Displaying Only the  
Plansheet Data*

1. Select the PlanMaster program by entering **planmast**, followed by a space, in response to the menu prompt:

*Enter choice and press RETURN →*

2. Type **-d** (hyphen, followed by **d** for *data*).
3. Enter the name of the plansheet, for example, **expensel**.
4. Press the **RETURN** key.

*Figure 7-3*

*Displaying the Plansheet After Entering the Program—the Read Command*

After entering the PlanMaster program by selecting 2 from the C-10 menu of functions, use the Read command to display a saved plansheet.

The procedure is reviewed in Figure 7-4, opposite.

*Procedure for Using the Read Command to Display the Plansheet  
After Entering the Program*

- You press: The **ESCAPE** key to return the cursor to the PlanMaster command line.
- You enter: **r** for *read*
- PlanMaster: Asks if you want to display:
  - Data Format Both
  - or a list of saved files.
- You enter: **b** for *both* data and format
- PlanMaster displays: Enter filename
- You enter: The name of the saved plansheet.

*Figure 7-4*

### *Displaying Only the Plansheet Labels After Entering the Program—the Read Command*

You can also use the Read command to display only the labels (includes the title) of a saved plansheet. To do so, use the Read command format option, as explained in Figure 7-5.

Note that after entering **f** for *format*, the program asks if you want to read only the definitions from the saved plansheet to the current plansheet. “Definitions” are the define equations used by the PlanMaster program to calculate the plansheet. These are explained in detail in Chapters 9 and 10.

*Procedure for Using the Read Command to Display Only the  
Plansheet Labels After Entering the Program*

- You press: The [ESCAPE] key to return the cursor to the command line.
- You enter: r for *read*
- PlanMaster: Asks if you want to display:
  - Data Format Both
  - or a list of saved files.
- You enter: f for *format*
- PlanMaster displays: Definitions only?:
- You type: n for *no*
- PlanMaster displays: enter filename
- You enter: The name of the saved plansheet.

*Figure 7-5*

*Displaying Only the Plansheet Data After Entering the Program—the Read Command*

You can use the Read command to display only the plansheet data after entering the PlanMaster program. To do so, use the Read command data option, as described in Figure 7-6.

*Procedure for Using the Read Command to Display Only the  
Plansheet Labels After Entering the Program*

- You press: The **ESCAPE** key to return the cursor to the command line.
- You enter: **r** for *read*
- PlanMaster: Asks if you want to display:
  - Data Format Both
  - or a list of saved files.
- You enter: **d** for *data*
- PlanMaster displays: enter filename
- You enter: The name of the saved plansheet.

*Figure 7-6*

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7

## *Chapter Eight*

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8

### *Changing the Plansheet Format*

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*Changing the Column Width—the Set Command*

*Bypassing Options with the RETURN Key*

*Changing the Width of Columns 1 through 3—the Set Command*

*Changing the Width of All Columns—the Set Command*

*Changing the Width of Line Labels—the Set Command*

*The Format Option of the Set Command*

*The Set Format Option—Exercise*

In this chapter, you will use the Set command to change the width of column and line labels on a plansheet.

Now select the PlanMaster program from the C-10 menu of functions and display a blank plansheet. You will manipulate the column width and other format variables on this blank plansheet so that the flexibility of the Set command becomes obvious.

---

### *Changing the Column Width—the Set Command*

A blank plansheet, as shown in Figure 8-1A, is now displayed.

Use the ARROW keys and position the cursor anywhere in column 4. Column 4 is the *current column*. As an exercise, use the following procedure to change the width of the current column.

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **s** for *set*.
3. Type **c** for *current column*.
4. Type **12** to increase the width of the current column to the maximum allowed.
5. Press the **RETURN** key three times.

The plansheet now appears as shown in Figure 8-1B, opposite.

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	c1	c2	c3	c4	c5	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

**Figure 8-1A**

	c1	c2	c3	c4	c5	totcol
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

**Figure 8-1B**

### Bypassing Options with the RETURN Key

You have noticed that pressing the **RETURN** key “bypasses” command options. More accurately, the PlanMaster program then uses the default option (shown in brackets on the command line) for that command. For example, as you changed the width of column 4 in the previous exercise, you left the settings for the number format and decimal places options unchanged by pressing the **RETURN** key in response to the program prompts.

With the exception of the Print command, pressing the **RETURN** key bypasses the options of any PlanMaster command. For example, if you select the Mode command and want to use the autocalc but *not* the autotab option, press the **RETURN** key in response to the autotab message.

Figure 8-2 summarizes the uses of the **RETURN** key.

### The RETURN Key

- Pressing the **RETURN** key “bypasses” command options by instructing the program to use the default.
- Pressing the **RETURN** key with autotab set to *right* moves the cursor to the next column of the plansheet. If autocalc is also on, pressing the **RETURN** key calculates the previous column.
- Pressing the **RETURN** key with autotab set to *down* moves the cursor to the next line of the plansheet. If autocalc is also on, pressing the **RETURN** key calculates the previous line.

**Figure 8-2**

### Changing the Width of Columns 1 through 3—the Set Command

With the plansheet as shown in Figure 8-3A, you are going to set the width of columns 1, 2, and 3 to the minimum.

For the columns to be as narrow as possible, eliminate the decimal point and decimal places, and set column width at the absolute minimum.

Use the following procedure to change the width of column 1. Then repeat the procedure for columns 2 and 3, each time repositioning the cursor in the appropriate column.

1. Position the cursor in the column to be formatted.
2. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
3. Enter **s** for *set*.
4. Enter **c** for *current column*.
5. Type **4**, the minimum column width, and press the **RETURN** key.
6. Press the **RETURN** key to bypass the number format option.
7. Type **0** to eliminate decimals.
8. Press the **RETURN** key.

When you have completed this procedure for all three columns, the plansheet appears as shown in Figure 8-3B. Notice that column 6 moved into the window.

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Page 1	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
	c1	c2	c3	c4	c5	c13 total
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
31 totline	0.00	0.00	0.00	0.00	0.00	0.00

**Figure 8-3A**

Page 1	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
	c1	c2	c3	c4	c5	c6 total
1	0	0	0	0.00	0.00	0.00
2	0	0	0	0.00	0.00	0.00
3	0	0	0	0.00	0.00	0.00
4	0	0	0	0.00	0.00	0.00
5	0	0	0	0.00	0.00	0.00
6	0	0	0	0.00	0.00	0.00
7	0	0	0	0.00	0.00	0.00
8	0	0	0	0.00	0.00	0.00
9	0	0	0	0.00	0.00	0.00
10	0	0	0	0.00	0.00	0.00
11	0	0	0	0.00	0.00	0.00
12	0	0	0	0.00	0.00	0.00
13	0	0	0	0.00	0.00	0.00
14	0	0	0	0.00	0.00	0.00
15	0	0	0	0.00	0.00	0.00
31 totline	0	0	0	0.00	0.00	0.00

**Figure 8-3B**

### *Changing the Width of All Columns—the Set Command*

The Set command allows you to change the width of all columns simultaneously. The plansheet is now as shown in Figure 8-4A. As an exercise, use the Set command to change all column widths on the plansheet to the maximum allowable width, which is 12.

Use the following procedure:

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **s** for *set*.
3. Type **a** for *all* columns.
4. Type **12**.
5. Press the **RETURN** key three times.

As shown in Figure 8-4B, the columns are wider, and fewer are displayed in the window.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	c1	c2	c3	c4	<
					c13	totcol
1		0	0	0	0.00	0.00
2		0	0	0	0.00	0.00
3		0	0	0	0.00	0.00
4		0	0	0	0.00	0.00
5		0	0	0	0.00	0.00
6		0	0	0	0.00	0.00
7		0	0	0	0.00	0.00
8		0	0	0	0.00	0.00
9		0	0	0	0.00	0.00
10		0	0	0	0.00	0.00
11		0	0	0	0.00	0.00
12		0	0	0	0.00	0.00
13		0	0	0	0.00	0.00
14		0	0	0	0.00	0.00
15		0	0	0	0.00	0.00
31 totline		0	0	0	0.00	0.00

**Figure 8-4A**

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	c1	c2	c3	c4	<
					c13	totcol
1		0	0	0	0.00	0.00
2		0	0	0	0.00	0.00
3		0	0	0	0.00	0.00
4		0	0	0	0.00	0.00
5		0	0	0	0.00	0.00
6		0	0	0	0.00	0.00
7		0	0	0	0.00	0.00
8		0	0	0	0.00	0.00
9		0	0	0	0.00	0.00
10		0	0	0	0.00	0.00
11		0	0	0	0.00	0.00
12		0	0	0	0.00	0.00
13		0	0	0	0.00	0.00
14		0	0	0	0.00	0.00
15		0	0	0	0.00	0.00
31 totline		0	0	0	0.00	0.00

**Figure 8-4B**

### Changing the Width of Line Labels—the Set Command

The Set command also allows you to change the width of line labels. When you select the PlanMaster program, the length of all line labels is set for the maximum 12 characters. Using the Set command, you can reduce the length of all labels to as little as three characters.

You cannot change the length of a single line label. Changing the length of one label changes the length of all.

Type the line labels shown in Figure 8-5A, opposite. Now change the line label length to 5, using the following procedure:

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **s** for *set*.
3. Type **l** for *line label length*.
4. Type **5**.
5. Press the **RETURN** key.

The plansheet is now as shown in Figure 8-5B. The line labels are truncated in accordance with the shorter line label width.

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	c1	c2	c3	c4	c13 totcol
1Houston	0	0	0	0.00	0.00
2Rome	0	0	0	0.00	0.00
3Los_Angeles	0	0	0	0.00	0.00
4New_York	0	0	0	0.00	0.00
5Brussels	0	0	0	0.00	0.00
6Paris	0	0	0	0.00	0.00
7Amsterdam	0	0	0	0.00	0.00
8Chicago	0	0	0	0.00	0.00
9London	0	0	0	0.00	0.00
10	0	0	0	0.00	0.00
11	0	0	0	0.00	0.00
12	0	0	0	0.00	0.00
13	0	0	0	0.00	0.00
14	0	0	0	0.00	0.00
15	0	0	0	0.00	0.00
31 totline	0	0	0	0.00	0.00

**Figure 8-5A**

	c1	c2	c3	c4	c13 totcol
1Houst	0	0	0	0.00	0.00
2Rome	0	0	0	0.00	0.00
3Los_A	0	0	0	0.00	0.00
4New_Y	0	0	0	0.00	0.00
5Bruss	0	0	0	0.00	0.00
6Paris	0	0	0	0.00	0.00
7Amste	0	0	0	0.00	0.00
8Chica	0	0	0	0.00	0.00
9Londo	0	0	0	0.00	0.00
10	0	0	0	0.00	0.00
11	0	0	0	0.00	0.00
12	0	0	0	0.00	0.00
13	0	0	0	0.00	0.00
14	0	0	0	0.00	0.00
15	0	0	0	0.00	0.00
31 totline	0	0	0	0.00	0.00

**Figure 8-5B**

*The Format Option of the Set Command*

In the previous exercises, as you adjusted columns on the plansheet, you pressed the **RETURN** key to bypass the following prompt:

```
set number format: Normal Scientific Hex ESC
```

The number format option determines how numbers are represented on a plansheet. When you enter the PlanMaster program, this option is preset to normal.

In scientific format, entries are displayed in scientific notation. Scientific notation expresses numbers as powers of 10, or exponentially. For instance, the decimal number 12345.00 is expressed in scientific notation as 1.23E+04, where the number following the plus (+) sign indicates the number of places the decimal is to be moved to the right. Although scientific notation can be used in define equations (see Chapters 9 and 10), you cannot use scientific notation to make entries on the plansheet.

The hexadecimal format displays plansheet entries as numbers in base 16, rather than the customary base 10 (decimal) format. You can make entries on the plansheet in hexadecimal format—up to a maximum of 8 digits.

Numbers in normal, scientific, and hexadecimal format are compared in Figure 8-6, opposite.

*Numbering Formats*

Decimal Format	Hexadecimal Format	Scientific Format
1	1h	1.000E+00
2	2h	2.000E+00
3	3h	3.000E+00
4	4h	4.000E+00
5	5h	5.000E+00
6	6h	6.000E+00
7	7h	7.000E+00
8	8h	8.000E+00
9	9h	9.000E+00
10	Ah	1.000E+01
11	Bh	1.100E+01
12	Ch	1.200E+01
13	Dh	1.300E+01
14	Eh	1.400E+01
15	Fh	1.500E+01
16	10h	1.600E+01
17	11h	1.700E+01
18	12h	1.800E+01
19	13h	1.900E+01
20	14h	2.000E+01
21	15h	2.100E+01
22	16h	2.200E+01
23	17h	2.300E+01
24	18h	2.400E+01
25	19h	2.500E+01

*Figure 8-6*



### The Set Format Option—Exercise

To dramatize the difference among number formats, make the entries shown in Figure 8-7A, opposite. You will leave column 1 of the plansheet in normal (decimal) format, while reformatting columns 2 and 3 to display the same numbers in hexadecimal and scientific format, respectively.

Position the cursor in column 2. Then use the following procedure to display the entries in this column in hexadecimal format:

1. Enter **s** for *set*.
2. Type **c** for *current column*.
3. Press the **RETURN** key to display the number format prompt.
4. Type **h** for *hexadecimal*.

Now move the cursor to column 3, and repeat steps 1 through 3. At step 4, type **s** for *scientific*. Then proceed as follows:

5. Type **3** to increase the decimal display.
6. Press the **RETURN** key.

The plansheet now appears as shown in Figure 8-7B.

At this point, use the *Quit* command to leave the PlanMaster program. Do not save this plansheet.

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	c1	c2	c3	c4	c13 totcol
1Houst	120	120	120	0.00	0.00
2Rome	195	195	195	0.00	0.00
3Los_A	7	7	7	0.00	0.00
4New_Y	34	34	34	0.00	0.00
5Bruss	1001	1001	1001	0.00	0.00
6Paris	0	0	0	0.00	0.00
7Amste	0	0	0	0.00	0.00
8Chica	0	0	0	0.00	0.00
9Londo	0	0	0	0.00	0.00
10	0	0	0	0.00	0.00
11	0	0	0	0.00	0.00
12	0	0	0	0.00	0.00
13	0	0	0	0.00	0.00
14	0	0	0	0.00	0.00
15	0	0	0	0.00	0.00
31 totline	0	0	0	0.00	0.00

Figure 8-7A

	c1	c2	c3	c4	c13 totcol
1Houst	120	78h	1.200E+02	0.00	0.00
2Rome	195	C3h	1.950E+02	0.00	0.00
3Los_A	7	7h	7.000E+00	0.00	0.00
4New_Y	34	22h	3.400E+01	0.00	0.00
5Bruss	1001	3E9h	1.001E+03	0.00	0.00
6Paris	0	0h	0.000E+00	0.00	0.00
7Amste	0	0h	0.000E+00	0.00	0.00
8Chica	0	0h	0.000E+00	0.00	0.00
9Londo	0	0h	0.000E+00	0.00	0.00
10	0	0h	0.000E+00	0.00	0.00
11	0	0h	0.000E+00	0.00	0.00
12	0	0h	0.000E+00	0.00	0.00
13	0	0h	0.000E+00	0.00	0.00
14	0	0h	0.000E+00	0.00	0.00
15	0	0h	0.000E+00	0.00	0.00
31 totline	0	0h	0.000E+00	0.00	0.00

Figure 8-7B



## *Chapter Nine*

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9

### *Doing More Complex Calculations (1)*

- 
- Filling in the Plansheet Data and Labels*
  - Steps Required Before Calculating Total Sales*
  - The \$ Feature*
  - Writing Equations for the Plansheet—*
    - Overview*
    - Writing the Equation to Calculate Total Sales of Pens*
    - Writing the Equation to Calculate Total Sales of Pencils*
    - Writing the Equation to Calculate Combined Sales*
    - Making the Equations Accessible to the Program—the Define Command*
    - Entering the Equations*
    - Calculating the Plansheet—the Verify Command*
    - Expanding the Plansheet*
    - A Word About the Equal Sign*
    - Using Line and Column References in Define Equations*
    - Removing and Inserting Lines and Characters in the Define Screen*
    - Performing Division, Subtraction, and Other Calculations—the Define Command*
    - Printing the Plansheet—the Print Command*



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## *Chapter Nine*

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9

### *Doing More Complex Calculations (1)*

- 
- Filling in the Plansheet Data and Labels*
  - Steps Required Before Calculating Total Sales*
  - The \$ Feature*
  - Writing Equations for the Plansheet—Overview*
  - Writing the Equation to Calculate Total Sales of Pens*
  - Writing the Equation to Calculate Total Sales of Pencils*
  - Writing the Equation to Calculate Combined Sales*
  - Making the Equations Accessible to the Program—the Define Command*
  - Entering the Equations*
  - Calculating the Plansheet—the Verify Command*
  - Expanding the Plansheet*
  - A Word About the Equal Sign*
  - Using Line and Column References in Define Equations*
  - Removing and Inserting Lines and Characters in the Define Screen*
  - Performing Division, Subtraction, and Other Calculations—the Define Command*
  - Printing the Plansheet—the Print Command*

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In this chapter, the use of the Define command is introduced.

This command enables you to define how the PlanMaster program calculates a plansheet.

You will instruct the program to perform calculations as you create a new plansheet, the sales report of a national stationery firm.

Now select the PlanMaster program to display a blank plansheet.

### Filling in the Plansheet Data and Labels

Before filling in the plansheet, use the Set command to eliminate the decimal field for all columns of the plansheet. The plansheet is now as shown in Figure 9-1A, opposite.

Title the plansheet, "Sales—J & K Stationers." Now type the labels and enter the data shown in Figure 9-1B. The integers you enter in columns 1 and 2 represent the total boxes of pens and pencils sold in the states listed.

*As you type the line labels in this exercise, be sure to include a dollar sign (\$) to the right of each line number. The dollar function is discussed in detail later in this chapter.*

In the following exercises, you will calculate the total sales of these items.

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	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
	c1	c2	c3	c4	c5	c13
						totcol
1		0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
11	0	0	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
31 totline	0	0	0	0	0	0

Figure 9-1A

	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write					
	c1	c2	c3	c4	c5	c13
	pens	pcls				totcol
1\$Arizona	782	690	0	0	0	0
2\$California	2378	3750	0	0	0	0
3\$Colorado	640	567	0	0	0	0
4\$Connecticut	340	790	0	0	0	0
5\$Delaware	120	108	0	0	0	0
6\$Maine	167	234	0	0	0	0
7\$Nevada	300	550	0	0	0	0
8\$Ohio	1500	1875	0	0	0	0
9\$Oregon	972	1027	0	0	0	0
10\$Utah	690	789	0	0	0	0
11\$Washington	962	1012	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
31 totline	0	0	0	0	0	0

Figure 9-1B

*Steps Required Before Calculating Total Sales*

You must do three things before calculating total sales:

**Step 1:** Assign prices for one unit of the items sold. In this case, use the following prices for one box of pens and one box of pencils:

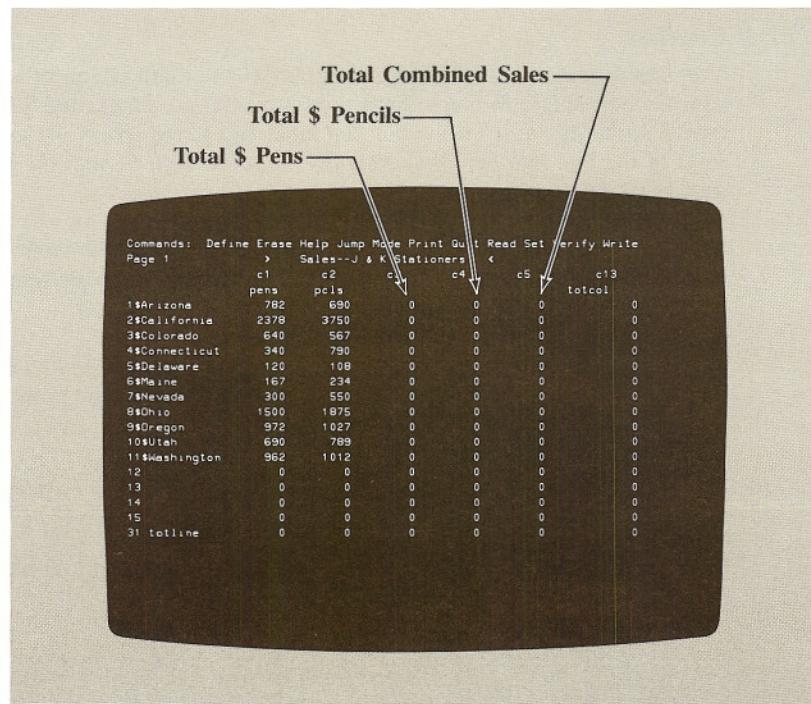
pens	\$10
pencils	\$ 5

**Step 2:** Decide in which columns or lines you want the totals displayed. In this case, you will need three columns:

- Total sales of pens
- Total sales of pencils
- Combined total sales of pens and pencils

As shown in Figure 9-2, opposite, use column 3 for total sales of pens, column 4, for total sales of pencils, and column 5 for combined total sales.

**Step 3:** Write the equations the PlanMaster program will use to calculate the plansheet and display the results in the appropriate columns. Writing the sales equations is discussed in detail later in this chapter.

**Cromemco C-10 PlanMaster Manual***Figure 9-2*

### The \$ Feature

You can instruct the PlanMaster program to automatically print a dollar sign (\$) before any numerical entry on a plansheet. To use the \$ feature, type \$ at the *tab stop* for the column label and in the space just to the right of the line number. *You must type a dollar sign in both the column and line label area.*

You have already selected the \$ feature for each *line* in the sales report plansheet by typing a dollar sign before each line label. Now select the \$ feature for the *columns* where dollar signs will be printed.

Tab to column 3 on column label line, type a dollar sign *at the tab stop*, then type the column label shown in Figure 9-3. Repeat the process for columns 4 and 5 until the plansheet is as shown.

When you calculate the plansheet later in this chapter, dollar signs will be displayed before each entry in columns 3, 4, and 5. When you print the plansheet, each entry in these columns will be printed with a dollar sign. Dollar signs will *not* be printed with the column and line labels.

**Cromemco C-10 PlanMaster Manual**

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	> Sales--J & K Stationers <					
	c1 pens	c2 pcls	c3 \$ totpen	c4 \$ totpcl	c5 tot	c13 totcol
1\$Arizona	782	690	0	0	0	0
2\$California	2378	3750	0	0	0	0
3\$Colorado	640	567	0	0	0	0
4\$Connecticut	340	790	0	0	0	0
5\$Delaware	120	108	0	0	0	0
6\$Maine	167	234	0	0	0	0
7\$Nevada	300	550	0	0	0	0
8\$Ohio	1500	1875	0	0	0	0
9\$Oregon	972	1027	0	0	0	0
10\$Utah	690	789	0	0	0	0
11\$Washington	962	1012	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
31 totline	0	0	0	0	0	0

**Figure 9-3**

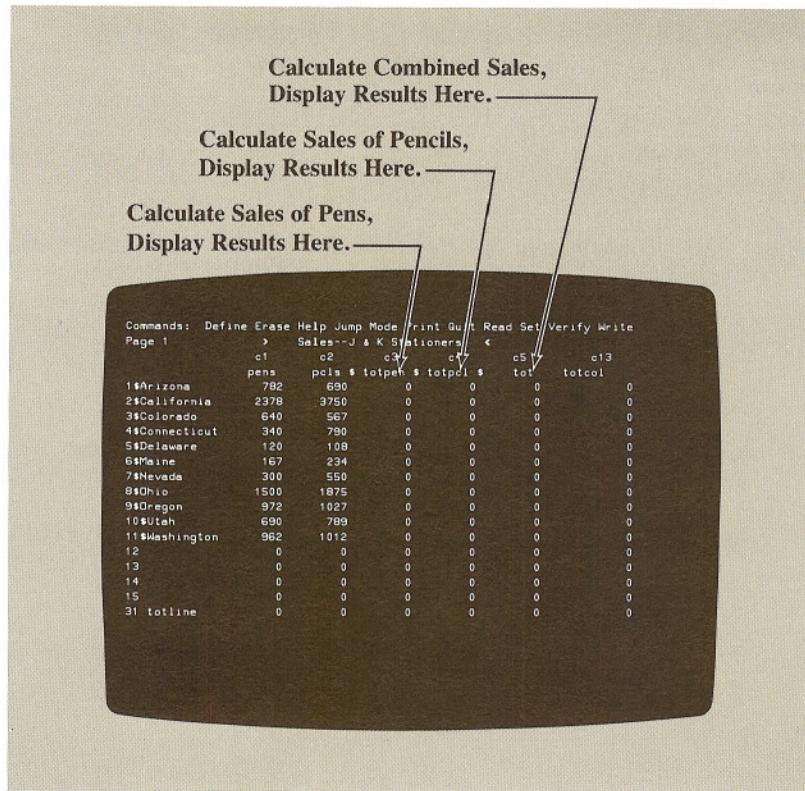
### *Writing Equations for the Plansheet—Overview*

The PlanMaster program performs your calculations in accordance with *equations*. Equations tell the program where numbers are, what to do with them, and where to place the results.

As shown in Figure 9-4, three equations are needed to calculate the current plansheet. To write these equations, you need:

1. The quantity of pens sold, which you entered in column 1.
2. The quantity of pencils sold, which you entered in column 2.
3. The price of a box of pens and a box of pencils, which is \$10 and \$5, respectively.
4. Three columns to hold the total sales, which you assigned to columns 3, 4, and 5 of the plansheet.

Now turn the page to learn how to write the first sales equation.

**Cromemco C-10 PlanMaster Manual****Figure 9-4**

### *Writing the Equation to Calculate Total Sales of Pens*

The first equation tells the PlanMaster program to take the number of boxes of pens sold and multiply this quantity by the price of one box, \$10. In other words, the program must take the contents of column 1, multiply each entry by 10, and place the result in column 3, as shown in Figure 9-5.

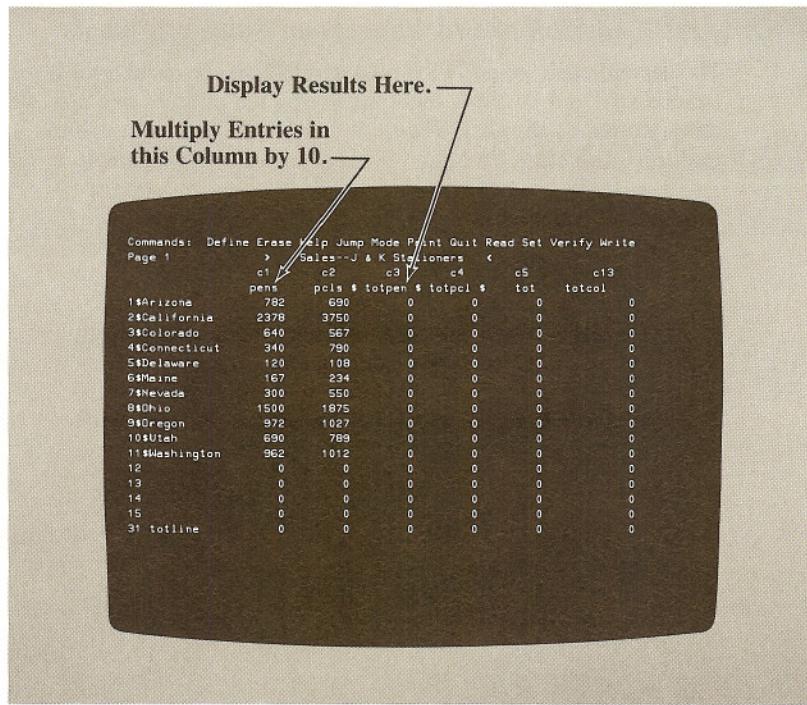
Always begin your equations with the location where results are to be displayed.

The first equation is:

$$C3=Cl*10$$

Where: C3 (column 3) is where the results appear.  
Cl\*10 (column 1 multiplied by 10) is the calculation.

Notice that an asterisk (\*) is used for the multiplication symbol in the equation. To better understand how equations are written, turn the page for assistance in writing the next two equations.

**Cromemco C-10 PlanMaster Manual****Figure 9-5**

***Writing the Equation to Calculate Total Sales of Pencils***

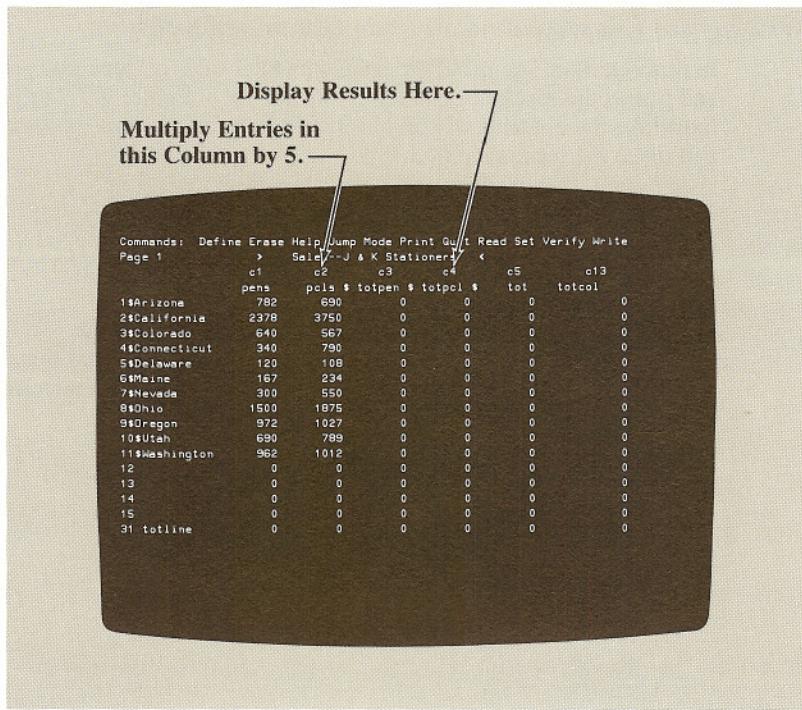
The second equation tells the program to take the number of boxes of pencils sold and multiply this quantity by the price of one box, \$5. In other words, as shown in Figure 9-6, take the entries in column 2, multiply each entry by 5, and place the results in column 4.

The second equation is:

$$C4=C2*5$$

where: C4 is the column where the results appear.  
C2\*5 is the calculation.

Try writing the third equation. For assistance, turn the page.

**Cromemco C-10 PlanMaster Manual****Figure 9-6**

### *Writing the Equation to Calculate Combined Sales*

In this equation, the program calculates total sales of pens and pencils and places the results in column 5. As shown in Figure 9-7, the program must take the contents of column 3, add it to the contents of column 4, and place the results in column 5.

The equation is:

$$C5=C3+C4$$

where: C5 is the column where the results appear.  
C3+C4 adds the entries in column 3 (total sales of pens) to those in column 4 (total sales of pencils).

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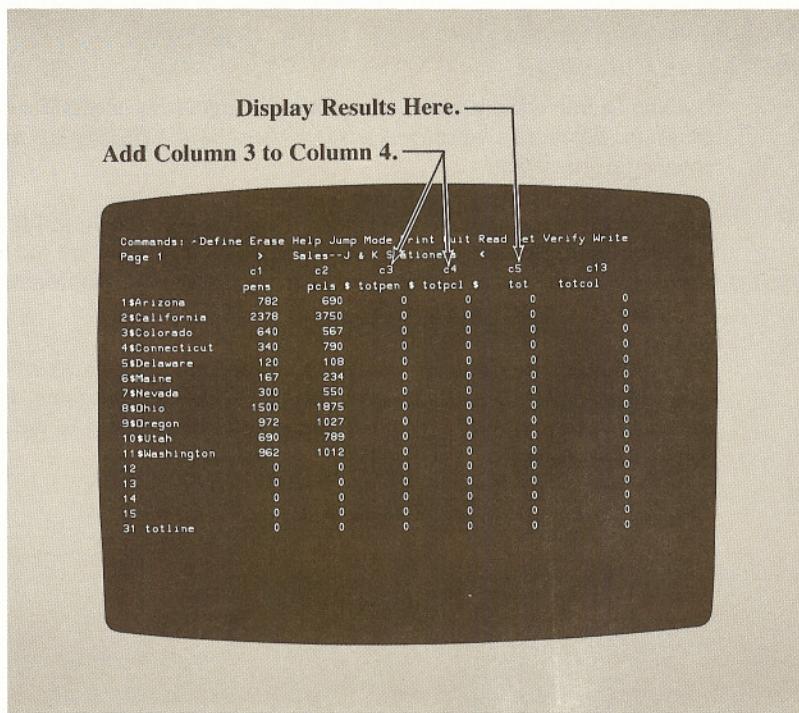


Figure 9-7

### *Making the Equations Accessible to the Program— the Define Command*

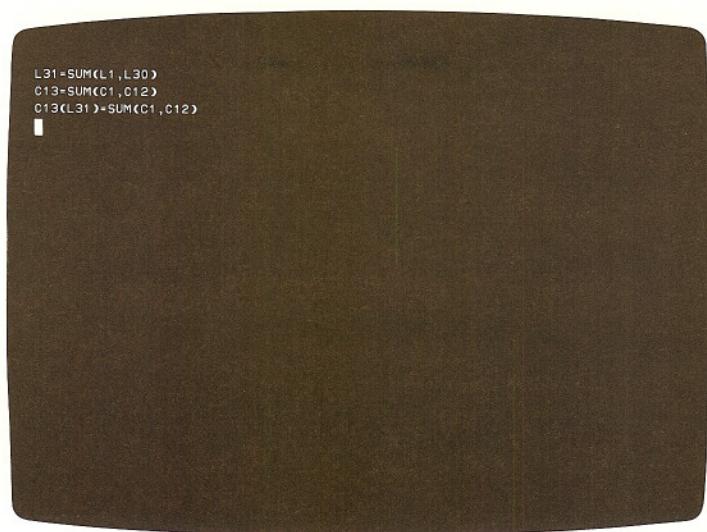
Use the Define command to make the sales equations accessible to the program. Select this command now by pressing the **ESCAPE** key and entering **d** for *define*.

A new display replaces the plansheet. This display, shown in Figure 9-8, is called the define screen. The three equations displayed are the *default equations*. Unless you type in your own equations, the PlanMaster program uses these default equations.

Each plansheet page has its own define screen and its own set of equations. *When you enter an equation, it applies only to that page.* For the equation to be applicable to other pages, you must enter it in the define screen of each page.

The default equations are discussed in detail in Chapter 10.

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*Figure 9-8*

### Entering the Equations

Before entering the sales equations, remove the default equations. Use the ARROW keys to move the cursor to the top left of the define screen, as shown in Figure 9-9A. Now press CONTROL-T three times to remove the three default equations.

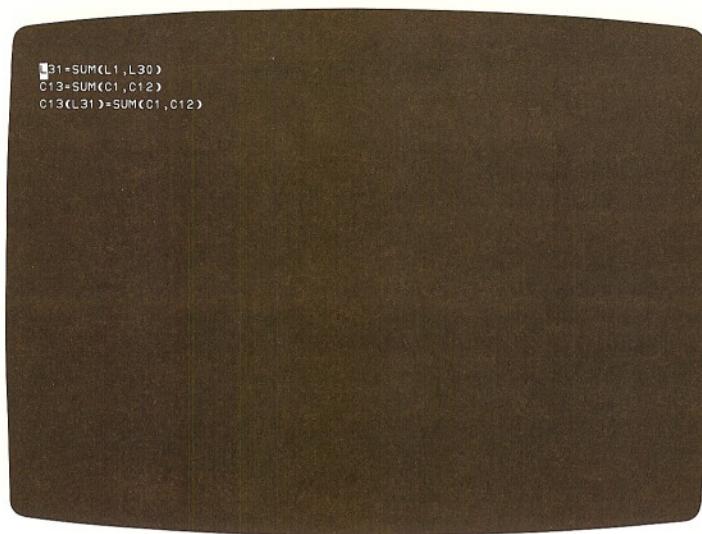
When the define screen is clear, enter the sales equations:

$$\begin{aligned}C3 &= C1 * 10 \\C4 &= C2 * 5 \\C5 &= C3 + C4\end{aligned}$$

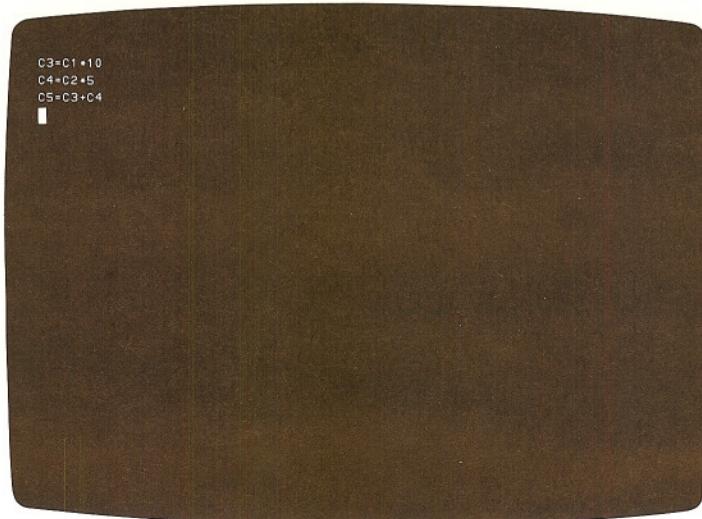
Do not use spaces in the equations. Start each equation on a new line, using the **RETURN** key to move the cursor to the beginning of the next line. If you make an error, type over it. Use the ARROW keys to move the cursor on the screen.

The define screen is now as shown in Figure 9-9B.

To verify that the equations you typed are entered in the define screen, press CONTROL-V. Then press the **ESCAPE** key to redisplay the plan-sheet. Do this now.



**Figure 9-9A**



**Figure 9-9B**



## Calculating the Plansheet—the Verify Command

To calculate the plansheet, use the Verify command:

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **v** for *verify*.
3. Type **c** for *current page*.

The program calculates the plansheet, reading the equations from the define screen and carrying out the operations indicated. Watch the status line, shown in Figure 9-10A, monitor the calculations.

The calculated plansheet is shown in Figure 9-10B.

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```

Verify: Current_page All_pages ESC (C)->
Page 1      > Sales--J & K Stationers <
               c1      c2      c3      c4      c5      c13
               pens    pcms $  totopen $  totpcl $   tot   totcol
1$Arizona     782     690      $0      $0      $0      0
2$California  2378    3750      $0      $0      $0      0
3$Colorado    640     567      $0      $0      $0      0
4$Connecticut 340     790      $0      $0      $0      0
5$Delaware    120     108      $0      $0      $0      0
6$Maine       167     234      $0      $0      $0      0
7$Nevada      300     550      $0      $0      $0      0
8$Ohio        1500    1875      $0      $0      $0      0
9$Oregon      972     1027      $0      $0      $0      0
10$Utah       690     789      $0      $0      $0      0
11$Washington 962     1012      $0      $0      $0      0
12           0       0       0       0       0       0
13           0       0       0       0       0       0
14           0       0       0       0       0       0
15           0       0       0       0       0       0
31 totline    0       0       0       0       0       0

Calculating
Col= 3   Line= 20

```

**Figure 9-10A**

```

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write
Page 1      > Sales--J & K Stationers <
               c1      c2      c3      c4      c5      c13
               pens    pcms $  totopen $  totpcl $   tot   totcol
1$Arizona     782     690      $7820    $3450    $11270    0
2$California  2378    3750      $23780   $18750   $42530    0
3$Colorado    640     567      $6400    $2835    $9235     0
4$Connecticut 340     790      $3400    $3950    $7350     0
5$Delaware    120     108      $1200    $540     $1740     0
6$Maine       167     234      $1670    $1170    $2840     0
7$Nevada      300     550      $3000    $2750    $5750     0
8$Ohio        1500    1875      $15000   $8375    $24375    0
9$Oregon      972     1027      $9720    $5135    $14855    0
10$Utah       690     789      $6900    $3945    $10845    0
11$Washington 962     1012      $9620    $5060    $14680    0
12           0       0       0       0       0       0
13           0       0       0       0       0       0
14           0       0       0       0       0       0
15           0       0       0       0       0       0
31 totline    0       0       0       0       0       0

```

**Figure 9-10B**

### *Expanding the Plansheet*

To verify that the equations work with more entries, add the additional line labels and data shown in Figure 9-11A to the plansheet. As you did in the preceding exercise, use the Verify command to calculate the sales.

The program performs the new calculations, and the plansheet is as shown in Figure 9-11B.

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	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
	> Sales--J & K Stationers <						
	c1	c2	c3	c4	c5	c13	
	pens	pcls \$	totpen \$	totpcl \$	tot	totcol	
1\$Arizona	782	690	\$7820	\$3450	\$11270	0	
2\$California	2378	3750	\$23780	\$18750	\$42530	0	
3\$Colorado	640	567	\$6400	\$2835	\$9235	0	
4\$Connecticut	340	790	\$3400	\$3950	\$7350	0	
5\$Delaware	120	108	\$1200	\$540	\$1740	0	
6\$Maine	167	234	\$1670	\$1170	\$2840	0	
7\$Nevada	300	550	\$3000	\$2750	\$5750	0	
8\$Ohio	1500	1875	\$15000	\$9375	\$24375	0	
9\$Oregon	972	1027	\$9720	\$5135	\$14855	0	
10\$Utah	690	789	\$6900	\$3945	\$10845	0	
11\$Washington	962	1012	\$9620	\$5060	\$14680	0	
12\$Georgia	470	680	0	0	0	0	
13\$Tennessee	389	512	0	0	0	0	
14	0	0	0	0	0	0	
15	0	0	0	0	0	0	
31 totline	0	0	0	0	0	0	

Figure 9-11A

	Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
	> Sales--J & K Stationers <						
	c1	c2	c3	c4	c5	c13	
	pens	pcls \$	totpen \$	totpcl \$	tot	totcol	
1\$Arizona	782	690	\$7820	\$3450	\$11270	0	
2\$California	2378	3750	\$23780	\$18750	\$42530	0	
3\$Colorado	640	567	\$6400	\$2835	\$9235	0	
4\$Connecticut	340	790	\$3400	\$3950	\$7350	0	
5\$Delaware	120	108	\$1200	\$540	\$1740	0	
6\$Maine	167	234	\$1670	\$1170	\$2840	0	
7\$Nevada	300	550	\$3000	\$2750	\$5750	0	
8\$Ohio	1500	1875	\$15000	\$9375	\$24375	0	
9\$Oregon	972	1027	\$9720	\$5135	\$14855	0	
10\$Utah	690	789	\$6900	\$3945	\$10845	0	
11\$Washington	962	1012	\$9620	\$5060	\$14680	0	
12\$Georgia	470	680	\$4700	\$3400	\$8100	0	
13\$Tennessee	389	512	\$3890	\$2560	\$6450	0	
14	0	0	0	0	0	0	
15	0	0	0	0	0	0	
31 totline	0	0	0	0	0	0	

Figure 9-11B

*A Word About the Equal Sign*

The use of the equal sign (=) in define equations is different than normal. As in the following example:

$$2+4=6$$

ordinarily, the left of the equal sign ( $2+4$ ) equals the right (6).

In PlanMaster define equations, the left of the equal sign is a *destination*—a place on the plansheet where the program puts results. The right of the equal sign is an *operation* to be performed, such as adding two numbers or multiplying the entries in one column by the entries in another.

In the first sales equation:

$$C3=C1*10$$

C3 is the destination, and  $C1*10$  is the operation (multiply the entries in column 1 by 10).

The equal sign, as it is used in define equations, is summarized in Figure 9-12.

*Destination=Operation*

► Example:

$$L5=L6-100$$

Place Results at Destination: line 5

Perform Operation: subtract 100 from line 6

*Figure 9-12*

### Using Line and Column References in Define Equations

Line references are used in the same way as column references. You can have a destination with both a line and a column reference. An example is the third default equation:

$$C13(L31)=SUM(C1,C12)$$

This equation tells the program to display the sum of columns 1 through 12 in column 13, line 31. The SUM function is discussed in detail in Chapter 10.

Line and column references can also be used to the right of the equal sign as in:

$$C1(L1)=C2(L2)+C3(L3)$$

which instructs the program to add the entry at column 2, line 2, to the entry at column 3, line 3, and display the result at column 1, line 1.

When you have a line and a column reference, put the second reference in parentheses. It does not matter which reference you type in first.

Figure 9-13 shows sample equations using line and column references.

**Sample Equations****L6=L5\*1.1**

Multiplies the entries on line 5 by 1.1 (110%) and displays the results on line 6.

**L10=L5+L9**

Adds the entries on line 5 to the entries on line 9 and displays the results on line 10.

**C5(L6)=C1(L5)+C3(L2)**

Adds the entry at column 1, line 5, to the entry at column 3, line 2, and displays the result at column 5, line 6.

 **Figure 9-13**

### ***Removing and Inserting Lines and Characters in the Define Screen***

You are already familiar with CONTROL-T, which you used to clear the define screen before entering the sales equations. CONTROL-T is one of four CONTROL characters used to remove or insert lines or characters as you edit the define screen:

- CONTROL-E:** Enters a blank space in a define equation.
- CONTROL-N:** Enters a blank line in the define screen.
- CONTROL-R:** Removes one character from a define equation.  
This can be a printing character or a space.
- CONTROL-T:** Removes a line from the define screen.

The CONTROL characters you have learned thus far are summarized in Figure 9-14.

*Control Characters*

- |                             |   |
|-----------------------------|---|
| <b>CONTROL-E</b>            | Used for editing the define screen. Enters a blank space.   |
| <b>CONTROL-N</b>            | Used for editing. Enters a blank line in the define screen or in the line label area.   |
| <b>CONTROL-R</b>            | Used for editing the define screen. Removes a character.  |
| <b>CONTROL-T</b>            | Used for editing. Removes a blank line from the define screen or from the line label area.  |
| <b>CONTROL-SHIFT-DELETE</b> | Clears an entry on the plansheet. This can be a numerical entry at a line and column intersection, a column heading, or a line label. |

*Figure 9-14*



## Performing Division, Subtraction, and Other Calculations— the Define Command

You have already written equations for multiplication and addition. The only difference when writing and entering equations to perform other operations is the *operation symbol* used.

The symbols used in writing define equations are:

- + addition
- subtraction
- \* multiplication
- / division
- \*\* raise to a power or find a root

For example, the following equation:

$$C3=C1**2$$

raises the contents of column 1 to the power of 2 and places the result in column 3.

This equation:

$$C5=C1/10$$

divides the contents of column 1 by 10 and puts the results in column 5.

Figure 9-15, opposite, gives sample equations using each operation symbol.

**Addition:**  $C3=C1+10$

**Subtraction:**  $C3=C1-10$

**Multiplication:**  $C3=C1*10$

**Division:**  $C3=C1/10$

**Raise to a Power:**  $C3=C1**2$  (use the multiplication symbol twice)

**Find a Root:** Square root:

$C3=C1**(1/2)$  (use the multiplication symbol twice)

Cube root:

$C3=C1**(1/3)$  (use the multiplication symbol twice)

**Figure 9-15**



### Printing the Plansheet—the Print Command

As you follow the procedure given below to print the plansheet, remember that you cannot bypass a Print command option by pressing the **RETURN** key. Answering the command option prompts as indicated yields the printed result shown in Figure 9-16, opposite.

1. Press the **ESCAPE** key to return the cursor to the PlanMaster command line.
2. Enter **p** for *print*.
3. Type **y** for *yes* in response to the “print definitions?” prompt.
4. Type **y** for *yes* in response to the “zero fields print as blanks?” prompt.
5. Type **n** for *no* in response to the “negative numbers in brackets?” prompt.
6. Type **y** for *yes* in response to the “add commas?” prompt.

Now use the Quit command to leave the program and save the plansheet. When asked for a file name, enter **sales**. The plansheet, **sales**, is stored on disk.

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Page 1

	pens	pcls	totpen	totpcl	tot	totcol
Arizona	782	690	\$7,820	\$3,450	\$11,270	
California	2,378	3,750	\$23,780	\$18,750	\$42,530	
Colorado	640	567	\$6,400	\$2,835	\$9,235	
Connecticut	340	790	\$3,400	\$3,950	\$7,350	
Delaware	120	108	\$1,200	\$540	\$1,740	
Maine	167	234	\$1,670	\$1,170	\$2,840	
Nevada	300	550	\$3,000	\$2,750	\$5,750	
Ohio	1,500	1,875	\$15,000	\$9,375	\$24,375	
Oregon	972	1,027	\$9,720	\$5,135	\$14,855	
Utah	690	789	\$6,900	\$3,945	\$10,845	
Washington	962	1,012	\$9,620	\$5,060	\$14,680	
Georgia	470	680	\$4,700	\$3,400	\$8,100	
Tennessee	389	512	\$3,890	\$2,560	\$6,450	

-----  
totline

C3=C1\*10

C4=C2\*5

C5=C3+C4

*Figure 9-16*





---

## *Chapter Ten*

---

**10**

### *Doing More Complex Calculations (2)*

*The Default Equations*

*The SUM Function*

*Points to Remember When Using the SUM  
Function*

*The REPEAT Function of the Define  
Command*

*Simple Uses of the REPEAT Function*

*More Complex Uses of the REPEAT Function*

*The IF/ELSE Function of the Define  
Command*

*A Simple Use of the IF/ELSE Function*

*Points to Remember When Using the IF/ELSE  
Function*

*Autocalc, Verify, and the Define Equations*

*Using Page References in Define Equations*

*Points to Remember When Using Page  
References*

*Using Labels and Numbers in Define  
Equations*

*Steps in Creating a Plansheet*

This chapter covers the more advanced features of the Define command, including the SUM and IF/ELSE functions. Also discussed are page references, labels, and numbers in define equations.

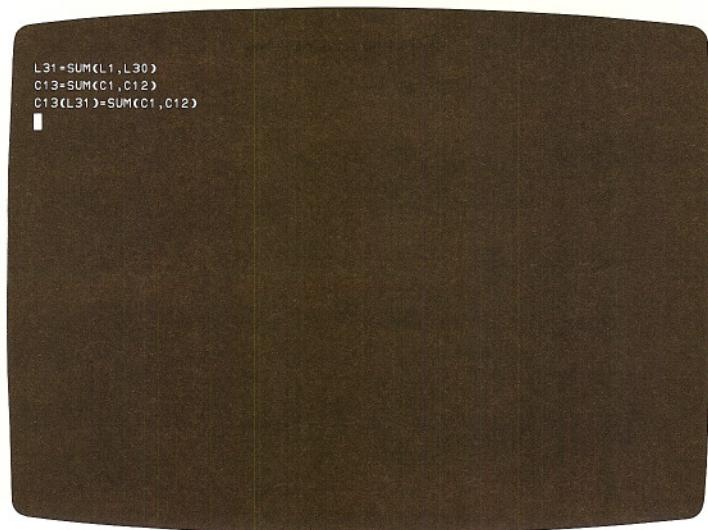
### *The Default Equations*

Each page of a plansheet has its own define screen. Unless you enter new equations, as you did for page 1 of the sales report plansheet, the define screen contains the program's default equations.

The define screen shown in Figure 10-1, opposite, displays the default equations. These are the equations the PlanMaster program used to calculate the expense report plansheet in Chapter 4.

Note that each equation contains the word *SUM*. The *SUM* function is a quick way to tell the program to add selected entries. The *SUM* function is discussed in detail in the following pages.

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*Figure 10-1*

### The SUM Function

The SUM function tells the PlanMaster program to add various entries.

For example, the first default equation:

$$L31=\text{SUM}(L1,L30)$$

tells the program to total (SUM) all entries in lines 1 through 30 (L1,L30) and place the result in line 31 (L31). Notice a comma separating the entries in parentheses denotes *through*.

The third default equation:

$$C13(L31)=\text{SUM}(C1,C12)$$

tells the program to total (SUM) the entries in columns 1 through 12 (C1,C12) and place the result at column 13 (C13), line 31 (L31).

Without the SUM function, you would have to enter every line or column reference to be included in the operation. For example, the second default equation:

$$C13=C1+C2+C3+C4+C5+C6+C7+C8+C9+C10+C11+C12$$

Figure 10-2, opposite, shows sample equations written with and without the SUM function. For more information on the SUM function, turn the page.

**Equation 1:**

**With SUM:**

$$L15 = \text{SUM}(L1, L3) - L4$$

**Without SUM:**

$$L15 = (L1 + L2 + L3) - L4$$

**Equation 2:**

**With SUM:**

$$C12 = \text{SUM}(C1, C5) * 5$$

**Without SUM:**

$$C12 = (C1 + C2 + C3 + C4 + C5) * 5$$

*Figure 10-2*

*Points to Remember When Using the SUM Function*

There are a few things you must remember when using the SUM function—explained below and summarized in Figure 10-3, opposite.

1. Enclose the first and last line or column reference in parentheses and separate the entries with a comma.
2. The entries in parentheses must be continuous. In other words, do not use SUM to add the entries in lines 4, 7, 9 through 12, and 14.
3. You cannot use SUM to add numbers. Use only line or column references with the SUM function.
4. You cannot use the SUM function across pages.

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### *The SUM Function*

- Enclose line or column references in parentheses and separate the entries with a comma.
- The entries in parentheses must be continuous.
- Do not use SUM to add numbers.
- Do not use SUM to add entries from different pages of the plansheet.

*Figure 10-3*

*The REPEAT Function of the Define Command*

Another function of the Define command can simplify your calculations. This is the REPEAT function. The REPEAT function, as the name implies, repeats data. Unlike the SUM function, REPEAT can be used with numbers.

When using the REPEAT function, you must enter your equations in a form that the PlanMaster program understands. Use the format shown in Figure 10-4, opposite.

In the next exercise, simple uses of the REPEAT function are demonstrated.

*The REPEAT Function*

**X = REPEAT(Y,Z,EXPRESSION)**

**X** is a line or column label or number.

**Y** is the starting column if X is a line.  
is the starting line if X is a column.

**Z** is the ending column if X is a line.  
is the ending line if X is a column.

**EXPRESSION** is any combination of line or column labels  
or numbers.

*Figure 10-4*

### *Simple Uses of the REPEAT Function*

To illustrate some simple uses of the REPEAT function, enter the PlanMaster program at this time and display a blank plansheet. Now make the entry shown in Figure 10-5A.

1. Assume you want to **repeat** the entry across line 1 of the plansheet. You need an equation instructing the program to do so. This equation can be written in two ways:

$L1=REPEAT(C2,C5,L1(C1))$

tells the program that line 1, columns 2 through 5, should repeat the entry from line 1, column 1.

$L1=REPEAT(C2,C5,100)$

tells the program that line 1, columns 2 through 5, should repeat the number *100*.

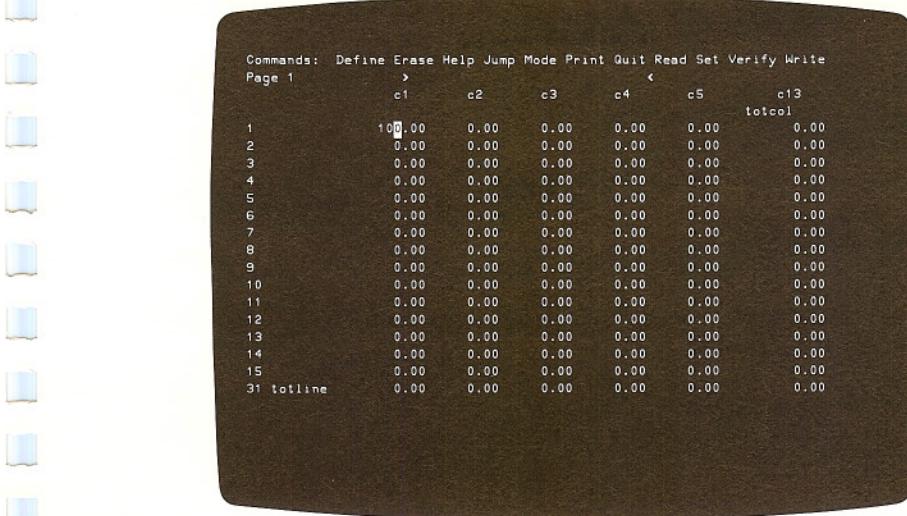
2. Assume also that you want to **repeat** the entry at every line in column 1. Again, the equation can be written in two ways:

$C1=REPEAT(L2,L30,C1(L1))$   
 $C1=REPEAT(L2,L30,100)$

As an exercise, display the define screen at this time, and use CONTROL-T to remove the default equations. Enter the two new equations. Use CONTROL-V to verify that the equations are entered in the define screen. Then press the **ESCAPE** key to redisplay the plansheet.

Now enter the Verify command to calculate the plansheet. The result is shown in Figure 10-5B.

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Figure 10-5A

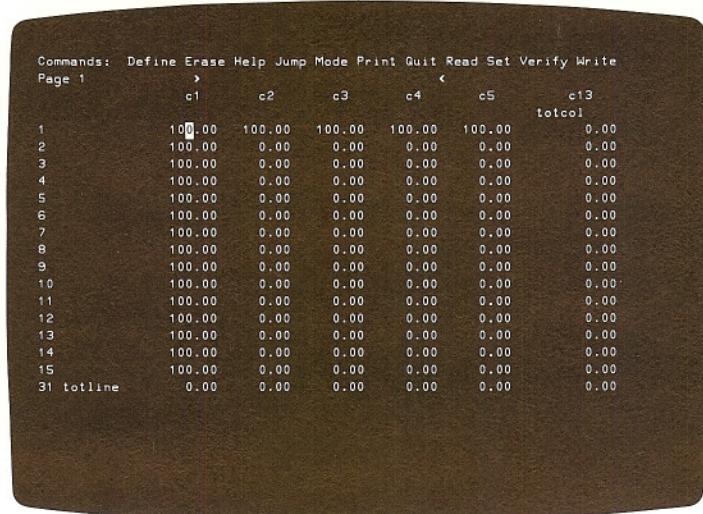


Figure 10-5B

### More Complex Uses of the REPEAT Function

The REPEAT function can do much more than simply repeat entries at selected locations on the plansheet. For example, you can use REPEAT to show progressive change.

Use the Erase command to clear the plansheet data. Now make the entries shown in Figure 10-6A.

In this exercise, you will enter two new equations in the define screen. The first equation:

```
L1=REPEAT(C2,C5,L1(-1)*1.1)
```

tells the program, for the entries in columns 2 through 5 (C2,C5), on line 1 (L1), look at the previous column (-1) and multiply (\*) by 1.1, or 110%.

In a similar manner, the second equation:

```
L2=REPEAT(C2,C5,L2(-1)*.9)
```

tells the program, for the entries in columns 2 through 5 (C2,C5), on line 2 (L2), look at the previous column (-1) and multiply (\*) by .9, or 90%.

When the PlanMaster program uses these equations to calculate the plansheet, line 1 will show a 10% growth rate, line 2 will show a 10% decline.

As an exercise, display the define screen once again, and remove the equations you entered in the previous exercise. Enter the new equations, and redisplay the plansheet.

Now use the Verify command to calculate the plansheet. The result is shown in Figure 10-6B.

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```
Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write
Page 1      >          <
                  c1    c2    c3    c4    c5    c13
                                         totcol
1       100.00   0.00   0.00   0.00   0.00   0.00
2       0.00   0.00   0.00   0.00   0.00   0.00
3       0.00   0.00   0.00   0.00   0.00   0.00
4       0.00   0.00   0.00   0.00   0.00   0.00
5       0.00   0.00   0.00   0.00   0.00   0.00
6       0.00   0.00   0.00   0.00   0.00   0.00
7       0.00   0.00   0.00   0.00   0.00   0.00
8       0.00   0.00   0.00   0.00   0.00   0.00
9       0.00   0.00   0.00   0.00   0.00   0.00
10      0.00   0.00   0.00   0.00   0.00   0.00
11      0.00   0.00   0.00   0.00   0.00   0.00
12      0.00   0.00   0.00   0.00   0.00   0.00
13      0.00   0.00   0.00   0.00   0.00   0.00
14      0.00   0.00   0.00   0.00   0.00   0.00
15      0.00   0.00   0.00   0.00   0.00   0.00
31 totline   0.00   0.00   0.00   0.00   0.00   0.00
```

Figure 10-5A

```
Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write
Page 1      >          <
                  c1    c2    c3    c4    c5    c13
                                         totcol
1       100.00   100.00   100.00   100.00   100.00   0.00
2       100.00   0.00   0.00   0.00   0.00   0.00
3       100.00   0.00   0.00   0.00   0.00   0.00
4       100.00   0.00   0.00   0.00   0.00   0.00
5       100.00   0.00   0.00   0.00   0.00   0.00
6       100.00   0.00   0.00   0.00   0.00   0.00
7       100.00   0.00   0.00   0.00   0.00   0.00
8       100.00   0.00   0.00   0.00   0.00   0.00
9       100.00   0.00   0.00   0.00   0.00   0.00
10      100.00   0.00   0.00   0.00   0.00   0.00
11      100.00   0.00   0.00   0.00   0.00   0.00
12      100.00   0.00   0.00   0.00   0.00   0.00
13      100.00   0.00   0.00   0.00   0.00   0.00
14      100.00   0.00   0.00   0.00   0.00   0.00
15      100.00   0.00   0.00   0.00   0.00   0.00
31 totline   0.00   0.00   0.00   0.00   0.00   0.00
```

Figure 10-5B

### More Complex Uses of the REPEAT Function

The REPEAT function can do much more than simply repeat entries at selected locations on the plansheet. For example, you can use REPEAT to show progressive change.

Use the Erase command to clear the plansheet data. Now make the entries shown in Figure 10-6A.

In this exercise, you will enter two new equations in the define screen. The first equation:

```
L1=REPEAT(C2,C5,L1(-1)*1.1)
```

tells the program, for the entries in columns 2 through 5 (C2,C5), on line 1 (L1), look at the previous column (-1) and multiply (\*) by 1.1, or 110%.

In a similar manner, the second equation:

```
L2=REPEAT(C2,C5,L2(-1)*.9)
```

tells the program, for the entries in columns 2 through 5 (C2,C5), on line 2 (L2), look at the previous column (-1) and multiply (\*) by .9, or 90%.

When the PlanMaster program uses these equations to calculate the plansheet, line 1 will show a 10% growth rate, line 2 will show a 10% decline.

As an exercise, display the define screen once again, and remove the equations you entered in the previous exercise. Enter the new equations, and redisplay the plansheet.

Now use the Verify command to calculate the plansheet. The result is shown in Figure 10-6B.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	c1	c2	c3	c4	c5
						totcol
1		100.00	0.00	0.00	0.00	0.00
2		100.00	0.00	0.00	0.00	0.00
3		0.00	0.00	0.00	0.00	0.00
4		0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00
6		0.00	0.00	0.00	0.00	0.00
7		0.00	0.00	0.00	0.00	0.00
8		0.00	0.00	0.00	0.00	0.00
9		0.00	0.00	0.00	0.00	0.00
10		0.00	0.00	0.00	0.00	0.00
11		0.00	0.00	0.00	0.00	0.00
12		0.00	0.00	0.00	0.00	0.00
13		0.00	0.00	0.00	0.00	0.00
14		0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00
31 totline		0.00	0.00	0.00	0.00	0.00

Figure 10-6A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	c1	c2	c3	c4	c5
						totcol
1		100.00	110.00	121.00	133.10	146.41
2		100.00	90.00	81.00	72.90	65.61
3		0.00	0.00	0.00	0.00	0.00
4		0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00
6		0.00	0.00	0.00	0.00	0.00
7		0.00	0.00	0.00	0.00	0.00
8		0.00	0.00	0.00	0.00	0.00
9		0.00	0.00	0.00	0.00	0.00
10		0.00	0.00	0.00	0.00	0.00
11		0.00	0.00	0.00	0.00	0.00
12		0.00	0.00	0.00	0.00	0.00
13		0.00	0.00	0.00	0.00	0.00
14		0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00
31 totline		0.00	0.00	0.00	0.00	0.00

Figure 10-6B



### The IF/ELSE Function of the Define Command

Another useful feature of the Define command is IF/ELSE. IF/ELSE is used for conditional calculations. In other words, if a certain condition is met, then do the following.

When using the IF/ELSE function, you must enter your equations in a form that the PlanMaster program understands. Use the format shown in Figure 10-7, opposite.

Referring to Figure 10-7, *EXPRESSION* means any equation containing any of the following operation symbols:

=	equal to	<=	less than or equal to
<	less than	>=	greater than or equal to
>	greater than	<>	not equal to

A simple use of the IF/ELSE function is given in the next exercise.

*The IF/ELSE Function*

IF(EXPRESSION)

any number of statements

ELSE

any number of statements

ENDIF

*Figure 10-7*



### A Simple Use of the IF/ELSE Function

Assume you are working on a plansheet with the following format:

- 1 Sales
- 2 Taxes
- 3 Costs
- 4 Net\_Sales

and the tax rate used to calculate line 2 depends on the amount of sales in line 1. A typical IF/ELSE statement, in this case, might be, "IF sales is greater than 1000, taxes equals 10% of sales; ELSE taxes equals 5% of sales."

As an exercise, use the Erase command to clear the plansheet data, and enter the labels and data shown in Figure 10-8A.

Display the define screen, and remove the equations from the previous exercise. Now enter the IF/ELSE statement shown below:

*You enter:*

```
IF(L1>1000)  
L2=.10*L1  
ELSE  
L2=.05*L1  
ENDIF
```

*PlanMaster interprets:*

Is line 1 greater than 1000?  
If it is, line 2 = 10% (.10) of line 1.  
If it is not (ELSE),  
line 2 = 5% (.05) of line 1.  
This is the end of the conditional statement.

When you have done so, redisplay the plansheet, and enter the Verify command to calculate the plansheet. The result is shown in Figure 10-8B.

You may wish to leave the PlanMaster program at this time. If so, enter the Quit command and do not save this plansheet.

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Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	c1	c2	c3	c4	c5
1Sales		1000.00	5000.00	500.00	2500.00	100.00
2Taxes		0.00	0.00	0.00	0.00	0.00
3		0.00	0.00	0.00	0.00	0.00
4		0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00
6		0.00	0.00	0.00	0.00	0.00
7		0.00	0.00	0.00	0.00	0.00
8		0.00	0.00	0.00	0.00	0.00
9		0.00	0.00	0.00	0.00	0.00
10		0.00	0.00	0.00	0.00	0.00
11		0.00	0.00	0.00	0.00	0.00
12		0.00	0.00	0.00	0.00	0.00
13		0.00	0.00	0.00	0.00	0.00
14		0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00
31 totline		0.00	0.00	0.00	0.00	0.00

Figure 10-8A

Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write						
Page 1	>	c1	c2	c3	c4	c5
1Sales		1000.00	5000.00	500.00	2500.00	100.00
2Taxes		50.00	500.00	25.00	250.00	5.00
3		0.00	0.00	0.00	0.00	0.00
4		0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00
6		0.00	0.00	0.00	0.00	0.00
7		0.00	0.00	0.00	0.00	0.00
8		0.00	0.00	0.00	0.00	0.00
9		0.00	0.00	0.00	0.00	0.00
10		0.00	0.00	0.00	0.00	0.00
11		0.00	0.00	0.00	0.00	0.00
12		0.00	0.00	0.00	0.00	0.00
13		0.00	0.00	0.00	0.00	0.00
14		0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00
31 totline		0.00	0.00	0.00	0.00	0.00

Figure 10-8B

**Points to Remember When Using the IF/ELSE Function**

There are a few things to remember when writing IF/ELSE statements for the PlanMaster program. These points are explained below and summarized in Figure 10-9, opposite.

1. The equation after IF must be enclosed in parentheses.
2. Write the equation as you would any other equation. However, be sure to include one of the following operation symbols: =, <, >, <=, >=, or <>.

For example

IF(L5\*10>L6)

is valid.

IF(L5\*10)

is not.

3. ELSE must be the only statement on the line.

For example:

IF(L5\*10>L6)  
L7=0  
ELSE

is valid.

IF(L5\*10>L6)  
ELSE(L7=0)

is not.

4. You can enter as many conditional statements as you like, but you must end each IF/ELSE statement with ENDIF.
5. ENDIF must be the only statement on the line.

### *The IF/ELSE Function*

- Enclose the equation after IF in parentheses.
- This equation must include one of the following operation symbols: =, <, >, <=, >=, or <>.
- ELSE must be the only statement on the line.
- Enter as many conditional statements as you like, but end each IF/ELSE statement with ENDIF.
- ENDIF must be the only statement on the line.

*Figure 10-9*

### *Autocalc, Verify, and the Define Equations*

Both the autocalc feature of the Mode command and the Verify command use the define equations to calculate the plansheet. These equations can be the default equations, new equations, or the default equations plus new equations.

When you turn on the autocalc feature and press the [RETURN] key, the program calculates the current line and column (the line and column where the cursor is).

When you enter the Verify command, depending on the command option you select, the program calculates either the current plansheet page or the entire plansheet.

Autocalc and the Verify command are summarized in Figure 10-10, opposite.

*Autocalc and the Verify Command*

**Autocalc:**

Uses the define equations to calculate the current line and column (the line and column where the cursor is).

**Verify:**

Uses the define equations to calculate the current plansheet page or the entire plansheet.

*Figure 10-10*

### Using Page References in Define Equations

You can use page references in your equations just as you use column and line references. If you wanted the sales report of J & K Stationers on a quarterly basis:

- Page 1 for the Spring quarter
- Page 2 for the Summer quarter
- Page 3 for the Fall quarter
- Page 4 for the Winter quarter

you could use page 5 of the plansheet to summarize the sales for the entire year.

To do so, you would type the equations shown in Figure 10-11, opposite, in the define screen for page 5. The first two equations tell the program to total the entries in column 1 and 2 on pages 1 through 4 of the plansheet, and display the results in columns 1 and 2 on page 5.

Notice that the new equations were inserted before the sales equations. *The PlanMaster program always performs calculations in order.* To calculate columns 3, 4, and 5, the program must first have the entries for columns 1 and 2.

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```
C1=C1(P1)+C1(P2)+C1(P3)+C1(P4)
C2=C2(P1)+C2(P2)+C2(P3)+C2(P4)
C3=C1+10
C4=C2*5
C5=C3+C4
```

10

*Figure 10-11*

*Points to Remember When Using Page References*

There are some things you should remember when using page references in equations. These points are explained below and summarized in Figure 10-12, opposite.

1. You can use page references with column references, line references, or both.
2. The page reference must be last in an equation:

$$C1(P5)=C2(L4,P4)$$

is a valid equation.

$$P5(C1)=(P4,C2,L4)$$

$$P5(C1)=P4(C2,L4)$$

are not.

3. You cannot use the SUM function with *different* page references:

$$C4(P2)=SUM(C1(P3),C4(P3))$$

is a valid equation.

$$C4(P2)=SUM(C1(P2),C4(P3))$$

is not.



### Using Page References in Define Equations



- Use page references with column references, line references, or both.
- The page reference must be last in an equation.
- Do not use *different* page references with the SUM function.



**Figure 10-12**



### Using Labels and Numbers in Define Equations

Equations can also be written with numbers and labels. Referring once again to the sales report, shown in Figure 10-13A, equations to calculate the plansheet could be written:

```
totpen=pens*10  
totpcl=pccls*5  
tot=totpen+totpcl
```

You can mix labels with column, line, and page references in an equation. In this manner, the equations used to calculate the sales report could be written:

```
C3=pens*10  
C4=pccls*5  
C5=totpen+totpcl
```

Compare these equations with the sales equations shown in Figure 10-13B.

Although they take longer to enter, numbers and labels in equations make them easier to read. This can reduce errors.

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```
Commands: Define Erase Help Jump Mode Print Quit Read Set Verify Write
Page 1      > Sales--J & K Stationers <
               c1      c2      c3      c4      c5      c13
               pens    pcis $ totpen $ totpcl $   tot   totcol
1$Arizona    782     690     $0     $0     $0     0
2$California 2378    3750    $0     $0     $0     0
3$Colorado    640     567     $0     $0     $0     0
4$Connecticut 340     790     $0     $0     $0     0
5$Delaware    120     108     $0     $0     $0     0
6$Maine       167     234     $0     $0     $0     0
7$Nevada      300     550     $0     $0     $0     0
8$Ohio        1500    1875    $0     $0     $0     0
9$Oregon      972     1027    $0     $0     $0     0
10$Utah       690     789     $0     $0     $0     0
11$Washington 962     1012    $0     $0     $0     0
12           0       0       0       0       0       0
13           0       0       0       0       0       0
14           0       0       0       0       0       0
15           0       0       0       0       0       0
31 totline    0       0       0       0       0       0
```

Figure 10-13A

```
C3=C1*10
C4=C2*5
C5=C3+C4
```

Figure 10-13B

*Steps in Creating a Plansheet*

1. First format the plansheet using the Set command.
2. Title the plansheet, and enter the appropriate column and line labels.
3. Decide what calculations you want the program to perform. Write the necessary equations, and use the Define command to enter them in the define screen.
4. Turn on the autotab feature of the Mode command to move the cursor rapidly from one entry field to the next. If you wish to display results as you enter data, also turn on the autocalc feature of the Mode command.
5. Enter the plansheet data.
6. Use the Verify command to calculate the current plansheet page or the entire plansheet.

This procedure is summarized in Figure 10-14, opposite.

### *Creating a Plansheet*

- ***Set Command:*** Format the plansheet.
- Type titles and labels.
- ***Define Command:*** Write and enter equations to calculate the plansheet.
- ***Mode Command:*** Set autocalc on or off. Set autotab right, down, or off.
- Enter the plansheet data.
- ***Verify Command:*** Calculate the current plansheet page or the entire plansheet.

*Figure 10-14*



## *Appendix A*

---

### *Error Messages*

*A*

This appendix lists the error messages you may encounter while working with the PlanMaster program. After investigating the source of the error, you can remove an error display or unwanted message from the display screen by pressing the **ESCAPE** key and then pressing CONTROL-V.

---

**Errors that Occur When Calculating**

One of the following error messages is displayed if you make an error in a define equation. These messages are also listed in the PlanMaster help file.

**ERROR 1      *Expression Error***

You entered an invalid label or operator. Labels must begin with letters. Numbers must be separated by operators and cannot be mixed with letters (except for hexadecimal numbers or numbers in scientific notation).

**ERROR 2      *Too Many Operands***

You entered too many operators or labels on one line. Split the operation into two or more lines, using a temporary variable if necessary.

**ERROR 3      *Too Few Operands***

There are not enough labels for the number of operators in the expressions or there is a syntax error in the statement.

**ERROR 4      *Syntax Error in SUM Statement***

There is a SUM function syntax error, such as a comma missing between arguments, or too many arguments.

**ERROR 5      *Too Many Left Parentheses***

The expression in question has unmatched parentheses. There must be an equal number of left and right parentheses.

**ERROR 6      *Divide by Zero* (invalid denominator)**

Write an appropriate IF statement (if 0 is the denominator, skip this operation, and go to the next).

**ERROR 7      *Syntax Error in REPEAT Statement***

Check your REPEAT statement for misspelling, imbedded spaces, mismatch with plansheet labels, or use of a value not entered on the plansheet.

**ERROR 8      *No Matching IF***

The program encountered an ENDIF or ELSE without a preceding IF statement.

**ERROR 9      *No Matching ENDIF***

The program encountered an IF statement without a corresponding ENDIF.

**ERROR 10     *Syntax Error in IF Statement***

**ERROR 11     *Attempt to Take Power (\*\*) of a Negative Number*  
(use ABS first)**

**ERROR 12     *Too Many Operators* (see ERROR 2)**

**ERROR 13     *Too Few Operators* (see ERROR 3)**

**ERROR 14     *Too Many Temporary Variables***

**ERROR 15     *Label Not Found***

A temporary variable was qualified (not legal) or a label was misspelled.

**ERROR 16     *Qualification Error***

A column was used to qualify another column, for example, C1(C5); or a line was used to qualify another line, for example L1(L5). Lines qualify columns, and vice versa.

**ERROR 17     *Syntax Error***

The expression in question has been phrased incorrectly or contains an extraneous character. This error is often caused by imbedded spaces, since a blank space is read as a character by the program.

**ERROR 18     *Invalid Number or Numeric Quantity***

Labels cannot start with a number, and a number cannot contain a letter (other than E and h for scientific or hexadecimal notation).

# A

**ERROR 19    *Label or Expression Too Long***

The text has exceeded display limits. Labels, plus qualifiers, cannot exceed 30 characters.

`gross_sales(first_quarter,P10)`

is an example of the longest permissible label. Unqualified labels cannot exceed 12 characters.

**ERROR 20    *Undefined Symbol***

A special character was used in an invalid manner, or a label includes an illegal character.

---

*Errors in Calling PlanMaster and Reading, Writing, or Printing*

**ERROR 22    *Incorrect Number of Arguments***

You used an incorrect number of parameters when you called up the program. After selecting the program by typing **planmast**, a maximum of two names, separated by a space, is allowed (e.g., **expensel expensel**).

**ERROR 23    *Invalid Parameter***

An invalid parameter was used to call up the PlanMaster program.

**ERROR 27    *Out of Memory***

The define buffer (stored memory area) is full, and no more equations can be entered for the current page. If this happens, use the following procedure:

1. Enter some of your equations:

```
L1=REPEAT(C1,C12,100)  
L2=L1*5  
L3=L1+L2
```

2. Go back to the plansheet, make the necessary entries, and calculate the plansheet.

3. Enter the Define command, erase the equations, and enter new ones:

```
L4=L3*2  
L5=REPEAT(C2,C5,L5(-1)*1.3)
```

4. Calculate the plansheet.
5. Repeat this procedure as required.

**ERROR 33    *Unable to Open <filename>***

This message is displayed when the program cannot find a file (if an input file) or cannot create a file (if an output file) or cannot create a file (if an output file).

---

***System Errors***

System errors are usually caused by hardware problems or disk errors.

**ERROR 34    *Invalid File name* (data or format file)**

**ERROR 35    *Calculation Stack Overflow***

**ERROR 40    *Invalid Column Number***

If no message appears except *ERROR 40*, an error was made while using the Set Format command. Otherwise, this message indicates a system error.

**ERROR 41    *Incorrect Array Location***

This message indicates possible memory problems.

**ERROR 45    *Invalid Page Number***

If no message appears except *ERROR 45*, an error was made while using the Set Format command. Otherwise, this message indicates a system error.

***Create temp variable => "name"***

If the preceding message is displayed, the name appearing after the arrow ( $=>$ ) was not located in the line or column label list, so the program is treating it as a temporary storage variable, with its own identity. This message is frequently caused by a misspelled label in a define equation or statement. If the creation of a temporary storage variable is not desired, check the spelling of the line or column label for a match with its spelling in the definitions.

**A**

## *Appendix B*

---

### *Control Characters*

**B**

- CONTROL-A:** Moves the cursor to the left:  
Press CONTROL-A once, and the cursor moves one space to the left. Keep pressing CONTROL-A, and the cursor moves to the extreme left of the display screen. You cannot use CONTROL-A to scroll the plansheet.
- CONTROL-C:** If CONTROL-C is pressed after CONTROL-S, the program immediately terminates, and your data is lost.
- CONTROL-D:** Moves the cursor to the right:  
Press CONTROL-D once, and the cursor moves one space to the right. Keep pressing CONTROL-D, and the cursor moves to the extreme right of the display screen. You cannot use CONTROL-D to scroll the plansheet.
- CONTROL-E:** Enters a blank space in the define screen. Used for editing.
- CONTROL-H:** Moves the cursor to the left. Same as CONTROL-A.
- CONTROL-I:** Used in place of TAB key to tab from left to right. Scrolls the plansheet.
- CONTROL-J:** Moves the cursor down:  
Press CONTROL-J once, and the cursor moves down one line. Keep pressing CONTROL-J, and the cursor scrolls to the last line of the plansheet.
- CONTROL-K:** Moves the cursor up:  
Press CONTROL-K once, and the cursor moves up one line. Keep pressing CONTROL-K, and the cursor moves to the top of the plansheet. Can be used for scrolling.
- CONTROL-L:** Moves the cursor to the right. Same as CONTROL-D.

- CONTROL-N:** Enters a blank line in the define screen or in the line label area. Used for editing.
- CONTROL-R:** Removes a character from the define screen.
- CONTROL-T:** Removes a blank line from the define screen or from the line label area. Used for editing.
- CONTROL-U:** Used in place of CONTROL-TAB to tab from right to left. Scrolls the plansheet.
- CONTROL-V:** Verifies that equations are entered in the define screen.
- CONTROL-W:** Moves the cursor up. Same as CONTROL-K.

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