

**DATA**  
CORPORATION



**PLAN MANAGER**

**INSTRUCTION MANUAL**

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PLAN MANAGER  
ELECTRONIC SPREAD SHEET

INSTRUCTION MANUAL

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## SECTION 1

### INTRODUCTION

#### 1.1 WHAT IS AN ELECTRONIC SPREAD SHEET?

An electronic spread sheet is a program that allows you to manipulate rows and columns of numbers, like you would find on a columnar pad. The electronic spread sheet does for calculation what the word processor does for typing, namely it does it quicker, easier and allows you see the finished product on the screen before it is printed on paper.

The Plan Manager allows you to have 63 columns and 254 rows for calculations. These are presented on the screen, and you can change them and see the results immediately. The screen will scroll up and down as well as side to side so that you can work conveniently on any of these rows and columns.

The important math functions are supported by the Plan Manager. These include addition, subtraction, multiplication, division, negation (making a number negative), and column or row summing.

#### 1.2 EQUIPMENT REQUIRED

The Plan Manager will run on either a Commodore VIC 20 or a Commodore 64 with the following:

##### VIC 20 system:

- \* VIC 20 Computer
- \* 16K additional Memory
- \* 80 Column Expander
- \* 1541 Disk Drive
- \* Datasette (required only if you plan to load the program from tape)
- \* printer (and interface if required)

##### Commodore 64 System:

- \* Commodore 64 Computer
- \* 80 Column Expander
- \* 1541 Disk Drive
- \* Datasette (required only if you plan to load the program from tape)
- \* printer (and interface if required)

### 1.3 LOADING INSTRUCTIONS

For the VIC 20:

Tape version:

1. Make sure the equipment is all turned on and ready to operate.
2. Insert the tape in the tape drive, right side up. Rewind the tape if necessary.
3. Hold down the key marked SHIFT and press the key marked RUN STOP. You will be instructed:  
PRESS PLAY ON TAPE

4. The computer will respond:  
SEARCHING

When it finds the Plan Manager on the tape it will respond:  
FOUND CALC (if it finds 64CALC - you have the wrong side of the tape)

LOADING

READY.

5. Type in RUN and hit the key marked RETURN.

The Plan Manager is now ready for operation.

Disk version:

1. Make sure the equipment is all turned on and ready to operate.
2. Insert the disk in the disk drive, right side up.
3. Type in :  
LOAD "CALC".8  
Then press the key marked RETURN

4. The computer will respond:  
SEARCHING FOR CALC

When it finds the Plan Manager it will respond:

LOADING

READY.

5. Type in RUN and hit the key marked RETURN.

The Plan Manager is now ready for operation.

For the Commodore 64:  
Tape version:

1. Make sure the equipment is all turned on and ready to operate. Type in SYS 36867 to start the 80 column expander.
2. Insert the tape in the tape drive, right side up. Rewind the tape if necessary.
3. Hold down the key marked SHIFT and press the key marked RUN STOP. You will be instructed:  
PRESS PLAY ON TAPE
4. The computer will respond:  
SEARCHING  
  
When it finds the Plan Manager on the tape it will respond:  
FOUND 64CALC ( if it finds CALC - you have the wrong side of the tape)  
  
Now hit the Commodore Key (extreme left bottom of the keyboard.)  
The computer will respond:  
  
LOADING  
READY.
5. Type in RUN and hit the key marked RETURN.  
The Plan Manager is now ready for operation.

Disk version:

1. Make sure the equipment is all turned on and ready to operate. Type in SYS 36867 to start the 80 column expander.
2. Insert the disk in the disk drive, right side up.
3. Type in : LOAD "64CALC",8  
Then press the key marked RETURN
4. The computer will respond:  
SEARCHING FOR 64CALC  
  
When it finds the Plan Manager it will respond:  
  
LOADING  
READY.
5. Type in RUN and hit the key marked RETURN.  
The Plan Manager is now ready for operation.

1-3

## 1.4 TERMS

Different computer systems often use different names to mean the same thing, and you may already be used to using certain terms in certain situations. Therefore, it is useful to review the terms we will be using throughout this manual. As other terms are used they will be introduced later.

\* The words disk, diskette, and floppy disk are used interchangeably to mean the 5 1/4 inch magnetic diskettes on which the programs and data are stored.

\* The names of the keys on the keyboard will always be in capital letters. RETURN used in the text means you should press the return key. For example, where the manual says to type:

121 George St. RETURN

it actually means " type in 121 George St. then press the RETURN key on the keyboard."

\* A character is any letter, number, symbol, punctuation mark, or space that you type on the keyboard.

\* Monitor or Screen are used interchangeably to mean the video presentation on the video monitor or T.V. set.

\* Error messages tell you when something happens that is not supposed to happen. This can either be something that you did wrong or an indication of a problem with the computer itself. For example, if you enter a letter when the computer was expecting a number, it will give you an error message saying that a letter is not a logical response to a question that requires a number.

\* The Computer doesn't use the normal symbols for multiplication and division. Instead, it uses \* for multiplication and / for division.

\* In the text, it will be sometimes necessary to refer to the English pound sign as <L>.

## 1.5 WHERE TO GO IF YOU NEED HELP

If you find that you have a problem that you can't solve and the people who sold you this product can't help, you can call our customer service department at (714) 770-2366. We encourage you to call this number as a last resort, after you have tried solving it yourself. Please don't call if you have not read the book.

## 1.6 COPYING THE PLAN MANAGER TO DISK

If your copy of the Plan Manager came on tape, you will want to copy it to disk. Here's how:

1. Follow steps one through four of the tape loading instructions for your machine. See section (1.3).
2. Insert a disk into the disk drive. If the disk has not been formatted, the Plan Manager can do this for you, see section 2.5.5.
3. For the Commodore 64 type in: SAVE "64CALC",8 RETURN  
For the VIC 20 Type in: SAVE "CALC",8 RETURN
4. When the computer has accomplished this, it will respond with:  
READY.

You can now load your disk copy of the Plan Manager.

## 1.7 THE KEYBOARD

The Keyboard is the way that you tell the computer what it is to do. In most respects, the computer keyboard is like the typewriter keyboard. It has letters, numbers, and symbols, most of them in the same place as on a typewriter.

In a few important respects, however, the keyboard is very different from that of a typewriter. For example, the SPACE BAR works differently than on a typewriter in one respect. If the cursor (the small blinking rectangle of light which marks the current typing position) is at the beginning or somewhere in the middle of a typed line of information, pressing the SPACE BAR causes the character under the cursor to be erased. You can't just "space over" existing characters on the screen. To "space over" characters without erasing them, you must use the cursor control keys. These two keys are located to the bottom right of the keyboard, marked CRSR with arrows. To move the cursor right, press the CRSR key with the arrow pointing right. To move the cursor left, press the same key again, only this time hold down one of the shift keys at the same time. The cursor up and down work essentially the same, except that they use the key marked with the up and down arrows.

When you type a letter, number, symbol, or a space, it appears at the current typing position, and erases anything that was in that position before. For example, if you type "spplle", and you meant to type "apple", just use the cursor left key to position the cursor over the letter you want replaced, in this case, the s, and type the right letter.

Another useful key is the DEL (for delete) key. This key deletes, or removes letters to the left of the cursor. Try it! It's just like PAC MAN!

The RETURN key signals the computer that you are done entering a command or data.

## 1.8 WHAT IS A CELL AND HOW ARE THEY NUMBERED ?

If you think about the accountant's friend, the columnar pad, you can pretty easily visualize what a cell is. On the pad, you have rows and columns, and each of these can contain numbers. Each place where you can put a number, is called a cell.

In order to get at each of the cells, we have to give them numbers. It is important that this number be related to the row and column where the cell resides. So, we numbered the columns A through BZ (there are 63 of them), and we numbered the rows 1 through 254 (there are 254 of them). Now, if you put all this together, you discover that the cell in column A, row 1 - the upper left corner - has the number A1. The cell to its immediate right is called B1 and the cell under it is called A2. If this isn't clear, wait until section 2, where you will actually get to try out the spread sheet.

## 1.9 WHAT CELLS MAY CONTAIN

When you look at your columnar pad when it is all full of numbers, you will notice that there are three things that can go in the cells:

- |   |  |
|---|--|
| 1. TITLES                                   | These describe what the numbers in a particular row or column mean. We call these LABELS in computerese.       |
| 2. NUMBERS                                  | These are all the numbers that tell the story. Again, computerese comes to the rescue, and calls these VALUES. |
| 3. TOTALS or numbers based on other numbers | When you total a row of numbers, or you have a number that is based on other numbers you are using FORMULAS.   |

## SECTION 2

### USING THE PLAN MANGER

Before we proceed with our discussion, you should have the Plan Manager screen in front of you.

#### 2.1 THE SCREEN EXPLAINED

When the Plan Manager comes up, you will see a row of letters across the top, and a column of numbers along the left side, the number A1 in the upper left corner, a message on the right indicating how many bytes are free, and a little word - AUTO.

The row of letters across the top of the screen is the individual column numbers. Column A is the first column, Column B, to its right, is the second column, and so on.

The column of numbers across the left hand side of the screen is the individual row numbers.

The A1 in the upper left corner is the cell where the cursor is currently residing. To change the contents of a cell, you have to put the cursor over it.

The bytes free indication tells you how much memory you have left available for use.

AUTO tells you that each time you change something on the spread sheet, it will automatically be recalculated.

#### 2.2 MOVING THE CURSOR AROUND

You can easily move the cursor around by using the cursor control keys. When you go past the boundary of the screen, the screen will scroll in the appropriate direction.

If you want to put the cursor in the upper left corner of the screen, then just press the HOME key. If you scrolled off the original page, pressing the home key a second time will put the cursor back in cell A1.

When you move the cursor over a cell, an indicator in the upper left side of the screen will tell you what is in the cell and what type of data it is.

#### 2.3 ENTERING DATA

The best way for you to quickly understand this program is to solve a problem using most of the program's features.

The problem:

Let's say that you own a fruit stand that sells apples, oranges and grapefruits. You want to know the total sales of each item and the total sales of all the items each month. This report for the months of January, February, March, and April should look like this:

	JANUARY	FEBRUARY	MARCH	APRIL	TOTAL
APPLES	50.00	36.00	48.00	26.00	160.00
ORANGES	25.00	32.00	10.00	66.00	133.00
GRAPEFRUITS	40.00	41.00	25.00	17.00	123.00
MONTH TOTAL	115.00	109.00	83.00	109.00	416.00

Notice that there are labels: APPLES, ORANGES, GRAPEFRUITS, MONTH TOTAL, JANUARY, FEBRUARY, MARCH, APRIL, TOTAL. There are also numbers, and the totals represent formulas.

Let's start by entering the labels, then the numbers, and then the formulas.

##### 2.3.1 LABELS

You tell the computer you want to enter a label by first hitting the SPACE BAR then typing in the label, then hitting the RETURN. Remember that the cursor has to go over the cell where you want the label to go. Start now by putting the labels in. JANUARY should go in B1, FEBRUARY should go in C1, etc. APPLES should go in A2, ORANGES should go in A3 etc.

If you make a mistake, you can use the DEL to correct it. If you forget to put in the space ahead of the label, erase whatever you typed with the DEL key and then hit the RETURN before typing in the new label.

##### 2.3.2 NUMBERS

Now enter in the numbers as shown above. This is done by positioning the cursor over the right cell, then typing in the number and hitting the RETURN. Later, for your own experiments, you may want to put in negative numbers. This is done by putting a minus in front of the number (no space allowed in between).

##### 2.3.3 FORMULAS

In our example above, we wanted to get totals of the various rows and columns. This can be done very easily by putting the right formulas in the cells that represent the total.

To get the total for JANUARY, you would do something like this:

1. Put the cursor over cell B5.

2. The total for JANUARY is the sum of B2, B3, and B4. The formula, therefore, would be B2+B3+B4. Now type the formula and hit return.

Notice that when you put in the formula, the screen went blank for an instant and the total for JANUARY appeared under the cursor. Now try putting in this formula for FEBRUARY: C2+C3+C4. You can also use B2+C2+D2 for the total of APPLES. You should by now be able to figure out the rest by yourself. If you have done it correctly, it should look like the picture above.

#### 2.4 MORE ON FORMULAS

In our simple example, we only used addition, but there is also subtraction, multiplication, and division. These use the symbols: +, -, \*, and /, respectively.

You might well wonder how a formula like A1+A2\*A3 would be calculated. Would A1 and A2 be added, then multiplied by A3; or would A2 and A3 be multiplied, then added to A1? The answer to this question is very simple using what is called precedence. Precedence is the order in which the operations are performed. As it turns out, negation has the highest precedence, followed by multiplication and division, and last addition and subtraction. So our example would be done by first multiplying A2 and A3, then adding A1.

What do you do if you really wanted our example evaluated the other way? Simple, use parentheses. To make A1 add to A2 before multiplying with A3, use this: (A1+A2)\*A3. You might need at times to write very complex formulas, so you are allowed to use up to eight sets of parentheses, as long as it fits on one 80 column line.

In your formulas, you may operate on cell names, constants (fixed numbers) and the sum function. So an expression like: 3\*(A1+A2) is perfectly acceptable.

In addition to the regular arithmetic operations, there is a special operation called the sum function. The sum function can take a row, a column, or a rectangle of numbers and add them up. To add up the row of numbers beginning with A1 and ending with D1, you would use @SUM(A1:D1). To add up the column of numbers beginning with A1 and ending with A4, you would use @SUM(A1:A4). You can also add a rectangle of numbers. Let's say you wanted the sum of all the numbers between A1,D1, and A4, D4. You would use @SUM(A1:D4). The sum operator can also be used in a complex formula. For example if you wanted to pay your salesman in the fruit stand (example above) a 15% percent commission for the month of January, you could use: @SUM(B2:B4)\*.15.

#### 2.5 DISK FUNCTIONS

The Plan Manager allows you very convenient access to the disk through the below listed disk functions.

##### 2.5.1 DISK DIRECTORY

You can see what is on your disk by hitting the F1 key followed by a 1. This command clears the screen, shows you the name of the disk in reverse video at the top of the screen, and displays the names of all the programs and data files on the disk. You return to operating the spread sheet by hitting the RETURN. The disk directory operation will not affect the data in the work space.

##### 2.5.2 LOAD WORKSPACE

This command loads a previously saved workspace by hitting F1 then 2. You will be asked for a name that the workspace was saved under. Enter in the appropriate name, then hit RETURN. Hitting the RUN STOP key or just hitting the RETURN without supplying a name will cause the load operation to be cancelled. You can correct typing errors with the DEL key. If the name you give does not match a valid workspace name on the disk, you will see a message: FILE NOT FOUND. If an error occurs, an appropriate error message will be printed after the workspace name.

##### 2.5.3 SAVE WORKSPACE

This command saves the current workspace onto disk for future use, by hitting F1 then 3. You will be asked for a name to save the workspace under. Enter in the appropriate name, then hit RETURN. Hitting the RUN STOP key or just hitting the RETURN without supplying a name will cause the save operation to be cancelled. You can correct typing errors with the DEL key. If the name you selected already exists on the disk, the original data will be overwritten.

##### 2.5.4 DELETE WORKSPACE FROM DISK

You can delete a workspace from the disk by hitting the F1 then 4. This operation does not affect the workspace currently in the computer's internal memory. You will be asked for the name of the workspace you want removed. Enter in the appropriate name, then hit RETURN. Hitting the RUN STOP key or just hitting the RETURN without supplying a name will cause the delete operation to be cancelled. You can correct typing errors with the DEL key. A confirmation will then appear: %CONTINUE (Y/N)? To proceed with the deletion, answer Y, any other answer will cause the deletion to be stopped.



## 2.5.5 FORMATTING A DISK

Formatting a disk is an initialization process that must be performed on a new disk prior to use. This operation can also be used to completely clear all the data on an existing disk. This command is accessed by hitting the f1 then the 5. You will be asked to name the disk. Enter in an appropriate name, then hit RETURN. Hitting the RUN STOP key or just hitting the RETURN without supplying a name will cause the format operation to be cancelled. You can correct typing errors with the DEL key. You will then be asked for an ID number. Any two digit number is acceptable (but it must be two digits). A warning will appear telling you that all data will be erased in this operation. You will be asked if you want to proceed. To proceed with the format, answer Y, any other answer will cause the operation to be stopped.

## 2.6 WORKSPACE COMMANDS

### 2.6.1 SCREEN PRINT

Hitting f1 then 6 will cause the screen to be printed on the printer. You must have a printer that is connected through the serial bus.

### 2.6.2 CHANGE RECALCULATE MODE

Normally, you would like the computer to recalculate the spread sheet whenever you put in a new entry. If you don't want this to happen, hit the f1 then the 8. With the automatic recalculation off, you will have to hit the = key to get a recalculation. You can turn the automatic recalculation back on again by hitting the f1 then 8 a second time. If the automatic recalculation mode is on, the message "AUTO" will appear at the top of the screen.

### 2.6.3 CLEAR WORKSPACE

The entire worksheet in memory can be cleared by hitting the f1 then 9. You will then be asked: CLEAR WORKSPACE?. You must answer Y for the operation to occur. The workspace will then be cleared, the display will show cell A1 in the upper left corner and the cursor will also be placed in cell A1.

## 2.6.4 SET AUTOMATIC LINEFEED

The set automatic line feed command is activated by hitting the f1 key followed by the back arrow key (located on the upper left corner of the keyboard). This command causes the paper in the printer to advance a line each time the print head goes back to the left side. If your printer double spaces, you can stop it from doing that by activating the set automatic line feed command.

## 2.6.5 EXIT TO BASIC

By pressing the f1 then the <L> (English pound) key you can exit to BASIC. This will allow you to run any other program written in BASIC.

## 2.6.6 RECALCULATE

You can cause the entire spread sheet to be recalculated by pressing the = key. This is useful when the automatic recalculation mode is turned off.

## 2.6.7 CLEAR CELL

Pressing the f5 key will clear the cell under the cursor.

## 2.7 MEMORY USAGE

You will have the following number of cells available to you with the following configurations:

VIC 20	8K Expansion RAM;	100 Cells
	16K Expansion RAM;	300 Cells
	24K Expansion RAM;	500 Cells

C 64 with 80 col exp. : 1100 Cells

## QUICK REFERENCE CHART

### Direct Functions:

<u>Function</u>	<u>Key Sequence</u>	<u>Description</u>
Cursor Up	Cursor Up	Move cursor up one row
Cursor Down	Cursor Down	Move cursor down one row
Cursor Left	Cursor Left	Move cursor left one column
Cursor Right	Cursor Right	Move cursor right one column
Cursor Home	HOME	Move cursor to upper left corner of screen
Cursor to A1	HOME HOME	Move cursor to cell A1
Recalculate	=	Recalculate all cells
Clear Cell	F5	Clear current cell

### Functions that require f1:

<u>Function</u>	<u>f1 followed by:</u>	<u>Description</u>
Disk Directory	1	Display disk directory
Load Workspace	2	Load a workspace from disk
Save Workspace	3	Save a workspace to disk
Delete Workspace	4	Delete a workspace from disk
Format Disk	5	Format a disk
Screen Print	6	Print contents of screen
Recalc on/off	8	Turns auto recalc on or off
Clear Workspace	9	Delete workspace from memory
Auto Line Feed	BACK ARROW	Turns auto line feed on or off
Exit to Basic	<L>	Exit spread sheet to BASIC

### Arithmetic Functions (listed in precedence order):

<u>Function</u>	<u>Symbol</u>	<u>Description</u>
Negation	-	Make a number negative
Multiply	*	Multiply two numbers
Divide	/	Divide two numbers
Add	+	Add two numbers
Subtract	-	Subtract two numbers
Summation	@SUM(SS:EE)	Sum a row, column, or rectangle SS is the starting cell EE is the ending cell