CREATIVE CALC

Spreadsheet for APPLE II+, IIe, and IIc

CREATIVE SOFTWARE

CONTENTS

INTRODUCTION

Congratulations! You have just purchased the most complete home and personal electronic spreadsheet program available for your Apple II+, IIe, or IIc computer. This program lets you join the hundreds of thousands of people who have found electronic spreadsheets to be the most versatile and useful programs they own.

HARDWARE NEEDED TO RUN THIS PACKAGE

The Creative Calc program and a sample spreadsheet are on the diskette you received with this manual. Additionally, you will need a single disk drive and formatted diskettes to store the spreadsheet files you create.

Creative Calc is compatible with:

- 48K Apple II +, single disk drive
- 64K Apple II +, single disk drive
- 64K Apple IIe, single disk drive
- 64K Apple IIe, 80 column board, single disk drive
- 128K Apple IIe, 80 column board, single disk drive
- Apple IIc

If you have a printer, you can print your spreadsheets. However, a printer is NOT required and the program will run just fine if you don't have one.

USING THIS MANUAL

This manual is written in a very specific way. It assumes that you are familiar with your Apple II+, IIe, or IIc computer, know how to turn the computer on, load programs from the disk drive, and know the common functions on the keyboard.

This manual has two parts. Part I is written for the first time spreadsheet user, and is largely tutorial in nature. Part II is for users who have basically learned to use spreadsheets and want specific information on a particular function.

Keep in mind that creating a spreadsheet takes some thought and planning. We have provided the

framework and guidelines, but it is up to you to use your creativity to make the most efficient and workable spreadsheets for your particular needs. We think that you will actually find this part of using spreadsheets quite enjoyable.

The tutorial spreadsheet we have provided is a basic one. Most people will find their spreadsheets most useful in organizing their household budgets. For this reason, we have built the tutorial around the "budget" spreadsheet included with your Creative Calc. If you follow this tutorial, you'll be well on your way to creating your own spreadsheets.

You should plan to spend from one to two hours going through this manual and trying out all the features at least one time. Don't try to create any permanent spreadsheets until you learn to use all of Creative Calc's features; otherwise, you may cheat yourself out of some very important benefits.

In this manual, we use screen tint blocks to indicate words which appear on the computer screen. Words which you are to input on the keyboard are in this typeface and red. Keys you are to press are in red and surrounded by key shaped boxes. Example: When you are asked to press Return, press the Return key. Do not type the word "Return."

WHAT SPREADSHEETS ARE GOOD FOR

If you've ever filled out a worksheet that had rows and columns, you've used a spreadsheet. A household budget is a common example. A portion of what a simple household budget might look like is presented on page 5.

We put the months of the year on the top row to serve as column headings. We listed the titles down the first (left) column. We just made up some values for Salary, Other Income, Rent, Utilities, Food, Clothing, Auto Expenses, and Vacation. Once we put in those values, the amounts for Total Income, Savings, and Mad Money (the famous bottom line) were calculated automatically by Creative Calc, based on formulas we entered only once.

Total Income was calculated by adding Salary + Other Income. Savings was calculated by taking 10% of Total Income for each month. To get the values for Mad Money, we subtracted the sum of Rent + Utilities + Food + Clothing + Auto Expenses + Vacation + Savings from Total Income.

This example would have been quite easy to do with an ordinary pocket calculator. But suppose we wanted to change a few values. We might ask ourselves, "What if we increased our savings to 15%? How much Mad Money would be left?" We would need to do some erasing and recalculating. If we

	Jan	Feb	Mar	Apr	May
Salary	1200.00	1200.00	1200.00	1200.00	1250.00
Other Income	150.00	150.00	150.00	150.00	0.00
Total Income	1350.00	1350.00	1350.00	1350.00	1250.00
Rent	325.00	325.00	325.00	325.00	325.00
Utilities	70.00	70.00	55.00	45.00	40.00
Food	350.00	350.00	350.00	350.00	350.00
Clothing	40.00	40.00	40.00	40.00	40.00
Auto Expenses	200.00	200.00	200.00	200.00	200.00
Vacation	50.00	50.00	50.00	50.00	50.00
Savings	135.00	135.00	135.00	135.00	125.00
Mad Money	180.00	180.00	195.00	205.00	120.00

then tried some other changes, we would be in for some more erasing and recalculating. Creative Calc makes asking these "What if?" questions simple. Since your calculations are built into the spreadsheet, you can simply change values or formulas and watch the numbers change accordingly!

Creative Calc is your "Financial Processor" in much the same way as Creative Writer may be your Word Processor. It lets you rearrange your finances as easily as a word processor lets you rearrange your words.

Once you have created your spreadsheet, you can save it on disk in two ways. You can save the spreadsheet itself so that you can make later changes and additions (and to use its basic "framework" to build other spreadsheets), or you can save only the "results" of the spreadsheet as a text file which is compatible with the Creative Writer word processor.

CAPACITIES AND LIMITATIONS

Your spreadsheets can be up to 255 rows by 64 columns in size. You will probably never run into a problem that needs more capacity. You can store many spreadsheets on one diskette—the actual number you can store is determined by the amount

of free space on your diskette and the size of each spreadsheet.

GETTING STARTED

Creative Calc is very easy to use. You simply select the operation you want from a command menu. A submenu immediately appears, when appropriate, so that you can select the correct command option. The screen always displays what you can do next; you don't have to remember any complex commands. After just a little experience, you will seldom need this manual.

To begin, put the Creative Calc program diskette into your diskette drive, then turn on the power. After about 5 seconds, the screen will display the system selection menu:

```
1 48K APPLE II PLUS
  2 64K APPLE II PLUS
    3 64K APPLE IIe
      4 64K APPLE II E 80 COLUMN
        5 128K APPLE II E 80 COLUMN
          6 APPLE IIc
```

Press the number which corresponds to the type of system you have. We assume you know which type of computer you have, how much RAM memory is installed, and whether it displays 40 or 80 columns. (The Apple IIc has no internal options available and always runs in 80 column mode with Creative Calc.)

When you press a number, that number begins blinking on and off on your screen to indicate your selection. Press Return to complete your entry. While the program loads, the screen displays:

```
CREATIVE SOFTWARE PRESENTS

CREATIVE CALC
BY PETER FOKOS

(C) 1984 CREATIVE SOFTWARE
```

Note that the Creative Calc tutorial section is written for a 40 column display. If you have 80 column capability, some of the screen descriptions and illustrations may not apply. You will have to allow for these differences as you go through the manual.

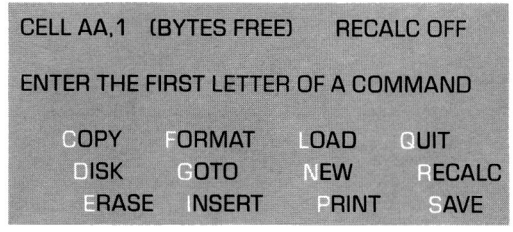
PART I
CREATIVE CALC TUTORIAL

CHAPTER 1
GETTING TO KNOW CREATIVE CALC

This part of the manual teaches you step-by-step how to use Creative Calc. If you already know how to use a spreadsheet, you may want to skip Part I and begin with Part II, the Reference section. Also, before starting, you may want to review the quick reference card included in the package. The information there will be useful to you as you follow this tutorial.

NOTE: If during the tutorial, you press the wrong key, you can abort the command simply by pressing the Esc *key.*

Assuming you started the program correctly, what you now see on your screen is a blank spreadsheet. Now, press Control C (press and hold down the Control key, then press the C key, then release both keys). You now will see the command menu at the top of the spreadsheet, which contains a variety of commands with their access keys highlighted:



Commands are performed by pressing the first letter of the command, as shown on the screen (for example, **GOTO**).

SOME TERMINOLOGY

Before we proceed to learn how to use Creative Calc, you need to understand a few important terms:

Cell

The intersection of a row and a column, which represents a single entry in the spreadsheet.

Cursor
An area of reverse video on the screen which acts as a pointer to indicate where the next character will appear when typed, or which item will be selected if you press Return.

Cell Cursor
A specific type of cursor which indicates which cell you are working in.

Command
An instruction to Creative Calc to do some function, as opposed to values, formulas, or text, which are *data*.

Formula
A mathematical expression which tells Creative Calc how to process the values in cells.

Text
Information (usually alphabetical) which is used for informational purposes and which cannot be processed by formulas.

Value
A number either entered by you or calculated by Creative Calc.

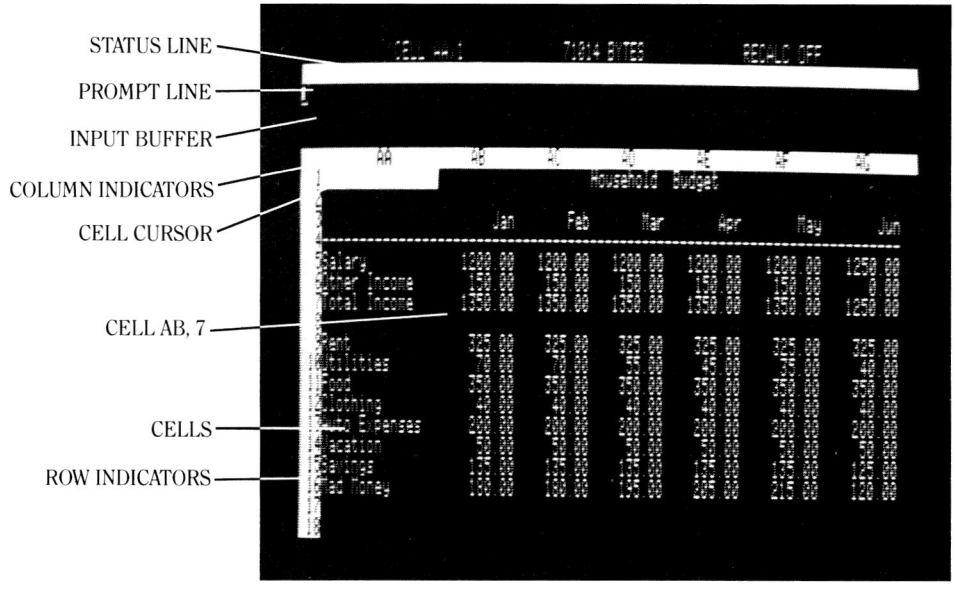
Input Buffer
The area into which you enter values, formulas, or text, which then appears in the current cell when you press Return.

AREAS ON THE SCREEN

The top line of the screen is called the **status line**. It lets you know where the spreadsheet cursor is located, how much memory remains, and the status of the Recalc feature. Directly below the status line is the **prompt line**. This is where Creative Calc displays questions or prompts which require some action on your part.

Below the prompt area is the **input buffer,** which is where your entries appear before they go into the actual spreadsheet. If you start an entry with an alphabetic character, the word TEXT appears in the prompt line. If you start an entry with a number, VALUE OR FORMULA appears instead. These descriptions in the prompt line tell you how Creative Calc will treat the information you enter.

The information you enter into the input buffer will show up in the cells which are located at the intersections of rows (numbered down the left side of the screen) and columns (indicated alphabetically across the top of the screen). For example, column AB (where Jan appears) and row 6 (where Other Income appears) intersect at the value 150.00. This value is therefore said to be contained in Cell AB,6.



MOVING AROUND THE SPREADSHEET

Before you can do anything, you need to learn how to move around. You will use these movement techniques not only for moving within the spreadsheet, but also to move among selections presented when you use certain commands. There are several ways to move around the spreadsheet. You will learn about all of them as necessary. For the time being, do these steps to move the cell cursor one cell at a time:

1. Note that the cell cursor is in column AA, row 1. In the future in this manual, we will refer to this as cell AA,1.
2. Press Control K . Note that the cell cursor moved one column to the right, to cell AB,1. Also note that the line at the top of the screen

changed to indicate the current "active" cell.

3. Now, press Control L. The cell cursor will move down one row, to cell AB,2.
4. Press Control J. The cell cursor will move left one column to cell AA,2.
5. Press Control O. The cell cursor will move up one column to cell AA,1. AA,1 is called the Home position.

You can also move an entire screen at a time. Keep in mind that the screen displays only a portion of the spreadsheet at any given time. Your screen is like a window which can be moved over 64 columns and 255 rows. As you move this window, much of your data will disappear from the screen. Don't worry, though, it is still there and will reappear when you scroll back to that position.

6. Press Control Z. The screen will move so that the last row of the screen becomes the first row. For example, if you are on the first screen, pressing Control Z moves row 18 to the top of the screen so that 17 additional rows are visible.
7. Press Control S. The screen will move so that the next set of columns to the right are visible.
8. Press Control A. The screen will move so that the previous set of columns to the left are visible.
9. Press Control L several times to move the cell cursor down the screen. Press Control K several times to move the cell cursor to the right. Now, press Control T. The cursor will move to the top left position on the screen.
10. Press Control Z several times to move you farther from the Home position.
11. Press Control W to move the window up toward the top of the spreadsheet.
12. Now, press Control G to move the cell cursor and the screen to the Home position.

To review, four keys move the cell cursor one cell at a time:

Control L Down
Control O Up
Control K Right
Control J Left

And, four keys move the window over the spreadsheet one screenful at a time:

Control Z Down
Control W Up
Control S Right
Control A Left

Finally, two keys move to the beginning of an area:

Control T Top left of screen
Control G Top left of spreadsheet (home position)

LOADING A SAVED SPREADSHEET

Once you have created a spreadsheet, you can save it on the diskette. Then, when you want to use it again, you load it into the computer's memory from the diskette using the Load function. There is already a spreadsheet on your diskette called BUDGET which is the example we will use in this tutorial.

Before we load a spreadsheet, let's take a quick look at how files are named. When you create a spreadsheet and then save it on the diskette, Creative Calc asks you for a name. At this point, you can type a name of from one to twelve characters (eleven characters for the IIc and 128K IIe).

Now, do the following steps:

1. With a blank spreadsheet on your screen, press Control C to bring up the command menu. (Disregard this step if you already have the command menu on your screen.)
2. Press L to select Load. The screen displays a catalog of the files on your disk and then displays various options at the top of the screen.
3. Move the highlight bar (cursor) to highlight BUDGET by using the techniques just described for the cell cursor. Then press L Return to **load** that spreadsheet. In a moment, the BUDGET spreadsheet will appear on your screen, as shown in the illustration on page 10.

THE GOTO FUNCTION

There is a shortcut method that can be used to move the cell cursor to a distant cell in the spreadsheet. To select the GOTO function, press Control C, then G to select GOTO. The screen displays:

```
ENTER THE COLUMN,ROW NUMBER
OF THE CELL
```

The status line shows you where your cell cursor is located on the spreadsheet. To show you how big the spreadsheet actually is, type in CL,255 Return

The cell cursor should now be on the last cell of the spreadsheet, in the conceptual lower right corner. Many people will never create spreadsheets big enough to use this last cell.

Press Control G to return to the top left cell of the spreadsheet.

ENTERING TEXT

Entering text is usually the first step in creating a spreadsheet. Text entries are used primarily to create titles for columns and rows. You can also

enter text anywhere on the spreadsheet to make notes about particular cells. As soon as you type a letter of the alphabet, TEXT appears above the input buffer. This lets you know that the program will process the entry as text and not as a value to be used in calculations.

If you want to enter text which starts with a nonalphabetic character (such as "1984 Budget"), you must begin the entry with a quotation mark ("). The quotation mark tells Creative Calc that the following nonalphabetic character is part of a text entry. The quotation mark itself will not be displayed or printed.

If you make a mistake or want to change a text entry, you can edit it by a couple of different methods. One way is to leave the cell cursor on the cell to be edited, retype the entire text, delete any extra characters, then press Return. If you make only a minor mistake and want to avoid typing the entire text again, you can press the left and right arrow keys to move the input cursor to the desired place on the line and press Control I to insert a space for a new character, or press Control D to delete a character.

Now, let's add some text to the sample spreadsheet on your screen. Do this now:

1. Place the cell cursor in the first column of an empty row (AA,16 would be a good choice).
2. Type Miscellaneous. As soon as you type the first character, TEXT will appear above the input buffer. (If it does not, press Esc and try again.)
3. Press Return.

Note that the last five characters neous exceed the length of the cell (Creative Calc is initially formatted so that only 8 characters appear in each cell). Consequently, only the first 8 characters of the word appear on our spreadsheet. (The cell actually contains the entire word—only the portion which fits the width of the cell shows.)

You can solve this problem very easily by increasing the width of column AA. Columns can be up to 37 characters wide (77 characters when using an 80 column system). Do this now:

1. Press Control C to display the command menu.
2. Press F to select **Format**. The screen displays the format options:

```
COLUMN WIDTH   GLOBAL FORMAT
CELL FORMAT    WINDOW
```

3. Press C to select **Column Width**. The screen displays two choices:

```
SET A COLUMN
        GROUP OF COLUMNS
```

4. Press C to set the width of the column on which the cell cursor currently resides. The screen displays:

```
CURRENT WIDTH IS 8. ENTER NEW WIDTH
```

5. Type 1 4 Return. The format of the entire cell changes to show the new column width, and the entire word Miscellaneous now appears in cell AA,16.
6. Now, let's change the width of the remainder of the cells in the spreadsheet. To do this, begin by pressing Control C to display the command menu.
7. Press F to select **Format**, then press C to select **Column Width**.
8. Press G to select **Group of Columns**. The screen displays:

```
SET HOW MANY COLUMNS TO THE
RIGHT?
```

9. Press 7 Return. The screen then displays:

```
ENTER A WIDTH FOR THESE COLUMNS
```

10. Type 1 4 Return. The screen changes as the width of the entire spreadsheet changes. On systems with 40 column screens, only two columns will display at any given time.

RETURNING TO THE ORIGINAL COLUMN WIDTHS

The only purpose in increasing the widths of columns AB through AG was to illustrate how you can change column width, and how column width affects what you see on the screen. For the remainder of this tutorial, it is only necessary that column AA retain its 14 character width. To return to the default column width, follow these steps:

1. Move the cell cursor to cell AB,1.
2. Press Control C to display the command menu.
3. Press F for **Format**, then press C for **Column Width.**
4. Press G to select **Group of Columns**. The screen displays:

```
SET HOW MANY COLUMNS TO THE
RIGHT?
```

5. Press 6 Return . The screen then displays:

```
ENTER A WIDTH FOR THESE COLUMNS
```

6. Type 8 Return . The screen changes as the width of the entire spreadsheet changes.

USING WINDOWS

Creative Calc does windows! Windows come in handy when you want to scroll the screen from side to side while keeping the titles in the left hand column in view. For example, you may want to keep the titles on the left of the spreadsheet visible while you move to the right of a large spreadsheet. Most of the time, you will want to make a window of column AA. However, when you activate the window mode, whatever column is displayed at the left edge of the screen is "locked" in place so that it does not scroll.

Do these steps now:

1. Press Control G to ensure that column AA is located on the left edge of the screen.
2. Be sure that the cell cursor is to the *right* or *below* the column or row you want to define as a window. For this example, place the cell cursor in column AB.
3. Press Control C to display the **Command Menu**, then press F to select **Format**.
4. Press W to select **Window**. Then press W again to turn the window mode ON.
5. Press Esc to remove the command menu from the screen. Note that there are now two column AAs on the screen, both of which contain identical information, as shown in the illustration below.

```
CELL AA,1  (BYTES FREE)  RECALC OFF
      AA                 AA          AB
 1                                    Jan
 2
 3 Salary                Salary      1200.00
 4 Other Income          Other Income 150.00
 5 Total Income          Total Income 1350.00
 6 Rent                  Rent         325.00
```

6. Press Control K several times to move the cell cursor to the right and scroll the screen to the left. Note that column AA stays in place as the remainder of the information scrolls.
7. Press Control J to move the cursor back to column AA. Note that when column AA appears, you cannot move the cell cursor into the "frozen" column AA.

COMBINING WINDOWS INTO A SINGLE SPREADSHEET

To undefine a window, follow these steps:

1. Press Control C to display the command menu.
2. Press F to select **Format**.
3. Press W to select **Window**.
4. Press W to turn window mode OFF.
5. Press Esc to remove the command menu from the screen. Note that the window goes away and that only one column AA is visible (provided it is currently located on the screen).

CHAPTER 2
ENTERING VALUES

It is important to understand the definitions of some terms before we start entering values. For example, what *is* a "value?" Creative Calc considers a value to be a single number, for example, 150.00 or 3000.00. It can be the solution to a formula or function, or it can be an arbitrary number entered into a cell, such as the clothing and food costs in the sample spreadsheet.

Unless you tell Creative Calc to do otherwise (by using the FORMAT options explained later), Creative Calc automatically adds two decimal places to each value entered into the spreadsheet. If you include three decimal places in a value, Creative Calc automatically will round the value to two decimal places (for example, 2.637 will display as 2.64).

When entering values, never enter commas in the number. If you enter a comma, you will get an error message in your spreadsheet.

Remember that Creative Calc is originally formatted to accommodate 8-digit entries. You will have to change the column width to enter longer values. If a value contains more than 8 digits and you haven't widened the column, you will get slash marks (////////) in the cell when you try to enter the value. (Note that the two decimal places and decimal point are considered part of the cell area, and will therefore cause this condition when you enter more than five digits.)

If you've previously entered a value into a cell, and return to that cell, note that you can "blank out" the contents of that cell by using the space bar. However, the prompt area still indicates that this is a VALUE, and the amount 0.00 will display in that cell, when you press Return . If you attempt to enter text, you'll get an error and will have to blank the cell and start over.

CHAPTER 3
ENTERING FORMULAS

To make Creative Calc perform mathematical functions upon the values you enter, you must also enter formulas. We will create formulas which, for the most part, require only some very basic math skills. To enter formulas, you can use numbers, functions, cell references, and the symbols for addition (+), subtraction (−), multiplication (*), division (/), and exponentiation (↑).

PRECEDENCE RULES

If you have never before written formulas on a single line, there are a few rules to learn; for example, the precedence rules, which determine the order in which arithmetic operations are done. Suppose you have the formula "2+3*4". The value of this formula depends upon whether you add first or multiply first. If you add first, you get 2 plus 3 which is 5, times 4 which equals 20. If you multiply first, you get 3 times 4 which is 12, plus 2 which is 14.

Creative Calc evaluates this formula as the value 14. The precedence rules used by Creative Calc are:

1. Exponentiation
2. Multiplication and division
3. Addition and subtraction

If this order of evaluation does not suit your needs, or if you don't want to remember these facts, you can use parentheses to change the order of calculation. For example, if you enter the formula (2+3)*4, the result is 20.

CREATING FORMULAS WITH CELL REFERENCES

You can create formulas using cell references. Let's create one to add the total income for January. To get the total income for January, you must compute the sum of January's Salary entry and Other

Income value. But rather than add the values (1,200.00 + 150.00), we will create a formula using the cell locations that contain these values. Do this now:

1. Place the cell cursor on the cell that is to contain the value of January's total income (cell AB,5).
2. Without using any extra spaces between characters, type this simple addition formula into the input buffer:

   (AB,3+AB,4) Return

3. Note what happened. Cell AB,5 now contains the sum of cells AB,3 and AB,4, the total income for the month of January. Now, look at the prompt area. It displays the formula (AB,3+AB,4). Values derived through the use of formulas will always appear in the spreadsheet, while the actual formula will appear in the prompt area. Formulas should never appear in the spreadsheet itself.

   If a formula appears in your spreadsheet, it is most likely because you omitted the parentheses, which caused Creative Calc to evaluate the entry as text.
4. Let's see what happens if you don't use parentheses. Press Control C to display the command menu. Then press E to select Erase, press T to select **This Cell** and press Return to erase this cell. Put the cursor back on the cell AB, 5 and type:

   AB, 3+AB, 4 Return

   The text AB,3+AB,4 now appears in your spreadsheet and will be of no use in calculating your budget.
5. You can fix this mistake as follows: press Control C to display the **Command Menu**. Then press E to select **Erase**, press T to select **This Cell**, and press Return to erase this cell. Then, reenter the entire line correctly.

Assuming you have returned cell AB,5 to the correct status, we will move on.

COPYING

There is an easy way to duplicate the formula you just entered so that you can add up the total income for each of the five remaining months. This is done with the Copy feature.

Copy lets you duplicate almost anything you enter into your spreadsheet. You can even copy blank cells (for example, if you want to erase parts of rows or columns). But its most time-saving application is in the duplication of formulas or functions.

Right now, you want to save time by copying the simple formula (AB,3+AB,4). Technically, you will not be "copying" the formula. What you will be doing is applying the same operation, "Salary + Other Income" to the five remaining cells so as to calculate their total monthly income. Do these steps now:

1. Press Control C to display the **Command Menu**.
2. Press C for **Copy**. The screen displays:

```
COPY  AREA
      ROWS DOWN
      COLUMNS TO THE RIGHT
```

3. Press C to select **Columns to the right**. The screen displays:

```
HOW MANY SOURCE CELLS DOWN?
AB,5
```

4. Press Return to accept the single cell AB,5 as the part of the column to copy. The screen displays:

```
HOW MANY DESTINATION COLUMNS?
AB,5
```

5. Type A G Return to specify that you want to copy the source cell to columns AC,5; AD,5; AE,5; AF,5; and AG,5. The screen then displays:

```
ADJUST : ALL
         NONE
         INDIVIDUALLY
```

6. Press A to select **All**. Creative Calc now takes a moment to copy the formulas from one cell to another and to make the appropriate adjustments.
7. Move the cell cursor to each cell in row 5 and note how the formula displayed in the prompt line changes to reflect the adjusted formula.

You entered the formula (AB,3+AB,4) into cell AB,5 to get the value 1,350.00, January's total income. When you chose to adjust all formulas, you told Creative Calc that you wanted to automatically modify each of the formulas for the conditions in each new location. This gave you (AC,3+AC,4) in cell AC,5, (AD,3+A,D4) in cell AD,5, and so forth.

If you had chosen None, the exact formula would have been copied into each cell, which is sometimes a desirable option. If you had entered Individual, you would have been asked if you wanted to adjust each formula as it was copied to its new location. This is also sometimes a desirable option.

Note that after you have copied the columns, the values are correct. This will not always be the case. Sometimes you will change a number

and a formula containing references to that number do not change. For this reason, Creative Calc provides two separate ways to recalculate the spreadsheet.

One choice is to recalculate the spreadsheet by pressing the exclamation point (!). This recalculates the entire spreadsheet once.

The other choice is to activate RECALC mode. When RECALC mode is activated, each time you make a change, the spreadsheet is recalculated. With a large spreadsheet, you may end up waiting several moments while the spreadsheet recalculates; therefore, you may not always want to have RECALC on.

When RECALC is activated, you will have the choice of recalculating by row or column. If you press [R] for **Row,** Creative Calc will recalculate all the values of all formulas row by row. Recalculation starts at the leftmost cell of the first row, proceeds right until the end of the row is reached, and then goes to the leftmost cell of the next row. If you press [C] for **Column**, the spreadsheet is recalculated column by column, starting at the top left cell.

The mode you pick for recalculation will depend upon how the spreadsheet is designed. Formulas in cells should reference other cells that are either to the left or above the cells containing the formulas. This is required so that the recalculation of the referenced cells occurs before the recalculation of formulas which reference those cells. For the most part, however, it does not matter which mode you use, and pressing either [R] or [C] will usually recalculate correctly.

To turn on RECALC mode, you must first set Creative Calc to the desired mode. To do this, press [Control] [C], then [R]. The prompt area displays:

```
SELECT RECALC MODE   ESC WHEN DONE
RECALCULATE BY
>ROW
 COLUMN
```

Select the desired mode by pressing [C] or [R], then [Esc]. Note that Recalc Mode is still OFF. Press [Control] [R] to turn ON Recalc Mode. The status line will then display:

```
RECALC ON
```

You should always be sure to recalculate the spreadsheet after making changes or copying cells.

You will be using the **Copy** feature many times in the remainder of this tutorial. If you forget the steps, refer back to the **Copy** section in this tutorial.

When you are finished making changes and recalculations, turn RECALC mode off. Spreadsheet commands and cell entries are processed much more slowly if RECALC is on. However, in the future you

may want to leave RECALC on at times, especially when you are playing "What if?" and changing many different values.

To turn Recalc Mode OFF, simply press Control R again. Note that the status line now indicates that Recalc Mode is OFF.

In a moment, you are going to total the entire budget spreadsheet. But first, you still have some changes to make. Look at row 13 labeled Savings. As the spreadsheet sample was supplied, it is calculating 10% of total income as the amount to put into savings. Many people reserve 10% of their income for their savings, but let's suppose you want to save 15%. You will create a formula to calculate 15% of the total income for January. After the formula is entered, you will use the Copy function to get the savings values for the rest of the months.

To calculate a percentage, you must multiply an amount by a fraction. 15% of $200.00 is equivalent to 200*0.15 and equals $30.00. To calculate savings, follow these steps:

1. Move the cell cursor to cell AB,13.
2. Type (.15*AB,5) and press Return. Cell AB,13 now will display 15% of the value in AB,5, which is $202.50.
3. Copy the formula from AB,13 to cells AC,13 through AG,13, remembering to use Relative References for each copy.
4. Press ! to recalculate the spreadsheet.

USING FUNCTIONS

Several important mathematical "functions" are available in Creative Calc. They are part of the reason this spreadsheet program is so easy to use. They do all of the work for you so that all you need to know about the functions is what they do. Here is a list of Creative Calc functions:

@SUM (column,row>column,row)
Calculates the sum of all the elements in either a row or a column. The row and column must be in the proper form (for example, AB,5), and the greater than sign (>) must be placed between the beginning and ending cell of the range to add.

@ABS (cellname)
Calculates the absolute value of a cell (result is always a positive number).

@SIN (cellname)
Calculates the sine of the cell. The number in the referenced cell must be expressed in radians.

@ COS (cellname)
Calculates the cosine of the cell. The number in the referenced cell must be expressed in radians.

@ ATN (cellname)
Calculates the arctangent of the cell. The number in the referenced cell must be expressed in radians.

@ EXP (cellname)
Calculates the value of 10 raised to the power of the value in the referenced cell, i.e., (10↑x).

@ LOG (cellname)
Calculates the logarithm (base 10) of the referenced cell.

x↑y or **(cellname)↑y** or **y↑(cellname)** or **cellname↑cellname**
Calculates the number or cell raised to the power of the number or cell.

NOTE: With the exception of the @ SUM function, none of the above functions requires parentheses, but you may include parentheses to make the formulas easier to read.

For this tutorial, the only function you will need to learn to use is the **@SUM** function. You will probably use this function more than any other in your spreadsheet calculations. The **@SUM** function makes it easy to add successive cells in a row or column.

You can start by adding up each of the rows labeled Salary, Other Income, and Total Income using the **@SUM** function. First you will use the function to add up the values in the row labeled Salary, then you will use Copy to apply that function to the Other Income and Total Income rows. Do this now:

1. Place the cell cursor on AH,3.
2. Type the following formula:

   @SUM(AB,3>AG,3) and press Return

   The cell will display the sum of this row, which should be $7250.00.
3. Copy the formula in AH,3 to AH,4 and AH,5. Use the **Adjust All** option.
4. Press ! to recalculate the spreadsheet.

You can use functions such as @SUM within formulas to get desired results. To see how this works, place the cell cursor on the Mad Money cell at AB, 14. Note that the formula shown in the prompt line looks like this:

```
(AB,5-@SUM(AB,7>AB,13))
```

This formula says: "Add Rent + Utilities + Food + Clothing + Auto Expenses + Vacation + Savings, and subtract this subtotal from Total Income." The cell displays the left over money for each month.

Now that you have seen how the functions work, let's subtotal each of the expense categories for the 6-month period shown. Do this now:

1. Move the cell cursor to AH,5.
2. Copy the formula in AH,5 to the remainder of the rows in column AH. Answer [Y] to all relative reference questions.
3. Press [!] to recalculate the spreadsheet.

CHAPTER 4
PLAYING "WHAT IF?"

Now that you have totaled your spreadsheet, you are all set to play "What if?" All the values entered into the expense portion of the budget spreadsheet are projected expenses. You can change some of the values to see how this affects the overall budget. Do this now:

1. Suppose that you know that there will be a $25.00 rent increase in February. Put the cell cursor on AC,7.
2. Press Control C R C Esc to select **Column Mode** for recalculation, then turn on RECALC by pressing Control R.
3. Type 350 Return to change the rent amount to $350.00.
4. Use **Copy** to change the values for March through June.
5. Note what happens to your Mad Money .

If you change any of the values that affect Total Income , Creative Calc will not only adjust the cumulative and monthly income values, it will also adjust the Savings values as well. That's because the savings values are derived through formulas which calculate a percentage of total income.

Try changing some of the other values in the spreadsheet, to see what happens. You may want to enter some of the values from your own situation to examine your financial picture. The budget spreadsheet can now be used as a "template" for plugging in whatever numbers you like.

CHAPTER 5
GLOBAL AND LOCAL FORMATTING

You have altered the spreadsheet considerably since starting the tutorial. In fact, it may even be a bit more confusing to read. The spreadsheet can be made a lot easier to work with by making just a few changes. Right now, your spreadsheet should look something like the one shown on page 27 (depending upon the values you changed in the last chapter).

Creative Calc is initially formatted for 8-character column width (you changed the column width in Column AA), two decimal places ($ mode), text and values right justified.

When you are working on a budget, you usually are not concerned with cents. So why display those extra two decimal places? By getting rid of the decimal places, you will make the spreadsheet much easier to read. Do these steps now:

1. Press Control C to display the command menu.
2. Press F to select **Format**, then press G to select **Global**. The screen displays:

```
GLOBAL FORMAT
TEXT
VALUE
```

You have the option of globally changing the text entries or the values in your spreadsheet.

3. Press V to select **Value**. The screen displays:

```
 LEFT
>RIGHT   SET DECIMAL POINT
 CENTER
```

4. Press S to select **Set Decimal Point**. The screen displays:

```
HOW MANY DECIMAL PLACES?
IT IS NOW 2
```

5. Press 0 Return, then Esc to select no decimal places and return to the spreadsheet. Note how all values are reformatted to reflect the new setting. If any odd cents are entered or calculated, they will

CELL AA,1 [BYTES FREE] RECALC ON CREATIVE CALC, V1.0

	AA	AB	AC	AD
1		Jan	Feb	Mar
2				
3	Salary	1200.00	1200.00	1200.00
4	Other Income	150.00	150.00	150.00
5	Total Income	1350.00	1350.00	1350.00
6				
7	Rent	325.00	350.00	350.00
8	Utilities	70.00	70.00	55.00
9	Food	350.00	350.00	350.00
10	Clothing	40.00	40.00	40.00
11	Auto Expenses	200.00	200.00	200.00
12	Vacation	50.00	50.00	50.00
13	Savings	202.50	202.50	202.50
14	Mad Money	112.50	87.50	102.50
15				
16				
17				
18				
19				

be rounded for the purposes of display in the spreadsheet; however their true value will actually be retained within Creative Calc and will display when the format is again changed.

6. Press Control C, then F G V to select global format of values again. Then, press L Esc to left justify all the values on the spreadsheet. Note that this does not look particularly good, because the dollar amounts do not line up to allow mental mathematics. Also, the text entries are still right justified in the column.
7. Press Control C, then F G V, then R Esc to return to the original right justification of values again.

In the command menu, there is an option that lets you format a single cell only. This is called local formatting. Follow these steps to format a single cell:

1. Place the cell cursor on AA,3.
2. Press Control C to display the command menu.
3. Press F to select **Format**, then press F again to select **Cell Format**. The screen displays:

```
>LEFT
 RIGHT
 CENTER
```

4. Press R Esc for **Right**. The entry in the selected cell will move to the right of the cell.
5. Repeat these steps for each cell in Column AA.

Local formats override global formats. Once you have selected a local format for a cell, changing global formats does not affect that cell.

CHAPTER 6
ADDITIONAL FEATURES

This final chapter of Part I explains some of the remaining features of Creative Calc.

INSERT

You can insert an empty row or column anywhere on the spreadsheet (as long as the spreadsheet is not filled to capacity). Before summoning the command menu, you must first place the cell cursor on the row or column where the blank area is to be inserted.

When you have the cell cursor at the desired position, press Control C to display the command menu, then press I to select **Insert**. The screen will display INSERT A ROW/COLUMN. Press the desired letter and the row or column will appear. You can now proceed to make new entries into the spreadsheet.

If you insert a row or column which is in the middle of a range in one of your formulas, the range within the formula will be adjusted automatically. For example, if you have the formula **@SUM (AB,3>AB,14)** and you add a new row at row 5, the formula will automatically change to **@SUM (AB,3>AB,15)**. This will ensure that your formulas will be evaluated correctly.

ERASE

To erase a single entry, or a row or column and close up the resulting space, choose the **Erase** function. First place the cell cursor on the desired cell or on any cell within the row or column you want to delete. Then press Control C to display the **Command Menu**. Press E to select **Erase**, then press T for **This Cell**, R for **Row** or C for **Column**, as desired. Finish your entry by pressing Return and the spreadsheet will change accordingly. Note that if you delete an entire row or column, formulas are automatically adjusted.

SAVE

When you get your spreadsheet the way you want it, you should save it to the diskette (all of this time, it has been in your computer's memory). Do these steps now:

1. Press Control C to display the **Command Menu**, then press S to select **Save**. The screen displays:

   SAVE
   SPREADSHEET
   RESULTS

2. Usually, you will want to save the entire spreadsheet, so that you can go back and do more additions and changes later. To do this, press S to select **Spreadsheet**. The screen displays:

   ENTER FILENAME

   Type a name for your spreadsheet up to 12 characters long, then press Return. The spreadsheet will remain on your screen and you can continue working. You have only saved the spreadsheet at its current state, you have not exited from the program.

CAUTION: If the name you specify already exists, the spreadsheet on your diskette will be overwritten by the spreadsheet on your screen. If this is not what you want to do, use another name for your new spreadsheet.

The other option you have is to save only the "results" of your spreadsheet. This is the option you would choose to save only the visible portion of the spreadsheet as a text file so that you could include it with another text file (document) by using Creative Writer.

Technically speaking, the **Save Results** function of Creative Calc creates an ASCII sequential file on the disk, using the file name you enter.

This ASCII sequential file contains only the numbers and text you see on the screen when working with the spreadsheet. It does not contain the underlying formulas. To include this file in a Creative Writer document, you will use the **Imbedded Print Command** Control I in the Writer document.

Note that Creative Writer does not actually read this spreadsheet into your document. Rather, as it outputs the document to the printer, it simply reads the spreadsheet from the disk when it gets to the imbedded Control I command in the document, and formats it properly for the printer.

If you are going to be preparing a spreadsheet file for use with Creative Writer, be careful about the length of each spreadsheet row. If the lines in your spreadsheet file are, for example, 100 characters

wide, and your document line is only 65 characters in width, Creative Writer will ignore the remaining 35 columns in each row and print only the first 65. It is up to you to be sure that the document format is adjusted to accommodate the spreadsheet file.

Note that you can save your spreadsheets on your own initialized diskettes, rather than on the Creative Calc program diskette. Since the entire Creative Calc program is stored in your computer's memory, you can remove the program diskette at any time and insert another. To initialize diskettes, see the Initialize option in Part II of the manual.

PRINTING A SPREADSHEET

If you have a printer connected to your computer, you will want to print your spreadsheets. You can choose to print only a part of the spreadsheet or the entire spreadsheet, as you wish. If you have a printer connected, do this now:

1. Make sure the printer is correctly installed, configured, connected, turned on, and that there is paper inserted. Also, make sure that the printer is "On Line".
2. Press Control C to display the **Command Menu**, then press P to select **Print**. The screen displays:

```
ENTER TOP LEFT CELL OF PRINT AREA
```

3. Note that the cell in which the cell cursor currently resides is already filled in for you. If you want to use this cell as the top left corner, simply press Return. If you want to specify another cell as the top left corner, type that cell's coordinates, then press Return. The screen displays:

```
ENTER BOTTOM RIGHT CELL OF PRINT AREA
```

4. Again the current cell is filled in for you, and you can accept that just by pressing Return. If, however, you want to specify another cell, simply type its coordinates and then press Return. Perform Step 5a if you are using an Apple IIc computer. Perform Step 5b if you are using an Apple II+ or Apple IIe computer.

5a. If you are using an Apple IIc computer, the screen displays:

```
BAUD RATE 9600     LINEFEED ON
8 DATA 1 STOP BITS     PARITY NONE
```

Press B, D, L, or P to cycle through the available selections on each of the parameters. When you have set Creative Calc to match your printer settings, press Return and proceed to Step 6.

5b. If you are using an Apple II+ or Apple IIe computer, the screen displays:

ENTER YOUR PRINTER'S I/O SLOT NUMBER

You must determine the number of the I/O slot in which your printer card is installed, and enter that number, followed by [Return]. Then proceed to Step 6.

6. After completing either Step 5a or 5b (depending on the type of system you are using), the screen displays:

HOW MANY COLUMNS ON YOUR PRINTER?

7. Enter the number of columns (usually 80), followed by [Return]. The screen then displays:

HOW MANY LINES PER PAGE?

8. Enter the number of lines (usually 66), then press [Return]. The screen then displays:

ENTER A TITLE FOR THE PAGE HEADER

9. If you want a title on the top of each page of the spreadsheet, type that title, then press [Return]. At this point, if everything has been correctly configured, the printer should begin to print. If it does not, press [Shift] [Reset] to return to the spreadsheet, then check such things as cables, baud rates, data/stop bits, and so forth.

STARTING A NEW SPREADSHEET

Remember that when you saved the spreadsheet, the screen did not clear. The spreadsheet remained on the screen just as it was. If you want to start a new spreadsheet from scratch, or if you want to load another spreadsheet in place of the one currently on your screen, you use the **New** function.

Follow these steps now:

1. Save the spreadsheet you are currently using before proceeding.
2. Press [Control] [C] to display the command menu. Then press [N] to select **New**. The screen displays:

DO YOU WISH TO KEEP THIS SHEET?

3. Press [N]. The screen displays:

DO YOU WISH TO START A NEW SHEET?

4. Press [Y]. The spreadsheet clears and you are back to where you started when you first began your Creative Calc session. If you wish, you can load another spreadsheet, or you can begin again from scratch.

*CAUTION: If you do not first save your spreadsheet to diskette before selecting the **New** command, the entire spreadsheet will be lost! Always be sure to save your spreadsheets before selecting **New**.*

QUITTING CREATIVE CALC

When you are finished using Creative Calc, you can return to the startup screen as follows:

1. Save your spreadsheet as previously described.
2. Press Control C, then Q to select **Quit**. The screen displays:

   DO YOU WISH TO QUIT CREATIVE CALC?

3. Press Y Return to return to the startup screen.

This is the end of the tutorial part of this manual. Now that you know how to use the basic functions of Creative Calc, you will want to refer to Part II to get specific information on certain functions.

PART II

CREATIVE CALC REFERENCE

CHAPTER 7
BASIC OPERATIONS

This chapter explains the basic operations you will need to use Creative Calc.

LOADING THE PROGRAM

There are six programs on your Creative Calc diskette for the various types and configurations of Apple computer systems. The program loads automatically upon power on or system reset, and you are presented with a series of choices:

1. 48K Apple II+
2. 64K Apple II+
3. 64K Apple IIe
4. 64K Apple IIe with 80-column board
5. 128K Apple IIe with 80-column board
6. Apple IIc

Press the number corresponding to your system, then press Return. After a few moments, a blank spreadsheet is displayed. You are now ready to begin work.

NOTE: When you load Creative Calc, the entire program is loaded into your computer's memory and the diskette is no longer needed. If you want to load a spreadsheet from or save a spreadsheet to a different diskette, you can change diskettes at any time.

AREAS OF THE SCREEN

There are several important areas on the screen: (see illustration p. 10)

- The top line is the **status line**. It tells you the current location of the cell cursor, the amount of free memory available, and the status of RECALC mode.
- The next three lines are the **prompt area**. The prompt area shows many important things, including the command menu, when selected, information on what you are to type next, questions to answer, error messages, and the contents of the cells. The left side of the prompt area also shows the contents of the **input buffer**. This is the information which will go into the spreadsheet itself when you press Return.

- Below the prompt area are the **column headings**, which are shown in reverse video. They range from AA to CL (for a total of 64 columns) though only a few are visible on the screen at any given time.
- Down the left side of the screen are the **row headings**, which are also shown in reverse video. They range from 1 to 255, though only a few are visible on the screen at any given time.
- The remainder of the area on the screen is the spreadsheet itself, into which you can place text, numbers (values) and formulas.
- The reverse video rectangle in the spreadsheet is the **cell cursor**. It indicates where the next entry will be made.

MOVING AROUND THE SPREADSHEET

To move around the spreadsheet, use the following keys:

Control O Moves the cell cursor up one row.
Control L Moves the cell cursor down one row.
Control J Moves the cell cursor left one column.
Control K Moves the cell cursor right one column.
Control G Moves the cell cursor to AA,1. (Home position.)
Control W Moves the previous 17 lines into view.
Control Z Moves the next 17 lines into view.
Control T Moves the cell cursor to the top left cell currently displayed on the screen.
Control A Moves the previous screen to the left into view.
Control S Moves the next screen to the right into view.

Not only do these keys move the cell cursor around the spreadsheet, they also enter whatever is presently in the input buffer into the current cell cursor location *before* performing the specified move.

The keys repeat when you hold them down for longer than 1 second, which can allow you to move quickly around the spreadsheet.

Another way to move the cell cursor to a certain location is to use the **GOTO** function (Control C, then G) and supply the cell coordinates as requested. This is the best way to get to a remote location quickly.

ENTERING TEXT

There are three types of data you can enter: text, numbers (values), and formulas. If the first character you type is a letter of the alphabet, the prompt area displays TEXT and Creative Calc will never attempt to perform a mathematical operation on the cell unless you erase it and start over.

If you must enter text which does not begin with a letter of the alphabet, you must precede the text with a quotation mark ("). This tells Creative Calc that whatever you are entering is to be treated as text. The quotation mark will not be displayed or printed.

You can enter more text than will fit in the cell. In this case, the extra text is hidden by the adjacent cell. If you widen the cell at some future time, the hidden text will appear. You can enter up to 119 characters in the input buffer.

ENTERING NUMBERS

To enter a number in a cell, simply begin the entry with a numeral. As you enter the first number, the prompt area displays VALUE OR FORMULA.

If you enter a number that is bigger than the cell, Creative Calc will display a series of slashes in that cell (////////). The number is really still there, and will appear if you widen the cell sufficiently. Until you do, however, you cannot see the number.

The default cell format is "$", which means that when you enter numbers, two decimal places are displayed, whether or not you enter them. If you enter more than two numbers to the right of the decimal, the resulting number will be displayed rounded to the nearest cent.

ENTERING FORMULAS

In addition to entering text and values, you will also want to enter formulas to perform mathematical operations on your numbers. Entering formulas is much the same as entering ordinary numbers except that you will also enter one or more mathematical operations. In general, you'll begin formulas with a left parenthesis "(" and end them with a right parentheses ")". If the total number of left parentheses doesn't equal the total number of right parentheses in a formula, you will get an **error message** (ERR*ERR*).

The basic operations are:

+ addition
− subtraction
* multiplication
/ division
↑ exponentiation

With these basic operations you could do most any function you desire, if you have a good enough knowledge of math. However, Creative Calc also gives you several other advanced operations to make your job easier:

@SUM Add the specified range of cells.
@SIN Find the sine of the specified number or cell.
@COS Find the cosine of the specified number or cell.
@ATN Find the arctangent of the specified number or cell.
@EXP Raise the number 10 to the value of the specified number or cell.
@LOG Find the log (base 10) of the specified

@ABS Find the absolute value of a number or cell (the number or cell must be enclosed in parentheses).

To enter a range of cells, enter the first cell of the range, a >, and the last cell of the range. For example, to take the average of all cells in column AC, you might enter @AVG(AC,1>AC,100).

When entering formulas, you must keep in mind the precedence rules for evaluating a formula, because it makes a difference in the result. Creative Calc uses the following precedence rules:

1. Exponentiation is done first.
2. Multiplication/division is done second.
3. Addition/subtraction is done last.

You can change the precedence of an equation by using parentheses around the parts of an equation you want to evaluate first.

When typing formulas, you can either enter values or cell references. If you enter cell references, your spreadsheet can be more easily modified, because in most cases cell references change automatically when you copy, move, insert, or delete cells, rows, or columns. You can simply enter cell references in the middle of equations; however, if you need to begin a formula with a cell reference, you must precede it with a left parenthesis. This is because simply entering B5 would cause Creative Calc to think of the entry as text and not as a formula.

CORRECTING OR CHANGING ENTRIES

If you want to change either text, a value, or a formula, you simply position the cell cursor in the desired cell, then do one of three things:

1. Press Control C, then E T Return to erase the cell and leave it empty.
2. Press Control C, then E T Return to erase the cell, then type a new entry.
3. Leave the contents of the cell in the input buffer and use the left and right arrow keys to move the edit cursor to the desired location to make a change. Then press Control I or Tab to insert a space for a new character, or type Control D to delete the character to the left of the cursor and backspace.

Once you change a value or a formula, be sure to recalculate the spreadsheet, either by turning (or having) RECALC on, or by pressing the ! key.

Keep in mind that you can build up your spreadsheet faster with RECALC turned off, especially as the spreadsheet gets bigger and more formulas are involved. Recalculation can then take several seconds. For this reason, you will probably want to keep RECALC turned off until you are finished making changes, and then turn it on to make final adjustments.

CHAPTER 8
COMMANDS

Creative Calc has 12 major commands, which can actually accomplish many more functions depending which options of a particular command are chosen. In addition, Creative Calc provides several other functions in the form of keys pressed in combination with the Control key. Many of these you have already learned to use. All will be covered in this chapter. The 12 major commands available are displayed by pressing Control C to display the command menu. The commands are:

- C Selects the COPY function to copy areas, columns, or rows from one position to another.
- D Loads the DISK catalog and lets you load spreadsheets, delete files, initialize the disk and select another drive. Has the same function as the L option.
- E ERASES cells, columns, and rows. If an entire row or column is deleted, the adjacent row or column is shifted to fill the space.
- F Lets you specify a FORMAT for each of the cells in the spreadsheet, or for the entire spreadsheet.
- G Specifies the GOTO function to quickly move to a distant cell.
- I INSERTS a row or column into the spreadsheet.
- L LOADS a previously saved spreadsheet from diskette into the computer (actually presents the same options as the DISK command above).
- N Clears the spreadsheet of any data and gets it ready for a NEW spreadsheet.
- P PRINTS a spreadsheet or a portion of a spreadsheet.
- Q QUITS the program and returns you to the initial selection screen.
- R Selects the RECALC mode (either by row or by column); however, this does not turn RECALC on or off.
- S SAVES the spreadsheet to disk or saves a

text-only version of the spreadsheet for integrating with another Creative Writer document.

COPY

Use the COPY function to copy an area of the spreadsheet to another area, or to copy rows or columns. After selecting COPY, the screen displays:

```
COPY : AREA
       ROWS DOWN
       COLUMNS TO THE RIGHT
```

Select the AREA option to copy all the cells in a rectangular area of the worksheet to another rectangular area of cells. If you enter A, the screen displays:

```
ENTER TOP LEFT CELL OF SOURCE AREA
```

The current cell position will already be filled in. If this is the cell you want to use to define the top left cell of the area, press Return . If you want to specify another cell, enter its coordinates or move the cell cursor to the desired cell, then press Return . The screen then displays:

```
ENTER BOTTOM RIGHT CELL OF
SOURCE AREA
```

Identify the bottom right cell of the rectangle in the same manner. When you press Return , the screen displays:

```
ENTER TOP LEFT CELL OF DESTINATION AREA
```

Identify the top right cell of the destination rectangle, then press Return . The screen then displays:

```
ADJUST : ALL
         NONE
         INDIVIDUALLY
```

The purpose of these selections is to allow you to specify how Creative Calc is to treat formulas in the cells you are copying (text and values are not affected by copying). You may or may not want Creative Calc to adjust the formulas when they are copied. This is an extremely important feature. Let's take a simple example: Suppose you are going to copy cells AA,1 and AA,2. AA,1 contains the value 4 and AA,2 contains the formula 2*AA,1.

Now, suppose you copy them to cells AB,1 and AB,2. If NONE is specified for the ADJUST option when you copy these cells, AB,1 would contain the value 4 and AB,2 would contain the formula 2*AA,1. No surprises there, just plain old copying. But with adjustment, things are quite different. AB,1 would

still contain the value 4, but AB,2 would contain the formula 2*AB,1! Note that's AB,1 and not AA,1. Creative Calc is intelligent enough to automatically adjust the formulas to maintain the same relationship to their referenced cells.

Notice that the formula in cell AA,2 refers to the cell just above it, namely AA,1. Also, notice that the formula in AB,2 also refers to the cell just above it, namely AB,1. This is what we mean when we say the formulas are adjusted to maintain the same relationship in the copies as in the originals. Now that you know what **Adjust** means, let's look at the options again.

If you enter A, all formulas are automatically adjusted, whether or not you want them to be adjusted. If you instead enter I, Creative Calc displays each formula in the input buffer area and asks:

```
SHOULD I ADJUST THIS REFERENCE? Y OR N
```

You reply with a Y or an N as appropriate, thereby maintaining control over whether or not a formula is adjusted. This process continues until you answer Y or N for each formula being copied. After responding to the last such question, Creative Calc returns you to the previous display.

DISK

When you enter D the screen displays a list of commands along with a list of all files on the diskette:

```
CATALOG          LOAD
INITIALIZE       DELETE
SET SLOT & DRIVE
```

Each of these commands lets you perform an operation involving the disk drive.

Pressing C will simply redisplay the disk catalog. This is necessary if you change diskettes while using the DISK option. To LOAD or DELETE a spreadsheet file, simply move the cursor over the desired file using the cell cursor movement commands (Control O, Control L, Control J, and Control K), then press the first letter of the desired function (D or L). Note that if you attempt to load a file which is not a spreadsheet file, Creative Calc will display:

```
THIS FILE IS INCOMPATIBLE! PRESS RETURN
```

Just press the Return key to return to the spreadsheet. Note that if you have a 128K system and have created a very large spreadsheet which used auxiliary memory, it was automatically saved in two sections. The numeral 1 was automatically appended to the file name when it was saved. To load such a "split"

spreadsheet, place the cursor over the file with the "1" appended to the end. This will load the entire spreadsheet. For example, if you have a large spreadsheet named BUDGET, it may have been saved to disk in two sections—BUDGET and BUDGET1. To load this spreadsheet, select BUDGET1 (not BUDGET).

Pressing [I] will initialize the diskette in the drive. **Be sure to place a blank or unwanted diskette into the drive before choosing this option!** Initializing a diskette erases all information stored on that diskette.

If you have a multiple-drive system, use the [S] option to specify the slot and drive which you want to access.

ERASE

The erase command lets you erase a single cell (make it blank) or erase all or part of a row or a column. Before selecting ERASE, place the cell cursor on the cell or in the row or column you want to erase. Then, press [Control] [C], then [E]. The screen then displays:

```
ERASE : THIS CELL
        ROW OF CELLS
        COLUMN OF CELLS
```

To erase a single cell, press [T] to select **This Cell**. The screen will now display:

```
PRESS RETURN TO ERASE THIS CELL
```

Press [Return] to erase **This Cell**.

To erase a row of cells, press [R]. The screen will then display:

```
ERASE ROW : ALL
            PART
```

If you press [A] for **All**, the entire row will be erased and all subsequent rows will be moved up and their formulas adjusted. Press [Esc] if you change your mind before completing this operation and want to return to the spreadsheet entry mode.

If you press [P] to select **Part** of the row, you will be requested to enter the coordinates of the last cell in the row you want to erase. Enter this information (or move the cell cursor to this cell) and press [Return] to erase the specified area of the row.

Erasing columns is done in the same manner, with the same options, as rows.

FORMAT

NOTE: If you want to change column width, format a single cell, or fix a column so it will not scroll off the screen, you must position the cell cursor before

pressing Control C *to display the command menu.*

Then, after displaying the command menu, press F to select **Format**. The screen displays:

```
COLUMN WIDTH    GLOBAL FORMAT
CELL FORMAT     WINDOW
```

CHANGING COLUMN WIDTH

Enter C to change the width of a column. The screen displays:

```
SET A COLUMN
SET A GROUP OF COLUMNS
```

Press C to set the width of the column in which the cell cursor is residing. The prompt line then displays:

```
CURRENT WIDTH IS 8. ENTER NEW WIDTH
```

Note that a different width may be displayed if you had changed it at an earlier time. Enter the desired width and press Return . If the width is acceptable, the column will change immediately. If you enter too large or too small a number, an error message will display and you must reenter the width. Acceptable widths for 40 column versions are 2 to 37 columns. Acceptable widths for 80 column systems are 2 to 77 columns.

If you press G to change the width of a group of columns, the screen displays as its first question:

```
SET WIDTH OF HOW MANY COLUMNS TO
THE RIGHT?
```

Enter the desired number and press Return . The remainder of the procedure is identical to that described for changing the width of a single column.

FORMATTING A SINGLE CELL

You cannot change the format of an empty cell with this option.

You must begin by moving the cell cursor to the cell you want to format. Then press Control C, then F F to format a single cell. The screen displays:

```
SELECT FORMAT. PRESS ESC WHEN DONE
      LEFT
      RIGHT          SET DECIMAL POINT
      CENTER
```

Note that if the cell contains text, the **Set decimal point** option does not appear. A greater than symbol (>) points to the currently selected format option.

These three options (left, right, center) let you control how the text and values are displayed in a

cell. You can position the cell contents to the left, center, or right. If the text or value completely fills the cell, you will not notice any difference when you change the cell format. When you press the desired letter (L, R, or C), the check mark moves.

Press S to set the decimal point position. The screen displays:

```
HOW MANY DECIMAL PLACES? IT IS NOW 2.
```

Note that a different number may display if you previously changed this option. Enter the desired number of decimal places (you can use 0, if desired), then press Esc to return to the spreadsheet and see your changes take effect.

GLOBAL FORMATTING

You can format all the cells at once if you wish. It does not matter where the cell cursor is located when you are performing global formatting. Press Control C, then F G to select global formatting. The screen displays:

```
GLOBAL FORMAT
     TEXT
     VALUE
```

You can now enter a T to format all cells containing text. Or, you can enter V to format all cells containing values. In either case, the screen displays:

```
SELECT FORMAT. PRESS ESC WHEN DONE
     LEFT
     RIGHT          SET DECIMAL POINT
     CENTER
```

Note that the SET DECIMAL POINT prompt does not appear when globally formatting text because it does not make sense. The remainder of the procedure for setting global formats is identical to the information for the formatting individual cells, but when you finish, the entire spreadsheet will change.

WINDOWS

You will often use column AA for titles when you create spreadsheets. As you move the cell cursor to the right, the columns on the left scroll off the screen. You must select the column you want to fix before going to the command menu.

Move the cell cursor left or right until the column you want to use as a window is positioned as the leftmost column on the screen. Then press Control C, then F W. The screen then displays:

```
PRESS "W" TO TURN WINDOW ON/OFF
```

The input area displays WINDOW OFF. Press W to turn the window on. The leftmost column

of the screen is now fixed in place and will not move as the rest of the screen scrolls. Note that you cannot place the cursor into this window; however, you can edit any cell in that column by displaying the column in one of the other areas of the screen. As you make entries, they will appear both in the column the cell cursor is in and in the column that is "frozen."

To turn the window mode off, follow the same steps.

GOTO

When you want to go to a distant cell in a large spreadsheet, use the **GOTO** function. Press Control C , then G to select GOTO, then enter the coordinates of the cell to which you want to go, followed by Return . The specified cell will appear in the top left-hand cell on your screen.

INSERT

Move the cell cursor *before* displaying the command menu. Then press Control C, then I. The screen displays:

```
INSERT A :
     ROW
     COLUMN
```

Press R to insert a new **Row**, or C to insert a new **Column** at the current cursor position. You can change the width by using the **FORMAT** command.

NEW

Press N to select **New**. The screen displays:

```
DO YOU WISH TO KEEP THIS SHEET?
```

If you type a Y, the command is aborted and the spreadsheet remains on your screen. If you press N, the screen displays:

```
DO YOU WISH TO START A NEW SHEET?
```

If you type Y, the command is aborted and the spreadsheet remains on your screen. If you press N, the entire spreadsheet clears and you are back to where you were when you first loaded Creative Calc.

This may seem a little foolish making you answer two questions instead of just one. It is a safety precaution to prevent accidentally losing your existing spreadsheet, as you would if you executed the **New** command before **Saving** your existing spreadsheet.

PRINT

Type a P to select **PRINT**. The screen displays:

ENTER TOP LEFT CELL OF PRINT AREA

The coordinates of the current cell cursor position are displayed. If you want to print beginning at that position, press Return . Otherwise, enter (or move the cell cursor to) the desired cell coordinates, then press Return . The screen then displays:

ENTER BOTTOM RIGHT CELL OF PRINT AREA

Again, enter the coordinates of or move the cell cursor to the desired cell, then press Return . If you are using an Apple IIc, the screen then displays a set of parameters which must be set to match your printer:

BAUD RATE 9600 LINEFEED ON
8 DATA 1 STOP BITS PARITY NONE

Pressing B , D , L , or P repeatedly will cycle that respective option through all possible configurations. You do not have to set your printer specifications before loading Creative Calc. Just set each option according to the specifications in your printer/interface card manual. When you have all settings as you want them, press Return .

If you are using any other Apple II computer other than an Apple IIc, the above prompts do not display. Printer configuration parameters are set by jumpers and switches right on the interface card. Instead, the screen displays:

ENTER YOUR PRINTER'S I/O SLOT NUMBER

You must determine the number of the I/O slot in which your printer card is installed, and enter that number, followed by Return .

All computer types now display the remainder of these prompts. The screen now displays:

HOW MANY COLUMNS ON YOUR PRINTER?

Enter the number of columns (usually 80) followed by Return . The screen then displays:

HOW MANY LINES PER PAGE?

Enter the number of lines (usually 66), followed by Return . The screen then displays:

ENTER A TITLE FOR THE PAGE HEADER

Enter whatever title you want. You can use all the editing capabilities just as you did when building your worksheet. You also have the same restriction on length, 119 characters. Also, you should not use a title that exceeds the column width of your printer.

After entering your title, press Return . The printer will start printing the area of the worksheet

you have identified. You can stop the printout at any time by pressing the Esc key.

RECALC

The command menu RECALC command does not turn the Recalc Option on and off (this is done by pressing Control R). Instead, the RECALC command selects how recalculation will be performed—either by row or by column. Press Control C, then R, and the screen displays:

```
RECALCULATE BY
   >ROW
    COLUMN
```

Note the mark in front of ROW . This indicates the currently selected option. Press R or C to select the desired recalculation method. The pointer will move to the specified method. ROW means that Creative Calc will recalculate the values of all formulas in the worksheet row by row, from top to bottom. Recalculation begins at the top left cell and proceeds to the right until it reaches the end of the row. Then, it proceeds to the leftmost cell of the next row. Similarly, if you select COLUMN, recalculation will take place column by column, starting at the top left cell.

The mode you pick depends upon how you have designed your spreadsheet. Formulas in cells should reference other cells that are either to the left or above the cells containing formulas. You will need to give this concept some thought to fully understand it, and you must design your spreadsheets accordingly.

You should arrange things so that when the value for a cell, such as AL,10 is recalculated, all the cells referenced by the formula in cell AL,10 have already been recalculated. If all the referenced cells are in rows above row 10, you can be certain that they have already been calculated *if* you pick ROW mode. If all the referenced cells are in columns to the left of column AL, you can be certain that they have already been recalculated *if* you pick COLUMN mode.

By the way, there are two methods of performing the recalculation. The first is to simply press ! to order an immediate and single recalculation. The other method is to turn on RECALC mode by pressing Control R. The status line on your screen indicates the current setting of RECALC mode. To turn RECALC mode off again, press Control R again.

SAVE

Type an [S] to select **Save**. The prompt line then reads:

```
ENTER THE FIRST LETTER OF A COMMAND
```

and the input buffer displays:

```
SAVE
SPREADSHEET
RESULTS
```

To save the spreadsheet and its underlying formulas so that it can be loaded at a later time, type an [S] to select **Save Spreadsheet**. The screen then displays:

```
ENTER FILENAME
```

Enter a file name of up to 12 characters, then press [Return].

To save only the text or results of the spreadsheet, press [R] to select **Save Results**. The screen then displays:

```
ENTER FILENAME
```

Enter a file name of up to 12 characters, then press [Return]. You will want to save only the results of the spreadsheet when you want to merge the spreadsheet into a Creative Writer document. This is explained more fully in Chapter 6.

OTHER FUNCTIONS

Other functions are:

[Esc]	Backs you out of most functions and lets you reconsider what you are trying to do.
[Control] [R]	Turns RECALC mode on and off.
[Control] [C]	Displays the command menu.

CHAPTER 9
INTEGRATING CREATIVE CALC WITH CREATIVE WRITER

You can take spreadsheets you have constructed with Calc and integrate them directly into documents created on Creative Writer. This is a very straightforward process, and only requires one intermediate step.

The intermediate step is to put a copy of the spreadsheet (the numbers and labels only, not the formulas!) on a disk file so that Creative Writer can read this disk file when printing a document. This operation is called saving the **RESULTS** to disk, and has been explained earlier in the manual. This section describes in more detail what Creative Calc does when the **RESULTS** are saved to disk.

DESCRIPTION OF DISK FILE

When Creative Calc saves the **RESULTS** to disk, the rectangular portion of the spreadsheet that you specify during the **SAVE** command is written to disk.

An ASCII sequential file is written to disk, with a carriage return/line feed sequence added to the end of line in the file. There are no imbedded tabs or any other characters in this file; the file is written on the disk just as it would appear on a printer if it were **PRINT**ed.

WHAT CREATIVE WRITER DOES WITH DISK FILES

Creative Writer has the ability to take an entire **RESULTS** file and place it anywhere in a document. This is done by imbedding the command Control I [filename] at the place in your document you wish the file to appear.

Creative Writer does not actually read the **RESULTS** file into the document (which would waste

precious memory reserved for your document). Rather, when it reaches the imbedded command, it searches the disk for the [filename] and prints the file from the disk. It continues printing this disk file until it reaches the end of file.

While it is printing this disk file, all the formatting commands for your document are kept intact. This means, for example, that if your spreadsheet was 100 characters wide, and your Writer document specifies a width of 65 characters, Writer will truncate the last 35 characters in each row. You'll have to change the format of your document in order to accommodate this.

This integration feature gives you the flexibility to create a spreadsheet, alter it to your satisfaction, and then place it anywhere in a Creative Writer document simply through the intermediate step of placing this spreadsheet on disk. There is no limitation to the width and length of a spreadsheet that can be included in a Creative Writer document.

49

INTEGRATING CREATIVE CALC WITH CREATIVE WRITER

INDEX

APPLE II CREATIVE CALC

COPYRIGHT NOTICE 1984

This manual and the programs included with this manual are the exclusive copyright of Creative Software. Purchase of this software allows the purchaser to use this software only in the application for which it was written. Any duplication of these programs is a violation of federal copyright law and is subject to prosecution.

Apple II Plus, Apple IIe, and Apple IIc are trademarks of Apple Computer, Inc.

90-DAY LIMITED WARRANTY

Creative Software warrants to the original consumer purchaser of this Creative Software program that the medium will be free from defects in material or workmanship for a period of 90 days from the date of purchase. If defective, return the product along with proof of the date-of-purchase, postage prepaid to: Creative Software, P.O.Box 61688, Sunnyvale, CA 94086 for repair or replacement. This warranty shall not be applicable if the defect in the medium has arisen through accident, misuse, or abuse. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

In no event will Creative Software be liable for any special, incidental, or consequential damage resulting from possession, use, or malfunction of this product.

CREATIVE SOFTWARE

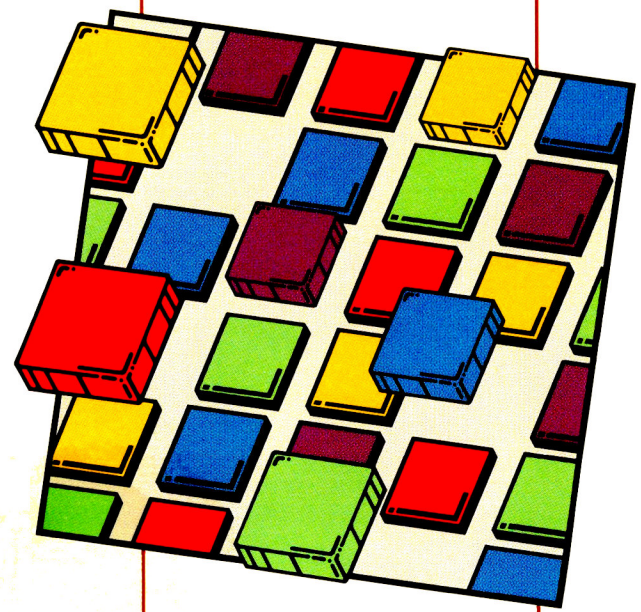
P.O. Box 61688

Sunnyvale, CA 94086

CREATIVE CALC™

Apple II + , IIe, IIc VERSION

SPREADSHEET



The easy-to-use spreadsheet that automates time consuming numerical chores.

CREATIVE SOFTWARE

Quick-Reference Summary of Creative Calc Commands

SIZE: 64 Columns by 255 Rows.
MEMORY AVAILABLE: Bytes Free of RAM for a spreadsheet.

TO START:
1. Place Creative Calc disk in disk drive.
2. Turn on computer; disk will automatically boot up.
3. When selection menu is displayed, enter the number corresponding to your equipment configuration and press RETURN.

TO BRING UP THE COMMAND MENU:
Type CTRL C.

TO ABORT THE CURRENT COMMAND:
Type ESC.

Note: To implement most commands , or select submenu options, you usually type the first letter of the command or option.

CONTROL KEYS AND FUNCTION

Ctrl O, ↓	■ Moves Cell Cursor up and down.
Ctrl J, K	■ Moves Cell Cursor left and right.
ESC	■ Aborts current command.
Ctrl G	■ Puts Cell Cursor at cell 1,1.
Ctrl T	■ Puts Cell Cursor at top left cell on screen.
Ctrl I, TAB	■ Inserts a space before current character in edit buffer.
Ctrl D, DELETE	■ Deletes current character from edit buffer.
RETURN	■ Enters content of edit buffer into current cell.
Ctrl C	■ Brings up command menu.
Ctrl W	■ Moves cursor up 1 page.
Ctrl R	■ Recalc toggle ON/OFF.
Ctrl Z	■ Moves cursor down 1 page.
←	■ Moves edit cursor left 1 character.
Ctrl A	■ Moves cursor left 1 page.
→	■ Moves edit cursor right 1 character.
Ctrl S	■ Moves cursor right 1 page.

All of the following commands are initiated by first typing CTRL C.

COMMANDS

COPY

Area: Enter top left and bottom right of area to copy from; then the top left corner of the area to copy to.
Rows: Enter last cell in the row to copy from; current cell is the first. Then enter the last row to be copied to.
Columns: Enter last cell in column to be copied; current cell is first. Then enter the last column to copy to.
During any copy you will be asked how to adjust any cell references encountered during the copy.
Adjust All: All cell references are adjusted.
Adjust None: No cell references are adjusted.
Adjust Individually: You will be asked each time a cell reference is encountered if it should be adjusted.

DISK

Brings up the disk directory. The cursor can be moved to select a file to load or scratch. A disk may be initialized or load another directory.

ERASE

This cell: Erases contents of current cell.
Row: Erases all or part of a row. If all, then the rows below it are moved up and all cell references are adjusted.
Column: Erases all or part of a column. If all, then the columns to the right are moved left and all cell references are adjusted.

FORMAT

Column Width: One or a group of columns may have their widths set from 2 to 33 characters wide. (or 2 to 77, with 80 columns).
Cell Format: You may specify how a cell will be displayed; left, right, or center justified. A value may have 0 to 12 decimal places.
Global: You may select how text and values will be displayed over the entire sheet. A cell that has had its format set earlier will not be affected.
Window: A vertical window into the sheet may be opened. The window will be the left-most column on the screen when the window is turned on. The window will scroll up and down, aligned with the rest of the sheet.

GO TO

Lets you move to any cell in the sheet. Type in the cell coordinates you wish to GO TO and press RETURN.

INSERT

Inserts a row or column into the sheet. Automatically adjusts references to affected rows and columns.

LOAD

Brings up disk directory, then the cursor is used to select the file to load. If it is not a spreadsheet, an error message will be displayed and the sheet cleared.

NEW

Clears the sheet.

PRINT

Outputs an area of the spreadsheet to your printer. Lets you specify type of printer, number of columns, and page header. If no header is given, no margin at the top or bottom of the page is allotted. Otherwise there will be a top and bottom border.

QUIT

Puts you back to the operating system.

RECALC

Selects mode of recalculation, by row or column.

SAVE

Saves a sheet to disk. Can be saved as either a working file to be reloaded later or as a text file that can be transferred to the word processor.

The exclamation mark (!) does an immediate recalculation of the entire spreadsheet.

MATH FUNCTIONS

All math functions except x↑y must be preceded by a "@."

@SIN(ARG)	Sine
@COS(ARG)	Cosine
@ATN(ARG)	Arctan
@EXP(ARG)	10↑x
@LOG(ARG)	Log Base 10
@SUM(CC,RRR>	
CC.RRR)(ARG)	Adds values in rows or columns.
@ABS(ARG)	Absolute value of X. X must be in parentheses.
X↑Y(ARG)	X raised to the Y power.