

MicroSpread

Spreadsheet for the CPC464

Soft 1012

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**IF YOU ARE GOING TO RUN MICROSPREAD
WITHOUT READING THE MANUAL PLEASE AT
LEAST READ GETTING STARTED ON PAGE 1.1
FIRST.**

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1. Overview

1.1 Getting Started

1. *MICROSPREAD* runs under CP/M not AMSDOS so first make sure you have loaded CP/M into your computer. if you are unsure as to how to do this consult first steps using the cp/m disc of your AMSTRAD DDI disk drive manual.
2. If you haven't already done so for goodness sake make a security copy of your *MICROSPREAD* disk. See APPENDIX A of this manual if you need details of how to do this. Your copy of *MICROSPREAD* is on a vendor format disc.
3. Put a working disk containing the *MICROSPREAD* programs into the disk drive and type.

SPREAD [ENTER]

4. A spreadsheet of the default size will be set up for you so press the **[SPACE BAR]** to start the program. If you want to change the number of ROWS and COLUMNS or to start a new protected worksheet use the **NEW** command by pressing the **[CTRL]** and **N** keys at the same time.
5. For a list of the **COMMANDS** available to you press **[CTRL]** and **H** or to enter DATA onto the sheet simply start typing.
6. If you are using *MICROSPREAD* for the first time do yourself a favour and work through the examples in this manual.
7. If you are an experienced spreadsheet user please refer to APPENDIX B. There are some differences between *MICROSPREAD* and some other spreadsheet which you should know about. If you haven't used other spreadsheet programs then ignore APPENDIX B.

1.2 Introduction

MICROSPREAD is a disk based spreadsheet program for your Amstrad CPC464 microcomputer and DDI 3 inch disk drive. The program runs under the CPM operating system supplied with your disk drive - it will **NOT** run under AMSDOS.

Before you do anything else please make at least one back up copy of *MicroSpread* then put the original disk somewhere safe. We strongly recommend that you only use the original disk for the purpose of making working copies.

The *MICROSPREAD* program comprises 54K of machine code and can handle data files of approximately 14K. So how does a total of 68K of program and data fit into the 38.5K of free space available on the CPC464 when running the CPM operating system. The answer is the use of **OVERLAYS** - the name given to storing parts of your program on disk and only reading them into the computer when those parts are needed (**OVERLAYING** the program segment which were already there).

By using overlays it is possible to run a much larger and more powerful program into a given space than would otherwise be the case. There are, however, several points which arise from this form of design which you should be aware of:

- 1) if you are using a **SINGLE** disk system then both the **PROGRAMS** and **DATA FILES** must be on the same disk.
- 2) once you have started the program running you **MUST NOT** remove the disk from the drive(s) until you **QUIT** or you could lose your valuable data.
- 3) as the program runs you will occasionally hear the disk drive running as program segments are loaded when needed.
- 4) the program can **NEVER** be run as a cassette based program even if you transfer all the overlay files to cassette.

If you want to draw graphs and charts of the data in your worksheets then the *MICROGRAPH* program will read any files which you generate using *MICROSPREAD*. Similarly if you already own the *MICROGRAPH* program then you can *MICROSPREAD* will be able to use your existing data files.

2. Hints, Tips, Do's & Dont's

- DO** work through the written examples at the keyboard of your computer as this will quickly familiarise you with the commans and structure of *MICROSPREAD*.
- DO** make regular back up copies of your data disks (see APPENDIX A for precise instructions on how to do this). Remember disks are cheap - your time isn't.
- DON'T** keep your back up copies with the originals.
- DON'T** expose your disks to
HEAT
MOISTURE
MAGNETS
STICKY FINGERS
- DON'T** Close the write protect hole shutter on the original program disc.
- DO** plan out your worksheets before starting work at the keyboard. Remember that creating worksheets and spreadsheets is a process akin to PROGRAMMING and is most successful following som thought and careful planning.
- DON'T** Remove your disk from the drive after loading the program until you exti using QUIT. This could result in a program crash or loss of data.
- DON'T** Turn off the power to the computer or disk drive whilst the program is running or with a disk still in the drive.
- DO** Make sure that your disk has enough room to store any NEW spreadsheet file you may create BEFORE you start an important new worksheet. If the disk basn't enough room then you could lose data. Note - a full size spreadsheet uses about 15K of disk.

3. Practical Examples

A good way to illustrate the features of *MICROSPREAD* is by example. There are two very different example worksheets saved on your main distribution disk. Please take some time to examine each one as part of your familiarisation with *MICROSPREAD*, remember to use a **WORKING COPY** only. The examples have been saved using the filenames **DEMO1** and **DEMO2**, and the passwords used were **PASS2** for level two and **PASS1** for level one.

The examples cover two different aspects of problem solving using a spreadsheet:

DEMO1 shows how you can use *MICROSPREAD* to mix text with calculations to form a complex letter.

DEMO2 demonstrates the classic use of a spreadsheet in planning business results.

Although the sample worksheets are quite different in concept the general approach to building each sheet is exactly the same. There are five distinct steps -

- 1) Plan out the worksheet using a pencil and paper - this helps to ensure that your sheet will fit within the space available **BEFORE** you spend several hours typing it in and that no major sections are left out.
- 2) Initialise your worksheet using **NEW** - because *MICROSPREAD* also **SAVES** your blank worksheet at this stage you can be sure that there is sufficient disk space to store the finished worksheet.
- 3) Type in **ALL** the text. You then have a framework to which you can relate when entering data and formulae.
If necessary you can **MOVE** or **COPY** blocks of cells and save a lot of time as against retyping identical text.
- 4) Enter your formulae and data.
- 5) Test the spreadsheet you have just created to make sure that it produces the results that you designed it to do.

Step 5 is **VERY IMPORTANT** as it is very easy to be misled by a worksheet which has a subtle error in it, and disastrous results could occur if you made a wrong investment decision with, say, your life savings because of such an error.

It is also important that you **SAVE** your worksheets at frequent intervals while you are developing them. Although power cuts etc happen infrequently it can be very frustrating to have to re-enter a whole sheet which has been lost after several hours work. Because you are using a fast disk based system **SAVING** your worksheet only takes a few seconds so **DO IT REGULARLY**.

Lets' now take a look at the demonstration worksheets. DEMO1 is a letter from a stockbroker to a client advising him to sell his holding of a particular share. You can see the formula structure by examining the FORMULA MAP printout. The basic principles are:

- a) $\text{VALUE OF HOLDING} = \text{UNITS HELD} * \text{UNIT PRICE.}$
- b) $\text{PROJECTED VALUES} = \text{TREND OF PREVIOUS VALUES.}$
- c) $\text{INDEX} = \text{CURRENT PRICE} / \text{BASE PRICE} * 100$

MICROSPREAD makes it easy for you to mix text, data and calculations in this way -whereas with a traditional spreadsheet this is very difficult.

DEMO2 shows *MICROSPREAD* being used to solve the sort of proble traditionally associated with spreadsheet programs. This worksheet contains three very similar blocks of CELLS.

- 1) a block contining a QUARTERLY PROFIT PLAN
- 2) a block containing the LATEST FORECAST using the same formt.
- 3) a block containing a variance analysis - the difference between the LATEST FORECAST and the original PLAN.

Because the text contents of each block is so similar most of the text was typed in only once. The other two blocks were generated using BLOCK COPY thus saving a considerable amount of time. Note also that as the year proceeds it will be desirable to "FREEZE" the results in the FORECAST block where the figures are known and no longer need to be recalculated. This can be done by KILLING the ALLOCATION of FORMULAE to those CELLS so that they will be unaffected by any further recalculations.

Please experiment with these demonstration worksheets as part of your familiarisation with *MICROSPREAD*. Doing so will strengthen your knowledge of both the program and spreadsheets generally.

MR. J. Smith,
 21, Any Street,
 Somewhere,
 Over the Rainbow.
 Dear Mr Smith,

I have been reviewing the performance of your investments over the last few months and would like to draw your attention to ABC123 Plc. As you will see from the figures below this particular share has performed significantly worse than the market average.

Currently your holding in this security is 775 units.

	UNIT PRICE	VALUE OF HOLDING	INDEX OF ABC123	MARKET INDEX
	=====	=====	=====	=====
JULY	3.21	2488	100	100
AUGUST	3.05	2364	95	104
SEPTEMBER	2.64	2046	82	109
OCTOBER	2.80	2170	87	107
NOVEMBER	2.63	2038	82	112
DECEMBER (PROJECTED)	2.44	1893	76	115
JANUARY (PROJECTED)	2.35	1818	73	116

I think that this analysis clearly shows that you would be advised to consider selling this holding and moving the funds into a security with some better prospect of capital growth. Please contact me at your earliest convenience with your instructions.

Yours faithfully,
 F. Bloggs. Partner.

DEMO 1

MR. J. Smith,
 21, Any Street,
 Somewhere,
 Over the Rainbow.
 Dear Mr Smith,

I have been reviewing the performance of your investments over the last few months and would like to draw your attention to ABC123 Plc. As you will see from the figures below this particular share has performed significantly worse than the market average.

Currently your holding in this security is 775 units.

	UNIT PRICE	VALUE OF HOLDING	INDEX OF ABC123	MARKET INDEX
	=====	=====	=====	=====
JULY	3.21	FORM 02	FORM 03	100
AUGUST	3.05	FORM 02	FORM 03	104
SEPTEMBER	3.64	FORM 02	FORM 03	109
OCTOBER	2.80	FORM 02	FORM 03	107
NOVEMBER	2.63	FORM 02	FORM 03	112
DECEMBER (PROJECTED)	FORM 01	FORM 02	FORM 01	FORM 01
JANUARY (PROJECTED)	FORM 01	FORM 02	FORM 01	FORM 01

I think that this analysis clearly shows that you would be advised to consider selling this holding and moving the funds into a security with some better prospect of capital growth. Please contact me at your earliest convenience with your instructions.

Yours faithfully,
 F. Bloggs. Partner.

DEMO 1-Formula Map

BLOGGS & CO LTD.

PROFIT PLAN 1985

	1ST QTR	2ND QTR	3RD QTR	4TH QTR	TOTAL
SALES	50000	65000	75000	35000	225000
GROSS MARGIN %	22.50	25.00	24.75	18.50	
GROSS PROFIT	11250	16250	18562	6475	52537
OVERHEADS					
Rent & rates	2500	2500	2500	2500	10000
Head & light	2000	1000	750	1500	5250
Motor expenses	1000	1000	1000	1000	4000
Insurance	1250	1250	1500	1500	5500
Wages	4000	4500	4800	3750	17050
Sundries	500	500	500	500	2000
TOTAL OVERHEADS	11250	10750	11050	10750	43800
NET PROFIT	0	5500	7512	-4275	8737
%	0.00	8.46	10.02	-12.21	3.88

BLOGGS & CO LTD.

1985 LATEST FORECAST

	1ST QTR	2ND QTR	3RD QTR	4TH QTR	TOTAL
SALES	75000	82000	90000	47000	294000
GROSS MARGIN %	22.50	25.00	24.75	18.50	
GROSS PROFIT	16875	20500	22275	8695	68345
OVERHEADS					
Rent & rates	2500	2500	2500	2500	10000
Heat & light	2000	1000	750	1500	5250
Motor expenses	1000	1000	1000	1000	4000
Insurance	1250	1250	1500	1500	5500
Wages	4000	4500	4800	3750	17050
Sundries	500	500	500	500	2000
TOTAL OVERHEADS	11250	10750	11050	10750	43800
NET PROFIT	5625	9750	11225	-2055	24545
%	7.50	11.89	12.47	-4.37	8.35

DEMO 2

BLOGGS & CO LTD.

VARIANCE PLAN V ACTUAL

	1ST QTR	2ND QTR	3RD QTR	4TH QTR	TOTAL
SALES	25000	17000	15000	12000	69000
GROSS MARGIN %	0.00	0.00	0.00	0.00	0
GROSS PROFIT	5625	4250	3712	2220	15807
OVERHEADS					
Rent & rates	0	0	0	0	0
Head & light	0	0	0	0	0
Motor expenses	0	0	0	0	0
Insurance	0	0	0	0	0
Wages	0	0	0	0	0
Sundries	0	0	0	0	0

TOTAL OVERHEADS	0	0	0	0	0
=====					
NET PROFIT	5625	4250	3712	2220	15807
%	7.50	3.43	2.46	7.84	4.47

DEMO 2-continued

COMMAND

AMEND a FORMULA

ACTIVATED BY [CTRL]A

ACTION Allows you to change an existing formula by re-entering it. This is useful where a formula, as originally entered, is no longer required, and can be changed to reflect the new circumstances. It is also necessary to correct mistakes.

EXAMPLE	KEYSTROKES	COMMENTS
	[CTRL]A	Invokes AMEND.
	12[ENTER]	Amend formula number 12
	Y	Confirms that the formula displayed is the one to be amended. Enter new formula as for the ENTER FORMULA procedure on page.

NOTES

1. All cells which contain the chosen formula will give results according to the amended formula NOT the original formula.
2. This command is not available to level one users.

COMMAND

BLOCK commands.

ACTIVATED BY [CTRL]B

ACTION

Many commands can be made to work throughout a defined rectangular BLOCK of cells. The BLOCK may be as small as one cell or as large as the whole spreadsheet. To define a block you must FIX the TOP LEFT HAND CORNER and the BOTTOM RIGHT HAND CORNER of the rectangle. FIXing is achieved by placing the CURSOR in the cell to be FIXED then pressing the [ENTER] key.

NOTES

1. Commands which may operate on a BLOCK of cells are:-

[CTRL] B A	Allocate formula to cell.
[CTRL] B C	Copy cells.
[CTRL] B D	Display Distribution.
[CTRL] B E	Erase cells.
[CTRL] B F	Format cells.
[CTRL] B K	Kill allocation.
[CTRL] B M	Move cells.
[CTRL] B P	Protect cells.
[CTRL] B U	Unprotect cells.
[CTRL] B Z	Zero cells.

2. Block commands are not available to LEVEL ONE users.

COMMAND

BLOCK ALLOCATE

ACTIVATED BY [CTRL] BA

ACTION

ALLOCATES a given formula to all the cells in a user defined block. Thus the command works in the same way as ALLOCATE ([CTRL] A) but over a wider area which you control. This facility is useful when you need to use the same FORMULA repetitively over part of a spreadsheet. (See the SHARE PORTFOLIO VALUATION example on page).

COMMAND

BLOCK COPY

ACTIVATED BY [CTRL] BC

ACTION

Copies a user defined BLOCK of CELLS to a chosen area of the spreadsheet leaving the original BLOCK intact. The COPY is completed in that TEXT, VALUES, FORMAT and FORMULAE are reproduced in the BLOCK. If you want different formulae to apply in the new BLOCK then you must amend the ALLOCATION using BLOCK ALLOCATE or BLOCK KILL as appropriate.

COMMAND

BLOCK DISTRIBUTION

ACTIVATED BY [CTRL] BD

ACTION

Shows you the DISTRIBUTION of your FORMULAE over the CELLS of a chosen BLOCK. In order to do this the program enters a special MAPPING MODE which allows the DISTRIBUTION to be shown (whether on the screen or not) whilst leaving your values intact. Whilst in the MAPPING MODE you cannot edit TEXT or values, but certain commands (eg PRINT) will work allowing you to print MAPS of your spreadsheet. You can turn off the MAPPING MODE using [CTRL] 0.

COMMAND

BLOCK ERASE

ACTIVATED BY [CTRL]BE

ACTION

ERASES the contents of all the CELLS throughout a user defined BLOCK. This process sets all those CELLS to the original state when the program was first loaded i.e.

TEXT of 9 spaces
FORMAT 0 decimal places
VALUE of 0
NO FORMULA active in the CELL

This command should be used with care as its effects cannot be easily reversed.

COMMAND

BLOCK FORMAT

ACTIVATED BY [CTRL]BF

ACTION

Performs the FORMAT command (see page 4.9) on every CELL in a user defined BLOCK. This eliminates the need for you to set each CELL format individually.

COMMAND

BLOCK KILL

ACTIVATED BY [CTRL]BK

ACTION

Performs the KILL command (see page 4.13) on each CELL in a user defined BLOCK. The ALLOCATION of FORMULAE throughout the BLOCK is cancelled so that the CALCULATE command will no longer affect those CELLS. NOTE, however, that the FORMULAE themselves are unaffected by KILL.

COMMAND

BLOCK MOVE

ACTIVATED BY [CTRL]BM

ACTION A user defined BLOCK of CELLS is COPIED to a chosen new location and then the original area occupied by those cells is ERASED. The copy action is complete in that TEXT, VALUES, FORMAT and FORMULA ALLOCATION are all MOVED. The CELLS originally occupied will be left completely blank with no FORMULAE or VALUE. The MOVE may be made in ANY direction and the new BLOCK location may overlap the original. You should ensure that FORMULAE still work as intended after the MOVE or you may get some strange results.

COMMAND

BLOCK PROTECT

ACTIVATED BY [CTRL]BP

ACTION Performs the PROTECT command (see page 4.19) on every CELL in a user defined BLOCK. Those CELLS are then accessible only to LEVEL TWO users until the PROTECTION is removed by the UNPROTECT command.

COMMAND

BLOCK UNPROTECT

ACTIVATED BY [CTRL]BU

ACTION Performs the UNPROTECT command (see page 4.22) on every CELL in a user defined BLOCK. This reverses the effects of PROTECTION and allows access to those CELLS by LEVEL ONE users.

COMMAND

BLOCK ZERO

ACTIAVED BY [CTRL]B Z

ACTION Performs the ZERO command (see page 4.22) on every CELL in a user defined BLOCK. FORMAT and FORMULA active in the CELL are unaffected by ZERO.

COMMAND

CALCULATE

ACTIVATED BY [CTRL]C

ACTION Calculates the formula within the spreadsheet and inserts the resulting values into the appropriate cells. If new values have been entered onto the sheet since the last CALCULATE command then the sheet will be updated.

EXAMPLE

KEYSTROKES

COMMENTS

[CTRL]C

Invokes CALCULATE.

New values are displayed.

NOTES

1. CALCULATE operates over the whole sheet.
2. The calculation of the worksheet is from left to right and top to bottom. Because of this ensure that any forward referencing is to cells whose state is predictable, otherwise the results of calculation might not be those expected.

COMMAND

CHANGE COLOURS

ACTIVATED BY [CTRL]W

ACTION Changes the colour of the Border, Ink on Paper to the phsical colour required. Terminate the display by pressing Q.

EXAMPLE

KEYSTROKES

COMMENTS

B

Change Border colour

8[ENTER]

Select colour 8 (Bright Magenta)

Q

Return to 'READY' state

COMMAND

DISPLAY formulae

ACTIVATED BY [CTRL]D

ACTION

Displays, in sets of ten, the formulae which you have entered. You can display the next set by pressing + or the previous set by pressing -. Terminate the display by pressing Q (quit). Pressing P will print the formulae currently displayed onto your printer.

COMMAND

Enter VALUE

ACTIVATED BY [CTRL]V

ACTION

If a numeric value is to be used in calculations (as opposed to a title or a date) then it must be entered using the VALUE command. The cell into which the value is entered becomes a NUMERIC cell and cannot contain text. Similarly VALUES cannot be edited so to change a VALUE you must re-enter the number using [CTRL]V.

EXAMPLE

KEYSTROKES

COMMENTS

[CTRL]V

Invokes VALUE enter.

123.456 [ENTER]

Enters the VALUE 123.456 into CELL BA10. Note that if the cell is FORMATTED to, say, 0 decimal places only 123 will be displayed even though 123.456 is stored.

NOTES

1. The ERASE command would convert a NUMERIC CELL back into a TEXT CELL.

COMMAND

ERASE

ACTIVATED BY [CTRL]E

ACTION

Resets the cell under the cursor to its original state i.e.

1. text is 9 blank spaces
2. numeric value of zero
3. no formula active.

This command may also be used over a user defined block (see BLOCK COMMANDS - page)

EXAMPLE

KEYSTROKES

COMMENTS

Move cursor to cell which is to be ERASED.

[CTRL]E

Invokes ERASE command and erases cell contents.

Y

Confirms that you want to erase the CELL.

[ENTER]

Returns you to the "READY" state.

NOTES

1. This command will only work for level one users in an UNPROTECTED CELL.
2. If you press N when asked "Are you sure you want to erase?" control returns to the READY state leaving your data intact.

COMMAND

FORMAT

ACTIVATED BY **[CTRL]G**

ACTION Allows you to fix the number of decimal places to which any value appearing in the cell will be displayed. You can choose any number of decimal places between 0 and 8. The format will only be set for the cell under the cursor when the command is invoked but **FORMAT** has a **BLOCK** counterpart (see page 4.4).

EXAMPLE	KEYSTROKES	COMMENTS
		Move the cursor to the cell to be FORMATTED .
	[CTRL]G	Invokes FORMAT command
	2[ENTER]	Format this cell to 2 decimal places.
	[ENTER]	Return to "READY" state.

NOTE

1. You can change the format of a cell at any time by re-using the command.
2. The default format is zero decimal places.
3. Formatting a cell containing text has no effect.

COMMAND

FORMULA enter

ACTIVATED BY [CTRL]F

ACTION Prompts you to enter the parameters for a FORMULA and enters the formula into the CELL where the results are to be displayed. The precise pattern varies with the function of the formula - a full list is on the following page.

EXAMPLE

KEYSTROKES

COMMENTS

[CTRL]F Invokes enter a FORMULA command.

\$(ie SHIFT 2) The formula is to calculate a SUM. Use CURSOR KEYS to move the CURSOR to CELL AC20. FIXes AC20 as the CELL containing the RESULT of the calculation.

[CTRL]JAC1 [ENTER] JUMP to cell AC1. FIX start at AC1.

R This is a RELATIVE cell reference.

[CTRL]JAC15 [ENTER] JUMP to cell AC15. FIX finish of SUM calculation at CELL AC15.

R This is a relative cell reference.

This FORMULA reads AC20=AC1 \$ AC15 which means add up the values in all the CELLS AC1 to AC15 inclusive and put the answer in AC20. Because formulae are re-usable and both parameters are RELATIVE this one could be allocated to CELL AD20 to mean SUM AD1 through to AD15 and put the result in AD20.

NOTES

1. Formulae are re-usable.
2. If you enter a formula which is a duplicate of an existing formula then the original formula will be used.
3. RELATIVE and ABSOLUTE cell references may be mixed in the same formula.

4. When the CURSOR enters a CELL any formula allocated to that cell will be displayed below the SPREADSHEET. The formula will be shown in the ABSOLUTE form as it relates to the current CELL.

FORMULA FUNCTION	KEY	PARAMETERS
ARCCOS	C	Res = ARCCOS Cell 2
ARCSIN	S	Res = ARCSIN Cell 2
ARCTAN	T	Res = ARCTAN Cell 2
ADD	+	Res = Cell 1 + Cell 2
SUBTRACT	-	Res = Cell 1 - Cell 2
MULTIPLY	*	Res = Cell 1 * Cell 2
DIVIDE	/	Res = Cell 1 / Cell 2
PERCENT RATE	%	Res = Cell 1 * 100 / Cell 2
PERCENT OF	P	Res = Cell 1 / Cell 2 * 100
SUM	\$	Res = SUM Cell 1...Cell 2
TREND	X	Res = TRENDLINE Cell 1...Cell 2
HI	H	Res = HIGHVALUE Cell 1...Cell 2
LO	L	Res = LOWVALUE Cell 1...Cell 2
RANGE	R	Res = HI-LO Cell 1...Cell 2
MEAN	M	Res = MEAN Cell 1...Cell 2

An error message will be generated if the cells in the linear functions (SUM, TREND, HI, LO, RANGE, MEAN) do not all lie in the same ROW and COLUMN.

COMMAND

JUMP

ACTIVATED BY **[CTRL]J**

ACTION Allows you to direct the **CURSOR** to any cell on the spreadsheet without using the usual cursor direction keys. This facility is useful when you want to move to a cell some considerable distance away from your current position.

EXAMPLE	KEYSTROKES	COMMENTS
	[CTRL]J	Invokes JUMP command
	BB	New column is BB
	14[ENTER]	New row is 14

NOTES

1. The **JUMP** command is available when using the cursor to “point” to a cell during formula enter and when using the **BLOCK** commands.
2. If you enter an invalid row or column then the entry will be ignored and you will be prompted to enter the value again.

COMMAND

KILL

ACTIVATED BY **[CTRL]K**

ACTION If the cell under the CURSOR has a formula allocated to it then tht allocation is cancelled (ie KILLED). The formula is not affected and will continue to work in any other cell where it hs been allocated. KILLing a formula is a useful way of “freezing” a value within the spreadsheet.

EXAMPLE	KEYSTROKES	COMMENTS
		Move the cursor to the cell where the formula allocation is to be KILLED.
	[CTRL]K	Invokes KILL command
	Y	Answers YES to “ARE YOU SURE YOU WANT TO KILL?”
	[ENTER]	Returns you to the “READY” state.

NOTES

1. This command will only work on an UNPROTECTED CELL if you are a LEVEL ONE user.
2. The KILL command has a BLOCK counterpart.

COMMAND

LOAD

ACTIVATED BY [CTRL]L

ACTION Loads a previously SAVED spreadsheet from DISK into your computer. After loading you will be prompted to enter your password which will determine whether you are a LEVEL ONE or LEVEL TWO user. More than three unsuccessful attempts at entering the password will abort the program.

EXAMPLE

KEYSTROKES

COMMENTS

[CTRL]L

Invokes LOAD command.

Y

Answers YES to "ARE YOU SURE?" prompt (N returns you to the current spreadsheet).

FRED [ENTER]

Filename is FRED.

ABC1 [ENTER]

PASSWORD is ABC1.

Y

Answers YES to "DO YOU WANT TO CHANGE PASSWORD?"

DEF2 [ENTER]

New PASSWORD is DEF2.

You can now proceed to work with the new spreadsheet.

NOTES

1. This command clears any data held in the spreadsheet at the time it is invoked.
2. Please note that the password system is case sensitive and that a password of "ABC123" is not the same as "abc123".

COMMAND

MAP OFF

ACTIVATED BY **[CTRL]O**

ACTION Turns OFF the formula mapping mode so that normal text editing and entry of numbers may be resumed.

EXAMPLE	KEYSTROKES	COMMENTS
	[CTRL]O	Invokes MAP OFF
	[ENTER]	Returns you to the "ready" state.

NOTES 1. The MAP OFF is automatically turned off by the CALCULATE, and ENTER VALUES commands.

COMMAND

MENU of commands

ACTIVATED BY [CTRL]H

ACTION Displays on the screen the complete selection of available commands. You can return to the READY state by pressing [ENTER].

COMMAND

NEW

ACTIVATED BY [CTRL]N

ACTION Creates a new spreadsheet which conforms to the specifications which you enter:

1. number of rows
2. number of columns
3. spreadsheet name
4. LEVEL TWO PASSWORD
5. LEVEL ONE PASSWORD

A new file is created on the disk.

EXAMPLE

KEYSTROKES

COMMENTS

[CTRL]N	Invokes NEW command
Y	Answers YES to "ARE YOU SURE?"
20 [ENTER]	There are 20 rows
25 [ENTER]	There are 25 columns
FRED [ENTER]	Spreadsheet name is FRED
ABC1 [ENTER]	LEVEL TWO PASSWORD is ABC1
DEF2 [ENTER]	LEVEL ONE PASSWORD is DEF2.

You can now start to work with the new spreadsheet.

NOTES

1. A password may contain up to nine characters.
2. Please note that the password system is case sensitive and that a password of "ABC123" is not the same as "abc123".

COMMAND

PRINT

ACTIVATED BY [CTRL]P

ACTION Prints an area of the spreadsheet onto your printer. You define the area as a rectangular block using the CURSOR to point to the TOP LEFT CORNER and BOTTOM RIGHT CORNER of the BLOCK. There is no limit to the length of report but the width is limited to the maximum width of your printer.

EXAMPLE	KEYSTROKES	COMMENTS
	[CTRL]P	Invokes PRINT command
	80 [ENTER]	Maximum printer width is 80 characters.
	N	Answers NO to "DO YOU WANT TO USE CONDENSED CHARACTER PRINTING"
	[ENTER]	Use the CURSOR keys to position the cursor then press ENTER -this defines the TOP LEFT CORNER.
	[ENTER]	Define BOTTOM RIGHT CORNER
	[ENTER]	Press enter when paper is aligned and printer is ready.
	[ENTER]	When printing is finished press [ENTER] to return to "READY" state.

NOTES

1. If you are using an AMSTRAD DMP1 printer then you should answer 80 to the prompt ENTER MAXIMUM PRINTER WIDTH -If you exceed a very untidy report. Please note also that the DMP1 does NOT support condensed printing.

2. If you are using an EPSON compatible printer then you can invoke **CONDENSED CHARACTER PRINTING** from within the spreadsheet. This will normally give the following maximum widths -
10 inch carriage 120 characters
15 inch carriage 233 characters
and these are the figures which should be entered to the prompt **ENTER MAXIMUM PRINTER WIDTH**.

If your printer has other character pitch options then in order to use these you must set up your printer using the appropriate codes **BEFORE** running MicroSpread. When you do this **ALWAYS** answer **NO** to **CONDENSED PRINTING**.

COMMAND

PROTECT a cell

ACTIVATED BY [CTRL]Y

ACTION Designates a CELL as one which may only be accessed by a LEVEL TWO user. This allows you to PROTECT the contents of a cell from accidental or deliberate alteration unless you, as the creator of the spreadsheet, desire it.

Such a facility is useful where, say, price quotations are being prepared and you wish to prevent unauthorised changes to key prices or rates.

EXAMPLE

KEYSTROKES

COMMENTS

[CTRL]Y

Move the cursor to CELL AD3.

Invokes PROTECT command

Returns you to the READY state.

Cell AD3 may now be changed by LEVEL TWO USERS only.

NOTES

1. The PROTECT command has a BLOCK counterpart.
2. Protection may be removed only by a LEVEL TWO user with the UNPROTECT command.

COMMAND

QUIT

ACTIVATED BY [CTRL]Q

ACTION Terminates execution of the program. The current spreadsheet will be lost unless it has previously been **SAVED**. So that you do not inadvertently **QUIT** and lose your data you will be prompted by "ARE YOU SURE". If you press **Y** then the **QUIT** command will work. Press **N** to return to the spreadsheet.

COMMAND

REPLICATE

ACTIVATED BY [CTRL]R

ACTION Reproduces the text content of the cell immediately to the left of the cursor. The value of the cell and any formula will be **REPLICATED** along with the cell **FORMAT** and **TEXT** content.

EXAMPLE

KEYSTROKES

COMMENTS

Position cursor in cell AA1

Enter ----\$----

[CTRL]R

---\$--- appears in cell AA2

[SHIFT]→

to move the cursor to next cell

[CTRL]R

---\$--- appears in cell AA3

NOTES

1. The **REPLICATE** command obviously will **NOT** work when the **CURSOR** is in column **AA** because there is no cell to the left.

COMMAND

SAVE

ACTIVATED BY

[CTRL]S

ACTION

Saves your spreadsheet and formulae onto disk under the current filename.

EXAMPLE

KEYSTROKES

COMMENTS

[CTRL]S

Invokes SAVE command

[ENTER]

Returns you to the "READY" state.

NOTES

1. If you are saving a sheet which has been constructed WITHOUT using NEW you will be prompted for a filename before the SAVE is carried out. Under these conditions the passwords will both be AMSTRAD until you change them.

COMMAND

TITLES lock

ACTIVATED BY

[CTRL]T

ACTION

LOCKS the current top two screen rows and left two screen columns onto the screen. This action allows column and row titles to remain on the screen as it scrolls. Behaving as separate windows and LOCKED row and columns scroll only when necessary to maintain the correct relationship between the titles and data. You can release the TITLES LOCK by pressing [CTRL]T again.

EXAMPLE

KEYSTOKES

COMMENTS

Position the screen WINDOW so that CELL AD4 is at the top left of the screen.

[CTRL]T

Columns AD and AE plus rows 4 and 5 are LOCKED as TITLE ROWS.

NOTE

1. The titles rows and columns need NOT be columns AA and AB or rows 1 and 2 of the spreadsheet.

COMMAND

UNPROTECT

ACTIVATED BY [CTRL]U

ACTION Reverses the effect of the PROTECT command on a CELL and makes it accessible by LEVEL ONE users. The command has no effect if you had not previously PROTECTED the CELL.

NOTE

1. This command has a BLOCK counterpart.
2. This command may only be invoked by a LEVEL TWO user.

COMMAND

ZERO

ACTIVATED BY [CTRL]Z

ACTION Sets the VALUE of the CELL currently occupied by the CURSOR to ZERO. Any FORMULA or FORMAT associated with the CELL are unaffected by the command. ZERO also has a BLOCK command counterpart.

Glossary of Terms

- ABSOLUTE** Cell reference.
In a FORMULA an absolute cell reference always points to the same CELL on the spreadsheet, even if the FORMULA is ALLOCATED to another cell under the MicroSpread system of re-using FORMULAE.
- ALLOCATE** When a FORMULA is created it will automatically be allocated to the results CELL. However the FORMULA may be re-used so that the results of the calculation also appear in other cells. This process is called ALLOCATION, and is invoked by the BLOCK ALLOCATE command. If you need to ALLOCATE a formula to a single CELL you simply define a BLOCK where the top left and bottom right corners of a BLOCK are the same CELL.
- BLOCK** A rectangular collection of CELLS, defined by reference to the CELL in the top left corner of the rectangle and the cell in the bottom right corner. The rectangle may contain only one cell or cover the whole spreadsheet.
- CELL** The basic building brick of a spreadsheet which is composed of cells. A cell is a single location defined by its ROW and COLUMN address. (eg. AA1 is the cell at the top left corner of the spreadsheet).
- CELL REFERENCE or ADDRESS**
The location of a CELL on the spreadsheet defined by the COLUMN and ROW on which it lies. These give a unique address at the intersection. It is a convention that the COLUMN is noted first then the ROW. (eg. AG12 denotes the CELL in COLUMN AG and ROW 12).
- COLUMN** A series of single CELLS arranged along the vertical axis of a spreadsheet. Columns are labelled sequentially by letters of the alphabet (eg AA.....BZ).
- COMMAND** An instruction to *MICROSPREAD* to perform a task. (eg SAVE the current FILE to disk).
- CURSOR** The CELL which is currently available for data entry is highlighted on the screen by being displayed in reverse video (ie. background and foreground colours are reversed). This highlighted area is the CURSOR.
- CURSOR KEYS** Four keys on the keyboard marked ↑ ↓ ← → which, when pressed, will move the cursor either UP, DOWN, LEFT or RIGHT.

ENTER KEY	A BLUE key towards the right side of the keyboard which is marked [ENTER] . Used to indicate to the computer that an input data item is complete and send it into the memory.
FILE	Information stored on a disk is kept in discrete packets called files.
FILENAME	A unique label by which each FILE on a disk can be identified. Refer to your AMSTRAD DDI-1 instruction manual for guidance on legal filenames. Please don't use filename extensions for your spreadsheet.
FIX	Many HANDY SPREADSHEET commands use the CURSOR to point to a CELL in order to identify it as a component in a BLOCK command or FORMULA. This pointing is called FIXing and is achieved by moving the CURSOR to the required CELL and pressing the enter key. This action will be preceded and followed by a PROMPT.
FORMAT	You can control the number of decimal places to which VALUES are displayed on the worksheet. This is called the FORMAT of the VALUE and each cell can be FORMATTED individually.
FORMULA	An instruction to <i>MICROSPREAD</i> as to how to calculate a number. See page for the procedure to enter a formula.
FUNCTION	The type of calculation performed by a FORMULA (eg. MEAN and TREND).
MAP MODE	Turned on by the BLOCK DISTRIBUTION command. Allows you to see the overall allocation of FORMULAE to CELLS. In this mode you cannot enter numbers. You turn OFF the map mode and return to the normal display by pressing [CTRL] O .
MENU	A series of choices, which are open to you at a particular time, listed on the screen. You may select only one of the options by pressing the appropriate key.
NUMBER	See VALUE.
PASSWORD	A user defined series of up to 9 characters which must be entered correctly before the spreadsheet can be accessed. Each spreadsheet has two PASSWORDS - level one and level two. Users who enter the level one password have only limited access to PROTECTED CELLS and can only use certain commands. This system gives considerable security to important parameters of your worksheets.

PROGRAM DISK

Any disk which contains the *MICROSPREAD* program.

PROMPT

A message which is displayed at the bottom of the screen, telling you what action to perform next.

PROTECTED CELL

A **CELL** which has been designated as accessible to level 2 users only by the use of the **PROTECT** command. Allows the creator of a worksheet to ensure that some elements of a calculation can be changed by him along but still allow others to use the worksheet for calculations.

QUIT

The **COMMAND** to exit from MicroSpread and return control to the operating system of your computer.

READY

The **PROMPT** which is displayed when MicroSpread is waiting for you to enter either data or a **COMMAND**.

RELATIVE

Cell reference.

In a **FORMULA** a **RELATIVE CELL** reference is one which will change when the **FORMULA** is **ALLOCATED** to another cell. The change in the actual cell addressed will be relative to the change in the address of the **RESULT**.

RESULT

When a **FORMULA** is calculated the **VALUE** which is the end product is known as the **RESULT**. The **RESULT** appears in the **CELLS** to which a formula is **ALLOCATED**. Whether the **RESULTS** change from **CELL** to **CELL** will depend on whether the **FORMULA** contains **ABSOLUTE** or **RELATIVE** cell addresses.

ROW

A series of **CELLS** along the horizontal axis of the **SPREADSHEET**. **ROWS** are referenced or addressed by number. (cf. **COLUMN**).

SCROLLING

The act of moving around the worksheet by using the **CURSOR KEYS** to change the position of the **CURSOR**. When the cursor reaches an edge of the screen the whole sheet will **SCROLL** to reveal a new area of the **SPREADSHEET**.

SHIFT

Keys.

Located on the lower row of the keyboard at each end of the row of alphabet keys. Marked **[SHIFT]**. Used to activate the upper set of symbols where a key is marked with two symbols.

SPREADSHEET

see **WORKSHEET**.

TEXT

Data entered directly onto the spreadsheet via the keyboard. Although **TEXT** may contain numeric characters these will **NOT** be regarded as **NUMBERS** or **VALUES** for calculation purposes.

VALUE

A numeric value which has been entered into the worksheet using the **ENTER VALUE COMMAND** or calculated by a **FORMULA**. It is also possible to enter numeric characters as ordinary **TEXT**.

WORKSHEET

The total array of **CELLS** on which the **FORMULAE** may act and into which you can enter **TEXT** and **NUMERIC** data. Defined by the number of **ROWS** and **COLUMNS** which you set up.

Appendix A

Making Security Copies

You should **NEVER** use the distribution disk containing *MICROSPREAD* to run your worksheets. Please make a security copy and then put the original disk in a safe place. To do this work through the following procedure:

1. Switch on your DD1 disk drive.
2. Switch on your computer.
3. Put your CP/M master disk in the drive.
4. Type |CPM [ENTER]
5. Type FORMAT [ENTER]
6. When prompted, put the destination disk in the drive and press any key.
7. When complete, put your CP/M back in the drive/
8. Type DISCCOPY [ENTER]
9. Remove CPM master disk from the drive.
10. check the write protect notches on the disks, the SOURCE (copy from) disk should be protected and the TARGET (copy to) disk should not. A disk is NOT protected if the front left notch is covered.
11. Put the SOURCE disk in the drive.
12. Swap the SOURCE and TARGET disks as directed by the program.

NOTE:

If you are backing up data disks, ie. not the distribution disk, steps 5 to 7 can be omitted.

You can make security copies of your worksheet DATA files by using the FILECOPY utility program on your CP/M master disc. A worksheet called FRED will consist of two files FRED.SDC and FRED.SPC. It will be necessary for you to copy BOTH files to your security disc.

Appendix B

Notes for experienced Spreadsheet users

Many users of MicroSpread will be familiar with spreadsheet programs which run on expensive office computers. If you are such a user and are familiar with say, VISICALC, SUPERCALC, or LOTUS 123 then there are a few things you should know about MicroSpread before you get down to some serious work. Let's take the major differences one by one.

1. **FORMULAE.** It's no use entering +A1+B (or something like that) in CELL C1 and waiting for the answer - it won't work. Formulae are entered using a visual method in which the CURSOR acts as a POINTER to the cell being used in a formula. See command FORMULA on page 4.10 for further details.
2. **RECALCULATION** must always be invoked by the user ie no AUTOCALC to slow things down.
3. **SPREADSHEET SIZE** is always known and finite. The spreadsheet is set to a default number of ROWS & COLUMNS when the program is loaded and may be RESET as part of the NEW command. The maximum number of Cells is 560. All CELLS may be used and there is NO danger of running out of memory.
4. The entry of text and numbers is made directly onto the worksheet **WHAT YOU SEE IS WHAT YOU GET**. You can even use MicroSpread as a simple word processor or electronic typewriter. This approach eliminates the need for adjustable column widths.
5. **SPEED** the formula structure of *MICROSPREAD* makes for very rapid recalculation of your worksheets so that even the most complex of calculations takes only a few seconds. Although the AMSTRAD has only an 8 bit processor *MICROSPREAD* is faster than most 16 bit CALC programs.

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