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SIDEWAYSTM

FOR EASY-READING HARD COPY

What if . . . your spreadsheet is too wide for your printer?

Now you can print all the columns of your spreadsheet, all at one time, all on one continuous page. SIDEWAYS rotates your spreadsheet by 90 degrees as it prints out, so your spreadsheet columns need never fall off the edge of your printer paper again.

SIDEWAYS can print any normal (ASCII) text file of virtually any width. It will print right through the perforations of your printer paper if necessary.

SIDEWAYS offers a choice of a wide variety of type sizes, gives you complete control over margins, spacing between characters, and spacing between lines, and provides a double-strike option for added print density.

SIDEWAYS is compatible with VisiCalc and Multiplan, as well as with most word processors and editors. To print a spreadsheet, first use your spreadsheet program's "print" command to create a "print file" on your disk. Then run SIDEWAYS, tell it the name of the print file you just created, and SIDEWAYS does the rest.

**FUNK
SOFT
WARE**

by Funk Software
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SIDEWAYSTM **FOR EASY-READING HARD COPY**

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This disk contains a high-speed operating system called Diversi-DOS[®], available from DSR, Inc., 5848 Crompton Ct., Rockford, IL 61111.

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WHAT YOU NEED

To run SIDEWAYS you will need an Apple II + , IIe, or IIc computer with at least 48K, at least one disk drive, a printer interface card, and a dot-matrix printer with dot-addressable graphics capability. For a list of currently supported printers and printer interface cards, refer to the separately enclosed "Installation Guide".

WHAT'S ON YOUR DISK

Your SIDEWAYS disk contains the following files:

SIDEWAYSthis is the SIDEWAYS program

INSTALL.....this program allows you to set up SIDEWAYS for your hardware configuration (printer model, interface card, slot number)

SAMPLE.PRF.....this is a sample spreadsheet print file, which can be used immediately to demo sideways printing

The SIDEWAYS program is copy-protected. The program is recorded on both sides of the disk, so that if either side of the disk fails or is overwritten, you may run the program from the flip side. If, within 90 days of your purchase, the disk fails to boot, you may return it to us for a new copy at no charge. Registered users may order an additional backup copy of the program by sending in the enclosed backup order form, with a check for \$15.

INSTALLING THE PROGRAM

Before you can use the SIDEWAYS program, you must tell it the type of printer you have, the type of interface card you have, in which slot the interface card is located, and the number of data bits per byte that your printer will accept (normally 8).

1. Put your SIDEWAYS disk in Drive 1 and turn on the computer.
2. When the title screen appears, type the character "I" (for "Install"). Be sure to do this before the main SIDEWAYS menu appears.
3. The "Install" program will tell you how SIDEWAYS is currently installed, and will present a menu for changing the installation. Select whichever items need to be altered; the program will lead you through the various options in a series of menus.
4. When you have made all the necessary changes, use the "Test Interface" option to do a preliminary check of the system. This will send a line of text to your printer continuously, insuring that your selection of printer interface card and slot number were correct.
5. Now use the "Exit" option to leave the Install program and start the newly installed SIDEWAYS program.
6. Check out the system by printing the sample spreadsheet that we've included on your SIDEWAYS disk. When the SIDEWAYS screen comes up, type in "SAMPLE.PRF", followed by RETURN.

If you buy a new printer, or otherwise change your configuration, make sure you keep SIDEWAYS abreast of the new developments by repeating the above procedure.

Refer to the separately enclosed "Installation Guide" for information on particular printers and interface cards, and how they should be installed.

STARTING UP THE PROGRAM

Put your SIDEWAYS disk in Drive 1, and turn on the computer. First, a title screen will appear, followed, after a few seconds, by the SIDEWAYS menu. The display is illustrated below.

What you see are all the current settings of the formatting and printing options. You may alter any of these options, save the new settings to disk, select a file for SIDEWAYS printing, or exit to a different program.

The cursor always points to a highlighted field; initially, it points to the *print file* field. Use **CONTROL-E** and **CONTROL-X** to move the cursor around the screen to different fields (on an Apple IIe, use **UP-ARROW** and **DOWN-ARROW**). If you would like to alter the value of a field, simply position the cursor to that field and re-enter it.

For most of the fields, you would simply enter the new value and terminate your entry with **RETURN**, or **CONTROL-E** or **CONTROL-X**. You can use **LEFT-ARROW** or **DELETE** to delete the last character you typed, or **ESCAPE** to delete your entire entry. If your entry is invalid, you will get an error message, and the field you just entered will revert to its previous value.

The rest of the fields are “toggle” fields: you can change their contents simply by striking any alphanumeric key (such as the space bar). These fields include *horizontal form size*, *character font*, and *double strike*.

S I D E W A Y S

VERSION 1.xx
S/N xxxxxxxx

VERT FORM SIZE: 11.00
HORZ FORM SIZE: 8.00

DOUBLE STRIKE: OFF
FONT: NORMAL 5 X 12 DOT MATRIX

CHAR SPACING: 1 12.00 CHARS/INCH
LINE SPACING: 3 6.40 LINES/INCH

LEFT MARGIN: 0.00
TOP MARGIN: 0.00
BOTTOM MARGIN: 0.00 51 LINES/PAGE

STARTING PAGE: 1

ENTER PRINT FILE:

=>

USE CTRL-E/CTRL-X TO SELECT FIELD
CTRL-L/CTRL-S TO LOAD/SAVE OPTIONS
CTRL-Q TO QUIT

SELECTING A FILE TO PRINT

To print a file, position the cursor to the print file field, and type in the name of the file you want to print, terminated by RETURN. Enter the file name in normal DOS format:

filename[,Sn][,Dn][,Vn]

(S, D, and V are Slot, Drive, and Volume. As indicated by the brackets, they are optional parameters.)

Once printing has begun, the following is displayed:

Strike "P" to stop printing

If you do strike "P", the printer will stop printing at the current line and do a form feed.

After your file has been printed, you may once again alter the option settings, enter a new file name for printing, or exit to another program.

Slot, Drive, and Volume

If you don't specify a Slot or Drive number, SIDEWAYS will use the default Slot and Drive. Initially, the default is the Slot and Drive from which SIDEWAYS was booted (normally Slot 6, Drive 1). Whenever you specify a Slot or Drive with a filename, it becomes the new default.

If you don't specify a filename, but type in a Slot and/or Drive number, followed by RETURN, SIDEWAYS will change the default Slot and Drive without attempting to print anything. You must remember to precede the Drive or Slot number with a comma. For example, to change the default Drive to Drive 2, type in:

```
,D2 RETURN
```

If you specify a Volume number, SIDEWAYS will match this number to the Volume number on the disk, and give you an error on a mismatch.

Wildcards

If you don't remember the name of the file you want to print, you can examine the filenames on your disk by using a "wildcard" in the filename you enter. The equal sign (=) is the wildcard character—it stands for any sequence of characters in the corresponding position of the filename. For instance, P=W would stand for any filename starting with P and ending with W. After entering the filename with the wildcard in it, don't type RETURN, but use RIGHT-ARROW to display, one-by-one, all text files matching your entry. When the file that you want appears, type RETURN to print it.

Here are some examples of wildcards:

```
=          all files on default drive  
=,D2      all files on Drive 2  
=ING      all files ending in ING
```

**Filename
Rules**

Your file must be on a DOS 3.3 disk.

DOS assigns every file on your disk a “file type”, which generally describes the format or purpose of the file. The “Text” file type indicates a file composed of printable characters—this is the type of file **SIDEWAYS** expects, and if you enter a file of a different type, **SIDEWAYS** will not recognize it. Text files are indicated by the “T” code next to the filename when you **CATALOG** your disk.

You should not use filenames with embedded control characters, or with flashing or inverse characters.

While **SIDEWAYS** will handle lower-case characters in a filename, it is good practice to avoid using them. **SIDEWAYS** will disregard case when you use **RIGHT-ARROW** to search for a file; however, when you terminate your filename entry with **RETURN**, all the characters of the filename must be in the correct case for the file to be found.

When you use **RIGHT-ARROW** to search for a matching filename, the equal sign (=) is a wildcard; but when you terminate your filename entry with **RETURN**, the equal sign is taken literally.

Vertical Form Size

Top Margin

Left Margin

Bottom Margin

Horizontal Form Size

***** PROFIT AND LOSS STATEMENT -- 1984 (PROJECTED) *****

	Jan	Feb	Mar	Apr	May	Jun	Jul	Sep	Oct	Nov	Dec	Total \$
Revenues												
Product Sales	285,411	304,252	327,508	359,309	357,009	358,419	382,095	411,285	444,720	446,477	457,483	4,581,142
Rentals	71,353	75,066	75,356	77,438	78,566	82,125	86,704	90,636	89,180	89,738	89,432	1,002,301
Maintenance Fees	42,812	42,981	43,151	43,768	47,112	45,835	49,337	49,021	51,830	56,863	55,911	581,895
	399,576	423,309	447,023	480,533	482,687	486,383	518,134	550,942	583,253	593,078	611,846	6,135,388
Cost of Sales												
Material Charges	150,835	154,704	153,581	164,912	168,726	181,175	185,366	199,042	218,671	232,589	235,613	2,263,941
Shipping Charges	9,818	9,746	9,695	9,676	9,676	11,414	11,678	12,540	13,776	14,653	14,844	142,629
Sales Commissions	21,178	21,453	23,692	25,488	23,582	25,778	27,461	29,200	30,912	32,435	32,428	325,174
	185,831	185,889	186,949	200,769	204,988	218,367	224,505	240,782	263,359	279,675	282,885	2,731,744
Proportional Expenses												
Repairs Expenses	9,180	10,082	10,539	11,235	11,279	11,987	13,043	14,195	14,151	14,782	15,209	150,475
Utility Expenses	29,169	31,388	31,522	33,450	33,010	34,140	33,271	34,743	36,021	39,142	39,501	410,677
Direct Mail	1,280	1,242	1,298	1,411	1,475	1,527	1,580	1,632	1,782	1,792	1,886	19,479
	39,609	42,722	43,359	46,076	45,764	46,574	47,914	49,595	51,954	55,691	57,416	579,633
Overhead												
Management	15,240	16,304	16,200	16,095	15,993	15,055	15,787	16,176	16,132	17,698	18,134	197,223
Engineering	42,488	43,096	42,374	44,236	43,388	46,507	49,135	51,314	51,517	53,986	59,104	591,378
Manufacturing	5,012	5,222	5,595	6,663	6,952	7,497	7,992	8,603	9,392	9,721	10,464	95,360
Administration	3,004	3,174	3,207	3,281	3,252	3,782	3,776	4,039	4,183	4,239	4,223	40,177
Depreciation	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000
Miscellaneous	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000
	74,804	75,859	75,684	77,269	75,016	80,604	82,545	86,499	91,888	97,179	100,282	1,008,889
Total Revenues	399,576	423,309	447,023	480,533	482,687	486,383	518,134	550,942	583,253	593,078	611,846	6,135,388
Total Expenses	331,244	363,462	380,992	424,814	427,118	430,543	464,364	496,976	521,501	531,543	544,853	5,430,286
Pre-Tax Profit	68,332	117,843	141,033	155,921	152,569	149,838	163,170	174,066	162,072	176,062	161,533	1,715,122
Taxes	39,333	47,137	56,413	62,368	61,988	56,333	64,829	67,626	64,829	64,613	68,517	726,049
Net Profit	28,999	70,706	84,620	93,553	91,781	84,505	97,502	104,440	97,243	103,631	96,520	1,089,073

SIDEWAYS OPTIONS

Setting paper dimensions

Horizontal form size refers to your paper width. It will toggle between 8 inches and 13 inches. If you have a narrow-carriage printer, you should leave it set to 8 inches.

Vertical form size is the distance between perforations of your printer paper. Whenever SIDEWAYS is done printing a page, it form feeds to the next multiple of *vertical form size*. It is normally set to 11 inches.

Setting the style of the printout

Double strike is a toggle field which may be ON or OFF. If it's on, each line will be printed twice, for added print density.

Character font is a toggle field which gives you a choice of various type sizes, from TINY to EXTRA LARGE. On the right of the screen, the dimensions of the "dot matrix"—the vertical and horizontal print dots that are used to make up each character in the selected font—are shown.

Character spacing is the distance between successive character columns, measured in terms of the vertical dot density of the printer. You can crowd characters together, or spread them apart, by making this number smaller or larger—the resulting number of characters per inch is displayed at the right.

Line spacing is the distance between successive print lines, measured in terms of the horizontal dot density of the printer. You can crowd lines together or spread them apart by manipulating this value—the resulting number of lines per inch is displayed at the right.

You may set a different *character* and *line spacing* for each *character font*; when you change fonts, you automatically revert to the *character* and *line spacing* associated with the new font.

Setting the format of the page

Left margin controls the amount of white space between top-of-form and the leftmost SIDEWAYS print column.

Top margin controls the amount of white space between the right edge of the paper and the 1st SIDEWAYS printed line.

Bottom margin controls the amount of white space between the last SIDEWAYS printed line and the left edge of the paper.

The amount of space available for printing is determined by subtracting *top margin* and *bottom margin* from *horizontal form size*. The program automatically computes the number of lines that will fit on each page, and displays this on the right hand side of the screen.

Other options

Starting page allows you to skip over the initial pages of a print file; it is normally set to 1.

SAVING OPTION SETTINGS TO DISK

Once you have set up the SIDEWAYS options as you like them, you can save them to disk by typing **CONTROL-S**, and reload them from disk by typing **CONTROL-L**.

The option settings are saved in a file called SWOPTIONS. When you type **CONTROL-S**, the current option settings are written to SWOPTIONS on the default Slot and Drive. When you type **CONTROL-L**, the option settings are loaded from SWOPTIONS on the default Slot and Drive. Remember that you can alter the default Slot and Drive by entering them in the *print file* field with a blank filename, followed by **RETURN**.

You can also save the option settings to the SIDEWAYS disk itself. If you have done so, they will be reloaded every time you boot SIDEWAYS, and you will not need to use **CONTROL-L**.

If you have one standard set of option settings that you use most of the time, it makes sense to save them to the SIDEWAYS disk. If you have different option settings used for different print files, you might want to save each of the various settings to a different disk, and use **CONTROL-L** to read them in.

Normally, when you want to print a spreadsheet, you issue a “print” command from your spreadsheet program which activates the printer directly. However, to use SIDEWAYS, you must first write a printable image of your spreadsheet to a text file on disk. SIDEWAYS uses this “print file” to create hard copy.

Your spreadsheet program documentation will tell you how to create print files from your spreadsheets; we’ve also included some hints for the more popular spreadsheet programs below.

When you tell your spreadsheet program what filename to assign to your print file, be careful! Don’t use the same name that you used for the worksheet file itself, or you could lose all your work. Create a “naming convention” and stick to it. For instance, you might append the suffix “.PRF” to the filename whenever you create a print file; thus, if you had a spreadsheet named “BUDGET”, you would call its associated print file “BUDGET.PRF”. You could then also use the SIDEWAYS file search feature to find all your print files by entering “=.PRF” followed by RIGHT-ARROW.

Some spreadsheet programs have a printing feature which is useful for normal printing, but gets in the way when you are printing sideways. These programs output the spreadsheet in sections, based on a parameter that you would supply indicating the width of your printer. Since the printing width of SIDEWAYS is virtually infinite, you want to make sure you set this print width parameter higher than the number of character columns in your spreadsheet; otherwise, your printout will be broken up into sections.

VisiCalc Hints

To create a print file in VisiCalc, all you need to do is issue the PRINT FILE command (/PF). The program will prompt you for a filename, then for the spreadsheet range you’d like to print out.

Method 1 — page breaks disabled

This method is simplest, and most resembles the original VisiCalc.

First, use the PRINT SETTINGS command to disable page breaks (/PSBN). Then, issue the PRINT FILE command (/PF). The program will prompt you for a filename, then for the spreadsheet range you'd like to print out.

Method 2 — page breaks enabled

You would use this method if you want to create a formatted, multi-page spreadsheet, possibly with titles or page numbers.

You will first need to bring up SIDEWAYS, and make note of how many lines per page it is able to print, based on the formatting options you set (this number appears on the right hand side of the SIDEWAYS screen).

In VisiCalc, use the PRINT SETTINGS command to set the following:

1. Page Breaks: Enabled (/PSBY)
2. Paper Length: equal to the number of lines per page that SIDEWAYS can print (/PSF)—this matches the VisiCalc page to the SIDEWAYS page
3. Page Length: less than or equal to Paper Length (/PSP)
4. Page Width: 255—this is its maximum value (/PSW)

Then, issue the PRINT FILE command (/PF). The program will prompt you for a filename, then for the spreadsheet range you'd like to print out.

Note that since page breaks are enabled, if your spreadsheet is wider than the page width of 255 character columns, VisiCalc will print it out in sections. If so, refer to Appendix B for some techniques to deal with this problem; or use method 1 above, rather than this method, to avoid the problem entirely.

Multiplan Hints

If you have version 1.05 of Multiplan or earlier, we strongly recommend that you upgrade to the latest version. Multiplan outputs very wide spreadsheets in sections based on its "print width" parameter. Multiplan version 1.05 and earlier will accept a value no higher than 165 for "print width"; version 1.06 will

accept values as high as 512. This means that with the earlier version of Multiplan it will be rather cumbersome to print spreadsheets wider than 165 character columns.

1. First, you must bring up SIDEWAYS, and make note of how many lines per page it is able to print, based on the formatting options you set (this number appears on the right hand side of the SIDEWAYS screen).
2. Run your Multiplan program.
3. Using the PRINT MARGINS command, set up the following parameters:
 - left margin = 0
 - print width = 512 (165 if v1.05 or earlier)
 - page length = the number of lines per page SIDEWAYS can print
 - top margin = 0
 - print length = same as page length(You may, in fact, set “top margin” and “print length” however you like, as long as their sum does not exceed “page length”; the values we suggest above maximize the number of available printable lines.)
4. Use the [PRINT] OPTIONS command to specify the range to be printed.
5. Use the [PRINT] FILE command to write the print file to disk.

CREATING TEXT FILES USING WORD PROCESSORS AND EDITORS

SIDEWAYS will accept as input any ordinary text file created using a word processor or an editor. The text file should not include printer control sequences such as Compressed Mode, Expanded Mode, Superscript, or the like, since these are not recognized by SIDEWAYS, and could produce unwanted results. If your word processor has its own “private” format for its text files, SIDEWAYS may not be able to print them directly. However, such word processors usually allow you to “print to disk”—that is, to re-route print output to a disk file instead of the printer. SIDEWAYS should be able to read a print file created this way.

APPENDIX A

TROUBLESHOOTING

If you are having trouble getting SIDEWAYS to operate properly, these notes may give you some clues as to what is going wrong.

The problems that you are likely to encounter can be generally divided into two types: (1) problems with the printing process, and (2) problems with the format of the text files you are trying to print.

To determine to which of these two categories your problem belongs, try printing the sample text file that is included on your SIDEWAYS disk. Boot the program, and enter "SAMPLE.PRF" in the print file field. If it does not print out correctly, then there is a problem in the printing process; if it does print out correctly, then the problem almost certainly lies in the format of the text file that you were trying to print.

If your problem is in the printing process, go back to the installation procedure, and select the "Test Interface" option to repeatedly print a line of text on your printer. If nothing prints out, or the printout has errors, you may have specified the wrong interface card or slot number.

Problems with the printing process

1. Is any data getting to the printer?

If, when you try to print, the message "Printer not ready" appears, despite the fact that the printer is on-line, and the cable is plugged in; or if the message "Strike P to stop printing" appears, but the printer does nothing; then it is very likely that, when you installed SIDEWAYS, you specified either the wrong Interface Card or the wrong Slot Number.

2. Does the printout consist entirely of normally oriented (non-sideways) characters?

Most likely, your printer does not have graphics. Most printers come with graphics capability; on some, graphics is an option which must be purchased. It is also possible that you specified the wrong printer when you installed SIDEWAYS.

3. Is the printout an amalgam of sideways characters and normally oriented characters? are the sideways characters misregistered?

There could be various explanations. The cable to the printer may be loose, or faulty. If you are using an external printer buffer, try removing it from the circuit and see if the problem persists. It is also possible that you specified the wrong printer or interface card when you installed SIDEWAYS.

If you have a serial, rather than parallel, printer interface, it could be that your cable is not carrying the printer's "handshake" signal back to the interface card, and the printer is being overrun by data coming in too quickly. SIDEWAYS sends a large volume of graphics data to the printer at very high speeds, and it is entirely possible that a cabling error of this kind would cause no problem at all when printing text, but would show up immediately when printing in graphics mode. Try reducing the baud rate—if this alleviates the problem, then your cable is very likely at fault and should be replaced.

If you have a printer which is not manufactured by Epson, but is supposed to use the same control codes as Epson printers, this may be the culprit. Many such "lookalikes" operate just like an Epson, and won't cause any problems; others have slight differences and may not operate properly. Besides the standard Epson installation options, we've also provided "lookalike" installation options which use somewhat different techniques to operate the printer. Try re-installing SIDEWAYS using these alternatives—hopefully one of them will work.

Problems with the format of the text file

1. Does the printout contain information that you would expect to see in your file, but organized in a totally different way?

You are probably printing the wrong sort of file. When you are using a spreadsheet program, the worksheet file that you load and save is in the program's own private format—you shouldn't try to print this file. Your spreadsheet program should also be capable of creating a "print file", with all the worksheet information in displayable, or printable, form; this is the type of file that you should print. Reread the section above: "Creating spreadsheet print files".

2. Does your spreadsheet print out in sections; that is, do you get some of the columns of your spreadsheet on one page, followed by a formfeed, then the rest of the columns on a second page?

Some spreadsheet programs will section a spreadsheet as it prints it out, in order to accommodate wide spreadsheets to narrow printers. If this has occurred, your sideways printout will have the kind of dislocations described above.

In order to prevent the spreadsheet program from sectioning your printout, you should set its printing width parameter as high as possible. Refer to the section “Creating spreadsheet print files” for specific information about the printing width capabilities of various spreadsheet programs. If your spreadsheet program will not accept a value for its printing width that is high enough to accommodate the entire width of your spreadsheet, then you will have to use one of the strategies outlined in Appendix B in order to get the proper printout.

3. In a formatted, multi-page printout, is the 2nd page of the spreadsheet not appearing at the top of the 2nd page of the printout?

In a formatted printout (such as in Multiplan), one of the parameters you specify to the spreadsheet program is the page length. You should be sure to set the spreadsheet program's page length equal to the number of lines per page that SIDEWAYS can print (as displayed on the SIDEWAYS screen). The spreadsheet program will pad out each page with blank lines, up to the page length: if page length is too high, some of those blank lines will appear at the top of the second sideways page, forcing the data down; if page length is too low, lines from the second page will appear at the bottom of the first sideways page.

4. In a printout of a VisiCalc spreadsheet, are there individual cells which appear in the wrong place—in the correct row, but 20 or 30 cells to the left of where they should be?

This problem can occur in VisiCalc print files when the spreadsheet is very wide and contains many blank cells all in a row. Refer to Appendix C for a complete discussion of the problem.

APPENDIX B

IF YOUR SPREADSHEET IS WIDER THAN YOUR SPREADSHEET PROGRAM'S MAXIMUM PRINTING WIDTH

We mentioned above that some spreadsheet programs automatically break very wide spreadsheets into sections as they print out, in order to limit the width of each page to the width of the printer; for SIDEWAYS printing, you should specify as wide a print width as possible, in order to prevent this unwanted sectioning.

Some spreadsheet programs may be limited in how high a number they will accept for the printing width parameter. For example, Multiplan v1.06 will not accept a "print width" greater than 512 (v1.05 or earlier is limited to 165). If your spreadsheet is wider than this limit, you will not be able to prevent the program from sectioning it.

Here are a couple strategies to get around this problem.

1. Create multiple print files and string them together.

Divide your spreadsheet into segments that do not exceed the spreadsheet program's printing width, and create a separate print file for each segment. Now run SIDEWAYS, and print these files side by side, creating a single, very wide printout. Be sure to set *vertical form size* to 0; this will prevent formfeeds from occurring between the segments.

2. Create a single print file, with page-breaks adjusted so that successive sections appear on successive pages.

Set the page-length in your spreadsheet program to match the number of lines per page in SIDEWAYS, and make sure that the rows of the print range all fit within a single page. Run SIDEWAYS, set *vertical form size* to 0, and print the file. Each section will thus be printed on a new page, exactly adjacent to the previous section, thereby creating a single, very wide printout.

APPENDIX C

A GLITCH IN VISICALC

There is one problem that you might run into when printing VisiCalc spreadsheets, if the spreadsheet is quite wide (more than 256 character columns) and if it contains many blank cells all in a row.

If a row of your spreadsheet contains a sequence of cells which are all blank, followed by a non-blank cell, and if the total number of blank character columns is 256 or more, then VisiCalc will “lose” 256 blank character columns, and shift the non-blank cell that far to the left when creating the print file.

For instance, let’s say that in row 14 of your spreadsheet, you have data in columns A and B, columns C through AF are blank, and data once again appears in column AG. Thus, there are 30 blank columns in sequence, with 9 characters per column, for a total of 270 character columns of blanks. VisiCalc will lose 256 out of those 270 blanks, and when the spreadsheet is printed, AG14 will have been shifted left by 256 columns, and will appear at about the position of D14.

The most direct way around this problem is to insure that you never have a sequence of 256 blank character columns in any row. If your spreadsheet does have this many blank columns, pick a cell somewhere in the center of the sequence of blanks, and put some inconspicuous printable character in it, such as a “.”, or a “0”. Having broken up the long sequence of blanks into two shorter sequences of blanks, the spreadsheet will print out correctly.

Another way around this problem would be to create two spreadsheet print files, one for the left half, and one for the right half of the spreadsheet. You would then print them out side by side. As long as neither of the two halves contain a string of 256 blanks, the problem will be obviated. When you do this, be sure to set *vertical form size* to 0; this will allow the two halves to be printed continuously, without an intervening form feed.

CONFIGURATION GUIDE

This booklet lists all the printers and interface cards that SIDEWAYS supports, and will tell you how to install SIDEWAYS for your hardware configuration.

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Selecting a Printer

The INSTALL program's printer selection menu will allow you to select one of the following printers:

Apple Dot Matrix Printer
Apple Imagewriter I or II
Apple Scribe
C. Itoh Prowriter
Epson MX, FX, or RX
Gemini 10X/15X
Hewlett-Packard Thinkjet
IDS Prism, Micro-Prism, 460/560

Mannesmann Tally Spirit
Mannesmann Tally 160/180
NEC 8023
Okidata ML 82A/83A (Okigraph)
Okidata ML 84 Step 2
Okidata ML 92/93
Okidata ML 182/183/192/193
Texas Instruments 850
Texas Instruments 855/865

Dot-Addressable Graphics

Your printer must have dot-addressable graphics capability in order to work with SIDEWAYS. Most of the printers listed above have this capability as a standard feature. For the following printers, graphics is an option available from your dealer:

- **Epson MX-80** — "Grafrax option" (standard on more recent models)
- **Okidata ML 82A/83A** — "Okigraph" option
- **IDS Prism** — "Dot Plot" option

Epson-Compatible Printers

Many printer manufacturers are making their printers software-compatible with Epson printers. In most cases, such a printer will print perfectly when installed as an Epson. However, if your printer doesn't, we've provided two additional "Epson-compatible" installation options for you to try.

DIP Switch Settings

Apple DMP, C. Itoh Prowriter, NEC 8023 — SW1-7 must be CLOSED.

IDS Prism, Dataproducts P-80/132 — Switch 7 on Function Select DIP S4 must be ON, to enable graphics.

Selecting an Interface Card

The printer interface cards supported by SIDEWAYS are listed below. Your interface may be parallel or serial; each type is listed separately.

If you have an Apple IIc or IIgs, you don't need a separate interface card — your interface is already built into your computer. Depending upon which computer you own, select either the "Apple IIc Serial Port" or the "Apple IIgs Serial Port" installation option. *(If you are not using the IIgs' built-in interface, select the card that you are using, rather than the "IIgs Serial Port" option.)*

Parallel Interfaces

Apple Parallel Interface
ALS Dispatcher
ALS Printermate
CCS 7728
Dumpling
Dumpling 64
Fingerprint
Franklin Ace 1200 Dual Interface
Grafstar
Grappler Plus
Grappler (older model)
Microbuffer II
Mountain CPS Parallel
Pkaso
Texprint Print It!
Videx Uniprint

Serial Interfaces

Apple Super Serial Card
Apple IIc Serial Port
Apple IIgs Serial Port
CCS 7710/Versacard Serial
Grappler Serial
Grappler Serial Plus
Mountain CPS Serial

Most other interface cards are compatible with one of the cards listed above. If your interface card is not listed, look for it in the chart below.

If you have:

Epson APL
Fingerprint Plus
Franklin 2000 Parallel Port
Graphicard
Orange Interface
Okidata Plug 'n Play/normal
Okidata Plug 'n Play/smart
Prometheus PRT-1
RV-611C
SSM (Transend) APPIC
Spies Lab Super-MX
Tymac PPC-100
Tymac Tackler/normal
Tymac Tackler/smart
Versacard Parallel
Wesper IPI/BPO

Install it as:

Apple Parallel Interface
Grappler Plus
Apple Parallel Interface
Microbuffer II
Apple Parallel Interface
Apple Parallel Interface
Grappler (older model)
Apple Parallel Interface
Apple Parallel Interface
Apple Parallel Interface
Grappler (older model)
Apple Parallel Interface
Apple Parallel Interface
Grappler (older model)
Apple Parallel Interface
Apple Parallel Interface

If you have a different card from the ones listed, the installation options most likely to succeed are "Apple Parallel Interface" if your interface is parallel; or "Apple Super Serial Card" if your interface is serial.

Selecting a Slot Number

When you run the INSTALL program, you must indicate the slot in which your printer interface card is located. Typically, this would be slot number 1.

If you have an Apple IIc, select Slot Number 1 or 2 based on whether your printer is connected to Serial Port 1 or 2 (normally port 1). If you have a IIgs, select Slot Number 1 if you are using the built-in serial port; otherwise, select the slot where your interface card is located.

Selecting the Number of Data Bits

Normally, your computer will send data to your printer as a series of "bytes", each of which is 8 "bits" long. However, it is possible that — due to limitations in your interface card, your cable, or your printer — only 7 of those bits will get there. If this is the case, you must inform SIDEWAYS of the fact, so that it won't send out more bits per byte than can get through to the printer.

In general, you should select 8 data bits. However, if you have one of the following interface cards, you must select 7 data bits:

- Epson APL
- Older models of the Apple Parallel Interface
- Mountain CPS Parallel

Certain printers have DIP switch settings which either enable or disable the 8th bit. You should normally set these DIP switches to enable the 8th bit. However, if you disable the 8th bit in your printer, you must also select 7 data bits when installing SIDEWAYS.

If you incorrectly select 8 data bits when you should select 7, you will notice that, periodically, all the characters in a column will be missing one print dot. Also, on Epson printers, the printout will be a jumble of rotated and non-rotated characters.

While 8 bits is preferable, SIDEWAYS will handle most printers perfectly well using 7 bits. However, for the following printers to operate at all, you must select 8 data bits:

- Mannesmann Tally Spirit
- Mannesmann Tally 160/180

Cursor Control on the Apple II+

Since the II+ does not have up- or down-arrow keys, use <CTRL><E> and <CTRL><X> to move the cursor between menu options in the DOS and ProDOS versions of SIDEWAYS.

INSTALLATION GUIDE

LINCOLN - WOODSTOCK
COOPERATIVE SCHOOL DISTRICT

This booklet lists all the printers and interface cards that Sideways supports, and will tell you how to install Sideways for your hardware configuration.

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Selecting an Interface Card

The printer interface cards supported by Sideways are listed below. The column on the left lists the interface cards; the column on the right shows which installation option you should select.

If you have an Apple IIc, you don't need a separate printer interface card --your interface is already built into your computer; select the "Apple IIc Serial Port" installation option.

Your interface card	Installation option to select
Apple Parallel	Standard Parallel Interface
Apple Super Serial	Apple Super Serial Card
Orange Interface	Standard Parallel Interface
Grappler	Grappler (older model)
Grappler Plus	Grappler Plus
Pkaso	Pkaso
RV-611C	Standard Parallel Interface
Dumpling	Dumpling
Dumpling 64	Dumpling 64
SSM (Transend) APPIC	Standard Parallel Interface
Epson APL	Standard Parallel Interface
ALS Printermate	ALS Printermate
ALS Dispatcher	ALS Dispatcher
Microbuffer II	Microbuffer II
Graphicard	Microbuffer II
Prometheus PRT-1	Standard Parallel Interface
Versacard Parallel	Standard Parallel Interface
Versacard Serial	CCS 7710/Versacard Serial
CCS 7728	CCS 7728
CCS 7710	CCS 7710/Versacard Serial
Tymac PPC-100	Standard Parallel Interface
Tymac Tackler/normal	Standard Parallel Interface
Tymac Tackler/smart	Grappler (older model)
Okidata Plug 'n Play/normal	Standard Parallel Interface
Okidata Plug 'n Play/smart	Grappler (older model)
Spies Lab Super-MX	Grappler (older model)
Wesper IPI/BPO	Standard Parallel Interface
Mountain CPS Parallel	Mountain CPS Parallel
Mountain CPS Serial	Mountain CPS Serial
Apple IIc	Apple IIc Serial Port

If you have a parallel interface card which is not listed above, the installation option most likely to succeed is "Standard Parallel Interface".

Selecting a Printer

The Install program's printer selection menu will allow you to select one of the following printers:

Apple Dot Matrix Printer
Apple Imagewriter
Epson MX-80/100, RX-80/100, FX-80/100
IDS Prism, 460, 560 (Dataproducts P-80/132)
Okidata Microline 82/83
Okidata Microline 92/93
Okidata Microline 84 Step 2
C.Itoh Prowriter
NEC 8023
Mannesmann Tally Spirit
Mannesmann Tally MT160/180
Texas Instruments TI850/855

Your printer must have dot-addressable graphics capability in order to work with Sideways. Most of the printers listed above have this capability as a standard feature; for the following printers, graphics is an option available from your dealer:

Epson MX-80 -- "Grafrax" option (standard on recent models)
Okidata Microline 82/83 -- "Okigraph" option
IDS/Dataproducts printers -- "Dot Plot" option

Printer notes:

Apple DMP, C.Itoh Prowriter, NEC 8023 -- SW1-7 must be CLOSED.

IDS/Dataproducts -- switch 7 on Function Select DIP S4 must be ON.

Okidata 84 -- Sideways only supports the "Step 2" version of this printer. If you have an older model, you can get an upgrade kit from Okidata.

Epson "lookalikes" -- many printer manufacturers are making their printers software-compatible with Epson printers. In most cases, such a printer will work perfectly when installed as an Epson. However, if your printer doesn't, we've provided "Epson-compatible" installation options, which you can try.

Selecting a Slot Number

When you install Sideways, you must indicate in which slot your printer interface card is located. Typically, this would be slot number 1.

If you have an Apple IIe, you would select Slot Number 1 or 2 based on whether your printer is connected to Serial Port 1 or 2 (usually port 1).

Selecting the Number of Data Bits

Normally, your computer will send data to you printer as a series of "bytes", each of which is 8 "bits" long. However, it is possible that, due to limitations in your interface card, your cable, or your printer, only 7 of those bits will get there. If this is the case, you must inform Sideways of the fact, so that it won't send out more bits per byte than can get through to the printer.

In general, you should select 8 data bits. However, if you have one of the following interface cards, you must select 7 data bits:

Epson APL
Mountain CPS Parallel

Certain printers have DIP switch settings which either enable or disable the 8th bit. You should normally set these DIP switches to enable the 8th bit; however, if you disable the 8th bit in your printer, you must also select 7 data bits when installing Sideways.

While 8 bits is preferable for Sideways printing, the program will handle most printers perfectly well using 7 bits. However, for the following printers to operate at all, you must select 8 data bits:

Mannesmann Tally Spirit
Mannesmann Tally MT 160/180

Warranty Registration Card

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Occupation _____ Tel. # _____

SIDEWAYS Version # _____ Serial # _____

(these are displayed at the top of the screen when you run the program)

Purchased from _____ Date _____

Computer brand and configuration _____

Printer brand and model number _____

Printer interface card _____

Spreadsheet or other software you use SIDEWAYS with _____

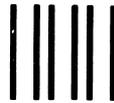
How did you hear about SIDEWAYS?

- Computer store Computer show Word-of-mouth
 Advertisement in _____ magazine
 Article in _____ magazine
 Other _____

Comments about program _____

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Now you can print all the columns of your spreadsheet, all at one time, all on one continuous page. Sideways, the ingeniously simple software program, causes your hard copy to print out — you guessed it — sideways. So your spreadsheet columns need never fall off the edge of your printer paper again.

SIDEWAYS SPECIFICATIONS:

System requirements

Apple II+ (48K), IIe, or IIc
A parallel or serial interface
(most popular interface cards
are supported)

One of these graphics printers:

Apple DMP or Imagewriter

Epson MX/RX/FX-80/100

Okidata 82, 83, 92, 93, 84 Step 2

C. Itoh Prowriter

NEC 8023

IDS Prism, 460, 560

Dataproducts P-80/132

Mannesmann Tally Spirit, MT160/180

Input files

Any ordinary (ASCII) text file, in
DOS 3.3 format.

Compatibility

SIDEWAYS is compatible with
spreadsheet programs such as
VisiCalc and Multiplan, as well as
most word processors.

Features

- choice of a variety of type sizes, from compressed to large
- optional double-strike mode for added print density
- character and line spacing may be set by the user
- margins and print dimensions may be set by the user
- virtually unlimited printing width

**Suggested
Retail Price** **\$60**

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Please fill this out with the same information you supplied on the Warranty Registration Card.

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Company _____

Address _____

City _____ State _____ Zip _____

Tel. # _____ Date purchased _____

SIDEWAYS Version # _____ Serial # _____

(these are displayed at the top of the screen when you run the program)

I enclose a check or money order for \$ _____

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