

## INTRODUCTION

Multiplan is an electronic spreadsheet application designed for use with the CP/M® operating system on the Wang Alliance™, Office Information Systems (OIS), and Wangwriter product lines. Multiplan can also be used with the Microsoft Disk Operating System (MS-DOS) of the Wang Professional Computer (PC). Multiplan is a management productivity tool developed by Microsoft, Inc., and offered by Wang Laboratories, Inc. It complements Wang's family of integrated, upgradable software products and systems.

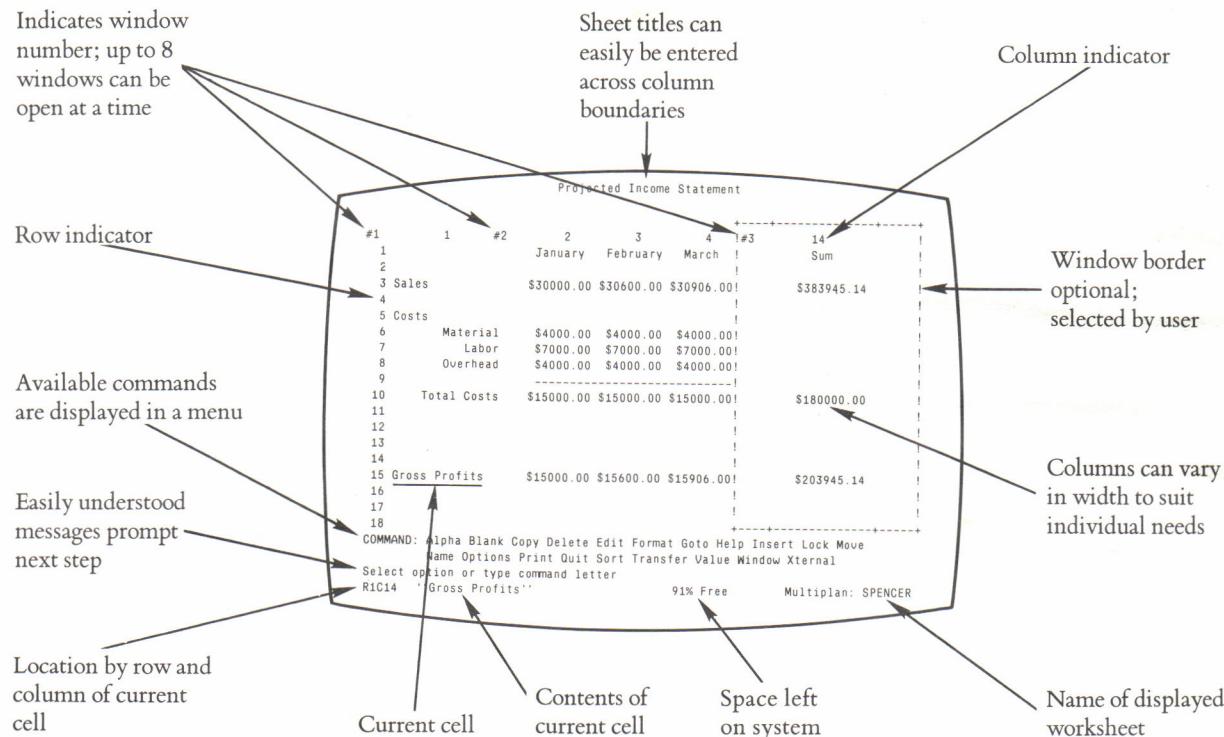
Specifically written for use by the busy, non-programming professional, Multiplan is one of the most detailed, easy-to-use spreadsheet packages currently available. It is one of many Wang software products that completely automates important information management tasks.

Multiplan uses extensive screen messages, a menu of commands, and an on-line HELP screen facility to minimize the time required to learn the system. Because Multiplan keystrokes are virtually identical on every Wang system, you can learn the software on one and use it productively on any of the four systems.

Access to all functions is structured logically and simply by use of menus and prompts. Managers, analysts, office systems planners, clerical workers—any professional involved in business tracking—can quickly process mathematical formulas. Then they can present the results on a customized spreadsheet that is composed of rows and columns similar to a balance sheet.

## BENEFITS

Multiplan benefits your office by offering a powerful professional tool for effectively delegating work



**Multiplan Guides You Through Each Step**

among personnel. Specifically, Multiplan provides the following benefits.

- A variety of applications for planning, modeling, and forecasting projects.
- Ease of use through menus, prompts, full word commands, and HELP screens.
- Flexibility to display and print information in a number of ways on the worksheet, vary the size of the worksheet, or combine values from existing worksheets to build a new summary sheet.

### Variety of Applications

Multiplan has the ability to conveniently plan and hypothesize many types of business procedures and decisions common to the office environment. It can save hours of examining different budgeting alternatives or updating from forecast to actual figures. Because of Multiplan's powerful and efficient operations, you get fast answers to planning, modeling, and forecasting questions.

Multiplan's spreadsheet/ledger format is standardized to accommodate a variety of forecasting demands. Cash flow analysis, budget planning and consolidation, investment analysis, pricing analysis, sales force decisions, resource allocation, product planning, and production management are some of the applications that can utilize Multiplan's powerful calculating and analyzing methods.

For example, you need to find out what happens if sales rise by 20% during the current fiscal year. But what if inflation boosts the costs of materials by 12%? Different sets of figures for these dependent forecasts can be quickly entered into Multiplan. Every time variables are entered, the machine automatically recalculates all pertinent figures. If the results are needed for a report or presentation, the computer can print them out, quickly and neatly.

### Ease of Use

Compared with similar products on the market today, Multiplan's features simplify software use. For example, Multiplan displays a readily identifiable English word command for each system task, not just an arbitrary code or abbreviation.

In addition, Multiplan's features provide detailed advice that help you complete the job quickly. The Multiplan message line provides up-to-date program status information and detailed action prompts. The on-line HELP screen facility offers specific information regarding a system function. You can use the HELP screen facility without exiting from the software, or loosing your place on the spreadsheet. You can also use a variety of formatting capabilities to present numerical models in easy-to-read formats.

System tasks are easy to find and perform using a minimum number of keystrokes. All commands are available from a Command main menu by typing the first letter of the command. Once a command is

#### There are three ways to use HELP:

1. You may press the "?" key at any time during your work. The help text that appears will apply to the command you were using when you pressed "?". When you resume (by pressing "R") your work will be exactly as you left it.
2. You may view information on special topics right now by selecting one of the topics listed at the bottom of the screen. Type the first letter of the desired word.
3. You may familiarize yourself with all the available information by paging through the help text right now. Select "Next" (press "N"), "Previous" or "Start" page.

If you need information on a specific command, highlight the command name on the proper menu (using the space bar) and press "?".

On the next page, there is a list of common problems followed by the commands or special help topics that provide solutions.

HELP: Resume Start Next Previous  
Applications Commands Editing Formulas Keyboard

Select option or type command letter  
R1C1 100% Free

Multiplan: TEMP

accessed, Multiplan also prompts you for any information necessary to complete the command. Multiplan also saves time by figuring out the most likely response to a request for information and displaying it on the screen.

In addition, Multiplan has the ability to create and edit text and formulas on the worksheet. The software lets you construct formulas using over 20 mathematical and machine-specific functions that can hypothesize a variety of detailed projections.

Multiplan also provides the most up-to-date approach to quick reference documentation. With Multiplan's on-line HELP screen facility, you can access detailed information about Multiplan's keystrokes, commands, functions, editing procedures, and rules for creating formulas by merely touching a key. Once you find the related reference information, Multiplan returns to the worksheet at the position you left it. This facility allows the first-time user to understand system procedures more quickly.

### Flexibility

Multiplan provides a variety of ways to present information on the worksheet. The program contains special formatting, alignment, and printing operations that display text in the selected format and quickly print professional looking reports.

The size of each worksheet and the width of each column can vary according to user specifications.

	January	February	March	April	May	June
Sales	\$20,000.00	\$20,250.48	\$32,015.76	\$45,150.75	\$19,451.00	\$22,895.00
Cost						
Material	\$4,440.00	\$4,900.00	\$5,890.00	\$6,723.50	\$4,890.00	\$4,076.23
Labor	\$7,230.00	\$8,946.12	\$7,890.23	\$6,532.56	\$7,082.12	\$7,067.00
Overhead	\$4,333.00	\$4,000.25	\$4,295.60	\$4,298.45	\$4,003.56	\$5,890.00
Total Costs	\$16,003.00	\$17,846.37	\$18,075.83	\$17,554.51	\$15,975.68	\$17,033.23
Gross Profits	\$57,274.37					

### Print Professional Looking Reports

You can enter commas or dollar signs into money figures and fix the decimal point anywhere from 0 to 16 places. Or, you can decide how to line up the data in each column: left justified, right justified, or centered. Multiplan also allows you to assign meaningful names to areas on the worksheet, such as sales or expenses, for all future calculations.

Data within a worksheet or worksheets is easily manipulated. The screen can be divided into windows to organize text, values, and formulas. Through each window, you can view part of the worksheet to display related computations together. By using windows, titles can also run across several columns. You can link the data in one worksheet to calculations being performed in

another, using up to eight worksheets. Or, a summary worksheet can be created using data from other worksheets.

Multiplan also provides easy editing tools. Specific commands and keystrokes guide you to insert, delete, move, or reorder data on the worksheet. The package also contains a sorting capability that lists all column entries alphabetically or numerically. Multiplan has the unique capability of presenting results of formulas either as numbers or letters. Thus, if sales figures exceed a certain amount, you can instruct Multiplan to print a statement indicating the figures have exceeded an office goal.

## RANGE OF FUNCTIONS

The following information specifically describes Multiplan's powerful range of operations.

### Worksheet

Multiplan creates a simulated worksheet of up to 63 columns wide and 255 rows long. On this worksheet, words, numbers, and formulas can be entered into cells (one column high by one row deep) to prepare the most complex forecasts. Across the top and down the left edge of the screen are column and row numbers that indicate which area of the worksheet you are viewing.

You are prompted across the bottom of the screen with a list of all action commands available in Multiplan. Prompts also appear while you are performing specific functions.

### Commands and Functions

Multiplan includes more than 20 major commands for performing a multitude of system tasks, all available from an easy-to-read menu. By using these commands, you can perform the following activities.

- Enter text and numbers
- Create formulas
- Edit worksheets
- Format worksheets
- Print worksheets
- Link worksheets

Multiplan also provides more than 30 mathematical and text functions that help you find solutions to the most complex modeling needs. The functions can be combined with numbers in formulas to predict budgets, forecasts, and financial plans. Multiplan consists of the following functions.

- Arithmetic Functions (such as SUM, AVERAGE, SQ. RT.)
- Trigonometric Functions (SINE and COSINE)
- Conditional Functions (IF-THEN, AND, OR)
- Financial Functions (NET PRESENT VALUE)
- Statistical Functions (STANDARD DEVIATION)
- Other Functions (text string and row and column definition)

### Formatting and Printing

Multiplan's format and report capabilities are listed below.

- *Text Calculation* sets up formulas that print out relevant text in presentation format.
- *Alphabetical and Numerical Sorting* reorders columns of information into a more applicable presentation.

- *Variable Column Width* defines and varies the column width for each individual worksheet column.

- *Alignment Options* control how to align text in columns.

- *Format Options* control the entry of dollar signs or commas, rounded numbers, scientific notation, extended figures beyond column widths, or fixed decimals in formulas.

- *Print Options* vary the margins for hard copy printing of worksheets.

### External Linking

Multiple worksheets can be linked together, allowing parts of one worksheet to be used for calculations in another. Thus, the computations from several worksheets can be consolidated into a summary sheet.

Worksheets can be permanently linked so that each time you load a worksheet on the screen, Multiplan automatically copies data from the supporting, filed worksheets.

## FEATURES

Multiplan consists of the following features.

- Automatic recalculation of affected figures if a dependent figure or formula is modified.
- Horizontal and vertical scrolling for viewing access of the entire worksheet.
- Simplified menus to access all standard functions.
- On-line HELP screens provide quick reference information regarding system functions.
- Screens that can be segmented and boxed into eight windows simultaneously.
- Cell naming capability for readily identifying and recalling a section or cell of a worksheet.
- Use of full English words to represent all Multiplan commands.
- Quotes that can be placed around text within formulas to generate descriptive and understandable results.
- Linking ability to consolidate information from many worksheets into one summary worksheet.

- Sorting capability to reorder worksheet columns either alphabetically or numerically.
- Automatic pagination when printing a worksheet.
- Format capabilities that enable use of commas and dollar signs in figures and alignment of figures in columns.
- Formatting that allows column width to vary from column to column.
- Formulas that can be printed instead of results, to help analyze data on worksheets.
- A variety of mathematical, statistical, conditional, trigonometric, and machine-specific functions to support complex forecasts.
- Lock and unlock cell functions to secure all dependent calculations.

## PRODUCT SPECIFICATIONS

Multiplan operates on Alliance, OIS, the Wang Professional Computer, and Wangwriter in the following manner.

### Alliance

Because of the system capabilities of the Alliance 250 and the CP/M operating system, Multiplan worksheets are easily converted to a word

processed document. A CP/M conversion utility creates a text file to store the worksheet, then transfers its contents to a document. At this point, worksheets can be edited, printed, or merged with other word processed documents using the complete range of Wang's powerful word processing capabilities.

Using the Alliance menu customizing utility you can create a direct menu selection for the Multiplan application with just a few key-strokes. Because Alliance is a multi-user system, a copy of Multiplan must be maintained for each workstation accessing the software. Data file storage of worksheets are separately maintained for each user.

The use of Multiplan on Alliance requires a 64K workstation and the CP/M operating system. For Alliance users, level 2.0 (or above) software is required to operate CP/M and Multiplan. Software is loadable from an 8-inch, hard sectored, single-sided, single-density diskette.

Multiplan software requires approximately 110K of disk space on the system. When used in conjunction with the CP/M software, Alliance Multiplan requires approximately 250K of disk space per user for each copy of Multiplan maintained on the system.

### **Office Information Systems**

The OIS systems supporting CP/M can also convert a Multiplan worksheet to a word processed document. To either store a worksheet in a CP/M text file or an OIS document file, use the conversion utilities available with the OIS CP/M software. This filing flexibility ensures that worksheets can be maintained, edited, or printed using the complete range of OIS and word processing functions.

Multiplan is accessed from CP/M once the software is installed. You can set up a command prompt to automatically call Multiplan to the screen every time the CP/M operating system is accessed.

Because the OIS implementation of Multiplan supports a multi-user environment, a copy of the software should be maintained for every workstation that accesses Multiplan.

The use of Multiplan on the OIS requires a 64K workstation and the CP/M operating system. For OIS users, level 7.0 (or above) software is required to operate CP/M and Multiplan. Software is loadable from an 8-inch, hard sectored, single-sided, single-density diskette.

Multiplan software on the OIS requires approximately 110K of disk space. Approximately 250K of disk space per user is required for each copy of Multiplan maintained on the system.

### **Wang Professional Computer**

Wang's newest product line, the Wang Professional Computer, supports Multiplan on the MS-DOS operating system. The combination of MS-DOS and PC Multiplan provides one of the fastest implementations of an electronic spreadsheet tool in the computer industry.

With PC Multiplan, you can create a worksheet print file that will convert to a word processed document. The word processed document containing the worksheet can then be edited, printed, or merged with other word processed documents maintained on the system.

The software package is designed for the single-system user operating on single-drive, dual-drive, or Winchester disk drive system models. Multiplan is loaded from a 5 1/4-inch soft sectored, dual-sided, dual-density diskette. It is unnecessary to set up installation parameters for running PC Multiplan.

### **Wangwriter**

Wangwriter Multiplan is a single-user system available for use with the CP/M operating system. Once CP/M is installed, the Multiplan software can be loaded into the Wangwriter's diskette drive and the appropriate files can be called to the screen.

Worksheets are exclusively printed by using Multiplan's set of PRINT commands. The WW-CPM software package is used with Multiplan for both 96K and 128K Wangwriter hardware systems.

Multiplan is loaded from a 5 1/4-inch soft sectored, dual-sided, dual-density diskette. It is unnecessary to set up installation parameters for running Wangwriter Multiplan.

**CONFIGURATION CHART**  
**Multiplan Product Specifications**

	<b>Alliance</b>	<b>OIS</b>	<b>Wang PC</b>	<b>Wangwriter</b>
<b>Models</b>	All 250 models	105-1 115-2,-3,-4 130A,B,C,D,E All 140 and 145 models	All Wang PC models	5503A, 5503D 5504S, 5504D
<b>Operating System</b>	CP/M	CP/M	MS-DOS	CP/M
<b>Workstations</b>	Ergo-2 5300 series (domestic)	5536-4 AWS-4 5556C	MS-DOS model	CP/M model
<b>No. of Users</b>	Multiple	Multiple	Single	Single
<b>Diskette Size</b>	8-inch hard sectored Wang format	8-inch hard sectored Wang format	5 1/4-inch Wang PC format	5 1/4-inch Wangwriter format
<b>Disk Space</b>	250K	250K	128K	96 or 128K
<b>System Software Level</b>	2.0 (or above)	7.0 (or above)	MS-DOS 2.0 (or above)	CP/M 2.2

**WANG**

---

ONE INDUSTRIAL AVENUE  
LOWELL, MASSACHUSETTS 01851  
TEL. (617) 459-5000  
TWX 710-343-6769, TELEX 94-7421

*Wang Laboratories, Inc., reserves the right to change specifications without prior notice.*