



PC TAP

Consumer Report

Evaluation of WordPerfect Version 5.1

Open Forum
Graphics Software for Scientific Applications:
A Followup

Report #6
February 1990



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PC TAP CONSUMER REPORTS

From the Editor's Desk

The evaluation of proposed upgrades to standard items on EPA PC procurement contracts is a new assignment for PC TAP, and the assessment of WordPerfect 5.1 is the first project we have undertaken since we were given that responsibility. We're pleased with our expanded technology assessment role, and we look forward to the new challenges it represents. However, our product testing philosophy hasn't changed, and as you'll see when read the report, neither has our methodology.

More people were involved in the WordPerfect 5.1 assessment than in any previous PC TAP project. We're pleased about this, since user participation is a fundamental aspect of the PC TAP approach to product assessment. We are convinced that the best test environment is in the workplace under "live" conditions. It's in the hands of end users doing real work that the merits--and the flaws--of a product are sure to emerge.

Because *PC TAP Consumer Reports* have been so favorably reviewed by our readers, it has been decided that our publication should be distributed to a wider audience. Consequently, beginning with this issue *Consumer Reports* are being sent to everyone on the *Connection* mailing list, in addition to our previous subscribers. This represents a significant increase in our readership, and we welcome those of you who aren't familiar with our publication. We look forward to your comments, and to your contributions to future editions. *Open Forum*, beginning on Page 14 in this issue, provides an opportunity for readers to share their own technology assessments with others. Guidelines for preparing and submitting contributions to *Open Forum* can be found on Page 19. We invite you to consider sending us an item for publication, and we heartily encourage you to participate in future PC TAP evaluation projects.

David A. Taylor
PC TAP Coordinator

WORDPERFECT

Introduction

Over the past several years organizations within EPA have adopted a variety of word processing software. Usually a product was selected that seemed to fit a particular group's unique needs, or perhaps because it was recommended by a respected colleague. Although on the surface it may seem that this *select-your-own* practice would put the most suitable tool in the hands of each user, or at least in each office, a number of problems are inherent in the proliferation of many diverse products within the agency, all of which were designed to perform the same fundamental function. Not the least of these is the transmittal of machine-readable text to someone in the next room, in the next building, or across the country. The difficulties of editing and otherwise processing a text file in a foreign environment--that is, using an editor other than the one with which it was created--became more obvious with the proliferation of file-sharing throughout EPA. It became clear that standardization of word processing software was a desirable goal for the Agency.

Although a mandatory standard has not been imposed, WordPerfect has become the recommended word processing software product for users of personal computers throughout EPA. Over the past several years, use of WordPerfect has increased around the Agency. It has been installed as a standalone package in both MS-DOS machines and in Macintoshes, and in the local area network environment too.

With the increased usage of local area networks, WordPerfect Corporation's LAN front end, WordPerfect Office, has been gaining in popularity. WP Office provides a convenient platform for launching user applications, and it provides a number of convenient office-management features like interoffice messaging, calendaring, and resource scheduling.

Version 5.1 of WordPerfect, released in January 1990, is a significant upgrade over release 5.0. This means a number of new features not present in earlier versions have been introduced, and the package is substantially different from its predecessors. On the Agency's PC procurement contract, an upgrade to WordPerfect 5.1 as the standard word processing package has been proposed. Moreover, a bundled option has been recommended that would offer both WordPerfect version 5.1 and WordPerfect Office version 2.0 for a single price. The purpose of this PC TAP project was to confirm the advisability of upgrading to WordPerfect 5.1 as the contract standard word processing package, and to ensure that the WordPerfect 5.1/WordPerfect Office 2.0 interface is stable.

Why Upgrade to 5.1?

You may be asking yourself what's behind all the hype about WordPerfect 5.1. WordPerfect is acknowledged to be a frontrunner among word processing packages, and it's well known for the vast array of features it provides. Nevertheless, with Version 5.1 an impressive list of new features and enhancements appeared. The more significant among the recent additions are a graphical mathematics equation editor, pull-down menus, mouse support, an improved table creation/editing function, and a capability to import external spreadsheet data into WordPerfect tables. A number of other, less dramatic, enhancements were also made in 5.1. The increased flexibility, functionality, and ease-of-use the upgrade represents make a strong case for its implementation. In the following paragraphs we will look more closely at the new release.

Tables. The process of creating and editing tables has been significantly improved. In the new release, the user simply indicates that a table is to be created, and how many rows and columns are required. WordPerfect presents the table on the screen in the form of a grid. All that's necessary is to tab through the cells and enter the data to complete the table. Shading of selected rows or columns is supported, and calculations can be performed.

Equations. The graphics function has been expanded to include the capability to build a formula. A wide range of mathematical symbols and operators are available in the equation "palette," from which the user can choose elements to create an equation. The finished product is saved as a WordPerfect graphic image that can be placed selectively in a document, complete with sub- and superscripts and all the appropriate symbols in their proper relative positions.

Pull-down Menus. All the primary WordPerfect functions can be displayed across the top of the PC screen. Submenus are accessible through the typical "pull-down" technique, which can be activated with a mouse, or you can use the directional arrow keys to move around within the menus and submenus. This option can be turned on and off at the user's discretion; that is, if you want to leave it on permanently you can, but if you don't want the basic menu displayed across the top of your screen all the time you can turn it off.

Mouse Support. The mouse feature facilitates pulling down menus and subsequently selecting the desired option. A nice side-benefit of the mouse is the ease with which it can be employed to highlight text blocks for moving or deletion. However, for the significant group of users who persist in getting themselves regularly inoculated against rodent fever, all functions can be performed exclusively with keystrokes. WordPerfect 5.1 doesn't even care if you have a mouse attached to your system; but if you do, the product will support it.

Merge. The power of the previously-available Merge command has been substantially increased, while at the same time it has been made easier to understand and use. Merge commands can now be included in headers and footers, and they can be incorporated into macros.

Labels. It's easier to produce mailing labels in the new release. Avery Mailing Label formats have been pre-defined, so all you have to do is define the label dimensions you want, and specify how many are to be printed on each page.

Printer Support. Whereas in previous versions there were limitations on the character sets that some printer drivers would handle, under 5.1 all supported printers can print any character in WordPerfect's 1700-character repertoire.

Install Now, "Upgrade" Later

One of the beauties of this upgrade is that you can install the software now, and *grow into it later*. This is possible because you can use WordPerfect 5.1 in exactly the same way you've been using Release 5.0 (that is, not taking advantage of any of the enhancements), and you probably wouldn't even know you were using the upgraded product. As you become curious about new features, you can begin working them into your repertoire. Mix the new with the old, adding new things as you become comfortable with them.

Moving Between Versions

Usually one of the first questions asked about a new release of any software product sounds something like "Is the new software compatible with my old files, and vice versa?" In our opinion this is *usually* more of a theoretical question than a practical one. When a person moves to a new package, or a new version of an old one, they tend to stay with the new version. Why would you want to use Version 5.0 some of the time and 5.1 the rest of the time? (That's just a rhetorical question, folks; please don't bombard us with reasons why you might want to do this!)

We are aware of some limitations when you bring WP 5.1 files into WordPerfect 5.0. For example, if you create an equation in 5.1 and then try to use it in a 5.0 document, don't expect it to work. The 5.0 software doesn't support the new features of Version 5.1. However, you can probably get away with editing routine 5.1 text files in 5.0, or with importing routine 5.1 files into a 5.0 document. But it's probably not a good idea. When you want to import from 5.1 into 5.0, the recommended technique is to use the "save as" option (CTRL-F5) from the new release to save a 5.1 document in 5.0 format; then go into WP 5.0 and retrieve it.

Going the other way--that is, using 5.0 files in Version 5.1--should not present any significant problems. However, there are a couple of things you need to watch for, most of which relate to fonts and printing. Fonts and point sizes have been known to change when a WordPerfect 5.0 document is brought into WordPerfect 5.1. Letter- and word-spacing may also change. These minor inconveniences can be quickly corrected by simply re-selecting the correct settings.

Another consideration when moving between the two versions is the printer drivers. WordPerfect 5.1 comes with only three printer drivers: one for "all HP printers," one for "PostScript Printers," and one for "Dot Matrix Printers." WordPerfect recommends using the new drivers, rather than trying to convert 5.0 drivers for use under 5.1. A Bitstream fontware kit was recently announced for Version 5.1.

Environmental Considerations

Unlike WordPerfect 5.0, for which a separate version was available for local area network installations, Version 5.1 is networkable. That means the same software can be installed either as a standalone version in your PC, or as a LAN version on your network. Of course, the installation procedures are different when the product is networked, but that's the LAN administrator's problem, not yours.

When you move from standalone to the LAN world, all the compatibility questions resurface. In the EPA environment, concern focuses on potential compatibility problems between WordPerfect and its LAN front end, WordPerfect Office. We investigated this aspect of the upgrade issue, and ultimately went to the horse's mouth for the final word. We're pleased to report that, according to WordPerfect Corporation, both WordPerfect 5.1 and the LAN version of WordPerfect 5.0 are compatible with Office Version 2.0; and they intend to maintain compatibility between soon-to-be-released Office Version 3.0 and both versions of WordPerfect. In the final analysis, this means that, unless unforeseen problems are encountered, any combination of these products that is likely to be in use around the Agency will work OK.

Another environmental issue is a reported problem with Version 5.1 running on PCs with expanded memory boards. Some folks said the computers locked up when they ran WordPerfect 5.1 on such machines. After investigating this issue, WordPerfect Corporation reported that some manufacturers of expanded memory cards are not following the expanded memory specifications of

Lotus/Intel/Microsoft (LIM) 4.0, although they say they are. Since WordPerfect 5.1 expects LIM 4.0 protocol when it encounters boards that are advertised to be using it, the resulting incompatibilities cause problems. In the January interim release of WP 5.1, steps were taken to overcome this problem.

Evaluation Method

For the most part, this study followed the same methodology that has been successful in previous PC TAP projects. One constraint, however, was that people who volunteered to participate in the evaluation of WordPerfect 5.1 had to have access to the software; we weren't able to provide copies of 5.1 for evaluation purposes. Another element that hadn't been a consideration before was *time*. Because WordPerfect is a standard contract item and it takes time to effect a change to a contract item after the decision to do so has been made, it was important that the product evaluation be completed as expeditiously as possible. While we probably didn't finish as soon as some folks would have preferred, we did it as quickly as we could within what we considered to be a prudent timetable.

In all, sixteen people contributed to the testing of WordPerfect 5.1 and its WordPerfect Office 2.0 compatibility. A standard questionnaire was sent to those who were looking at Version 5.1 as a standalone product. It asked about installation of the software, and for comparisons with the installation of previous versions. Participants were also asked to complete several tasks using the new features: create and edit a formula; build and modify a table; use the pull-down menus and the mouse. Personal insights and opinions about Version 5.1 were requested, and the participants responded with lots of good hands-on experiences that we will pass along to you on the following pages.

The combined input from all the participants in this assessment follows. First the information gathered from those who tested WordPerfect 5.1 as a standalone product will be addressed. Then the results of tests conducted in the local area network environment are discussed.

User Assessment: WordPerfect 5.1

Evaluators were asked to describe their experiences with several aspects of WP 5.1 installation and use, and to rate each task on a 6-point scale where zero indicated the task was very difficult and 5 denoted a very easy task. First we'll present the scores and related comments on specific items from our evaluation questionnaire, then we'll discuss participants' general comments.

Assessments of Specific Tasks

Installation. Our evaluators all agreed that installation of WordPerfect 5.1 is easy, easier than installing WP 5.0. Several people reported having to remove something else from their hard disk to make room for 5.1 (it takes almost a megabyte for the entire program and all the options). Nobody reported any memory space problems, but one person noted that even though WordPerfect Corporation says 5.1 will run in 512K, this is cutting it very close. Consider 640K a more practical minimum for memory.

One evaluator who is responsible for keeping up a number of PCs found the installation process painful when you have to repeat it numerous times. This person said it has been made so "user

friendly" that it really slows you down when you know exactly what you're doing--but there's no way to speed up the process. Another comment was that, while the flexibility of 5.1's install allows you to selectively omit some modules (like the tutorial) to conserve hard disk space, it also will allow you to leave out parts that you need for WP to run. If you make this mistake, you have to go back and start all over!

Despite the few grumbles about specific aspects of the installation process, everyone gave it either a "4" or "5" score on our scale of 0-5, with 5 being the most favorable. WordPerfect 5.1 gets a B+ for ease of installation.

Creating/Manipulating/Editing Tables. Although everyone agreed that creating a table in WP 5.1 is a piece of cake, there wasn't complete consensus about the ease with which one can enhance or modify a table. One person pointed out that you have to be careful when you delete a row or column from an existing table, because the data contained in that row or column is lost in the process. Another, commenting on the ease with which tables can be created, noted that the discussion of tables in the new manual is very clear and concise. One individual summed up the table evaluation very simply: "I love it." Others pointed out the enhanced appearance of 5.1 tables, and several praised the ability to import spreadsheet data into WP tables "so they work almost like LOTUS." Finally, one enthusiastic evaluator commented that the table feature alone is sufficient reason to upgrade to WP 5.1; "worth the price of admission," she said.

Several of our participants had problems with shading a row or column, and with adding a column to an existing table. We could sympathize with these people, having been temporarily frustrated ourselves over these functions. It seemed to us, though, that the process is quite simple and easy to perform, once you know how; the documentation was our stumbling block in this instance.

Our evaluation form had four items related to tables: creating, shading, totaling a column of numbers, and adding a column. The average score for all participants for these four items was 4. Tables get a grade of B.

Using the Equation Editor. Although everyone agrees this is one of the best features of the upgrade, there also is consensus that it's the hardest to use. Using the equation editor was characterized as "not very intuitive," by one person, but another said the only thing that would make it better would be the capability to actually perform calculations.

Anybody who ever has faced the problem of trying to deal with scientific notation in a standard word processing environment will appreciate WP 5.1's equation editor. But it's one of those things that lots of people will never need. So this feature will probably always be seen as the ultimate by users who have need for it, and as an obscure capability to those who don't. With an average score for our evaluators of 2.9, this enhancement rates a C.

Pull-Down Menus/Mouse/Keystrokes vs. Function Keys. Because most of our study participants were familiar with WordPerfect from having used 5.0 for a while, the majority favored using function keys. After all, nobody likes change; if you have a method that's become second nature for you, why would you want to change? If it ain't broke, don't fix it, right? As one evaluator put it, "pull-down menus won't be used by folks who are already 'power users' of WordPerfect." Another pointed out that not everyone can afford mice, and "anyway, with the function key template it's child's play."

Notwithstanding their preference for the old ways, everyone acknowledged that the pull-down menus and mouse support are a great enhancement. New WordPerfect users who have the requisite equipment will no doubt fall very quickly and easily into mouse use. The pull-down menus are convenient, and you can see the command tree, so you know where you're going next.

On our evaluation form we asked participants to distinguish between "mouse with pull-down menus," "cursor keys with pull-down menus," and "function keys" with respect to speed and ease-of-use. Here's the result of their ratings.

User Interface Preferences

	<u>Easiest</u>	<u>Fastest</u>	<u>Most Cumbersome</u>	<u>Recommended</u>
Mouse with Pull-down menus	80%	00%	20%	34%
Cursor keys, Pull-down menus	00%	00%	80%	00%
Function Keys	20%	100%	00%	66%

WP 5.0 Files with WP 5.1 Software and Vice-Versa. None of our evaluators reported any problems in Version 5.1 when using files created in WordPerfect 5.0. That's no surprise. The new version can do anything the old one can do; everything appears to be upwardly compatible.

Several people experienced "problems" when they used Version 5.1 to create files, then brought those files into WordPerfect 5.0. The reported difficulties related to enhancements or functions in Version 5.1 that 5.0 doesn't support. For example, if you create a table using the new enhanced table feature of Version 5.1, then try to use that table in a WP 5.0 document, the formatting codes for the table get lost in the translation. The text will be there, but no rows or columns. That really shouldn't surprise anyone either. Similarly, don't bring a WP 5.1 file that contains an equation into Version 5.0 and expect to see the equation. A good thing to remember when bringing a 5.1 file into WP 5.0 is to turn the "show codes" option on; all WP 5.1 codes that aren't supported in 5.0 will be shown as [unknown].

Nobody commented on the occasional, more subtle changes we discussed earlier in this report, such as font or point-size changes. But if you find yourself having to move files between WP 5.0 and Version 5.1, remember to be on the alert for those situations too.

Additional Enhancements

The major thrust of our evaluation strategy was to make sure the "big" items that were announced for Version 5.1 worked as advertised, and to confirm that an upgrade was justified and worthwhile. However, there are a number of other enhancements that, while not as obvious or dramatic as those we've highlighted, nevertheless are worthy of mention. Several participants in our study pointed out some of these features, and we'd like to pass on their comments along with some of our own.

Multiple Pages Command In Print Function. A new selection can be found among those listed when you execute the print function: "Multiple Pages." When you choose "Multiple Pages," you then can specify the page-range you want to print from the document (like 3-5, or 51-57). Under WordPerfect 5.0, this capability was available only when printing a document from disk, or when selecting a document to print from the List Files screen.

Spreadsheet Importing and Linking with Text In/Out Function. This new function allows you to import information from a spreadsheet file into your WordPerfect document. When you *import* information, the values from the specified spreadsheet are placed in the WordPerfect document at the point where the cursor was when the function was executed. When you *link* a spreadsheet file with a WordPerfect document, the values in the document are updated in one of several ways. For example, you can update from the spreadsheet on demand, or you can elect to have the document updated every time it's retrieved from disk. Currently, files from these spreadsheet programs can be imported and linked: PlanPerfect (versions 3.0 through 5.0), Lotus 1-2-3 (versions 1.0 through 2.2), and Microsoft Excel (versions 2.x). In addition, spreadsheets from Lotus 1-2-3 version 3 can be imported as long as they are in .WK1 format.

Saving 5.1 File in 5.0 Format with Text In/Out Function. Another option on the Text In/Out function is "save as," which allows you to save the current WP 5.1 file "as" (in the format of) a WP 5.0 or WP 4.2 file. This is not a new option, but it has been updated for WP 5.1.

Long/Short Display Option with List Files Function. The "long display" is a new capability with the List Files function. It accommodates "descriptive" file names in addition to the conventional DOS-format file name (8 characters and a 3-character extension). When "long display" is turned on, only the names of files created in WordPerfect are displayed, and they are arranged alphabetically by the descriptive name, not the DOS-format name. Long (descriptive) document names may be up to 68 characters long; the first 30 characters will appear on the List Files display. The biggest complaint we've heard about long document names and the "long display" option is that it slows down the List Files function noticeably.

Context-Sensitive Help. In WP 5.1, the help function is context sensitive; that is, when the Help function key is pressed, WordPerfect presents help screens related to the function that was being performed at the time help was requested. For example, if you pressed F7 for "print," and weren't sure which option to select from the print menu, pressing F3 would bring up help screens related to printing.

Enhanced Merge Function. The Merge function allows you to insert information from one file into specified points in a second file. The most common example is bringing a list of names and addresses into a document, one at a time, to prepare personalized letters. In WP 5.1, this capability has been made more powerful by allowing Merge to be used in conjunction with WordPerfect macros.

Relative Tabs. In prior versions of WordPerfect, tabs were always set relative to the left margin. In a document with a 1-inch left margin, then, a tab set at the 1-inch reference would be one inch from the margin, or 2 inches from the left edge of the paper. In WP 5.1, you may set *relative* tabs. Let's illustrate it with the same example. In a document with a 1-inch left margin and a tab set at the 1-inch reference point, the tab would be 2 inches from the left edge of the paper, just as with "hard" tabs. However, if we change the left margin to 1½ inches, the *relative* tab will be adjusted automatically a half-inch to the right too, to a point 2½ inches from the left edge of the page. Thus, relative tabs "float" in order to maintain their *relative* positions from the left margin.

Performance Issues

Several people reported that, compared with the execution speed of Version 5.0, WordPerfect 5.1 is slow. It was reported in the media (*Infoworld*, December 18, 1988; *Computer Reseller News*, January 22, 1990) that 5.1 is in fact about 10 percent slower in execution. This is attributed to the increase in the size of the overlay file, which in turn causes more disk I/O, the net result of which is slower execution.

Because one of our evaluators reported what appeared to be inordinately slower performance with the spell checker, particularly in the LAN environment, we ran some independent tests of this feature. Using the same test document in all cases, the times we recorded for spell-checking in LAN WP 5.1 were about 12 percent slower than the times in standalone WP 5.1. However, the difference between WP 5.1 and WP 5.0 was more dramatic: Version 5.0 was about 35 percent faster!

These have been the major additions and enhancements advertised by WordPerfect Corporation for Version 5.1, and brought to our attention by evaluators of the new release. No doubt there are more, and if any significant omissions come to our attention, we will prepare a followup report to bring them to your attention.

Running Under WordPerfect Office 2.0

The PC TAP evaluation of WordPerfect 5.1 included tests to be sure of its compatibility with WordPerfect Office 2.0. WordPerfect Office was installed in a test LAN environment in both Washington and in Research Triangle Park. For several weeks we ran both Versions 5.0 and 5.1 from the same Office platform with a limited number of users. No significant problems were reported, and nothing was encountered to suggest the configuration should not be adopted for EPA use.

Summary and Recommendation

The consensus of the participants in this evaluation project is that WordPerfect 5.1 represents a significant set of enhancements to an already powerful, versatile product. Our conclusions are supported by those of IDC Washington, Inc., an independent software testing/reporting organization, whose January 15, 1990 report on WordPerfect 5.1 said the upgrade represents "an impressive series of refinements that make an already good product finer yet." The advanced capabilities and new features have high potential value for the Agency's WordPerfect users.

Based on the test results reported by all participants, PC TAP has recommended acceptance of WordPerfect 5.1 as the contract standard word processing product. We hope you will enjoy learning and using WordPerfect 5.1, and that it will contribute to your word processing efficiency and productivity.

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Open Forum

Open Forum provides an opportunity for users to share with others their own innovations, or the results of their own technology assessments. The PC Technology Assessment Program neither verifies nor endorses the contents of *Open Forum* items, but we are pleased to offer them as a service to users.

Graphics Software for Scientific Applications: A Followup Arts & Letters, Designer, and Xerox Graph

PC TAP Consumer Report #2 focused on graphics software for scientific applications. In choosing graphics packages that were evaluated for that report, we did not select those normally considered to be aimed at *presentation* graphics applications. However, three such products are considered by some people to be quite well suited for preparing scientific data for presentation or publication. Those products are reviewed here.

Arts & Letters and Designer were evaluated for us by Steve Waltrip, the PC Star Coordinator at the Cincinnati lab. Anyone who knows Steve will attest to the fact that this guy is a walking encyclopedia of computer graphics lore. We're grateful for his cooperation with PC TAP, and we thank him for sharing his expertise with our readers.

Arts & Letters Overview

Arts & Letters is a Windows version of another package, Diagraph 2000. The basic version, Arts & Letters Graphics Composer, contains a catalog of 3,700 clip-art images and 15 user-selectable typefaces. You simply choose by number the image you want to use, and it appears on the computer screen where it can be positioned and manipulated. Arts & Letters Graphics Editor is an expanded, enhanced version of the Composer that contains over 15,000 clip-art images and dozens of type faces. The Graphics Editor also offers advanced drawing features and the capability to import TIFF, ASCII, Lotus PIC, and Diagraph files, and export .EPS, .CGM, and Windows Metafiles.

Arts & Letters Graphics Editor was used for this report, and it is the recommended version for those who wish to consider this powerful graphics package. In a review of this product in the December 1988 issue of *PC Publishing*, this product was called "the most powerful and sophisticated PC-based graphics program available today." Arts & Letters is said to be so easy to learn and use that even inexperienced users will have no difficulty with it. A context-sensitive help function as accessible from anywhere in the program.

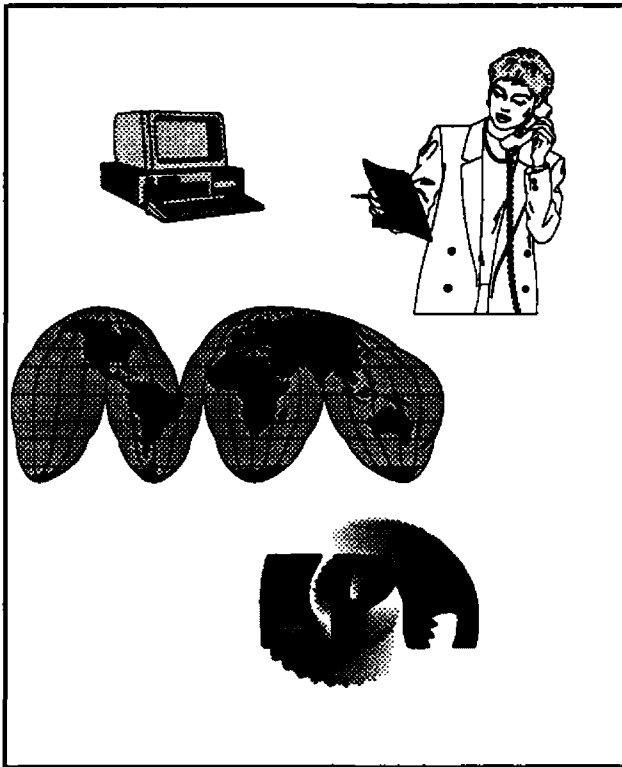
User Assessment of Arts & Letters

It was hard for us to stop admiring the sample graphics submitted with the evaluation of this product long enough to actually read the evaluation form. The output from Arts & Letters Graphics Editor is, in a word, striking. There's an example below.

Our evaluator, an experienced user of computer graphics software and unabashed Arts & Letters fan, reported no problems installing and using this product. The documentation was rated "excellent" in all aspects. Both online help and a manual-based tutorial are available, and they are said to make the other documentation almost unnecessary during routine use. This supports a quotation from a user in the vendor's sales literature that after 15 minutes with the product, "you won't need the manual."

This product's only shortcoming--and for scientific applications it's a significant one--is that its forte is *graphics*, not *graphs*. It will not produce line, bar, or pie graphs; and it can't create scatter graphs, histograms, or Gantt charts. However, high-quality word charts and organization charts can be created, and the product's repertoire includes a host of sophisticated presentation graphics images, many of which are appropriate for display of scientific data. Test output was reported to be an exact image of the screen display, with the final output under all test conditions being excellent. Images created from imported files were also said to be very faithful to the originals.

Arts & Letters Graphics Editor is a first-rate product, and it deserves consideration by people who are interested in creating quality presentation graphics, slides, and posters. Computer Support Corporation is said to have the development of graphing capabilities for Arts & Letters on their "to do" list. That enhancement should make this product totally acceptable for users of graphics software for scientific applications.



Arts & Letters Graphics Editor; List \$695

Requirements: 512K; Microsoft Windows
Version 2.0 or higher;
graphics card; mouse

Manufacturer: Computer Support Corporation
15926 Midway Road
Dallas, TX 75244
(214) 661-8960

Designer Overview

Micrografx Designer is a Windows-based graphics product for graphic arts and technical illustration applications. It provides a comprehensive set of drawing and graphing tools, symbol and clip-art libraries, and palette sets of over 3.6 million colors and gray scales.

According to Micrografx, anything that can be drawn at the drafting table can be created with Designer. For example, technical illustrations, fashion designs, medical diagrams, logos, maps, cartoons, architectural designs, mechanical drawings, electrical schematics, and engineering specifications all have been the subjects of Micrografx applications. In addition to the tools you would normally expect of a graphics package, Designer's capabilities are enhanced by a number of advanced features, of which Bézier curves are most notable. The Designer Reference Guide explains Bézier curves like this:

Any shape—even shapes that are composed of straight lines and sharp angles—can be expressed as Bézier curves. Mathematically, a Bézier curve is very complex, but Designer expresses them in an easy-to-use fashion that requires no mathematical skill.

It isn't important to understand the mathematics behind Bézier curves to appreciate their usefulness. In Designer, they allow you to create graphic images composed of smoothly contoured curves in compositions of various degrees of complexity.

In addition to its impressive artistic capabilities, Designer includes a number of templates for creating word charts for use in publications or for presentations. Any font supported by your printer can be selected for use in Designer word charts. Three levels of magnification are provided by the zoom feature. A "line connect" function automatically closes any gaps you inadvertently leave between segments of a drawing, and curves can be edited, smoothed, and unsmoothed.

Designer is compatible with a number of other software products, so you can create graphics for use in other environments or import components that have been created by other products. These file formats may be both imported and exported: .CGM, .DRW, .DXF, .EPS, .GRF, HPGL, .PCX, .PIC, .TIF, and .WMF. ANSI text files are supported too.

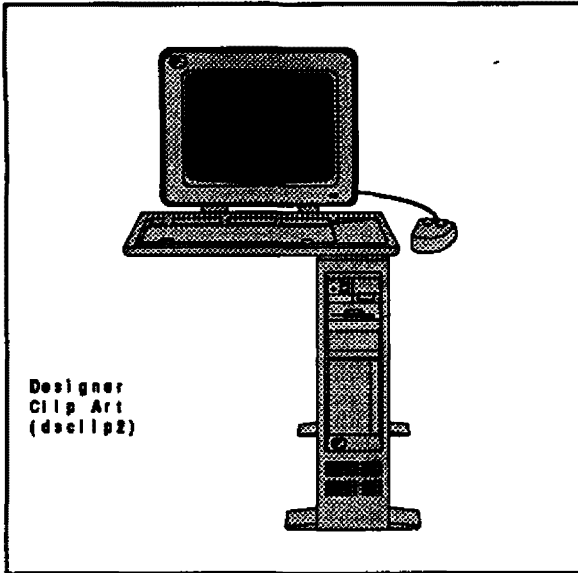
User Assessment of Designer

Use of Designer was reported to be "fairly intuitive," meaning most keystrokes are easy to anticipate. The documentation was judged "average," except for the "excellent" table of contents and the "poor" tutorial. Online help is available, along with "help-help" (a tutorial on how to use the help function), but was said to be only somewhat helpful.

Like Arts & Letters, this is not a "scientific" graphics product. Neither error bars, mathematical symbols, nor typical chart types (x-y, bar, line, etc) are supported. Except for "ease of use" and handling of errors/error messages, which were rated "poor," Designer's capabilities received a grade of "average."

The reported shortcomings of Designer were its slow execution and sub-par conversions to some file formats—CGM in particular. Exports were "quite often unusable by other programs." Its best feature was said to be vector clipping for plotters. Output for PostScript printers and matrix cameras was judged "excellent."

Designer has a number of desirable features. However, our evaluator judged its sluggishness and its tendency to hang up were too high a price to pay to gain access to them.



Micrografx Designer, List \$695

Requirements: IBM PC or PS/2 with DOS 3.0 or higher (AT-class or faster recommended); 512K (640K Recommended); Microsoft Windows Version 2.0 or higher; graphics card; mouse.

Manufacturer: Micrografx, Inc.
1303 Arapaho
Richardson, TX 75244
(214) 234-1769

Xerox Graph was evaluated for us by Jim Ooro, a member of the CSC staff at the National Computer Center in RTP. Jim's expertise has been applied to management of Perkin Elmer minicomputer systems, database management, and testing and installation of software. He uses PC graphics software for graphing statistical and engineering data.

Xerox Graph Overview

Xerox Graph is another Windows-based product that, according to the product's *Training Guide*, uses pull-down menus, dialog boxes, buttons, a 256-color palette, and a tool box that all work together to provide an "easy way for you to create complex graphs." Xerox Graph outputs to a number of devices, including laser, matrix, and color printers, and it also supports Autographix Overnight Slide Service, a nationwide network of service bureaus that produce 35mm slides, overheads, and color prints.

Twelve different graph types can be created with Xerox Graph: area, line, pie, polar, bar, stacked bar, column, stacked column, scatter, double Y axes, double x axes, and text. Data to be used in graphs can be read from files in Xerox Graph's own .XGD format, or from ASCII, .DIF, .SLK, and WK? files, and Cricket Graph files from the Macintosh.

Graphs are created by entering data into the rows and columns of a worksheet provided by Xerox Graph. After entering the data, you can sort on the values in a selected column. A *simple math* function allows you to add, subtract, multiply, and divide one column by another column or by a constant. More complex mathematical operations can be accomplished with the *Transform* function: natural and base 10 logarithms, exponentials, sines and cosines, n^{th} derivative, x^n transforms, running sums, percentages, and

Z-scores. Another function, *Count Frequency*, tabulates the number of occurrences of a value or category in a column of data, and *Smooth averages* irregular data to produce a smoother graph.

User Assessment of Xerox Graph

This product was reported to be easy to install, with excellent startup instructions, except for those relating to installation of optional Bitstream fonts. Overall, the documentation was rated "average." The tutorial was rated "good," while online help was said to be "somewhat helpful." Although the package is generally easy to use, usage was said to be difficult without first reading the documentation. There was little reported predictability of keystrokes for various functions.

Creation and editing of graphs was reported to be easy and straightforward, except for some of the more complex features. As with the startup instructions, the elementary functions are well explained and clear, but clarity of the instructions and documentation decreases with increasing complexity of the material under discussion. Most aspects of graphs--size, position, font selection, titles and labels--can be easily controlled during creation. Similarly, nearly all aspects of existing graphs can be edited with ease.

The best features of Xerox Graph were said to be ease of installation and clarity of output, with only a few minor differences between screen images and printed output. The most significant reported problem related to usage was with the placement of icons in some menus. Because some icons are very close together, our reviewer had trouble selecting the desired icon with the mouse without "overlapping" the pointer onto adjacent icons. Overall, however, Xerox Graph offers more functionality than the typical "presentation" graphics package, and the output, as can be seen in the example below, is excellent.

Xerox Graph, List \$295

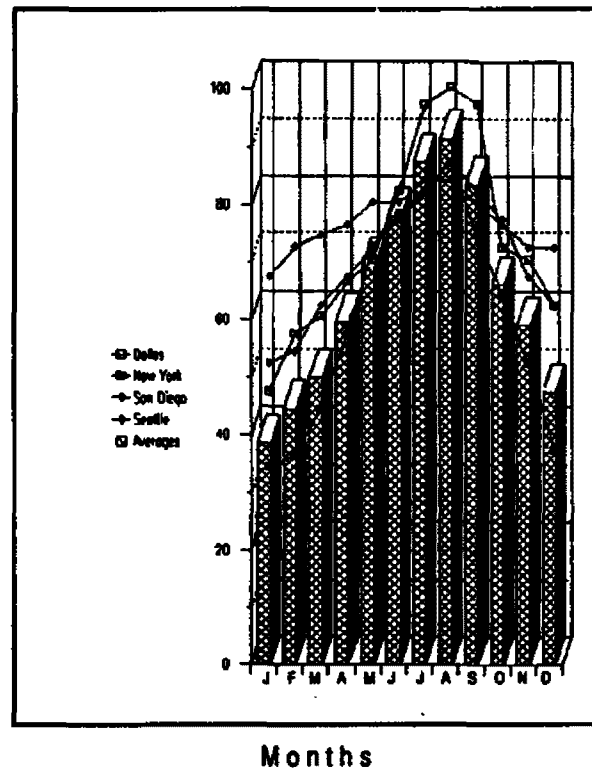
Requirements:

IBM AT or PS/2 with DOS 3.1 or higher;
640K (1 Meg Recommended for 286
machines, 2 Megs for 386s);
Microsoft Windows Version 2.1 or
higher (run-time bundled);
graphics card; mouse.

Manufacturer:

Xerox Corporation
9745 Businesspark Avenue
San Diego, CA 92131
(800) 822-8221

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How to Submit Items for Open Forum

In keeping with the PC Technology Assessment Program's objective to have the user community actively involved in TAP projects, users are encouraged to submit items for inclusion in future *PC TAP Consumer Reports*. If you have independently investigated the capabilities of a software product or a hardware component, we would like to hear from you. We'd also like you to share with others your solutions to any problems you may have encountered with a particular application or device, and about tricks, shortcuts, or unique applications you have devised. Although we can't promise to publish every contribution, we will evaluate them all in terms of their potential interest to our readers and their conformance to the spirit and intent of PC TAP.

There are no additional rules for *Open Forum* contributions, but here are some guidelines:

1. Contributions must be typed. Our first preference is that they be submitted on a floppy disk in WordPerfect format. If that isn't possible, the next best method is to EMAIL the text to PCTAP, EPA30647. The least preferable method, but still acceptable, is to mail a typewritten article to TAP at the address on the cover of this publication.
2. The length of your contribution will be determined somewhat by its complexity. However, keep in mind that we're primarily interested in the purpose of your study project and how pleased you were with the results, not in the nitty-gritty details of how you did it. We will publish your name, address, and phone number for those who want more details. Two to three pages is probably a reasonable maximum length. On the other hand, a paragraph containing a nugget that may be useful to others would be equally welcome.
3. All material submitted by users is subject to our editing, and you will not be given an opportunity to review the final manuscript before publication. Sorry, you'll just have to trust us. If we have questions or don't understand any part of your text, we'll contact you for clarification.

We hope you enjoy *PC TAP Consumer Reports*, and we look forward to hearing from individuals who have insights or discoveries to share with others. Thanks for your interest and your participation in the PC Technology Assessment Program.