

those used to retrieve data and display it on the screen).

Both the screen-generation facility and the report-generation facility remind us of MicroPro's InfoStar. You use the IBM PC's editing keys to create screen and report forms, simply by typing. You can type report headings on the screen and even perform mathematical operations by

values into which it must fall. If you attempt to enter information that does not meet the requirements, the machine responds with a message you create while designing the Rules statement.

In addition to protecting you from making errors in fields you have defined, the program gives you one feature that will make the users of old-style data

If you already have your perfect data base on disk somewhere, you can let R:base take charge of it. You can combine data bases created with R:base and data bases created with other programs (Multiplan, VisiCalc or dBase II, for example). You can even use R:base to send and receive data-base information from other computers.

Documentation for R:base is good; the program carries the major responsibility for teaching you on-line. The on-screen commands are understandable and logically progressive; users will hardly need to consult the manual.

If you must turn to the printed documentation, you will find a manual that is terse yet complete. Sections on data-base structure, data input, data inquiry, reports, modification, transporting other data bases and instructions on customization are well written. Microrim has sprinkled summaries throughout the text and has compiled an excellent glossary.

If you are new to using data bases you can turn to Microrim's tutorial disk, an option that contains predesigned data bases and explanations on how to use R:base options within those examples.

From the first command to the last, R:base worked without fault. It functions beautifully for the beginner yet also offers features that users can grow into as they acquire more expertise and confidence. ●

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simply specifying them in the Select statements. R:base can add, subtract, multiply, divide, find the minimum or the maximum or take the average of any numeric data values.

R:base's fine data-entry area, data-recall methods and data-report generator would be worthless if the program could not prevent you from entering anomalous data. R:base protects you with a feature called the Rules statement, which essentially specifies either the type of information that must be present or the range of

managers sing. R:base allows you to easily recover from any errors you might have made in your initial data-base structure. If you later decide to add an additional piece of information to your record, or decide that one item is no longer germane, you can instantly change the structure while retaining your information and its relations. You can edit information, add fields, delete fields and even reform the entire structure. This is an aspect of R:base we like a great deal: neither data nor data-base structure is "carved in stone."

Visi On Applications Manager for high-end use

BY JOHN LOMBARDI
Contributor

Only the most inattentive readers of the *Wall Street Journal* or other popular publications could have failed to notice major advertisements for Visi On, the window manager and integrated-software system for the IBMPC and PC-compatible machines.

This package from VisiCorp, the company that publishes the successful VisiCalc program, offers a completely integrated environment for various applications — including word-processing, spreadsheet, data-base and graphic packages. Although each application program is self-contained, they all share the same information, style and method of operation. Visi On is one of the first of the new generation of programs that combine window management with the integration of tasks.

The advantages of this approach are obvious. You don't need to learn four

different sets of complex commands or widely differing program structures in order to accomplish word-processing, graphics, spreadsheet or data-base-management tasks. For example, you can instantly insert data-base information into a written report, convert it to a graph or transfer it to a spreadsheet for further analysis. You need only learn one set of conventions to operate these programs, which reduces training time.

This review primarily covers the Visi On Applications Manager (the Visi On operating environment). In order to test the Applications Manager, we also used Visi On Calc (a spreadsheet) and Visi On Graph (graphics). VisiCorp was preparing two additional applications, Visi On Word (word processing) and Visi On Query (a data-base-management system) at the time of this review (March 1984). VisiCorp is also actively courting software developers to make their applications run under the Applications Manager.

The idea of a product such as Visi On is grounded in the exchange of information between various applications. Since we had only two applications to test, we couldn't explore the product as much as we would have liked.

Visi On is intended for business or professional use, and it demands a substantial investment in equipment. You'll need an IBM PC, Compaq or Honeywell Series 7900 computer with 512K of memory. (Don't be confused by the manual, which states that 256K RAM is all that is necessary. The system requirements listed on the Visi On box specify 512K, and you will need it.)

You'll also need a color-graphics board; the appropriate graphics monitor; an RS-232 serial port; a hard disk containing at least five megabytes of memory; a double-sided, double-density floppy-disk drive; PC-DOS or MS-DOS 2.0; and the VisiCorp Mouse. When all is said and done, this is not a cheap hardware setup. We tested Visi On on an IBM PC XT.

Visi On requires a special optical mouse, a two-button animal that moves around on a reflective grid measuring 9 x 11 inches. The mouse connects through the computer's RS-232 port and has an umbilical cord that runs to a wall-

plug transformer that supplies power to the mouse even when the computer is turned off. As long as you don't unplug it, you don't need to recalibrate the mouse, although recalibrating it is a simple task.

Visi On's user interface — its presentation of objects and information on the screen — is very different from that of most products now on the market. Its

Visi On, like the Apple products, relies heavily on its mouse. The hand-held device performs two distinct functions. It allows you to point at something on the screen by rolling it on the desktop — similar to moving a cursor with arrow keys — and activate the selection by pressing one of the two buttons. By pressing the other button, you can make the material dis-

played in a window scroll horizontally or vertically.

you can easily see the names of folders and files, point with the mouse, click the button and carry out your housekeeping without having to worry about typing the filename correctly.

VisiCorp seems to have little interest in helping you handle data that exists outside its own system, though. According to the manual, an Import function will, in theory, bring DOS files into the Visi On system, but only if you use a special program and DOS to convert these files. Such a program is not available from VisiCorp and can't be run from within Visi On. The manual does not supply information to help you prepare such a program. The manual does state, however, that third-party vendors will be providing such programs in the future.

Visi On can set up any floppy disks it uses by placing information on them, in addition to whatever information DOS puts on the floppy with its Format

Visi On's user interface — its presentation of objects and information on the screen — is very different from most products now on the market.

developers have decided to present the program in such a way as to eliminate typical computer conventions.

Like the software on Apple's Lisa and Macintosh, Visi On's basic presentation or analogy (*metaphor* is preferred in computer jargon) is that of a desktop containing papers. By picking up a paper and placing it on the top of the desk, you activate that file — a document, spreadsheet or other piece of work. Visi On stores its files in folders — a continuation of the office-desktop analogy.

Unlike Apple's desktop, however, Visi On does not use icons, or pictures, that symbolize files or processes. Instead, Visi On displays menu bars at the top right corner of the screen, each containing the name of one folder. The bottom lines of the screen are devoted to another menu bar, containing a series of options that never varies. They are intuitive selections, such as Open or Close. As you rest the cursor on each option, a fuller definition of the command appears above it.

You move between applications by opening and closing windows (a window being the active area of the screen in which you are performing some task). You can define the size of each window and keep more than one visible on your desktop at one time. Each window also displays its own menu bar at the bottom, and you can cause optional menus to appear at the appropriate times by selecting one of the commands in a menu bar.

Because it doesn't use pictorial representations, though, the analogy of the desktop is not totally apparent; folders don't actually *look* like folders. Much of the reason why Visi On does not use icons is the lack of resolution and processing power inherent in the IBM PC design; still, if you're used to the Lisa or Macintosh display, Visi On will not measure up.

played in a window scroll horizontally or vertically.

Moving information between files is as simple as defining the upper-right-hand and lower-left-hand corners of the area you want to transfer, moving the mouse and clicking its buttons.

The Applications Manager makes everything work in Visi On — it handles folders, files, windows and applications. After installing the manager onto your hard disk — it takes up 1.5 megabytes of memory space — you install application programs so they will work in conjunction with it.

The manager is a fascinating product. Its windows represent a programming tour de force; they are managed in a simple and easy-to-understand fashion. You can open and close, expand and shrink, store and retrieve these windows with wild abandon.

The manager depends on the mouse for its instructions. The mouse cursor appears on the screen in three forms: a pointed arrow, an hourglass shape and a scrolling pointer. When you see the mouse's arrow, the manager can accept instructions; when you see the mouse's hourglass, you must wait until the arrow reappears to issue commands. The scrolling pointer comes into play when a window is active.

The mouse issues instructions when you put the arrow on a command and click the Select button. Each window can have several command lines.

The manager's performance in this domain is nothing less than superb. The windows are easy to use, fun to play with and allow you to handle a lot of "housekeeping" with little effort.

The manager's file system is like DOS's file system, except that the manager calls subdirectories "folders" and allows filenames to be 12 characters long. The manager has a visual filing system —

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REVIEW

Visi On Applications Manager



	Poor	Fair	Good	Excellent
Performance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Documentation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ease of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Error Handling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Summary: The Visi On Applications Manager has superior visual design, good ease of operation and rapid transfer of information between applications. Its problems are the lack of supplied routines to move existing information to the product and the lack of speed for large spreadsheets. Overall, though, it is an impressive product.

Product details: List price, \$95; mouse, \$250. Available for IBM PC, Honeywell 7900 or Compaq running DOS 2.0. Requires 512K RAM; RS-232 serial port; 5-megabyte hard disk; one floppy-disk drive; graphics monitor. Published by VisiCorp, 2895 Zanker Road, San Jose, CA 95134; (408) 946-9000.

command. Visi On's nonstandard files do not easily transfer to the outside world. The manager can, however, convert VisiCalc files and export DOS text files outside its environment.

From the manager you can move to any installed application by pointing the mouse and selecting the application from a menu. The manager then creates and names a window, and you may begin work. All work must occur in a window that is open, so if you want to move data from three spreadsheets to a fourth, you need to open windows for all three source sheets and the destination sheet before beginning to work.

Only one window at a time is active, although you can have many open on the screen. When you point the mouse at an open window and press the Select button, that window becomes active and is displayed on top of any other open windows on the screen. You can adjust the size of windows easily so that pieces of all the open windows are visible. With some practice, it is relatively easy and efficient to activate, deactivate and work among windows.

Visi On Calc and Visi On Graph interact painlessly. Information in the Calc spreadsheet is first moved through an intermediate program called the Graph Series List. Graph then draws the graph with little effort on your part, other than a considerable amount of pointing and selecting with the mouse.

The mouse's pointer moves smoothly and accurately, although you will need some practice to consistently get the pointer where it belongs. If you point and select in quick succession, the mouse cannot always remember your actions because it has no buffer or special area of memory devoted to it. You must wait for the program to complete one operation before you point and select the next. And, of course, you must have a 9 x 11-inch clear space on your desk for the mousepad.

We were impressed by Visi On's ingenious method of scrolling. You perform all scrolling with the mouse, whether you are scanning menus or data, by using the Scroll button. You point to what you want to scroll, such as data in a window, press and hold the Scroll button and move the mouse's scroll pointer in the direction you want things on the screen to move. If you move the mouse's scroll pointer an inch or so, you scroll as fast as possible; if you move less, you scroll more slowly; if you change direction, the scrolling changes direction; if you move and then stay put, scrolling continues until you release the Scroll button.

Playing with windows is one thing; actually doing work with them is another, so we installed the two VisiCorp-supplied

applications. Visi On Calc has just about every feature available in other spreadsheets. It has functions and options, it can copy and move data, and it sorts and changes display formats with as much variety as anyone could want. In comparison to the spreadsheet functions of 1-2-3, Visi On Calc is more powerful, with its many built-in functions, but we recommend you check to see if what you need is there. Calc is especially strong in financial functions and options.

You must use the mouse for almost everything except data entry and command selection in Visi On Calc. VisiCorp does not expect you to be interested in using the keyboard much. It is even possible, although not very practical, to use the mouse to enter numbers, one digit at a time. That's right: point at 1, select 1; point at 5, select 5; point at 0, select 0; point at Enter, select Enter; see the entry: 150.

Because of this reliance on the mouse, Visi On Calc is harder to use than VisiCalc, but it does more than the old spreadsheet. Calc's worksheet is 511 rows by 128 columns in size. This is a large spreadsheet, though not close to 1-2-3's maximum workspace. Calc manages its workspace by paging the spreadsheet in and out of memory from the hard disk as needed.

To test the raw speed of this Calc, we created a spreadsheet by entering only the following numbers: 10, 15, 20, 25, 30, 35, 40, 45, 50 and 55. We replicated this series to create a 511 by 40 worksheet. In row 511, at the bottom of each column, we used the Sum function to total each column.

Recalculating this worksheet took the program about 20 minutes. The same operation on the same worksheet using Lotus 1-2-3 took 30 seconds. Visi On Calc in this situation is, obviously, slow.

In addition to operating speed, a spreadsheet needs to let you move quickly through it, especially if the workspace is larger than the window. The mouse scrolled very, very slowly through our test worksheet, although the Goto command moved the mouse's pointer rapidly to the selected spot. Of course, with Goto you must enter coordinates from the keyboard and remember them. You can, as is true of all good spreadsheets, define cells by name and then go to the name. This may be the only way to navigate efficiently around a large Visi On Calc spreadsheet.

Although this review is not intended to be a thorough test of the product, a short evaluation of Visi On Calc is in order. It is powerful and effective on small spreadsheets but unacceptably slow in almost every instance when operating with large spreadsheets.

Why is it so slow? The Visi On manuals contain no technical information about Visi

On products. The manager and windows, however, take up a tremendous amount of memory and processing power, leaving not much left over for Visi On Calc. Because it uses the virtual-memory approach of the whole Visi On system, Calc is always reading and writing pieces of large spreadsheets to the hard disk. The 20-minute spreadsheet recalculation described above kept the hard-disk light flickering nonstop.

For its part, VisiCorp contends that people have been creating large spreadsheets mostly because they haven't had the ability to link smaller ones together easily. The firm expects that, given Visi On's ability to transport data from window to window, you will develop much smaller spreadsheets than you would with other products.

On the other hand, Visi On Graph does a superior job of taking data from Calc or entering data directly into its own tables and turning them into outstanding graphic images. This graphing program, combined with the window and mouse operation, is superior in flexibility and ease of operation to 1-2-3. It has a wide variety of graph types and excellent labeling features. The mouse makes moving and placing labels a quick and easy process. The combination is excellent.

Visi On supports a range of printers and plotters, but it is only satisfactory if your printer is among those chosen for support by VisiCorp. Although Diablo is not represented at all, lots of Epsoms and some other common printers are supported, as are two plotters. We hope Visi On will support other printers and plotters in future versions.

Visi On's documentation is good. The tutorials are helpful, the explanations are clear and the manuals readable. Help screens in the programs themselves are useful but are not as good as those in 1-2-3. The manuals need better indexes and a technical-details section with information about file formats and transfer requirements for those owners who have files to convert.

VisiCorp provides a helpful telephone hot line. We called when we had some trouble installing the mouse, and the answers we received were useful, friendly and correct.

VisiCorp's copy-protection scheme has a good side and a bad side. The company has devised two types of copy-protection, only one of which is now in use. The unavailable scheme, which VisiCorp is still considering for use, relies on providing the mouse with a unique serial number for each system; Visi On's manager compares the mouse's serial number to that of the software. If you have the serial-number mouse, you can copy all the disks for backup since the protection is in the

mouse. You can only install this mouse on one system at a time, and if the mouse dies, you're out of luck until VisiCorp can get you a new one. You can move the Visi On system only as long as you are able to move the mouse.

The currently available scheme is software-based: you have a copy-protected system disk. This disk must be in drive A whenever you start Visi On and whenever you start a new application from within Visi On. When you begin, Visi On checks this disk. When you start a Calc sheet, Visi On checks the disk; when you begin to Graph, Visi On checks the disk. If the disk isn't there, the program doesn't run.

The manual warns you repeatedly during the installation instructions to be sure you have the right kind of software for your mouse; if you install incompatible

**The company's
documentation is
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the explanations
are clear.**

software and the mouse, you could end up with a trashed diskette and have to send it back to the factory. With the copy-protected system disk, you can move the system as long as you move the Application Manager disk. You cannot copy this disk, and you get only *one* system disk. VisiCorp will sell you a backup for \$50, after you've returned your registration card. You can copy all the other disks. You can consider backup for the system as a \$50 accessory — all prudent users should buy the backup disks for their own long-range protection.

The parts of Visi On we evaluated — the Applications Manager, Calc and Graph — have superior visual design, good ease of use, excellent graphing capabilities and strong spreadsheet capabilities. The manager is a strong product, and we think it could easily become a great success in the marketplace. But it is a large product, and its design makes the use of large spreadsheets impractical. We think the lack of available "import" routines is also a strike against the product. Still, in our evaluation of Visi On's Applications Manager as an environment in which to work, we were pleased and impressed. ●

I Am the C-64 unlocks machine's abilities

BY PHILLIP ROBINSON
Contributor

If you are a beginner or novice who owns a Commodore 64 and finds action on the screen easier to follow than on the page, *I Am the C-64* is the program to show you the workings of your machine. At your own pace, in large and colorful graphics, it will demonstrate the capabilities of the machine and give many explanations and a few hints about harnessing those capabilities.

I Am the C-64 is actually two programs. The Introductory Series consists of Volumes 1, 2 and 3 and is all on one diskette. These volumes are Overall Introduction to the C-64, Introduction to the Keyboard and Introduction to BASIC, respectively. Although you can run the volumes in any order you wish, the numbering is a good road map. The ideas become more advanced in each consecutive volume.

All of the volumes are built around screens. Each screen presents a single scene or explanation and occupies the entire display. Some screens are altered during your use of the program, and you can't stop a screen once you have started to use it. Once a screen is played out, however, you can use a function key to return to the previous screen.

Volume 1 is a fun introduction to the sprites and sounds of the C-64. It is short and sweet.

Volume 2, the Introduction to the Keyboard, is excellent. A diagram on the screen highlights each key as its function and use is explained.

Volume 3, Introduction to Basic, does a good job of covering the fundamentals. Short programs are run by a mysterious character on the screen who is supposed to be the obedient spirit of your computer. This volume could easily be expanded and deserves a diskette all by itself. This program within a program surprises us by how well it illustrates program action.

Volumes 4, 5 and 6 are on the second diskette called *I Am the C-64*, Advanced Series. They are Advanced Basic Techniques, Sprite Graphics and Music and Sound Effects.

Volume 4 is a continuation of the material in Volume 3, but it covers more complicated instructions and structures of the BASIC programming language.

Volume 5 shows off some of the powers of sprites, which are graphic objects you

can display and move about on the screen. It is not complete, though; it skips descriptions of some of the things you can do with sprites. Volume 5 demonstrates how to build a sprite, how to detect "collisions" between two sprites when moving them around on the screen and how to move sprites over each other.

The possibilities you can encounter by creating more than eight sprites through the use of more advanced techniques, as well as some other useful tidbits, are also left out.

Volume 6 illustrates how the Commodore 64's built-in sound-generating chip works in much the same way that Volume

InfoWorld

I Am the C-64



	Poor	Fair	Good	Excellent
Performance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ease of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Error Handling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Summary: *I Am the C-64* is a pair of programs designed to take the novice Commodore 64 owner through the fundamentals of using the machine and elementary BASIC programming. It is easy to use and error-proof, although the documentation is barely adequate. The material covered could also be a bit more extensive, though for the price it is a good buy.

Product details: List price, \$29.95 for each diskette. Available for Commodore 64. Requires one disk drive, color TV or RGB monitor. Published by Creative Software, 230 East Caribbean Drive, Sunnyvale, CA 94089; (408) 745-1655.