

## DESKTOP COMPUTERS

## Compaq Strikes Again With Classy Clone

DESKPRO 286 IS IBM PC AT COMPATIBLE AND EVEN FASTER THAN BIG BLUE'S BABY

BY JOHN LOMBARDI  
Review Board

Known since its inception as the classy clone company, Compaq Computer Corp. has done it again. Its clone of the IBM PC AT, the Deskpro 286, is an impressive piece of equipment. The machine is sleek, elegant, powerful, and — like the original Compaq transportable — is in some ways better than the IBM machine it mimics.

The machine comes in various configurations, but the one we tested, known as the Model 2, arrived loaded. It had a 30-megabyte hard disk, one 1.2-megabyte floppy disk, and one 10-megabyte cartridge tape drive for backup. Its display was a dual-mode 12-inch amber monitor. The heart of the machine is its dual-speed Intel 80286 processor, accompanied by 640K of main memory operating under the control of a slightly enhanced version of the MS-DOS 3.0 operating system that includes Microsoft Basic 3.0.

In addition, the system includes 1.5 megabytes of extended memory. Of course, MS-DOS 3.0 does not recognize more than 640K of memory, so the large memory space in this machine awaits software, including alternative operating systems such as Unix, that can use it. Right now, the main thing that can be done with the extra memory is to create a large random-access memory (RAM) disk; the operating system utility Vdisk handles that effectively.

Those familiar with previous Compaq computers will recognize this machine as belonging to the same family. The dual-mode screen displays excellent, high-resolution text, almost as well as the IBM monochrome adapter and monitor. With a single keystroke, this monitor offers amber graphics, just like those the IBM color graphics adapter provides. The display hardware also produces standard IBM red-green-blue and composite color output, making an excellent solution to the multiple display quandary some users have.

The keyboard has a slightly better feel than the mushy first-generation Compaq portable, but in our judgment its response is

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The Compaq Deskpro 286, next to its smaller portable sibling, runs IBM PC AT software — and other IBM PC-compatible programs — in both a standard speed mode and a high-speed mode.

not as good as the IBM keyboards'. It does, however, mimic the AT layout, complete with lights on the numbers lock, scroll lock, and caps lock keys that actually reflect the current condition of the machine. The keyboard features an audible click when you depress a key, and its volume can be increased or decreased from the keyboard, a nice feature.

The main circuit board has the IBM PC AT expansion slot arrangement of six long slots that can accept AT-compatible cards only, one standard PC slot for long or short IBM PC- or PC XT-compatible cards, and one short slot for short PC- or PC XT-compatible cards. The machine we tested came with four slots filled, leaving room for two AT cards and two PC cards. There is also a socket for a math coprocessor chip. Like the AT, the Deskpro 286 keeps date, time, and setup information in a special area of memory, maintained by a battery and always available at start-up.

The monitor attaches to the system unit with two cables, one for power and one for video signals. Although it is convenient for the monitor to be turned on and off at the same time as the computer, the very short

cables prevent flexible arrangement of monitor and system unit. Unless the monitor is on top of the system unit or directly beside it, the cables won't reach the sockets. Because the fan on this machine has a slightly annoying whine, we think many users will want to relocate the system unit out of earshot and will need longer cables. The keyboard cable, however, plugs into the front of the unit and has a nice long cord.

Setup and installation take no time at all. The instructions are clear and, except for the 30-megabyte hard disk, everything comes ready to go. Before using the hard disk, which arrives locked with a big clip inside the system unit, you have to disassemble the box, fish out the clip, plug in a power cable, push in a locking lever, and reassemble the box. It's not hard to do, but you need nimble fingers because there is little working room inside the body of the machine. Compaq's directions are adequate

FOUR SYMBOLS: Top-notch product  
THREE SYMBOLS: Recommended  
TWO SYMBOLS: Try before you buy  
ONE SYMBOL: Not recommended

## REVIEWS

for the task of setup and installation.

MS-DOS 3.0, revision A, provided with this computer, looks just like PC-DOS 3.0 with some minor enhancements. Delivered on three 360K disks, the operating system includes a diagnostic program and a helpful setup routine for the hard disk. It also includes utilities for a tape backup. The manuals, prepared by Compaq, offer clear, mostly complete, well-written, and elegantly presented information about the operating system and the Basic programming language. Spiral-bound and inserted in a hard slipcase, the manuals provide a good guide to the machine and its operating software.

Although the manuals are good, they

perpetuate a poor Compaq tradition of providing as little technical detail as possible. From the manuals provided, we couldn't find out which processor is in the machine, or at what speeds it runs (6 MHz and 8 MHz, in fact). We could not determine anything at all about the characteristics of the tape drive, and because our dealer had no tapes, we had a hard time locating alternative sources for the tape.

You can purchase the technical reference manual to garner such information. But that should not be necessary to learn such simple technical details about the system. Indeed, users who need a machine with a dual-speed processor and 30 megabytes of hard disk storage deserve manuals with a modest amount of technical information, even if relegated to an appendix. When the press releases for a computer contain better and more complete technical information than the user manuals, the manuals must be judged incomplete.

Although the success of the Compaq Deskpro 286 depends on compatibility with the IBM PC AT, as well as some unique features, the manuals fail to mention the existence of IBM. Although this may contribute to corporate pride, it doesn't help the user who wants to know how software and hardware products developed for the IBM PC and AT will work with the 286. What effect does processor speed have on compatibility? How does MS-DOS differ from PC-DOS? How does MS-Basic differ from PC-Basic? Again, the press releases provide more information about compatibility than the manuals and instructions.

Until more software and hardware developed specifically for the IBM PC AT appears and is tested, it is difficult to measure exact compatibility between this machine and IBM's. The Compaq will accept and properly function with AT-compatible modem boards, and its software compatibility with the AT has so far been complete: If a program is known to run on the AT, it will run on the Compaq without incident. We feel it is still too early, though, to take claims of complete compatibility with the AT as gospel and recommend you check the compatibility of any particular program you wish to run.

In testing with existing compatible software, though, we found this computer to be a superb performer. It races through its tasks with efficient competence and heart-warming speed. Most IBM PC programs we tried worked fine and were much faster than on the PC or XT. Wordstar's speed is a joy. Lotus' 1-2-3 zips along. Basic appears speedy and graceful.

We ran a series of performance benchmarks designed to measure apparent speed—that is, how fast the machine will appear to a user doing ordinary work. We used

three tests. The first simply writes lines to the hard disk over and over until the hard disk is full. The second reads those lines back from the hard disk. The third runs a little exercise with 1-2-3. Although there was some variation between these tests reflecting the disk activity, the Compaq Deskpro 286 in its high-speed mode runs between three and four times faster than a PC or PC XT's in slow mode that declines to between two and three times faster.

In a more formal test, we used the Norton Utilities SI benchmark to compare the Compaq's speed to that of the PC and the AT. That relative performance test, which assigns a base rating of 1.0 to the 8088-based IBM PC, gave the Deskpro 286 a rating of 7.7 in high-speed mode (8 MHz) and a 5.7 mark in slow mode (6 MHz). By comparison, the same benchmark on the IBM PC AT, which has the same processor but only one processor speed (comparable to the Compaq's slow speed), yields a 5.8 rating. In real life, we couldn't duplicate such performance improvements. Still, the three- to fourfold increase in apparent speed over the PC is no small advantage for large projects or complex calculations, and this machine will outperform the AT as well.

The other facilities of this machine also performed well. The hard disk works fine, although we were unable to determine its exact technical specifications. Thirty megabytes is a lot of data, so the backup facilities take on an added importance. The Deskpro 286 has an internal cartridge tape drive that uses 10-megabyte tapes. Thus, a full hard disk will require three tapes, and about 20 minutes per tape, to do a complete backup. Compaq's version of MS-DOS 3.0 contains tape backup utility programs designed to make file backups and allow file by file restoration, along with other tape management facilities. The tape utilities will also restore backed up files to a floppy disk, should that be needed while a hard disk is being repaired.

Although the tape drive and software worked well, the drive itself takes up one of the three available places for external storage, leaving room for one 1.2-megabyte disk drive and the full-size 30-megabyte hard disk. As a result, this machine, when equipped with the hard disk, will not be capable of reliably writing standard 360K IBM PC-compatible floppy disks (unless you are willing to forgo the tape backup, which we do not recommend), in an environment with many PC-compatible personal computers; this may be a major disadvantage.

Compaq Computer Corp. provides no support to users except by mail or through dealers. The manual and other materials list no telephone numbers except for the maker of the key that locks the keyboard. If you have a good Compaq dealer who can help,

you'll be OK. If not, you'll be like us, unable to get a tape to make the tape backup work. For a machine in this price range, such a support policy is unsatisfactory.

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## DATABASES

# Power and Sim

## FILEMAKER HANDLES MEDIUM WELL AS ANY MACINTOSH PAK

BY DOUG AND DENISE GREEN  
Review Board

Power and simplicity seldom go hand in hand in the realm of computer software. Filemaker from Forethought, a medium-duty Macintosh database management system, is a pleasant exception that provides excellent features and ease of use.

Unlike many microcomputer management systems, Filemaker lets you construct multiple views or layouts of the fields in your database. This makes editing records as they are presented in various layouts less tedious than with other databases we have used. You can also use the clipboard to paste graphics from other Macintosh products such as Macpaint into a layout.

Intended as a medium-duty database, Filemaker does not include a programming language as do products such as dBase III or Rbase 5000 on the IBM PC or Mac Lion on the Macintosh. Outside of that, however, it resembles more complex products and provides an excellent mix of power and flexibility. It uses the standard database organization of files, records, and fields. The number of records in a file and fields in a record are limited only by disk space. Additional layouts for editing, forms, and columnar reports increase the need for more disk space.

Typical microcomputer databases allow you to define fields on the screen and then enter data. Additional screens are seldom available, and producing reports or forms often requires extra software. Mainframe-based products allow unlimited fields that can be viewed in countless arrangements, but they are expensive and difficult to set

*Doug Green, a director of school computer services, has also taught computer programming and worked with both minicomputers and microcomputers. Denise Green is an educational computer consultant and teaches computer use to adults. Their software reviews have appeared in various publications.*

## InfoWorld

### REPORT CARD

#### DESKPRO 286

	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 type="checkbox"/>	<input checked="" type="checkbox"/>
Ease of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Setup	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Serviceability	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### SUMMARY

Compaq's clone of IBM's PC AT is an accurate one, although it can be as expensive a personal computer as you will find. Its software compatibility is the same as the IBM model, and a high-speed mode for its 80286 processor means the Compaq 286 can work even faster than the AT. Except for a lack of some technical information in the manuals supplied, the Compaq entry is a classy and complete effort.

#### PRODUCT DETAILS

List price \$4,499 (base model); \$6,254 (as tested). Machine uses 80286 processor running at 6 MHz or 8 MHz running under MS-DOS 3.0, revision A. Base model includes 256K RAM; one 1.2-megabyte floppy disk drive, integral hard disk drive, 10-megabyte tape backup, 640K RAM, 1.5-megabyte extended memory optional. Includes dual-mode amber monitor capable of displaying IBM PC graphics; can accept RGB and composite video monitors. Eight expansion slots. Manufactured by Compaq Computer Corp., 20555 FM149, Houston, TX 77070. (713) 370-7040.

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## REVIEWS

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Given its sterling performance and the

high quality of the hardware, packaging, and instruction manuals, we think this is a fine machine in spite of Compaq's unwillingness to offer technical information or any telephone support. If your dealer is not up to

supporting the machine, we suggest you buy the technical manual at the same time you buy the machine or at least make sure that you get some amount of technical information. □

## DATABASES

# Power and Simplicity Combined

FILEMAKER HANDLES MEDIUM-DUTY DATA TRACKING AS WELL AS ANY MACINTOSH PACKAGE, WITH GREAT SUPPORT

BY DOUG AND DENISE GREEN  
Review Board

**P**ower and simplicity seldom go hand in hand in the realm of computer software. Filemaker from Forethought, a medium-duty Macintosh database management system that includes report and form generation, is a pleasant exception that provides excellent features and ease of use.

Unlike many microcomputer management systems, Filemaker lets you construct multiple views or layouts of the fields in your database. This makes editing records as they are presented in various layouts less tedious than with other databases we have used. You can also use the clipboard to paste graphics from other Macintosh products such as Macpaint into a layout.

Intended as a medium-duty database, Filemaker does not include a programming language as do products such as Dbase III or Rbase 5000 on the IBM PC or Mac Lion on the Macintosh. Outside of that, however, it resembles more complex products and provides an excellent mix of power and flexibility. It uses the standard database organization of files, records, and fields. The number of records in a file and fields in a record are limited only by disk space. Additional layouts for editing, forms, and columnar reports increase the need for more disk space.

Typical microcomputer databases allow you to define fields on the screen and then enter data. Additional screens are seldom available, and producing reports or forms often requires extra software. Mainframe-based products allow unlimited fields that can be viewed in countless arrangements, but they are expensive and difficult to set

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up. They also require buying separate report writers.

Filemaker uses the mainframe approach to define unlimited fields and create as many different screens or views as you like for viewing or editing data. It goes one important step further, however, by allowing you to use a screen layout as a report or a form that can be printed. This means that once you learn how to set up a screen that can contain all — or only some — of your fields, you can write reports and fill out forms. You can actually edit your data on these report or form layouts.

Although you do not give a formal name to each layout, you can easily scroll from one layout to the next depending on how you wish to view, edit, or print selected records. You are not limited by the size of the Macintosh screen. Layouts of up to 14 inches by 36 inches can be created, and you simply use the familiar scroll bars to move up and down or left and right within a layout.

A layout is divided into specific parts that can include each of the following: header, body, subsummaries, grand summary, and footer. When you create a new layout, you are presented with a list of all of the fields you have defined. Each field is in a box of its own that can be moved, cut, or resized using familiar click-and-drag techniques.

All fields are automatically indexed as you enter information into them. This facilitates multiple-level sorting and searching, as unique key fields are not required. Different field types include text, numbers, dates, and fields that result from calculations. Calculations can contain formulas up to 250 characters long and include the operations of addition, subtraction, multiplication, and division. Several date formats are allowed, and the program handles all of them correctly when used for sorting.

In addition, you have special summary fields for total, average, and count. Summary and derived fields change as the dependent values are edited, similarly to the way they would on a spreadsheet. This is a useful feature.

Filemaker's power is aided by the well-

considered use of Macintosh features. You have menu bars and pull-down commands at your disposal, and you can move quickly to a desired field with the mouse, which saves you time as you edit selected fields.

The program's eight menus are apple, file, edit, select, gadgets, format, font, and style. The apple menu contains the usual Macintosh desk accessories, plus basic information about Filemaker and a hard disk installation option.

The file menu lets you manipulate files that you create and has some interesting options. You can combine or use information from other files because the program can read from and write to text files created by word processors or other programs. Basic

## Infoworld

### REPORT CARD

#### FILEMAKER

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Performance

Documentation

Ease of Use

Error Handling

Support

Poor Fair Good Excellent

#### SUMMARY

Filemaker is a medium-duty database program for the Macintosh organized around data entry and report forms. The forms, which can be rendered very attractive with Macintosh graphics, are simple to construct. The product, outside of the lack of a programming language found in more complex products, offers one of the best mixes of power and flexibility combined with ease of use we have seen in Macintosh databases.

#### PRODUCT DETAILS

List price \$195. Version tested (1.0) available for the Apple Macintosh. Requires 128K RAM, one disk drive. Second disk drive, 512K RAM recommended. Published by Forethought Inc., 1973 Landings Drive, Mountain View, CA 94043. (800) 622-9273.