tion, Encore! would still be a difficult system to master. Unfortunately, the documentation is far from perfect.

Training begins with a disk-based tutorial that takes you through the basic use of the system, simulating the building of several small models. The simulation is realistic and instructive, but as a whole the tutorial is sometimes confusing and often infuriating.

The biggest problem is the overuse of pauses. A paragraph is displayed and left there until it can safely be assumed that you have read it. If you're a fast reader, or have been part way through the tutorial before and are trying to get to the point where you stopped, you feel like pounding the keyboard — but it won't do you any good. Finally you will see the message "Press RETURN to Continue."

Perversely, on occasion the text is whisked away without your so much as pressing a single key. If you happen to miss it, that's too bad, and you get to go around again.

The explanations are sometimes insufficient, since both the tutorial and the manual tend to use terms before defining them. At one point, after a particularly confusing section, you are asked to press Control-C. The directions for doing this are explicit, and the screen goes wild with congratulations when you succeed. No one likes to be patronized by a machine.

The manual also includes a tutorial that uses the same "case study" (Animal Antics, Inc.) as the disk tutorial. The repetition is not explained, but neither is it objectionable, since the manual's treatment is more detailed.

Regardless of their shortcomings, the tutorials do succeed in getting you started with Encore! When you're done with them, however, you still have a long way to go. In order to be competent enough in the operation of this program to use it to full advantage — that is, to make it perform better than 1-2-3 — you have to master several distinct functions.

First, you will probably find the operating system somewhat confusing. This program requires a version of the UCSD p-System, so nothing you know about MS-DOS is going to do you much good. The terminology, commands, constraints, and advantages of the p-System are very different from MS-DOS.

The p-System editor is very different from the general run of word-processing packages. It is really intended more for programmers than writers, and if you are not used to it, you will need at least several hours to get the hang of it. For example, most commands within the editor (and at the operating-system level as well) are executed by pressing a single key, without pressing Return afterward. However, there is also a "type ahead" capability,

meaning that the computer will store a series of keystrokes as you type them, even though the machine may be busy performing one function already. Novices tend to press Return after a command as a result, and the carriage return is stored and executed following the command. Occasionally that extra keystroke can cause you to bypass an important screen so that you have to cycle around again.

The logic functions themselves are not too complex, but the EXEC! programming language is huge, powerful, and unstructured. You can do almost anything you are likely to want to do with it — but only after hours of study and practice, and days, weeks, or months of experience.

On the plus side, the reference materials for the logic functions and EXEC! commands are fairly good. Also, the compiler (which operates on logic files to compute the details of your models) is well supplied with error messages, and these are explained in the manual. Because one of the jobs of any compiler is to trap as many errors as possible before program

execution, this is a good sign.

Encore! has an on-line Help function, but it seems to be far from complete. The option is presented on most screens, but only on a very few does it actually come through. Usually pressing H (for Help) results in nothing more than a beep, or message that "Help is available only from SPREADSHEET."

The saving grace may be Ferox's support, which includes free telephone support for registered users, classes in financial modeling ($400 for two days), and on-site consultants ($600 a day). The last two options may be expensive, but if you are serious, they at least show that Ferox is, too.

If you have worked with the most powerful conventional spreadsheets available, and find that you can't do the kinds of financial analysis you really need to, then you should look closely at Encore! It is comprehensive, powerful, and flexible enough to handle complex financial models for businesses of all sizes. Mastering it requires patience and dedication.

PFS:ACCESS
An MS-DOS communications package

BY JOHN LOMBARDI
Contributor

S oftware Publishing's PFS series of reasonably priced software acquires communications capability with this new package, designed in the clear, simple, and effective style characteristic of the series. PFS:Access provides a useful, if limited, set of communications features.

Personal-computer communications involve a wide range of uses and requirements. Some people use their personal computers to access information stored on commercial database computers such as those maintained by The Source, CompuServe, and Dow Jones. Others communicate with microcomputer bulletin boards maintained by individuals, computer clubs, schools, and some software or hardware manufacturers. Students and teachers in colleges and universities find it useful to turn their micros into terminals to accomplish a range of tasks on large mainframe computers or super-mini machines. Each of these applications places its own demands on the software.

A microcomputer-communications program ought to be able to take full advantage of standard, intelligent modem hardware; transfer information to and

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from a host, and cope with most of the peculiarities encountered in matching microcomputer to modem to host machine. PFS:Access does a good job with most of these requirements, but has few of the refinements usually included in other communications programs.

PFS:Access can be installed effortlessly, works easily, and usually forgives errors. It allows you to define nine dial-up services that can be accessed virtually automatically if you have an auto-dial modem. Each service so defined includes the necessary specifications for speed of transmission, word length, and parity settings to match the host. The package comes with entries for some of the major commercial database services: The Source, CompuServe, and Dow Jones. Moreover, the kit includes a variety of free or reduced-cost offers for new subscriptions to those services.

This package will store the sign-on sequence for each of the services you define, and then, each time you dial the service, will automatically perform the sign-on procedure — a very nice feature in general. Its automatic nature makes it easy to use, but limits its ability to deal with unusual or variable sign-on procedures.

The program performs well and has several interesting features for a communications program in its class. While most programs will record the transmission in

an area of memory (a buffer) or a file on the disk when requested, PFS:Access automatically saves the transmission in a buffer that varies according to the size of the machine's memory. Generally, it can handle five to 15 screens of information at a time. The cursor movement keys on the numeric keypad of the IBM PC allow you to skip around the record of the transmission effortlessly. The program can also save the transmission on a disk, although it does so somewhat more slowly than other programs in its class. However, it has the interesting feature of highlighting each line in the buffer that is being saved, so you know where you are in the process.

Print operations are also handled well, and the program supports XON/XOFF protocol to handle printers that must operate more slowly than the transmission speed. The program can record the session on the disk, print it, and display the

record on the screen, all simultaneously. This feature, too, worked quite well.

PFS:Access will send a file from the IBM PC's disk to a host computer. The process couldn't be simpler: you specify the file name, and the program sends it out a line at a time. It isn't clear from the manual what kind of acknowledgment from the host is required between lines (possibly a carriage return), but PFS:Access appears to simply send a line, wait, and send another line. There is no way to customize this waiting process, either to slow down the transmission between characters or change the response time between lines. Under difficult circumstances, such as communicating with a heavily used host with slow response time, it would be possible to lose a part of the transmission.

PFS:Access does have a scheme for coding the outgoing information so that it is unreadable both on your screen as it goes out and in the receiver's file. With the key, a receiver with PFS:Access can decode the information. This may well be useful for sensitive business data or other critical information.

The program has no provision for protocol transfers or error-correcting transfers, however. Thus, you have no way to move 8-bit binary files, such as program files, between computers reliably. This omission is especially puzzling because the standard microcomputer error-correcting protocol, XModem, is in the public domain.

This package has no capability for allowing your personal computer to behave like any of the common computer terminals, such as the VT-100 series, so if your interest is in communicating with a system that works better with a specific terminal, this program is not for you. Moreover, PFS:Access has no facilities to help you survive nonstandard or difficult computer connections. There is no way to view the incoming control characters, for example, or to strip or add characters during reception or transmission.

This should not present a problem when using standardized information utilities, but hobbyist bulletin boards, university computer centers, and some other hosts may prove a problem.

The program documentation comes in a neat, well-presented, and clearly illustrated manual that's good on the features that PFS:Access supports. The manual is rather thin on the potential difficulties that can occur in computer communications. The range of modems supported directly is broad, and the instructions are sufficient to enable installation with almost any ordinary modem.

This program comes on a copy-protected disk that allows you to make only one back-up copy. The package can be installed on a hard disk, but you can install it only five times. A configuration process permits the use of color, regular monochrome, or IBM monochrome screens. The manual provides considerable troubleshooting information, but no phone number for support appears in the documentation.

While PFS:Access is well done, cleanly presented, and effective within its somewhat limited range, it must compete in a packed marketplace. Its principal advantage is its ease of use. Its limited features are a disadvantage. Full-featured communications programs for the IBM PC come free with many modems, cost about two-thirds less than PFS:Access if purchased, or can even be transmitted free from dozens of computer bulletin boards across the country.

If you already have the rest of the PFS line of software and have an interest only in text materials available on standard information utilities, then this package might be a good buy to maintain the consistency of your software library. Otherwise, you'll get more for your money with a program such as PC-Talk III, available from most bulletin boards around the country and bundled free with some modems.

InfoWorld

PFS:Access

	Poor	Fair	Good	Excellent
Performance	☐	☑	☐	☐
Documentation	☐	☐	☑	☐
Ease of Use	☐	☐	☐	☑
Error Handling	☐	☐	☐	☑

Summary: PFS:Access provides a basic set of communications capabilities in an easy-to-use package. The program, adequate for communicating with standard systems and transferring text files where absolute accuracy of transfer is not essential, has clear documentation and adequate on-line help. Be sure to compare price and features with other communications products.

Product details: List price, $95. Available for IBM PC, PCjr, and compatibles. Requires 128K RAM; modem. Not all modem cards work with all systems. Published by Software Publishing Corporation, 1901 Landings Drive, Mountain View, CA 94043; (415) 962-8911.

BLUE CHIP 1
A teaching tool for the novice

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Blue Chip 1 is another tutorial package that attempts to initiate the potential user to personal-computer applications (for another example, see our review of *Knoware*, March 19, 1984). The package, offered by Micro Courseware of San Francisco, California, introduces IBM PC users to the PC keyboard, then to common applications such as spreadsheets, business graphics, word processing, database management, and project scheduling. Regrettably, the achievements of this package fall short of its ambitious goals.

Blue Chip 1 is based mostly on uninspired, rote learning, without the