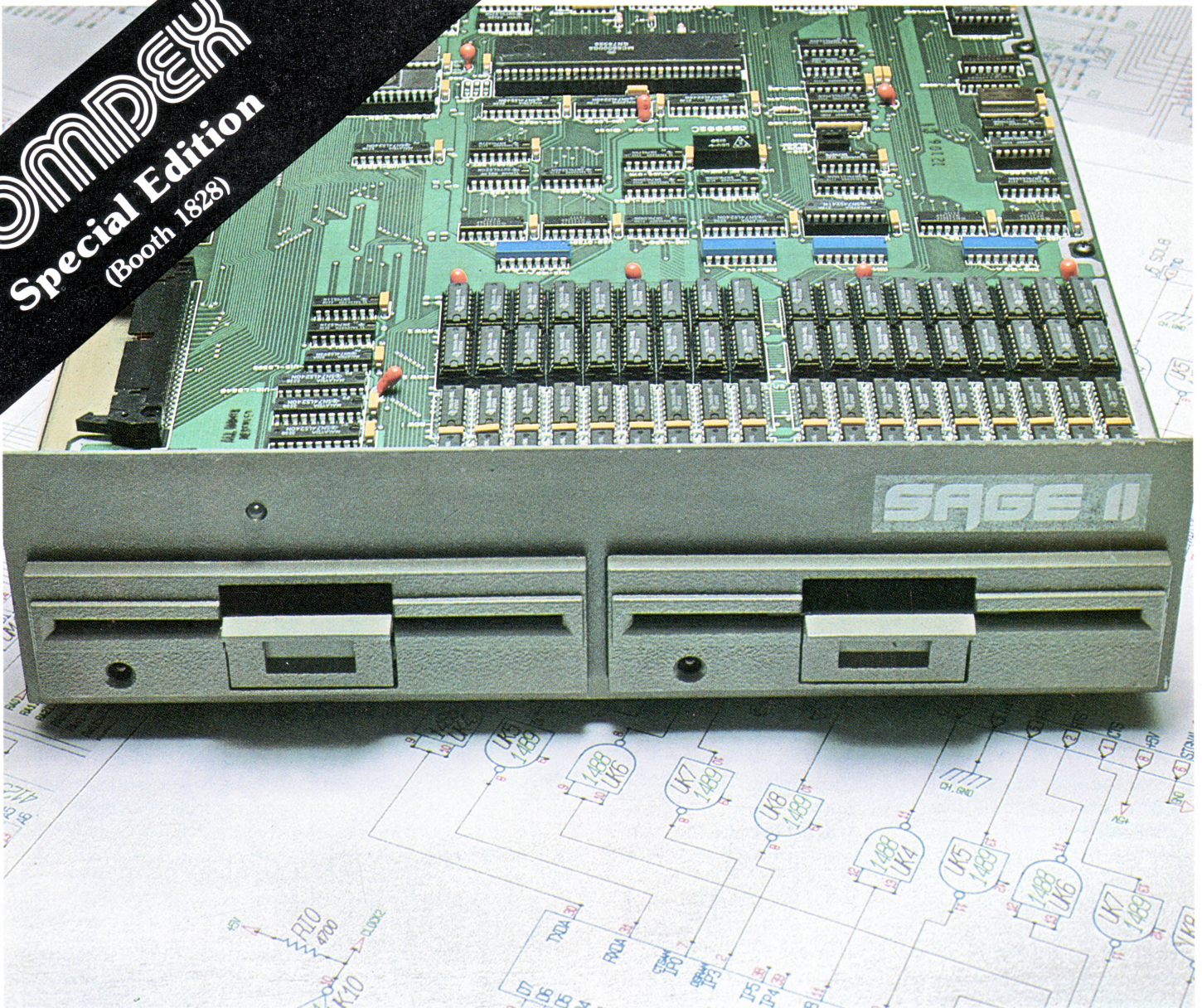


COMDEX
Special Edition
(Booth 1828)



Performance By Design

by Rod Coleman

President, SAGE Computer

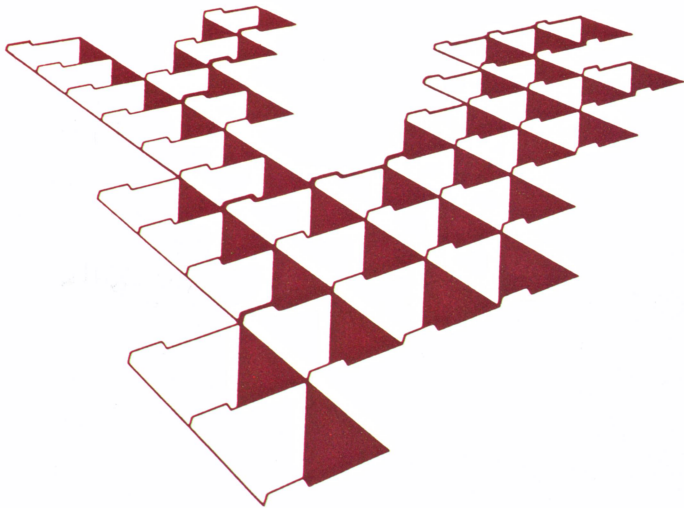
That simple statement above has been our theme at SAGE since we began production just over two years ago. In its purest form, it relates to our use of leading edge components and superior system-design to achieve high speed data processing capabilities. But it goes far beyond.

We've taken great pains to design a microcomputer system that would do more than go fast. We've sought maximum performance in all aspects of our business. Our circuit boards were built for ruggedness and reliability, but we also implemented a top-rated customer support operation to back up that dependability. Software performance compliments good hardware, and we've estab-

(continued on page 2)

Product Release

Advanced DB Master™



Stoneware, Inc. has released *Advanced DB Master* for the SAGE II and IV. The new version of this popular information management system was first unveiled at SAGE Faire in February, but introduction was delayed until last month.

Advanced DB Master is a computerized filing system. It allows the user to store, search, calculate, and reorganize information and then print customized reports. The program will work with floppy or hard disk. Diskette files can span up to 22 separate floppies, with the hard disk files accessing up to 100 megabytes.

The system also provides power and flexibility without programming. It is menu-driven and includes sophisticated features such as keystroke macros for automating operations, dynamic value tables which look up and insert information in your records, array (multiple field) searches, audit trails, and a browse mode to display data in tabular format. Text created by the built-in text editor can be merged with information contained in *Advanced DB Master* files. Data may be exchanged between the program and other p-System programs, as well as other computers.

According to John Dickerson, President of Stoneware, "Advanced DB Master was written for people who have serious information management applications, but want a system that is easy to use. Companies simply don't have the time or staff to become hostage to their software."

Advanced DB Master is available directly from SAGE or authorized SAGE Computer dealers.



The SAGE COMDEX Booth in Atlanta will be considerably larger than this display featured last fall in Las Vegas. There will also be a number of new products on hand (Booth #1828).

Performance (continued)

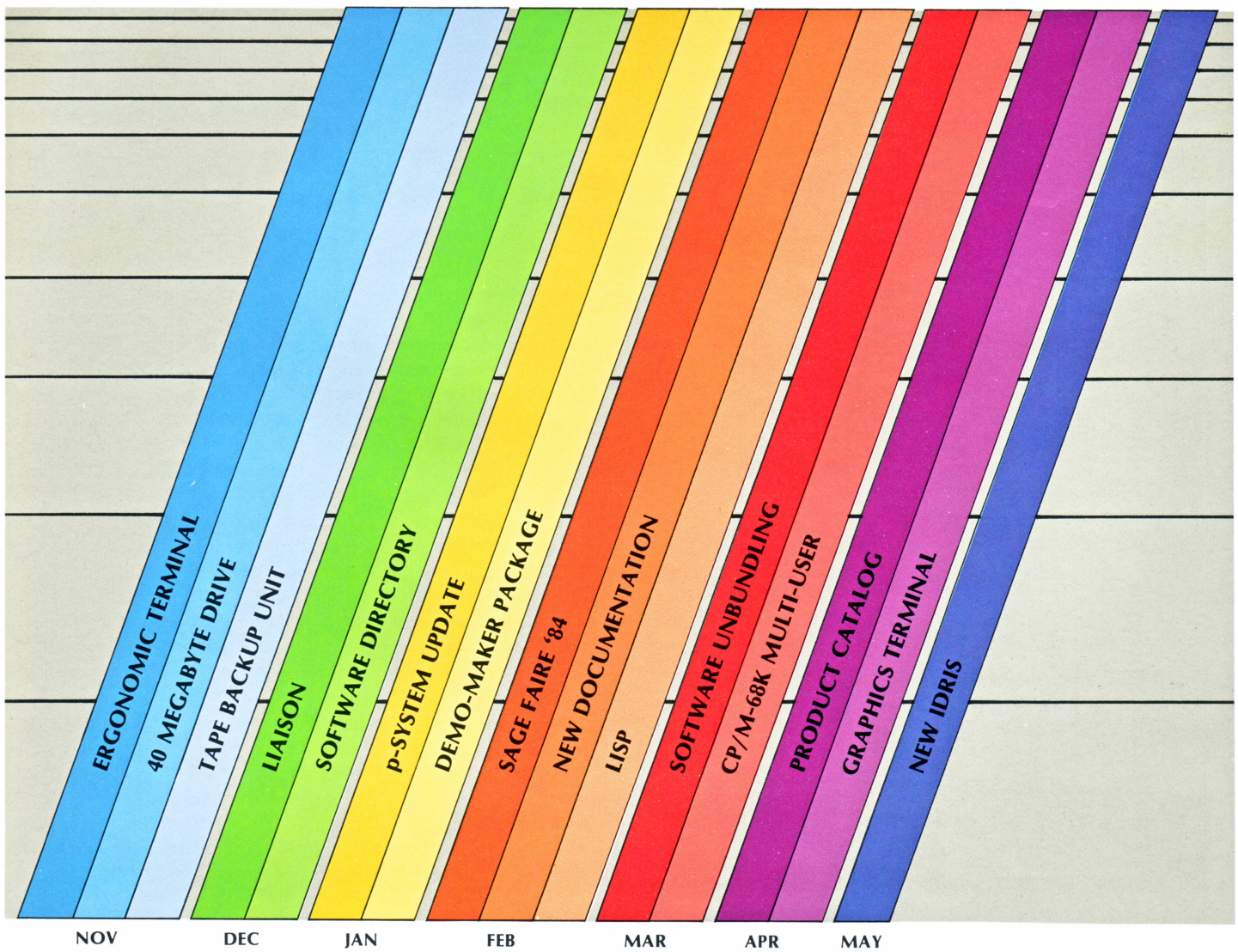
lished an aggressive pattern of support and assistance to developers. Openness and customer responsiveness have also led us to pioneer in other areas such as extended warranties, multiple operating systems, improved documentation and new system configurations. But the best measure of a microcomputer manufacturer today is in keeping up with tomorrow. The major COMDEX shows are a good milestone for judging progress and looking toward the future. SAGE is proud of its record of accomplishment since the last show held in Las Vegas. As the chart on Page 3 clearly shows, we haven't been standing still. We've added a new terminal, a graphics station, increased storage, improved system software, and a tape backup accessory. In another story in this issue, some of the many new software packages that have been added to the SAGE family of over 300 applications are featured.

We've also maintained our position as an "open" company responding to the needs and desires of our customers. The highly-successful SAGE Faire in February was instituted to share information with customers, developers and dealers. Our system software was unbundled to give users greater flexibility in choosing the right package at the lowest price. The recent Product Catalog described elsewhere in this issue was prepared to keep our audience up-to-date on product and pricing information.

We're also working to improve our Marketing and Sales efforts to better serve the customer base. Strict new qualifications and training procedures will insure that SAGE dealers will be able to offer the finest in service and support.

Often such a record of achievement goes unnoticed, but SAGE has been fortunate. In a recent *DataPro* user survey, the SAGE II was rated as one of the best overall microcomputers, scoring perfect marks in price/performance ratio and speed of disk access. Perhaps even more impressive is that a columnist in the current edition of *BYTE* magazine said, "I long thought Sage had the best 68000 based computers on the market. Now I'm certain of it."

Here at Comdex Atlanta, we are proudly displaying the systems which received such high praise. They are the result of all the accomplishments cited above. At the same time, work is already underway in the workshops and offices of SAGE to insure that six months from now we'll have an equally impressive record to cite at COMDEX Las Vegas. That's what we call "Performance By Design."



As this graph clearly shows, since the last COMDEX show held last fall in Las Vegas, SAGE Computer has made significant progress in both hardware and software development.

New APL Runs On Sage

The Computer Company of Richmond, Virginia has announced the availability of the APL language running under the Idris operating system. Previously, APL was available on the SAGE only under the European-based Mirage operating system.

Known as APL.68000, The Computer Company claims it is the first APL interpreter able to address up to 16 megabytes of main memory. APL.68000's enhancements

include a system function, "Quad-CC", which facilitates development of full-screen, machine-independent applications, a component file system in which files are always open, error-trapping and a fast search-and-replace primitive.

For more information on APL.68000, contact The Computer Company, P.O. Box 6987, Richmond, VA 23230, (804) 358-2172.

Conference Set For Brussels

Many of SAGE's international distributors will gather on the 13th of this month in Brussels for a one-day Atlantic Region Conference hosted by SAGE. Their counterparts on the other side of the globe will hold a similar Pacific

Region Conference in mid-July, tentatively set for either Hong Kong or Singapore. Similar in concept to SAGE Faire, the gatherings are designed to share information, examine new products and discuss future strategies.



Software Grows

interesting operating systems and languages. A multi-user version of CP/M-68K was released this winter opening the door for developers of this popular OS. *Idris*, the UNIX-like environment, has been improved, and SAGE recently began marketing a new porting which significantly enhanced *Idris* performance. The p-System was improved with the 4.13 release on March 1st, and SAGE also signed the first contract to carry the new *Liaison* networking software from SofTech Microsystems.

On the language front, a full mainframe LISP was announced for the SAGE from Metacomco. An APL running under *Idris* was released by The Computer Company. A high-performance FORTRAN, also under *Idris*, was announced by ABSOFT. New versions of Pascal and FORTRAN were released from Silicon Valley Software. And there have been many more including an improved Modula-2 and a 32-bit FORTH.

From the end-user point of view, the growth has been even more dramatic. A number of leading companies have either ported their products to SAGE or improved existing versions. Among the new companies on board are Stoneware, PCD Systems, MicroFinancial, Basic Business Computers, Monterey Computer Consulting, Robinson Systems, Absoft and Software Architects.

Applications run the gambit from new editors to diet programs. In the database field alone, SAGE has seen dramatic improvement. Multi-user systems are available now from both *Flexware* and *PDBase*. The *Aladin* package has been improved with excellent documentation. We've added the popular *Advanced DB Master* from Stoneware, and work is underway to update many of these to multi-user applications. Overall, there are 15 different DBMS packages from which to choose.

Best of all, SAGE's strength as a development station has assured us that this trend will continue. Many new and exciting applications are already in the final stages of preparation or testing for release in the coming months. A good sign that SAGE will continue to make even more software "look good".

"... the SAGE make even tired-out software look good."

Quite naturally, we love quotes like the one above from Personal Computer World last year. But the compliment is only valid if SAGE continues to expand and develop its software base. We have!

At COMDEX Las Vegas last fall we highlighted the addition of the successful State of the Art accounting line for SAGE microcomputers. In the six months between that show and COMDEX Atlanta this spring, we have continued the trend of seeking quality software by adding dozens and dozens of new and diverse packages.

At the highest level, SAGE recently pioneered several

International Protection Weak

Proprietary rights on software are very much up in the air outside of the United States and the developed countries of Europe, attorney Susan Nycum warned members of USUS, the USCD Pascal System User's Society at their recent meeting in Oakland, California.

Until software protection issues are resolved in Australia, Hong Kong, Singapore, Taiwan and the like, the only way to safeguard proprietary software is to treat it as a

trade secret under a contract or not sell it in those places, according to Nycum.

Just prior to serving as keynote speaker at the USUS Conference on April 13, she attended a United Nations conference on software protection in Australia. Nycum is a nationally-known attorney specializing in high technology issues.

M U L T I



U S E R

While Local Area Networks (LANs) are generating a lot of media excitement these days, multi-user systems are quietly gaining market share. *Computer Dealer* recently reported that "in the next five years, multi-user desktop computers will remain the most cost-effective approach for configuring low-end business systems with shared files and peripherals". Likewise, *Advanced Resource Development* has predicted that multi-user systems will double their present share of the total desktop business computer market by 1986.

SAGE microcomputers are well placed to take advantage of this marketplace. Even some current SAGE users, unaware of the power of their system, may find a new appreciation of their machine upon a closer examination of its multi-user capabilities. Flexibility is the key.

Unlike the bulk of shared CPU systems, SAGE's multi-user Basic Input/Output System (BIOS) permits different operating systems to run simultaneously. This exclusive feature will not only be appreciated by developers working with different OSs, but also by end users with a variety of applications. An example would be running a popular p-System database (like Stoneware's *DB Master*) at the same time another user works with a CP/M-68K program (like the *McGraf* package from Monterey Computer Consulting).

The "MU.CONFIG" utility permits total control over

partitioning, file sharing, priority, device access, time slice and much more. Apart from the usual cost efficiency aspects of this type of multi-user operation, this configuring ability also permits multi-tasking by combining users on a single port. With foreground and up to five background users on the IV, several tasks may be run virtually at the same time.

A more common formatting might be to keep one type of application, such as word processing, in the foreground and have another program, such as a database, in the background. Using this arrangement, a secretary could perform typing chores until the phone rings and then instantly switch to database files to record or retrieve information. Another example would be to compile a program in the foreground while actively continuing editing chores in the background.

This type of operation is further enhanced by the ability to switch quickly from multi-user to single user environments. Additionally, since the "MU.CONFIG" file (containing the configuration specifications) is kept separate from the Multi-User BIOS, different setups may be stored to make changing formats quick and easy. It's simply a matter of using a different "MU.CONFIG" to start the system.

The bottom line is that multi-user is an important microcomputer feature, and SAGE offers one of the best.



A SAGE II system was featured in full color on the cover of a Greek computer monthly.

ATKO in Athens

There might not be many SAGE computers in Greece, but they are certainly getting good exposure. Through the efforts of our new distributor, ATKO Ltd. of Athens, a SAGE II system appeared on the cover of the Greek monthly magazine *MICRO Computer* and was the subject of a four-page article.

ATKO has also produced several impressive brochures on SAGE equipment for the local market. As with many of our international distributors, their goal is to work toward developing local software support and to add local value via language assistance. Greek-language versions of several software packages are currently under development including the WORD/7 word processor.

Modula-2 update

Release 0.30 of Modula-2 for the SAGE is now available from Volition Systems. This update fixes a number of bugs in the compiler, library, and operating system. It also includes a number of improvements: hard disk and multi-user support; faster real I/O; a new utility named LibMap which writes library information; and single-character string constants as part of the standard language.

An optional second disk is available with the 0.30 update. This disk contains the source code for p-Shell, a UNIX-like shell and utility program written in Modula-2. Note that p-Shell includes the source files for the program SYSTEM.SHELL provided in the 0.3h release.

For further information, contact Volition Systems, P.O. Box 1236, Del Mar, CA 92014, (619) 481-2286.

Input

Dear SAGE News:

We are writing you to express our gratitude for the assistance given to us by Brian Kersanski and Lonnie Cline when our SAGE IV recently experienced hardware problems. With the help of these two gentlemen, we were able to identify and correct the problems quickly, keeping downtime to less than 24 hours. Being a 24-hour-a-day, 6-day-a-week operation, this rapid response allowed us to continue operations with minimal disruption.

As this was the first hardware problem we have had with our SAGE since purchasing it last August, we were concerned about the kind of service we might receive. Needless to say, we were pleasantly surprised. We look forward to continuing our relationship with you as our company grows, and please be assured that we will recommend SAGE to all of our clients with confidence.

Richard E. Saltzberg
Charles River Publishing
Cambridge, MA

Dear SAGE:

This is a quick note to let you know that the customer support I have received from Peggy Lakey, Lonnie Cline and Chris Dunlap has been superb. Your SAGE Computer is OK too.

Bob Griffith
Mesa, AZ

New Dealers

The number of authorized SAGE dealers throughout the country continues to grow. Welcome aboard.

H.I.S CORPORATION
 1295 Cypress Avenue
 Melbourne, FL 32935
 (305) 254-9399

VRA COMPUTER SYSTEMS
 12930 North A1A
 Vero Beach, FL 32963
 (305) 589-4664

MICRO MART
 3415 Westminister #100
 Dallas, TX 75205
 (214) 361-7831

SHEPARD AND VICK
COMPUTER PROFESSIONALS
 200 San Jacinto Tower
 Dallas, TX 75201
 (214) 969-0194

New Catalog Out

Over 15,000 copies of the new "Spring 1984 — Product Catalog" have been mailed to SAGE customers and prospects. The 24-page booklet will be updated quarterly in an attempt to keep the marketplace current on pricing and availability of all SAGE Computer equipment.

"The catalog will serve a variety of purposes," according to Vice President of Marketing William Delaney. "We wanted to produce a vehicle which would show the public what we had to offer, support and encourage our existing dealers, and strengthen the direct marketing channel for those customers without a local dealership."

Each catalog contains a listing of addresses and phone numbers of authorized SAGE dealers throughout the United States, as well as SAGE's corporate and regional facilities. Used in conjunction with a local dealer, the catalog should serve as an excellent reference source. It establishes a strong retail price preception for customers, as well as providing a convenient checklist for system design. Virtually every item is covered from warranty extensions to accessory cables.



This premiere edition of the catalog is being mailed to all existing customers and prospects. It is also available upon request directly from SAGE Computer.

Review

PDBase: A Multi-User DBMS

by Craig Hilton
Central Data Corporation

PDBase, a new DBMS from IOTC is one of the most imaginative and powerful approaches to data manipulation I have seen using the UCSD p-System. Originally developed for use within mainframe environments, *PDBase* reminds me of the PICK operating system. Both share a powerful BASIC-like interactive high-level "procedure" language coupled with a first-time-user set of file handling menus. Add in complete multi-user capabilities and you have a single package something like a cross between the new multi-user *dBase II* and *PROFILE*.

The file handling portion provides for step-by-step creation and maintenance of files, as well as complete input and output of data using a full screen formatting utility from a menu-driven environment. You really don't need to use any of the more complex capabilities to set up a simple filing system. However, the interactive "procedure" language, *PDBasic*, reminded me of the very powerful Revaltion DBMS's *R-Basic*, and is definitely not for the first-time user. *PDBasic* contains over 50 verbs (including IF, GOTO, SORT and EDIT) used in a BASIC-like syntax. Any of the verbs can be re-named, opening up all sorts of customizing potential.

For real purists requiring a totally structured programming environment, *PDBase* offers a complete procedural interface to Pascal. Like the popular, and expensive 'LAN-DATACORE', procedures can be written in Pascal and *PDBase* used to maintain the relational tables and provide query and report generation utilities. I found the proce-

dures calls operating exactly as documented.

PDBase is truly relational. That is, information is stored in "tables". Rows and columns of tables can be compared to other tables using "relations" of data. Up to 12 separate tables can be simultaneously linked together for relational comparisons.

The latest versions of *PDBase* is true multi-user with complete record locking at the file level. There is also an override feature permitting record access should one user leave his station parked in a file. Additionally, *PDBase* will support Omninet for networked systems.

The early development roots of this program in the Defense Department are evident by the nine levels of hierarchal security intrinsic with each data field. Even the use of the "procedure" verbs is controlled by login procedures!

I found *PDBase* (contrary to the rule) everything indicated in the manual, and (contrary to the rule) the manual is well written and logically laid out. Each *PDBasic* verb I tried worked without a hitch and error handling is well integrated into the package. Not only can you rename verbs, you can also rewrite your own error messages — a nice touch. So what are the problems? *PDBase* suffers from the anathema of the p-System, slow-w-wness! Sort times running on the PC remind me of *dBase II*, on the order of minutes for sorts of 4,000 records on keys of 15 characters. But fortunately, put *PDBase* on a SAGE IV micro and it files.

For more information on *PDBase*, contact IOTC, 910 Sully, Laramie, WY 82070, (307) 721-5818.

Questions and Answers

I'm confused. Is SAGE a 16-bit computer, or is it a 32-bit computer?

No wonder you're confused. The microcomputer industry has taken great liberties with their claims. In reality, the SAGE is a 16/32-bit system, utilizing the Motorola 68000 microprocessor. That means the internal registers and most of the buses of the 68000 are 32 bits wide. However, the data bus, which generally controls what's going in and out of the CPU, is only 16 bits wide. Thus 16/32.

But when the advertising folks become involved, things can change. The IBM PC has been promoted as a 16-bit computer since its introduction. It is really a 8/16-bit machine based on the 8088 with 16 and 20-bit registers and an 8-bit data bus.

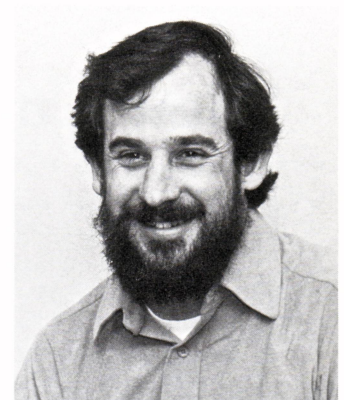
Following IBM's lead, new Apple products using the 68000 have declared themselves 32-bit machines. This puts SAGE in a strange position. If Macintosh is 32-bit micro, does that mean we are not as good since we are only 16/32? We may be forced (reluctantly) to also call ourselves 32-bit out of self defense. It will be interesting to see what the industry does when true 32-bit processors like the Motorola 68020 are released.

Where can I buy SAGE equipment?

SAGE has well over 100 dealers or value-added resellers in the U.S., with 3 dozen distributors spread throughout the world. For the name and address of the one nearest you, please call one of our Regional Offices [West - (702) 322-6868; East - (617) 229-6868; South - (214) 392-7070]. If there is no dealer nearby, you may purchase directly from the factory or regional outlet. A complete product catalog is available upon request.



Bruce Robertson



Tom "Mitch" Mitchell

People

Tom Mitchell is an early member of the SAGE team who has served in nearly every capacity from stock clerk to hardware engineer. "Mitch" has just recently been promoted to Quality Engineer, charged with assuring that all SAGE microcomputers meet design criteria. Although he holds a degree in Geology, he was bitten by the computer bug almost six years ago. When he's not in the factory, you're likely to find Tom in the nearby mountains or desert looking for additions to his extensive mineral collection.

Need some assistance with Idris or CP/M? **Bruce Robertson** is the man you're looking for. He did most of the development work on our multi-user CP/M-68K package and is currently at work enhancing Idris for the SAGE. To say that Bruce enjoys computers is a serious understatement. His favorite relaxation, away from work, is programming. If there's absolutely no CPU available anywhere and his terminal is terminal, he has been known to enjoy a night of square dancing or harmonizing on his flute or clarinet.

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SAGE NEWS

COMPUTER

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