



Brian Kirk of Robinson Systems demonstrated the new mouse-controlled SAGE Paint graphics system during COMDEX.

SAGE Paint Draws Crowd

by Buddy Frank

"SAGE has the only thing that's really worth seeing at COMDEX"

That was the reaction of many who stopped by the SAGE Computer booth in Atlanta and watched the new SAGE Paint graphics system. The product is actually a combination of a SAGE II with an add-on graphics board and a mouse. Robinson Systems have been marketing their RSE Graphics Addon for quite some time in England, but the addition of the mouse-controlled SAGE Paint software really drew the attention.

The immediate reaction is that you're watching a high speed Macintosh that runs in full-color. Many of the icons and functions are similar to the popular machine from Apple. Pull-down menus, paint, spray, fill, and custom pattern generators are all included.

The vivid color first catches your attention. There are eight primary colors available, and by using a tightly-spaced pattern overlay, you can mix any two of the eight to produce custom tints. The display in Atlanta was directed to a 640 X 288 resolution terminal from the Cotron Sword series. However, the Robinson package will accommodate other color monitors up to 768 X 576 in resolution. Currently, the system also requires a standard terminal to do keyboard inputs such as text or system commands.

Several "Mac" users were dazzled by the quick execution possible on SAGE Paint. They were completely devastated upon learning that the program was actually written in interpretive Pascal and not Assembly, as the speed might indicate.

Robinson Systems demonstrated the product with a mechanical mouse, but they are currently rewriting the drivers to accommodate optical mice such as the Mouse

(Continued on Page 3)



The SAGE booth at COMDEX Atlanta was located in the center of the Main Hall and drew impressive crowds all week.

COMDEX Success

From SAGE Computer's viewpoint, COMDEX Atlanta held from May 22-25 was one of the most successful trade shows of the year. The spring edition of the **COMputer Dealer EXposition** draws less than half the crowds of its big brother held in Las Vegas in the Fall, but that may be its best feature.

The Las Vegas event is soooooo big, that it almost becomes impossible to absorb any of the information available. The 800,000 square feet of displays in Atlanta was certainly not small, but it was a lot less intimidating than the 2 million square feet planned for COMDEX Fall in November.

SAGE had an ideal location this year in the center of the main hall of the Georgia World Congress Center. In addition to showing off our own multi-user systems, SAGE invited several software suppliers to display their wares in the booth. Among them were the *Flexware* line of database and accounting solutions, ADI's *Aladin Relational Problem Solver*, Micro Research and Development's "7" series of word processing and business applications, and a new COBOL demonstrated by Austec, Inc.

Featured on the hardware side were: a QMS laser printer running off a SAGE IV with the *Sprinter* text processing package from Scenic Systems, an HP plotter demonstrating the printed circuit layout (*P.C. CAD*) system from Microstar Labs, and the Robinson Systems graphic package (see cover story).

There was excellent traffic in the SAGE booth throughout the show which resulted in the signing of a number of new dealers and considerable attention from visiting journalists.

Overall, there were no major announcements on the hardware scene in Atlanta. AT&T had the most lavish display making another preview of their new computer line. Likewise, software news was slim with *Symphony* from Lotus and *Framework* from Ashton-Tate drawing the most interest. As mentioned in *SAGE News* last month, Stoneware also demonstrated their new *Advanced DB Master* running on the SAGE IV and IBM PC.

Finally, the best "freebie" was a solid chocolate diskette handed out by Dysan. Not surprisingly, they ran out by the second day of the show.

Input

Dear SAGE:

I want to compliment whoever set up the multi-user system. Once I figured out what to do, it's really slick. It enabled me to quickly do a side-by-side comparison of *Word/7* and *WordExec*. Yesterday I was running *Word/7* in the foreground and *LogiQuest* in the background. What a dream! I'm sure no floppy-based IBM-PC can do that! They'd probably need *UNIX* and a hard disk; and there's no software for *UNIX*. Keep up the good work.

Dan Kuttner
Naval Medical Command
San Diego, CA

(Ed. note — The credit for our unique multi-user software deservedly goes to SAGE Fellow and co-founder Bill Bonham.)

Dear SAGE News:

. . . I noted with interest the article in the last *BYTE* Magazine that referred to your SAGE IV. You truly do have a very special product, that we feel especially honored to have had the use of this last Spring semester. . .

Warren T. White
School of Engineering
San Jose State University
San Jose, CA

Dear SAGE News:

The AIBMUGO (*Anti IBM Underground Guerrilla Organization*) is very serious. IBM got where they are, not "by being a good outfit", but by taking advantage of the ignorance or naivete of the computer buying public. They also established a monopoly by whatever means they could. This is not just the opinion of AIBMUGO, but is the opinion of the United States Department of Justice, Anti-Trust Division and is the opinion of the European economic community.

We, the taxpayers of the United States paid double during the time the Justice Department attempted to prosecute IBM for anti-trust violations. We paid the Justice Department and IBM deducted, from their corporate taxes, the legal expense of defending themselves.

The purpose of the AIBMUGO is to inform the computer buying public of those aspects of IBM products not in the computer buying public's best interest. This is difficult to do, considering the billion dollars or more IBM spends on advertising.

Is it too much to ask for a little free unequal time? We must do something about IBM before IBM does something about us all. We must have freedom of choice in the products we buy.

AIBMUGO
Hermosa Beach, CA

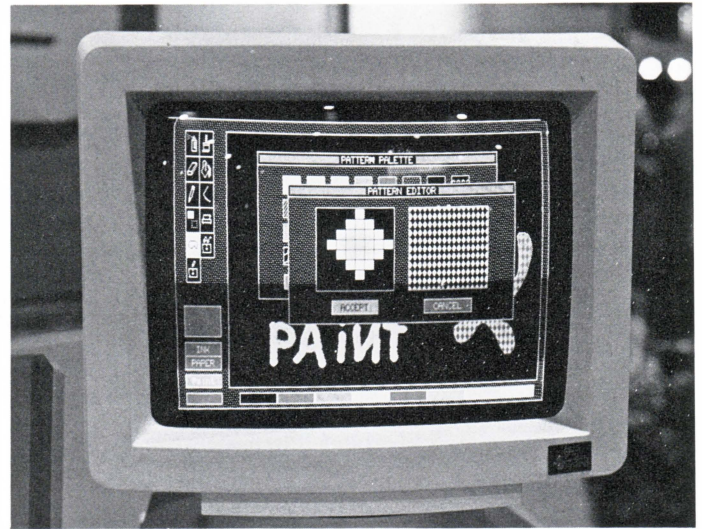
SAGE Paint (continued from Page 1)

Systems device sold by SAGE dealers. Unlike the Macintosh, these mice have three control buttons. The center contact was used for pull-down menus and execution commands. The outside buttons were part of the graphic function with the left switch giving a single burst of color (dots and splotches) and the right button handling continuous output (lines and drawings).

As you may notice in the photos, there are currently 11 icons available, including Disk Read and Disk Write. The straight line, spire and circle functions are to be added soon. Unlike Macintosh, the bottom row features the color selection with the ability to choose different colors of ink and paper. This comes into play when using patterns such as those shown in the blotch on the lower right of the screen.

Currently, the add-on board is housed in a case that is identical to a SAGE II enclosure. A simple interface board is placed inside your SAGE computer, just above the CPU board, on plastic standoffs. It plugs into the Winchester board connectors and a ribbon cable (supplied) is routed out the rear modem port for direct attachment to the Robinson box. Inside, the graphic functions are handled by an Intel 8088. A single cable connects the box to the monitor. The whole conversion of a standard SAGE II took me less than 15 minutes from start to finish.

Their printer did not arrive in time for the COMDEX show, but Robinson had several examples of hard copy generated by the new color printer from Canon. Essentially you can print whatever you can create on the screen. However, the printer output seemed to lack the crispness of color seen on the screen.



The Pattern Editor allows creation of customized backgrounds and overlays in eight mixed colors.

Not all of us require the free-form graphic capability of *SAGE Paint*, but I can assure you that no matter how hard core your programming background, it's nearly impossible to resist trying your hand at this mouse. Especially if there's a Macintosh owner somewhere nearby!

For more information on *SAGE Paint* or the *RSE Graphics Addon*, contact Robinson Systems, Red Lion House, St. Mary's Street, Painswick, Gloucestershire, GL6 6QR, United Kingdom. Telephone: 011 44 813699 (Remember the eight-hour West Coast time difference in England when calling).

CBASIC Compiler Released

CBASIC, the popular CP/M language from Digital Research Inc., is now available on SAGE microcomputers. In an agreement signed early last month with DRI, SAGE Computer will market the new compiler directly and through its chain of authorized dealers.

According to the folks at DRI, the "*CBASIC* Compiler, a native code compiler, is a direct enhancement of the industry standard *CBASIC* language. Designed specifically for commercial applications, *CBASIC* Compiler's program structuring allows separate modules to be written, tested, and then combined to create a complete program. This efficient, modular, top-down approach makes *CBASIC* Compiler programs faster to write and easier to maintain.

"One of *CBASIC* Compiler's most significant features is speed. Arithmetic functions are as fast as double-precision binary while retaining 14 decimal digits of accuracy. Because *CBASIC* Compiler modules, as well as assembler routines, can be easily linked together. *CBASIC* Compiler's record lock and unlock functions are designed to

support Digital Research's multi-user operating systems."

Other features of note are: 32K-byte dynamically allocated strings, error trapping, CALL statements with parameter passing, and optional overlay files from the linker.

In testing here at SAGE, we found the 68K version of this compiler to work flawlessly. As it now becomes available to the outside world, it should open the door to porting many of the thousands of popular *CBASIC* applications to the 68000 environment and SAGE. Several developers have already indicated that they plan to recompile their products for SAGE microcomputers for release in Third Quarter 1984.

Perhaps the true significance of the addition of *CBASIC* is the compatibility that it ensures by allowing developers to remain under the DRI umbrella of CP/M products. Today Digital Research users include over 800,000 systems, 700 OEMs and 1000 independent software houses. That's an impressive base that could make a substantial contribution to SAGE's future software growth.



Skycam

Soaring Toward the Olympics

by Buddy Frank

Maybe the Russians won't be at the Summer Olympics, but *Skycam* will. This revolutionary new aerial camera will be soaring above the Los Angeles Coliseum, the gymnastics pavillion, and the swimming amphitheater next month to give ABC TV some of the most unusual and spectacular shots television viewers have ever seen.

From the stands, *Skycam* may look like a giant bird gliding on the air currents above the athletes, but it's actually tied to earth by four stainless steel cables and a SAGE microcomputer.

A ground-based camera team controls the motion of *Skycam* using familiar video game joysticks. These inputs are directed into extenders, transferred to a SAGE II for translation and then sent to the four drum motors via fiber optic cables. By letting the cables in or out with exact precision, *Skycam* can achieve smooth, fluid movement in any direction.

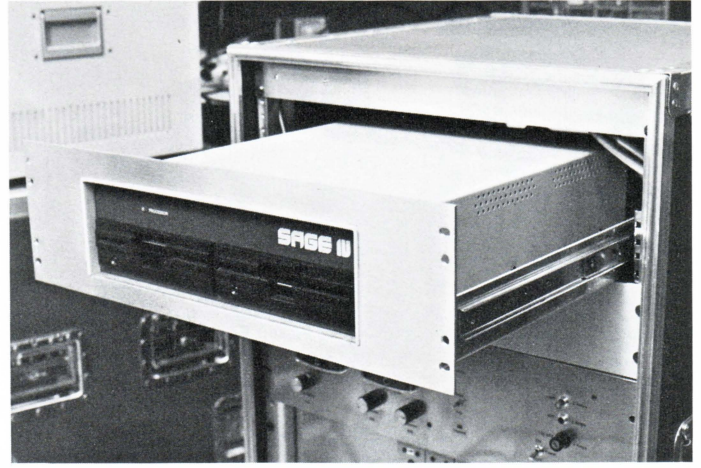
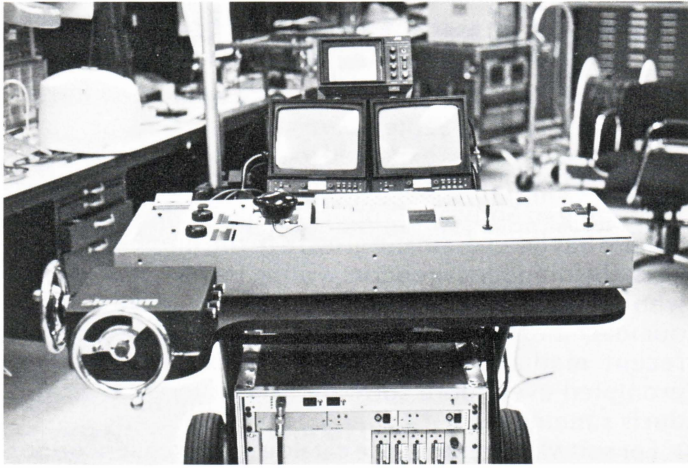
The more traditional camera controls (zoom, pan, focus and aperture) are accomplished via radio control and the outgoing video signals from the camera are handled by an extremely small microwave device mounted on the *Skycam* spar.

The entire project is the brainchild of award-winning cinematographer Garrett Brown. When he says that he thinks *Skycam* could change the way people make movies and produce television, it's worth noting. Brown has already won an Academy Award for his invention of *Stedicam*, a gyrostabilized camera platform that allows cameramen to walk or run without jiggling the picture.

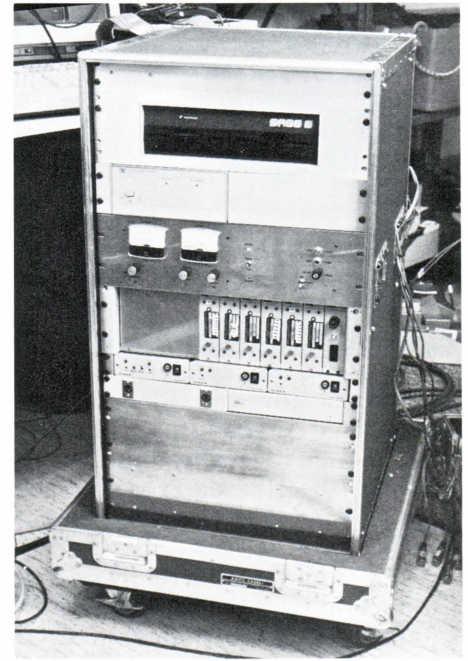
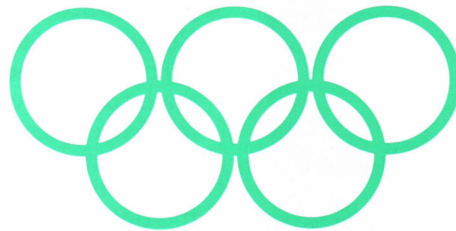
Stedicam has already changed the way people make movies. Such notable scenes as *Rocky* training on the streets and steps of Philadelphia, the forest chase scene on rocket cycles in *Return of the Jedi* and almost all the action shots in *Indiana Jones and the Temple of Doom* were filmed by Brown with a *Stedicam*.

With *Skycam*, he says, these shots could have been even more spectacular, "In *Jedi*, I walked through the forest with *Stedicam*, and then the film was shown at high speed. However, I was restricted to where I could walk. With this new system, you could string cables between the trees and shoot all kinds of things."

A lot of people seem to agree with Brown's assessment. His *Skycam* team recently completed filming on two motion pictures: "Birdy" directed by Alan Parker and "Slugger's Wife", a Neil Simon screenplay directed by Hal Ashby. A football demonstration is underway right now in Meadowlands, New Jersey for the NFL and all three major networks. MTV is interested for use with rock videos.



(photos by David Hastings)



Security agencies are evaluating the surveillance possibilities. And of courses there are the Olympics.

It's not certain yet how the system will be used in Los Angeles, but one could imagine *Skycam* running alongside the hurdlers on the track or flying just above the swimmers providing shots that used to be impossible. Clearly the potential is limited only by the director's imagination.

SAGE became involved in the project in early 1982. *Skycam's* computer whiz, Larry Cone, had been using an Osborne portable to demonstrate the feasibility of the idea and get an early prototype "flying". However, he found that since this micro was limited to only 4 cycles per second, camera movements were "lurchy". When he went searching for a faster micro, he discovered SAGE Computer and immediately put one to work. Cone said, "Quite simply, no other micro available could provide us with the price/performance of the SAGE II."

In the quest for speed, Cone also chose HyperFORTH Plus as an operating system. According to David Hastings, another of the *Skycam* programmers, HyperFORTH provided speed, compactness and extendability for custom functions. Additionally, he credits the operating system with thorough testing procedures necessary in real-time operations.

The SAGE made the difference, and *Skycam* began attracting attention. Today the system has been totally rebuilt from the original prototype with use of fiber optic connectors, lightweight alloys (total weight today is 42 lbs.) and some revolutionary new electronics. In the photo shown, the white cannister sitting atop the spar houses the radio equipment, a vertical gyro, the rate sensor, miscellaneous electronics and the system batteries. In the center are the cable anchor points and the motors for rotation and position. Also located here is one of the world's smallest microwave transmitting systems. Mounted on the bottom yoke is the camera which can be either a Panasonic video unit or a custom built Panavision film camera with a video viewfinder attachment.

There's only one *Skycam* in existence today, but they expect to have 5 or 6 within a year. The only way to get your hands on one is through the parent company, *Skycam*, and rent their team of equipment and technicians. It's not cheap, but as anyone in Hollywood will testify, considering the alternatives of using cranes, laying dolly tracks or using helicopters, *Skycam* is a bargain.

For that reason, and the creativity potential involved, you can expect to see the SAGE-controlled *Skycam* in a lot of movie credits during the coming year.



SAGE receives Exporter of the Year Award. From l. to r.: Export Council Director Hans Wolfe, Reno Mayor Pete Sferrazza, Nevada Governor Richard Bryan, SAGE President Rod Coleman, SAGE VP of Int'l Operations D. Michael Deignan.

International Honor

The State of Nevada honored SAGE Computer last month as *Exporter of the Year*. The presentation was made by Nevada governor Richard Bryan who praised the Reno-based company for providing leadership in the area of economic diversification. The selection of SAGE was made by the Nevada Export Council with the citation: "For outstanding and dedicated effort in promoting exports."

SAGE Computer currently sells up to 40 percent of its production to the International marketplace with 35 distributors or representatives in 33 countries.

More Good Reviews

SAGE Computer received some excellent magazine reviews recently. The most impressive article was a multi-page review done by *BYTE* columnist Jerry Pournelle.

His commentary appeared in the May issue of *BYTE* and took a detailed look at both SAGE and Compupro. Overall, it was extremely favorable and contained the quote: "I've long thought Sage had the best 68000-based computers on the market. Now I'm certain of it."

Another good article appeared in the June edition of *Micro*. This publication has recently changed its format from the 6502 environment to a magazine "for the Serious Computerist". The story by Paul Lamar and Richard Finder was on 16-bit supermicros and contained several positive references to SAGE microcomputers.

The authors were not quite as kind to other PC machines, "The 68000 and its derivatives will become the *de facto* standard microprocessors for at least the next ten years, despite IBM's temporary lead with the 8088."

In the coming months, look for SAGE IV product reviews in the July or August editions of *BYTE* and *Microsystems*.

New Directory Planned

The *Software Directory* is currently under revision and will be released in September.

The new edition is expected to double in size, listing up to 700 applications available for SAGE microcomputers. According to Software Product Manager Sheri Coleman, "There has been dramatic growth in the number of packages, the number of vendors writing for SAGEs, and those who are revising or enhancing existing products. While our machines have always been popular with developers, recent media coverage and favorable reviews have prompted even more software houses to get their products running on SAGE."

For software vendors, the catalog is an excellent opportunity to inform existing and prospective SAGE customers of their wares. Coleman is urging all suppliers and developers to submit new product information and check current listing for accuracy prior to July 30, 1984 for inclusion in the revised *Directory*. Information and inquiries should be addressed to Applications Department, c/o SAGE Computer, 4905 Energy Way, Reno, NV 89502.

For users, the directory provides an invaluable reference source. Applications are indexed by Type, Operating System and Company. Current pricing and system requirements are also listed together with a brief product description. While SAGE does not verify, or comment, on the performance of the software listed, an effort is made to insure that the programs are actually ported and running on SAGE micros, and that they are provided with documentation.

Names, addresses and phone numbers of the suppliers are included in each listing, along with a note on the Operating System and Language of each application.

Like the current edition, the updated *Software Directory* will be available for purchase from all authorized SAGE dealers or directly from SAGE.

New Dealers

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

ALBERTSON DATA MANAGEMENT
2520 Beverly Place #7
Stockton, CA 95204
(209)941-0220

MARKETLINE SYSTEMS, INC.
975 Jaymore Road
Southampton, PA 18966
(215) 355-5400

ULTRAMATIC DATA PROCESSING
231 Quincy Street
Hancock, MI 49930
(906) 482-8260

Customer Support

by Peggy Lakey

Many of you have called to ask about writing to the PRINTER using Pascal. Below is a simple routine for doing that or writing to the floppies. In this example, we print the string, "Hello, World!"

```
PROGRAM print;
VAR file1:Text;
BEGIN
  REWRITE(file1,'printer:');
  WRITE(file1,'Hello, world!');
  CLOSE(file1,lock)
END.
```

You may use a similar program routine to write information to the floppy (#4: or #5:). Simply replace the 'printer:' with '#4:filename.text' or '#5:filename.text'. Of course "filename" is the name of your particular file. Be sure to close the file on both of these programs.

Digital Doll

It had to happen. The Barbie Doll has gone high tech. This fall you'll be able to buy a video game from Epyx that allows you to dress the new "video" Barbie, change her hair styles and create new outfits from scratch.

Epyx will market Barbie for the IBM PC, PCjr, Atari and Apple Computers for about \$30 each. Reportedly they are also getting ready to release video versions of G.I. Joe and Hot Wheels.

While this news may be disappointing to many users, SAGE Computer has no plans to market Barbie and her friends.

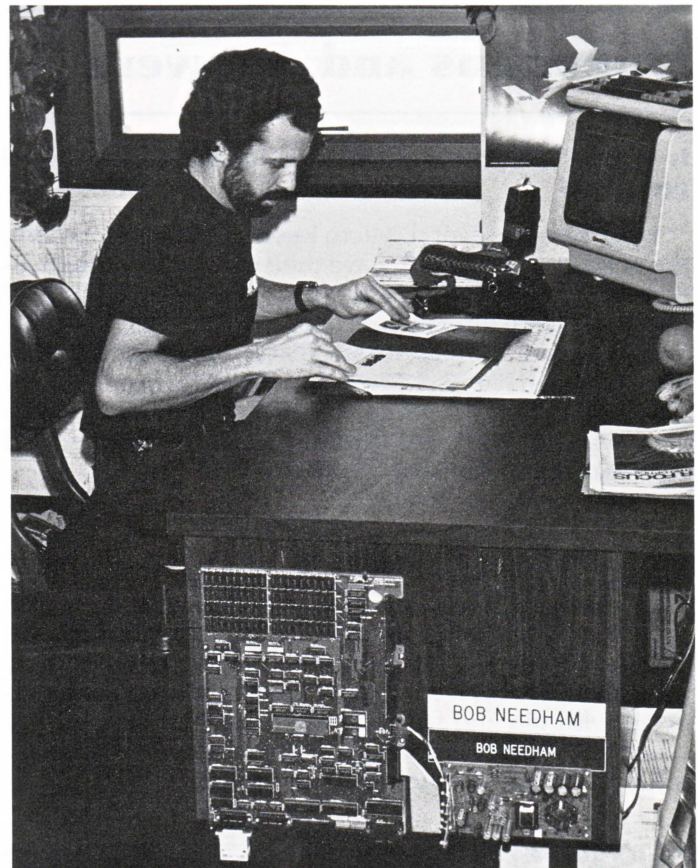
Product Release

ProTime Plus

The Resource Systems Group has announced the availability of an integrated professional time and billing package for the multi-user SAGE IV. Known as *PROTIME PLUS*, the new product combines traditional time and billing features with general ledger accounting and remote communications.

RSG is recommending these systems for attorneys, accountants, consultants, civil engineers, public relations and advertising agencies. Some of the unique features are space for an unlimited number of cases or jobs per client, the option to choose different statement formats for individual clients and variable length record handling which allow extensive billing narrative without wasting pre-allocated space.

For more information on *PROTIME PLUS*, contact RSG, 215 S. Hwy 101, Suite 112, Solana Beach, CA 92075. (619) 755-1626.



The Non-portable SAGE

You might think that working for a computer company would at least guarantee access to hardware, right? Wrong! Just ask Bob Needham.

Bob is one of SAGE Computer's founders. In those early days when parts and inventory were precious commodities for the then-startup company, Bob would often find that his computer had been shipped to a customer. He would build himself another one, only to find that it, too, had been shipped after just a few hours in his office.

He tried several approaches from hiding the machines under blueprints to asserting his authority as a major stockholder. The shipping department wasn't fooled or impressed! His machines kept disappearing.

Frustrated, Bob finally built himself the system you see pictured above. Performance-wise, it is a SAGE II. Size-wise it's sort of a main-frame micro. At 250 pounds, it's definitely not a portable.

This may be the ultimate desktop system. Or perhaps more correctly, desktop system. The CPU board is bolted to the side of the desk. So's the power supply. In front, the floppy disk drives are installed in the bottom file drawer. The on/off switch and reset button have been relocated to just in front of the chair area, so all functions can be accessed from a standard sitting position.

So far, Bob reports that the computer's been working just fine. Best of all, he says, "it hasn't moved in the last 18 months."

Questions and Answers

Is there a spell checker available for the Word/7 word processor?

Yes, there are several. Micro Research & Development, the authors of *WORD/7*, have their own which interfaces directly in *WORD/7*'s Main Menu. It's known as *SPELL/7* and is available directly from Micro R&D. (303) 594-6727. Two others we know about are *SPELL* from Scenic Computer Systems [(206) 745-6804] and *DISPELL* from I.O.T.C [(307) 721-5818]. All three have large dictionaries with provisions for additions from the user. All may be used with text files other than *WORD/7*'s.

Can I install my own RAM?

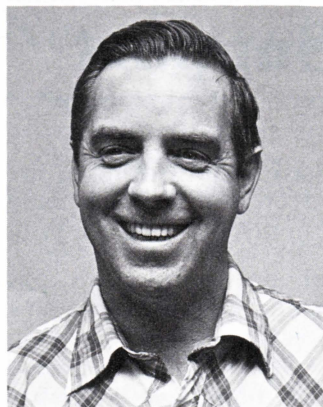
We are asked this question so often that it's worth repeating. It is possible, but SAGE does not recommend it. First, SAGE will not warranty any RAM array not factory installed. Second, it's tricky to do. The biggest problems occur with pin and static damage. For those technically qualified to tackle the job, good luck. Our advice is to pay the extra dollars and let SAGE do it right.

I can't get past the Green Snake in the USUS Adventure game. Can you help?

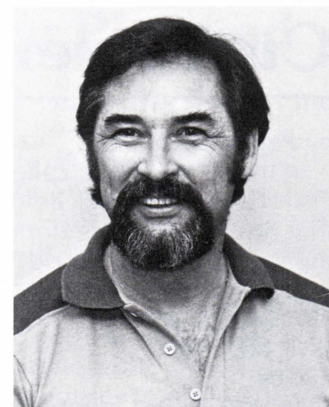
It wouldn't be fair to all those who've wrestled successfully with that creature to tell you. But here's a hint: a bird in the hand is worth two in the bush.

There are so many computer magazines out today that it is hard to keep track of them all. How do you guys do it?

One of the best sources is the *Computer Media Directory* available from COMPUMEDIA, 2518 Grant Street, Houston, TX 77006. The bad news is that it costs about \$100.



Jim Sloane



Edmund Juillerat

People

Eighty percent of the work performed in SAGE's factory in Reno is testing. This extensive effort is headed by **Edmund Juillerat**. He joined SAGE with a 21-year Navy background as an Electronic Technician and Reactor Operator aboard nuclear submarines. Obviously, Edmund's technical talents are many, but he is also the King of SAGE's indoor badminton courts. Edmund is hard to beat during the lunch-time and after-hours tournaments he frequently coordinates. When he's not battering shuttlecocks, Edmund enjoys reading, bicycling and cross-country skiing.

Jim Sloane is SAGE's technical handyman. When Customer Support or Repair identifies a generic problem, Jim is charged with providing a fix. He's been so successful, that he's found solutions to problems that don't even exist yet. One of Jim's innovations is a prototype RS-422 link which ups the terminal-to-computer distance from a hundred feet to 4000 feet. We've licensed him to market the device, and he says he'll have it ready soon. That's quite an accomplishment considering that he and his wife Baye are already kept busy with 8 children and 13 grandchildren!

Subscriptions are \$12 for one year. All correspondence should be addressed to **SAGE News**, 4905 Energy Way, Reno, NV 89502. Editor: Buddy Frank.

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COMPUTER

Southern Division
14755 Preston Road
Suite 600
Dallas, TX 75240
(214) 392-7070

Eastern Division
15 New England Executive Park
Suite 120
Burlington, MA 01803
(617) 229-6868

Reno Corporate Headquarters
4905 Energy Way
Reno, NV 89502
(702) 322-6868

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