# PRintScreen

# C·O·N·T·E·N·T·S

## *Don't Forget*

### THE NOVEMBER MEETING WILL BE AT
# VARIAN
### SEE THE MAP ON PAGE 11

## GOING MY WAY?

Member Matt Lehmann would greatly appreciate a lift to the General Meeting at Varian on 25 November. He can meet at the Foothills/280 junction. Anyone who can oblige, please give Matt a call on [415] 968-3655.

# *The President's Piece*

### FAREWELL...

It is with great regret that we must bid a fond farewell to our friend and editor, Tony Allen. He is moving back to England in December and he will be missed. Tony has been part of SPAUG for several years now, as chief architect of the newsletter and as computer problem solver non-pareil. Tony's mixture of good common sense and willingness to help out has been an invaluable asset to the club. We miss you already, Tony!

Tony has promised to stay in communication with us from his estate in the south of England, where he plans to idle away his days being rude to the help *[I should be so lucky, Ed.]* and gossiping about the royal family. Sounds like a full life to me! All kidding aside, we will miss you very much, Tony, and wish you all the best back at home.

### ... AND WELCOME!

Well, I don't know who it is, but someone must be living right because we've been blessed with a new newsletter editor already. Her name is Jennifer Wildman and she has graciously volunteered to pick up where Tony has left off. Her first issue will be in January, so we can look forward to a new year and a new hand at the helm of the newsletter. We're all behind you Jennifer!

By the way, there are still some highly sought after positions currently open: for newsletter courier and mailer. We're taking applications now to fill these posts. If you feel you have the background and experience to meet our needs, then talk to me and you will be considered for one of the openings. The pay is great and you'll be the first to see the newsletter each month. Don't wait too long, *call me now!*

### LEGAL STUFF

The papers for the incorporation and non-profit status should mostly be finished by the time you read this. We will be filing as soon as possible. Check out the most recent version of the bylaws on the bulletin board, or at the meeting, and give us some feedback.

On the opposite page you will see a draft of the proposed Articles of Incorporation. These have been adapted from a standardized version, again your feedback would be appreciated.

### CLUB COMPUTER

With our move to Varian, we have the need for a laptop computer to use at the meetings. There isn't one in the hall, so we will need to supply one. Our options are to buy, rent or borrow one each month. Does anyone in the club have a laptop that we could use? Does anyone have a laptop that we could buy at a good price? Once again, I feel the optimal solution here is to have one donated to us from one of our many hi-tech neighbors. I need someone with the time and willingness to head
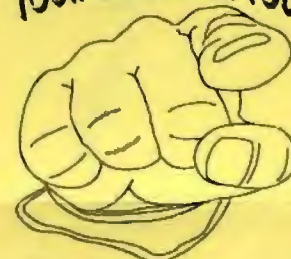
this up for me. This will be an easy task, but probably somewhat time consuming. Step up and be a real part of this club - GET INVOLVED! I guarantee you that you'll have fun and enjoy the experience.

### WINDOWS OS/2 SHOW

The annual WIN OS/2 show is coming up in January. In the past this show has been very good for the club, both financially and in terms of exposure to the industry. We've had new members join in large numbers as a result of being there. Traditionally, Jan has spearheaded this effort and done a great job of it, with the help of many others in the club. This year, however, all of our energies are being taken up with the incorporation and we won't be able to do it. It would be very good for the club to be there, and in order to do that we need an overseer who will coordinate the whole shebang. Jan can give you an idea of what time is required. Call her and sign up. The club needs to be there, plus you'll get into the show for free!

*Paul Staley*



**YOUR CLUB NEEDS YOU**

**BE AN ACTIVE SUPPORTER**

## PLANNING MEETING

**December 2 (1st Wednesday) at 7:30pm**
*The location*
**1670 Oak Avenue, Menlo Park**

Help us to make decisions about the club. All members are welcome. You don't have to be a club officer to get your views heard.

## ARTICLES OF INCORPORATION
### OF STANFORD/PALO ALTO PC USERS GROUP
### A CALIFORNIA NONPROFIT PUBLIC BENEFIT CORPORATION

### ARTICLE I
### NAME

The name of the corporation is STANFORD/PALO ALTO PC USERS GROUP.

### ARTICLE II
### PURPOSES OF THE INCORPORATION

This corporation is a nonprofit public benefit corporation and is not organized for the private gain of any person. It is organized under the Nonprofit Public Benefit Corporation Law for charitable purposes.

This corporation is organized exclusively for educational purposes within the meaning of Section 501(c)(3) of the Internal Revenue Code of 1986 or the corresponding provision of any future United States internal revenue law. The specific and primary purposes for which this corporation is organized include, but are not limited to the following:

A. Facilitating users sharing common experiences with computers.
B. Providing assistance for people who are having computer-related problems.
C. Teaching people how to use computers and software.
D. Providing impartial information about computer products.
E. Acting as a channel between computer vendors and users.
F. Providing access to computer resources.

### ARTICLE III
### AGENT FOR SERVICE

The name and address in the State of California of this corporation's initial agent for service of process is Paul Staley, ................., ...............

### ARTICLE IV
### PROHIBITED ACTIVITIES

(a) Notwithstanding any other provision of these articles, this corporation shall not, except to an insubstantial degree, engage in any activities or exercise any powers that are not in furtherance of the purposes of this corporation, and the corporation shall not carry on any other activities not permitted to be carried on (1) by a corporation exempt from Federal Income Tax under Section 501(e)(3) of the Internal Revenue Code of 1986 or (2) by a corporation contributions to which are deductible under Section 170(c)(2) of the Internal Revenue Code of 1986 or the corresponding provision of any future Unites States internal revenue law.

(b) No substantial part of the activities of this corporation shall consist of lobbying or propaganda, or otherwise attempting to influence legislation, except as provided in Section 501(h) of the Internal Revenue Code of 1986, and this corporation shall not participate in or intervene in any political campaign (including the publishing or distribution of statements) on behalf of, or in opposition to, any candidate for public office.

### ARTICLE V
### GOVERNANCE

The number of members of and the manner of election of the Board of Directors and all other matters concerning the operation and governance of the Corporation shall be as set forth in the By-Laws.

### ARTICLE VI
### INITIAL DIRECTORS

The names and addresses of the persons appointed to act as the initial Directors of this corporation are:

NAME ........................ ADDRESS ...............................................

### ARTICLE VII
### DISSOLUTION

The property of this corporation is irrevocably dedicated to charitable purposes and/or educational purposes meeting the requirements of Section 214 of the California Revenue and Taxation Code and no part of the net income or assets of the organization shall ever inure to the benefit of any director, officer or member thereof or to the benefit of any private person.

On the winding up and dissolution of this corporation, after paying or adequately providing for the debts, obligations, and liabilities of the corporation, the remaining assets of this corporation shall be distributed to such organization or organizations organized and operated exclusively for charitable and/or educational purposes and which has established its tax-exempt status under Section 501(c)(3) of the Internal Revenue Code of 1986 or the corresponding provision of any future Unites States internal revenue law.

Date: _____   _____

Paul Staley, Incorporator

I hereby declare that I am the person who executed the foregoing Articles of Incorporation, which execution is my act and deed.

_____
Paul Staley, Director

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# A BATCH FILE
## Tony Allen

JOIN is a DOS command that fools the operating system into thinking that one drive is a sub-directory of another drive. This is a batch file that will let you do things on all your drives by fooling a program into thinking that it is one big drive with lots of sub-directories. You can, if you wish, JOIN floppy drives (JOIN A: C:\A_DRIVE) for those applications that don't support hard drives (such as DOS 1.0(!))

A couple of things to be aware of:

1. Any programs on the drives be temporarily unavailable. This lasts until you cancel JOIN with the command:

### JOIN d: /D

what this means is that if you want to run a program from your F:\UTIL directory you can't Because drive F: is now a now a JOINed drive called C:\f_drive. So any programs you expect to use need to be copied to a non-JOINed drive. (See the batch file below.)

2. So in light of the above, naturally you will need to unJOIN the drives after you complete the reason for JOINing them in the first place. The /D parameter does this.

CAUTION: Don't use any of the following on JOINed drives

**ASSIGN; SUBST; BACKUP; RESTORE; DISKCOPY; DISKCOMP or FORMAT.**

For these reasons it is best to run JOIN from a batch file that does all the housekeeping work for you. This one shows the steps necessary for JOINing 5 drives, C: through F:, and running a specific search and destroy on the lot, then unJOINing them, i.e.:

### SWEEP DEL *.TMP

You can, of course, amend the batch file to use any suitable commands for performing any required function. For example, use XCOPY /S to backup all the .TXT files in all drives and directories to floppy drive A:.

```
@echo off
Echo
Echo
Echo      ┌──────────────────────────────┐
Echo      │      This is KILL.BAT         │
Echo      │ It will delete all the %1 files on all the │
Echo      │ drives in the computer (except floppies) │
Echo      │      Format is: KILL file.ext  │
Echo      └──────────────────────────────┘
Echo
c:
cd\                    ;change to root directory of c:
copy f:\util\sweep.com ;as f: will be a JOINed drive
join d: c:\d_drive     ;JOIN the drives to c:
join e: c:\e_drive
join f: c:\f_drive
join g: c:\g_drive

  sweep del %1         ;carry out the command(s)

join d: /d >nul        ;unJOIN the drives
join e: /d >nul
join f: /d >nul
join g: /d >nul
rd\d_drive             ;delete the temp. directory
rd\e_drive
rd\f_drive
rd\g_drive
del c:\sweep.com       ;delete the duplicate file
```

My 2½ year old 386 gave up the ghost at the end of October. I tried everything I knew, but I just couldn't get it to boot. So I decided to junk it, and put in a new motherboard.

What I was planning on getting was a 386DX motherboard with a 40MHz AMD CPU. I spent a week shopping around: first checking in Micro Times and Computer Currents, then following up with phone calls to check availability and prices, and finally going around to my short list of potential suppliers to have a look at the motherboards themselves. The layouts of the boards differed quite a lot, some of them had the SIMM sockets in the same plane as the expansion slots which prevented the use of a full length card. Half the ones I saw had the AMD chip surface mounted (soldered onto the motherboard). And all but one came with the current 7 expansion slot standard ("They do it to save money on manufacture, Sir."). Prices ranged from $159 to $219, and I had just about settled on a $199 board from NCA of Sunnyvale when, doing a final check in Micro Times, I spotted a company offering a board with a Cyrix 486DLC 33MHz chip.

I knew that Cyrix's 486SLC chip was a fairly widely used, and successful, replacement for the 386SX chip so went along and had a look. The motherboard is a standard 386DX with a 64K SRAM cache. There are 6x16 bit and 1x8 bit slots, and a socket for a 487 or a Weitek. Their price for the board with the 486DLC was $230 -- so I bought it. (They would have added a Cyrix 487 co-processor for an extra $65.)

# A MOTHERBOARD WITH AN INTERESTING NEW CHIP



Installation was a breeze. I used my original fixing hardware (screws and plastic spacers) with no problems -- all the slots lined up. I installed the old 80ns SIMMs, two basic cards -- disk controller/I/O and video -- plugged in the keyboard and switched on. First time success.

I played around with the BIOS settings and configured the CMOS for my hard disks, then I installed all the other cards, connected the drives and put the case back together. I suppose the whole exercise, from opening the case and removing the old motherboard to final restart took about 1½ hours and at least 25 minutes of that was trying to get the old motherboard out. Two of the fixing screws were inaccessible and I had to remove

both the floppy drives. The new motherboard is 50% smaller (out of interest I counted the chips -- old board 115, new board 23) and looks a bit odd in my big tower case, but everything is now marvelously accessible.

As far as performance is concerned, using a combination of Norton SI, Checkit, and Landmark, it benchmarks out at twice the speed of the 386 and 2/3 the speed of my 486 50. Running under DR DOS and Windows 3.1 compatibility has been perfect so far. And while, after just three weeks, I can't comment on reliability, I did run a burn-in program for 48 hours which would seem to bear out the vendors contention that they have had no returns so far. Only time will tell, but at the moment I reckon that I got a bargain. The company I bought it from are ASA Computers in Santa Clara. As of October they were the only ones advertising the Cyrix chip, by now there may be others.

*NOTE*
*The 486DLC that I bought is a 33MHz chip with 32-bit internal and external data paths. It only has a 1K of internal cache (the Intel has 8K), and, like the Intel 486SX, has no internal math co-processor. You can get a Cyrix 487DLC math chip which fits into the socket next to the CPU (ASA's price was $65). The neat thing about this chip is that everything is pin compatible with the 386DX sockets. The internal cache needs a compatible BIOS to take advantage of it, so you can't simply do a plug-in replacement on your 386 motherboard.*

**Tony Allen**

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# BOOK REVIEW 1

Solid state devices are inherently reliable -- no moving parts to malfunction -- but Murphy will not be denied, and everything goes wrong in the end. That's when you need a book with a title like **Troubleshooting Your PC**. This has been put together by three people who know the PC from a practical standpoint, and is a volume that covers all the essentials of problem solving. It takes a logical approach to all of the many, and often mysterious, things that can happen to your computer.

Each chapter deals with one part of the system, chips, memory, drives, etc. and here the problems are split up: First the **Symptom**(s), then the **Suspect**(s), finally the **Solution**(s). Like a fault diagnosis program, it deals with real world problems and gives real world solutions. You know you're dealing with a good trouble shooting manual when you come across a chapter entitled "Really Weird Things That Can Happen" -- I've experienced a couple of them, and they are.

One of the authors, Mike Todd, is a founder of the IBM SIG on Compuserve and of the large (a 68 page monthly newsletter!) Capitol PC User Group in Washington, DC and that User Group support feeling comes through in the writing. Sympathetic explanations instead of circuit diagrams. As an example there is a Problem Index at the front of the book which lists 136 specific (important) problems, with the page numbers of their solutions. "Modem dials out but nothing else happens" see page 99. Easy reference for common problems — that's friendly support.

There are some topics that are touched upon only lightly, display systems for example get a brief 16 pages. Sensible warnings of the dangers of playing around inside monitors and a full complement of error codes and their meanings, but I would like to have seen more about color aberration problems and differing cable pin-outs. Though, to be fair, there is not a lot the user can do about display failure, other than the well known swap-out check.

Other chapters are more comprehensive — which means more problems and more solutions. At the end is a chapter which gives some extremely sensible advice on user

maintenance and, when all else fails, how to get the best out of Tech. Support. There's a solid reference section that touches all the Memory, IRQ, Error Code, ASCII, EBCDIC, and Cabling bases (more about video cables here -- though no problem solving). And, as a final touch, a list of all the APCUG members, yes folks we're here -- with Don as president.

The book comes with a 360K disk of utilities which are not particularly current, though two of the memory checkers together with Hdtest and Memwalk are useful programs.

On my shelves there are maybe eight PC problem solving books of different types, this one I'll probably make the first I check out. Not for its deep technical analysis, but for its very practical approach and the easy, reassuring way it has of explaining things.

| | |
|---|---|
| **Title:** | Troubleshooting Your PC |
| **Author:** | Aspinwall, Burke, Todd |
| **Publisher:** | M&T Books |
| **Price:** | $32.95 [with disk] |

**In Short:** A very well thought out, and friendly book that will be of aid and comfort when trouble strikes.

# Ami Pro 3.0

## STILL HOLDING THE HIGH GROUND

### Rod McKenzie

Word processing in Windows has never been better than with the newest version of Ami Pro, Release 3.0. It packs impressive new features that ensure real ease of use for the product, and a smooth learning curve for users who are making the transition from the text-based word processors to the graphical user interface. Lotus has continued to hold the leadership position by implementing features that are relevant; the ones that facilitate the day-to-day work that users care about. With release 3.0, Ami Pro now has Object Linking and Embedding (OLE), as well as efficient drag and drop features for moving and copying text.

When compared with release 2.0, this new version is no more complicated, even though it's been made a lot more powerful. Compared to other Windows word processors, users will find Ami Pro has distinct advantages in formatting commands, in preparing tables, and especially in merging documents. Lotus has made a logical extension of the SmartIcon technology that was introduced earlier, but it's exciting, nonetheless.

> **Print Envelope will extract an address from the document, select an envelope size and automatically rotate the printing, if needed.**

This consistent look and feel will be found in upcoming releases of 1-2-3 for Windows and Freelance Graphics for Windows, too. Called their "Working Together" strategy, Lotus will standardize the menu bar, SmartIcons, and the active status bar along the bottom of the screen for the other applications. Completing this strategy, Ami Pro users will also be able to access Lotus Notes and cc:mail without leaving the program. A special SmartIcon group can be selected for the Working Together group.

Just the experience of opening a document in the new release gives the user a big clue that this is going to be a great experience. There's a preview option that shows any document that has been highlighted in true WYSIWYG. It's possible to copy from the preview without finishing the loading of the document. How often have you opened a document just for an address or short section of text? Ami Pro gives users the option of putting information onto the Clipboard with very little hassle.

Lotus has delivered a cure for the fear and loathing that many users felt for Mail Merge. The Merge screen is a guided tutorial on how to create the data file and how to compose the merge document. Data files can be created or edited, as can be the merge files. The data records appear as card file entries with each entry in an identified field. There's no guessing and the names of the fields are used, rather than arbitrary numbers.

When it's time to use the data in a letter or to make labels, a dialog box lists the field names in the data file. They can then be highlighted and inserted into the merge file without retyping the names. When it comes time to merge the files and get output, the user has the option of viewing first and then printing, or going straight to the printer. Another option is to save to file. Merging can take place after there has been sorting and conditional selection of the data in the file according to criteria set by the user.

## THE SCREEN'S THE THING

The interface, or screen as it appears to the user, normally consists of five elements that are active and ready to respond to the user's pointing and clicking. The first is the heading across the top of the screen which identifies the application and the file name of the document that is in the active window. Next is the menu bar with the normal headings of File, Edit, View, Text, etc. Immediately below that is the row of SmartIcons. This is a group of one-click push buttons. Don't worry if you aren't sure what they do. Click on the right mouse button and a text description of the icon's function appears at the top of the screen, replacing the application heading, until the button is released.

The fourth important active element is the tab ruler which runs across the screen just below the row of SmartIcons. A click on the ruler brings up a row of active buttons and drop-down lists to set margins, tabs, and align text to right margin, left margin, or fill between text, like the page numbers at the right side of a table of contents. This extra row of active buttons disappears when the mouse is clicked anywhere else on the screen.

Skip over the document window itself in the middle of the screen, where the normal entry work takes place, and go to the bottom of the screen. Here's the final active element of the interface. It sets Ami Pro apart from the rest. This active status bar will also distinguish Lotus's other applications when it is incorporated into their interface structure. Click on any one of these active status bars and a menu of options pops up for a point-and-click shift to another style, typeface, font size, current path, and SmartIcon group.

The left side of the bar contains the style information for the paragraph location of the cursor. Ami Pro lets the user predefine what will constitute the body text, number lists, bullet lists, headers, footers, subheads and titles. The next block to the left identifies the typeface, and the one next to that shows the point size of the face. If the cursor is clicked on another point in the document the information in these blocks will be updated.

At the right of the status bar are five closely spaced buttons. One shows the keyboard status of Insert, Revise or Type over, the SmartIcon group selector where the menu pops up showing the current selection in highlighted reverse video, and the list of other alternatives. The page control buttons consist of an up arrow page icon, the current page, and a page down icon. The current page number is active, in that clicking on it brings up a GoTo dialog box that gives the user choices to go to a new page number, the first page, last page, previously set bookmarks, or even footnote marks.

## THE SMARTICONS

Initially the SmartIcons are arranged in a row under the menu bar. Now with the help of the Tools-SmartIcons menu, the user can move them to the bottom of the screen, the side of the screen, or float them in their own window. The user can call up custom groups of icons appropriate to the situation, such as editing, proofing, graphics, working together, or tables. If none of these groups meet the users needs, icons can be saved in groups and added to the choices that Ami Pro offers. For quick customizing, drag-and-drop can be applied to the icons to rearrange them.

One of the new icons that will get regular use on my desktop is the Print Envelope icon. It lets the user extract the address information from the document on screen, add a return address, and select an envelope size to be printed. If the printer needs to rotate the printing, it's done automatically.

Since editing of documents often boils down to similar format changes that must be applied to numerous text elements, Ami Pro has been equipped with FastFormat so that the same formatting commands can be applied over and over again to text as it is highlighted. Text can also be manipulated with the mouse using drag-and-drop. The right mouse button has finally been given a reason to exist. It will pop up the Modify Page Layout or Modify Frame Layout boxes, depending on where the mouse is located when clicked.

## FRAMES AND GRAPHICS

"Frame" is a feature of Ami Pro which has set it apart from the rest of the word processor pack since its inception. The frame is first defined on the screen as an area. The area is then able to receive graphical information, text entry or contain and display a drawing file. The user is able to scale the image and can move the image around or anchor it to a specific location. It can also move with the paragraph above the frame, so as to remain adjacent to the text that might be making reference to it. Ami Pro will accept different image file types in the frame. They include .PCX, Lotus .PIC, DrawPerfect .WPG, Windows Metafiles, AutoCAD, HPGL, TIFF, EPS, and .CGM. The frame can be

transparent so that it will overlap other text or frame objects on the screen.

Text frames can be used to highlight text, even putting it into reverse – white on black. Drop capital letters can be used to start a paragraph by putting the letter into a frame. A frame can be divided into columns for flowing text across one part of a page. Because the contents in a frame moves with the frame, it can be an excellent way to position text on a page in relationship to other graphs, images, or tables.

Users can also use frames to create their own drawings. Ami Pro includes a group of drawing tools that appears when first opening a frame at the current cursor position. The tools include line, curve, circle, rectangle, and polygon, as well as text entry and buttons to rotate and mirror the drawing. A background grid can be established to keep things square and even. It's no substitute for a CADD system, but enough for many sketching jobs. Because frames can be layered, users can create special visual effects on screen and in the printed document.

## BETTER THAN ALMOST WYSIWYG

Ami Pro gives the user an accurate screen representation of the final output, including the correct text line length. They claim that there is currently no other graphical word processor capable of doing that. This feature makes it easier to visualize the printed page while the work is still on the screen.

Experienced users of Ami Pro will be familiar with the Tables feature. For new users this may be the first time that they have ever been able to create columns and rows of numbers or words so easily and keep everything aligned. The table can be linked to spreadsheet data or to other database information that may reside

in other directories or drives. Formatting of the table can be quickly modified with a right mouse click anywhere on the table itself. Also, the cells in a table can be used to contain pictures or even graphs.

Charting is a feature of Ami Pro that can be used to display in visual form the relationship between data. The user is coached as to the chart types that can be used. Examples are shown of the charts that might best display the user's data. Legend boxes, shading, and line types for charts help identify the data.

## GET A HEAD START IN STYLE

There are extensive Style sheet files to help the user get a flying start composing sophisticated documents that exploit some of the best features that Ami Pro has to offer. It's a real treat to see what word processing can look like. The "SmartStyles" booklet that comes with the product lets users browse through these examples and think about how they might be customized for the users' specific needs.

Several features were added specific to the legal profession. Lines may be numbered evenly down the page, or, as an alternative, there can be numbering of only those lines with text on them. Tables of Authorities are supported, and Tables of Contents can be prepared down to nine levels.

Grammar checking is now an internal feature of Ami Pro instead of a third-party add-in product run from a macro. There's spell checking, as well as a Thesaurus.

Image appearance is often affected by the output device. The program has image controls that include brightness, smoothing, edge enhancement, and halftone controls that can keep the image clear and sharp when printed.

Lotus Word Processing Division has prepared an excellent manual to document the features of Ami Pro 3.0 and includes good examples to follow for some of the more common, or special, jobs that come up. The on-screen help is context sensitive, with the "?" Help Icon at the upper right corner of every dialog box.

Beyond the features that most users will need, Ami Pro also has incorporated an extensive macro language, which users may want to explore by ordering the supplementary "Macro Language Manual." It contains functional definitions and examples for all of the macro commands. The manual consists of over 700 pages and is provided with a disk of example macros for a small handling charge of $9.95.

When Lotus Word Processing Division announced that Ami Pro would be upgraded to version 3.0, they did it at the New York PC Users Group meeting. They knew that there is a strong base of support among Windows users for Ami Pro. It has had a devoted following for almost five years. Ami started out as a Windows word processor even before Windows 3.0 was introduced. The big jump was made when version 2.0 of Ami Pro became available. The changes in Ami Pro version 3.0 are refinements, speed enhancement, and useful new features that make the product even more powerful than it was before.

Ami Pro 3.0 is a product of the Word Processing Division of Lotus Development Corporation. Upgrade pricing starts at $49, $79 for the technology guarantee upgrades, and $129 for the competitive upgrades. The suggested retail price is $495.

*Reprinted from Bits & PC's: the newsletter of the Madison PC User's Group.*

# GETTING LOGGED ON, etc.

A short logon script for automatically logging onto the BBS follows and can be edited to suit--if you use any Procomm communications program.

It's recommended to change your initial password after you log onto the BBS for the first time. This is done on the Main menu by selecting (Y)our Settings, and selecting option (1) for changing the password. Enter a new password and exit. After logging off the board, re-edit the logon script to reflect your new password.

```
;SPARC BBS - Automatic log-on for PROCOMM PLUS
NAME_PW:                          ;Log-on, Name and Password
TRANSMIT "^M"                     ;Carriage return
WAITFOR "first name?"
TRANSMIT "NANCY HELMY"   ;Your name
TRANSMIT "^M"
WAITFOR "password"
TRANSMIT "1911"                   ;Your BBS password (initially the last 4
TRANSMIT "^M"                     ;digits of your phone number)
```

To find the articles uploaded to the BBS from other user group newsletters, enter the Message menu, (S)can, S(u)bject, type

ARTICLES, (S)tart. This will give you the message numbers to which the articles are attached. To read a message and then download the attached article, (R)ead, type the message number, (D)ownload, and type the filename of the attached article. Match download protocols between the BBS and your comm program.

If you don't want articles cluttering up your hard disk, use a method for viewing that allows you to read inside the zipped file without permanently unzipping. A command that accomplishes this is PKUNZIP -cm ZIPFILENAME.

Drafts of SPAUG's Articles of Incorporation and Bylaws are available on the BBS. These can be searched on the Message menu by the same method as above, using Bylaws and Incorporation for the two S(u)bjects. A new (T)hread feature works too, as a (R)ead option. (D)ownload the drafts as above.

Incidentally, Bob Bottini is currently logging on each morning to see that the board is not "hung." Dialing a couple of times may be necessary to get connected. Line noise seems to be an intermittent problem for some. If the board disconnects without your logging off, redial in a moment or two. These are a few "work arounds" until operational reliability is resolved.

**Nancy Helmy**

# Put on More with SuperStor

## A Versatile Disk Compression Utility

### Rod McKenzie

This is an article about storing more files on a hard drive than DOS said would fit. That should be good news for anyone wanting to load one more Windows application. Know the feeling? Disk space is disappearing 6-10 MB at a time. Using software called a disk compression utility, files on the hard disk can be made to occupy less space, and thus "new" free space for more storage is created. It doesn't require the removal of all the files from the hard disk, nor hours of reading complicated procedures. The installation program doesn't say, "Abandon hope, all ye who enter here." In about a half an hour there can be roughly twice the disk space available than before. While nothing is free, this comes pretty close.

The person who first said, "You can never be too rich or too thin," wasn't thinking about computer disk storage. When it comes to hard disks I suspect that most users would agree that you can never be too big or too fast. In the past, it was only the very rich who could afford the very big, very fast hard disks. The rest of us had to wait for the cost of hardware to sink a little more, if we could be that patient. This leaves the thin to ponder their tofu! Under the banner of optimum performance, users should be able to get the most from their hardware, and disk compression is one of the most tangible ways that software makes the hardware go farther, and in some cases faster.

SuperStor is a disk compression utility that uses a memory-resident program to read and write to disk files in a compact form. This compressed version of the files takes less space, and in some cases, less time than the standard DOS format. The memory-resident portion of the program is loaded as a device driver in the CONFIG.SYS file whenever the computer is turned on or re-booted with Ctrl-Alt-Delete. It's important that this driver is loaded since DOS won't find the compressed files without it.

The typical user will have a hard disk that's close to full, and SuperStor is ready to start at that point. It does the work in several steps, each intended to optimize the system and conserve the data. Let's take a look at some of the procedures and considerations that are used to move files into the compressed form.

The new "disk" that SuperStor creates for the user is actually a very large file. It's identified as a disk, however, and all of the commands appropriate to disk and file management are appropriate to this "disk," too. During start-up, after the system finds the CONFIG.SYS file in the root directory, the device driver for SuperStor is loaded and then assigns or swaps drive letters with the C: drive.

Assume that there is only one hard drive and it has only one partition. The SuperStor "disk" is actually one large file on the C: drive. The swap assigns the drive letter C: to the SuperStor disk and D: to the rest of the hard drive.

After the installation program creates this new "drive," it will copy files and directories from the uncompressed area of the disk into compressed form. This will defragment the files as well. A few programs are copy protected, such as Lotus 1-2-3 version 2.01. They should be de-installed and after Superstor has created the new "disk," they should be reinstalled. When this is done, DOS's CHKDSK command will report a large increase in the bytes of space available.

Some files don't belong in the compressed disk because the computer wouldn't find them at the early points of the start-up process. When the computer is first turned on, the motherboard goes through some diagnostics programs that are ROM based. They have nothing to do with DOS or the hard drive at all. These routines check the integrity of the hardware and look around to see what's hooked up to the system. Finally, it attempts to load an operating system from a bootable disk. Most systems will attempt to do this initially using the first floppy drive (A:), or failing that, then the first hard drive (C:). This involves DOS's hidden and system files that are contained in the root directory. Since nothing about SuperStor has been loaded yet, the files need to be directly readable by the system. For this reason, it's important to leave space in the root directory of the bootable drive for uncompressed files that the system needs before the SuperStor device driver is loaded.

There's another kind of file that should not be in the SuperStor disk. If Windows is running in Enhanced mode on a 386 or higher system, it can use a permanent swap file. A Windows permanent swap file must be left on the uncompressed part of the drive. Windows reads and writes the permanent swap file directly to the disk device driver. SuperStor would not be able to compress or decompress the data that comes flying at the disk. If a Windows permanent swap file is present, the user will need to set aside space for it during installation. After swapping the drives, this will probably change the drive letter where Windows will find the swap file. It may be necessary to load Windows and reset the permanent swap file information in the Control Panel under the 386 Enhanced icon. All of the other files that Windows uses, including all of the application program files, can go on the SuperStor disk.

## KEEPING HOUSE

The user may want to create new compressed drives, and SuperStor does this with a separate DOS program. SSTOR is the name of the utility. Typing that at the DOS prompt will bring up a menu-driven program that enables the user to create new SuperStor disks. Even floppy disks can be compressed by SuperStor. The Prepare feature is not unlike formatting the disk. It creates the large file to which SuperStor actually writes the compressed file data.

SuperStor provides another utility program called SSUTIL. It's used for file maintenance and the house cleaning that's needed from time to time. This program will check the integrity of the data, meaning that it will see if the information matches the compression algorithm that was used when the data was written to the disk. It will also mark and correct errors if it can. The other choice, and the one that will be used more often, is the Tune Up option. The user can choose to defragment the only File Allocation Table (FAT) by using the Consolidate command, or go after everything with the Defragment command. Recompression can reduce the storage space by another 10-20 percent, depending on the type of files involved.

Times change and the size of the SuperStor disk may need to change. The Shrink and Expand commands in SSUTIL give the user that option. Not all disk compression utilities are able to do this. If, for example, the user learns from experience that Windows needs a larger permanent swap file, the size of the SuperStor disk might have to be changed to increase the space of the uncompressed disk.

## IF THINGS GO WRONG, GO WRONG, GO WRONG....

Good practice dictates that the user create a back-up floppy disk that can be used to start the system without having to access the hard disk for the system files. Users may be familiar with the way that a bootable floppy is created, either with the FORMAT command's "/s" switch, or using the SYS.COM program in DOS. Including a basic version of CONFIG.SYS and AUTOEXEC.BAT files, and a few of the important DOS utilities that are not resident in COMMAND.COM, will make this disk a little life saver for the system in distress. Copies of the SuperStor device driver files and utilities should also be included in this emergency disk.

## A CHANCE FOR FASTER SYSTEM PERFORMANCE

Addstor says that they expect user systems in the range of 20-25 MHz to perform slightly better with SuperStor. The algorithm that

compresses and decompresses the files will outpace the speed of the physical disk read/write activity that it is reducing. That means the drive type and the sophistication of the drive controller will affect this cross-over point between software and hardware performance. Depending on the file type that it is handling, it could be substantial. Database files and graphics files are the primary targets for high compression ratios. Executable files do not usually compress as much as one of these more highly structured file types.

## STILL WAITING FOR OS/2

Neither SuperStor, nor the other principal compression utility, Stacker, have delivered a driver for the OS/2 operating system. For some users this is a Catch-22 situation. They need the extra disk space just to load OS/2. Doing half the job, by compressing the application software that's already loaded, would free some disk space. Then maybe OS/2 would fit, but the applications would be out of reach when running OS/2! Some power users are waiting for the SuperStor, or the Stacker, driver for OS/2 before they will run it.

SuperStor is a DOS-based product, and will give any user a boost in drive capacity, not just the Windows user. Those who think they are soon going to be forced into buying a new hard drive might want to give this software solution a closer look. SuperStor is one of the more robust of the compression utilities on the market today.

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# OS/2 After Two Months Use A Report

**With tips on adjusting the "Settings" for CorelDRAW and Prodigy**

## BOB BOTTINI

Now that I have used OS/2 for a couple of months I find that I am settling into it. The differences in moving from Windows 3.1 to OS/2 is almost non existent. I am not discussing the differences in the two applications here but my personal, emotional adjustment to the newer system. At first I did experience some frustration because of inadequate information on the part of IBM relating to installation procedures. I have discussed these problems in previous articles. And, in that vein, I am happy to say that Colorado Memory is about ready to release OS/2 software (which they have held up for months) so that I can back up to my tape drive*. There seems to be a general dragging of feet on the release of OS/2 software on the part of software houses. Possibly because they are waiting for Windows NT so that they can deliver a generic product, usable on both operating systems (saving on advertising, printing, packaging etc.). Microsoft seems to be succeeding in its ploy to delay the introduction of 32 bit applications by delaying the introduction of Windows NT until such time as it's marketing strategy has fully paid off on Windows 3.1. Then it will move into converting Windows users to Windows NT. We are talking big bucks here.

But getting back to using OS/2, I am beginning to see the advantages of a 32 bit operating system in my everyday computing use. I am gradually becoming at ease with multi-tasking (something that I did not feel comfortable with in the Windows environment). And if I do have a crash on a particular application, I just go back to the desktop and shut that application down and then re-start it. From time to time I find that

it is prudent to refresh the OS/2 operating system. This brings back the system to its pristine condition and eliminates corruption that in time can build to serious proportions. This, I feel, is one of the principal reasons why applications crash. The procedure for refreshing the OS/2 operating system is simple but it does take time if you have a large drive.

Not being one to do things by half, I elected to upgrade all of my software at the same time. I went from an early version of Excel to the latest version. I upgraded Word for Windows and CorelDRAW, as well as several other applications. I am finding that I have a lot to learn in each of these programs. The sum total is that I make progress on learning all the applications including OS/2, but my progress with OS/2 is not as fast as if I had elected to concentrate on the operating system alone. But the important thing is that I am able to continue operating, and be in an ever-increasing productivity curve.

If you plan to convert to OS/2 and have CorelDRAW version 3.0** you will have to change some of your settings. To do this you click on the CorelDRAW icon with the right mouse button, click with the left button on open. Click again with the left button on settings, When the application's settings come up you click on the sessions tab. With the sessions window open you click on the WIN-OS/2 settings button. (If it is a DOS program you click on the DOS settings button.) Getting back to CorelDRAW, when you click on the WIN-OS/2 sessions button another window will appear which will list a number of syntax statements. You will change to the following:

```
DPI_MemoryLimit=8MB
EMS_MemoryLimit=0          ;(Zero)
XMS_MemoryLimit=0          ;(Zero)
```

You will have to use Adobe Type Fonts which come on the CorelDRAW CD-ROM disk. An OS/2 version of CorelDRAW is due out this month.

To install Prodigy you change to "OS/2 Full Screen". At the "C" prompt the syntax is A:INSTALL /E1,C:5,C: then press enter.

After installation you migrate the program. After migration is complete you click on your Prodigy object with the right mouse button to get into "settings" and then get into the "sessions".

Once you are in "sessions" click on DOS settings and you will see quite a few syntax statements, like DOS_COM_HOLD=OFF. You will change this statement along with a few others to the following:

```
DOS_COM_HOLD=ON
DOS_HIGH=ON
DOS_UMB=ON
DPMI_MEMORY_LIMIT=0        ;(Zero)
HW_ROM_TO_RAM=ON
IDLE SENSITIVITY=100
EMS_MEMORY_LIMIT=0         ;(Zero)
XMS_MEMORY_LIMITS=0        ;(Zero)
```

If you wish to use auto-logon you will have to install a batch file in your Prodigy directory and then change the path in the settings "Program" window.

Those of you who wish to avail yourselves of the full use of your 386/486 hardware will find an operating system such as OS/2 very productive. You will also find the new UNIX operating systems useful as well. These systems are due out shortly and will be inexpensive. Novell has its UNIX system due out before this year is out. I understand that this system will allow you to run standard software such as Excel and Word for Windows. On the whole we are at last getting operating systems that will allow us to use the full capabilities of our 386/486 hardware.

\* *Editors Note 1:*
*Colorado Memory Systems Inc., makers of the quarter inch (QIC) tape systems, have become a wholly-owned subsidiary of Hewlett Packard. So expect some new developments there.*

\*\* *Editors Note 2:*
*Corel have issued a maintenence upgrade (a full set of disks including a new CD-ROM) that fixes some of the bugs in version 3.0 for Windows. Contact Corel at 1-800-836-3729 - you'll need to send in your registration card.*

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*Jan is the Vice-President of SPAUG and a Microsoft Certified Trainer. Send your comments on Windows applications to:*
3655 Pruneridge Avenue, No. 135
Santa Clara, CA 95051,
[408] 243-5955.

**Q** What are the little "T"s next to fontnames in Word?

**A** The two "T"s next to fontnames in Word and Excel signify TrueType fonts. TrueTypes are a font technology that was introduced with Windows 3.1. A TrueType font has two distinct advantages: 1) It is completely scalable from 4 to 127. That is, you can choose any point size you like in that range. 2) A TrueType displays the same on the screen as on the printed page. Each one comes with both a screen and printer font, so printing discrepancies are kept to a minimum. I recommend setting a TrueType font as your default in both Excel and Word. My two favorites are Times New Roman and Arial (Microsoft's version of Helvetica).

**Q** What is the command Options Mark in the Windows Calendar program?

**A** The Options Mark command allows you to assign any of five symbols to a day. You can choose one or more of these symbols: [] () o x and _ . Though the symbols mean nothing to Calendar, you can assign your own meanings. For example, you might decide that the brackets mean a regular monthly meeting, and the circle signifies someone's birthday. You can use as many symbols as you want for a particular day, but they are only displayed in monthly view (View Month).

**Q** I've seen many computers with messages floating across the screen. Do you need an extra piece of software to do that?

**A** You sure don't. You're seeing one of the four different screen savers that come with Windows. A screen saver is a program constantly running in the background, that kicks in when you haven't touched the keyboard or the mouse after a certain number of minutes. By drawing a moving picture on the screen, it "saves" the screen from the effects of an image burning in when you walk away and leave the computer on. (An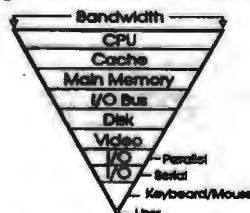 image can be burnt into the screen much like it does on your eyeball after looking at something bright.) Through the Windows Control Panel, the Desktop option lets you choose a screen saver. The one called "Marquee" floats a message across the screen. Choose Marquee and click the Setup button. In the Text field, type your message. Click Format Text to format it. I recommend a TrueType font, bold and italic, at 36 point or larger for legibility (see first question above for more on TrueTypes). Choose a color if you like, and click OK to return to the main Setup box. You can center the message on the screen, or have it appear in random places. You'll probably want to float it at a speed as fast as possible. When you're done, click OK to return to the Desktop box. Set the number of minutes before the screen saver kicks in. Follow the same procedure to change the message at any time.

**Q** In Excel, what's the best way to select a large range if you know exactly where it starts and stops?

**A** There are two shortcuts that immediately come to mind; either one makes selecting a quick and easy task. For an example, we'll select from A1 to J54. The first shortcut involves the Shift-Click trick. Start out by clicking in any corner of the area you want to select (we'll click in A1). Go to the opposite corner, scrolling if necessary (we'll scroll until we see J54). With the mouse, point inside J54 and hold down Shift while you click. The selection is extended from the active cell (A1) to the cell you're pointing to (J54). (I love this trick because it relieves you from having to drag the mouse, and we all know dragging is a drag.) The second shortcut involves a little-known use of F5, the Goto key. To select from A1 to J54, click inside A1. Press F5, and enter J54 in the Reference field. Hold down Shift while you press Enter. The selection is extended from A1 to J54. When using either of these shortcuts, remember that you can travel from any corner to its opposite corner.

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# BOOK REVIEW 2

An interesting, and very relevant, new book that has just come out is PC POWER! Boosting Your PC's Performance. It uses the idea of the data path bandwidth as a funnel to show how the different components of the computer combine to affect its total performance. The CPU is at the mouth of the funnel and the User is at the tapered end. Then each chapter of the



book goes into detail on how best to improve the performance of that particular segment.

This is not a book for the 8088 user; it deals exclusively with the 80286, 80386, and 80486. The advice it gives is generally extremely practical (though there is a fascinating chapter on advanced disk optimization techniques that deals with disk mirroring, RAID systems, and parallel transfer drives). There is some excellent advice on optimizing for Windows and useful tips on getting the best out of applications, with particular emphasis on AutoCAD. However, the main emphasis of the book, naturally enough, is on hardware. How to make sensible purchasing decisions, and how then to get the best out of the equipment you've bought.

The biggest section of the book concerns itself with disk performance. Here is an area where you can probably find more ways of speeding up performance than any other. The author describes the different types of drives and their controllers, points out the benefits and disadvantages of each. Then he goes into detail about caching controllers (both software and hardware), how they work, and how they compare. There's also some useful advice on implementing them to their best advantage. Included is an appendix on the technical details all types of RAM caches.

The book is written in non-technical language that is easy to follow, and is essentially a book for those who are discovering the limitations of their present computer setup but are not sure of the best way to overcome them.

| | |
|---|---|
| **Title:** | PC Power! |
| **Author:** | Stephen Dougherty |
| **Publisher:** | M&T Books |
| **Price:** | $26.95 |
| **In Short:** A useful book that does what it sets out to do -- Boost Your PC's Performance. | |

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# THE SPAUG FUNDRAISER

*T*here were some really great bargains at the Sidewalk Faire and here are some more. Are there computer users on your shopping lists? To purchase any of these items call Beverly Altman at (415) 329-8252 and it will be brought to the next meeting or you can arrange to pick it up.

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## WANTED

A newsletter courier and mailer. We're taking applications now to fill these posts. If you feel you have the background and experience to meet our needs, then talk to me and you will be considered for one of the openings. The pay is great and you'll be the first to see the newsletter each month. *Don't wait too long, call me now!*

*Paul Staley*

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## DISK OF THE MONTH

It's been a long time since we had a Windows Disk of the Month, so here we make up for it with a seven program special. Actually on the disk there are eight files, but one, VBRUN100.DLL, is a Visual Basic run-time module that a couple of the programs need; it goes in the WIN(DOWS) directory.

When I compressed the programs (using the LHA self-extracting option) I renamed them slightly so you wouldn't get the confusing " RALF.EXE Already Exists - Overwrite (Y or N)" message when you typed RALF to decompress the program, it's actually called RALPH.EXE. Same goes for the other compressed files -- names just a tad different to the programs themselves.

**FONTER3** displays Windows type fonts.

**ICOBMP** turns any Icon into BMP wallpaper.

**RESMON** displays and monitors GDI and User resorces.

**STOPWATCH** is just that.

**WINCLOCK** shows time (with alarms) and/or date in a small box.

**WINMEM** is rather like Resmon with extras (free disk space and a warning system etc.).

**RALPH** is - well try it and see.

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| TYPE | ITEM | DESCRIPTION | SPAUG PRICE | STREET PRICE* |
|---|---|---|---|---|
| Software | NORTON ANTIVIRUS For Windows and DOS | Comprehensive Virus Defense Detects over 1000 Viruses! | 36.00 | 99.00 |
| Software | NORTON BACKUP v1.2 For DOS | Simultaneous Backup of Multiple Drives Flexible and fast; Award winner | 40.00 | ** |
| Software | NORTON BACKUP v1.2 For DOS and Windows | Automatic schedule for Windows backups. Restores from damaged diskettes. | 32.00 | ** |
| Software | THE NORTON EDITOR Version1.0 | Created to meet the needs of programmers Written entirely in Assembly language; fast | 20.00 | ** |
| Software | THE BUDGET EXPRESS 1.1 by Symantec | Goal Tracking, "what if", Instant Summary Views, etc. for Lotus 1-2-3 | 28.00 | ** |
| Software | DESIGNER v2.0 by Micrografx | A top rated drawing and technical illustration program for Windows. | 90.00 | 309.00** |
| Software | ALLSAFE by XTree | An integrated security program, including password protection, keyboard locking, etc | 30.00 | 89.95 |
| Software | COMPUTER CHECK ORDERING KIT | | 10.00 | 39.95 |
| Software | hDC FileApps (for Windows) | Undelete/View/Search/Share/Transfer, etc. | 12.00 | 49.00 |
| Software | FileF/X (for Windows) | Enhanced file management utilities | 20.00 | – |
| Software | FORMWORX for Windows by Power Up! | An excellent forms processing program. | 40.00 | 199.99 |
| Software | JUST WRITE | Fast, easy word processor | 40.00 | 199.99 |
| Software | LAPLINK PRO | File Transfer Tool | 50.00 | 104.95 |
| Software | MENUWORKS SECURITY | Complete data protection | 28.00 | 99.99 |
| Software | ON TIMES for Windows | A calendar and list mgr. | 40.00 | 99.99 |
| Software | QUIKMENU III | Program Manager | 8.00 | 25.00 |
| Software | SYMANTEC GAME PACK | Fun for Windows: Jacks, Hangman Pick Up Sticks, Code Breaker, etc | 20.00 | 49.95 |
| Software | SQZ! PLUS by Symantec, for Lotus | Spreadsheet File Utility System; compress spreadsheet files by up to 95%. | 20.00 | ** |
| Software | TRADING POST by LaserTools | A PostScript printer manager (PCWorld Best Buy) | 10.00 | 79.00 |
| Software | VIRTUAL MONITORS | Desktop expansion for Windows | 12.00 | 39.99 |
| Book | CYBERPUNK | True stories of outlaws and hackers on the computer frontier | 5.00 | 12.00 |
| Book | EXCEL 4 (for Windows-1992) | A Self-Teaching Guide | 9.50 | 19.95 |
| Book | MICROCUMPUTER EXPERIMENTATION | | 4.00 | 31.95 |
| Book | MICROSOFT WORKS | Quick Reference Guide | 3.50 | 7.95 |
| Book | PC SECRETS | InfoWorld's PC tool book with 2 disks | 18.00 | 39.95 |
| Book | PHENOMENAL PC GAMES | 15 Games and 1 Disk | 10.00 | 24.95 |
| Book | WORDPERFECT for Windows (1992) | "Business Publishing Power" | 26.95 | 9.60 |

*The current discount price - where available.*   **  *Not the latest version - larger reductiion*

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# CLASSIFIED ADS

# THE SPAUG RESOURCE CENTER

# CLUB EVENTS IN DECEMBER

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |

**December 2** First Wednesday - *PLANNING MEETING*
**7:30pm** Beverly Altman, [415] 329-8252 or
Paul Staley, [415] 493-1864

**December 8** Second Tuesday - *WORD FOR WINDOWS SIG*
**7:30pm** We meet at Oakridge Appartments Rec. Room, 3655 Pruneridge Ave. Santa Clara: just west of Lawrence. *Topic:* **IMPORTING & POSITIONING GRAPHICS** The group is led by Jan Altman, a Certified Trainer in Word for Windows. For more information, please call Jan at [408] 243-5955.

**December 15** Third Tuesday - *QUICKEN SIG*
**7:30pm** Floyd Kessler, [415] 493-7780
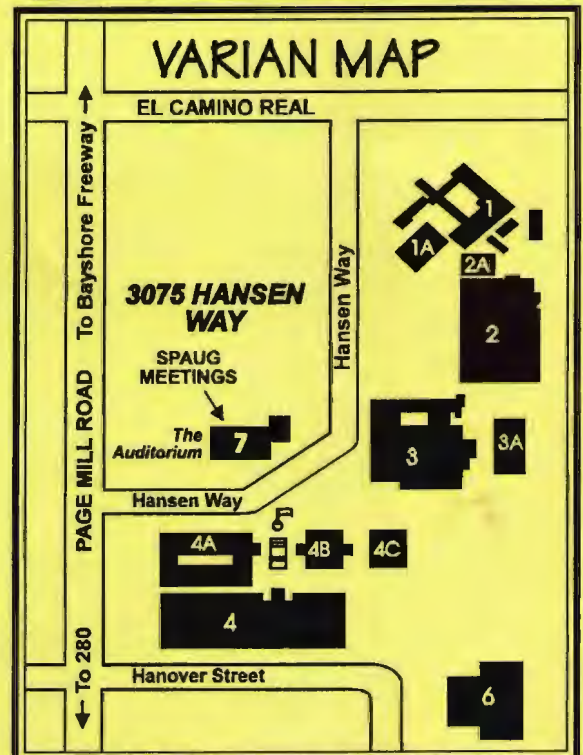
**NEW LOCATION** The new location is 1830 E. Embarcadero Road, Palo Alto. Take the Emabarcadero East exit off 101/Bayshore or come straight up Embarcadero Road from Palo Alto. Pass the frontage road heading for the bay. Pass Mings and 2 auto dealers on the right. Then turn right into the HARBOR complex find #1830 on the left.
For the latest meeting information see the notice on the Bulletin Board System..

**December 30** *NO MEETING IN DECEMBER* — See you on JANUARY 27 at 7.30pm in Building 7 at Varian, 3075 Hansen Way, Palo Alto. *See the map for directions.*

## THE NOVEMBER PRESENTATION
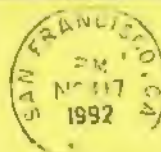*Last Wednesday: November 25 at 7:30pm at* VARIAN

**"HOLIDAY SPECIAL"**

## VARIAN MAP

EL CAMINO REAL

To Bayshore Freeway

**3075 HANSEN WAY**

SPAUG MEETINGS

*The Auditorium* 7

PAGE MILL ROAD

Hansen Way

Hansen Way

To 280

Hanover Street

1A, 1, 2A, 2, 3, 3A, 4A, 4B, 4C, 4, 6