



# **PRinT SCreen**

**The Newsletter for the  
Stanford/Palo Alto Users'  
Group for the IBM PC**

March 1989

Volume 7, Number 3

# **Lotus**

1-2-3

## **Is it soup yet?**



## CLUB NEWS

### ***New Officers...***

Elections for club officers were held at last month's meeting. We would like to welcome our new president, Rick Altman, and Vice-President, Corwin Nichols. Jared Nedzel will be serving his second term as Treasurer.

Former President Ralph Muraca did a wonderful job with the club in the last year and we would all like to give him a big thank you for all the work he has done for the club (and will continue to do, we hope!).

### ***...New Things***

Beginning this month, expect to see some major league software being raffled off before the general membership. In typical PC style, we will let the computer in Turing Auditorium determine which member wins each month. All guests attending can join

and enter the raffle right then and there, BUT — you must be here, present and accounted for to win! If you're not, the computer will pick someone else. This month: the new Lotus. Later this summer: Word-Perfect 5.0, Microsoft Word, Norton, and many others.

### ***April Meeting***

Stewart Alsop, a well-known computer columnist, addressed the question "Where Are PC's Heading?" at the April general meeting. He feels that DOS has a limited future, for several reasons. First, DOS is not capable of handling graphics in a friendly fashion. Second, DOS is not adequate for user programming and does not have the ability to share data over a network ("groupware"). Also, it doesn't handle multi-tasking.

## **May-June Calendar**

May 31 Group Meeting	7:30
June 13 Novice SIG	7:30
June 14 Planning Meeting	8:00
June 28 Group Meeting	7:30

### **Next Meeting**

**Date:** Wednesday, May 31  
**Time:** 7:30 p.m.  
**Place:** Polya Hall, Turing  
Auditorium (Rm. 111)  
Stanford University

*All members are welcome to attend the monthly planning meeting, where we make decisions on the future of the group. Call Beverly Altman, 329-8252, for the location of the next meeting.*



# This Month

Michael Rubenstein of Lotus Development Corporation will be demonstrating the two new upcoming versions of 1-2-3: Release 2.2 and 3.0. Members may recognize Michael's name—he demonstrated Agenda at a meeting last year.

The 3.0 version of 1-2-3 is packed full with new features but will run only on 286 machines. The 2.2 version has fewer enhancements but will run on all those XT's out there.

Some of the new things you'll find in 3.0 are: more professional graphics, graph printing from within 1-2-3, font changes from menus, multiple files open, linking files in formulas, search and replace, undo, and automatic formatting.

In Release 2.2 you will find an undo feature, display of settings sheets, search and replace, automatic file backup, and the inclusion of Allways, a formatting and printing add-in program.

## ***Programs of the Month***

Becky Bridges will be demonstrating the Disk of the Month, ARC. Those with modems are probably already familiar with this program which compacts single or multiple files into one smaller file. Becky will demonstrate other handy uses of this archiving program.

Copies will be available for \$1 each or in exchange for your "goodie coupon."

Rick Altman will also show you a way to *really* be dangerous with the DEL command...

## ***The Giveaway***

Michael Rubenstein will be raffling off a free copy of Release 2.2 as part of his presentation. At that time, we will unveil our new super-duper electronic raffling system. All members are automatically entered, but you need to be present to win!

Alsop talked about several alternatives to DOS. The Macintosh is currently growing 40-50% a year, although it still lags quite a bit behind PCs in the business world. IBM feels that the future lies in OS/2 and Presentation Manager. However, this environment requires a minimum of 4 MB. It also requires programmers to learn a new language.

Several companies, Next and Sun Microsystems, are pushing the Unix

operating system. Next (Steve Job's computer) puts ease of use first while Sun places primary consideration on speed.

Alsop said we are currently in a transition phase right now—this is actually a polite way of saying we are in a state of confusion and opportunity. According to Alsop, Windows 386 will be the next main stream

—see next page



## Club News

*from previous page*

operating system. The operating system of the future must use the 386 processor because it allows smooth access to extended memory and supports multi-tasking. Windows 386 is also the first software to take advantage of the protected mode of the 386 chip.

To quote Alsop from the April 16 issue of P.C. Letter (a newsletter he edits and publishes), "Think of Windows 386 as a single development environment that works well in machines costing from \$2,000 to \$10,000 with an explicit blessing and potentially system-level packaging and integration from IBM. That spells M-O-M-E-N-T-U-M in my dictionary."

He also explained in this article that Windows 386 essentially moves DOS aside and assumes the fundamental aspects of an operating system.

Alsop did mention that his opinion on the future changes frequently. His previous first choice was OS/2 and Presentation Manager. He now believes that it is too expensive to become a main stream environment.

### **Membership renewals**

For the two months preceding and the one month following the expiration of your membership you will find a renewal envelope enclosed in your newsletter. Use this envelope to promptly send in your \$25 check (\$10

—see page 14

## The SIGS

### **Microsoft Word SIG**

**Microsoft Word SIG** meetings are held on the second Monday of each month. Regular attendees are contacted by phone and informed of meeting dates and topics. If you are not a regular attendee, contact Jeanie Triechel at home (851-0100) or work (326-7438).

### **Novice SIG**

**Last meeting:** Randy Locke hosted and Richard Orser led the May 9 Novice SIG meeting. Richard led a discussion of DOS keyboard commands, subdirectory structuring, the path concept and command, and the DISKCOPY and DISKCOMP commands. He demonstrated and distributed three public domain software programs: QDISK, KREPET, EGAKAL. He also demonstrated a commercial program called Tornado Notes which allows quick searching and retrieval of information.

Eight people attended the three-hour meeting.

**Next Meeting:** The next meeting will be held on Tuesday, June 13 at Ron Johnson's home, 726-C Mariposa Avenue, Mountain View. Call Ron at 968-7023 for directions or details.



# THE VIEW FROM THE TOP

## Mr. President, You're Boots are Shaking

by Rick Altman,  
SPAUG President-Elect

**L**ong before I figured my turn would come, I find myself approaching my first month as President of the club. I have spoken before the group dozens of times, but I have the feeling that I will be shaking in my boots come May 31 around 7:30. You're invited to come watch, but no laughing, please.

I wonder if Ralph Muraca was nervous before his first meeting. He sure didn't show it if he was. I have nothing but praise and gratitude for my successor, who will probably go down as the hardest-working leader our club will know. I certainly hope the club will continue to benefit from his irreplaceable involvement.

What I lack in experience and maturity I hope to recoup in spirit and camaraderie. My campaign promises will be easy to keep: I want to have fun, and I want the membership to have fun, too. Don't just listen to Mike Rubenstein from Lotus come Wednesday — let him have it. *Exactly why is 1-2-3 two years late?* Don't think you can only participate in Random Access if you have some question or problem. Let us know what you think of software companies suing each other. Let us know why you think WordStar

belongs in the circular file or why Mace is better than Norton.

As I've said before, most of us have more information channels than we know what to do with — what this group needs is more entertainment, and I don't just mean engaging guest speakers. We are the entertainment; we are the talent.

To that regard, I don't feel like being the only one demonstraing the Program of the Month. I'm taking volunteers, as of this moment. If you've got something to say, show or sell, let me know — I'll make time for you in an upcoming meeting.

And I want more contributors to PRinT SCreen. If each of you gave us five paragraphs on a program that you absolutely love or completely despise, we would promise to eat all of our vegetables for the rest of the year. You don't even have to spend a stamp — just upload it to the bulletin board and we'll take it from there.

Oh, and speaking of which, it's not my imagination that traffic on SPARC is light. In fact, that's an understatement — most members don't use it at all, and I want to know why. More importantly, I want to know how to change that. Using bulletin boards has completely changed the way I use my PC and the way I do business. Why isn't that so for you?

Above all, I want you to want to come to meetings, especially this month so you can watch my boots shake... ¶



# dBASE IV: What's New

by Rebecca Bridges

I recently read a review of dBASE IV that touted "increased speed" as a key reason for upgrading to the new version of this popular database program.

In my opinion, speed is a reason *not* to upgrade. Though indexing and searching may be faster, the process of saving and viewing reports and forms is much slower. In dBASE III Plus, you will notice no delay when you save a report design or when you view or print a report.

In dBASE IV, however, you see line numbers count at the bottom of the screen as the report is compiled. This wait is not only noticeable, it is quite tiresome.

With that complaint out of the way, I have only good things left to say about dBASE IV (well, maybe just a few more bad things thrown in here and there...).

Here is a brief summary of the new features added to dBASE IV.

- Commands are chosen from pull-down menus.
- A Control Center lists and provides access to all files
- Browse and Edit modes are linked together by a single keystroke
- Queries are performed by filling in a form
- Indexes are stored in one master file, instead of in many separate files
- Indexes are updated automatically
- More formatting options are available for forms, labels, and reports (boldface, fonts, centering, lines, and boxes)
- Reports can be generated automatically
- Files are managed with built-in DOS utilities
- Commands and keystrokes can be automated with macros
- Multiple files can be easily linked together

### *Ease of Use*

Beginners will have a much easier time learning dBASE IV than novices had with earlier versions of the program. Immediately upon loading dBASE IV, you will notice a difference from dBASE III



Plus. Instead of the dot prompt or the Assistant menu, you see the *Control Center*. Though you can still operate dBASE IV from the dot prompt, the Control Center provides an easier interface.

The Control Center displays the names of the files in your database system, each in its own panel. For example, as shown in figure 1, all the database (.DBF) files are listed in the Data panel and all the reports are listed in the Reports panel.

To use, modify, or display any of these files, highlight the file and press Enter. The options available with this file type will then be listed. For example, when you highlight a database file and press Enter, the available options are **Use file**, **Modify structure/order**, and **Display data**.

To create a new file, highlight the marker in the appropriate panel.

dBASE IV offers pull-down menus from any screen. While you are editing data, creating a database, or designing a report, press the Menu key, F10, to choose available options.

## Queries

It's much easier to specify conditions in dBASE IV. For example, instead of typing

```
LIST FOR DEPARTMENT
='PERSONNEL' .AND. SALARY>32000
```

you simply type **'PERSONNEL'** under the DEPARTMENT field name and **32000** under the SALARY field in the Queries form. These queries can be saved for future retrieval and/or printing. Figure 2 shows an example of a query form.

—see next page

Catalog Tools Exit
5:26:57 pm

**dBASE IV CONTROL CENTER**

CATALOG: C:\DB4DATA\UNTITLED.CAT

Data	Queries	Forms	Reports	Labels	Applications
<create>	<create>	<create>	<create>	<create>	<create>
CUST EMPL MAIL STAFF	CA-CUST	CUST STAFF	ADDRESS STAFF	MAILOUT	

**File:** New file

**Description:** Press ENTER on <create> to create a new file

**Help:** F1   **Use:** ←   **Data:** F2   **Design:** Shift-F2   **Quick Report:** Shift-F9   **Menus:** F10

Figure One: dBASE goes visual



## dBASE IV: What's New

from previous page  
**Indexes**

In the "land of dBASE," records are sorted by creating index files. An index indicates by which field you want to view the data. For example, you can create indexes to view the names in alphabetical order, the salaries in numerical order, or the dates in chronological order.

In dBASE III Plus, each index was stored in a separate file. In order for the index to be updated when you entered new records or changed data, you had to activate the index. In dBASE IV, you have one index file, called a multiple index file which can contain many indexed fields (called index tags). Indexes are always kept current, even when they are not activated.

I do have one complaint about

dBASE IV indexes: you can not change the order you view the data in (i.e., activate another index tag) while you are viewing data. You must go back to the Control Center and use the **Modify structure/order** command.

### Reports

In earlier versions of dBASE, you had two ways to get a report: the LIST TO PRINT command or design a report with the CREATE REPORT command. LIST TO PRINT was quick and easy but it offered no page breaks, formatting, or totaling. CREATE REPORT allowed you to format the report but required you to specify each and every field and column heading in the report.

dBASE IV has several unique report features that will save you from having to design a report from scratch. You can get an instant report by pressing the Quick Report function key. The Quick Report includes all fields in

a tabular listing. If you need to make a few modifications to the quick report, such as add a title, you can use the Quick Layout report command. The entire report will be laid out automatically, and you can customize it.

Furthermore, the new version of the program offers options for underlining, boldfacing,

Staff.dbf	DEPT	GRADE	SALARY
	PERSONNEL		32000

Query C:\db4data\STAFF Field 4/7

Prev/Next field: Shift-Tab/Tab Data: F2 Pick: Shift-F1 Prev/Next skel: FJ/F4

Figure Two: User-friendly querying



centering, changing fonts, and adding lines and boxes.

### ***Relating Multiple Files***

dBASE has always been considered a relational database, meaning information from separate files can be combined together for viewing or printing. But not until dBASE IV has the process of relating the files been a simple one.

Once you know how to create a query, you practically know how to

link files together. You simply create a view query containing the files you want to merge, indicate which field is common to the databases, and then select the fields in the multi-file view.

### ***Summary***

If you rejected dBASE back in its II, III, or III Plus days, you should take another look at the program. You will find that it is much easier to use and more powerful, if not always faster. ¶

---

## **PC Tools Deluxe**

*by Kevin Jeong,  
Diablo Valley PC*

**P**C Tools Deluxe by Central Point Software is a full featured DOS Shell with many powerful sub-programs. It can be installed as a memory resident program or called up from DOS. The DOS shell has 19 commands which are all menu driven along with six external utilities.

All of the most commonly used DOS commands can be found in the PC Tools main file utility menu. One can copy, delete, move, and compare files in the on screen file directory by marking them with the Enter key. One can search files for certain matching strings of data. This eliminates the time consuming process of browsing through the file line by line.

Another handy option is the verify function. This enables one to verify if

all the sectors on a given disk are usable. If it encounters bad sectors, verify can remove them from available use. The view/edit function enables one to see and modify file's.

PC Tools Deluxe also comes with six external utilities. The most celebrated is compress. This speeds up the hard disk by defragmenting its files. PC Tools is also famous for its backup utility. PC Backup is one of the fastest and most reliable backup utilities on the market today. PC Tools also comes with its own format program. PC Format works the same as the standard DOS format command with one exception: disks can be unformatted using Rebuild. Mirror creates an "image" of the file allocation table and of the root directory of a hard disk. If a hard disk is somehow formatted, Rebuild can restore the image created by mirror. ¶



# Turning One DOS Into Many

by Rick Altman

**I**n this column, I conclude my exploration into multi-tasking, or "windowing" programs. In the first column, I shared with you my experiences converting my AT computer into an 80386 and my reasons for doing so. I decided to replace the entire motherboard, instead of inserting an add-on 386 card, because of the memory enhancements that a true 386 machine offers. A 386 computer with expanded memory can be partitioned into several DOS windows, each running a separate application. I have looked at Windows/386 and Desqview 386; today I will explore VM/386 and draw some final conclusions.

## **Virtual Machines**

This strange term can be defined as one computer acting like several, and that is the primary attraction of VM/386. Of the three programs looked at in this series, VM is the true isolationist. The segments of memory that you define in VM are so apart from other segments, you may truly feel like you are working with separate computers. For each memory segment you define, you are given the opportunity to define CONFIG.SYS and AUTOEXEC.BAT files,

as well as the multi-tasking subtleties of time-slices, foreground and background ticks, and port and device sharing.

VM gives you a running start toward configuring a multi-tasking environment with "profiles" — a group of configurations designed for users' typical needs. You can use them as is, modify them or create your own profiles from scratch. For instance, if you intend to run dBASE IV in one machine and Lotus 1-2-3 in another, you could create profiles for each, complete with AUTOEXEC files that automatically start each program. In the 1-2-3 profile, you might choose to limit the amount of expanded memory that the program consumes and in dBASE, perhaps you would choose to print to a local area network across COM2. As you proceed with your work, you can jump between the two applications with a single keystroke. You can call for the program in the background to continue calculating, sorting or even printing, or you can demand that the foreground program receive the processor's full attention.

VM maintains such a sturdy segregation between its "machines" that you can reboot any one of them without affecting others in memory. Being so casual with CTRL-ALT-DELETE took a bit of acclimation, but



soon I was rebooting machines with cold-blooded swiftness (each machine starts up so quickly that rebooting them is often the easiest way to clear memory or just exit an application).

VM comes with its own disk caching software and has a menu devoted entirely to the allocation of high memory for each machine. It manages shared devices like printers and serial ports and also can act as referee if two machines are attempting to open the same file. There is a modest list of DOS programs that should not be run inside of VM (FORMAT, CHKDSK, BACKUP among others).

### **Who Should Consider VM?**

VM delivers on every promise and claim that its reference guide makes. My only question is how many users need its very specific capability. If you want to be able to set up your computer to act like several computers — each one doing its own thing — VM/386 is probably the program to buy. But be clear on what it is you are buying: VM will not allow you to transfer data between one “window”

and another, like Windows or Desqview, and there are no system-wide macros that control the operation from above. When VM says separate, it means it — no cross-talk at all between the virtual machines that are in memory. Windows and Desqview multi-task also, but not in such a segregationist fashion.

VM is the choice if you seek true and unconditional multi-tasking where two or more applications run in their own slices of processor time, totally oblivious to all else.

### **The Grand Conclusion**

My bias has already crept out more than once in this series of articles: I like Desqview for the range of features and controls that it provides. You can multi-task if you need to or just “multi-window”, where the programs in the background are frozen in memory, waiting to be brought back into the foreground. Most importantly, you can determine

—see next page

---

*They call them “virtual machines” — memory segments so separate that you can reboot one with <Ctrl-Alt-Del> and the others remain alive and running.*

---



---

## Virtual Machines

*from previous page*

this on the fly without having to shut down the application and reconfigure.

Desqview is the only one of the three with macros, offering a well-stocked library of pauses, delays loops and sub-routines. You can define macros that are specific to a particular window or active while at Desqview's main screen. I succeeded in using macros while in PageMaker, running in a Desqview window that was running Windows.

Finally, Desqview is fast. My applications appear to run at the same speed inside of Desqview as they do outside. In truth, they do not run as fast, but the difference is discernible only to the stopwatch.

In addition to the features discussed in the last column, Windows/386 enjoys one significant, if somewhat obscure, advantage over the other two programs: support for

---

*On the balance,  
Desqview gets the  
nod, based on overall  
versatility,  
performance, ease of  
use and speed.*

---

high-resolution full-page displays as a primary monitor. VM isn't able to take a high-resolution graphics screen and throw it into the background; neither is Desqview, except for screens from Genius monitors. With both programs, you can only use full-page monitors if they are the secondary display or if they are running in one of their standard emulation modes.

On the other hand, all high-resolution monitors on the market today offer drivers for Windows, meaning that any and all programs displaying high-resolution graphics can be freely run in the background. Therefore, if you need to run, say, Ventura Publisher on your Viking Moniterm in full-page mode, and switch between it and WordPerfect, Windows is the only multi-windowing program that presently allows it.

I also need to retreat somewhat from one of the comments I made about Windows/386 in my last column. I mentioned that many users may feel the psychological burden of not having a DOS prompt available while in Windows. While I believe this to be true for many thousands of users, I should point out that Windows allows you to create a tried and true DOS prompt, from which you can execute any command that fits into available memory.

Both Windows/386 and VM/386 are legitimate choices in the multi-tasking/multi-windowing game, proving to be solid performers for those with specific needs to be met. On the balance, however, Desqview gets the nod, based on overall versatility, performance, ease of use and speed. ¶



# PRTSC POTPOURRI

## **IBM Announces New PCs**

IBM recently announced two new personal computers: the PS/2 Portable and a 386 desktop model. The portable weighs in at 20 pounds and uses a 20-megahertz 80386 processor. However, it is not a laptop and does not run on batteries. The PS/2 Portable with a 60-MB hard drive is priced at \$7,695; with a 120-MB drive it retails for \$8,295.

The new desktop computer, the Model 55 SX, uses the 80386SX processor.

## **Not So Cheap**

The prices of PCs in the U.S. keep coming down, but PCs are not quite as cheap in the Soviet Union. According to London's Daily Telegraph, the demand for Western personal computers is so high that PCs are going for \$65,000 to \$135,000 *each* on the black market. Unbelievable.

## **What's Hot**

Wondering what the hottest selling software packages are? The following is a list of top sellers in March 1989. The information was compiled by Ingram Software from sales to more than 12,000 computer product resellers in the U.S. and Canada.

Database: dBASE IV (Ashton Tate)

Graphics: Freelance Plus (Lotus)

Spreadsheet: Lotus 1-2-3 (Lotus)

Utilities: PC Tools Deluxe (Central Point)

Word Processor: WordPerfect

(WordPerfect)

Communications: Carbon Copy Plus

(Meridian Technology)

Desktop Publishing: PFS: First Publisher

(Software Publishing)

Accounting: Quicken (Intuit)

Integrated: Works (Microsoft)

Information Manager: Time Line

(Symantec)

Entertainment: Times of Lore

(Broderbund)

## **Leisure Suit Larry II**

by Alan Mildwurm,

Diablo Valley PC

He's back! Leisure Suit Larry makes his return in Sierra's Leisure Suit Larry II, Looking for Love (In Several Wrong Places). This time Larry starts off in better shape than before. Who else could win a dream date with Barbara Bimbo and win the Luck-o-Buck Lottery with a "found" dollar, all in an afternoon? Unfortunately for Larry, foreign agents and intrigue interfere with our traveling millionaire.

As usual, the graphics and animation are quite good. The game can be played on a normal XT but the instructions suggest a turbo. The delay while the screen changes is not terrible but it is noticeable. The game can be played with keyboard, joystick or mouse. I prefer a joystick. The game

—see next page



---

## PRTSC Potpourri

*from previous page*

comes on six 5.25 disks and three 3.5 disks. The game is not copy protected but you need the manual to enter a lovlies' phone number before play can commence. This game is one of Sierra's new offerings which can accept and utilize a stereo card for added

enjoyment. While Sierra does not sell hardware, the game comes with a discount coupon for a card (\$175.00 post discount). I've sent for the free audio tape and will report. Having played games on other machines that utilize stereo (Apple IIGS and Amiga) this will add measurably to the game—if the price for the card is right.

As for now, I am immersed with Larry and his travails. ¶

---

## Club News

*from page 4*

for students) so that you won't miss an issue of the monthly newsletter. A current membership card will then be sent to you in the next PRTSc.

### Free Ads

Don't forget that as a member you are entitled to free classified ads in PRinT SCreen. If you have old/unused hardware or software, place an ad here. Members have reported good responses to their ads.

### Goodie Coupons

Remember, the "Goodie Coupon" attached to your membership card is presently good for one free disk: the library catalog, Disk of the Month, or a blank disk. Trade in your coupon for a disk at a future meeting.

### Floppy disks for sale

Xidex Precision disks are available for \$6/box. High density floppies are \$10/box (10 disks). The catalog and the Disk of the Month will be offered

for \$1 a disk. If you wish to purchase disks at the meetings, you will need to present your membership card, so be sure to bring it with you.

### Become a Writer

Please contact Becky Bridges (326-8605) if you are interested in writing for PRinT SCreen.

It does not matter what your level of computer experience is; each of you has some information, knowledge or opinion that would be of interest to your fellow members. Review your latest software or hardware purchase. Tell us how you use the PC in your work and play. Help others avoid or solve problems you have encountered.

Please submit the articles:

- WordStar or ASCII format.
- Single-spaced.
- Double-spaced between paragraphs.
- Any right margin.
- No centering or tabs.
- By the 15th of the month. ¶



# The SPAUG Resource Center

## Club Officers

---

<b>President</b>	Rick Altman	962-9270
<b>Vice President</b>	Corwin Nichols	494-8640
<b>Treasurer/ASSU Rep</b>	Jared Nedzel	854-2732

## Managers

---

<b>Financial Manager</b>	Beverly Altman	329-8252
<b>Newsletter Editor</b>	Becky Bridges	326-8605
<b>Production Editor</b>	Rick Altman	962-9270

## Library

---

<b>Public Domain Software</b>	Les Weil	321-5541
<b>Soft Copy</b>	Ralph Muraca	365-1659
	Turley Angle	707- 526-4921

## Software

---

<b>Accounting-Computer Assoc. Framework</b>	Larry Mehl	326-6037
	Jim Caldwell	692-7181
	Richard Orser	408-425-0474
<b>Lotus 1-2-3</b>	Bruce Coddling	367-8642
	Arthur Naman	408-879-9900
<b>Microsoft Word</b>	Jeanie Treichel	851-0100
	Hunter Jackson	408-446-4097
<b>Q &amp; A</b>	Elaine Meyer	325-8057
<b>R:BASE</b>	Jack Kahoun	349-4696
	Tony Pabon	408-866-4815
	Larry Mehl	326-6037
<b>Symphony</b>	Sally See	941-1378

## Languages/Operating Systems

---

<b>BASIC</b>	Ralph Muraca	365-1659
<b>C</b>	Corwin Nichols	494-8640
<b>Fortran, Pascal</b>	John Watson	325-7632
<b>Hard Disks</b>	Jim Caldwell	692-7181
<b>Toshiba Printers</b>	Paul Berry	494-2043
<b>Epson Printers</b>	Jim Caldwell	692-7181
<b>Panasonic Printers</b>	Van Maulis	966-1306
<b>XT/AT Systems</b>	Van Maulis	966-1306



## **The Stanford / Palo Alto Users' Group for the IBM PC**



P.O. Box 3736,  
Stanford, CA 94309

### **Club Information**

#### **Membership**

Louise Greer Bolitho  
322-3850  
\$25/year fee (Students \$10)

#### **Bulletin Board Newsletter**

723-7995  
Becky Bridges  
326-8605  
P.O. Box 982  
Palo Alto, CA 94302