



# P R T S C

A newsletter for the Stanford/Palo Alto User's Group for the IBM PC

PRinT SScreen

January 1987

Volume 5 Number 1

## N E X T M E E T I N G

Date: Wednesday, January 28  
 Time: 8:00 p.m.  
 Place: Polya Hall,  
 Turing Auditorium (Rm. 111)  
 Stanford University

## A G E N D A

8:00 PM General Club Business, Elections  
 8:30 PM Speakers: Ray Harvey  
 John Magistad  
 Topic: VIEWPOINT  
 9:00 PM Discussion and Random Access  
 10:00 PM Conclusion

Ray Harvey and John Magistad will demonstrate and discuss their soon-to-be-released product, VIEWPOINT. Writers will find VIEWPOINT's combination of file management, outlining and text processing to be a valuable technical writing tool.

## P L A N N I N G M E E T I N G :

All members are welcome to attend the monthly Planning Meeting, where we make decisions on the future of the group (e.g., speakers, topics). Please call Corwin Nichols, 494-8640 or 324-9114, for the location of the next meeting, which will be held on Wednesday, February 11th at 8 p.m. If you can't reach Corwin, call any Club Officer.

## C A L E N D A R

Jan. 28....Group Meeting.....8:00  
 Feb. 3.....Novice SIG.....7:00  
 Feb. 5.....Power Users SIG.....7:30  
 Feb. 11....Planning Meeting.....8:00  
 Feb. 25....Group Meeting.....8:00

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## CLUB NEWS

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**Membership renewals:** For the two months preceding 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 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 issue of PRTSc.

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.

**Xidex Precision disks** are available for \$7/box. 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.



"I've got a home computer in my den and a desktop computer in my office. Here, I feel lost."

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## POWER USERS SIG

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The Stanford Power Users meet and exchange ideas and information on a continuing basis on the bulletin board (SPACE), and in person on the first Thursday of each month. New members are welcome; leave a message for Jay Fox on SPACE, or attend the next meeting if you would like to join.

The January meeting was cancelled. The next meeting will be Thursday, February 5th, 7:30 pm. The meeting place will be on the campus at Sweet Hall, Room 25 (where the November meeting was held). Program to be announced.

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## NOVICE SIG

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**NEXT NOVICE SIG GROUP MEETING** - Tuesday 2/3/87, 3785 Farm Hill Blvd. Redwood City, Call Don Baird 415 365-6822 for information. Meetings are at 7PM on the 1st Tuesday of the month. People can arrive early & stay until 11PM for extra business, like copying (public domain). Current attendees will be notified in case of late changes.

Databases will be the main topic, including a discussion of PC-File 3.

Contributions to refreshments are optional, but if contemplated please call to avoid duplications.

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## LOTUS SIG

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The Lotus SIG is being revived! Anyone interested in joining this SIG please call Deborah Crewdson at 328-9270. Further information will be given at the January group meeting.

## DIAGNOSING MEMORY PROBLEMS

by Arnold Kishi

Hawaii PC Users Group

as updated by Jerry Schneider, CPCUG

If you encounter the message "parity error" while operating your PC, a malfunction has occurred somewhere in the PC's memory (RAM). In many instances, a parity error can be traced to a defective RAM chip or one that is seated poorly in its socket.

To find the cause of the parity error, turn off the PC, wait about five seconds, and turn it on again. After flipping the power switch on, the PC automatically runs a series of diagnostics which tests different parts of the system. If a memory problem exists, a PARITY CHECK 1 or PARITY CHECK 2 error message will appear. This article will help you interpret these error messages, isolate defective memory chips, and correct the situation.

### System Board Memory

Early PCs have system boards which hold only 64K of RAM. These system boards have four parallel rows (or banks) of nine 16K 4116 RAM chips. Newer PCs and XT's with 256K system boards have four parallel rows of nine 64K 4164 RAM chips. In both cases, each row has eight chips for memory (data bits) and one for parity checking (parity bit).

When facing the PC chassis from the front, the row of chips closest to the front is designated row 3, with the next row being row 2, then row 1, and row 0 next to the expansion slots. In each row or bank, the chip on the extreme left, slightly separated from the data bits, is the parity bit chip.

### Expansion Board Memory

The amount of memory contained on expansion boards varies widely from manufacturer to manufacturer. While the early expansion memory boards only con-

tained 64K memory, the current standard seems to be memory boards in one of three configurations: 256K, 384K, or 512K. Most memory boards still use the 64K 4164 RAM chip, although use of the newer 256K 41256 RAM chip has become more prevalent as its availability has increased and unit cost has dropped substantially (from \$60/chip to \$7/chip during the past six months).

The introduction of 80286-based computers like the AT has also impacted the popularity of mega-memory expansion cards because the 80286 can address up to 16 megabytes of RAM, as compared to the 1 megabyte limitation of 8088-based PCs.

To simplify matters, we will limit our discussion here to those expansion memory boards that use the 64K RAM chips. In general, these expansion boards comprise from four (256K) to eight (512K) parallel rows of nine 64K memory chips. The rows are usually arranged horizontally, numbered from 1 to 8, and are populated sequentially from right to left (row 1 is on the extreme right; row 8 on the extreme left).

### Memory Error Messages

Now that you know which row is where and its "numeric" position indicator, you can begin to isolate which chip may be causing the parity error.

If your computer has a memory problem, a memory error message will appear on the monitor during the start-up diagnostic (Power-On Self Test) or when performing system diagnostics. This memory error message consists of two parts: a four-digit error code followed by the numbers 201, e.g. 3040 201; and either a PARITY CHECK 1 or PARITY CHECK 2 message.

A PARITY CHECK 1 message indicates that the memory error was detected on the system board memory; a PARITY CHECK 2 message identifies a memory error on a memory expansion board.

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**MEMORY PROBLEMS**  
(continued)

**PARITY CHECK 1**  
**System Board Memory Errors**

The first number of the memory error code indicates which 64K bank of memory is involved. On PCs with 256K system boards, this can be rows 0, 1, 2, or 3. On 64K system board PCs, the number 0 represents the entire 64K bank of 36 16K chips.

For PCs with 64K system boards, the second digit can be 0, 4, 8, or C, and points to the 16K bank within the 64K which is failing; 0 is row 0, 4 is row 1, 8 is row 2, and C is row 3. In contrast, for PCs with 256K system boards, the second digit of the error message identifies the 4K page in the memory chip that is failing; this number is not needed to identify the problem chip and should be ignored.

The third and fourth digits represent which bit position (or RAM chip) in the 64K row is causing the error condition. This number represents the hexadecimal address of the chip within the row.

Table 1 provides the address for each of the chips on a 64K or 256K system board.

Using the error message example given earlier, 3040 201, we can quickly identify the faulty chip as the eighth chip (Bit 6) in the first row from the front (Bank 3) of a 256K system board.

Bank Number	64K System	256K System	Parity Bit	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
0	00	0x	00	01	02	04	08	10	20	40	80
1	04	1x	00	01	02	04	08	10	20	40	80
2	08	2x	00	01	02	04	08	10	20	40	80
3	0C	3x	00	01	02	04	08	10	20	40	80

M E M O R Y      C H I P S  
F R O N T    O F    C O M P U T E R

**Table 1. System Board Memory Addresses.**

**PARITY CHECK 2**  
**Expansion Board Memory Errors**

The procedures for diagnosing errors in memory contained on expansion boards is similar to that used for system board memory diagnosis.

The first number of the memory error code indicates which 64K bank of memory is involved. On PCs with 256K system boards, this can be row 4 or greater; on 64K system board PCs, row 1 or greater.

For both 64K and 256K system board PCs, the second digit is not used and should be ignored. The third and fourth digits contain the hexadecimal address (within the row) of the problem memory chip.

Because there are numerous third-party manufacturers of expansion memory boards and because each manufacturer may use a different configuration and/or bank numbering scheme, the rules for identifying errant memory chip addresses for your expansion board might be different. You should check the documentation provided with your expansion board as reference for proper diagnosis of expansion board memory problems.

For demonstration purposes, however, the following example uses a 384K memory expansion board (AST Six Pak Plus), configured with six banks of chips, numbered 1 to 6, from right to left.

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**MEMORY PROBLEMS**  
(continued)

Table 2 provides the address for each of the chips on the expansion memory card. Notice that the starting address for the rows of memory chips is different for the 64K and 256K system boards. This is due to the fact that the expansion board rows begin addressing where the system board stops: for the 64K board, starting address is 1x; the starting address for the 256K system board is 4x (x can be any number).

Using Table 2, we can see that a 7120 201 error code identifies the errant memory chip as the sixth chip from the bottom (Bit 5) in the fourth bank from

Bank No.	6	5	4	3	2	1	
64K System	6x	5x	4x	3x	2x	1x	
256K System	9x	8x	7x	6x	5x	4x	
<hr/>							
Parity Bit	00	00	00	00	00	00	M
Bit 7	80	80	80	80	80	80	E
Bit 6	40	40	40	40	40	40	M
Bit 5	20	20	20	20	20	20	O
Bit 4	10	10	10	10	10	10	R
Bit 3	08	08	08	08	08	08	Y
Bit 2	04	04	04	04	04	04	C H
Bit 1	02	02	02	02	02	02	I P
Bit 0	01	01	01	01	01	01	S

BOTTOM OF EXPANSION BOARD

Table 2. Expansion Board Memory Addresses.

the right (Bank 4) in a 256K system board machine.

**Correcting Memory Errors**

Now that we have identified the problem chip, we should verify it by replacing it with a spare chip and run the diagnostics again and see whether the error is corrected. If no spare chip is available, exchange the suspect chip with another one in an adjacent bank. If we have correctly identified the problem chip, the diagnostics will display a different memory code -- that of the location where we put the suspected chip.

If, however, the error code continues to identify the original location, a problem may exist with the socket and you should contact your dealer for assistance.

If the system board or expansion board switches are not set properly or a chip is missing, the bit position in the error code may be AA, FF, 55, or 01. If you are experiencing problems with more than one memory chip, the bit position code displayed will be the sum (in Hexadecimal) of the problem chip locations and consequently, will not match any of the values in Table 1 or 2. When this happens, the resultant error code could be any number from FF to 00. Diagnosis of the errant chips will involve a trial and error process of switching several chips from the identified row to an adjacent row.

**Reseat Chips Before Switching**

Before switching chips in the "suspect" row, however, remove all chips and reseat them in their sockets. Run the diagnostics again. Because many parity problems are due to poor contacts between chips and sockets, this trick may eliminate the parity error. RAM chip failures are rather rare.

The most difficult parity error or memory error to locate is one which

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## MEMORY PROBLEMS (continued)

occurs "intermittently". For example, heat generated by expansion boards, disk drives or other add-ons may cause a memory chip or some other memory-related component to shift sufficiently to break the electrical contact. You may never find this particular problem since the same set of conditions may not be duplicated exactly during diagnostics.

### A Simple, Do-It-Yourself Remedy

What has been discussed here is a simple method to troubleshoot your PC. If in doubt, professional service technicians have the tools to diagnose memory problems instantly. But performing these simple checks yourself can save you money, especially if the cause is a poorly socketed chip.

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## ANSI OPTIONS

By adding one line to your CONFIG.SYS file, you can see a marked increase in screen display speed in many applications. If you already have a CONFIG.SYS file, add the following line to it:  
**device=ansi.sys**

If you do not have a CONFIG.SYS file on your boot disks, you can create one by typing:

```
COPY CON:CONFIG.SYS  
DEVICE=ANSI.SYS
```

Press **!F6!** to save the file. You will need to do this to all your boot disks. If you boot off a hard disk, put this file in the root directory.

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" FANCY console is better (on BB) "

## GET PUBLISHED: WRITE FOR PRINT SCREEN

Please contact Rebecca Bridges 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.

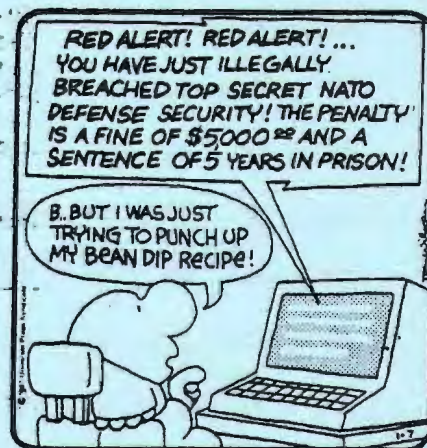
Please submit the articles:

- o In WordStar or ASCII format.
- o Single-spaced.
- o Double-spaced between paragraphs.
- o Any right margin.
- o By the 15th of the month.

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## PC SECRETS

The September 1986 issue of BlueNotes (San Francisco PC Users Group) gave a high review to the book PC Secrets by James Kelley. The well-written and carefully organized book is loaded with useful and clever tips for PC users. Osborne McGraw-Hill is the publisher.



## WORKING WITH ARC FILES

Jay Fox

99.9% of the files that you can download from SPACE are stored and transferred to you in ARChive form as .ARC files. You need to have certain tools and know how to work with ARC files in order to use these files after you download them.

This article will tell you what tools you need, how to get them, and how to use them to "de-arc" an .ARC file after you download it. (Note: this article was extracted from Bulletin 3 on SPACE.)

### What Is An .ARC File

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An .ARC file is a single file that contains within it a set of one or more related files that as a whole constitute an entire program, system or other meaningful group of files intended to be kept together and usually stored together on a diskette or in a separate subdirectory. Typically you will find at least two files within an .ARC -- an executable .COM or .EXE file, and a README or .DOC file that describes the executable file and tells you how to use it. There is no limit to the number of files that can be stored within an .ARC, and some large system .ARCs contain dozens of files.

You can see already that ARChiving greatly simplifies the task of managing files by reducing to a single file an entire set of files that are intended to be kept together, and also by reducing the overall number of files that have to be managed and maintained. ARChiving also minimizes the amount of disk space needed to store files and the amount of time required to transfer files by modem. This is because each of the individual member files that constitutes the .ARC is re-coded in compressed form at the time it is put into the .ARC, and reconstituted to its original code and size when it is extracted.

### What Tools Are Needed

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Though several archiving utilities are listed on SPACE, ARCE.COM is the fastest and easiest dearchiving program presently available. Because it is all that you need to de-arc files that you download from SPACE, we recommend it as the tool that you use to get started. Later, when you have occasion to create .ARC files or perform other .ARC functions, you can download and learn to use the comprehensive ARC.EXE utility and/or other utilities.

### Getting Started

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The first file that you download from SPACE should be the latest version of ARCE.COM (currently ARCE206.COM), which you will find listed in Directory 1. Also download the related documentation file which is named ARCE206.DOC. For obvious reasons, these are two of the small handful of files on SPACE that are not themselves in .ARC form. (If you don't know how to download a file, use the **H**elp function at the SPACE Main Menu and also consult the manual and help screens for your particular communications software.)

After you download ARCExxx.COM, use DOS to rename the file ARCE.COM and put the re-named file on a diskette or in a subdirectory on your hard disk that is on the DOS path (see DOS manual) so that DOS will find it without your having to specify the path each time that you use it. Usually we recommend that you put the file on the same diskette or in the same subdirectory with your other external DOS commands.

Now you are ready to de-arc any .ARC file that you get from SPACE!

### De-Arc'ing A File With ARCE.COM

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This section assumes that ARCE.COM is on your DOS path. If it is not, you will have to enter a complete path

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## ARC FILES (continued)

specification for ARCE.COM whenever you invoke the command.

Let's say that EXAMPLE.ARC is the name of the file that you want to de-arc, that it is on drive d1 (where d1 is the name of any drive/directory), and that you want the files contained within EXAMPLE.ARC to end up on drive d2 (also any drive/directory) when they are extracted.

Here is how to do it:

1. Make d2 your default drive/directory.
2. With d2 as your default directory, enter the command ARCE d1\EXAMPLE

Presto! ARCE will now extract and reconstitute all the files contained within EXAMPLE.ARC and place them in your default drive/directory, displaying the name of each such file on your screen as it goes about its work. The entire process will normally take only a few seconds. When the DOS prompt appears, ARCE is finished and you have the original files ready to use. If you wish, do a DIR to get a list of the files that you now have in your default drive/directory. Done!

By the way, you still have the .ARC file in d1. Save it on a floppy and keep it as a backup. Notice that you will only have to keep track of one file rather than several, and that it takes up less space than the working files that you now have in d2. And if you accidentally lose or destroy the working files, you can easily and quickly recover them from the .ARC.

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## EXECS INCREASE COMPUTER USE

The nation's top business leaders are increasing the amount of time they personally use computers but continue to rely on the machines more for management control than long-range planning, says a study by the Stanford University Graduate School of Business, and funded by Epson America Inc. About 10 percent of the senior executives polled used a computer regularly. They reported working at their computers nearly seven hours each week.

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## WORD FOR WORD

A new program from Mastersoft now takes the pain out of upgrading word processing programs. It transfers files that have been created with one word processing program into files that can be used on another word processor with all formatting instructions intact. All formatting codes (e.g., centering, tab stops, boldfacing, underlining) in the original file will be translated into the new word processing document.

For more information, call (800) 624-6107. The price is around \$95.

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## D O S   T I P S

Christine Rivera

(Reprinted from NYPC July, 1986)

One of my clients called to tell me of an undocumented command he found in PC-DOS 3.1. It seems that if you use the ERASE or DEL command with the name of a subdirectory, it will erase all the files in that subdirectory (after presenting you with the "Are you sure Y/N?" message). Thinking this to be very strange, I tried it out on my version of DOS (MS-DOS 2.11). It works! Since then I have used this command on PC-DOS version 2.1 as well.

I find this command convenient to use -- it requires fewer keystrokes than ERASE subdir\\*.\* or DEL subdir\\*.\*, so I find myself using it all the time when I want to empty a subdirectory. However, this command could be dangerous if you think you are deleting a file and the filename you use is actually the name of a subdirectory. The message "Are you sure Y/N?" is the tipoff here. Whenever you get that message, it means a whole subdirectory is about to be deleted, so be aware of that. If you are at all unsure that this is what you want to do, select N, then check things out with the DIR command.

### Banish the ECHO Blues

Many of us have used the ECHO(space) command in 2.x version of DOS to echo a blank line in a batch file. This feature no longer works in DOS 3.x, and I have seen patches published in various user group newsletters to enable this echo command. Rather than mess around with DEBUG, use this simple command: ECHO.(period) -- it works just as well, and you don't have to alter COMMAND.COM.

### Watch Those Abort, Retry, Ignore Messages

Suppose you are copying a file from a diskette in drive A to a diskette in drive B. The diskette in drive B turns out to be one of your important data diskettes which you have protected with a

write protect tab, so you get the error message "Write protect error writing B...Abort, Retry, Ignore." No harm done, you can just take the diskette out of drive B and put the correct disk in, right? Wrong.

When you use the COPY command, one of the first things that DOS does (even before checking to see if the target diskette is write protected) is to read and store the directory filenames from the target diskette. If you remove the write protected diskette, insert a different one and then select either Retry or Ignore, the COPY command continues where it left off. The directory from the removed diskette is then placed on the newly inserted target diskette, which makes all the files on the second target diskette inaccessible. The solution is to Abort, then change disks and try again.



"It does data processing, word processing and list processing. Get me some data, some words and some lists."

REVIEW:

THE NORTON UTILITIES  
VERSION 3.0

George Gynn

(reprinted from N.E. Indiana PC Club)

Utilities are programs that let you do things to files and disks. DOS just provides the basic plan vanilla essentials. Norton's Utilities are the frosting with the cherry on top.

PC users continually collect favorite utilities that they wouldn't be without. PC clubs have utility disks in the public domain. But they only complement Norton's programs; they don't replace them.

Version 3.0 of the Norton Utilities is a major enhancement. First of all, the programs have been reorganized and completely rewritten. They are much smaller, much easier to use, and do many more things than the earlier versions.

The program NU.COM is the real power in Peter's collection. NU integrates the older DiskLook, SecMod, and UnErase programs of earlier versions. NU is menu-driven and easy to use.

The important task of recovering accidentally erased files has been made easier with the addition of a single keystroke "find-all-the-data" feature.

A whole new complement of programs called "hard-disk helpers" has been added. They make managing a hard disk easier, as well as floppies.

Version 3.0 displays a different approach of style in that it is oriented toward the everyday nontechnical user, whereas earlier versions were slanted more toward the technical user.

In brief, the utility names are:

BEEP

DS (directory sort)  
DT (disk test)  
FA (file attribute)  
FF (file find)  
FS (file size)  
LD (list directories)  
LP (line print)  
NU (main program)  
SA (screen attribute)  
TM (time marks)  
TS (test search)  
VL (volume label)  
WipeDisk  
WipeFile.

DS is one of the new version's most valuable programs, letting you sort directories with a number of combined options, such as sorting by name and extensions at the same time.

DiskTest is a sort of an enhancement to CHKDSK. Whereas CHKDSK is concerned with disk-space allocation, DT checks every disk sectore to ensure that each sector can be written to and read from.

FileAttribute is a program that lets you set the attribute of a file, as well as its archive and read status.

If you like to limit the files in a subdirectory so that they can be copied to a floppy, how do you find out the sum of the file sizes? FileSize does it for you exactly.

WipeDisk and WipeFile are valuable if you want to avoid having someone accidentally get your data. Suppose you have a disk of confidential information. Let's say it is an old work disk, and you clean it up by erasing all the files. Later someone gets his hands on it and looks at it with an UnErase utility. With a good guess he has unerased your files and has your data! WipeDisk and WipeFile will eliminate that danger by overwriting hex 00's to every part of the specified disk or file.

Present users of the utilities can upgrade for \$25; otherwise its list price is \$100.

**CLUB OFFICERS:**

President:	Corwin Nichols	494-8640
Vice President:	Kathy Carroll	325-0824
Treasurer/ASSU Rep.:	Mark Woodward	327-6659
Financial Manager:	Beverly Altman	329-8252
Newsletter Editor:	Becky Bridges	326-8605
Speaker's Bureau:	Jim Wampler	656-7694

**SIGS:**

Power Users:	Jay Fox	965-3000
Novice:	Don Baird	365-6822
Lotus:	Deborah Crewdson	328-9270

**LIBRARY:**

Public Domain Software	Les Weil	321-5541
Soft Copy	Jim Caldwell	692-7181
	Ralph Muraca	365-1659
	Turley Angle	369-1981

**RESOURCE PEOPLE**

**Application Packages:**

MicroSoft Word	Jeanie Treichel	851-8828
KEDIT	Arthur Naman	408-374-1700
Lotus 1-2-3	Bruce Coddling	367-8642
	Arthur Naman	408-374-1700
Symphony	Sally See	941-1378
Framework	Jim Caldwell	692-7181
Financial Software	John Van Deman	854-1167
Perfect Series	Stefan Unger	321-7319
Q&A	Elaine Meyer	325-8057

**Languages/Operating Systems:**

BASIC	Ralph Muraca	365-1659
Pascal, DOS 2.0	Jeff	321-5930
	John Watson	325-7632
"C"	Corwin Nichols	494-8640
	John Watson	325-7632
	Mel Cruts	408-263-6099
Fortran	John Watson	325-7632
APL	Paul	968-8283
	Stefan Unger	321-7319
	Paul Berry	494-2043
PC-LAN	Paul Berry	494-2043
MSDOS, CP/M	Mel Cruts	408-263-6099

**Hardware:**

Expansion Boards	Curt Carlson	941-5680
Columbia computer	Stefan Unger	321-7319
Hard disks	Jim Caldwell	692-7181
Epson printers	Jim Caldwell	692-7181
Toshiba printer	Paul Berry	494-2043

**CLUB INFORMATION**

**MAILING ADDRESS:** P.O. Box 3738  
Stanford, CA 94305

**MEMBERSHIP:** Louise Greer Bolitho 493-0979  
\$25/year fee

**BULLETIN BOARD:** Jay Fox, System Operator  
964-9039, 24 hours a day  
Protocol: 300/1200, N,8,1

**NEWSLETTER:** Rebecca Bridges 326-8605  
P.O. Box 982  
Palo Alto, CA 94302  
Deadline for submissions: 15th of each month

**ADVERTISING**

If you are interested in advertising in PRINT SCREEN, send camera ready copy to P.O. Box 3738, Stanford, CA 94305 before the 8th of the month. All ads are payable by check in advance. Rates per issue are:

Full Page (8.5 X 11) \$25.  
Half Page (7.5 X 4.5) \$15.  
Qtr. Page (4.5 X 3.5) \$10.

Classified ads are free to paying members.



**The Stanford/Palo Alto  
Users Group for the IBM PC**  
Box 3738 STANFORD, CA 94305

