

S.P.A.U.G

Stanford
Palo Alto
Users Group

Print Screen

The Newsletter of Stanford/Palo Alto PC Users Group

VOLUME 9 NUMBER 9 OCTOBER 1991

C · O · N · T · E · N · T · S

CLUB NEWS

President's Piece	Paul Staley	2
Member of the Month		2
The BBS In Print	Bob Bottini	3

THE ANSWER MAN

Rick Altman	4
-------------	---

ANSEL FOR WINDOWS 3.0

David Black	5
-------------	---

USER GROUPS

Jim Seymour	6
-------------	---

BATCH FILES

Rick Altman	7
-------------	---

MEMORY: Pt. 1 THE HARDWARE

Tony Allen	8
------------	---

De CLAIR's DEFINITIONS

Bill DeClair	9
--------------	---

WINDOWS Q & A

Jan Altman	10
------------	----

Grand Excel Contest
Customizing Program Groups
Finding Data In Excel

CLASSIFIED

10

SPAUG RESOURCE CENTRE

11

WHAT'S ON THE MENU

October's Events	11
------------------	----

SPAUG's SUMMER

SIDEWALK FAIR

Last Wednesday: September 25th, 6.00pm at Turing Auditorium

Come celebrate at our annual salute to the last month of summer! This year's Sidewalk Fair will feature more vendors, better hot dogs, and two drawings! Some of the companies planning to come are Borland, Microsoft, Lotus, Aldus, WordPerfect, Octave Systems, CompUSA, 800 Software, and many more. The rumor mill has it that many of them will be offering special offers for fair attendees.

Once the fair is over, the evening's special presentations will feature 1-2-3 for Windows, WordPerfect for Windows, and some Not-To-Believed Windows utilities.

The evening's schedule is as follows:

- 6:00 Summer Sidewalk Fair is open for business.
- 6:30 Special Early-Bird Drawing! Choice of software to winner.
- 7:30 Sidewalk Fair over - general meeting begins featuring products new to Windows.
- 10:00 The biggest drawing of the year!

Don't forget to come early to be included in both drawings!

This column is going to be a short one this month. I've just begun a new job which is going to be demanding a lot of my time for the next 3-6 months. Jan is also in a similar position. This means that we'll be concentrating our club efforts on basic monthly meetings. We'll have to put off for a few months any special projects, such as a Utilities face-off.

This is a great opportunity for everyone in SPAUG to come forward and take on some of these projects. We want to continue the caliber of the meetings that we've become accustomed to. And believe it or not, this can actually be

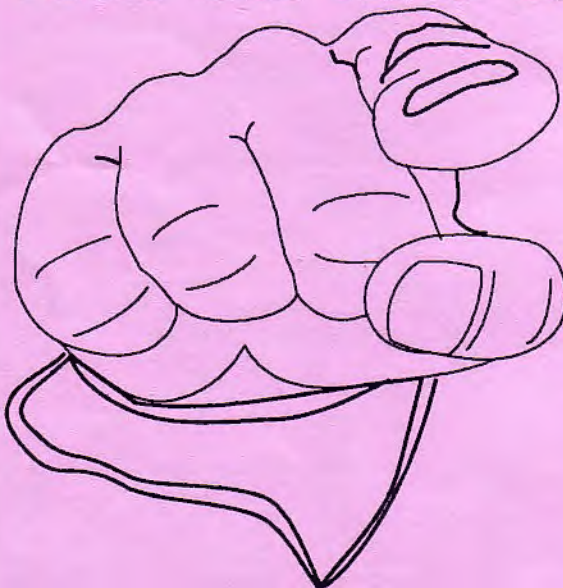
an enjoyable experience! Most of the folks that we have come to speak to us are thrilled to be able to present their product to us. This makes it very easy to make arrangements with them. So don't even think about this- Just Do It!

This is also the time of year when we face our annual task of recruiting new student members. Please rack your memories for any leads that you might have. At this point we need four new students in order to continue as a Stanford organization. Ask everybody you know for the names of students that we can contact. Give them to me and I will take it from there.

The Sidewalk Fair is shaping up to be a good one. There are a lot of vendors lined up, plus a table or two for our members to display their items for sale. Speaking of which, we need tables and chairs for the displays. Let me know what you have. We're still looking for volunteers to help setup and take down. This will be a big help - give me a call (415 493-1864).

SPAUG would like to thank
**OCTAVE
SYSTEMS**
of Campbell for
helping us with
the hard drive
for our BBS

YOUR CLUB NEEDS YOU



**BE AN
ACTIVE
SUPPORTER**

MEMBER OF THE MONTH

Bob Mitchell is September's M-O-M. He was the one who lugged his desktop computer to the August meeting to be used for the for the Games demos.

Thank you Bob.

TELL US A STORY

Why did you buy your computer? What's your favorite program? And why? When was the last time you felt like throwing the damn thing through the nearest window? Why? Everybody's got a story to tell. So,

tell us yours and we'll print it here. How about your computer wish list? What about that free software you won? Did it do what it claimed it could? We need fresh input from some fresh voices. It doesn't have to be fancy or long, just real. Tell us your story.

THE BBS IN PRINT

BOB BOTTINI

Bob is the BBS Sysop

(415) 321-4497
THE NEW BULLETIN BOARD NUMBER

At Last ! Our BBS is UP !!!

The happy ending of our saga; the final struggle to revamping our BBS. Some devious little happenings that caused delays.

As you remember from our previous installment of our saga, we left you with the unanimous agreement of our planning committee to purchase a new computer for our BBS. We agreed to buy a 386/33 MHz, including a VGA monitor and a new 9600, V.32, V.42 modem. What did happen is that we did buy a computer with a "Made In America" motherboard manufactured by Cache Computer of Fremont, CA, with an AMD (Advanced Micro Devices) 80386 40MHz CPU. Specs for the motherboard can be found at the end of this article.

Because of the current status of computer clubs at the university being somewhat unsettled, we limited expenditures for the BBS to the computer. Because we felt the necessity of keeping a cash buffer we did not get a VGA monitor (we did get a VGA card, anyone with an extra VGA/color monitor - your help will be much appreciated) and we did not buy a modem intending to use our old modem for the short term. However, the Fates were not with us. Our modem, it turns out, does not work (as I suspected). The modem functions OK when calling out, but it refuses to act as a host. We must buy/solicit a new high speed modem. We hope to have this resolved before our meeting on the 25th. May I point out to you the necessity of having reliable equipment, software, etc. As you can learn from our experience with our BBS, reliable equipment is an absolute necessity; we had so many variables in our hardware that, when we added the vagaries of our software, the task of operating the BBS became an impossibility.

Another little "setback" occurred with the software. While we were impressed by software (rated highly in the September 10th issue (Vol.10 No.16) of PC MAGAZINE where it got Editors Choice), configuring this program became such an ordeal that we fell back upon the new version 3.0 of WILDCAT. This is the upgrade which we had originally planned to use on the new BBS. We tested the old version and found it very easy to install and get up and running. As stated in a previous article, WILDCAT has many desirable features and is also great "show biz". It has the best graphics I have yet to see on a BBS. It is used also by more BBSs

than any other - which must mean something.

The Future -

Well what can you expect from your BBS? What is visualized by me is a BBS that not only has great Shareware and Public Domain programs available for download, but a BBS that also has a human, everyday life use. What's at the theater tonight? Any good movies? What about a good restaurant? What about sport activities? Where for all of these? There are art exhibits, etc., etc., that could be a part of the services offered by our BBS. Eventually there might also be business services added to our BBS. There are endless possibilities and while what we are doing might be "crude" by the turn of the century; whether we believe it or not; and whatever form it might assume, this is a beginning.

About our new computer-

The motherboard has an AMD (Advanced Micro Devices) 80386 40MHz microprocessor with write-back cache architecture having 64Kb of SRAM (expandable to 256Kb). The CPU is backed with an OPTi 82C391/82C392/82C206 chipset. It has an 82C391 system controller (SYSC) which integrates cache control and local memory control, plus the CPU/AT bus interface. The 82C392 data buffer controller (DBC) integrates memory data buffers, AT bus control, keyboard control decoding, and reset and clock logic. The 82C206 handles peripheral control. As well as the 64Kb of static RAM cache, the motherboard supports the use of 256Kb, 1Mb, and 4Mb dynamic RAM (DRAM) in the form of single in-line memory modules (SIMMs). By using the 4Mb SIMMs, up to 32Mb of memory can be installed on the motherboard (we have 4Mb of the stuff). It also comes with an IDE controller, two serial and one parallel ports built in.

We expect great service from this motherboard.

PLANNING MEETING

October 14 (2nd Monday) 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.

THE ANSWER MAN

RICK ALTMAN

C'MON LOTUS - SPEAK ENGLISH!

QUESTION

I do a lot of billing using Lotus 1-2-3 and I need to send out professional-looking bills. Unfortunately, 1-2-3's date function can only be formatted to display as 9/1/91 or 1-SEP-91 or some other cryptic format. Whatever happened to **September 1, 1991**? How can I make 1-2-3 give me dates in normal English?

ANSWER

While it's true that 1-2-3's simple date formatting doesn't have an option to display dates in verbose English, you can rig it up using a lookup table and a few fancy formulas. I won't get too detailed here, because this is one of those techniques that you can use without necessarily understanding it.

The first step is to build a simple table and give it a range name of **MONTH**. The table is two columns across, 12 rows down, and it looks like this:

- 1 January
- 2 February
- 3 March
- 4 April
- 5 May
- 6 June
- 7 July
- 8 August
- 9 September
- 10 October
- 11 November
- 12 December

The year can be set for the entire year, and the day is easy because it's just a number, but the month is tricky because we're asking Lotus to determine it via formula, and yet display it as English. In effect, what we're going to do is instruct 1-2-3 to determine what the month is, and then use this table to display its findings, instead of using one of its own date formats. In English, what the formula says is: "Hey, Lotus, if we're in the ninth month right now, move down nine rows and display the label in the right column (September)."

Here's the formula:

**@VLOOKUP(@MONTH(@NOW),MONTH,1)&"
"&@STRING(@DAY(@NOW),0)&", 1991"**

Briefly, the **@MONTH(@NOW)** determines the month and returns a number from 1 to 12. That number tells 1-2-3 how many rows down to go to fetch the label. Then after the space, the **@STRING(@DAY(@NOW),0)** converts the calculated day of the month into a usable label. The formula ends by automatically inserting **1991**.

You don't need to understand all of this — just plug it into your spreadsheet and it will work. Make sure to name your table and use the same name in the formula.

LOOKS LIKE YOU HAVE A PROBLEM!

QUESTION

We have a loud-mouthed colleague at work who drives everyone crazy boasting about how he knows everything there is to know about our computer system. Any ideas on how we can shut him up?

ANSWER

Slip a system disk in A: the next time he boots up and put the following **AUTOEXEC.BAT** file on it:

@ ECHO OFF

ECHO Invalid ROM cycle specification

ECHO Corrupted file control block

ECHO Register out of range

ECHO Unavailable environment variable

ECHO ^G

ECHO FATAL ERROR NO. 357-C

ECHO All data in network lost

ECHO.

ECHO Please report to supervisor

ECHO For immediate termination

ECHO.

ECHO Bye

BETTER MAGAZINE RATES

Ziff-Davis has a discount offer on several of their computer magazines for SPAUG members. Call 1-800-777-2547, tell them you want the user group rate and they'll set you up. The following are available:

P.C. Magazine
\$24.97/yr
P.C. Computing
\$14.97/yr
Computer Shopper
\$14.99/yr
P.C. Sources
\$12.97/yr
Mac User (?)
\$13.50/yr

THIS MONTH'S RENEWALS

James Crouch, Santa Clara
Shirley Manders, San Mateo
Martin Molloy, Palo Alto

ANSEL FOR WINDOWS 3.0

DAVID BLACK

The Best Hand Scanner Software Yet?

Several years ago, hand scanners for PCs first began to appear. They provided a cheap, low-cost method for scanning small images for use in desktop publishing and other applications. However, the first models suffered from low resolution, poor quality, and a narrow scanning width, not to mention the poor software included. Nevertheless, scanners soon began to improve. The resolutions and colors that were scanned improved, but for the most part, the software included still left much to be desired.

About 3 years ago, I purchased Logitech's second revision of their popular ScanMan. It would scan up to 400 dpi in black and white, and came with their PaintShow software for scanning. After the ScanMan Plus was released, I upgraded to dithering capability and a more stable design, but was still stuck with the same software. Then about 6 months ago, Logitech released their new ScanMan/256 and accompanying Ansel software. This whole project started when the people at Logitech faced upgrading their small WinScan utility to work under Windows 3.0. As they began to add features they reached a point where it became a complete editing package. This decision was also made to accommodate the new ScanMan/256 that Logitech was developing at the time. Logitech decided not to offer a low-cost upgrade to the ScanMan/256 for users of the older ScanMan, as this new model used both a different interface card and scanning head. To appease the complaints of these users, Logitech decided to offer them the Ansel software at a discount price of \$40. Being an avid Windows fan, I immediately accepted Logitech's offer and a few weeks later the software arrived.

The software itself comes either on two 360K 5.25" disks or one 720K 3.5" disk, and includes a spiral bound manual (nice touch). The software requires a machine capable of running Windows 3.0, and currently supports only Logitech scanners for scanning from the program. To install Ansel, simply start up Windows and run the installation program on disk 1. This will copy the files to your hard disk, edit your WIN.INI and SYSTEM.INI files, and place the program in one of the Program Manager groups you specify. Ansel also includes a new version (v2.0) of the Logitech Scanner Driver on the disks. When you run the program and have a VGA or SuperVGA system, Ansel will take control of your on-screen palette and change it to a gray scale mode while the Ansel window is in the

foreground. This is to make on screen editing much easier. Any gray scales that can't be shown in a solid color will be represented by a dither pattern. You can disable this function, in which case Ansel will simply use the two grays available and dither most of the grays. If you are lucky enough to be running Windows with a 256 color driver, Ansel will use all 64 gray shades in the palette, while not touching any of the other colors.

Most of the editing tools that you would expect are here on the menus and in the tool palette. You can rotate, lighten/darken, deskew (more on this later), flip, and scale images globally, as well as edit pixels individually. You can also scan two halves of a page and stitch them together interactively on screen. A few drawing tools are here, but not many. You can draw rectangles, lines, polygons, as well as draw, erase, and fill an area. You can zoom in and out to make the image easier to work on, and use the pencil tool to lighten/darken individual pixels. After you are done working on the image, you can save it in numerous formats and print it. An extensive on line help system is also included. All of the options are selectable from the pull down menus, and the option to have a toolbox and palettes for such things as shade of gray and line styles, is also available. The deskew feature allows you to take an image that wasn't scanned quite right, and straighten it out.

You can bring in almost any image into Ansel and edit it, but in that mode the results can be mediocre. There is much better software made for that specific purpose. It is when you combine Ansel with a Logitech scanner that it really shines. Now I only have a ScanMan Plus, but this software added many new features to my old hardware. First, it abolished the previous limits on scanning in the higher resolutions. With the older PaintShow software I could only scan 2-3 inches in 400 dpi mode, but because of the port to Windows 3.0, the length that can be scanned is limited only by available disk space. I can also interactively set how much of the scanning width I want to use. Both of these features are useful, but one of the truly amazing features it added to my ScanMan was the ability to do limited gray scale scanning. If I set the scanner for a dithering mode, and the software for gray scale scanning, I can actually do 16-64 shade gray scale scanning.

(continued) →

Reprinted from the April
1991 issue of
README.DOC, the
Journal of the Orange
Coast IBM PC User
Group

USER GROUPS NEED CORPORATE OUTREACH PROGRAMS

JIM SEYMOUR

User groups represent exactly the right kind of rich repository of that larger-context, look-ahead information these companies are losing.

Jim Seymour is a computer consultant and author. He writes regular columns for PC Week and PC Magazine

I'm getting tired of hearing about the constant cutbacks in end-user support staffs in major corporations. I'm not unsympathetic about the problems those cuts create. I'm not happy about these cuts. But it seems that every day or two I get another anguished call from a friend (and sometimes a client) who runs a PC support shop in a large company....and who's just been told to cut his staff in half. Or worse.

And it does get wearying. The stories are so depressingly similar; Mr. Big has decided to cut the Help Desk staff by 25% or 50%. Or maybe even wipe it out. Of course, Mr. Big has never called a PC Help Desk *himself* and if he has a PC on his desk it's more of a Yuppie Totem than a real tool.

(Ask him to show you a list of the files in one of the subdirectories on that PC sometime. Don't be surprised if he doesn't know the DIRectory command. If he does, and can actually get a list of files on screen, don't be surprised if you can't find a file-creation date in that list that's more than a few days after the PC was installed. And *he's* making the critical decisions about PC support....)

But I digress.

We're finally working out a set of reasonable alternatives for many of the support issues raised by the last couple of years' cutbacks. Overwhelmingly, for example, companies are farming out hardware maintenance. (Or maybe I should say farming it *in*, since they're signing desk side repair contracts with local VARs and third-party support vendors.)

And while a lot of Info Center staffers and PC Coordinators, by whatever job title, are involved in planning networks these days, few of those people are actually pulling wires. That work is contracted out to network VARs, who use laid-off electricians to do the work. (In some cases that's because of local union work rules; only guys with a seventh-grade education, making \$35 an hour, can knock holes in walls, crawl around on their knees, and yell:

"Marty! Marty? Yo! You got it yet? Naw?"

This capability made all the difference in what I scanned and used, as now I could get a good quality reproduction of an image on my Laserjet IIP.

With all of the above features, Ansel was well worth the upgrade price of \$40, and certainly is a powerful tool even with the older Logitech

Nymph! Well, pull on the damn wire, anyway!"

People with BA degrees, who know what they're doing, and who are making \$12.50 and hour — your basic \$35,000-a-year PC support tech — aren't allowed to do that.

And finally, companies are experimenting with the new kinds of support arrangements offered by appliance software publishers. In some cases that means priority 800-line service, thanks to annual service contracts; in others, it means pay-by-the-call 900-number service. Neither is half so convenient or effective as a skilled, experienced group answering help calls through an internal Help Desk set-up. Those full-time in-house people come to know the approved-and-supported software packages at least as well as the vendor's people — and more important, they understand the context of how those programs are being used internally.

But that kind of internal applications support is being cut further every day. What's really lost in these hatchet cutbacks is a large issue than fixing broken PCs and pulling twisted-pair and explaining how macros work.

It's that priceless core of PC know-how, and PC industry *know-what*, that's lost when companies cut their PC support operations below critical mass.

It's the ability of a line manager to wander into the Info Center and ask for some help on figuring out how to implement a new system, *fast*, using off-the-shelf applications packages. It's the awareness of software and hardware tools which exist but are not presently used in the company, which could be brought in literally overnight to solve a new problem or exploit a new opportunity.

It's the broad knowledge — broader than anything the company is using or doing right now — of what's coming, where things are headed, how the company can start changing how it does things in order to exploit the phenomenal power of networked PCs.

Where is that kind of insight going to come from for these companies?

ANSEL FOR WINDOWS 3.0

(continued)

scanners. As a stand alone editing package however, it is nothing to write home about, having the basics plus a few features more. If you have an older ScanMan, and run Windows 3.0, by all means get this software as it will make a valuable addition to your software collection.

Consultants are usually the first answer. Far be it from me to disparage the role of consultants, or our collective insight and savvy; I earn a comfortable living telling large companies which way the PC business is headed, and helping them solve their problems. As do a lot of my colleagues.

But there are only a few of us, and so many of them. Consultants are a good, if only partial answer, especially for large companies. But consultants are expensive, hard to find, of hugely uneven quality.

The answer for most companies, I'm convinced — and especially for companies in the 50-500 employee range — is to make intelligent use of local user groups.

User groups represent exactly the right kind of rich repository of that larger-context, look-ahead information these companies are losing. And the price is certainly right.

It's a near perfect match.

But as much as I believe in that answer, it's hard for me to see how to get from here to there. User groups are good at free-for-all pop-up Q&A sessions at the beginning of meetings. Some are good at maintaining a corps of vol-

unteers who'll take your panicky calls at 1 a.m., when that dBASE file you need for a 9 a.m. meeting seems hopelessly corrupted.

But one thing very few user groups are good at is the kind of out-reach which would attract the attention of the senior MIS people in companies undergoing these sharp cutbacks.

Computer retailing is well into a fundamental revolution, moving from a storefront-focused industry to an outbound-sales industry. Even Computerland has been encouraging its dealers to consider shutting down their storefronts and replacing them with exclusively outbound sales staffs.

Perhaps the user group community needs to borrow a page from that book. Not in shutting down present user group functions, to be sure, but in emphasizing outreach, and especially outreach to companies which for good or bad reasons have decided they can no longer afford to maintain clusters of PC expertise on staff.

Maybe, just maybe, that represents the model for the most effective, successful and enduring user groups in the 1990s.

An APCUG article reprinted from the May 1991 Issue of *ORANGE BYTES*, the journal of the North Orange County Computer Club.

SAVE KEYSTROKES WITH BATCH FILES

RICK ALTMAN

Batch files can be used for applications as simple as combining two commands into one or for creating full-blown, knock-your-socks-off interactive menus that manage all of your computer functions. The important thing to remember is that in most cases, batch files are nothing more than a string of DOS command instructions that you could type yourself. But why bother if a batch file can do it for you? This answer assumes very little computer aptitude or experience:

Batch files are simple ASCII text files, but DOS treats files with "BAT" extensions as being executable files that contain other DOS commands. The simplest batch file that every hard disk user should use is one that changes directories and then runs a command in that directory. It's also a good introduction because from its simple form, you can build in a ton of enhancements. For example, let's take Lotus 1-2-3, a program that can only be started from a directory that contains the critical 1-2-3 files. You don't want to have to type `CD \LOTUS` and then `123` every time you start 1-2-3, so instead you can create a batch file called `123.bat` that contains those two commands. Building this batch file is a piece of cake — we'll use the DOS Copy command to do it. At any DOS

prompt, you type:

COPY CON 123.BAT

The cursor will drop down a line, at which point you enter the following two lines:

CD \LOTUS

123

You tell DOS that you're finished by typing `Ctrl-Z` (or the `F6` key).

You will see the familiar "one file(s) copied" message, and presto, you have an executable file that will combine those two commands into one. Every piece of software that first requires a `CD` command should have a batch file made for it, and by the time you get to about six batch files, you will realize that your system needs a place for them. I recommend creating a directory called `BAT` to house all of your batch files (so your command to create them would be

COPY CON \BAT\filename.BAT

Then run, don't walk, to your `AUTOEXEC.BAT` file to add `C:\BAT` to your `PATH` statement. If you don't have a `PATH` statement, add a line in `AUTOEXEC` that reads

PATH=C:\BAT

ROM

Memory on the PC comes in the form of either Read-Only Memory (ROM) or Random-Access Memory (RAM). ROM chips are non-volatile devices that contain instructions that will never be changed. ROM chips are to be found on EMS and Video expansion cards, but the most important one is on the PC motherboard. This is the Basic Input/Output System (BIOS). It consists of either one, two or three chips containing a large amount of information which has been hard coded onto the silicon. It is through these chips that DOS issues its commands to the hardware.

RAM

There are three physical types of Random-Access Memory for the PC: Dynamic Static, and Video.

DRAM (Dynamic RAM)

As opposed to ROM, where data is permanently stored, the data in RAM is lost whenever the PC is powered down. And it is only kept alive in memory by having the chips dynamically refreshed (the system continuously rewrites the data to the chips). This makes DRAM relatively slow, because the system can only read data from it during the cycles when it is not being refreshed. (Note: the faster the CPU the faster the refresh cycle.)

SRAM (Static RAM)

Static, as opposed to Dynamic, RAM needs no refreshing and retains its data for as long as power is applied. This makes it much faster (and much more expensive) than DRAM. It is mostly used as on-board cache memory, in small quantities of 32 Kb to 256 Kb.

VRAM (Video RAM)

Video cards for the PC come in many varieties, from MDA to SVGA and above, and all have at least some memory on board - from as little as 4 Kb to as much as 1 Mb. Frequently this is standard DRAM, but some of the higher priced video cards come with dual ported VRAM. This is much faster because memory can be read and written at the same time. Therefore the video card can be talking to the memory even while the CPU is changing it. This speeds up screen redrawing, sometimes by a factor of 4. However, Video RAM is considerably more expensive than the humble DRAM.

Form Factor

Memory for the PC comes packaged either as single chips or as modules. Singletons are normally found in Dual In-

line Package (DIP) form. They come in capacities of 64 Kb, 265 Kb and 1 Mb. Each memory bank has nine chips, eight of them store information and the ninth is used as a parity checker. Each chip stores memory in *bits* not *bytes*, so a 64 Kb chip stores 65,546 bits of information, multiply this by the number of chips in each memory bank, eight - discount the parity chip - and you get 64 Kbytes (eight bits to the byte).

Note: There are other configurations, including Single In-line Pin (SIP), Zig-zag In-line Pin (ZIP), and DIP x 4 packages, however, single DIP chips are the norm.

Memory modules come in two types (with the full complement of chips on each module) the Single In-line Pin Package (SIPP), and the Single In-line

Memory Module (SIMM). The only difference is in the type of connector, header pins or edge connectors respectively, and the two types are not interchangeable. They come in 256 Kb, 1 Mb and 4 Mb forms, are more compact and much easier to install than the DIP chips. Basically they are an entire bank of memory on a miniature board. Their main advantage is that they socket

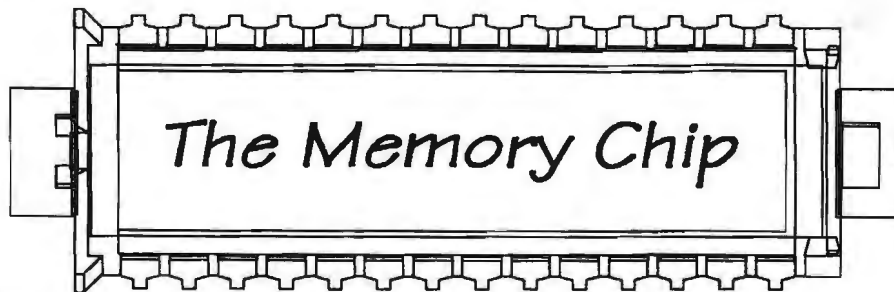
vertically into the motherboard, thus taking up far less real estate. In the original IBM PC-2, the four memory banks occupied approximately a fifth of the total motherboard area, they used 64 Kb DRAM chips, and 256 Kb was the maximum amount installable. In contrast, a modern 286/386 computer - with a 25% *smaller* motherboard - can put this 256 Kb of memory in a SIMM slot ½" wide x 4" long, and the same slot can accomodate a 4 Mb module (next year it will be 16 Mb).

Speeds

The speed of the memory chips is in essence their access time. This in turn is a function of their cycle time; the formula is thus:

$$\text{Memory Access Time} + \text{Memory Refresh Time} = \text{Memory Cycle Time}$$

When the CPU requests information from memory, the RAM chips need to be able to respond within two clock ticks, otherwise the CPU has to insert extra ticks. One extra tick equals one wait state, and each wait state slows the computer down 50%. The rate of these ticks is the reciprocal of the clock rate, i.e. a 12 MHz (12 million clock ticks per second) has a clock rate of 83 nanoseconds (1/12,000,000). The CPU cycle time (2 ticks of 83ns) is 166ns. So 150ns DRAMS should do? But don't forget the refresh



WHAT IT'S ALL ABOUT

A Guide to PC Memory

Part 1: HARDWARE

TONY ALLEN

time, which is around 70% of the access time. This means 150ns chips have a cycle time of 270ns - much too slow, though sufficiently fast for a 6 MHz machine. In fact for a zero wait state cycle time the memory chips for a 12 MHz machine need to be 80ns, for one wait state 120ns will suffice. You will see from this that the faster CPU's are unable to operate without wait states (a 33Mhz CPU would require DRAMS with a cycle time of <30ns - these don't exist). This is where static RAM (SRAM) comes in.

SRAM needs no refreshing and its cycle time is typically 20-30ns and is used in small doses to cache the conventional DRAM memory. A cache controller, such as the Intel 82385, checks all memory requests from the CPU to see if the data is in the super-fast SRAM cache. With decent size of cache, and a well written caching algorithm, a hit rate of more than 90% can be achieved. This can effectively mean the number of wait states on a 80386 will approach zero.

To Be Continued

DeCLAIRE'S DEFINITIONS

BILL DeCLAIR

ASCII

The action of presenting a question.

Assembly Language

Profanities used by people who build computers from kits. (Such persons are called "cursors".)

Automatic Calling Unit

Teenager with a telephone.

Baud

A lady of the evening.

Bug

A parasite which infests software, transmitted by illicit activities between people and programs.

Core

Remains of an Apple when all the bytes are gone.

Full Duplex

No vacancies.

Hollerith

What thou doeth when thy phone is out of order.

Line Printer

A device that puts the thin blue streaks across your notebook paper.

Modem

Southern for "more of them."

Parity Check

Agricultural subsidy.

Reboot

To repeatedly kick a faulty computer until it starts working.

Semiconductor

Part-time railroad employee.

Terminal

Said of a computer that's about to die.

Twisted-Pair

A couple of perverts.

Reprinted from the Mile High Computer Organization as published in Orange Bytes - Journal of the North Orange County Computer Club

MEMORY ERROR CODES

If you are unlucky enough to have a memory chip fail in the IBM PC-2 or the XT you will see a message something like this, when the computer is switched on:

2008 201

Parity Check 1.

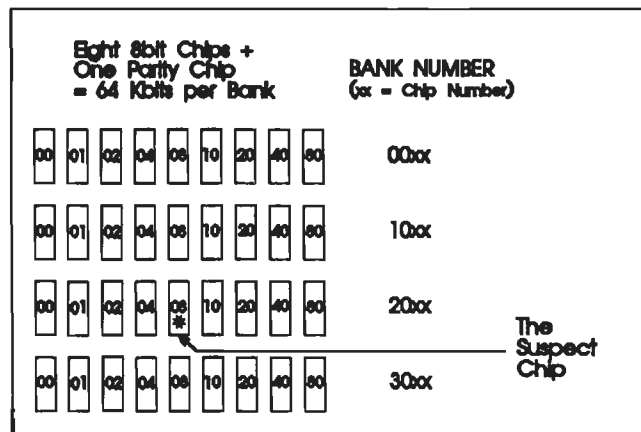
This seemingly cryptic nonsense is chock full of information. It notifies you that a parity checking chip (the ninth chip) has found that the sum of the information bits in one bank of memory is wrong. It tell you in which bank it found the error, and pinpoints the specific chip that is sending the bad data.

The "Parity Check 1" tells you the problem is on the motherboard, "Parity Check 2" would mean that the bad chip was on the memory expansion card.

The arrangement is thus:

The first two digits (20) point to the bank with the faulty chip, the second two (08) specify the actual chip. So 2008 means the third bank (the banks are numbered 00, 10, 20, 30) and the fifth chip (these are numbered 00, 01, 02, 04, 08, 10, 20, 40, 80) as shown in the illustration below. 201 is simply the code that signifies that it is a memory problem; just as 101 means a motherboard problem and 301 is a keyboard error. There are upwards of 220 error codes but you'd be most unlucky to ever see more than a couple of them, and the 'Parity Error' is by far the most common.

The above information applies to IBM 8088 machines. In general clone system messages will only identify the bank with the bad chip - not the chip itself. Things get somewhat more complicated on 286 and 386 computers. The principle remains the same, but the AT error codes are longer. This is because the x86 series are 16 bit chips so they need 16 (not 8) memory chips plus two parity chips, therefore memory is arranged in 18 chip banks. For convenience these are arranged in two banks of 9 chips. So the error code is now covering eighteen chips and has to differentiate between them.



Memory Section of 256 Kb PC-2 Motherboard

EXCEL TIPS & TRICKS CONTEST

Attention all readers! From now until the end of the year, I will be holding a contest to find the World's Best Excel Tips & Tricks! Here's how it works:

Carefully describe any special tip you've discovered since using Microsoft Excel 3.0 for the PC. (Remember - the one that caused you to see all those fireworks...) Document it on paper using as much detail as possible (you may even attach screen shots if you wish). The tip may be focused towards either beginning or advanced users. (Even non-club members are welcome.)

You may submit as many tips & tricks as you like, but please document each one on a separate piece of paper. Your name, address, and phone should be included at the top of each page.

Mail your entries to **World's Best Excel Tips & Tricks, c/o Jan Altman, 3655 Pruneridge Avenue, No. 135, Santa Clara, CA 95051**. Deadline for all entries is December 15, 1991. I will print the top three in this column (with full recognition, of course). The grand prize winner will be announced here in January, and will receive a very special gift from Microsoft.

Q *As the system administrator for my company, I am regularly called upon to install Windows for new users. Once the program's installed, I always need to customize the program groups and icons to fit the company's standards. Is there any way I can make this job more automatic? Normally, I would back up and restore the installed version of the program, but I'm often installing to different configurations of hardware. Anything I can do?*

A Make copies of your original installation diskettes. Using the copies, find the file **SETUP.INF**, and call it up in Windows Notepad. Look for the section **[progman.groups]**. This information is used to create the groups in icons in Program Manager. You are free to modify this data as needed. Add or delete whatever groups you wish, and then modify each group section below. Save the file on the diskette (make sure you're not modifying the original!). Setup will refer to that section during installation.

Q *I do all of my personal finances using an Excel spreadsheet. Over time I've developed some pretty intricate formulas. At the beginning of each month, I bring up the previous month's spreadsheet, delete the data, and create the new month. Not only is this tedious, but in doing so, I invariably erase some formulas by accident. Is there a way I can easily find the cells that contain the data?*

A Easy as pie. Pull down Formula Select Special. Select "Constants," and click OK. Only cells with constant figures will be selected; no formulas or blank cells will be included. You can then do an immediate Ctrl/Delete, and save the file with the new month's name.

*Jan is the Vice-President of SPAUG and a Microsoft Certified Trainer. Send your questions on Windows products to:
3655 Pruneridge Avenue,
No. 135, Santa Clara,
95051, (408) 243-5955.*

**LaserCare**

Laser Printer / Personal Copier Repair
Toner Cartridge Recharge Service
Preventive Maintenance Programs

444 Saratoga Ave., Suite 40-E
Santa Clara, CA 95050

Phil Kardys, Owner
408-249-3067

THE SPAUG RESOURCE CENTER

This is a list is of club members who have volunteered their services. If anyone would like their name added to this list, please get in touch with Paul Staley or Jan Altman.

OFFICERS

President	Paul Staley	(415) 493-1864
Vice President	Jan Altman	(408) 243-5955
ASSU Representative	Alex McMillan	(415) 322-4543

MANAGERS

Bulletin Board Sysop	Bob Bottini	(415) 369-2086
Financial Manager	Bev Altman	(415) 329-8252
Librarian - Public Domain Software	Les Weil	(415) 321-5541
Newsletter Editor	Tony Allen	(408) 739-2953

SOFTWARE

Accounting	Larry Mehl	(415) 329-6037
Foxbase	Marie Hooper	(415) 325-1206
Windows Products	Jan Altman	(408) 243-5955
R:Base	Larry Mehl	(415) 326-6037
Lotus 1-2-3	Larry Mehl	(415) 326-6037

LANGUAGES

C	John Watson	(415) 325-7632
Fortran	John Watson	(415) 325-7632
Pascal	John Watson	(415) 325-7632
Smalltalk	John Watson	(415) 325-7632
QuickBasic	Don Baird	(415) 365-6822

CLUB EVENTS IN OCTOBER

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		

October 14 Second Monday - PLANNING MEETING

7:30pm Beverly Altman, (415) 329-8252 or Paul Staley,
(415) 493-1864

October 9 The WORD FOR WINDOWS SIG meets the second

7:30pm Wednesday of each month at 7:30pm to talk about Word for Windows and general Windows issues. The next meeting will be on Wednesday, October 9. Location is Infotec Training Institute, Techmart, 5201 Great America Parkway, Suite 254, Santa Clara. The group is led by Jan Altman, a Certified Trainer in Word for Windows.

For more information, please call Jan at (408) 243-5955.

There will be no meeting of the **MICROSOFT WORD FOR DOS SIG** this month.

For more information, please call Jan Altman at (408) 243-5955 or Harold Santos at (415) 573-8786.

October 30 Last Wednesday - General Meeting

7:30 PM Turing Auditorium, Polya Hall, Stanford University

SPAUG's SUMMER SIDEWALK FAIR

*Last Wednesday: September 25th, 6.00pm
at Turing Auditorium*

Come celebrate at our annual salute to the last month of summer! This year's Sidewalk Fair will feature more vendors, better hot dogs, and two drawings! Some of the companies planning to come are Borland, Microsoft, Lotus, Aldus, WordPerfect, Octave Systems, CompUSA, 800 Software, and many more. The rumor mill has it that many of them will be offering special offers for fair attendees.

Once the fair is over, the evening's special presentations will feature 1-2-3 for Windows, WordPerfect for Windows, and some Not-To-Be-Believed Windows utilities.

The evening's schedule is as follows:

6:00 Summer Sidewalk Fair is open for business.

6:30 Special Early-Bird Drawing! Choice of software to winner.

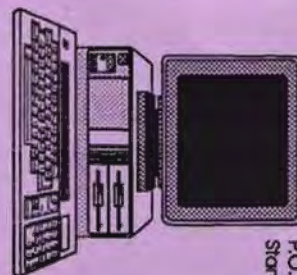
7:30 Sidewalk Fair over - general meeting begins featuring products new to Windows.

10:00 The biggest drawing of the year!

**DON'T FORGET TO COME EARLY TO
BE INCLUDED IN BOTH DRAWINGS!**

The Stanford/Palo Alto PC Users Group

P.O. Box 3738
Stanford, CA 94309



Club Information

Meetings

Paul Staley
(415) 493-1864

Membership

Beverly Altman
(415) 329-8252

\$25/year (Students \$10)

Bulletin Board Newsletter

(415) 321-4497
Tony Allen
(408) 739-2953



SPAUG's SUMMER SIDEWALK FAIR

Last Wednesday: September 25th, 6.00pm at Turing Auditorium

Come celebrate at our annual salute to the last month of summer! This year's Sidewalk Fair will feature more vendors, better hot dogs, and two drawings! Some of the companies planning to come are Borland, Microsoft, Lotus, Aldus, WordPerfect, Octave Systems, CompUSA, 800 Software, and many more. The rumor mill has it that many of them will be offering special offers for fair attendees.

Once the fair is over, the evening's special presentations will feature 1-2-3 for Windows, WordPerfect for Windows, and some Not-To-Be-Believed Windows utilities.

The evening's schedule is as follows:

- 6:00 Summer Sidewalk Fair is open for business.
- 6:30 Special Early-Bird Drawing! Choice of software to winner.
- 7:30 Sidewalk Fair over - general meeting begins featuring products new to Windows.
- 10:00 The biggest drawing of the year!

Don't forget to come early to be included in both drawings!