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Stanford Palo Alto Users Group

PRinT SCreen

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Stanford/Palo Alto PC Users Group

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C · O · N · T · E · N · T · S

COMMUNICATIONS PROGRAMS

Source: Boardwatch Magazine, Sept. 1992

A Boardwarch survey producing 11,152 responses showed the three favorite communications programs to be - Procomm, Telix, and Qmodem.

Others, in descending order, and each favored by fewer than 5% of respondants: Telemate, Crosstalk, Zterm, JR Comm, Bitcomm, Boyan, Quick Link, Smartcom, Unicom, Microphone, Commo, Flash Link, White Knight, GT Power, Comit, NComm, Robocom, MTEZ, Proterm, Windows, Mirror, MS Works, Micro Link, First Class, Baud Bandit, Red Ryder, and Front Door.

The President's Piece

STANFORD

It's that time of the year again! It's time once again to do the re-registration dance with Stanford U. We need everyone's help on this one. Talk to all the Stanford students that you know, all the students that you might work with. We're offering a special deal on membership to them. If they're interested or want more info, have them give myself or Beverly a call.

This needs to be done soon, meaning right now! If you have someone in mind, please give them a call so we can start the ball rolling.

THE SIDEWALK FAIRE

It's also that time of year for the annual sidewalk faire. We will be bringing in more vendors than ever this year, plus we'll see the return of the food cart. You'll be able to sup on sandwiches and coffee while you peruse the displays.

We've always had a table or two set up for members to sell their own goodies. This year we're asking members to bring those items they wish to sell, plus all the other "shelfware" they have laying around. We'll have a large box or two set up so you can donate your extra stuff. All donated items will be given to local schools. This could also include all the items you brought to sell, but weren't able to get rid of.

So go over your shelves and consider giving some of those dusty, still-in-the-wrapper items to charity. The schools will thank you for it. (And thanks to Nancy Helmy for the great idea!)

Paul Staley

In my review of Stacker in last month's issue I mentioned that my AT locked up on a regular basis after installing the software. I have since discovered, after systematically removing and re-installing all my hardware peripherals that the culprit was the Logiteck mouse and driver combination, which was having an IRQ conflict. Stacker was innocent.

RICHARD ORSER

WHAT'S NEW?

Browsing through the computer bookshelves last week, I found two excellent books that now have a prominent place on my table. The first is an updated edition of Scott Mueller's "Upgrading and Repairing PCs" (QUE). This is a major improvement on the first edition, and includes, as a bonus, all sorts of useful info. in a 224 page reference section at the end.

A brand new book on how to get the best from your computer's memory is John Goodman's "Memory Management for All of Us" (SAMS). This is a major book by a writer who not only knows his subject but can communicate. He authored the best book I know on the technical aspects of hard disks and, on first browse, this new one may well take the place of Phil Robinson's "One Minute Memory Manager" as my main reference for memory information.

TONY ALLEN

GOING MY WAY?

Member Matt Lehman would appreciate a lift to the General Meeting on 26 August. He can meet at the Foothills/280 junction. Anyone who can oblige, please give Matt a call on [415]968-3655.

YOUR CLUB NEEDS YOU

BE AN ACTIVE SUPPORTER

THANKS TO THIS MONTH'S RENEWING MEMBERS

Robert Birss	Mountain View
Donald Brookman	Palo Alto
John Egbert	Portola Valley
Harry Hughes	Sunnyvale

PLANNING MEETING

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

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

ZOOM IN ON TIPS & INFO

HIDDEN KEYBOARD Source: Jim Seymour, Jim Seymour's PC Productivity Bible

Hold down the Shift key with your left hand and type numbers with your right hand on the number pad without having to use NumLock.

SHAREWARE WINNERS Source: Boardwatch Magazine, Sept. 1992

The Assn. of Shareware Professionals awarded "bests" in several industry categories in June.

Best New Product was won by Surefire, a "smart document" that combines spreadsheet, word processor and database into one form.

Best Overall was won by Commander Keen, a space voyager game with layered graphics.

Winners in a few other categories: Utility -4DOS Application- As-Easy-As Graphics/Tools - Paint Shop Pro Business/Finance - Medlin Accounting System Programming Languages/Tools - A86 Assembler Math/Engineering - Kwikstat

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DO.BAT Source: Russ Walter, The Secret Guide to Computers

```
::DO.BAT
::CD to %1dir and invoke 1%program
cd %1 %1
```

Nancy Helmy

SPECIAL ON COMPUSERVE Source: CompuServe (but not cleared with their PR Dept.) Customer Service 1-800-848-8990

$7.95/mo. gives you unlimited access to certain databases: sports, weather, encyclopedia, delayed stock quotes, shopping, travel, leisure, entertainment, and games.

THE SET TABLE FOR HIRE Source: Michael P. Orchekowski, Manipulating Environment Table Parameters, Journal of the Tucson Computer Society, July 1992

A lot of work for DOS: To resurrect the old path after altering it in the environment, redirect the original path display output to a batch file. This requires DOS to perform several steps: (1) write the directory entry at zero-length size; (2) write out the file; (3) update both copies of the File Allocation Table; and (4) update the directory entry by adjusting the size.

Recommended technique: Create a batch file that saves the old parameter, alters it, then restores it, all by adding and deleting a new parameter. Command.com is run in its current system location. Restoration takes place when the Exit command is invoked.

In this version of Shellit.Bat, both the path and prompt are temporarily altered and then restored.

```
Syntax: Shellit program_name
::SHELLIT.BAT
::Alter Set Table. Restore by invoking Exit
command.
::Po and op are new parametes, added then
deleted.
set op=%prompt%
set po=%path%
set prompt=[%1]%prompt%
set path=%path%%1% %comspec%
set prompt=%op%
set path=%po%
set op=
set po=
```

The technique can be used within any batch file:

To add: **Set param=text**

To delete: **Set param=**

To exit copy of Command.com and restore original params: **Exit**

Comspec can also be changed to any command interpreter, e.g., 4DOS. A new prompt cannot exceed 127 characters. Be sure to maintain a semicolon at the end of the normal path statement.

ANYONE FOR A TIMED BATCH FILE? Source: L. M. Boyd, The Grab Bag, San Francisco Chronicle

The E-Z Wake alarm clock, invented in 1888, was hung from the ceiling over the bed and, at the appropriate time, dropped a weight on the sleeper.

ABOUT OS/2 Ver. 2.0

Bob Bottini

On March 30, 1992, when OS/2 Ver 2.0 became available I ordered it. My motivation was easy to figure out. Anything is better than DOS. I also considered Windows Ver. 3.0 & 3.1 an interim step on the way to a 32 and/or 64 bit operating system. Also, by sending in my Windows manual front page I was able to get OS/2 for $49. What had I to lose?

Well this is August, and I am now older, and somewhat wiser. OS/2 Ver. 2.0 is certainly the Cat's Meow. It is a marvelous and mystical program. It automatically corrects its own problems. It automatically corrects my own mistakes. I don't even begin to know about the program but I am working well with my Windows

applications. Word for Windows Ver. 2.0, and Excel Ver. 4.0. Both work as well as IBM claimed. I haven't done too much with DOS applications because my real work is in the two Windows applications that I mentioned, and besides I am having too much fun learning and playing with OS/2.

There is a down side. It is what you must know and do BEFORE you install OS/2. First, you must know that while the OS/2 manual is an improvement, it still has a long, long way to go. (This is true of all manuals as far as I am concerned.) Secondly, IBM expected to sell 400,000 max. OS/2 applications in 1992. To date they have sold over 1,000,000, and if you are ordering now you are put on a waiting list. But the real problem of their success is that it has caused a shortage of technical support people.

Another problem is that some DOS software doesn't work in the OS/2

environment. An example that has caused me some anguish is with Colorado Memory Systems. I backup all my files with Colorado's Jumbo tape deck. Before I installed OS/2 I updated my backup. Since I did not want a DOS partition, and wanted to use the file compression system that comes with OS/2, I re-formatted my hard drive. However, I found that I could not restore my backup files to OS/2. Colorado's DOS software is not compatible. Now, I am happy to say, IBM includes a list in their current OS/2 shipments that names the DOS programs that they know not to be compatible. Also, Colorado Memory Systems will shortly have their OS/2 upgrade out for those of us who have this problem.

In closing I must say that I am very pleased with OS/2. I will give you a second report on my experiences as they accumulate.

On the Road with Windows

The AST Premium Exec 386SX

Rod McKenzie

Contributing Editor
Madison PC User's Group

Looking at a notebook computer? Do you think that there are times that your desk ought to have wheels on it? Or even wings? Dreaming about unfettered computing can be a lot of fun. Shopping for it can be a frustrating experience. The AST Premium Exec 386/25 Color deserves a close look. Well made and loaded with features, it means having Windows with you on the road with few, if any, concessions.

Prices for notebooks have always been priced at a premium when compared to desk-bound machines with essentially the same features. Since the prices of PCs generally have dropped significantly, this might be a good time to look again at the equipment you thought was too expensive just six months or a year ago. With the most recent price cuts, it now might be a lot more affordable. Fortunately, the computing power that a given dollar will buy today is more than ever before. Windows programs place more of a demand on the hardware, so the new entry level is probably higher than where users started when they bought that first desktop machine.

When I started using Windows I stopped using my old laptop. It just didn't have the horsepower that Windows needed. All that has changed since I had the chance to try out a notebook-sized PC, the AST Premium Exec 386SX/25 Color. The Exec is a well-crafted piece of equipment that meets the challenges that Windows and portable computing puts on the hardware. It's not an entry-level notebook, and equipped with an internal fax/modem, a price was paid for convenience. I think it's worth it for several reasons. The most obvious is the fact that my computer investment can now keep up with me. When I move around, it can follow me, and when I want to get to work on a project, the machine I have along is every bit as capable as the machine I left at home on the desk.

Looking back, it's clear why the old iron wasn't equal to the task of running Windows. It was based on an 8086 chip, 640K of RAM, and dual floppies. There was no way to expand RAM and the cost of a hard drive conversion was over $1000. It ran at a respectable 9 MHz, but even loading large DOS programs crawled. This old horse was not going to run Windows, not even on a dare! Having run Windows on a notebook, I'm not looking back. The Exec has a 386SX chip, 4 MB of RAM, and an 80 MB hard disk that's further enhanced with a copy of Stacker which effectively makes it a 150 MB drive.

Windows 3.1 loaded very easily onto the notebook and the hard drive wasn't even breathing hard when I started to load the applications. Since I'd be plugging into a printer only once in a while, I loaded only one printer driver. I moved into the Control Panel, clicked on the 386 Enhanced icon, and made a permanent swap file. Windows thought that 11.7 MB was a good number, and who was I to argue? This was actually going smoother than when I loaded Windows 3.1 over 3.0 on my desktop machine.

For the applications, I decided to start with the Lotus SmartSuite for Windows. First I loaded Ami Pro, my favorite Windows word processor. Installation went by the book. It included Adobe Type Manager, so I knew that I would be able to add some favorite PostScript fonts that weren't included with any of the basic programs. Still no problems. The next program to load was 1-2-3 for Windows. It loaded without a hitch; I upgraded with the version 1.1 diskette that was included, and then added the SmartPack disk I picked up at Lotus World. I was interested in the SmartFill feature that figures out sequences for numbers, months, days of the week, and that sort of stuff.

The next application to be loaded was Freelance Graphics for Windows. This is a presentation graphics package that really brings out the best in a color notebook. Freelance gives the user a head start on generating a good-looking presentation, by providing SmartMasters. These are pre-designed style sheets that match good contrasting colors, suitable typefaces, and pleasing layout on the screen. Getting a screen show ready for presentation is almost painless. Previewing is fun, watching the special effects like fades, wipes, louvers, and merging lines of text and data on the screen. This really shows off the bright readable LCD panel of the Premium Exec. Several people can stand around the machine and comfortably look at a clear screen image.

Although I wouldn't be tied into a printer most of the time I am on the road, I know I'll still want to generate some output, so I added WinFAX Pro, from Delrina. It's been the most reliable fax software I've used. Sit down with the notebook plugged into a phone line and you're ready to deliver fax messages, complete with TrueType or ATM fonts, imported graphics, headers, footers, and an optional cover page. Users can easily create a custom graphic cover page using their Windows word processor or a paint program, and then send the file to WinFAX for printing. Instead of sending it to a phone number, the output is saved to file. Now the saved file can be used as the cover page graphics file. There's even auto-dialing to groups, as well as to individuals. Delrina has recently added DOSFax to their line. Users who need to fax from a non-Windows application can have the same convenient performance. If your DOS application can print to an Epson printer or to an HP LJ-II, DOSFax will grab the output and send it out as a fax.

Data communications was the next thing to consider, and the choice was obvious. Datastorm Technologies started delivering ProComm Plus for Windows late this spring, and I needed a place to try it out. It's the successor to WinComm, a favorite of mine since the days of Windows 3.0. The timing was perfect and the hard disk wasn't even close to full. Now I hit some rough sledding. ProComm couldn't find the modem. Finally, I had to do the one thing that I had avoided. I had to read the manual! It turns out that in order to conserve power, the default status is for the modem to be disabled. It gets awakened by a .COM program called ASTMODEM. The user enters ASTMODEM ON, or puts that line into a

batch file, and then loads the communications program. The other choice is to turn it on in the configuration setup program. I turned it on and left it on. I just have to be aware that it's going to put a little more demand on the battery.

Once the modem was turned on, ProComm Plus installed with no problems and I was dialing into the BBS and getting a busy signal. Situation normal... Actually, I was pleased to see that the modem sensed the busy signal and started the redial delay. My only complaint with ProComm Plus is that they have chosen a fairly small font for their screen and put it into a window that is a good deal smaller than the display. On a notebook PC, type easily gets too small to read comfortably. It's just plain too hard on the eyes. Skip the big frame and make the font bigger.

The Exec doesn't come with a pointing device, so I looked around for something I thought would be convenient. I tend to cut the time too close sometimes, so when I'm packing up to go it looks a little like a bookie's joint being raided. I chose a Microsoft Ballpoint, which clamps to the side of the keyboard and is not a problem to pack when it was time to hit the road. The software includes a program to set the sensitivity, the speed, and the button functions. I ran for a few minutes and realized that the cursor could very easily hide from me. Windows has a cure for that. I turned on the "mouse tracks" feature, so it's easier to follow and to find. I can't close the cover all the way with the Ballpoint clamped on the keyboard, but I can pick up the unit in one piece. A mouse would be a lot more awkward to set up shop and move around, so I prefer the Ballpoint.

The hard disk wasn't full yet, but just to keep the swap file from feeling cramped, I added Stacker 2.0. This is the software only version of the product. Considering the fact that Stacker moves just about all the data on a hard disk into one huge compressed file, I was prepared for an extended session waiting for the STAC_VOL to be created and for all the files to be transferred. It really wasn't that bad. The installation program takes the user through the process smoothly. In this case there were some fragmented files, so it bailed out the first time and told me to run the DOS program CHKDSK and clear up the fragments before Stacker wrote over them. The installation program also saw that there was a permanent Windows swap file and left enough uncompressed disk space so that I could recreate it after Stacker was installed. The next time Windows loaded, it announced, with a warning box, that the swap file was

not found and I should recreate it.

While Stacker was doing its installation, I read up on how it works. It uses a compression algorithm to pack the data closer together on the disk, and it creates and then refers to tokens, sort of like code patterns, to save space. This is a loss-less compression method, so file integrity is supposed to be very secure. There's a hardware board for desktop machines that can run even faster than the software-only version. Anyone running Windows and a few applications begins to feel the empty disk space practically evaporate as the software loads. Stacker makes the drive hold a lot more. Loading Windows and its applications from the "Stacked" drive is actually a little faster than the original un-Stacked drive. Not a lot, but it was never very slow in the first place.

Using the keyboard was a little frustrating at first. The keyboard layout is compact. That's a good news, bad news story. For general typing of text, I actually made fewer errors with the Exec than I do with my desktop machine's 101 key standard keyboard. The feel of the keys is definite and they release quickly. The right side shift key is too small for my liking. I will often overshoot it and hit the cursor-up arrow key. When this happens I have to really hunt around for the cursor, and it can be a disaster when you are typing in "typeover" mode. Besides using the cursor keys, I often navigate with the Home, End, Insert, and Delete keys. They're together on a 101 key keyboard, but on the Exec, the Home and End keys are on the top row, and the Insert and Delete are on the bottom row. The spacing of the keys is good for my medium-sized hands. I didn't find that my fingers were in the way of each other while typing.

Battery power will run the Exec for about three hours. That's pretty good for a notebook. Remember that they're trying to keep it small and light. Batteries are usually taken for granted and, unfortunately, some designers treat them like ballast. Many times the three hours is not long enough for my working habits. Given the interruptions that occur, I need to stop and shut off the machine or plug into the AC, right from the start. The hard drive will power down and save power, but the screen still draws its share. The screen saver is handy, but I haven't really noticed a lot more battery time as a result of using it.

What did I want in a notebook that I didn't get with the Exec? First there's the keyboard layout I mentioned earlier. Then there's the small carrying case. I'd like it to have more room for the power supply and space for the Ballpoint or a mouse — a notch molded into

the side of the case that would attach the Ballpoint directly, so the clamping bracket could be left at home. I consider that the Ballpoint is a regular accessory. Why not make the physical attachment point also provide the electrical connection to the serial port? It would eliminate the dangling cord and extra hassle of plugging in the cord every time the machine is unpacked. For a scanner, I'd like to have at least one slot for a half-height card. WAIT! Yes, I know that it wouldn't be a notebook size for long if I add too many more options.

It would be nice to be able to recharge the battery while the notebook and the power supply are still in the carrying case. A little extra space in the case, and another zipper at the back would give the user access to the AC cord.

In the case of the Premium Exec, the fax/modem is a Megahertz unit with 2400 bps data rate, and Class II, 9600 bps Group III fax send and receive capability. WinFAX Pro, as well as DOSFax, will work on the AST Exec equipped with the Megahertz unit or on an external fax/modem connected to the COMPORT, provided it's using the Sierra SendFax chipset or other Class I/II hardware.

What does the Premium Exec 386/25 Color cost? As tested with 4 MB of RAM, 80 MB hard drive, and color screen, it lists for $3595. The optional Class II Send/Receive modem adds another $499, putting the total price at $4200. The Ballpoint and the applications software would push it to just about $5000. Give up some of the features or options and the price comes down. Another ploy is to wait for a little of the dust to settle in the most recent PC price wars.

Any user who must take a PC on the road and wants to have almost all of the comforts of home should give the Premium Exec PC a very close look. AST paid a lot of attention to details and has designed a very durable, portable machine. It's easy to set up and quickly becomes comfortable to use. I found that I often used it at home, getting it out of its carrying case, in preference to my desktop machine.

The AST Premium Exec 386SX/25 Color is a product of:

AST Research P.O. Box 19658 Irvine, CA 92713-9658 (800) 876-4AST (714) 727-8585 (fax)

"SCSI" - not "SCUZZY"

PAUL GLANVILLE

Both IDE (Integrated Drive Electronics) and SCSI (Small Computer System Interface) drives are relatively intelligent drives; the card in your PC that communicates to your IDE or SCSI drive is not a controller but rather, an interface (called a "Host Adapter"); IDE and SCSI drives have their controllers built-in. Not so with ST-506 and ESDI drives - both types are somewhat smarter than their ST-506 counterparts) requiring an actual controller plugged into your system.

The Technical Merits of IDE vs. SCSI

In SCSI there are at least two interpretations of data when going through this interface - one to translate the stuff from the host's format to SCSI format, and another on the other end to translate from SCSI format to the peripheral's format. This is similar to IDE except that here the drive employs either "Translation", "Increased Cylinder Counts", or "Unusual Sector Counts" - three of the features of both IDE and SCSI. So instead of these translations: Computer to SCSI to Peripheral we have in their stead: Computer to IDE to Peripheral. No savings. Further, at the device driver level, DOS natively talks in a tongue very close to a SCSI device (and very much unlike a regular disk drive); your computer almost already "talks" SCSI and has to do a data conversion in order to talk to an IDE drive, not the other way around. The bottom line is that the published access times for identical SCSI and IDE drives (Maxtor LXT340A vs. LXT340S, for instance) are the same. Check it out and see for yourself.

SCSI drives are not inherently any more or less expensive than IDE, although SCSI host adapters are somewhat more costly (though not significantly so - especially when taken in the context of a whole disk subsystem). The intelligence added to a SCSI device (more on what a SCSI device is a little later) causes that device to conform to a standard hardware and software interface, just as the extra silicon on an IDE disk drive causes that drive to conform to IDE's interface. So there is no extra silicon on a SCSI device that does not also have a counterpart on an IDE drive. There is little extra silicon required on the host adapters either, since all the devices, regardless of type, will respond to the same commands. This is the major strength of the SCSI concept. All of the devices on a SCSI

bus respond to the same commands, and are individually smart enough to figure out how to interpret those commands. If you send a block of data to a disk drive, you don't have to tell the drive the track, and the sector, and the head address of the data; you give it the block number, and the drive will figure out where the data goes. The same is true of a tape drive - give it the desired block address, the drive will get you to the right place, and you're ready to read or write a block.

This standardization of peripherals allows SCSI to offer some very definite advantages over any other peripheral interface - in particular, the ability to connect to up to 7 devices, possibly of very different types (i.e. a mix of hard disk drives, tape drives, and others), to a single host adapter card. Where extra silicon may exist, it exists to add certain performance features, usually to goose up the speed of the data transfers. Certain SCSI host adapters can achieve data transfer performance well in excess of the EISA DMA (Direct Memory Access) transfer specifications (i.e. 2 to 3 times faster) on ISA equipment through either bus-mastering or caching (read: lots of extra silicon).

While this performance is theoretically possible on IDE, nobody had yet attempted it, as the interface card would be just as expensive as a similar SCSI interface. High performance is paid for in extra silicon which predictably raises the (dollar) price; it's foolish to expect high performance, without paying for it somehow, as if by magic. Most IDE interface cards (and, in fairness, practically every other hard disk interface as well — including most SCSI host adapter cards) haven't paid that price and are limited to the motherboard's DMA timing, which for ISA systems is about one million DMA transfers (or 2 Megabytes) per second; EISA systems can get up to 100% better DMA throughput (that is, up to 4 Megabytes per second).

What is a SCSI device?

Unlike any other peripheral interface I know of, a SCSI device is not a physical peripheral, but rather, its controller. The physical peripherals are called "Units" and up to 8 of them can be connected to a single controller. Individual units are addressed by their device: "Device #D, Unit #U", or "D:U" for short. It is therefore theoretically possible to have up to 56 separate units connected to a single host adapter (up to 8 units (peripherals) per device (controller) times the maximum of 7 devices per host adapter equals 56 total units, maximum). However, modern SCSI peripherals include a controller which is only able to control the one unit it's affixed to, so the device and unit distinctions have become blurred. SCSI still

addressed these integrated peripherals as devices and units separately, referring to such a peripheral as "Device #D, Unit #O" or "D:O" for short. For the sake of this discussion I will assume we're talking about integrated drive/controller SCSI peripherals and refer to them as devices.

Scenario #1

All this technical talk is a bit dry, so let's shift gears and look at how SCSI can help you. First, suppose you want to add multimedia to your present setup. Let's say that you're starting with an 80Mb drive, two floppy drives (one each: 3.5" & 5.25"), serial (RS232) and parallel (printer) interfaces, a tape drive (shame on you if you don't do backups!), a nice VGA card, a mouse, and an internal modem. To this you want to add a scanner, a CD-ROM, and a sound card. Sounds nice, eh?

Let's assume that you've already got one of those combination IDE/Floppy/Serial/Parallel/Game interface cards (you can save a slot that way). If the mouse is a bus-mouse and your motherboard has 8 expansion slots, then you're out of expansion slots. The situation is naturally worse if the Serial and Parallel ports aren't on the IDE interface card, or if you're also doing video-capture work or anything that requires additional specialized cards (I'm a hardware engineer with a PROM programmer and a Logic Analyzer plugged in my system). And if yours is one of those older 386's with the memory on a separate card, or a 286 with an expanded memory board, or any 6-slot machine (and there are a lot of them out there — mostly "Baby" 386 and 486 motherboards), you're in an even tighter bind.

You could use a serial mouse and/or an external modem to relieve the congestion, but if you started out with these things you'll have to buy duplicate hardware to replace your otherwise perfectly good equipment and it's possible that it still won't all fit. It's either that or buy two whole systems (2 motherboards, 2 sets of memory chips or modules, 2 80Mb drives, 2 tape drives, 2 VGA cards, 2 VGA screens, 2 cases, 2 keyboards, etc). All of a sudden IDE isn't so inexpensive after all. And even if you could get it to work you've got a real wiring mess inside your cabinet, with separate cables going to the hard disk, the floppies, the tape, and the CD-ROM. Yuck!

How can SCSI help? Well, a single SCSI host adapter can handle up to seven devices. So the hard disk drive, floppy drives, tape drive, and the CD-ROM can all be hooked up to a single SCSI host adapter instead of requiring separate cards, thereby freeing up a minimum of two valuable slots (the Multi-

I/O card would get one of those, resulting in a net saving of at least one slot). Also, the inside of the machine will less resemble a rat's nest with only two ribbon cables routing around the inside of the computer: the floppy drive cable and the SCSI cable. Ironically, the IDE system in our example may well already include a latent SCSI host adapter, since CD-ROMs often natively interface via SCSI. If you're going to have a SCSI host adapter in your system anyway, why not skip the IDE, and go 100% SCSI (saving an expansion slot in the process)?

Scenario #2

You originally had a machine with 40Mb of hard disk. When you ran out of space you got a second 40Mb drive. But now you're out of space again and you can't afford anything larger than a third 40Mb drive — much less a single 120Mb drive.

IDE? Good luck. You are limited to two drives. Period. (This is not just a limitation placed upon IDE. All PC hard disk controllers (MFM, RLL, ESDI and IDE only allow for two drives; although some controllers can be assigned to "Alternate Addresses", no BIOS that I know of supports multiple hard disk controllers).

SCSI? No problem — just plug it in. As I mentioned before, SCSI allows up to 7 devices per host adapter and if you need more (!?!?!) there's no reason why you can't have two or more host adapters in your system.

One possible inconvenience here is that you will probably need to add a device driver to your system in order to acknowledge the third (and any additional) drive(s) because DOS is a bit dim-witted when it comes to additional drives. Not to worry, though, as the necessary drive(s) ought to be included with your host adapter — mine came with drivers for DOS, OS/2 and Novell. Although the driver will consume some memory, at least this is a possible solution; IDE had you painted into a corner.

Scenario #3

You have a Tandy 1000TX computer (a 286 system) with a Tandy 40Mb hard-card (installed by Tandy) inside. You want to upgrade to a 386 (or better) system. The problem is that you have a ton of stuff on your drive but it uses the XT version of the IDE interface which is totally incompatible with the AT version (the Tandy 1000TX uses an XT expansion bus in spite of it being a 286 processor). You simply cannot plug the two differing types of drives into the same system and copy your old stuff to a newer (read: IDE-AT) drive.

This compatibility problem persists to this day; on certain systems you cannot upgrade

your system without throwing away your investment in what should be reusable hardware. These systems are typically prepackaged by dealers (such as Tandy) for their customers who are lead to believe that they are wisely buying expandability and compatibility, when they are actually buying into a dead-end. (Question: How can you be certain that there won't be another (incompatible) version of IDE in a few years? And what will happen to your data if you put it on an IDE drive today, and later you want to upgrade to the next flavor of IDE?)

SCSI users have never had this problem — Apple adopted SCSI for its Macintosh computers partly because of the hardware-independence that SCSI provides. You can take the SCSI drive now in your old XT (8-bit) system and plug it directly into your new EISA (32-bit) system and still access your data without a hitch — chances are it'll boot right up. The reason lies in the SCSI host adapter card which adapts your particular computer system to SCSI's standard interface. SCSI is not the moving target that IDE threatens to be.

Scenario #4

You have either a multitasking system, a multi-user BBS, for instance) or a network with a large file server.

DMA transfers on an ISA machine are relatively slow — only one million transfers per second. IDE drives can only transfer their data through this bottleneck. Furthermore IDE can only really process one disk transaction (i.e. one disk read or write) at a time — even if you have more than one drive in your system — so a system laden with several layers of multitasking and lots of disk accesses will bog down.

But the highest performance SCSI host adapters are perfectly suited for such applications, providing very high throughput (up to five million transfers per second — accomplished by bypassing the slow system DMA), and "Multi-threaded Operation" — that is, the ability to process numerous commands (up to 255 separate requests, for instance) from different sources, intended for different destinations, simultaneously. This frees up the operating system for other chores and speeds up the system generally because the host adapter can then try to optimize the disk accesses and operate the drives in parallel (to the maximum extent possible). For systems requiring ultra-reliability you can get a host adapter that offers "Disk Mirroring" — that is, the ability to continually maintain a second hard drive as a standby copy of your primary drive. Should anything happen to the primary hard drive, you can switch over to the second (and get the primary drive repaired).

These features, only offered by the highest performance SCSI host adapters, are far beyond the capabilities of IDE.

SCSI Considerations

In fairness, I want to say that SCSI is no Garden of Eden. SCSI devices are "Smart", just as IDE drives are, so SCSI has suffered from exactly the same sorts of teething problems that the early IDE drives apparently have. Early SCSI users commonly complained of compatibility problems — usually caused by interconnecting several SCSI devices made by different manufacturers, each requiring different (or conflicting) commands to perform the same operations. Just as an IDE standards committee was formed to take care of their compatibility problems, a SCSI standards committee, comprised of interface card manufacturers, drive manufacturers, and other interested parties, was formed. It's been years since I've heard of anyone suffering a real, live compatibility problem in their SCSI system. Still, the old song of SCSI having compatibility problems persists to this day.

Personally, I've side-stepped the compatibility issue by shopping for SCSI equipment only from reputable manufacturers who would be harmed by rumors of incompatibility. For instance, my own host adapter is made by Adaptec; I bought it knowing that they are on the SCSI standards committee (in fact, they practically invented SCSI). I wouldn't be penny-wise and pound-foolish by trying to save a few bucks and purchase a host adapter made by some clone manufacturer from Taiwan. If you do, I don't want to hear any talk from you about compatibility problems... SCSI is very flexible by nature. As a result, it can be somewhat more difficult to setup than most of the other interfaces I've encountered — and much more so than IDE. SCSI host adapters often have a dozen or more options which must be correctly set in order to get things humming, so attention to detain is the order of the day — you will probably have to actually read the book if the default setup doesn't work right away (although it probably will). Therefore, your local computer outlet cannot hire some high-school dropout or other marginally qualified technician to install a SCSI setup like they can with IDE (in my experience, most techs can only barely manage a plain vanilla MFM or RLL setup — I have no illusions as to why the computer stores push IDE).

Looking to the Future

Gleaned from the Hard Disc Bible: "... for most low capacity applications, we recommend ... an IDE drive." "... it seems clear that SCSI is the interface of the future." "SCSI controllers offer the most flexibility and

expandability in the long run." "For example, all of the popular optical and DAT drives use the SCSI interface." "If you are interested in high speed with upward compatibility ... go with a SCSI drive and controller."

I want to remind all of you that personal computer systems are getting more powerful, and demanding more storage of higher performance, every year. Megabytes of RAM and hundreds of megabytes of mass storage were, until fairly recently, the exclusive realm of room-filling mainframe computers. Today you can have that capacity in your briefcase, weighing in at under twenty pounds, and there is every reason to believe that this trend will continue to skyrocket. SCSI is, and always has been, at the forefront of that skyrocket.

For years, the highest capacity, highest performance equipment available to mere mortals has only been available via SCSI. In the past, when 5 and 10Mb drives were common, if you dreamed about having 80Mb in your system you dreamed a SCSI dream. Today you may well have an 80Mb drive in your system. And if you dream about anything over 500Mb, or a tape backup capacity measured in gigabytes, you are still dreaming SCSI dreams. Ever since its inception SCSI has provided the only standardized interface to devices such as CD-ROMs, WORM and Erasable Read/Write optical drives, hard drives, tape drives (now including DATs), and more (including some pretty exotic stuff — did I hear someone say that they wanted a CDC 9766 (a 300Mb, multi-platter, removable media mainframe drive) hooked up to their PC? No problem!). Today it's CD-ROMs, 20Mb floppy drives and DATs. Who knows what great new stuff will come tomorrow. Unlike any other interface, installing SCSI buys you the possibility to connect into the future. IDE only offers a cheap, inflexible, medium performance interface to small and medium capacity hard disk drives.

1. All references to ISA and EISA bus speeds and timing figures were extracted or derived from AT Bus Design by E. Solari, published by Annabooks, located in San Diego, CA. (800) 462-1042. Mr. Solari, who works for Intel, is a member of the P996 Working Group, which developed the AT bus standard for the IEEE.

2. I also referred several times to the Hard Drive Bible which is published by the Corporate Systems Center, located in Sunnyvale, CA. (408) 737-7312. CSC is a company that sells and services magnetic and optical disk drives.

3. My comments regarding DOS's device drivers are based on the Disk Operating System Technical Reference, published by IBM. Although my copy is for an old version of DOS (PC-DOS version 3.20), the device driver information is still basically valid.

dBASE IV
Release 1.5
David Jensen

If dBASE IV hadn't had problems since Ashton-Tate started working on it, Borland wouldn't have been able to buy Ashton-Tate for the price they did. Ashton-Tate would still be at the top of the heap without any fear of anyone else. Unfortunately, while companies like FoxBase were able to produce new programs that used the dBASE language with execution that was faster and extensions that made it easier to run, Ashton-Tate's answer was to sue, not to improve.

When dBASE IV release 1.0 came out late, it was big, slow, and buggy. Release 1.1 was a major improvement, but by then the damage had been done. Most customers would rather not have to try a new product, no matter how similar it might be to the one they are using, but if the original product's upgrade is bad enough, people will bail out. People did. Now, here is the challenge: Can Borland keep dBASE from going the way of WordStar, a product now more important for its history than its current value?

As a release upgrade from 1.1, dBASE IV 1.5 offers a number of nice features that many developers would find valuable. dBASE IV Release 1.5 is Borland's first shot at saving dBASE. They did a pretty good job. Borland added a number of language extensions, added a group of low-level file I/O functions, improved execution, added mouse support, added features and improved

configurability to the control center and additional file format import/export support.

I assume that no one still uses release 1.0. Considering the problems people had with it, Ashton-Tate must have made sure that everyone was upgraded to release 1.1.

For dBASE users of older releases of the product, especially dBASE III+, it's probably time to change your dBASE. For those who don't want to use the dot prompt, the control center is an excellent environment for developing applications. Along with the control center, there is an integrated application generator that creates dBASE code. There is solid multi-user network support, transactions with rollbacks, SQL (Structured Query Language) support, multi-table QBE (query by example), conditional indexes and more.

Well, that's fine, but I'm sure that Borland has made their best effort to sell current owners of older releases of dBASE on the merits of dBASE IV release 1.5. What can new users or users of competitive products expect from dBASE IV?

First, they can expect to use a product that is highly compatible with the most common database language in PCs: the dBase or xBase language. New users will appreciate this since they will be able to find more books, more power users, and more advice columns that have been written about this language than any other. With a product as complicated as a database management system, it is very helpful to have as many experienced people around as possible. Along with the language, new extensions have been added that provide further power to users who will be working in the dBASE

IV environment only. Compiler switches are now available to allow compiled code to reflect the different environments that the application may be run in.

Second, they can expect to use the product the way they want. The program runs in three modes: command line (the dot prompt), SQL (a different command line mode that is compatible with IBM's mainframe DBMS, DB2, among others), and control center. The command line mode can be interactive or can be used to run programs that have been written using any ASCII editor (one is included in the package). The SQL mode is similar to the dot prompt, but it interprets the commands differently to use the pseudo-standard SQL. Some dBase commands cannot be used in SQL mode, either because they conflict with SQL, or because there is an SQL statement that will do the job.

The control center mode offers a fully interactive development system. The user can use the control center to do something, such as create a file, add records, change records, ask a question about the information in the files or other ad hoc use, or the user can develop an entire application by creating all of the files, all of the data forms, all of the reports and the menus required for an integrated application. Each part of the application is created modularly, so each part can be used for other applications. As these modules are added, even ad hoc users may find that they have developed an application before they knew they were doing so.

The control center mode is the mode that most new users are likely to want to start in. The control center has excellent help

facilities, good menus, and, with the help of the application generator, allows users to take advantage of the power of the language. On the other hand, I would guess that most experienced programmers would rather use the dot prompt to get a program written. They just don't need the hand-holding that is provided by the control center. I would consider this combination of excellent support for new users along with freedom for the experienced developer to be a necessary capability for this kind of a development environment.

Third, they can expect to be frustrated by the lack of a proper compiler. Whether the programs have been developed from the command line or the control center, these programs can be compiled to an intermediate object code that runs substantially faster than the uncompiled code can be interpreted. Borland cheerfully offers to sell a runtime compiler to those who want to run their applications on machines that don't have dBASE IV on them. This is nonsense. For the same price or less, you can buy a professional-level language compiler or DBMS that compiles to source code and has no runtime license or limitations. Since this product is aimed at both major applications developers and the more casual users of databases, the value of the product to applications developers is limited substantially by the lack of this capability.

Users will find that the product is easy to install, offers a lot of configuration possibilities, allows multiple users to select configurations, provides excellent security options and has the network and network administrator in mind. The manuals are clear and easy to use. Not only do they cover the actual operation of the program, but they also describe some effective basics of using a relational database manager.

dBASE IV is a relational database management system. It understands that relations can be defined among fields of different files, so the files can be smaller, and redundant data need not be keep in each record. This is particularly valuable for those who have to keep the same piece of information for a variety of reasons. If that piece of information can be kept once and pointed to, there will be better data integrity (the piece of information is correct [or incorrect] everywhere) than if that information is actually kept in a number of places, as a flat file system requires. It is much easier to forget to change information in one place, if it is kept in many places.

While users can use dBASE IV or any other relational database manager as a flat-file system, and that is a good way to use it at the beginning to learn the product, if they continue to do so, they have bought a Ferrari for a school zone. dBASE IV works well as a relational database manager.

While there is PostScript and other laser printer support, there is really only support for monospace fonts, so the value of this printer support is minimal. Considering that it was easy for a copywriter to identify parts of the report development as WYSIWYG (on a character mode screen) — what you see is Courier and what you get is Courier. As Henry Ford might have said, "Any font you want, as long as it's Courier."

The last time I used dBASE, it was dBASE III+ and I'm quite happily impressed with the improvements that I've seen in the product between then and now. I was especially impressed by the changes that were available in the control center, changes that made it easy for casual users to use dBASE at its best. While I can say that dBASE IV release 1.5 is a major improvement from dBASE III+, I can't say that it has managed to continue to outpace the competition. FoxPro, in particular, has been doing its best to be the best xBase DBMS. With the added resources of Microsoft behind it, FoxPro will continue to give dBASE IV a run for its money. Still, this release shows that Borland didn't just buy Ashton-Tate for its mailing list.

dBASE IV Release 1.5 Ashton-Tate, a Borland Company 1800 Green Hills Road P.O. Box 660001 Scotts Valley, CA 95067-0001 (408) 438-5300

CAVEAT EMPTOR

A column on computer related purchases

BOB BOTTINI

THE INTEL 486/50 DX2

Businesses are converting to workstations as fast as they can get their hands on them. These workstations are replacing desktop and main frame computers. The 'mini-computer' capabilities are infinitely increased when it becomes a 'workstation'; as is the case for many main frames. All of this is done at a fraction of the price that it cost to buy an IBM 286, in 1988.

Please accept as a given that the type of workstation chosen is dependent on the operating system that a particular business, or division of that business, chooses to adopt. (DOS ain't gonna be one of them.) As an example, businesses that would use Unix in their operation would go to either a Sun Workstation, a Next Workstation, etc., which would use a "RISC" (Reduced Instruction Set Computer) type of CPU.

The most popular workstation is based on the Intel 486/50DX CPU. The most popular system cache used on the motherboard with this chip is 256K in size. Because our businesses are converting to the 486/50DX as such a rapid pace, the price of this CPU is up because of the demand. Not surprising. Into the breach went the Intel 486/50DX2.

If you check the prices advertised in any computer magazine you will find that the workstations, built with the DX2 chip are very attractively priced. However none of the advertisements I have read tell me that the DX2 operates at a considerably slower bus speed than the DX chip. The processing speed is also somewhat affected although it is supposed to be 50MHz.

A processing speed is defined as the time it takes a CPU chip to process data. But after processing, the data has to be communicated back to you. The computer achieves this through its peripherals such as memory, disk drive, video controller, etc. The DX2 chip does this at half the processing speed. Again, the DX2 processes data at a 50MHz rate. The DX also processes data at 50MHz. The difference is that the DX sends information that has been processed back to you through the peripherals at a 50MHz bus speed. The DX2 sends the information it has processed back to you as a 25MHz bus speed. Depending on the benchmark that you choose, any software that you run on a DX2 CPU will run from 30% to 50% slower than on the Standard DX CPU.

The reason the push is on to sell the DX2 computers is that they are so much faster and cheaper to produce. Intel would not discuss the matter but, through reading various publications I did run across a statement made by the president of a New York computer manufacturer who was quoted directly; and he willingly admitted that the DX2 chip cost him $100 less than the DX. What's more is that he could use the OLD motherboard designs based on the 25MHz CPU. All he needed to do was to add an extra pin-hole to the CPU socket. In contrast, designing a system based on the DX chip, you had to deal with motherboard layers, heat and a higher level of quality assurance. He also added that the support chips needed must be more "effective" and thereby more expensive.

What does this mean to you? If you are going to upgrade your computer and find the DX2 prices attractive, let us look at the actual value in dollars and performance they represent. I will use the advertised prices of two computer sellers in the area. Their prices and product represent the extremes. The prices come from their recent ads in "Micro Times" issued 8/3/92. Read their ads to define what each mean by a BASIC SYSTEM.

THE SPAUG FUNDRAISER

*Y*ou may purchase any of these items by calling Beverly Altman (415 329-8252) and it will be brought to the meeting or, if you want it sooner, you can arrange to pick it up.

CAVEAT EMPTOR *(continued)*

AXIK COMPUTER:

486DX2-50/64K   Basic System - $959
(25MHz Bus Speed)

486DX-33/64K   Basic System - $739
(33MHz Bus, True 486DX) (Faster System)

HI-TECH USA:

486DX2-50C   Basic System - $758

486DX-33C   Basic System - $539
(True 486DX) (Faster System)

In the case of Axik I save $220 by buying the 486/33DX. With Hi-Tech I save $219. In either case I am getting a better, faster machine and saving $220 as well. Happy times shopping.

CLASSIFIED ADS

TYPE	ITEM	DESCRIPTION	SPAUG PRICE	STREET PRICE*
Software	NORTON BACKUP v1.2 For DOS	Simultaneous Backup of Multiple Drives Flexible and fast; Award winner	40.00	**
Software	NORTON BACKUP v1.2 For DOS and Windows	Automatic schedule for Windows backups. Restores from damaged diskettes.	52.00	**
Software	NORTON DESKTOP For Windows v1.0	Integrates Program Mgr, File Mgr. . Backup, data recovery, and many utilities	38.00	**
Software	THE NORTON EDITOR Version 2.0	Simple, Easy-to-Use Text Editor Pull-Down Menus; Search and Replace	50.00	90.00
Software	THE NORTON EDITOR Version1.0	Created to meet the needs of programmers Written entirely in Assembly language; fast	.25.00	**
Software	JUST WRITE 1.0 by Symantec	Fast & Easy Windows Word Processing WYSIWYG, Spell Check, Thesaurus etc.	80.00	**
Software	THE BUDGET EXPRESS 1.1 by Symantec	Goal Tracking, "what if", Instant Summary Views, etc. for Lotus 1-2-3	35.00	**
Software	SQZ! PLUS by Symantec, for Lotus	Spreadsheet File Utility System; compress spreadsheet files by up to 95%. Load and unload in RAM without leaving Lotus	25.00	**
Software	DESIGNER v2.0 by Micrografx	A top rated drawing and technical illustration program for Windows.	120.00	309.00
Software	ALLSAFE by XTree	An integrated security program, including password protection, keyboard locking, etc	40.00	89.95
Software	RESOURCE WORKSHOP	A designing and compiling resource for applications running under Windows 3.0	18.00	99.00
Software	VENTURA CONTROL!	Utilities for Ventura Publisher	15.00	—
Software	MAGELLAN v2.0 by Lotus	Lets you find and see all the text in every file on disk, including graphics files.	35.00	79.95
Software	TRADING POST by LaserTools	A PostScript printer manager (PCWorld Best Buy)	15.00	—
Software	FORMWORX for Windows by Power Up!	An excellent forms processing program.	54.00	199.99
Software	MORE WINDOWS v3.0 by Aristoft	A Windows untility that adds 300% more. Transforms your monitor into a giant screen.	20.00	59.99
Book	HANDS-ON VENTURA 2.0 C. J. Wallia (1989)	A Self-Teaching Guide and Reference	5.00	26.00
Book	CLIPPER 5	A developer's guide to "The ultimate dBase compiler" (1300 pages! with disk)	10.00	44.95
Book	HOW TO BACK UP YOUR PC Murach Press (1992)	Basic techniques, tape backups, network commands etc.	8.00	25.00

* The current discount price - where available.

** These items are not latest versions. They're marked at 60% below the current version price.

THE SPAUG RESOURCE CENTER

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Resource Center Manager	Rich Madden	[408] 253 2075

SPAUG members are encouraged to make themselves available to other members to answer questions about hardware or software. Your area may be general or specialized. If you are willing to have your name added to this list, please contact the Resource Center Manager, Rich Madden at [408] 253-2075.

SOFTWARE

Accounting	Larry Mehl	[415] 329-6037
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Pascal	John Watson	[415] 325-7632
Smalltalk	John Watson	[415] 325-7632
QuickBasic	Don Baird	[415] 365-6822

CLUB EVENTS IN SEPTEMBER

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			

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

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

September 15 Third Tuesday - **QUICKEN SIG**
7:30pm Floyd Kessler, [415] 493-7780
Greg Marek will be demonstrating some more features of Quicken 5 for DOS. After the demonstration there will be a general Quicken (both DOS and Windows versions) question and answer session, so bring along your Qs and get some As.
For the latest information see the notice on the Bulletin Board.

September 30 Last Wednesday
6:00pm **SIDEWALK FAIR &**
7:30pm **GENERAL MEETING**
Turing Auditorium, Polya Hall, Stanford University

THE AUGUST PRESENTATION

Last Wednesday: August 26th, 7:30pm at Turing Auditorium

REMOVABLE STORAGE

If you've ever been concerned with secure off site backups, transferring more data than will fit conveniently on floppy disks, or being able to successfully liaise with a service bureau, then this meeting is for you.
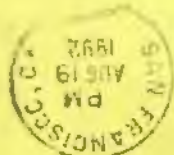
Here you will see some of the industry leaders in the technology of removable disks, tapes and cartridges demonstrate their latest products.

There will be some really special offers too.