



NEWS

Vol 2

North Texas IBM Personal Computer Users Group

No. 4

Special Interest Programs

Programmers

PC-compatible computers, the topic of the March meeting of the programmers' special interest group was conducted by Mike Wiles. Diskette formats, preliminary comments on PC-DOS 2.0, and the 8087 numeric data processor chip were also reviewed during the general discussion portion of the meeting.

APRIL MEETING

Discussion will continue on the features of version 2.0 of the IBM-supplied disk operating system. Also Ken Land is planning a demonstration of WordVision, a new low-cost, modular word processing program. The color features of WordVision will be demonstrated if a color monitor and color-graphics adapter board can be made available at the meeting.

Dick Gall

Beginners

There will be a review of "PC Parrot", a speech synthesis software package at the April meeting.

Mike Durbin

GENERAL INFORMATION

DISK OF THE MONTH PRICE: \$5.00. Available at the general membership meeting. Media: DSDD 5" diskettes formatted single-sided. Public domain software only. Donations of programs and information are needed for future issues. Call Will Janoschka at 231-6449 to submit items for the Disk of the Month.

Mailing Labels

Those of you who were not at the last meeting will have another opportunity to add your name to the address list we will be selling for benefit of the Group. The master list circulated at the March meeting for sale of address labels will be available April 16 so that you may select whether or not you want your name included. If you check the "yes" column, your address will be included. Please mark "Y" or "N" on the list so that we know you have seen it. If you are a new member, please add your name, address and selection on the blanks at the end of the list.

A g e n d a

For the next meeting, the general order of business will be:

1. Club Business
2. Presentation -
(Not determined at Press time.)
3. Question and Answer Period
(as time allows)
4. Vendor Announcements
Club "Professional" Members
5. Specialty Group Agendas for Next Hour (Each SIG Chairman makes 1-minute announcement)

Chris

Next Meeting April 16, 1983

Room 207 of Florence Hall

(See map on page 2)

SMU Campus

9:30 TO 12:00

*Leaders meeting
9:00 AM*



North Texas PC NEWS

Published monthly by members of North Texas IBM Personal Computer Users Group for their use. Members each receive a free subscription; for others, price of the NEWS is \$1.00 per copy. Advertising is accepted; contact Editor for rates. Members are requested to notify the editorial staff in writing of address changes. Send all editorial correspondence to the Editor, PC NEWS, 2025 Rockcreek Dr. Arlington, TX 76010.

Editor: John Pribyl (817)275-4109
 Programming Editor: Tom Prickett (214)387-3667

Copyright (c) by North Texas PC NEWS, 1982. All rights reserved. Use or reproduction in any manner is prohibited without written permission.

Deadlines: All material for publication in PC NEWS (articles and ads) must be received by the NEWS staff no later than the first Saturday of the month in which publication is desired.

North Texas IBM Personal Computer Users Group

A non-profit, independent group, not associated with IBM Corporation. The Group meets on the third Saturday of the month at 10:00 AM in the Auditorium, Cox School of Business, Fincher Building, SMU Campus. (Check meeting notice on page 1 for any late changes.)

Officers:
 President: Alan Elliott (214)941-8475
 Program Chairman: Chris Morgan (214)446-0484
 Treasurer: Bill Hood (214)350-9784

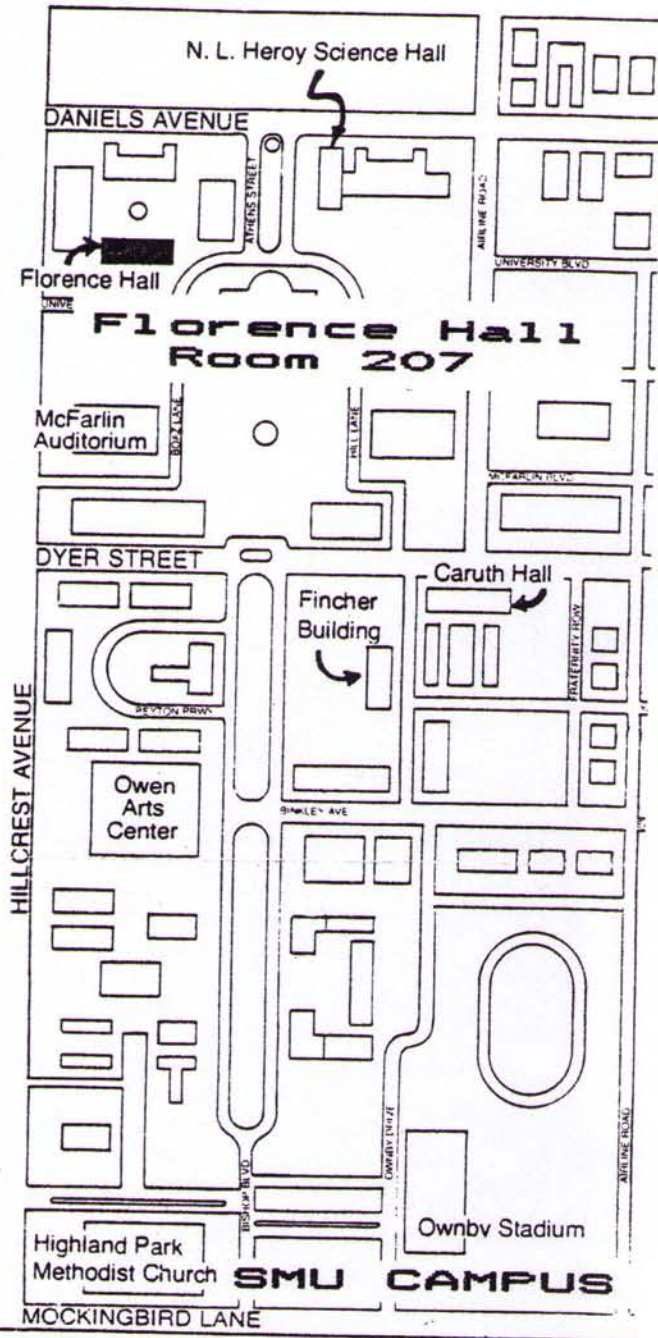
Special Interest Groups:
 Beginners: Mike Durbin (214)271-8779
 Business Applications: Alan High (214)385-0553
 Disk of the Month: Will Janoschka (214)231-6449
 Programmers: Neil Bennett (214)238-7450
 BASIC Applications: Charles Loftin (214)492-3594

Special Group
 Bylaws Committee: Fred Williams (214)245-4319

Dues: Professional Membership - \$36.00 year
 Regular Membership - \$24.00 year
 Student membership - \$12.00 year

Payable in January, dues are prorated for balance of year when applicant joins after January. Dues should be mailed to W. A. Hood, 10437 Goodyear Dr, Dallas TX 75229.

Thanks to all of you who have submitted material for publication in the newsletter. The articles are great and getting better! This months review of DOS 2.0 by three of our members is very interesting. Keep up the good work.



This Month Only

We will be meeting in room 207 of Florence Hall on April 16th only. The Fincher Building will be in use for final exams on that date. Watch this space next month also... exams will still be going on!

Words of Wisdom



Notes for the Prospective PC Owner

By Larry Jordan Downloaded by Chris Jacobs 03/29/83

After working with several people who were buying IBM PCs and after reconfiguring my own system several times during the past year, I have reached some conclusions that I'd like to share with those who are thinking about buying PCs. Generally, there are two categories of would-be PC owners: those who want a nice neat package delivered to them that is ready to be plugged in and run, and those who want to buy the minimum configuration so as to add on additional equipment later. This article applies to both categories.

Bare Essentials

Earlier this year I would have recommended that a buyer purchase a stripped down 16K random access memory (RAM) machine then build up to 64K by adding mail order memory chips to the PC motherboard. That option is still available for the tinkering hobbyist, but the waiting list for 16K machines is over three months at many PC dealers. If you choose to go this route, you can save yourself over \$150 in memory cost. If you are anxious to get your PC and get cranking, you will probably have to buy a 64K machine.

The disk drive story is similar to the motherboard RAM story. You can buy a PC without disk drives, but you may have to wait three months for delivery of the machine. To get started earlier you will have to buy a PC with one disk drive. I recommend that you purchase the IBM Disk Drive adapter board, the expansion slot card that controls the disk drive and one double sided, double density 5.25-inch disk drive. With this configuration, you will get an excellent IBM instruction guide that tells you how to install a second disk drive.

After you have had your PC awhile, you will very likely get tired of constantly switching diskettes to make back up copies of software, and you will become a candidate for a second disk drive. At this point you have all the documentation you need to purchase and install a second Tandon 100-2 (double sided, double density) disk drive. You can either have a local dealer do this for you, or you can purchase the drive and install it yourself at cost savings of at least \$100. If you don't know which

end of a screwdriver to hold, you should have a dealer install the second drive. If you are the type that likes to tune up cars occasionally or install a light switch, you can install a disk drive in 30 minutes with no problems.

Beyond Bare Essentials

Beyond the 64K RAM and a disk drive recommended in the initial configuration, you need a monitor or display in order to use the PC. There are two options available to satisfy this need. You can buy a monochrome adapter and a monochrome monitor or you can buy a color adapter and one of several types of color or graphics monitors. The two key elements in selecting between these two options are what you intend to use the monitor for (1) now, and (2) in the future. The critical difference between these options is graphics. As you can see from the following table, both options can be used for 80 column text applications such as word processing, but only the graphics board and graphics monitor option can be used to produce the IBM PC powerful graphics displays.

Capability	IBM Monochrome	RGB Graphic	Composite Graphic
40 column text	Yes	Yes	Yes
80 column text	Yes	Yes	Yes
High Res 80 col text	Yes	No	No
Medium Res graphics	No	Yes	Yes
High Res graphics	No	Yes	Yes
Multiple Screen Storage	No	Yes	Yes

I recommend the graphics board over the monochrome board because you can do everything with the graphics board that you can do with the monochrome board plus you can produce graphics. The graphics board made by IBM allows you to use an 80 column green phosphor monitor, a television set (color or black & white) or a high resolution color monitor. By selecting a good quality green phosphor composite monitor such as the Aadek Video 3006, you can almost produce monochrome quality text (reducing the height of the screen display also helps) along with pie charts and bar charts at half the cost of an IBM monochrome monitor. By adding an RF modulator attachment to the color board you can also use any good quality television for games and graphic software; the Microsoft Flight Simulator looks much better on a television set than on a high resolution RGB color monitor.

Printing and Communication

You can buy separate adapters to plug into the PC's expansion slots for printers and communications, but

How Software Gets To You

by Neil Bennett



Most everyone who has a micro is interested in writing some software to put on the market. There are about a million software consumers out there, so the potential for making money is enormous. It's safe to say that one day there will be as many micros in the U.S. as there are color television sets now. About the only danger is predicting how long it will take. There is a traditional curve of acceptance of a new type of product. Initially, there is a fairly slow acceptance until people decide the product is not just another fad. Then it takes off as everyone gets in on the act. Finally, the market saturates when everyone has one. (An example of a saturated market is stereo sound; the sound industry then started trying to sell a couple of extra speakers to people with four ears.) In the micro market, the boom is just starting. Once IBM came into the market, people started taking notice.

This is a short, much simplified overview of how (& why) those little plastic bags containing software appear on the shelves in your computer store. The

Words of Wisdom

(continued)

combination boards are a better buy. You can get a parallel printer port, a serial port (for serial printer or communications), a battery powered clock, 64K of RAM memory, and expansion pods for another 192K of RAM for the same price you would pay for 64K of memory and a parallel or serial port. The combination board advantage is the capability-to-cost ratio and the freeing of expansion slots for future use.

By combining a disk drive adapter, a graphic display adapter, and a combination parallel/serial/memory board, you have a lot of computer power and you still have 2 PC expansion slots open for new-fangled boards yet to come for the PC. You also have 128K of RAM, which is the minimum recommended configuration for word processing and some spreadsheet application software. You can also expand the RAM memory to 320K for approximately \$150 (mail order) and be one up on some of your PC friends. Big memory will also be very useful for multi-tasking with IBM's PC-DOS 2.0.

why is real simple; the technology can do it, the consumer wants it and there is money to be made. There are 5 central characters. I am going to give figures on how many of each of these guys there are. Don't plug these figures into your Visiclone model; they are only approximate and if they were accurate today, then they would be out of date tomorrow. It's the ratio of the numbers that's relevant.

Let's talk about a software product that sells over the counter at your computer store for \$100. Here is a list of those 5 characters, the numbers of them, and about how much they get out of the \$100.

Software author; about 1000 of them; he gets about \$8 from the Software Publisher.

Software Publisher; about 100 of them, he gets about \$45 from the distributor.

Distributor; about 5 of them, he gets about \$60 from the Computer store.

Computer store; about 2000 of them, he gets \$100 from the Software consumer.

Software consumer; about a million of them today and growing fast. He gets the product to make his machine do tricks. This guy pays everyone; on the other hand, he is also the boss. He decides what software will appear on the shelves.

Now for a closer look. First the consumer, because he is the most important. The first micros were built from kits by hobby electronic freaks. The next wave was people who had used a mainframe and had always wanted a computer of their very own. When an APPLE appeared that they could plug straight into the power supply, these people started buying. Now that powerful 16-bit machines are on the market and IBM, DEC and Baby Bell are making the whole scene legitimate, everyone from business men to belly dancers are buying up big.

The computer know-how of the average micro purchaser is going down. The people that knew all about computers and software were the first on the block to have a micro. The people buying now know less about how to use a micro. This has an impact on the style of software demanded. In the old days (about 5 years ago), it was not too bad to give an "ERROR 42", and expect the user to look it up in the manual. Today it just won't do. The user can't handle it and he doesn't have to. Competition amongst the

▷

How Software Gets To You

(continued)

software producers has given the consumer a taste for friendly software. The consumer is now caring less and less about chips, bits and bytes and more about how well the micro grants his every wish.

The software author dreams of changing the world and making a million dollars. The potential is there. If he can just collect \$1 from every one of those consumers, he's got a megabuck. Looking at it another way; if he spends 6 months building a product that will sell 1000 copies a month for 3 years, and he gets a royalty of \$5 per copy, then that's \$180,000. He only needs one of the popular micros, an understanding bank manager to help him fight the wolf from his door till they start throwing money at him, and lots of confidence. The reality is that a handful of authors are doing that well, the next 10% are doing O.K. and the rest are thinking about taking a part-time job.

In the very early days, anyone that could sharpen a pencil made money at writing micro software. Once other programmers started coming in, you had to specialize to survive. The obvious field to specialize in is something you're good at; and something there's a market for. The software author writes his program and a manual, gets his buddy to try it out and starts looking for a software publisher.

The software publisher manufactures the final product. Obviously, the only programs that he is interested in are those that he thinks will make money. Because of competition, the publisher tends to specialize in one field. Even if the software author has an excellent product, not every publisher is going to be interested in it. The publisher and his staff may have experience in the education field and he's not going to be interested in war-games software.

In the very early days, publishers took on "everything that moved". The publishers that tried to continue doing that went under. The more perceptive publishers tried to plan what software they wanted and sought it out. Those with the resources started building integrated lines of software in-house. These days the consumer expects his word processing software and a spelling checker to be

able to talk to each other. The individual software author still can compete in the field of ideas, but projects which require man-years of work are being done in publishing houses rather than garages.

The publisher has to have staff to check the program out, design attractive packaging, worry about piracy, manufacture the product and send it to the distributor. His \$45 may look good, but he probably ends up making about the same as the software author. He has lots more to worry about for his money.

The distributor serves a very useful role to both the publisher and the computer store. Look at the numbers again. Without the distributor, a publisher would have to deal with 2000 computer stores and a computer store deal with 100 publishers. They would both rather concentrate on what they do best and leave the distribution to someone else. Both are happy to talk to just the handful of distributors.

Finally there is the computer store where you buy the product. There are even stores now which deal only in software. You may think his \$40 looks like a good deal. If the computer store got in 10 copies of the product first thing in the morning and sold them all by lunchtime, I would agree with you. It's more typical for a customer to walk in, get a half hour demonstration of the product and then buy a magazine for \$2. When he gets home, he sees an ad. for our product through a mail-order house at a much better price and gets it that way. When it arrives and he has a problem using it, where do you think he goes?

Nobody likes to buy software without trying it out. Glossy ads build an expectation of what the product will do and how well it will perform. The chances of a software product being all you hope it will be are not excellent. The computer store needs several micros in the store so customers can try out the software. The staff in the store have to know a fair bit about the products they are selling. If the computer store sells a line of hardware, it needs training in the product, an inventory of stock, shelf space for parts and accessories. To start selling a new line of computers costs a computer store about \$50,000.

So that's the story. I hope it gives a fair overview of the industry. Personal computers are one of the fastest growing businesses ever.

Neil



Adding 8" Floppy Disk Drives to Your IBM PC

by Ernie Stokely

I promised myself when I coughed up the family fortune for the PC that I would never become involved in hardware hacking, spending my Saturdays perusing the back rooms of the local computer junk dealer, resurrecting tired bargains that require garage construction of an interface without the aid of schematics. In fact, I succeeded in my resolve until a month or two ago when I stumbled into the Xerox Surplus Store located on far north Dallas North Parkway. I'm sure now that it was a plot to get me there, instigated by my work colleague who spends his weekends cloistered with a home-brew CPM system, emerging on Monday to show up red-eyed for work. He's one of those guys who disassembles the ROM BIOS just to see what's in it; proud to share his discovery that parts of his BIOS contain unused code now known only to him and the designer of the machine. This he tells me before Monday morning coffee, mentioning in the process that he picked up two brand new Shugart 800 8" drives for under \$300 for the pair at the surplus store. I never should have listened.

On the day I visited the place there were double-sided (DS) Model 1850's on sale for \$136 each! Brand new! Well, I wasn't that easily taken in... After all, everyone knows that PC DOS (and presumably the IBM disk controller) doesn't know that 8" drives exist. Then I remembered Jim Rich's comments about Tall Tree Systems JFORMAT software which provides a patch for DOS to allow the mixing of drives of different flavors. A phone call to California got me the information that I didn't need... Yes, there are several manufacturers who build disk controller cards compatible with the Tall Tree software and 8" outboard drives. I decided to try Maynard Products since their board was discounted through a mailorder house. Yes, they could supply a board for that purpose which would control two inboard drives and two outboard 8" drives... mine for the paltry sum of \$199. The drive cable could be picked up from Jade Electronics for \$32.50, and an outboard drive housing was a gift at \$225.

For a meager \$728.50 I could be in business!

I could extend my storage capacity from 640K to 3.15 Mbytes, or even to more than 3.3 Mbytes if I was willing to use the non-IBM 10 sector/track format available from JFORMAT. It was more than an ex-ham radio operator

could resist... a saving of half the off-the-shelf cost!

Eight weeks after my "60" decision, the drives are installed and working.

If you need more storage and want to consider 8" drives, here's how you can add them to your PC.

Lots of places have the 8" drives for sale. Most places offer used drives, but the Xerox Surplus Store also handles many new ones. Another source here in Dallas is Rondure on Butler Street. There are basically two kinds of drives, single-sided (SS) and double-sided (DS). Either kind of drive will read and store data in single or double density, assuming the controller provides the proper signals. Since all controllers these days use a standard controller chip, the density will be under the control of your software. Next, you will need some kind of cabinet with a power supply and a cooling fan for the drives. These you can buy ready-made, or you can save a few bucks with a kit. (See me before you buy a kit... you may be getting into more than you bargained for.) Next, you need a new controller card for the drive, which you can buy from a number of vendors. Tall Tree can provide you with a list of vendors. To be safe, be sure to state on your order the exact configuration (type and number of drives) you expect to support with the controller. Finally, you need the JFORMAT software from Tall Tree (\$60). Beware, before you buy! Some of the controller manufacturers are supplying JFORMAT as part of the controller package. (Anybody want to buy an unopened JFORMAT diskette at a bargain?)

The JFORMAT software is very nice, as it allows you to build a JDOS system diskette which contains a modified PC DOS system with a boot. Part of the building process involves a system configuration program which allows you to tell JDOS the format of each of your disk drives. JFORMAT will support 12 formats, including an electronic disk which supports up to 2 megabytes of disk RAM, 8" drives, and a hard disk. Another nice feature of the software (which I think is built into PC DOS) is that it will look at a 5 1/4" diskette to determine its format and automatically adjust. Unfortunately, it does not do this for the 8" drives.

There are also some irritations with the system. I am interested in reading IBM 3740 format diskettes. While the controller can format and read these diskettes, there is no available software to import a CPM file from an 8" drive. Before I launch this part of my project, does anyone know of such software? Also, JFORMAT will allow 3 kinds of 8" formats, meaning that you must have a JDOS diskette for each 8" format that

▷



DISK OF THE MONTH

by Mill Janoschka

APRIL HIGHLIGHTS

RatBAS

A translator that converts programs written in RatBAS, a modified version of BASIC, to logically equivalent programs in basic. Permits programs to be written in modular, structured style and then be translated into versions executable by the standard BASIC interpreter or useable as input to the BASIC compiler. With documentation and example programs including a sort routine. (Note: a volunteer is still needed to write a detailed RatBAS example program). From Brent Weaver of San Francisco.

GOMOKU.EXE

A compiled version of the BASIC program from the March disk. Implements a full-screen board game where the player is to line up 5 men on a board with 30 x 7 spaces despite interference from the computer. Pete Lewis.

PACMAN.BAS

A smaller version than the previous PAC-GAL offering, in interpreted BASIC.

SHARON.BAS


An X-calendar program. Provided by an anonymous donor.

Will 

Adding 8" Floppies ... (continued)

you expect to use. (That's a waste!) And finally, you must boot JFORMAT every time you want to format a diskette. PC DOS "FORMAT" will no longer work unless you stick to the standard PC DOS formatting standard.

My experience with this system is limited, but so far I like it very much. Especially when I need 400-500 Kbytes on a single diskette! If you decide to subject yourself to this (relatively) inexpensive storage, I'll be happy to help you get started...

Ernie 

CHANGES IN MEMBER INTERESTS ...

Every attempt will be made to keep your PC NEWS slanted toward member interests, and to get your copy to you before each meeting. To do this we must keep our address/activity/interest listing current. Please provide new information when your situation changes.

Fill in changes and mail the following form to Editor, PC NEWS, 2025 Rockcreek Dr., Arlington, TX 76010.

If you know someone who is interested in the IBM Personal Computer and is not now a member of our Group, fill in their name and address and send the form to the Editor. We'll send them a complimentary copy of the News and a membership application blank.

Name _____ NEW APPLICANT _____
 _____ CHANGES _____

Address _____

City _____ State _____ ZIP _____

Phone: Home _____ Metro? _____
 Work _____ Metro? _____

by: _____

TWO GREAT DEALS for your PC

<p>#1</p> <p style="text-align: center;">SAVE \$140</p> <p style="text-align: center;">EPSON</p> <p style="text-align: center;">MX-80 printer</p> <p style="text-align: center;">cables available!</p>  <p style="text-align: center;">Just \$389!</p>	<p>#2</p> <p style="text-align: center;">SAVE \$60</p> <p style="text-align: center;">Multifunction Board</p> <p style="text-align: center;">Parallel or Serial</p> <p style="text-align: center;">Real Time Clock</p> <p style="text-align: center;">64k now expand to 256k</p> <p style="text-align: center;">just \$339 during April</p>
--	--

SOFTWARE ACCESS

659-0503 659-0504

2642 N. Beltline (Across from Irving Mall)
 HOURS: MON-FRI 10-6 PM, SAT 10-6 PM






Programming Topics

(This month's Programming Topics is dedicated to DOS 2.0. Mike Wiles will conclude his articles on spooling and RAM disks in next month's issue.

Tom Prickett, Program Editor)

A LOOK AT DOS 2.0

What can the average PC owner/user gain from DOS 2.0? There are many, many nice things for the "expert" -- the systems analyst and the advanced programmer. It would appear that most of the "enhancements" present in DOS 2.0 are really directed at bridging the gap between strictly "personal" micro-computers and the "mini" and "mainframe" systems that many PC owners are accustomed to working on.

But this article is directed at that "average" user, who can use some of the advantages of 2.0, but who may never get into the use of the ANSI.SYS instructions or DOS interrupts.

With a few minor exceptions, you can plug in 2.0 and operate almost the same way you have been running. In the DOS 2.0 Manual, Appendices I thru K list some helpful hints for using a few of the commercially packaged programs. In particular, page K-26 discusses the use of 2.0 with VisiCalc. Thus far, I have had no problems with any existing programs I had written with earlier versions, including Assembler Language and "C" programs. "WORDSTAR", as an example, runs with no modification.

THE BAD NEWS

However, probably the first thing you will notice is that 2.0 takes up more disk space! For example, the early version of COMMAND.COM was 4959 bytes. In 2.0 it requires 17644 bytes. The early BASICA needed 16768 bytes of disk space. Version 2.0 requires 25984 bytes! So those two files together take up about 22000 more bytes on a diskette.

Moreover, whereas you probably found you didn't need COMMAND.SYS on many or most of your diskettes, the new version is frequently overlaid, so that it's convenient to have it available on most of your disks, other than purely data disks.

Version 2.0, however, can format diskettes with 9 sectors per track instead of 8 -- increasing the capacity of single sided diskettes to 180K bytes, and double-sided to 360K bytes. However, if you do this you are committed to 2.0. It can use either format, but the older versions of DOS cannot read the 9-sector format.

Some of the nice utility programs many of you use, either don't work at all, (such as "FK", for assigning strings to the function keys), or don't work completely correctly, (such as the Directory Listing program "SD", which doesn't show the correct amount of bytes available on the diskette and doesn't list the diskette label, or volume name).

I'm certainly less than enthusiastic about the new DOS Manual. IBM had achieved a mostly-deserved reputation for excellence in the early days of PC Manuals, but this latest one is like the usual computer manual -- incoherent, disconnected, and illogical.

And that's just about all of the bad news. If you can cope with that, the rest is good.

THE GOOD NEWS

These are some of the advantages you can gain from DOS 2.0 with no other changes in your system except learning the new instruction formats.

1 - Disk Labels.

If you succeed in operating with half a dozen diskettes, you likely have no problem. But if you've accumulated several dozen, and need to depend on file dates and times to tell you which is the latest disk and which is the back-up, you'll love having an individual name or label on each diskette. The name prints with the DIR listing, or can be displayed with the "VOL" command at any time.

2 - EDLIN

Both Neil Bennett and I struggled along with EDLIN for months. I finally bought WORDSTAR. But now I often use the new EDLIN, because it has MOVE, COPY, and PAGE instructions -- and for minor editing it's faster than WORDSTAR. If you use it, you'll love the added features.

▷

Programming Topics

(continued)

A LOOK AT DOS 2.0

(continued)

3 - CHKDSK

This instruction no longer automatically "recovers" the sectors that are not allocated to any file. If you run it with "CHKDSK/F" and answer "Y" when it asks if you want unlinked sectors put into a file, it will store them under a file name such as "FILE0000.CHK".

This means, among other things, that if you have had a program that created a lot of data, but that "blew up" before the output file was closed, you can recover the data.

4 - Redirection of I/O devices.

You ought to go for this one. It has numerous applications, but a common one is printing the contents of a file on the printer. The usual way of doing this has been to enter "Ctrl PrtSc", and "Type Whatever.dat".

Now you can enter "Type Whatever.dat > PRN:" and the output will be sent only to the printer (not the screen) -- and it quits when the printing is done. You don't need to remember to toggle "Ctrl Prtsc" again to stop additional output from going to the printer!

5 - Clear Screen

When the DOS prompt is on the screen, type "CLS" (the same instruction as in BASIC), and the screen will be cleared and the prompt will appear at the top of it.

6 - DISKCOPY will also Format a diskette

This is particularly useful in copying diskettes that have been formatted with 9-sectors per track onto unformatted diskettes, or onto ones previously formatted with 8-sectors per track. DISKCOPY will "format as it goes", producing 9-sector copies. (Personally, I usually prefer to format normally and then "COPY *.*").

7 - The MODE command can now select the monitor.

If you are fortunate to have both a "B&W" and color monitor, you have no doubt developed either Assembler or "Peek and Poke" routines for selecting the one you want to use. The MODE command will now do this for you.

8 - Queing files for printing.

There is both hardware and software available on the market for "spooling" files to the printer, so that you can proceed with editing or another program at the same time that your print files are printed.

DOS 2.0 accomplishes this with the "PRINT" command. You can queue up to 10 files for printing in a quasi-"overlapped" mode. If the PC isn't busy doing other things, it will operate the printer. (Don't listen to the printer -- it starts, stops and stutters a lot -- but it does print files while you do other things).

9 - Recovering files from bad disks.

I've been lucky! In 15 months of operating 3 PC's, I have yet to experience a disk failure. If you have already purchased a program to recover files from a disk that goes bad, tough luck, because DOS 2.0 can do it for you. ▶

John Broderick, CPA

Broderick & Associates recommends and sells

SAGE II 68000-BASED MICROCOMPUTER

BRODERICK & ASSOCIATES has found SAGE II so powerful and flexible that we can no longer contain our excitement.

SAGE II is a low-cost 8 MHz **68000** supermicro. It has been shown to be the highest performance computer in history for its price. Byte magazine Sept. 81, lists the SAGE as executing code faster than any other existing microcomputer.

PASCAL, FORTH, and **C** programmers have been using the Sage II as a development system and target compiling their software to slower and less flexible microcomputers.

Business users find the **SAGE II** a cost-effective way to process information without worrying about the computer becoming obsolete. Plus, we handle a variety of application software from spreadsheets to accounting systems.

BRODERICK & ASSOCIATES is offering a special price of \$2995 for a SAGE II configured with 128K and one 800K floppy disk (excluding the terminal). This price includes the full UCSD p-SYSTEM OPERATING SYSTEM, a \$1,400. value. To find out more about the Sage II or to join the Dallas Sage Users Group call (214) 341-1635.

Programming Topics

(continued)

A LOOK AT DOS 2.0

(continued)

10 - SORT

This "extended" DOS instruction will sort practically anything you use for input. For example, my "C" Compiler produces a map file of functions listed alphabetically. I can very quickly produce a new file with the functions sorted by memory address, using

```
A> SORT < C.MAP/+4 > C.SRT
```

This says to sort the record from the input file C.MAP, starting in column 4 of each record, and produce an output file C.SRT. And it's fast!

"SORT" is not without problems, however. I have sometimes gotten the message "Insufficient disk space", which I believe to be an incorrect message. Generally, if I try to sort a file in which the first few characters in the sort string are identical in each record, I have trouble.

Nevertheless, for most applications it is great -- and much easier than writing individual sort programs.

11 - Diskette Directories

DOS 2.0 includes a number of routines for operating the hard disk that is part of the "IBM XT". Since most of you will continue to operate with 0, 1, or 2 diskette drives, unless having only one directory per diskette has caused you difficulties, I wouldn't fool around with "paths", sub-directories, and the like.

On your operating disk, delete the following programs:

```
BACKUP
FDISK
RESTORE
TREE
```

If and when you need them, you can get them from your Distribution Diskette. In the meantime, there's no use in taking up disk space you don't need.

12 - Other Programs you may not need

Unless you are sure your printer can handle it -- and unless you use it often enough to make it worthwhile, I'd delete GRAPHICS from my operating disks. This, in effect, plots graphics displays on the printer, and your printer may not even be capable of it.

I'd also suggest deleting file ANSI.SYS. Unless you are interfacing with a large system that uses ANSI commands for video control (such as on Digital Equipment VT-100 terminals), I wouldn't waste the disk space to store the program.

13 - The "Window" statement in BASIC


If you're into graphics, you'll probably really appreciate this new instruction. In essence, the center of the screen becomes location 0,0 -- the top is +1y, the bottom -1y, the right side +1x and the left -1x. This makes it much easier to plot graphs in relative terms, for example. And, you can "zoom" in and out by changing coordinates. Super visual effects!!

14 - Extended BATCH instructions

Since the majority of us do not run our PC's with a multi-tasking operating system, we're really operating a "batch" system, whether we use BATCH files or not.

Although still primitive, there are several worthwhile additions to the Batch file commands. A bit of ingenuity is needed to really use them effectively. And, Batch operations tend to be slow. Nevertheless, there are occasions when they can be very useful.

In summary, DOS 2.0 is probably well worth the money -- and is almost a necessity if you intend to try to keep up with the developments in the PC field.

Philip Chamberlain 

Programming Topics

(continued)

DOS 2.0 Monitor

After obtaining DOS 2.0, and scanning all the new commands, my reaction was "See whiz, this looks like it could be very powerful." However, it is sometimes hard to see how all the pieces play together when what you get from the manual is a not too detailed explanation of each piece. I thought it would be helpful to many to take an example application and explain how the pieces of DOS 2.0 work to accomplish the application. Hopefully, in addition to getting a potentially useful application, you will also gain some ideas about how you can utilize DOS 2.0.

The mechanism that ties the pieces of DOS 2.0 together for the user is called a BAT file. This is basically a text file containing several DOS commands and DOS executes them one at a time. All you have to do is to reference the BAT file from the DOS command prompt, and perhaps pass it some parameters. These features were in DOS 1.0 and 1.1, so there is nothing new so far.

Application: Execution Monitor

Some systems I have worked with use the concept of a monitor. The best way to explain this is to walk you through an example. First, you enter the monitor, specifying the file name of your choice. Whatever you type afterwards is executed by the system as though you were talking directly to it, but it is also retained into the file you specified for execution later. If you like what you did, you can exit the monitor, replaying what you just did, again, and again. If you don't like what you did, you can start over. One system which supports this type of capability is the UCSD p-System.

Monitors are helpful if you have a long series of DOS commands, and you need the blow by blow dialogue with the system telling you when you that you are in error at the time you go astray. The following two BAT files implement a monitor using no user written programs, just DOS 2.0 BAT commands. They are shown just as you would input them to EDLIN.

```
A>EDLIN MONITOR.BAT
```

```
I
```

```
1: ECHO OFF
2: ECHO ECHO Begin Execution of %1.BAT>%1.BAT
3: ADDTOMON %1
```

and,

```
A>EDLIN ADDTOMON.BAT
```

```
I
```

```
1: ECHO OFF
2: ECHO DOS Command(RTN), or F6(RTN) to execute,
3: ECHO or CtrlBreak to quit
4: COPY CON: MONLINE.BAT>NUL:
5: COPY %1.BAT+MONLINE.BAT>NUL:
6: ECHO ADDTOMON %1>>MONLINE.BAT
7: MONLINE %1
```

Looks simple enough, right? Wait until you hear the explanation of what goes on when the user does something simple like typing in:

```
A>MONITOR ABC
```

The first thing is MONITOR.BAT is executed, and one parameter is passed, namely "ABC". The first line turns echo mode to off for the purpose of making what goes on within the BAT file as invisible as possible.

The second line is complex, and quite different in effect from the first line even though they are the same command. Since the characters immediately following ECHO are neither "ON" or "OFF", DOS assumes its task is to display whatever follows as a message, after all parameter substitutions have been made to the contents of the line. Ordinarily, this would cause:

```
ECHO Begin Execution of ABC.BAT
```

to be typed onto the screen whether or not the ECHO mode was on or off, but the > symbol redirects this text to a file, namely "ABC.BAT". Consider what this is doing. It is creating a file that was specified at the time the user executed the BAT file and embedding the file name inside of the file. Thus, if ABC.BAT is ever invoked, an informative message to that effect will again be ECHOed. This command also has the effect of rewriting ABC.BAT, should that file already exist. >

Programming Topics

(continued)

DOS 2.0 Monitor

(continued)

What about line three of MONITOR? Could this be a BAT file executing another BAT file? DOS 2.0 says no problem, provided it occurs in the last line of the BAT file. The reason they make this restriction is so DOS doesn't have to remember where it left off when the called BAT file completes, a concept required by Subroutines and Procedures in many programming languages.

Now we come to ADDTOMON.BAT. Again, line one turns ECHO OFF to suppress any syntactic garbage caused by the details of the monitor process. Line two does another ECHO, only this time it really goes to the screen. This is to inform the user of what the monitor is expecting, namely to enter either a:

DOS Command(RTN), or F6(RTN) to execute,
or CtrlBreak to quit the monitor.

The show now stops in line four and waits for the user to COPY CON: to a file called "MONLINE.BAT". Notice that more than one line can be copied before execution resumes, and that execution will not begin until the user signifies an end of file with F6 (really a Ctrl Z) followed by a carriage return. DOS 1.0 and 1.1 hackers should be quite used to this convention. Notice also that to reduce visibility of what's going on in the background, the syntactically incorrect "1 FILES COPIED" message produced by the COPY command goes to a special device called NUL:. This is sometimes known as the bit bucket, that place where all data should go that is not really relevant.

Line five concatenates the command entered by the user on back of whatever has been entered previously and throws the "FILES COPIED" message away. A concatenation is automatically assumed when no "to" file is specified.

Lines six and seven accomplish the final trick. Line seven executes the commands that were typed by the user in line four, but first a recursive call to ADDTOMON has to be concatenated to it to make the monitor into a perpetual motion machine and keep it coming back for more until the user's desires are complete. The >> notation redirects the output to the end of MONLINE.BAT instead of a simple > which would rewrite or create it.

When the user tires of the monitor, and wants to execute from it, a simple CtrlBreak in response to the monitor prompt and an affirmative answer to the

"Terminate batch procedure?"

is required. They are then free to execute the BAT file by typing whatever name they gave to it, this example would cause it to be executed with:

ABC

If they wanted to add more to ABC.BAT, then executing

A>ADDTOMON ABC

would accomplish this, while

A>MONITOR ABC

will replace it.

A few nagging questions may be going through your head. I will try to anticipate some of them:

What happens when the user executes something that requires input from the console? No problem. The system is well away from the COPY CON: portion of the ADDTOMON file when the command is actually being executed.

What happens when the user tries to execute a BAT file while within the monitor? No problem. In fact, after the BAT file executes, you will return to DOS rather than the monitor, as if the monitor knows that execution of a BAT file has to occur in the last line. I have already given you a clue as to why this is so.

What if the user wants to use parameters inside of the monitor file that is being created? There are significant problems here. I don't know whether these problems can be eliminated. Exactly what the problems are I will leave as an exercise to the reader. If you find a solution, I would like to hear from you.

Tom Prickett



Programming Topics

(continued)

More Notes on DOS 2.0

A curious soul at one of the computer stores asked "what is the difference between DOS 2.0 and DOS 1.1?" I replied "twenty dollars." After playing with 2.0 for about two weeks, I have found other differences.

DOS 2.0 is indeed Microsoft's "Bridge to XENIX" (UNIX). I have used UNIX and did not like it; however, it was better than most operating systems in the early 70's. I will let Microsoft report on the glowing features of DOS. Shall we look on the other side of the coin? After all, DOS does cost sixty large coins.

DOS 2.0 is big - about twice as big as 1.1. The resident part is about 21,000 bytes, with the transient part of COMMAND.COM another 17,000 bytes. To compensate, IBM increased the number of sectors on diskettes from 8 to 9. Now we have four types of diskettes to manage. If you keep DOS, BASICA and CHKDSK on a double sided diskette, the same space remains on a 2.0 nine sector diskette as you had with 1.1 with eight sectors.

DOS 2.0 seems to be slower than DOS 1.1. A screen dump of 8,000 bytes takes about 1.5 times as long. Pac-gal runs only slightly slower so perhaps only DEBUG is slow. Formatting and copying diskettes takes the same length of time. The best part is that DOS 2.0 has brand new bugs.


IBM and Microsoft seem to enjoy putting into DOS all the poor programming practices that the rest of the world tries to avoid. IBMBIO has self-modifying code; the interrupt value of an INT instruction is stuffed just before it is executed. The best bug I have found so far will only occur if you have more than 64k bytes of memory and you get a disk error.

The DMA controller chip in the PC cannot address across a real page boundary (64k). With DOS 1.1 the 512 byte sector that crossed a page boundary was buffered to a reserved 512 byte block in DOS and moved to the proper memory location by the CPU. In order to eliminate this

waste of memory, DOS "optimization" (DOS manual pp 14-24) now swaps the block that is across a page boundary with the next block, performs the disk operation on the second memory block location (that does not cross a page boundary), then swaps the blocks back. Neat isn't it?

This is not so neat. It takes four times the memory moves as before, with more instructions per move. The swaps are blind, with no regard to what is in the second block. On a diskette error, while the blocks are swapped DOS tries to do a unswap before reporting the error. This is where the bug shows up.

While trying to pop registers ES:BX from the stack to do the unswap, DOS misses the correct stack level by one and gets the segment offset (BX) into the segment register (ES) and the value hex 550 into the offset register (BX). DOS then swaps the 512 byte block starting at ES:>550 with the block at ES:>750. ES can be pointing anywhere. Typically, you would be looking at the bottom of the feet of your computer in 100 microseconds. The worst that could happen is to trash the diskette file allocation tables in memory and you wouldn't notice until you tried to read the diskette the next time.

Will Janoschka 

PC Update

The following news items are reprinted with permission from Computer Industry Update published by Industry Market Reports, Los Altos, CA.

IBM unveiled a combination hardware/software package which emulates 3270 devices running under BSC. An adapter operates at speeds up to 9600 bps and is \$300. The Binary Synchronous 3270 Emulation Version 1.0 software is 700. The package was developed by Micro-Integration of Friendsville, MD. Also announced were the Personal Computer Professional Editor, a full-screen editor for \$130 and the USCD p-System Run-Time Support package for \$50.

>

PC Update

(continued)

Scion of Reston, VA announced the PC640 Professional Color graphics display system for the PC. It generates a 640 by 480 pixel 16-color display from its 256K byte on-board memory. The hardware/software package is \$1595.

Ven-Tel of Santa Clara, CA enhanced the Pc Modem Plus with a communication software package called Crosstalk. It allows PC users to link to mainframes, minis or other personal computers and to transfer files to other crosstalk compatible systems. The PC Modem Plus system with Crosstalk costs \$389.

Vynet of Los Gatos, CA is offering telephone interface and voice synthesizer capabilities for the PC. Prices begin at \$450.

CMA Micro Computer of Yucca Valley, CA announced the Teach PC, a Basic teaching and IBM DOS training program for \$150.

Desktop Computer Software of Santa Cruz, CA introduced the Graph 'N' Calc business graphics system for the PC. It provides advanced menu-driven statistical and financial functions in table formats. It is \$200.

Information Software of Sausalito, CA introduced the first three members of the Financial Management Series for the PC. General ledger and financial reporter, accounts receivable, and accounts payable are interactive with each other and run on PC-DOS. They cost \$600 each or \$1500 for all three.

Intellect Associates of Holbrook, NY announced the Window full-screen text editor for the PC. It is \$150.

International Management Services of Framingham, MA announced the IBM Personal Computer Software Directory for \$35.

Micro Architect of Arlington, MA introduced the AP accounts payable system for the PC to track current and aged accounts payable. It costs \$248.

Microstuf of Atlanta, GA announced the Transporter software which provides unattended IBM PC to computer communications. The price is \$295.

Satellite Software International of Orem, UT announced the Wordperfect word processing package with merge, math, column and printer support capabilities for the PC. It is \$495. The firm is also offering SSI Forth, a version of the Forth programming language for \$95.

Sheppard Software of Redding, CA introduced the MicroPert-0 graphics oriented projects scheduling package for the PC. The price was \$500 through March 1st.

STSC of Rockville, MD announced the APL*Plus/PC System for the IBM PC. It is \$595.

Synergistic Software of Renton, WA introduced the Basic Programming Tools, a set of Utilities for the PC running under Basic. It costs \$120.

Tominy of Cincinnati, OH made available its Data Base-Plus, data base management system and application development software for the PC. The user can develop an application system and transport that has application to any other computer for which the Data Base-Plus is available. It runs under PC-DOS operating system. Languages supported include Basic, Cobol, Pascal, assembler and Data Base-Plus. A single development system costs \$5850 and the programming language costs \$1500.

Corona Data Systems of Westlake Village, CA introduced an external version of its Personal Hard Disk and optional external power supply for the PC. The disk is \$2195 for 5MB and \$2695 for 10MB. The power supply is \$189.50.

Data Acquisition Systems of Boston, MA introduced a measurement and control system integrated with the PC based on their Series 500 modular data acquisition and control system. Prices for the Series 500 begin at \$2700.

Hurricane Laboratories of San Jose, CA is offering the Nirvana board module which expands the Personal Computer with up to 640K bytes of memory. The board is \$995.



**SHOP
& SWAP**

(Four lines free each month to members, otherwise cost is 15 cents per word. Ads will run three consecutive months unless notified earlier to cancel. Ads must be renewed after three months if continuation is desired. Mail ads to the Editor.)

WANTED: Advertisers for PC NEWS. Rates are reasonable, exposure is great! Circulation approximately 140 PC users/owners. Contact J.P. Pribyl, at phone 817/275-4109 for particulars.

Street Electronics' ECHO-6P VOICE Synthesizer. \$279. COMPUTER GOLD Microsystems, 2417 Coleshire Drive, Plano, TX 75075. We accept Visa or M/C. Phone (214) 596-2598. Southwest dealer for Street Electronics

FREE Consultants Directory Listing: DEADLINE MAY 1 Microsystem Consultants Agency, 2116 E. Arapaho Suite 155, Richardson TX 75081, or call 690-4224. Extra lines, listings, ads avail., starting at \$5

FOR SALE - 2 SSDD Tandon TM-1's with IBM controller card (\$300), IBM printer card (\$60), Centronics 739 PC-compatible printer (\$300), JFORMAT software (\$40). **FOR TRADE -** Heavy-duty 120 cps Centronics 702 dot-matrix printer brand new. Trade for correspondence quality dot-matrix printer or sell (\$850). Ernie Stokely, Work 688-2910, Home 350-4430.

FOR SALE - IBM ASYNC attachment \$60; D.C. Hayes Smartmodem \$175; call Rich Lefebvre 661-6223 or 596-7953.

Word Processing and proof-reading. Reasonable rates Text copy, or program copy acceptable. Completed text can be returned by telephone line. User-Soft Wares, call Tom or Dianna Prickett (214) 387-3667, afternoons.

Member address labels for sale. Contact PC NEWS Editor for particulars.



Need 3" ²⁰⁰⁰ clean out plug



North Texas PC News
2025 Rockcreek Drive
Arlington, TX 76010



Robert Millikan



37c
USA

FIRST CLASS

