

San Jose PC Club Newsletter

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IBM PC Club

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IBM SAN JOSE PC NEWSLETTER

It's summertime and my camping gear is almost packed. Due to my 2-week vacation in June, the next newsletter will be in the mail shortly before the August meeting.

NEWS FLASH: I've just learned that Larry Crismond, Manager of Employee PC Sales, will attend the June PC Club meeting. The Q&A should be lively!

Now for this month's newsletter. It has

- May meeting summary
- another 2-sided BIOS patch
- a book review
- more BASIC notes
- tidbits from other club newsletters
- a file-append program

Happy reading.

JUNE/JULY ACTIVITIES

DATE	DAY	TIME	LOCATION	EVENT
June 8	Tue.	5 p.m.	STL Cafeteria	PC Club Meeting
June 9	Wed.	7:30p.m.	DYSAN Santa Clara	SVCC Meeting
June 15	Tue.	5 p.m.	STL K210	PASCAL-CP/M SIG
June 16	Wed.	5 p.m.	S.J.Cafe.Class A	Hardware SIG
June 22	Tue.	5 p.m.	STL K210 or Cafe.	VisiClub (SIG) Meeting
July 6	Tue.	5 p.m.	STL K210	Advisory Meeting
July 13	Tue.	5 p.m.	STL Cafeteria	PC Club Meeting
July 14	Wed.	7:30p.m.	DYSAN Santa Clara	SVCC Meeting
July 21	Wed.	5 p.m.	S.J.Cafe.Class A	Hardware SIG
July 27	Tue.	5 p.m.	STL K210 or Cafe.	VisiClub SIG
Aug. 3	Tue.	5 p.m.	STL K210	Advisory Meeting

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MAY PC CLUB MEETING

Stan Rosenfeld introduced the new club Vice President, Lee Wersal. Lee's responsibilities include scheduling PC Club program agendas and filling in for Stan when he's gone - these items require considerable work and patience. Thanks and congratulations, Lee.

Stan's informal survey: of those who received their PC contracts, how many days elapsed between contract receipt and PC pickup? The majority answered in the 40-60 day range, several responded with 25-35 days, and one individual waited 90 days.

Lost contracts: Paul Conrad discovered that an unknown number of employee contracts were lost in the mail between Boca Raton and San Jose. If you suspect that your contract has gone astray, call Boca for another one.

Other PC clubs: Toward the back of this issue is a list of clubs that our club is in touch with via letter, net, and/or newsletter. Also included in this issue are some selected articles from their newsletters.

Newcomers' session: John Mace, Bob Krampetz, and other advisory members are holding an after-meeting session every month to try to answer questions that new members have about configurations, software, hardware, service, etc.

DOS:Lu Spriggs explained 1.05 diskette differences. Please note that this diskette does NOT contain any DOS upgrade; the primary changes are for BASIC.

Club program library: Dennis Day now has 3 diskettes of programs. Due to the number of out-of-state requests for copies, the club would like to make local IBM PC clubs the points of distribution. Here's how it works: if you want a copy, contact your local PC club. If they don't have a copy, have a club officer request a copy from Dennis. In this way, the copies won't always have to be made by 1 overworked person.

PC Demo: Burt Snitz gave a good talk and demo of Time Manager using an Advent hooked up to a PC.

FROM YOUR CLUB PRESIDENT

Flying high - 37,000 feet and some great new Boca announcements in my bag.

By the time you read this, 2-3 weeks from now, not only will you all undoubtedly have read the 5/7 announcement, but probably discussed it many times over.

Let me summarize and comment.

1. The 5-1/4 inch 320KB Diskette Drive:

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I could use one of these dudes yesterday! Goodbye constant disk swapping. (Realizing full well that sooner or later I'll have a "dire" need for still more storage, but for now ...).

There are two interesting associated announcements which you may or may not have heard about. For one, a price reduction on the 160KB drive for IBM employees is effective on all shipments from Boca after April 14, 1982.

Also, 160KB drives can be exchanged for reconditioned IBM diskette drives which have been upgraded to 320KB capacity.

Note that a new Diagnostic Aids Diskette for the 320KB drive may be obtained from the dealer. The 320KB drive is supported also by CP/M-86(TM) and the UCSD p-system(TM), Version IV.0.

2. DOS/BASIC Version 1.1:

Nice update! The changes which I got most excited about were:

- Speedup (thank you, Larry Rosen)..about doubles disk performance.
- Diskcopy and diskcomp now use all of available memory, speeding up these operations even more.
- Redirect parallel printer output to Asynchronous Communications Adapter. This enhancement really simplifies the use of serial printers and other serial devices.
- DIR command will pause when screen is full. A significant annoyance removed.
- File appending capability and LINK program support of all compilers makes program production easier.
- FORMAT and CHKDSK commands return statistics/improved statistics. In my Vol. Ed. class I take 5-15 minutes to explain how to deduce success of FORMAT. No more!
- Time of day recorded in disk directory enables easier disk file identification of files created on the same day.
- And of course the (necessary) support of 320KB disk drives. And it's done right (in my estimation) in that the two sides of the diskette are treated as one large diskette side.

The new DOS manual is now supplied with a nice reference card.

We are also being advised that if we are converting from DOS 1.0 to do 1.1 that we replace all copies of DOS 1.0 on all disks with 1.1, e.g. not run with a mixed 1.0, 1.1 environment. When this "clean" switchover hasn't been made, it is suspected that some disk problems have occurred. Caution for now, more as I find out the details. But in any case, it's trivial to replace 1.0 on all diskettes.

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- BASIC is enhanced with, among other features, faster program load, and better control of non IBM printers.

3. A BASIC Compiler:

Who wouldn't want faster program execution? The employee price is attractive. (Everyone would use the compiler if it were free.) You'll have to decide. You don't have to be a programmer to make use of this Compiler. It is almost totally compatible with the BASIC interpreter, meaning that you should be able to take your favorite BASIC program, compile it, and realize significant performance improvement. Dynamic array dimensioning may turn out to be the function not supported occurring most often in interpreter BASIC programs. If you don't understand this function, the change is relatively simple and I feel assured you will receive any help you need at our club meeting. (This is what hobby clubs are all about.)

4. Printer Price Reduction (for machines shipped after May 10, 1982)

The printer price reduction for employees is being praised by everyone I've spoken to as an excellent change for Boca to have made. Not just because "lower prices are better", but because Boca is showing that it is always re-evaluating prices and makes changes when warranted.

5. Accounts Receivable by BPI:

6. Inventory Control by BPI:

These two are comprehensive packages for those of you targeting your PC for business use, including possible IBM internal use.

A personal opinion now, about price reductions and the effect (mental and money) on one who has already purchased at the old price. We have all experienced this phenomena in the past on everything from heads of lettuce to homes. You feel bad, I feel bad when we realize that if we had "only waited" we would have saved some money. I put these occurrences in the category of bad luck; sometimes darn bad luck. Some stores will refund the difference when price reductions occur within a specified period of time, typically a week. I'm quite sure this is done as "good business" and not because of any legal requirement. (In the case for IBMers, we've had our orders in since 1981, so it isn't like we just made our purchase.) And of course those of us who placed orders after the "window closed" will be getting the new price (as well as those "first dayer's" with ship dates after May 10, 1982). Also, for how far into the future might one want retroactivity? And then again, how about price increases?! Nuf said ... just bad luck.

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CLUB MATTERS

First of all I,d like to invite any comments you all may have on club operation. Please address them to me. We have an advisory board meeting on the first Tuesday of every month and I will make sure that any suggestions you have for the club will be thoroughly discussed at the next meeting.

Second, I have a specific request for speakers and instructors for our monthly general meetings. I like demos! What have you done with your PC that you can show us? On the job or at home applications are fine. Burt Snitz's demo of Time Manager at our May meeting was the type of presentation I believe we really benefit from. But what do you think? When you believe you have something of interest for a meeting, call Lee Wersal, who will see to it that you are put on the meeting schedule.

Third, let me have your ideas on having a club bulletin board system , whereby with a modem etc., you could access from home a data base of the latest info and local news about our beloved PC. Consider and comment on raising the club dues from \$1.00(!) to \$5.00 - \$15.00 to help purchase such a system.

See you our next meeting.....Stan

IBM PC DOS VERSION 1.1 PRODUCT DESCRIPTION (5/19)

John Bernauer sent us this information on DOS 1.1. It repeats some of Stan's article, but summarizes the release nicely.

The IBM PC DOS Version 1.1 replaces DOS Version 1.0. Version 1.1 supports 320KB diskette drives, and provides several enhancements to DOS version 1.0, Disk BASIC Version D1.0, and Advanced BASIC Version A1.0. Diskette Performance has been improved. Application program support is not affected.

Highlights

- Significant improvement in diskette performance.
- Supports both 160KB and 320KB diskette drives.
- Supports both 160KB (single-sided) and 320KB (double-sided) diskettes in a 320KB diskette drive. (Each diskette's directory identifies it to DOS as either a 160KB or 320KB formatted diskette. A 320KB diskette may **NOT** be used in a 160KB drive.)
- Optional verify after write. (DOS Function Call or /V on COPY command)
- Other enhancements to DOS include:

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- Redirect parallel printer output to async port
 - COPY command will provide a list of file names
 - DEBUG will permit files larger than 64KB to be loaded
 - DIR command will pause once screen is full (commands 'DIR' 'DIR /P' and 'DIR /W')
 - Some compiler output (EXE) files can be converted to command (COM) format for size reduction and faster loading
 - LINK program will support all language compilers
 - FORMAT command provides diskette statistics
 - CHKDSK command returns improved statistics
 - DISKCOPY will format target diskette if necessary
 - MODE will provide async setup and serial printer support
 - APPEND multiple files together (COPY command)
 - PrtSc may be diverted to async port
 - TIME is now an internal function, can bypass with 'enter'.
 - Time of Day recorded in file directory entries
 - DATE is now an internal function, can bypass with 'enter'.
 - DISKCOPY and DISKCOMP use all of available memory for maximum performance.
- Enhancements to BASIC:
 - Disk Basic version D-1.10 (includes all 1.05 changes)
 - Advanced Basic version A-1.10 (includes all 1.05 changes)
 - Faster program load
 - Suppress line feed after carriage return for printers requiring it
 - OPEN statment supports additional control of printers and modems via async port
 - Support up to four buttons on game adapter
 - VARPTR\$ function for music and graphics applications

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DID YOU KNOW?

The AMDEK Color II monitor does not have yet FCC approval for class B (home) use.

VisiCalc purchased from IBM comes with a backup copy, but VisiCalc purchased from VisiCorp does not. Our sources inform us that the documentation is also not the same from the two companies.

SIG CALL

A member from the Palo Alto/Menlo Park area suggested that an area SIG should start up for folks from that area. Stand up at the next meeting or send us a note if you're interested.

16K BUFFER FOR IBM 80 CPS MATRIX PRINTER

Practical Peripherals Inc. has just introduced a 16K buffer card that plugs inside the IBM 80 CPS Matrix Printer. The buffer, which is completely transparent to both the PC and the printer, increases data processing efficiency by eliminating the wait normally experienced while printing.

While printing, the PC is capable of transmitting a 16,000 character document in about three seconds. However, the rate at which the printer can accept characters is limited by its print speed to only 80 characters per second, or about five minutes for a 16,000 character document. You, and the PC, spend five minutes waiting for the slowest device on your system to complete a three second job. The buffer card eliminates this wait by accepting characters as fast as the PC can transmit them, storing them in its buffer, then passing them to the printer at whatever rate it is willing to accept them. You can get back to work immediately while the printer cranks away for five or six minutes. If you wish, you can even power off the PC and the printer will continue printing until the job is complete.

I have been using the MBP-16K buffer card for a few weeks and have had no problems. It is well made and operates flawlessly with normal ROMs, Graftrax ROMs, or MX-Plus ROMs.

John Bernauer, SJEVM1(CUTTRAS), San Jose, TL 276-3577

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BEST OF OTHER NEWSLETTERS

The following are excerpts from some of the newsletters received in PC Club exchanges. Turnabout is fair play of course: any IBM PC Club that wants to share articles in our newsletters with their members should do it. Although there really are articles that may interest you more, these were selected for general interest, with the length of an article taken into account. Copies of other club newsletters are kept at the libraries at STL and San Jose for your leisure reading (but make copies - don't take the originals home).

COMMUNICATIONS EXAMPLE

Austin IBM Personal Computer Club, February 1982.

Until now, I have maintained the membership name and address file on my home TRS-80. The list was transferred to a PC using the Asynchronous Communications program at the PC end. The program was configured in PC-to-PC mode, and the communications program at the TRS-80 end was configured to conform to the PC protocol. Basically, the protocol for down-loading into the PC requires that the host (in this case, the TRS-80) be able to do the following:

1. Wait for the PC to send the line "Ready to Receive File", ending with the characters Begin Transmission (IBG - Hex 1C) followed by Carriage Return (CR - Hex 0D).
2. Return a header line ending with the same sequence. This can contain informative material, such as "Beginning Transmission"; it is not part of the file.
3. Transmit the file; each line (record) ending with a CR.
4. While transmitting, monitor the input from the PC over the line. If a Transmit Off (XOFF - Hex 13), CR sequence is seen, transmission of the text file must be paused until Transmit On (XON - Hex 11), CR is received. This sequence is the receiving computer's defense against being overrun. The receiving PC can also send an ITM-CR combination (see below) to abort the file transfer.
5. At the conclusion of file transmission, send a line ending in Terminate Transmission Mode (ITM - Hex 17), CR. This trailer line is not part of the file, and can contain descriptive information (e.g., "Ending Transmission"). It is the signal from the host to the PC to close the disk file it has been creating and resume normal communications mode.

Most intelligent terminal control programs available for home computers support the XON -XOFF protocol. Some modification might be necessary to send the IBG and ITM characters when required. I was using the OMNITERM program for the TRS-80, which contains complete translation tables between keyboard

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and transmission line, so I could simply assign Hex 17 and 1C to unused keys (ampersand and percent, for example) and key in the header and trailer lines. OMNITERM already has the capability of moving a disk file down the line while supporting XON - XOFF.

The actual transmission of this file (10,579 bytes) took four or five minutes using 300 baud acoustic couplers at each end. There were no apparent XON - XOFF pauses; evidently the PC is able to stay ahead of a 300 baud line even when writing to disk at the same time. Probably a good example of the PC's DMA for disk I/O. The only "anomaly" was that the "Beginning Transmission" header made it onto the PC's resultant disk file; the documentation says it should not. I don't know if this is a problem with the program or my mistake somehow. In any case, it was trivial to delete the one line.

Written by John Dierdorf.

HAYES SMARTMODEM PINS

Capital PC, April 1982

If you are using the D.C. Hayes Smartmodem, be aware that the RS-232 pins are compatible with those of the IBM Async Board except for pin 4 (Request to Send) from modem to the IBM PC. This may be tied to pin 20 (on the IBM end) which is the Data Terminal Ready pin.

Written by Ramona Landberg.

GRAFTRAX 80 INSTALLATION

Poughkeepsie Microcomputer Club, April 1982.

GRAFTRAX 80 is three ROM chips that plug into the EPSON MX-80 or MX-80FT. Even though the installation procedure was 10 steps long, it took only five minutes. It involved removing one ROM, inserting three ROMs, and snipping one jumper. The internal DIP switches have to be reset since they now have new meanings. One of interest is the 'slashed zero' switch which automatically slashes zeros. It also causes the self test to print all characters including italics.

Written by John Barry.

DISABLING WRITE PROTECT

Silicon Valley Computer Club, April 1982.

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Ever wanted to write on disks without write protect notches? You can easily disable the write protect on your disk drive using a microhook or other jumper. Turn off the power and remove the computer's case. Locate chip IF on the disk drive, it's the one in the far right corner. Attach one end of your microhook to pin 4 and the other end to pin 7. The built-in write protect switch connects pin 4 to ground (pin 7) whenever a non-write protected disk is inserted. By jumping pin 4 to pin 7, the drive thinks it always has a non-write protected disk in. Make sure the metal on the hooks does not touch any other pins. Replace the case and you're ready to go. If you want the option of enabling or disabling the write protect, use 2 microhooks. Attach one microhook to pin 4 and the other microhook to pin 7. Run the free ends of the microhooks out the back of the computer as you replace the case. Now by coupling the two external hooks you disable the write protect, by uncoupling the hooks you enable the write protect.

(Ed. note: Be careful.)

(Stan's comment: I would notch the disk.)

Written by Steve Winegarden and Nancy Nehring.

ASSIGNING BASIC PF KEYS

Austin IBM Personal Computer Club, March 1982.

If you don't like the default PF key assignments in BASIC, write a program like the one following; it re-assigns the keys each time you load BASIC. Simply use 'BASIC(A) KEYS' - KEYS will execute, change the key settings and wipe itself out. Remember to SAVE a copy of the program before testing it!

KEYS.BAS

```
10 ' Redefine PF keys
20 '
30 ' JRD 3-13-82
40 '
100 KEY 1,"list"
200 KEY 2,"run"+CHR$(13)
300 KEY 3,"load"+CHR$(34)+"b:"
400 KEY 4,"save"+CHR$(34)+"b:"
500 KEY 5,"cont"+CHR$(13)
600 KEY 6,"chr$("
700 KEY 7,"tron"+CHR$(13)
800 KEY 8,"troff"+CHR$(13)
900 KEY 9,"files"+CHR$(34)+"b:*.*" +CHR$(13)
1000 KEY 10,"cls"+CHR$(12)
2000 NEW
```

Written by John Dierdorf.

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YOUR KEYBOARD DOES NOT A GOOD CASSETTE RECORDER MAKE

Washington Area IBM Employees Personal Computer Club, April 1982

Avoid misconnecting the PC keyboard plug to the cassette recorder jack. The keyboard and cassette jacks are identical. They are situated side-by-side in the same cutout on the back panel of the systems unit. Component damage may result if you plug the keyboard where the cassette should go. See the Guide to Operations page 2.4 for a detailed diagram of these connections. A member suggests taping over the cassette jack if you are not using a tape cassette recorder as an I/O device.

Written by Bob Liverman.

PASCAL NOTE

IBM Manassas Personal Computer Club, May 1982

When downloading a file from VM/370, the left brace character can be improperly transmitted. Moral: use the (* *) comment notation instead of braces.

Written by Robert H. Beckley.

USING MONOCHROME DISPLAY AND A COLOR MONITOR

Austin IBM Personal Computer Club, April 1982.

The BASIC program segment shown below is useful for those who have both the Monochrome Display and a monitor attached to the Color/Graphics Adapter. A GOSUB to the appropriate entry point will 'freeze' the active screen, clear the inactive one, and make the newly cleared screen 'live.' GOSUB 60080 brings up the Monochrome display (80 column) while GOSUB 60040 brings up the Graphics monitor (40 column). This permits programs to make the PC act almost like a 3277/618 Tektronix combination: menu selection can be done on the mono screen, and a new image put up on the graphics screen which will remain there when control is returned to the green screen again. If this is kept on disk in ASCII form, the lines can easily be merged into another routine. Note that by testing location &H0410, you could easily modify this code into a single entry-point 'switchscreen' subroutine.

```
60040 'to COLOR
60041 DEF SEG=0: A=PEEK(&H410): POKE &H410,(A AND &HCF) OR &H20
60042 WIDTH 80 :KEY OFF
60043 SCREEN 1: CLS: LOCATE ,,1,6,7: COLOR 0,7: RETURN
60080 'to MONOCHROME
60081 DEF SEG=0: A=PEEK(&H410): POKE &H410,A OR &H30
```

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60082 SCREEN 0: COLOR 7,0: WIDTH 80
60083 LOCATE ,,1,12,13: KEY ON: RETURN

Written by John Dierdorf.

ANOTHER 2-SIDED DISK DRIVE PATCH

Silicon Valley Computer Club, May 1982.

(Ed.note: This is the program we promised you in last month's errata. It is outdated by DOS 1.1, but you can use it until you get the new release. The patch comes from a reliable source, but we have not had a chance to verify it.)

```
5 REM * ANOTHER DOUBLE SIDED DRIVE DOS PATCH * By R.Tobey
10 FOR I=1 TO 85:READ N:C=C+N:NEXT:READ N:IF N<>C THEN 40
20 RESTORE:OPEN "r",1,"dsdrive.com",1:FIELD 1,1 AS N$:FOR I=1 TO 85
30 READ N:LSET N$=CHR$(N):PUT 1:NEXT:CLOSE:PRINT"CREATED":END
40 PRINT"***ERROR VERIFY DATA***":END
100 REM MOVE routine moves PATCH code to 50:58-7F and points vector to
105 REM itself
110 DATA &H56,&H51,&H57,&H50,&H8C,&HC0,&H50,&HBE,&H2D,&H01,&HB9,&H28,
    (continued)&H00,&HBF
120 DATA &H58,&H00,&HB8,&H50,&H00,&H8E,&HC0,&H8B,&HC7,&H26,&HA3,&H82,
    (continued)&H00,&H8C
130 DATA &HC0,&H26,&HA3,&H84,&H00,&HFC,&HF2,&HA4,&H58,&H8E,&HC0,&H58,
    (continued)&H5f,&H59
140 DATA &H5e,&HCD,&H20
150 REM PATCH code is disassembled and explained below
160 DATA &H52,&H80,&HFA,&H01,&H7E,&H18,&H80,&HFC,&H05,&H75,&HOE,&H57,
    (continued)&HBF,&H1D
170 DATA &H00,&HC6,&H01,&H01,&H81,&HEF,&H04,&H00,&H79,&HF7,&H5F,&H80,
    (continued)&HE2,&H01
180 DATA &HFE,&HC6,&H9C,&H9A,&H59,&HEC,&H00,&HF0,&H5A,&HCA,&H02,&H00,&H254A
```

050:58 7d

```
0050:0058 52          PUSH DX          ;SAVE CURRENT DRIVE,HEAD
0050:0059 80FA01      CMP DL,01        ;CHECK DRIVE NUMBER
0050:005C 7E18          JLE 0076        ;IF 0/1 (A/B) THEN EXIT
0050:005E 80FC05      CMP AH,05       ;CHECK FOR FORMAT FUNCTION
0050:0061 750E          JNZ 0071        ;JUMP IF NOT
0050:0063 57          PUSH DI          ;SAVE D1 REG (BX PNTS TO PARM TABL)
0050:0064 BF1D00      MOV DI,001D     ;GET OFFSET OF LAST SEC HEAD PARM
0050:0067 C60101      MOV B,(BX+DI),01 ;CHANGE TABLE ENTRY TO HEAD 1
0050:006A 81EF0400    SUB DI,0004     ;DI POINTS TO NEXT ENTRY
0050:006E 79F7          JNS 0067        ;LOOP IF NOT COMPLETE
0050:0070 5F          POP DI          ;RESTORE DI REG
0050:0071 80E201      AND DL,01       ;MASK OFF HI DRIVE BIT
0050:0074 FEC6          INC DH          ;SET HEAD NUMBER TO 1
0050:0076 9C          PUSHF          ;CORRECT STACK
```

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```
0050:0077 9A59EC00F0    CALL EC59,F000    ;LONG CALL TO DISK HANDLER
0050:007C 5A          POP DX           ;RESTORE ORIG DRIVE,HEAD NUMBER
0050:007D CA0200       RET L,0002       ;RETURN CLEAN STACK
-d50:80 8f          ;NOTE 50:82 BELOW POINTS TO START
0050:0080 EB 13 58 00 50 00 00 00-00 00 00 00 00 00 00
```

K.X.P.....

--NOTE the DOS patch runs in a place in memory assigned to BASIC. Extensive tests have not yet uncovered any conflict and a call to Microsoft confirmed that they are NOT using this part of memory in the current version. However a new version might utilize it --- but by then I expect an official Double Sided DOS to be out.

*** PROBLEM ALERT *** Double sided drives and IBM Async software
If the planar switches are set for 4 drives (or 2 double sided drives) the IBM Async package program TERMINAL V1.00 dies due to a conflict between its machine language subroutine and extra buffer space assigned by DOS when more than two drives are specified.

*** SUGGESTED SOLUTION *** In TERMINAL.BAS V1.00
Change line 115 DEF SEG =&HE80 (to=&HEC0).
Change line 210 IDSEG=&HE80 (to &HEC0).

DEBUGGING DEBUG

Poughkeepsie Microcomputer Club, May 1982

This month I have a bug in DEBUG to report. The DEBUG program which comes with PC DOS is a really neat way to "poke" around and discover things about the system. DEBUG provides functions for dumping out storage in either dump format or as pseudo-source code, for displaying and setting the registers, for executing a program with breakpoints, and all other sorts of neat stuff. Unfortunately there is at least one bug in DEBUG. When using the U command (Unassemble) the opcode X'EB' is disassembled improperly. This bothered me and I decided to try to debug DEBUG.

By using DEBUG to disassemble itself, I gradually uncovered enough about its inner workings to find the bug (a bit like playing Adventure). As I suspected, and it eventually turned out, DEBUG's U command is table-driven. The table starts at CS:OFFB and consists of 4 bytes for each 8-bit opcode. The first 2 bytes of each entry contain a pointer to the mnemonic (or zero if a 2-byte opcode), the next 2 bytes contain a pointer to a routine which formats the instruction for the opcode. In the case of X'EB' the routine pointer in the table is correct but the mnemonic pointer is not. The fix is easy: just correct the mnemonic pointer to point to the 'JMP' mnemonic instead of 'JP'. Actually you just need to change 1 byte at CS:13A7 from 95 to 89. How do you do this? Well you use DEBUG of course! The structure of the PC allows recursive invocation of DEBUG since a new set of segment registers can be set up making all code relocatable.

Here's how to make a corrected version of DEBUG on your B disk:

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1. Type the command: A>debug.com

This invokes the debug program and loads another copy of itself.

2. Give a new name to the resulting program with the N command:

```
-n b:fixdebug.com
```

This will prevent overwriting the system debug program.

3. Display location 13A7 by typing:

```
-e 13a7
```

The system should display: 049F:13A7 95.89

The 049F may be different on your system.

4. Write the updated program with the W command:

```
-w
```

5. Exit DEBUG with the Q command:

```
-q
```

```
A>
```

You should now have a file called **FIXDEBUG.COM** on your B disk. Use this in place of **DEBUG**. If you have your **DOS** master disk filed away in a safe place (you do don't you?) then you can replace **DEBUG.COM** on your working backup copy with the fixed one.

Written by Rick DeNatale.

BOOK REVIEW

Okay, so what's a book review doing in a place like this? Well, with a title like BUGS...A Novel Of Terror In The Computer Age, how can any self-respecting computer nut pass up checking it out?

Set in the not-too-distant future, this book describes an era where machines are measured in BIPS, no longer MIPS, and the sum of the country's knowledge is gathered into a giant Washington complex not very imaginatively titled "THE BRAIN". Running alongside these 'BIPpers' are the venerable 370/158 and the monstrous 370/188. (I wonder if the author signed a non-disclosure agreement!) I'm not sure the technical scenario hangs together but then that's the author's license.

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Although the center is a political hot spot, things perk along until the center's director, our hero, while doing a TV special with a group of visiting school kids, mentions there are BUGS in the computers that sometimes come out and pinch you. This hits a hot button in one young girl and her specially trained, over-imaginative, psychic mind starts materializing these critters in computers all over the place. They amass the strength to chew through buildings, not to mention a few persons along the way.

What follows is the tale of trying to do away with these despicable little devils. The story gets mired in psychic-religious cultism, a semi-love story that never quite gets off the ground, the Washington political intrigue, and the little darling that created the whole mess is the biggest non-character a story ever had. On top of that, in the end ----- Nah - I don't want to tell it all.

I wish, just for once, the computer could be the hero, staunchly defending the country even after it's power has been shut off, or silently networking to all known computers to discover how the universe was created, or some such wonder.

BUGS, by Theodore Roszak, Doubleday, 1981. Do I recommend it? - I give it 2 stars on the traditional scale of 4 or 5 just because it mentions IBM San Jose and a couple of well-placed four-letter words give it some unforgettable lines. Maybe after you read it, you'll never refer to those programming challenges again as "B...".

Paul Conrad

IBM PC Club

BASIC INFORMATION

PROGRAMMING NOTES

(Ed. note: We believe that the problems described in the first two paragraphs below are fixed by DOS 1.05 and 1.1.)

More on the misplaced decimal point. It seems that you can show that the result of the division ($A\# = .1D/10$) is correct by multiplying $A\#$ by 1000 and printing the result which is 10. So the original calculation was correct but the handling of the double precision variable on output was not correct.

Several IBMPC (Yorktown) notes indicated that LPRINTing CHR\$(7) caused the internal speaker to beep but not the printer. If you add 128 and do the LPRINT (LPRINT CHR\$(135)) then you can get the printer speaker to beep and not the internal speaker. The high order bit is ignored by the printer so it looks like CHR\$(7) has been sent, but BASIC sees the whole byte and ignores it.

The multiple screen page availability is an interesting feature. It looks very useful for multiple panel type programs. The following program writes to all pages (assumes a WIDTH of 40 and a Color/Graphics adapter) and allows you to move sequentially from one panel to the next. To exit the program, use CTRL BREAK.

```
10 FOR I=0 TO 7 ' modify all pages loop
20 SCREEN 0,0,I,0 ' get to the page to write on
30 CLS ' make sure we have a clean page
40 PRINT "This is written to page ";I ' put something on the page
50 NEXT I
60 I = 0 ' start on the first page
70 LOCATE 10,10:INPUT A$ ' position cursor and wait for response
80 SCREEN 0,0,I,I ' set current visible page also active page
90 I=I+1 ' to get to next page
100 IF I<8 THEN GOTO 60 ' loop through the pages
110 I=0 ' back to the beginning
120 GOTO 60 ' start display loop again
```

Have you ever wondered about how high a frequency you can hear. The SOUND command may be the answer in finding out. The operands on the SOUND command are the frequency in Hertz and a time duration. The speaker in the PC may not be very good for low frequencies but seems quite adequate for the higher frequencies (above 10,000 Hertz). One thing I noticed when I tried the following program was that the volume seemed higher at some frequencies than others. This may be dependent on the speaker response but it also may be dependent on my own hearing ability. I would appreciate hearing about the experiences of others who try this program.

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```
10 INPUT "frequency in Hertz ";A ' range is from 37 to 32767
20 SOUND A,10 ' 10 seems to give a good duration
30 GOTO 10 ' an invalid frequency gets you out of this loop
```

J.F. Pycior STLVM7/PYCIOR

COMMENT ON THE USE OF THE BASIC RANDOMIZE STATEMENT.

Reference: Ray Trimble to Paul Conrad, May 4, 1982 PC Club Newsletter.

I tried out the RANDOMIZE statement, which Ray Trimble submitted, and it apparently worked fine. However, there is a sneaky problem with it that may jump out and bite you later.

The problem is that it only works before 3:28 am (when the clock is between 00:00:00 and 03:27:59). After that, taking the INT of the clock (as described), results in a number that is greater than 32767. That is the limit of an integer variable, and is also the limit of the positive number used by the RANDOMIZE statement.

The net result is that if you haven't set the time, the statement works for about 3 and 1/2 hours, then it fails. If you have set the time, the failure probably occurs immediately.

Suggest that you do not use the hour portion of the clock when using this method. Then you will never overflow the largest integer, and will never overflow the RANDOMIZE statement. This would be:

```
RANDOMIZE INT(VAL(MID$(TIME$,4,2)+RIGHT$(TIME$,2)))
```

Mel Duke

FILE VOLUME-SERIAL PROGRAM

Below is the text for a trivial basic program which will place a volume serial file onto the disk inserted into the A: drive. The purpose is to provide a machine readable record of the diskette identification for reading by a catalog and free space listing program to be supplied later. This will then allow you to insert your diskettes, one by one, and have the directories accumulated, sorted, and reported for a combined listing of all files on all your disks. I believe this is an easier way of developing a catalog than any other I have seen when you do not have a resident hard disk. This code will probably be integrated into the catalog listing program also.

```
10 DIM VOLSER$(15)
```

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```
20 CLS
30 PRINT "Insert Disk Into A: Drive"
40 INPUT "Type in VOLSER ";VOL$
50 IF VOL$ = "end" or VOL$ = "quit" THEN END
60 VOLSER$ = "A:" + VOL$ + ".VOL"
70 OPEN "O",#1,VOLSER$
80 PRINT #1,VOL$
90 GOTO 30
```

Paul Conrad M63/C476 Santa Teresa 8-543-5019 (STLVM7/CONRAD)

APPEND PROGRAM

(Ed. note: Once again, a program to give a DOS 1.1 function.)

The program below was published in the March 1982 issue of Personal Computer Age. It combines up to 8 new or existing files. Caution: the program ends with a SYSTEM command, so SAVE it before running it.

```
1020 '
1030 'APPEND, Version 1.0
1040 'Author: J. Crone
1050 'Date: 1-25-82
1060 '
1070 'Copyright 1982 by Personal Computer Age. All rights reserved.
1080 'This program is published for the personal use of readers of
1090 'Personal Computer Age. Commercial use is prohibited.
1130 '
1140 '
1150 'Initialize.
1160 DEFINT A-Z: KEY OFF: CLS
1170 CLOSE 'any open files
1180 'Set the following variable equal to a number slightly larger than
1190 'the length of the average line in the files you will be
    (continued) appending
1200 AVG.LINE.LEN = 70
1210 ARRAY.SIZE = FRE(0)/(AVG.LINE.LEN + 1)
1220 DIM TRANSFER$(ARRAY.SIZE)
1230 '
1240 '
1250 'Display title and instructions
1260 DATA "    PERSONAL COMPUTER AGE - File combining utility    "
1270 DATA "Enter file names as requested. An output file is required"
1280 DATA "and may be a new file or an existing file. Up to eight"
1290 DATA "append files may be entered. After completion the output"
1300 DATA "file will contain all files in the order listed. Type"
1310 DATA "'/' as the last entry to start execution."
1320 DATA "Note: this utility works on text files only."
1330 COLOR 0,7: READ TEXT$: LOCATE 3,(40-(LEN(TEXT$)/2)): PRINT TEXT$:
    (continued)COLOR 7,0
```

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```

1340 COL= 10: FOR I = 5 TO 10: LOCATE I,COL: READ TEXT$: PRINT TEXT$:
    (continued)NEXT I
1350 '
1360 '
1370 'Get output file name.
1380 ON ERROR GOTO 1890
1390 I = 1
1400 COL = 25: LOCATE 13,COL: LINE INPUT: "OUTPUT FILE NAME  -"
    (continued),FILE.NAME$(I)
1410 IF INSTR(FILE.NAME$(I),"/") THEN GOTO 1800 'Abort.
1420 OPEN FILE.NAME$(I) FOR APPEND AS #1
1430 '
1440 '
1450 'Get append file names.
1460 FOR I = 2 TO 9
1470     LOCATE 25,1: PRINT SPC(79)
1480     LOCATE 12 + I,COL: PRINT USING "APPEND FILE NAME _## - ";
    (continued)(I - 1);
1490     LINE INPUT FILE.NAME$(I)
1500     IF INSTR(FILE.NAME$(I),"/") THEN GOTO 1580 'Done.
1510     'Test for good file specification.
1520     OPEN FILE.NAME$(I) FOR INPUT AS #2: CLOSE #2
1530     NEXT I
1540 IF I = 10 THEN I = 9
1550 ON ERROR GOTO 0
1560 '
1570 '
1580 'Do the job.
1590 LOCATE 25,1: PRINT SPC(79)
1600 FOR J = 2 TO (I - 1)
1610     LOCATE 25,1: PRINT SPC(79);
1620     COLOR 23,0: LOCATE 25,25: PRINT "APPENDING ",FILE.NAME$(J);:
    (continued) COLOR 7,0
1630     OPEN FILE.NAME$(J) FOR INPUT AS #2
1640     ERASE TRANSFER$ 'Garbage collection, the fast way.
1650     DIM TRANSFER$(ARRAY,SIZE)
1660     FOR K = 0 TO ARRAY.SIZE 'Read lines from input file.
1670         IF EOF(2) THEN GOTO 1700
1680         LINE INPUT #2,TRANSFER$(K)
1690     NEXT K
1700     IF K = 0 THEN GOTO 1750
1710     FOR L = 0 TO (K - 1) 'Write lines to output file.
1720         PRINT #1, TRANSFER$(L)
1730     NEXT L
1740     GOTO 1640
1750     CLOSE #2 'Input file.
1760     NEXT J
1770 CLOSE #1 'Output file
1780 '
1790 '
1800 'More work to do?
1810 LOCATE 25,1:PRINT SPC(79);: LOCATE 24,15
1820 LINE INPUT; "JOB COMPLETE. MORE FILES TO TRANSFER? (Y/N)";RESPONSE$
1830 IF LEFT$(RESPONSE$,1) = "Y" OR LEFT$(RESPONSE$,1) = "y" THEN GOTO 1860

```

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```
1840 CLS: STOP 'SYSTEM 'Job complete, return to DOS.
1850 'Erase screen and go again.
1860 FOR I = 11 TO 25: LOCATE I,1: PRINT SPC(78);: NEXT I
1870 GOTO 1370
1880 '
1890 'Trap common errors.
1900 BEEP
1910 MSG52$ = "TOO MANY FILES OPEN, ALLOCATE MORE BUFFERS AND TRY AGAIN."
1920 MSG53$ = "THAT FILE DOES NOT EXIST. PLEASE REENTER."
1930 MSG64$ = "INCORRECT FILE SPECIFICATION. PLEASE REENTER."
1940 MSG67$ = "BAD FILE NAME OR TOO MANY FILES. REENTER OR USE A NEW DISK."
1950 MSG70$ = "REMOVE WRITE PROTECT TAB FROM DISK."
1960 MSG71$ = "PUT A DISK IN THE DRIVE AND CLOSE THE DOOR."
1970 LOCATE 25,1: PRINT SPC(79);: LOCATE 25,1
1980 TRAP = 0
1990 IF ERR = 52 THEN PRINT MSG52$;: CLOSE: END
2000 IF ERR = 53 THEN PRINT MSG53$;: TRAP = 1
2010 IF ERR = 64 THEN PRINT MSG64$;: TRAP = 1
2020 IF ERR = 67 THEN PRINT MSG67$;: TRAP = 1
2030 IF ERR = 70 THEN PRINT MSG70$;: TRAP = 1
2040 IF ERR = 71 THEN PRINT MSG71$;: TRAP = 1
2050 IF TRAP = 0 THEN GOTO 2090
2060 'Found the problem. Go back and try again.
2070 LOCATE 12 + I,1: PRINT SPC(79);
2080 IF I = 1 THEN RESUME 1400 ELSE RESUME 1480
2090 'Not a common system error. Let the system handle it.
2100 ON ERROR GOTO 0: CLOSE:
2110 SAV.ERR = ERR: RESUME 2120
2120 ERROR SAV.ERR: END
```

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