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P.O. Box 1328
Boca Raton FL 33432
VM(BCRVM1/PCNEWS)
ITPS(ABCB)

PREFACE

This document is a publication of the Entry Systems (ES) organization at Boca Raton, Florida. It is classified **IBM INTERNAL USE ONLY** and is not to be distributed outside of IBM. It may be freely copied or transmitted within IBM for business use.

Articles to be considered for publication and subscription requests for this document should be addressed to:

    Newsletter Editor   -or-   VM(BCRVM1/PCNEWS)
    2L9 / 227-2
    P.O.Box 1328
    Boca Raton, FL 33432

The editor prefers to receive articles in machine-readable form, sent to VM(BCRVM1/PCNEWS). Specifically, articles should be sent as FILES, via either DISK DUMP or XMIT.

If it is not possible to send machine-readable articles, then hard-copy articles will be accepted.

As used within this document:

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EDITORIAL SECTION

In PCN8205 I mentioned that we would try to return to a regular publication schedule beginning with PCN8207. However, we have changed our thinking.

As you are well aware, Entry Systems is a dynamic environment, with frequent developments. We would like to be able to bring you these new developments as soon as possible. Accordingly we will publish when circumstances warrant, but at least once in every month.

I realize this causes uncertainty among readers who have been asking what our publication schedule is. On the other hand, you can now be pleasantly surprised whenever an issue of the PC Newsletter arrives. You should also be pleased that you will have the latest information soon after announcement.

Daily I receive many requests for subscriptions, and I'm pleased that so many people want to receive this newsletter. To assist me in processing subscription requests, I ask that you send me your request in either of two ways: (1) over the Corporate Job Network, sent to me at VM(BCRVM1/PCNEWS), and (2) by mail, sent to me at 2L9/227-2, Boca Raton FL (external address: 2L9/227-2, P.O. Box 1328, Boca Raton FL 33432). **Please do not call me for a subscription.**

You may request to receive this newsletter in either of two ways: soft copy via the internal Corporate Job Network (CJN), and hard copy via mail. For soft copy, please give me your node and userid. For hard copy, please give me your IBM mailing address, whether internal or external mail.

We are able to send out soft copy as fast as the network can handle our traffic. However, we are experiencing delays in printing and addressing hard copies. (Of course this is a reflection of the newsletter's popularity.)

If you currently receive hard copy, and if you have access to the Corporate Job Network, I encourage you to change your subscription to soft copy, by sending me at VM(BCRVM1/PCNEWS) notice that you would like to change from hard copy to soft copy, and specifying your node and userid.

We are attempting to reduce the amount of network traffic we generate, as well as the number of hard copies we print, by establishing distributors of the PC Newsletter at major network nodes. Our distributors are volunteers who have graciously offered to receive soft copy PC Newsletters, and to make them available to others at their sites for copying and distribution.

Occasionally we receive requests for soft copy subscriptions from people at nodes where we have already established distributors. In such cases our response to these potential subscribers is to refer them to their local distributors. We hope you understand our reasons for this action.

As time progresses, a few of our distributors may change jobs and may no longer act as distributors. We would very much appreciate being notified when this happens. If you are a distributor and contemplate being unable to continue, at the very least please tell us. Better yet, try to find a replacement, and give us that person's name.

At the risk of being inundated with offers, I request that those people interested in becoming distributors of the PC Newsletter at their network node should indicate their interest to me. If we already have a distributor at your node,

I'll tell you. But if we don't, we'll welcome you into the fold, because it will help us greatly in alleviating our distribution load.

Thank you.

Mike Engelberg

FROM THE ENTRY SYSTEMS CHIEF PROGRAMMER

Continuing my column that began in PCN8204, here are some additional video/graphics tips and techniques.

160 x 100, 16 Color Graphics

This mode is essentially 80-column color. We split each character in half using character number 222 (left half has all dots off, right half has all dots on). The color of the left half of the character is set using the background color, and the right half by the foreground color. This gives us 80 x 2 = 160. By filling the entire 16KB video buffer and only taking 2 scan lines from each character (instead of the normal 8), we wind up with 160 x 100, where each "pixel" is 4 dots wide (half a character), and 2 dots high. Unfortunately, the colors displayed will only be accurate on RGB monitors.

Example:

```
10   DEFINT A-Z
20   SCREEN 0: WIDTH 80
30   OUT &H3D8,9              'enable 16 background colors
40   DEF SEG=&HB800           'address video buffer
50   FOR OFS=0 TO 16191 STEP 2   'fill buffer with character
60   POKE OFS,222             '    #222 and set all color
70   POKE OFS+1,0             '    color attributes to black
80   NEXT
90   OUT 980,4: OUT 981,124   'vertical total = 124
100  OUT 980,6: OUT 981,100   'vertical display = 100 lines
110  OUT 980,7: OUT 981,112   'vertical synch = 112
120  OUT 980,9: OUT 981,1     '2 scan lines (0 and 1)
130  REM To draw a blue line from 0,20 to 159,20
140  OFS = (20-1) * 160
150  FOR I = OFS+1 TO OFS+159 STEP 2      'attribute bytes
160  POKE I,&H11              'set both foreground and background
170  NEXT                     '     to blue (color 1)
```

80 x 100, 16 Colors, 2 Pages

This is similar to 160 x 100, except that you use 40-column mode and only half the buffer. That way you can have 2 pages of 80 x 100 in the video buffer. Use the information on hardware scrolling from the April 23 (PCN8204) issue to switch pages. You will want to set registers 12,13 to 0 to address the first page, and 4000 decimal to address the second page. This mode works fine on composite video monitors and TV's.

Two New Palettes in Graphics Mode

To switch palette 0 (green, red, brown) to high intensity (light green, light red, yellow), do the following:

    OUT &H3D9,&H1X (where X is background color)

To switch palette 1 (cyan, magenta, white) to high intensity, do:

    OUT &H3D9,&H3X (where X is background color)

You will find that these high-intensity versions of the two palettes are much more viewable, and that text superimposed on graphics is a lot clearer on TV's or on composite monitors.

<div align="right">

Mel Hallerman
ES Programming and Publishing

</div>

INTERNAL BUSINESS SECTION

The articles in this section were submitted by individuals outside of the Entry Systems organization. These articles have not been reviewed by Entry Systems for accuracy, and are not official statements of either Entry Systems or the IBM Corporation.

IBM PC programs described in this section were developed using IBM resources and are the property of IBM. These programs are provided to improve the capability and productivity of IBM employees on the job. They are not be be discussed with non-IBM employees. There is no commitment to release as IBM products any programs described in this section.

Articles for this section can be submitted by anyone within IBM. Articles should be brief, not more than two pages in length. The author must be identified, and the article cannot be confidential. Responsibility for clearance of material submitted is the responsibility of the author.

Articles should address one of the following areas:

* Announce a program or technique for the IBM Personal Computer.
* Query for the existence of a program or process.
* Describe current work-in-progress (not IBM Confidential).
* Express an individual's point of view (letter to the editor).

The editor reserves the right to not publish articles received, and to perform editing as required.

REMINDER: PC SYMPOSIUM ABSTRACT DEADLINE IS JUNE 30

A reminder: **June 30** is the deadline for submitting abstracts of candidate papers for the upcoming Symposium on Internal Applications of the IBM Personal Computer. (This is an extension of the June 18 date given in PCN8205.)

Abstracts should be submitted to:

    Karl Konnerth
    532 / 17-123
    IBM T. J. Watson Research Center
    P.O. Box 218
    Yorktown Heights NY 10598

If at all possible, please submit abstracts in machine-readable form to Karl Konnerth at VM(YKTVMT/KON2).

For further information, please consult PCN8205, and/or contact:

    Stan Rosenfeld, Symposium Chairman
    VM(STLVM11/ROSENFEL)
    Santa Teresa CA
    TL 543-5150, outside line 408-463-5150
    ITPS(AAST)

LETTERS TO THE EDITOR

8206-01   MORE KUDOS

"PC Newsletter 8205 is beautiful. In fact, without it I probably would not have been able to make an update to my PC order. ..."

* * *

"You are speedy!! Just proves the value of your letter!!..."

* * *

"This is a great newsletter, and the improved formatting you have added is outstanding. Keep up the good work."

* * *

"You can be proud, your newsletter is a well-produced effort."

* * *

"Let me congratulate you on the excellent newsletter you have produced. I have been reviewing PCN8204 and find it full of outstanding information."

* * *

"If you people keep sending out newsletters that get our creative juices flowing, how do you expect us to get any work done?"

8206-02   LETTER: CORRECTION TO BASIC TIPS

In PCN8205, Software Information, IBM BASIC Tips, Full-Screen BASIC Invocation: line 60 of the program is missing an equal sign. The correct coding is:

    IF CHR$(SCREEN(DR%,DC%+1))=" " THEN 130

John Bernauer, VM(SJEVM1/CUTTRAS), G74/142, San Jose CA, TL 276-3577

8206-03   LETTER: A TIP FROM EMILY POST

(Editor's note: This is the author's title, not mine.)

For those of you who mail diskettes to others requesting copies of IBM internal PC software, a few short requests are in order:

• Really try to obtain it locally. Check with your site coordinator to see who might have it at your site already.

- Pack your diskette so it is easy to reuse the protection around the diskette.

- As a minimum, format the diskette. By the way, this is a really nice time to send a "goodie" to someone else. It's really neat to get a surprise package along with a request to send the diskette back with the author's goodie on it.

- Get a copy of the associated document (if available) from another source, like Yorktown.

- Include a self-addressed envelope, with your external address, unless you are very certain that your internal address is known at the other end. Also include your business card or a letter with your phone number on it.

- When you receive it, reproduce it for your site coordinator, so he can satisfy local requests for additional copies.

These steps make it a lot easier for the person at the other end, who after all has things to do, such as developing more and better stuff for us all.

Dick Dievendorff, DEMO14(DIEVEN), NAD Region 14 Market Support, 3424 Wilshire Blvd., Los Angeles CA 90010

8206-04   LETTER: PRINTING SUGGESTIONS

First, congratulations on a great beginning for a "wholly owned" Boca Newsletter. You've set a good standard to maintain.

What is your strategy on subscriptions? Are you going to mail tons of hard copies to all who request it? Or a master copy to each site library? Or use VNET? Or what?

I'm currently offended that 100s (1000s?) of us are each printing 1 or 2 copies on a 3800, 6670, 1403 or whatever--which can't be cost effective. But, probably every IBMer who has access to a PC wants or needs the good stuff in the newsletter. We (you) need a cost effective way to distribute it.

How about reducing it to 65% (so that two 8.5x11 pages fit on one page)? The advantages are:

1. It costs half as much to print.

2. It costs less to bulk mail.

3. If it were carefully formatted, with each set of subject/application/program data on two sides of its own 8.5" x 5.5" page, then individual pages could be removed and placed in the relevant PC documentation binder.

The disadvantage is that it takes some extra work beyond using the facilities of Script/DCF et al.

Charles Stott, VM(TUCVM2/STOTT), 62C/071, Tucson AZ, TL 562-2074

(Editor's reply: thanks for your comment. This issue's editorial responds to points raised in your note.)

READER CONTRIBUTIONS

8206-05 QUERY FOR A HARDWARE SIMULATION PROGRAM FOR THE IBM PC

Has anyone come up with a program for the IBM Personal Computer that simulates hardware? Another term for this is a behavioral simulator. This would be very useful in testing and debugging new adapters.

If anyone has such information, please contact me.

R. Alden, PLKSB/K55YRKAC, Kingston NY, TL 373-5778

8206-06 'SOURCE' DISCOUNT FOR IBM EMPLOYEES

Any IBM employee wishing to subscribe to THE SOURCE can do so at a substantial discount. The normal one-time signup charge of $100 has been reduced to $29.95 for IBM employees. To receive the discount, simply put the words 'IBM EMPLOYEE' any place you can find room at the top of the SOURCE application form. If you wish to speed things up, put 'Attention Richard Plourde' on the outside of the envelope. Application forms can be obtained by calling the SOURCE number listed in your local phone book.

John Bernauer, VM(SJEVM1/CUTTRAS), G74/142, San Jose CA, TL 276-3577

8206-07 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 made well, and operates flawlessly with normal ROMs, Graftrax ROMs, or MX-Plus ROMS.

John Bernauer, VM(SJEVM1/CUTTRAS), G74/142, San Jose CA, TL 276-3577

8206-08   TECHNIQUE TO CONTROL DOS FUNCTIONS FROM BASIC

I have used the following technique to pass control to different batch programs from BASIC, and return control to BASIC. The BASIC program can determine which batch program is desired. This is useful if certain DOS functions are needed by a BASIC program (e.g., NAME___AS___, COPY, etc.) without operator intervention.

1. Set up a separate batch program (XFER.BAT in this example) with one statement that will be modified by standard BASIC diskette I/O routines.

2. Be sure to issue the XFER command every time control is passed to BASIC via the DOS command BASIC YOURPROG. Then, when the BASIC command SYSTEM is issued, the interrupted batch program will again gain control and execute XFER.

3. The requested batch program can return control to BASIC (followed by the XFER command), so that further returns to DOS are possible under BASIC control.

4. The BASIC program should reset the XFER batch program (e.g., REM Return to DOS), so that manual return to DOS is possible.

Example:

```
Auto Exec Batch Program
   AUTOEXEC.BAT
      CHKDSK A:
      CHKDSK B:
      DATE
      BASICA YOURPROG
      XFER

Transfer Control Batch Program
   XFER.BAT
      REM RETURN TO DOS

BASIC Code to Modify Transfer Control Batch Program
   OPEN "XFER.BAT"      'for output as #1
   PRINT #1,"USERBAT"
   CLOSE #1
   SYSTEM

Required DOS Function
   USERBAT.BAT
      COPY ......
      ERASE .....
      BASICA YOURPROG
      XFER
```

Bob Billman, NAD B.O. 484, Harrison NY, TL 367-4894

8206-09   VISICALC PROBLEM

I am trying to calculate a floating average.

I have keyed in a formula that appears something like this:

   @sum(b1...g1)-@min(b1...g1)/(@count(b1...g1)-1)

I expect to add a group of numbers, subtract the smallest number, and divide by the total of numbers minus one.

The problem is, the VisiCalc manual states that @min will find the smallest number in a list of non-blank fields. However, if I use any-thing but the exact number of fields in the list, I get different re-sults.

Also, as soon as I expand the @min range to include a blank field, the results change.

I would appreciate any assistance.

Ken Brown, PLKSH/KENBROWN, 53P/201-2, Kingston NY, TL 373-6303

(Editor's reply: The min(list) arguments must not contain any blank fields. If a blank field is detected, the function returns a zero an-swer. The min(list) function requires a complete set of arguments.)

8206-10   BASIC QUESTION

I am writing a math program in BASIC to generate random math problems
(add, subtract, multiply, divide). I use the random number generator
to give me the numbers, and then use "CINT" to convert them to whole
numbers. The problem is that, every once in a while, one of the num-
bers has a blank in it.

My program looks something like this (a lot is left out for simplicity
purposes).

```
10  first1 = rnd*1000      this gives me a 3 prime number
                               with decimals
20  first2 = rnd*1000      this is my multiplier
                               (same as above)
30  topone = cint(first1)  round up to nearest whole number
40  botone = cint(first2)  round up to nearest whole number
50  locate 11,39           center of screen
60  print topone           first whole number on top
70  locate 12,39           center of screen
80  print botone           second whole number on bot
90  ans1 = topone*botone
```

I then proceed, asking for the correct answer, do some checking, and
loop back to generating the numbers.

The problem is this: every once in a while one of the numbers comes up
with a blank in it, e.g.,

```
967
3 5
```

Most times, when I print the answer, it also has a blank in it, and it
is wrong based on any manipulation of the blank number.

Ken Brown, PLKSH/KENBROWN, 53P/201-2, Kingston NY, TL 373-6303

(Editor's reply: you are printing a short number over a long number.
E.g., 123 prints as space-1-2-3-space, while 1 prints as
space-1-space. Therefore the trailing 3 was not blanked out. Use
PRINT USING to format output.)

8206-11   CAUTIONS REGARDING WRITE-PROTECTED DISKETTES

Two instances have occurred at this site which warrant passing on.
Both are in regard to write protected diskettes.

In the first situation, after prolonged use of a write-protected disk-
ette, the write protect tab became depressed enough for the diskette
to be written on. Check your write protect tabs frequently, and if
you notice them being depressed, add another tab over the top of the
first one.

In the second instance, the user received a write protection error
message with the reply abort, or retry option. After inserting the

correct unprotected diskette in the drive and replying retry, the system wrote the directory from the protected diskette over the top of the directory of the unprotected diskette. Do not reply retry to the write protect error message if you have changed diskettes.

Dave Brown, VM(DAYVMH1/B311873), MVS(DAYBIS/B311873), 19-6VG-2, Dayton NJ, TL 529-7947

8206-12   SER1DA PROGRAM VERSION 0.5 NOW AVAILABLE

Now available are two programs, one written in BASIC and one in EDX, to connect the IBM Personal Computer to an EDX-based Series/1.

Connection to the Series/1 is via the 7850 TTY card, using a simple 3-wire hookup. All communication takes place at 9600 baud; however, actual transmission speed, due to program limitations, is around 3000 baud.

Program options are as follows:

1.   Display dataset

2.   Print dataset

3.   Copy dataset to diskette

4.   Series/1 Terminal

5.   Return to BASIC

At this time, only download is supported. An upload feature is planned in the next release.

The terminal option allows the user to start the EDX program directly from the PC. Since I am over 100 feet from my Series/1, this option has been especially useful for downloading from the host to the Series/1 prior to downloading to the PC. Note that SER1DA works well with data in EXPORT 1.0, 2.0 or 3.0 format.

If you send me your blank diskette(s), I will be glad to load both the BASIC and EDX programs on your diskettes and return them to you. The EDX program will be put on an EDX 3.0 Series/1 diskette, if desired. I have a 300 baud modem if you want to try it.

Jack Cameron, MVS(BTVMAE/D814246), B68/617-2, Burlington VT, TL 435-3452

8206-13   QUERY FOR DEAF TTY ATTACHMENT TO IBM PERSONAL COMPUTER

I am interested in contacting anyone working in the area of a deaf TTY attachment to the IBM Personal Computer (National Deaf TTY Network). One manufacturer, Krown Research, Inc. of Los Angeles, makes a unit called Porta Printer Plus, which can both communicate with the network

and also serve as a portable computer terminal (a straight ASCII option is available). There may be others that I am not yet aware of that have similar functions.

Cliff Conger, VM(ENDAPLVM/CONGER), 745/40-3, Endicott NY, TL 252-1276

8206-14   VOLUME SERIAL FILE FOR 'A' DISK

Below is the text for a trivial BASIC program which places a volume serial onto the disk inserted into the A: drive.

The purpose is to provide machine-readable diskette identification that can be read by a catalog and free space listing program (to be supplied later).

You will be able 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.

This is the easiest way I have seen of developing a catalog when you do not have a resident hard disk.

This code will probably be integrated into the catalog listing program also.

```
10 DIM VOLSER$(15)
20 CLS
30 PRINT "Insert Disk Into A: Drive"
40 INPUT "Type in VOLSER ";VOL$
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, VM(STLVM7/CONRAD), M63/C476, Santa Teresa CA, TL 543-5019

8206-15   QUERY FOR 8-INCH DISKETTE ON PC

I would like to know if there is any work being done on the attachment of an 8-inch diskette drive (DS/DD), and adapter for the PC.

Jack DeVerter, VM(PLKSE/KR20JEDC), Kingston NY, TL 373-2591

8206-16   QUESTION ON CO-PROCESSOR SOCKET

Referring to the co-processor socket on the system board: I have an Intel 8086 microprocessor, and am wondering if it can be used in place of the Intel 8087 microprocessor?

Steven Dickes, VM(RCHVMV/STEVE), Rochester MN, TL 456-9575

(Editor's reply: The Intel 8086 will not work, because it is a main processor rather than a co-processor.)

8206-17   AVOIDING SEED NUMBER PROMPT

To avoid prompting a game player with a seed number for the BASIC random number generator, you can seed it by using part of the system time of day as follows:

    RANDOMIZE 60*VAL(MID$(TIME$,4,2)) + VAL(RIGHT$(TIME$,2))

Dick Dievendorff, DEMO14(DIEVEN), NAD Region 14 Market Support, 3424
    Wilshire Blvd., Los Angeles CA 90010

8206-18   PRINTING THE PC NEWSLETTER ON HONE

A comment on printing the newsletter once we receive it on HONE: The instructions in the first three lines of the Personal Computer Newsletter do not work properly on HONE. The correct command I have used is:

1.   SPOOL PRINT TO P3286   (This puts it on local branch printer)

2.   SCRIPT2 PCNXXXX (PROF(SSPROF) TWOPASS PRINT DEV(3270) BIND (10)

Without DEV(3270), the printout is bunched up. Without PRINT, the output goes to the screen.

Kim Frank, B.O. 495, TL 222-1251

8206-19   COURSEWARE ON THE IBM PERSONAL COMPUTER

A recent two-day meeting was held in Atlanta on the subject of Courseware on the IBM-PC. The vehicle considered was IIPS/IIAS, or as much of that product as possible.

A list of needs and wants, both long and short range, was defined.

It was the consensus that we address this area as effectively as possible. The education market is watching IBM; the interest shown by SRA is a factor. SRA already has products that run on other micros. IBM should be there too.

I will be the contact person for information on this project.

Dick Gage, VM(CAMBRIDG/RGAGE), Cambridge MA, TL 249-9273

8206-20   LIST COMMAND IN A BASIC PROGRAM

In newsletter PCN8204, article 8204-10 by John Thomas, "Scroll Routine For Basic Programs", showed how to scroll a Basic program using function keys 7 and 8 and the LIST command.

There are some unusual problems with the LIST command in a BASIC program. The arguments of the LIST command cannot be parameterized, e.g. 10 LIST N-M or 10 LIST "N-M". In addition, the program terminates after the LIST is executed, e.g., 10 LIST 10:PRINT "HI", will not print HI.

Is this an error, or the way it is intended?

Peter M. Hirsch, VM(PALOALTO/HIRSCH), 63M/046, Palo Alto CA, TL 465-3117

(Editor's reply: yes, it is intended this way. Please refer to the BASIC manual.)

8206-21   PC - EDX COMMUNICATION

The following program will make the IBM Personal Computer function as a standard EDX Terminal when connected to a Series/1 via a TTY adapter. The program has operated satisfactorily in San Jose at 9600 baud, but change line 2400 if a different baud rate is desired. The TTY port should be generated with the option ECHO=NO.

Another program has also been written to interface with the EDX Laboratory Automation Software utility $LISTUT3 to acquire data from the Series/1 and store it on a PC diskette for user processing. This program illustrates some of the techniques necessary to implement program-to-program communication with an existing EDX application program which thinks it is receiving and transmitting data to a terminal, when in fact it is a PC program on the other end of the TTY line.

More information is available by contacting the author.

```
100 '
110 '         Initialize the screen
120 '
130 CLEAR: CLOSE: CLS: SCREEN 0,0: WIDTH 80
140 '
150 '         Disable BASIC's function keys
160 '
170 KEY OFF: FOR I = 1 TO 2: KEY I, "": KEY(I) ON: NEXT I
180 '
190 '         Display prompts on line 25
200 '
210 COLOR 0,7: LOCATE 25,1: PRINT"F1=ATTN F2=STOP";: COLOR 7,0
220 '
230 '         Set up function key responses
240 '
250 ON KEY(1) GOSUB 670:  ON KEY(2) GOSUB 720
260 '
270 '         Open the communication line as device #1
280 '
290 OPEN "COM1:9600,N,8,1" AS #1
300 '
310 '         Open the terminal screen as device #2
320 '
330 OPEN "SCRN:" FOR OUPUT AS #2
340 LOCATE 24,1,1
350 '
360 '         Look for input from the keyboard
370 '
380 '
390 B$ = INKEY$:  IF B$ <> "" GOTO 590
400 '
410 '         Look for input from the Series/1
420 '
430 IF EOF(1) THEN 390
440 '
450 '         Print all of the input from the Series/1
460 '         except a -LINE FEED-
470 '
480 A$ = INPUT$(LOC(1),#1)
490 LOCATE ,,0
500 FOR I = 1 TO LEN(A$):
510   C$ = MID$(A,I,1): IF C$<>CHR$(10) THEN PRINT C$;:
520 NEXT I
530 LOCATE ,,1
540 GOTO 430
550 '
560 '         Transmit keyboard input to Series/1 and print
570 '         everything but a -LINE FEED- on the screen
580 '
590 PRINT #1, B$;:
600 IF B$ <> CHR$(8) THEN 630
610   X = POS(0) - 1: Y = CSRLIN:
620   LOCATE Y,X: PRINT #2, " ";: LOCATE Y,X: GOTO 430
630 IF B$ <> CHR$(13) THEN PRINT #2, B$;: GOTO 430
640 '
650 '         Send attention to Series/1 (PF1 entered)
660 '
670 PRINT #1, CHR$(27)+"h": RETURN
680 '
```

```
690 '         Stop program after clearing the screen and
700 '         resetting BASIC's function keys (PF2 entered)
710 '
720 CLS: KEY 1, "LIST ": KEY 2, "RUN"+CHR$(10): KEY ON: END:
```

Bob Martin, VM(SJRLVS1/M060973), K03/282, San Jose CA, +
276-2488 TL 276-2488

8206-22   DOS INTERRUPT 27H

DOS interrupt 27H (terminate but remain resident) works, but the de-
scription in the DOS manual applies only to filename.COM type
programs. Upon return to DOS, CS must point to the program prefix, and
DX must contain the length of the program PLUS THE LENGTH OF THE PRO-
GRAM PREFIX. I was able to make this work by adding 100H to the offset
(relative to my own code segment) of the end of my stack, then doing a
MOV BYTE PTR ES:1,27H to change the second byte of the program prefix
so that a normal program exit (RET) will result in an INT 27H instead
of INT 20H. Of course, I also had to push DS and a word of zeroes onto
the stack, as for any normal RET to DOS.

Incidentally, I was a bit disconcerted that the interrupt vector I had
altered (via DOS function 25H) to point to this program was modified
again following the INT 27H, and my program had been shifted from seg-
ment 4AFH to segment 307H. It seems that DOS is smart enough to dis-
card the old program prefix, etc., and shift the newly resident code
down to become an actual extension of DOS.

By using this facility, I now have an AUTOEXEC.BAT file that modifies
my DOS to direct all printer output to the RS232 interface. By fudging
the printer address vector in low core, I also caused the BASIC LPRINT
statement to work through the RS232 port.

Dave McManigal, A74/707-1, Poughkeepsie NY, TL 253-8053

(Editor's reply: DOS 1.1 has a new option on the MODE command that ac-
complishes this function.)

8206-23   VISISUM PROGRAM SUMS MULTIPLE VISICALC SPREADSHEETS

Visisum is a program designed to sum multiple VisiCalc spreadsheets
which were created against a common template. The resultant sheet is
in the same format as the template, and each of the grid items is the
sum of the corresponding items on each of the individual sheets.

Visisum is heavily used by the East Fishkill financial area to create
composite results from many individual details (as many as 27 sheets
are summed together).

Key features of the package are:

1.   Standard VisiCalc datasets are used for input. No special file
     formats are required (PRINT or DIF).

2. Input file names can be defined using a VisiCalc file or by inputting them at the start of the program.

3. The user can request the program to pause when necessary to allow for diskette mounts.

4. All calculations are retained in the resultant spreadsheet, so that it can be loaded and manipulated like any other VisiCalc spreadsheet.

5. Since VisiCalc does not protect the formulas from the template when data is added, Visisum checks each input data set against the template to insure that all of the original calculations are unchanged.

6. An audit trail is generated at the end of the resultant sheet, specifying the data sets which were summed and the date.

The program is written in advanced BASIC, and requires about two minutes for each data set summed.

A copy of the program may be obtained by sending a diskette and self-addressed mailer to:

Robert Merillat, MVS(FSHNET1/RDM377), Zip 71A, East Fishkill NY, TL 532-5063

(Editor's concern: Even in the case of internal programs, beware the use of names, such as Visisum, that are similar to those protected by trademark.)

8206-24   PC 3277/ANR CARD ORDERING UPDATE

IPT's in the amount of $1,000 per card should be addressed to: Jim McLean, H83/632, Raleigh (Research Triangle Park), North Carolina. The ultimate price will be determined when costs are clearly defined.

Werner Meyer, VM(YKTVMV/WERNER), Yorktown NY, TL 862-1664

8206-25   COLOR GRAPHICS CARD IN SLOT 2

In reference to the display adapter tips on page 38 of PCN8204, where it is recommended that the color graphics card be placed in slot 3-- please note:

The front portion of the color graphics card is approximately 1/2 inch deeper (top to bottom) than all of the other cards that I know about, including the monochrome/printer card. Because of this additional card depth, if the color graphics card is placed in any slot other than slot 2, the bottom of the card will rest on a ROM, and the top front corner of the card will be approximately 1/4 inch higher than the top front corner of the adjacent monochrome/printer card, and will be slightly higher than the top of the front metal internal panel of

the PC. The cover (case) will rest on this corner of the color graphics card and put pressure on it (from the weight of the display sitting on top) and on the ROM. Needless to say, the ROMs were not designed to have this pressure applied, and may fail in time.

Because of this potential problem, the color graphics card should never be placed in any slot other than slot 2. The monochrome/printer card does not have this additional depth, and hence can be placed in slot 3 without any problems.

John Meyers, VM(RALVM8/RD79JWME), D79/B002, Raleigh NC, TL 441-6535

8206-26 CMS/370 ON THE IBM PERSONAL COMPUTER

For the last three and a half years, the Cambridge Scientific Center has been running CMS on microprocessor-based systems. For the past two years, our prototype system has been based on a Motorola 68000.

Rather then re-writing CMS in native 68000, we felt it was important to provide 370 compatibility. Our objective was to achieve compatibility at the user interface (CMS command) level, as well as at the object module level, allowing us to run existing programs such as compilers. All of this was accomplished by emulating the 370 instruction set, and the CP/370 Diagnose interface.

The above capability was demonstrated in the spring of 1981 on a Motorola EXORmac development system. At that time we demonstrated CMS running on a system with 384K of main storage, and less then 1 mbyte of floppy disk. During that demo, we ran the standard CMS commands, including Script and the language compilers. We demonstrated FORTRAN G1, VSBASIC, ASSEMBLER, Waterloo Pascal, Script, and a number of user applications, some requiring more then the minimum storage. In all of the above programs, with the exception of the standard CMS commands, we had access to only object module files. These were DISK DUMPed from our 158 and DISK LOADed into the 68000 CMS.

Since then we have been migrating this work to the IBM PC for further evaluation and research. This is accomplished with a 68000 co-processor card that plugs into the PC bus. On this card is 256K of memory, shared between the 68000 and the 8088. Another card with 3/4 meg of memory was built to run on the 68000 bus to provide a total 68000 memory of one megabyte. We currently have running, on this hardware, our full 370 emulator, plus diagnostic support for the keyboard and display. We are in the process of programming the disk support and migrating CnS (Cambridge nano System, our version of CMS) into PC DOS. We expect to obtain between 10 and 20 370 KIPS running in this fashion.

We would like to know if others are interested in this work, either the CMS/370 or 68000 co-processor. Contact:

Arnie Miller, VM(CAMBRIDG/AMILLER), Cambridge MA, TL 249-9244

8206-27   PROBLEMS WITH COLOR GRAPHICS COMPOSITE OUTPUT

Here are two problems I noticed when using a composite monitor with
the composite output of the Color/Graphics board of the IBM PC:

1. When in BASIC, enter:

        KEY ON
        SCREEN 0,1
        SCREEN 0,0
        SCREEN 0,1
        SCREEN 0,0

    Notice how the letters showing the KEY information twist when go-
    ing to SCREEN 0,0. All this does is turn on (0,1) or turn off
    (0,0) the color burst signal.

2. Some of the dots that form letters seem to be missing when dis-
    playing text in either RED or CYAN. The following BASIC program
    will demonstrate the problem quite nicely, provided you are using
    a composite monitor attached to the composite output jack. By the
    way, if you don't have a composite monitor handy, and you do have
    a VCR, you might try connecting the composite output jack to the
    camera input jack of the VCR and use a TV connected to the VCR as
    your display device. Here is the program:

    ```
    10 WIDTH 40     ' to insure that the output is legible
    20 SCREEN 0,1   ' enable color (turn on color burst)
    30 FOR I = 1 to 15
    40 COLOR I,0    ' set color to color I
    50 PRINT "ABCDEFGHIJKLMNOPQRSTUVWXYZ";I ' print
            text with color number
    60 NEXT I
    ```

    I know this is a rather simple-minded program, but it illustrates
    the problem quite clearly.

I have a few additional observations regarding the above two problems.

The problem appears on an Amdek Color I monitor and on a Sanyo
monitor. It does not appear on a Sony Pro-feel monitor operating in
composite mode. I noticed the Amdek Color I does not use a power
transformer, so I thought maybe a ground loop was causing the problem;
however, an isolation transformer did not clear up the problem. I am
still baffled.

Also, when drawing circles or lines at an angle, unexpected colors oc-
cur using the composite output with a composite monitor.

Neither of these problems occurs with an RGB monitor. I can't believe
that all of these problems happen because the composite monitor has a
lower resolution than an RGB monitor.

If anyone knows of a fix for this problem, or if anyone knows why it is
occurring, I would be interested getting more information.

Jerry Pine, 228/84F, Los Angeles CA 90010, TL 285-6055

8206-28   INCORRECT PRINT RESULT

My PC will not run the following program correctly. In addition to printing what I want, a solid bar is printed near the bottom of the screen. Numerous variations of this program produce similar results. The problem first occurred when I tried to reverse print a phrase on line 25 that would print fine normally. Here is the program:

```
10 CLS
20 KEY OFF
30 LOCATE 25,1
40 PRINT "1"
50 COLOR 0,7
60 PRINT "HELLO"
70 COLOR 7,0
80 LOCATE 1,1
```

Is it me or my PC? I should be able to print reverse color to line 25 without an extra line printing.

Any help you can give me on this would be greatly appreciated.

Gary Reeves, VM(WPACPVM1/DUCK), D00/1CP, White Plains NY, TL 254-9330

(Editor's reply: line 25 does not take part in scrolling. Try PRINT "1"; and PRINT "HELLO"; to prevent scrolling. Note the use of semicolons at the end of each statement.)

8206-29   BASIC MEMORY DUMP PROGRAM

I have written a memory dump program in BASIC.

The first prompt allows selection of the printer for output. The second prompt requests input of the segment and the offset where dumping is to begin. Entering -1 for the segment causes the program to use the BASIC default workspace segment. Use of Ctrl-Break is the only way to terminate execution.

In the example, execution results in display of the first two lines in the monochrome display buffer.

```
100 'BASIC Memory Dump Utility
110 DEFINT A-Z
120 INPUT "print dump";P$: P$=LEFT$(P$,1): IF P$="Y" THEN P$="y'
130 INPUT "segment, start offset";S,A
                    'Segment = -1 uses default workspace
140 IF S=-1 THEN DEF SEG ELSE DEF SEG=S
150 A=INT(A/32)*32
160 WHILE QUIT=0     'QUIT is always 0 -- program terminates only via
                    Ctrl-Break
170   L$=HEX$(A): WHILE LEN(L$)<4: L$="0"+L$: WEND
180   FOR I = 1 TO 2
190     L$=L$+" "
200     FOR J = 1 TO 4
210       L$=L$+" "
220       FOR K = 1 TO 4
230         H$ = HEX$(PEEK(A)): IF LEN(H$)<2 THEN H$="0"+H$
240         L$=L$+H$
250         A=A+1
260       NEXT K
270     NEXT J
280   NEXT I
290   IF MID$(L$,&)=LL$ THEN DUP=1 ELSE DUP=-DUP
300   IF DUP<0 THEN IF P$="y" THEN LPRINT ELSE PRINT
310   IF DUP<1 THEN DUP=0: IF P$="y" THEN LPRINT L$ ELSE PRINT L$
320   LL$=MID$(L$,7)
330 WEND


RUN
print dump?
segment, start offset? &hb000,0
0000  4F076B07 FF072007 20072007 20072007  (plus 4 more 20072007's)
0020  20072007 20072007 20072007 20072007  (plus 4 more 20072007's)

00A0  52075507 4E072007 20072007 20072007  (plus 4 more 20072007's)
00C0  20072007 20072007 20072007 20072007  (plus 4 more 20072007's)
```

Steve Ritland, MVS(RCHIS1/D213SRR), Rochester MN, TL 456-2496

8206-30   PRINTING IN FOREIGN COUNTRIES

I have spent the last few days reading the PC Newsletter, and yes, I must say that the exchange of information is long overdue.

As the PC is not presently announced in Europe, I realize the newsletter has not gotten wide circulation; thus I doubt much thought has been given to printing the newsletter using print chains with national characters.

> Example 1. # is letter A with two dots over it.
>   2. @ is letter O with two dots over it.
>   3. $ is letter U with two dots over it.

As you can see from your printout, what I send is not what you have received. These are not the only special characters, as every country has its own character set.

Carter Robinson, VM(UITHONE/72474967), Hamburg, West Germany, tele-
phone 0049-40-30112729

8206-31   GRAPHIC STANDARDS NOTE

Items in PCN8205 suggest an increasing interest in acquiring or devel-
oping graphic support software systems. PC users and implementers
should be aware of the growing activity outside IBM aimed at develop-
ing device-independent graphic standards. Presumably people hoping
to sell their code would find greater market acceptance if they were
at least aware of the imminent graphic industry standards.

There are three standards groups dealing with graphics, plus another
working on videotex. The graphics groups are:

*   ANSI X3H3 (working on PMIG, the Programmer's Minimal Interface to
    Graphics)

*   ISO TC97SC5WG2 (working on GKS, the Graphic Kernel System)

*   ANSI X3J2 (Basic, with graphics)

For documentation, see the proceedings of the 1982 conferences of the
National Computer Graphics Association or the ACM SigGraph, as well as
some of the computer graphic technical journals. If you really need
more information, give me a call.

In closing, let me warn you against buying or building a "GSPC core
standard" graphic system. Any American National **standard** for graph-
ics will be developed by X3H3 and will differ from the GSPC Core pro-
posal in at least one major area. The standard will have no concept
of current position, and thus no relative orders.

Barry   Shepherd,   IBM   Standards   Project   Authority   for   Graphics,
445/050-2, Rochester MN, TL 456-5543

8206-32   TAKING 35MM SLIDES OF DISPLAY SCREENS

I have given presentations using 35mm slides of display screens, and
I've had numerous questions on how to take (photograph) such slides.
Here are a few guidelines:

1.   Tripod -- this is a must!

2.   35mm camera -- can use 2-1/4 or other format with 'SUPER' slides.

3.   Zoom lens -- can use fixed lens, but the zoom makes life much eas-
     ier. I found that a focal length of 100+ worked fine for me.

4.   Slide film ASA 400 -- can use slower or faster film, but must ad-
     just exposure, and I recommend testing before going all out.

5. Cable release for camera. With a zoom lens, I find that, even with a good tripod, vibrations are sometimes a problem. The cable release eliminates this.

6. Ability to darken room and prevent stray light from hitting the screen. I usually use a 3279 (can be any terminal but I like the color for effect) in an office with a door and no windows or open ceiling. Turn off the lights, leave the door open about 2 inches (this is to keep you out of the dark and keep you from falling over something like a chair). Usually I turn the display to face away from the door. This avoids the light from the door hitting the screen.

7. Adjust the intensity to the desired level. This will affect your camera settings, but I find if I adjust for what looks right under the above light conditions, everything works out fine.

8. Set camera for 1 second at f8 (for ASA 400 film). You may find that with your camera and your lens the speed and/or aperture may be different.

9. Focus and shoot. I try to get perpendicular to the screen, but the long lens and small aperture will help eliminate this as a problem.

I find it best to shoot lots of pictures and at least one of each before and after action.

Why slides, you ask? Because not everyone has a method of displaying terminal screens to a large group. Also, what do you do when the computer goes down just as you start your presentation?

John Terdik, VM(HARVM2/CCP12), 39/79U/1F10, Harrison NY, TL 254-5276

GENERAL INFORMATION SECTION

This section provides information about the IBM Personal Computer hardware and software products marketed by IBM.

PRODUCT ANNOUNCEMENT, JUNE 10, 1982

The following IBM Personal Computer product is now available:

EASYWRITER VERSION 1.1 (6024005)

EasyWriter Version 1.1 will be available in July. This new version features enhanced capabilities, and is faster and easier to use.

IBM also announces that current owners of EasyWriter Version 1.0 are given the opportunity to exchange that version for the new EasyWriter Version 1.1 at no cost.

EASYWRITER VERSION 1.1 PROGRAM HIGHLIGHTS

Highlights of EasyWriter Version 1.1 are:

* Significantly enhanced program performance, with noticeable improvement in insertion and deletion of text.
* Improved usability of menus and control keys.
* Documents are now stored as individual DOS files, making more efficient use of diskette space.
* Utility to convert EasyWriter 1.0 files to EasyWriter 1.1 files is provided.
* VisiCalc print files may be converted and merged into EasyWriter documents.
* Reconfiguration options have been enhanced.

In addition, the EasyWriter manual has been completely rewritten. It now contains a tutorial section as well as a reference section, and a section on tips and techniques for more experienced users.

EASYWRITER EXCHANGE HIGHLIGHTS

To take advantage of this one-time opportunity, which is available until **December 31, 1982,** please follow these steps:

* As proof of purchase, remove the inside cover page (the purple page with the number 6172310 at the bottom) from your current IBM EasyWriter Version 1.0 manual.

- If you purchased a PC through the Personal Computer Employee Purchase Plan, you should return the inside cover page to an authorized IBM Personal Computer dealer.
- If you are an internal IBM user, using the Personal Computer for internal business applications, you should return the inside cover page to your PC Site Coordinator.

Beginning in July, IBM will provide its authorized dealers and internal site coordinators with Version 1.1 diskettes and replacement pages for the manuals. Upon receipt of the new diskettes and manual pages, the dealers and site coordinators will contact you.

This upgrade package does not contain a binder or a slip case for the manual, since these components can be reused.

APPENDIX A. IBM PERSONAL COMPUTER EMPLOYEE PURCHASE UPDATE

May 17 Price Reductions Now Effective as of Pickup Date

Entry Systems is pleased to announce that, under the Employee Purchase Plan, the May 17 price reductions are now effective as of the date of delivery to the employee, rather than the ship date.

An employee's payroll deduction or cash invoice will reflect the reduced prices if the employee's system was picked up on or after May 17, 1982.

The Entry Systems Employee Sales Department is currently contacting those employees who:

* have cancelled their PC orders since May 17
* had ship dates prior to May
* would have taken delivery on May 17 or later.

The purpose of these contacts is to ensure that the employees are aware they would have been entitled to the May 17 price reductions. If these employees are not aware of this announcement, Employee Sales is giving them the opportunity to withdraw their cancellations and retain their current delivery schedule.

Questions should be directed to the IBM Personal Computer Employee Sales Response Line, tie line 443-6075.

Clarification of Employee Purchase Plan Pickup Locations

Several readers have asked about pickup locations for IBM PC's purchased under the Employee Purchase Plan.

ComputerLand stores and IBM Product Centers are the only pickup locations participating in the Employee Purchase Plan at this time. However, IBM is looking forward to adding new pickup locations in the future, and will announce them when they become available.

The IBM Personal Computer Employee Sales Response Line, tie line 443-6075, maintains an official up-to-date list of pickup locations.

Price Reduction for Existing Employee Orders for 48KB System Unit

Component 5150013, System Unit with 48KB memory and one 160KB diskette drive, is no longer available. However, some employees have already placed orders for this System Unit, and are awaiting shipment.

If:

* Entry Systems Employee Sales received your order for the 48KB System Unit by April 15, 1982
* you did not also order a 16KB additional memory

- your pickup date is May 17, 1982 or later

then your purchase price for the 48KB System Unit has been reduced from $1,517 to $1,440.