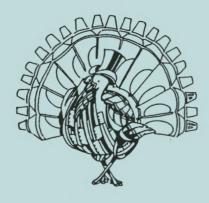## NOVEMBER 1988 PCjr MEETING AGENDA

A> November 10th General Meeting will be held at the Ida Patterson School Library, 16th and Polk in Eugene. Set up and disk sales will start at 6:30pm, the meeting will begin at 7:00pm. Graphics image conversion and compiling. Bring the kids as Mother Goose will be demonstrated by Paul Matchulat.

VOTES FROM THE PRESIDENT
by Mike Luttio

By the time we meet again I hope everyone has exercised their choice to vote. With the election over, and politics on the back burner, we can look ahead to the holiday season.

We will be working on some library disks of graphics pictures for your Print Shop and Print Master programs. We hope to be able to translate some items from one program to another. In any case, we will have these compiled disks available for copying by club members and they will be added to the club's library.

What we will need is your participation and support. Bring in your images and 2 or 3 blank disks to copy the product of our efforts. I hope to see you all there!

PC-FILE USERS NOTE:

The Club received a note from Computer Templates & Applications (CTA) in Bellevue, WA. As a neighbor of Button-Ware, CTA has created several useful templates and application programs for PC-FILE. These programs are very useful for those who may not want to define their own database for their particular use.

Here is a partial listing of applications that CTA has: Coin collections, Address book, Accounts payable, Books, Church records, a record for Coupons, Home inventory, Personal records, one called Photolog, a Prepaid invoice and Purchase order invoice database, and even one for your Video library.

CTA states that their database application templates come with ready-to-use report and label formats, smart keys, a snapshot mailing label definition and some come with mail-merge samples. There is on-disk documentation about the templates.

The price CTA quoted was about $15 per template or $13 each for three or more. This isn't ShareWare and no demo disks or samples were sent to us so we can't tell you how well written they are. As soon as we receive a report from someone who actually uses CTA's products, we'll let you know.

HOW TO BACKUP YOUR PCjr BASIC CARTRIDGE
by Larry Young

Most of us PCjr Owners have had our systems for quite a few years now. The PCjr system came with only one floppy drive but had two cartridge slots. I usually plugged the BASIC cartridge in one slot, and the Clock Calendar Cartridge in the other slot. This set up has worked rather well.

That is, it worked well until I loaned out my system and it was returned with the BASIC cartridge damaged. (The tale of how the BASIC Cartridge was damaged is another story by itself. The reason that I loaned out my PCjr has a lot to do with showing off how great the PCjr's educational values are, especially running those low cost Sesame Street programs.) Unfortunately, the BASIC cartridge's internal IC (ROM Integrated Circuit) was damaged beyond repair.

As you all know, the BASIC cartridge, like many other PCjr specific products, is very difficult to find. If you wish to replace or purchase another BASIC cartridge from your local IBM dealer, you would be very likely laughed out of their showroom. My alternative was to duplicate (or shall we say BACKUP) my friend's BASIC cartridge.

I would like to remind our readers that IBM and Microsoft own the copyrights to the BASIC ROM software. This ROM contents should not be copied for commercial distribution as this would infringe on their ownership. Or better yet, you may want to consult a copyright lawyer about backing up your BASIC cartridge for your own use. One example would be using one cartridge for two PCjr systems.

Anyway, these are my experiences on backing up and replacing my damaged BASIC cartridge.

1. Save the BASIC Cartridge ROM content in diskette.

Fortunately, I had saved and explored the BASIC cartridge on diskette before it was damaged. If you borrow a good PCjr BASIC cartridge from your buddy to make a backup, you will need to understand the copyright ownership question. I booted up with my backup DOS (2.1 or higher) diskette which contains DOS's DEBUG.COM program, and had the BASIC cartridge plugged in.

Next, I executed the DEBUG program as follows.

```
A>debug                      (Lower case signified entered commands)
-d e800:0                    (display the beginning of BASIC Cartridge)
E800:0000 55 AA 40 E9 1D 00 05 42 41 53 49 43 E9 82 01 06
  " "
  " "                        (check the ROM contents are not FF.)
  " "
-d eff0:0000                 (display the end of BASIC Cartridge)
EFF0:0000 29 00 61 1B 62 1B 8E 00 00 00 1A 1A FF FF FF FF
  " "
  " "
-n basicrom.bin              (set output file name as BASICROM.BIN)
-r cx                        (set output amount to 32768 bytes)
CX 0000
:8000                        (enter hex value 8000 bytes)
                             (you can also patch the BIOS at this time)
-w e800:0000                 (output to file from starting address)
-q                           (exit DEBUG)
A>
```

Now you have saved the BASIC Cartridge contents into the diskette file called BASICROM.BIN. The file name is arbitrary. The file size is 32K byte, that is 8000 hexadecimal in value. Check the output file by looking at the diskette file directory:

```
A>dir
BASICROM  COM     32768     6-20-88     1:40p
```

You can also double check the output file contents by using DEBUG again:

```
A>debug basicrom.bin
-d                           (display the beginning of BASIC Cartridge)
XXXX:0000 55 AA 40 E9 1D 00 05 42 41 53 49 43 E9 82 01 06
  " "
  " "
-d 7fe0                      (display the end of BASIC Cartridge)
XXXX:7fe0 29 00 61 1B 62 1B 8E 00 00 00 1A 1A FF FF FF FF
  " "
```

```
    " "
    ¬q
    A>
```

2. Purchase the Cartridge Kits and EPROM Integrated Circuits.

I purchased four PCjr ROM Cartridge kits from Integrity Technology Corporation in Milpitas, CA. for $4.95 each. I also paid $3.50 for their ROM Cartridge Technical Reference Manual diskette.
You can purchase the EPROM (actually called Ultraviolet light Erasable Programmable Read Only Memory) IC from most local electronic retail stores (ie: Fry's Electronics in Santa Clara, CA) or most electronics distributors (ie: Allied Electronics, 800-433-5700). The EPROM IC generic part number is 27256-250. That is a 256K EPROM IC in 28 pins DIP, with 250 nsec access time, 32K bytes of memory in 8 bits per byte width format, usually with programming voltage at 12.5 volts.
After you get the EPROM IC, you should erase its internal contents to blank by Ultraviolet Light EPROM Eraser. There are very inexpensive EPROM Erasers, some costing no more than $35.

3. Program the BASIC cartridge contents into the EPROM IC.

I used the DATA I/O Model 201 External EPROM Programmer. Obviously, this DATA I/O EPROM Programmer is a very expensive piece of equipment. The only reason I chose it was because I had access to it.
Since this EPROM programmer only accepts ASCII formats, I had to convert the BASICROM.BIN binary file to Hexadecimal ASCII file in Intel 8 bits Data Record Format. The program I have written is the BASIC program HEXCONV.BAS listed at the end of this article. After you start the program, you can go for a cup of coffee. It takes 25 minutes in a PC-XT and about 35 minutes in a PCjr. Running in Complied BASIC will be much faster.
In your PCjr, do the following: (Diskette has room for 100KB file?)

```
    A>basica hexconv                          (start BASICA program)
    Converting from BASICROM.BIN to BASICROM.HEX (go for a cup of coffee)

    Byte Remaining =  32768
    File BASICROM.HEX translated.

    A>dir                                     (check directory)
    BASICROM  COM     32768    6-20-88    1:40p
    BASICROM  HEX     92174    6-20-88    2:56p
```

I connect the PC through the RS232 Serial Port to the EPROM programmer in the following configuration:

```
    PC or   ---> Serial Port Cable  --> EPROM Programmer   --> 27256 EPROM
    PCjr         (cross pin 2 & 3)      DATA I/O Model: 201     (NEC 27256-
                                                                25)
    PC-TALK
```

In the PC, I use the Public Domain communication program PC-TALK III. In the EPROM Programmer, I push the setting to "RS232 PORT" and "COMPUTER CONTROL". The default communications setting is 9600 Baud, 8 bits data, 1 stop bit, no parity. Communication started by entering these commands into the PC, through the PC-TALK program, to the EPROM Programmer:

```
    M                 (To EPROM Programmer : start computer communication)
    >                 (From EPROM Programmer : acknowledge, command OK)
```

First, I transmit the BASICROM.HEX data from the PC to the EPROM Programmer:

```
    I                        (To EPROM Programmer : Input data from Host)
    Alt-T                    (To PC-TALK : Transmit a file)
    FILENAME: basicrom.hex   (transmitting file to EPROM programmer)
    >                        (From EPROM Programmer : command executed OK)
    4532@                    (To EPROM Programmer : set to NEC 27256 type)
    >                        (From EPROM Programmer : command executed OK)
    B                        (To EPROM Programmer : check EPROM for Blank)
    >                        (From EPROM Programmer : command executed OK)
    P                        (To EPROM Programmer : program the EPROM)
    >                        (From EPROM Programmer : command executed OK)
```

```
V                          (To EPROM Programmer : verify the EPROM)
>                          (From EPROM Programmer : command executed OK)
S                          (To EPROM Programmer : perform checksum)
C85B                       (From EPROM Programmer : checksum)
>                          (From EPROM Programmer : command executed OK)
```

You can use another brand of external and less expensive EPROM Programmer (it must have a RS-232 serial port link), or you may borrow one from a friend for couple of hours. The method of using these EPROM Programmers differ widely, so I recommend you read and follow the operating manuals and instructions for the one you use.

```
PC -->   EPROM Programmer in -->  External Mount  -->  27256 EPROM
         PC Expansion Card        Socket
```

The option of using the EPROM programmer in a PC expansion card is usually the least expensive. These EPROM Programmers usually come with their own operating software running in the PC, instead of PC-TALK.
You may need to convert the BASICROM.BIN binary file into a ASCII Hex file in Intel 8 bit Data Record Format or some other type of format. You can use, or modify my BASIC program at the end of this article to fit your needs.

4. Solder the EPROM and assemble the new BASIC Cartridge.

Solder the 28 pins EPROM DIP IC in the "ROM 1" socket location (slot near the gold plated edge connectors) of the PCjr ROM cartridge kit printed circuit board. Make sure pin #1 of the EPROM IC matches the PCB's socket hole marked "1". The EPROM IC pin #1 is usually marked with a dot, or a mark, or slotted short edge which should match the PCB's slotted IC marking footprint.
The detail assembly instructions and PCB schematics is in the PCjr ROM Cartridge Kit Technical Reference Manual (file name RC-TECH.REF).

                Contact list: (For your reference only, not endorsements)

A. Integrity Technology, 105 Serra Way, Suite 230, Milpitas, CA, 95035.
   (Editor's Note: see their ad in this month's newsletter.) (408)
   262-8640. They charge $3.00 for shipping and handling.
   PCjr ROM Cartridge Kits are $5.75 each, with a minimum of 4 kits.
   PCjr ROM Cartridge Kits Technical Reference Manual diskette, $3.50.
   PCjr Clock Cartridge, $34.50 each.

B. JDR Micro Device, 1224 S. Bascom, San Jose, CA, 95128 (408) 995-5430.
   EPROM IC 27256-250: $5.95 each, Programming voltage 12.5V, 28 pin DIP
   EPROM Eraser: Data Ease EPROM Eraser, erase 2 EPROMs in 10 minutes,
    $34.95.
   EPROM Programmers:
   MCT EPROM Programmer in IBM PC Expansion Card, with software, $130.
   Intelligent Serial EPROM Programmer, external with RS232 Serial Port,
    $199 unassembled kit, $349 assembled with case and power supply.
C. Fry's Electronics, 541 Lakeside Drive, Sunnyvale, CA, 408-733-1770.
   EPROM IC 27256A-250: $6.99 each. Programming voltage 12.5 V, 28
   pins.
   EPROM Eraser: Palm Eraser (Compact EPROM Eraser, erase in 2 minutes)
    $49.95 each.
   EPROM Programmers:
    EPROM Programmer for IBM PC Expansion Card, with software, $119.95.
    EPROM Programmer for Apple Expansion Card , with software, $109.00.
    External EPROM/EEPROM Programmer (Logical Device, Inc. Shooter)
     with module RS232 serial connector, $395.00.

D. Data I/O, 10525 Willows Road NE, P.O. Box 97046, Redmond, WA, 98073
   EPROM Programmer, Model 201.
   Technical Help Line: 800-247-5700

5. Conversion Program to Convert from Binary to ASCII Hex in Intel 8 Bits Data Record Formats for EPROM Programmers. Written in PC BASIC. Copyright reserved by Larry Young, 1988:

```
100 ' Convert from Binary to ASCII Hex in Intel 8 bits Data Record Format
150 PRINT " Converting from BASICROM.BIN to BASICROM.HEX "
```

```
200 PRINT " Bytes Remaining = ";
250 OPEN "R", 1, "BASICROM.BIN", 1 : FIELD 1, 1 AS I$
300 OPEN "O", 2, "BASICROM.HEX"
350 NBYTE = 0 : NCKSUM = 0
400 GET 1
450 WHILE NOT EOF(1)
500 IF NBYTE MOD 16=0 THEN PRINT #2,":10";RIGHT$("000"+HEX$(NBYTE),4);"00
    ";:NCKSUM=16+(NBYTE MOD 256)+INT(NBYTE/256)
550 PRINT #2, RIGHT$("0"+HEX$(ASC(I$)),2);
600 NCKSUM = (NCKSUM + ASC(I$)) MOD 2048
650 NBYTE = NBYTE + 1 : IF NBYTE = 32768! THEN GOTO 800
700 IF NBYTE MOD 16 =0 THEN PRINT #2,RIGHT$("0"+HEX$(-NCKSUM),2) : LOCATE
    ,20 : PRINT 32767-NBYTE;
750 GET 1 : WEND
800 PRINT #2,RIGHT$("0"+HEX$(-NCKSUM),2) : PRINT #2,":00000001FF"
900 CLOSE:PRINT:PRINT "File BASICROM.HEX translated."
950 SYSTEM
```

If you have questions about "backing up" you Basic cartridge, you may contact the author, Larry Young, at P.O. Box 604, Milpitas, CA 95035.

"HEARD (HERD?) ON THE STREET"
by Dick Page

ADDING A RESET SWITCH

How many times have you had a program freeze up on you - necessitating restarting your junior? How many times have you switched between self-starting disks requiring a reboot?

An article by Bob Horan in the Sept. issue of the Metro PCjr Journal has a very detailed explanation of how to add a quick reset switch to PCjrs. This allows you to restart without having to either completely turn off your junior (and wait while the diagnostics are redone) or shorting the system by putting a cartridge in or pulling it out of the cartridge slot (which stresses the motherboard's cartridge contacts). This switch also helps when junior won't respond to a <Ctrl><Alt><Del> or a <Fn><Break> "warm boot".

Check out the newsletter from the documents librarian or speak with me at the next meeting about how it is done.
(Thanks Metro PCjr Users Group and Bob Horan!).

FASTER SPEEDUP BOARD

PC Enterprises has a new speedup board for $129.00 which runs at up to 9.54 MHz faster than Paul Rau Consulting's Nickel Express Jr costing $79.00 which runs at up to 8 MHz.

PC Enterprises claims the speedup board runs well with most memory expansion boards. Still, a call to them at press time revealed they haven't tested the board for compatibility with Racore's second drive and memory expansion - the hardware configuration many of us have.

10 ARTICLES
YOU MIGHT BE READING HAD THE
MICROCHIP NOT BEEN INVENTED

1. The Two-Rolodex Setup
2. Choosing A Type Ball That's Right For You
3. Ledger Widow Complains: "My Man Spends All His Time Cross-Tabulating"
4. Tidiness Tips From The White-Out User's Group
5. Traveling With Accordion Folders
6. Standards Committee Sets Hole Parameters For Desktop Calendars
7. How To Upgrade Those Narrow Filing Cabinets
8. Slide Rules Aren't Just For Nerds Anymore
9. 10 Ways To Get More From Index Cards
10. Prim Penmanship Gets Your Ideas Recognized
(from Personal Computing, Oct. 1988)

EYE STRAIN PREVENTION

An article in the October 1988 issue of The Hope Healthletter (from The Hope Heart Institute) indicates that the optimum viewing distance from your computer monitor is about 20 inches.

You also may need to think about the act of blinking. The staring required to read your monitor interfers with blinking (which normally happens about 15 times a minute). Remember to blink once in a while to keep your eyes from getting that dry, scratchy feeling.

Rx FOR FILENAME CRAMPS

A new memory-resident program called "Extend-A-Name" is out from World Software (1-800-962-6360, $79.95). It gives you more freedom and flexibility in creating meaningful filenames. Using as little as 37K the program stores file-names of up to 60 characters in length (as opposed to the usual 8 plus 3 of D.O.S.'s filename.ext) in a special file in the root directory of any disk you use.

Although Extend-A-Name isn't a full-featured DOS shell, it does offer many shell-like features - including the commands COPY, DELETE, ASSIGN, RENAME, TAG, and UNTAG files.

from COMPUTE!, Nov. 1988

SOME UPGRADE NOTES

PC Tools Deluxe is now out in Version 5.0 and Central Point Software claims it is better with more features than any similar program (such as Sidekick, Norton Commander, Mace Utilities or Fastback Plus). It retails for $79 and for owners of previous versions an upgrade costs only $15.

ButtonWare has announced a new version of PC-File called "PC-File:dB" which directly accepts dBASE III Plus data files. It retails for $89.95 or can be purchased as an upgrade for $30.00. It requires a hard disk or two 720K flop-pies and 412K of RAM. (A configuration most PCjrs don't have.)

PrintMaster by Unison World has added a smoothing feature which rounds out the choppy, jagged-edge look to the graphics printouts.

Print Shop meanwhile is offering - for a limited time - a bonus when you pur-chase the main program. Inside the spe-cially marked box is a Special Edition Graphics Library which retails for $24.95 but is included free during this promo-tion. This extra disk includes more graphics pictures and border designs as well as other font options. The main Print Shop program retails for $59.95.

****

Q: Alright, Dick, I have a question for you. My new Seikosha 24-pin printer isn't printing signs and cards in correct porportions. PrintMaster works fine, but it seems that what I do with The Print Shop just doesn't fit the page. What's up? Newsletter Editor

A: You are right, Louie, The Print Shop doesn't support 24-pin printers. If you want to continue using this program, I suggest that you contact NAP Systems, 1120 NASA Road 1, Suite 320, Houston, TX 77058. They have a software patch that will allow you to use The Print Shop with your new printer. The cost is $40 and the patch will work with any letter-quality printer. Another way would be to wait until the new version of The Print Shop comes out later on this year. Good luck! Dick Page

COMPUTERMAN

We received a note from our Portland reporter telling us of "Computerman" who answers questions for the Hacker Shack. Some of the questions were interesting, so we are repeating them here.

Q: My Flight Simulator program keeps crashing. What do you suggest I do?
                                        -Ace-

A: Fly a little higher, Ace!

Q: I use a $4 pocket computer to balance my check book, yet my daughter says we need a computer. Why do we need one?
                                        -Balanced-

A: Buying a computer may NOT balance your check book, Balance, and it may put a dent in your account. Still, it will help you keep a running balance and will also help you at tax time. Had you attended the October meeting and seen Gene Brown's fine presentation of MATHBLASTER, you would have seen that your Junior will do much more than just balancing your check book.
     You can write letters and always have a copy of them on your disk for later use. You can write that letter to the editor or write the great American Novel. Printing cards, posters, or publishing your club's newsletter, complete with mailing labels, is a piece of cake. You may track your stamp or coin collection, and your daughter can make letter-perfect papers for school or study for her SAT exam. You can study for your CPA exam, Balance. So, you see, while you may not NEED a computer, you can SURE USE ONE!

Past Member Mary Burich Goes Big Time with PrimeTime

All of us send our congratulations to Mary Burich with her latest endeavor, PrimeTime. PrimeTime is Eugene's newest bulletin board. Mary has a section on her board for Junior owners (plus 26 other areas), so give PrimeTime a call (344-3270). PrimeTime operates 24 hours a day, on 300/1200/2400 Baud. In case you are wondering, no, Mary isn't using a 128K Junior for PrimeTime.
Congratulations, Mary!

"...the PCjr is better designed than the PC/XT/AT in that a number of chips were custom designed, such as the video gate array.   And, all chips were put on a single motherboard, so that the jr lacks many of the "big" PC's connections, a source of many computer failures. Excepting its original equipment QUME disk drive, the PCjr has earned a reputation as a rugged machine.   So, next time you're visiting a friend with a PCsr, you can sniff and say, 'Old thing's still running, eh?'"

                                Paul Crumley
    as quoted by Tom Crider in jrNewsletter

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Classified "For Sale" ads in this section of the Newsletter are $2 for 25 words or less to non-members and free to members on a one-time basis.

Ads should be placed at least two weeks before the next club meeting, and all payments should accompany the ad request.

Q: I have been a subscriber for quite awhile, but now I feel that I need to join a club. How can I find one near me?
                Hoppie in Salisbury, NC
A: To find the location of your closest registered user group, call IBM at (404) 988-2782. Have your zip code ready when they answer!

EUGENE PCjr CLUB

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