

# *Jr* Newsletter

## Selecting the Right Monitor For Use with Your PCjr

By Delmar Mineard

There comes a time in every PCjr user's life when choosing or changing a video display is unavoidable. Incompatibilities between software and monitor can be confusing with today's glut of display standards and modes.

The purpose of this article is to provide information about monitors so you can make an intelligent decision when you select a better monitor for your PCjr. When I purchased my IBM PCjr I did not buy the new IBM PCjr Color Monitor, but instead chose a higher resolution RGB monitor; PGS (Princeton Graphics System) HX-12. This article is based upon that experience.

The IBM PCjr monitor is hard on the eyes for long viewing sessions. The sharpness is barely adequate. Heavy use, at one sitting, often produces eye strain. However, it is definitely better than a composite color monitor. Today the cost of a good high resolution RGB monitor is considerably less than three years ago.

The best way to begin your search for an appropriate display is to assess your software needs. Will the monitor be for principally graphics (games) or text work such as word processing and spread sheets? If it is the former,

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**"No, the price does NOT include my PCjr!"**

## One Man's Cost-Effective PCjr Upgrade System

By Ronald C. Pacanowski

Like many people I bought a PCjr back in 1984 during the time IBM slashed prices to spur sales. Priced at \$900 the system was a bargain. It included 128K RAM, and RGB color monitor, one disk drive and DOS2.1. All this and yet its sound and graphics capabilities were superior to the PC!

It wasn't long, however, before I realized that reading 80 column text on the jr's color monitor was not something one looked forward to. Adding a high resolution green screen quickly remedied this without the need of an interface card. Both monitors worked well together. The only missing item, which I considered essential, was a parallel printer interface which was also added.

This setup worked well for over a year, during which time various upgrades became available. Unfortunately, the additional price for these items in 1985 inflated the system price to the point where cost effectiveness was

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***PCjr Lives!***

# Why a Ram Disk is a Must for PCjrs

By Richard Hardesty

A RAM drive is without question the cheapest, quietest, and lightest weight disk drive that you can add to a PCjr. It weighs nothing, it takes up no elbow room on your desk, cannot have head crashes, it has no rails that will ever need lubrication or cleaning, it is many times faster than any PCjr floppy or hard disk drive. It costs nothing to get one, and is no more difficult to use than the floppy disk drive that came with your PCjr. In all criteria of speed, cost, and reliability the RAM drive is superior to the floppy drive. But there are two principal drawbacks: a RAM drive is volatile, and a RAM drive reduces the amount of memory available for running programs.

The principal of RAM drive (or RAM disk—the terms are interchangeable) is quite simple: the disk operating system (DOS) that runs the computer is instructed to reserve a portion of its total random access memory (RAM) and treat it as if it were a physical disk drive. Thereafter, you can copy files to and from the RAM disk and store files up to the limit of its size. The RAM disk will have sectors, a File Allocation Table, and directory space just as a floppy has. Programs that examine disk drives such as CHKDSK or the Norton Utilities will report the RAM drive as though it were a physical disk drive. There is really nothing that you cannot do with a RAM drive that you could do with a floppy drive, other than boot your machine when you turn it on.

Volatility means that when you turn off your computer the RAM drive disappears, along with all the files that were stored on it. So one must remember to copy any files that you created on the RAM drive to a floppy or a hard disk before you power down. Usually this lesson is learned the first time that you fail to save to a floppy and several hours of work on a document evaporates into the electronic ether.

Space allocation on a RAM drive is sometimes confused. Creation of a RAM disk will naturally reduce the available memory on your computer. But when you copy files to it, they occupy the space set aside for the RAM disk and do not further reduce your available RAM. Note: some software to create a RAM disk will leave you less space than you expect on the RAM disk itself. This is because part of it must be reserved for the directory and the file allocation table. Usually the overhead is about 5K. Thus you may set up a 64K RAM drive, but find it only has 59K available.

Many PCjr users use Larry Newcomb's JRCONFIG program, which automatically creates a RAM disk when

the system boots. There are a number of other programs that will enable you to create a RAM drive after your computer is booted, RAM.SYS, MEMBRAIN, and VDISK to name three. Of these, RAM.SYS is notable in that it lets you abolish and recreate RAM drives of any size over and over without having to re-boot your computer. (Both JRCONFIG and RAM.SYS are on Disk #52 in the software store, p. 13.)

A RAM disk is an essential tool if you are using a PCjr that only has one floppy drive. The task of copying several files from one floppy disk to another consists of a long session of aggravation as you must constantly swap floppy disks in and out of the drive. DOS copies one file at a time and you must swap disks each time. With a RAM drive you simply can copy all files to the RAM drive. Once that is done, you can copy them all back to a second floppy disk in the A drive very quickly. The RAM disk will also help speed programs that frequently need to read information from the disk—Wordstar is the classic example—and many newer programs written in Turbo Pascal operate similarly. Working from a floppy, Wordstar is agonizingly slow as it stops frequently to read the disk. When you run Wordstar from a RAM disk, the time required to read the RAM drive is so brief that you may not notice it is happening.

With a two-floppy PCjr the need for a RAM drive is less critical. Having two floppy drives means that you can copy files back and forth without swapping disks, but the RAM drive will still be useful for speeding up Wordstar and similar programs. However many disk drives you have, hard or floppy, some operations, such as database sorts and de-ARCing files downloaded from a computer bulletin board will simply go much faster with a RAM drive. You can also create a RAM disk which is substantially larger than a 360K floppy disk drive so that there is room on the RAM drive for both the ARC'd and the un-ARC'd versions of the programs, or for extra large databases.

(The above article was originally published in the Metro PCjr Journal.)

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## Questions and Answers



**EDITOR'S NOTE:** jr Newsletter gets questions in the mail from PCjr owners every day. So many, in fact, that we apologize for not being able to answer them personally. This Questions and Answers column is our way of responding to the questions readers ask about their PCjrs. We can't answer all of the questions we receive, but we try to answer those that are either asked by several readers or those we feel will be of interest to PCjr owners in general. If you have a question that you do not see answered here, or elsewhere in this newsletter, please feel free to write to us at jr Newsletter, Box 163, Southbury, CT 06488.

**Q. I have a Legacy memory expansion unit and second drive on my PCjr and I have heard that Legacy is getting out of the PCjr business. Am I going to be out of luck if my unit breaks down?**

A. Legacy is not going out of the PCjr business, according to Steve Jacobs, president of the company. The rumor that they were abandoning PCjrs may have arisen from the fact that they are offering PCjr owners \$300 off the price of an XT or AT clone if they trade in their PCjrs. Jacobs said they are offering the trade-in because they believe many people learned to use computers with their PCjrs, but now want to purchase more powerful computers. He said Legacy will continue to sell its many PCjr peripherals and to service the ones now in use by PCjr owners. And, as a result of the trade-in promotion, Jacobs says, Legacy may well be the best source for PCjr replacement parts anywhere.

**Q. I am having trouble printing out some files on my Panasonic 1091 printer. Have you heard of any defects in this printer? Usually it works just fine.**

A. We have heard that the Panasonic 1091 is a popular and very reliable printer, used by many PCjr owners who purchased it because it was a good value for the price they paid. One common error that PCjr users make is to assume that their computer or their printer is at fault, when it isn't. If the printing problem arises when you are trying to print out graphics or special print characters, it may simply be that you have not run GRAPHICS.COM, the graphics program on

DOS which is needed for most special printing jobs. If you do a lot of printing of special characters or graphics, just add the line GRAPHICS to your autoexec.bat file. Another thing you may be overlooking when you think your printer is at fault is the proper settings for the printer's dip switches. Most of us read the manual that came with our printers when we first set them up — which may have been years ago. Check the manual again for the proper dip switch settings before you decide you need a new printer.

**Q. Is it true that software companies that make games are forgetting about us PCjr owners?**

A. As we mentioned last month, many software producers seem to be overlooking PCjr users. But there are patches available to run many of the most popular games and other software that are not compatible out of the box. However, we have noticed that two new games by Accolade, Ace of Aces and Pinball Wizard, and Spectrum Holobyte's Tellstar II are specifically labeled PCjr compatible, so some software companies realize that the PCjr population is large. Here are a couple more for you: Electronic Arts' Arctic Fox is labeled PCjr compatible, but it's not. On the other hand, the Wizardry Fantasy series box says it may not run on PCjrs, but a PCjr user we know runs it without any problems. The moral of the story is: If you see a game (or any other software) you are interested in, and you don't know anyone with a PCjr who has tried it, you should either buy it on the condition that you can return it if it doesn't operate on your computer, or call the company and ask them if it is PCjr compatible. Sometimes the company will provide PCjr owners with easily installed patches that transform incompatibility into compatibility.

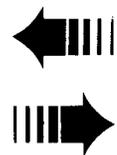
**Q. I would like to be able to use my computer while I am printing documents on my printer, but I'm not sure my PCjr is capable of doing that. Can I use a print spooler or buffer on my PCjr?**

A. Our PCjrs can do just about everything other computers can do, including print spooling and buffering. There is a big difference between a buffer and a spooler. Both will allow you to start your printer doing its job and

*Continued on page 14*



# READER FEEDBACK



## Managing Your Money Tips

Your newsletter and service for the PCjr sets a good example for larger companies selling computer hardware and software. I wish that IBM, particularly, would follow your example and support their installed hardware. Tecmar is another example of lousy aftersale service.

Andrew Tobias' quarterly Newsletter for registered owners of MECA's "Managing Your Money" and his prompt and honest correction of "glitches" discovered in program "updates" are other examples of excellent aftersale service. I would like to pass along a few suggestions for "Booting" and running "MYM" which have made it much easier to keep my personal financial data accurate and up-to-date.

I originally purchased the cartridge version of MYM to run on my basic PCjr with 128K of machine memory. I upgraded to a 640K 2-drive system with the Racore 2 drive with Direct Memory Address, and converted MYM

to the dual floppy drive program. Following suggestions in a MYM Newsletter, I configured my jr to "Boot" DOS 3.1, Date and Time, and then execute a AUTOEXEC.BAT file to run your "HUSH" patch (to fix the bug in DOS 3.1 which makes drive access noisy), set up a Virtual Drive C: (with 360K of reserved memory), copy the MYM Data disk (containing all database and archive files) from Drive B: to RAM Disk C:, and finally to start up the MYM program from drive A:

Using this startup system, I don't have to go through all of the diskette changes to get the MYM program running. Saving all subsequent data input to VDISK C: speeds up program execution appreciably, particularly later in each year when a lot of information has been saved to the database and archive files. A lot of disk swapping is also eliminated since all data goes to the RAM Disk C: and only the other three program disks need to be inserted in Drive A: to execute the various functions of the program.

Another obvious advantage of keeping all .db and .arc files on C: is the ease of back-up when exiting the program. MYM helps by requesting the "B/U" disk in drive B: (already there in normal program operation) and using the F3 function to copy all .db files and F4 to copy all archive files from RAM Disk C: (to the working MYM Data disk in Drive B:). Any number of additional B/U disks can be made easily by inserting them in Drive B: and ending the session.

J. W. Graves  
Palatka, FL

## Handy Use for REM

One technique that I have developed that others might find useful is as follows:

In my batch files I like to test to see if the correct VOLUMES are mounted. Unfortunately DOS does not support this test. In addition, I would like to be able to readily tell when a diskette was last backed up. Again DOS is of no help.

In both cases I could add a file to my diskette that could be tested. However each would require a cluster (1K). If you are using a hard disk under DOS 2.1 it's 8K. This is sometimes more than we wish to give up.

**SOLUTION:** Used correctly, the REM command will

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## Handy Use for REM *Continued from page 4*

create a directory entry with a 0 byte file. Thus all that is used is one directory entry out of a possible 112 (far more on a hard disk). Not a problem. How?

```
REM filename.ext
```

The above does the trick. Keeping in mind that a VOLUME name is 11 characters, anyone can be reproduced in a filename. Spaces can be simulated with the underscore (\_). The period must be tolerated but ignored. Thus:

```
MY 1ST VOL becomes MY__1ST__V.OL
```

```
BACKUP FILE becomes BACKUP__F.ILE
```

Incorporate into your backup routine the following command:

```
REM BACK__UP___.ON
```

Then take a look at what the command

```
DIR BACK__UP___.ON will show you.
```

June 1987 - A very interesting issue. I found it most informative.

July 1987 - I found the letter on the reset button very interesting. I concur with the letter that follows. Installing/removing a cartridge does the trick fine. I have always had at least one cartridge in my system. Thus, for 3 years I have used the cartridge technique.

I also took note in another issue about the danger of pin damage. I have always felt that the pins, front and rear on the PCjr are a bit delicate. To me they do not pose a threat providing you are careful. To get your jr to reboot you do not have to completely remove an in place cartridge. It only requires a slight unseating.

I also concur that connectors at the rear of the system should not be stressed. However, I find it difficult to believe that a tie down board is needed.

August 1987 - Once again an issue that is chock full of ideas. I find the idea of an 8 mh V20 exciting. I will have to get one as well as the character generator. Your note on the math coprocessor is also interesting. A how-to will be appreciated. I am also going to get one of the speech attachments.

Robert E. Johnston

Glastonbury, CT

## Use Infra-red Instead

COMMENT: Ref. June issue, page 9, "Warning: Junior's Sockets Can Be Easily Damaged" by Dick Page — Instead of disconnecting your 5151 keyboard when you want to use the standard PCjr keyboard, why not take advantage of its cordless input capability and leave the 5151 as is? I haven't tried it but my best guess is that it should work.

Peter Falker

Jeffersonville, VT

## Video & Buffer Cartridges Combined

In the June newsletter, there was an article about the new cartridges for the jr, the video and the keyboard buffer cartridges.

If you write direct to Cryptographics Software, 33 Harbour Sq. #2620, Toronto, Canada, you can for \$45.00 get both cartridges in one. It's called the Video Synchro Cartridge. I've ordered 3 so far for me and my friends. The people at Cryptographics are real nice. They called me to verify my order because I ordered so many they thought I made a mistake.

Rick Arnold

El Cajon, CA 92021

## DOS Has the TIME and DATE

Although it is very convenient to have a clock/calendar installed in your computer, which will automatically record the date and time of files when you create them, you can use the DOS DATE and TIME commands to do it yourself.

The DATE and TIME commands are internal commands, which means you can type them at the DOS prompt without having the DOS diskette in your logged drive. To set the date, for instance, type at the DOS prompt: date, then space, then two numbers each for the month, date and year, separated by hyphens. So, if you type DATE 10-08-88 (Enter), all the files you create until you reboot DOS or change the DATE, will bear that date when listed in the directory.

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## PCjr Upgrade Tips

Continued from page 1

questionable, especially in light of the onslaught of cheap PC clones.

As more programs started requiring 256K RAM, the time came when living within the bounds of 128K was just too restrictive. Fortunately by this time prices for jr upgrades dropped so that upgrading was clearly the cost-effective approach.

First a Microsoft 128K RAM Booster with clock/calendar and mouse was added. About a year later the booster was upgraded to bring the total memory to 640K RAM without the need for an additional power supply. The total upgrade cost under \$300 and addressed two inadequacies: not enough memory and no second disk drive.

### Memory Management

Microsoft uses a MEMORY.SYS device driver to partition memory for ramdisk, video memory, and system use. The actual memory map configuration is unimportant here. Just realize that DOS, device drivers, and video memory are all within the first 128K of RAM. The Ramdisk area starts here also. If it is large enough to fill up the remainder of the first 128K then all programs load and execute from expansion RAM. The benefit of this is that execution is at PC speed which is about 25% faster than an unexpanded jr. Games get zippy!

It is useful to have a stockpile of different CONFIG.SYS files because most application programs don't have the same requirements. Some need two disk drives while others need large amounts of memory.

Build a series of CONFIG.SYS files of the form:

```
DEVICE = MEMORY.SYS /S:N /D:64 /V:16
```

where N is chosen from the following table of desired environments:

N	Ramdisk size in units of 1000 bytes	Memory size in units of 100 bytes
0	10	602
99	99	512
224	225	384
348	351	256

Other values of N will give different Ramdisk and memory sizes which can be verified with the CHKDSK command. Since only one CONFIG.SYS file is allowed on each disk, a good naming convention for keeping them all together is to replace the SYS extension with the RAM size or abbreviated program name. For instance, use CONFIG.256 to create a 256K RAM environment. CONFIG.VW might be used to create the environment for a word processor like Volkswriter Deluxe Plus (VW for short). Simply COPY CONFIG.XXX to CONFIG.SYS to set the disk for booting the appropriate environment.

The above values are approximate for a video buffer size of 16K without other device drivers installed. The mouse driver, if installed, takes an additional 3500 bytes from available memory. Some programs require only 4K for a video buffer because they work exclusively in textmode. In this case the /V:16 option can be replaced with a /V:4 to free up an additional 12K for Ramdisk or available memory.

Also the /D:64 option specifies a maximum of 63 files on the Ramdrive. Actually this limitation only applies on the directory level so if it's a problem just organize files into directories.

### Fontasy

Fontasy is an example of a good poor man's desktop publishing program which runs well on the jr provided there is enough memory to produce an entire printed page. The amount of memory needed actually depends on printer resolution. Fontasy runs fastest if a CONFIG.512 type environment (N=99) is chosen to force the program into expansion RAM. If this doesn't leave enough RAM for a full page with your printer, reduce the ramdisk size and sacrifice speed.

Be forewarned that Fontasy finds a bug in DOS 2.1. Before using the program, get the patch for fixing non-maskable interrupts on the PCjr from IBM, a users' group, or order jrNewsletter Disk #40. Another solution is to use DOS 3.X but I don't recommend it since it leaves only 280K bytes free on disk and resets

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parameters so the drive sounds as if it's munching diskettes.

### Volkswriter Deluxe Plus

A ramdisk is much better than a second disk drive for disk intensive programs like spelling checkers. Ramdisks are about 50 times faster than floppy disks and there is no mechanical head to wear out. The following example shows how to run Volkswriter Deluxe Plus (VW normally requires two drives) on a one drive PCjr. First, add the following CONFIG.VW to the CONFIG stockpile:

```
DEVICE = MEMORY.SYS /S:160 /V:4
BUFFERS = 20
FILES = 10
```

Then COPY CONFIG.VW to CONFIG.SYS on the VW program disk. This sets up a Ramdrive for the spelling checker plus all related files except the main EXE drive. Setting BUFFERS and FILES speeds up the spelling checker. If other ram resident programs (thesaurus, etc.) are present, increase the numbers by 5 or 10 if memory permits.

By the way, I recommend VW to anyone who needs an inexpensive easy to use word processor that does just about everything — and runs great on PCjr's. Everyone in our family uses it.

VW should be set up to expect documents on drive A. Use an AUTOEXEC.BAT file to: 1) load all necessary files (except VW.EXE) from the program disk onto drive C: (the Ramdisk), 2) set the default drive to C:, and 3) execute VW from drive A. When the disk stops spinning, replace the program disk with the document disk, then everything is ready to go. Schematically the AUTOEXEC.BAT file should look like:

```
COPY A:VW.XXX C: (Step 1... one COPY per file
C: (Step 2)
A:VW (Step 3)
```

This technique can be successfully used with other programs requiring two drives. A worthwhile benefit will be improved performance due to the Ramdrive. Also some programs require 384K (N=224) and at times it is useful to copy a nearly full disk onto the Ramdrive and still have 256K for programs (N=348).

## Inexpensive Graphics Program Works Well With PCjr's Colors

By Joe Sturgil

The first program I ever looked at in a computer store was IBM's Paintbrush program for the jr. If memory serves me correctly, the going price was \$100 for the program on a cartridge and \$125 for the mouse that was required to run it. That was too much to spend on a program that was just something to play with even though I was very much impressed with it.

I have since looked at several paint programs that had come my way, only to be disappointed with the limited color. All of that has changed for me, thanks to a local bulletin board that mentioned a mouse and paint program that a PCjr user was very happy with.

The mouse is Logitech's C7 Mouse and the program that came with it is called Logipaint. This is actually the same program that is known as PC-Paint. The price for both was \$85 plus shipping and can be purchased from Telemart out of Phoenix, Arizona.

My artistic talents are very limited, but I have had a ball doing what I can. All of jr's 16 colors plus various patterns can be used as you see fit. There are also a dozen or so fonts that can be used in many different sizes. You may also use Italic, Underline, Outline, Kerning and Shadow to emphasize your text. It is too bad I do not have a color printer to make a hard copy of my efforts. It will print your pictures in various shades of black.

The mouse comes with its own software so a card is not required. You can create your own menus so you

can use the mouse with your favorite programs. It already has menus for several popular programs you can use the mouse with. You can use the Logitech mouse with any program that calls for the more popular Microsoft mouse.

The only problem with using the mouse with the jr is that jr has only one serial port and that is where my external modem plugs in. I may have to purchase a switch box but for now I just unplug one and plug in the other. (The above article was originally published in the OKC Jr. Orphans Chronicle.)



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# A Library of Labels

By Ray Stroud

Here is a simple program that makes labels without having to use a file program. If you often have letters or packages to send to the same person or company, then a small stock of labels can be handy. Do you mail monthly payments for your car or your house or do you have friends that you write frequently or monthly bills to a pharmacy? If so, this little program is fast, simple and handy. It is written in BASICA.

```
100 FOR X = 1 TO 5
110 LPRINT CHR$(14); "SHEREE"
120 LPRINT "Box 894"
130 LPRINT "Winter Park,"
140 LPRINT "CO 80482"
150 LPRINT
160 LPRINT
170 NEXT X
180 CLS : LOCATE 5,5 : INPUT"ANOTHER
    SET?",R$
190 IF R$ = "Y" OR R$ = "y" THEN 100
200 SYSTEM
```

This program will print five copies on the standard 15/16" label. The address requires four lines, then the two LPRINT statements are simply line feeds so the print

head will be at the top of the next label.

Line 110 prints double width and the CHR\$(14) command is one that will revert to normal font with a line feed. If you do not want the double width, delete CHR\$(14);.

Instead of the names and addresses shown on this program, insert the names and addresses you desire on lines 110, 120, 130 and 140. Be sure that each line of string data is enclosed in quotation marks, start and finish. If you only want a three line address, then eliminate the string data on line 140 and just keep the LPRINT.

If you desire to interrupt the printing of the labels (you may only want six or eight), use the *Ctl-break* to stop the printing. If you want the program to repeat more or less than the five for which it is designed, change the 5 in line 100 to whatever number of labels you desire.

After you have written the program to your satisfaction, SAVE it with the name of your choice. The program gives you the option of repeating the series after you have printed each set. If you answer "no", the program will exit BASICA and return you to DOS.

I have five different programs that I use frequently — one for a return address label.

## How to Label Your Diskettes

If you want to put a label on your diskette (not the kind you stick on the outside, but one appearing above the directory), use the FORMAT B:/V command. This will enable you to write an eight character label or volume number which will appear every time the DIR command is given.

## O Owl Software



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# Money Management System And Home Inventory Software

By Dorothy A. DeBisschop

Two excellent new software programs have been added to the jr Newsletter Software Store: Home Budget Management System and Your Very Own Home Inventory. Here is a description of what these programs can do for you:

The Home Budget Management System will tell you all you want to know about your money. Use it to make a budget, then keep track of where your money comes from and how you spend it.

It will give you a summary showing how closely the budget was followed. This is a detailed record which will be invaluable when filing your income tax.

The software maintains a straight-forward double-entry bookkeeping record, which can handle up to 254 accounts, which may be income, expenses, assets, or liabilities.

Make a separate account for each item you report on your income tax—the information will be summarized for you at the end of the year.

Double-entry bookkeeping is based on the premise that debits equal credits—for anything you get, you give away something. For example: If you buy a printer for PCjr, you will have more computer equipment, but less money. You just add the cost of the printer to your computer equipment account, and subtract the same amount from your cash or check account.

If, instead of paying cash, you buy that printer on a credit card, you would enter the cost in a liability account — money you owe. Future payments would be recorded as outgoing money and a corresponding reduction of debt.

The Home Budget Management Software will give you excellent records, and it is basically easy to operate. But a word of caution—once an entry is made, you cannot delete it.

If you make an error, another correcting entry must be made. This can be frustrating, but it provides a clear auditing trail at the end of the year. To minimize the frustration, we recommend reading the documentation file first, then working with the sample data files to see the way the program works. If you take the time to do this and learn the program, you'll save a lot of time in the long run.

The program will provide you with a variety of reports, including:

- chart of accounts which provides a handy reference for entering your financial data
- transaction report which lists each income and expense and its corresponding entry

- a sorted ledger which details every income or expense incurred
- income and expense statement which shows the total income and expense in each of your accounts
- annual budget report which summarizes all the figures you'll need to file your income tax return

This program is similar to commercial programs selling for as much as \$125. And some commercial programs don't handle as many accounts.

For someone who wants to build up a detailed financial record, either for their home or a small business, the Home Budget Management System is an excellent buy! It is Disk #57 in the Jr Newsletter Software Store, page 13.

## Your Very Own Home Inventory

Any insurance agent will tell you homeowners you should have a complete inventory of the items in your home.

Making that list is one of those tedious tasks that never seems to get done because of more pressing things. It's too easy to delay making that inventory.

Here's a way to make it a little easier on yourself—maybe even enjoyable: use your PCjr and Your Very Own Home Inventory to speed up an other-

*Continued on page 10*

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## Home Inventory Software

Continued from page 9

wise time-consuming project.

Your Very Own Home Inventory is a versatile inventory or cataloging program. A homeowner may use it to keep a record of valuables for insurance purposes. A hobbyist may maintain a file of baseball trading cards on it. A book collector can make a full catalog (using the Dewey Decimal System, for example) of an entire library.

This program comes with a general set of data for a home and furnishings. These can be personalized to meet the user's particular collection or inventory.

The number of categories and subcategories is almost limitless, and even the most avid collector can record the entire collection with this program.

After you have personalized the categories and subcategories, data is entered through menus which are a series of multiple choice questions. You avoid a lot of repetitive typing, and the program leads you through a thorough description of each item.

For example, when used to inventory home furnishings, the user would first choose a room of the house, then choose from categories, such as appliances, furniture, etc. If furniture was selected, the next choices

would include couch, chairs, etc.

When the piece is selected, the menu presents a list of family members to note its owner and a color list to record its color. There is also a place to record the piece's value.

Setting up your personalized menu selections may take some planning, but once it is completed, the data entry for individual items inventoried is simple, speedy, and straight-forward.

When all the data is recorded, you can search for a particular item, or ask the program to give you a list of everything in particular categories.

This program will appeal especially to people whose collections have grown to the point they are difficult to organize. But its greatest usefulness will be to the homeowner who makes a complete home inventory before he or she needs to make an insurance claim for loss of property.

If you ever have a fire, flood, or robbery, you'll be very glad you made out your home inventory. You've made a certain investment in your PCjr—maybe now is the time to use it to protect the other investments and assets you have in your home.

Your Very Own Home Inventory is Disk #58 in the Jr Newsletter Software Store, page 13.

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### IBM Center Offers Help For Many Disabilities

If you, or a member of your family, has hearing, learning, vision or speech disabilities, your PCjr may be able to help. IBM sponsors the National Support Center for Persons with Disabilities, offers technical assistance and information on the latest products designed to help persons with hearing, learning, mobility, retardation, speech, vision and other disabilities.

For instance, there is reportedly a system developed by IBM which translates words and programming symbols on a computer screen into braille. It uses a mouse along with an interface card. As the mouse moves the cursor over the characters on the screen, a set of tiny pins on top of the mouse form the dot patterns of braille. The system can reportedly be used with a braille keyboard.

To find out more about this development and other computer aids for disabilities, call 1-800-426-2133. Or write to the National Support Center for Persons with Disabilities, 4111 Northside Parkway, Atlanta, GA 30327.

# How To Select The Right Monitor

Continued from page 1

you need a RGB color monitor. If it is the latter, a monochrome monitor will do.

If, however, along with word processing, you will be using telecommunications and educational programs, you should really consider an RGB color monitor. Most software programs today make good use of colors which makes them easier to use. The sharpness of today's RGB monitors is greatly improved over their earlier counter parts and they are much easier on the eyes.

Early computer buyers purchased monochrome monitors primarily for alphanumeric displays, ones that produced clearer letters and numbers. Those who wanted color often chose composite monitors because of their low cost. They were less expensive than the RGB monitors.

The best display for a PC is IBM's Monochrome display and the Monochrome Display Adapter (MDA). However, this monitor will not run on a PCjr. So don't try it or you will burn out the monitor.

In a PC, the BIOS chip holds the instructions that set up the video controller to produce a screen segmented into 25 lines by 80 columns, for a total of 2000 character boxes of equal size. The density of dots in a character box, the points where the CRT's electron beam lands on the phosphor screen - directly affects the readability of on screen characters. The character box defined by the MDA is 9 dots wide by 14 dots tall, resulting in a sharp character image unsurpassed by the CGA, the Hercules Graphics Card or the Enhanced Graphics Adapter.

Monitor pictures are composed of many little dots called "picture elements," a phrase that is contracted to either pixels or PELS.

The IBM PCjr Color Monitor dot pitch is .63mm. That's the amount of space between pixels, and text characters won't be as sharp as they are on other monitors with a smaller dot pitch. If you do a lot of word processing, the extra clarity of character will be worth the additional money for a monitor with a smaller dot pitch.

The IBM PCjr Color Display, unlike the IBM PC Color Display, can be placed on top of Junior because the monitor's magnetic field is properly shielded. All monitors generate magnetic fields, which by the way can erase data on floppy disks. This could result in your data being destroyed on a diskette if you lay diskettes on top or even beside your monitor.

## How A Monitor Works

In order to produce color, the CRT (Cathode Ray Tube inside your monitor) needs three electron guns in-

stead of one, one each for red, green, and blue. By combining the colors in different ways (which entails shooting the guns at different phosphors in different intensities at the screen), the rainbow's spectrum can be produced.

Today almost all monitors are RGB (Red, green, blue) and accept only that video signal. RGB boards send three separate signals - one to each gun. Monitors using RGB video produce colors of greater intensity in a sharper image than a composite signal.

Some less expensive color monitors, commonly called composite monitors, read the instructions for the different color guns from one composite signal. This is an effective way to operate at a reasonable cost. However, sharpness is sacrificed.

***"More pixels of smaller size  
... produce a sharper picture."***

The word used when we talk about picture quality and clarity is resolution. Resolution refers to the number of picture elements your video display is capable of producing. More pixels of a smaller size closer together produce a sharper picture than fewer pixels can. Therefore, two factors control the video display you see: your computer and your monitor.

If you use the monitor primarily for word processing, spread sheets and other word and number-oriented purposes, your need for crisp, clear alpha and numeric characters will be best served by a RGB monitor with small pixels.

When monitor manufacturers talk about specifications such as 640-horizontal-by-240-vertical resolution, they are referring to the number of pixels the monitor can present.

## Speakers

One advantage of the IBM PCjr monitor is that it comes with a built-in speaker. It sounds much better than that cheap one in the CPU of the junior. If you buy a monitor without a speaker, such as I did, there is an inexpensive alternative.

Go to your nearest Radio Shack dealer and ask for a "Realistic Amplified Speaker System." The model number is "MPS-5" and the part number is: 32-2031. It has a volume control and tone control and runs on four C-cell batteries or a power supply. I paid \$14.00 for

Continued on page 14



# jr Newsletter Software Store



This software is the best public domain and user-supported software for the PCjr we've been able to find. All the programs in this collection have been tested on our PCjrs and are highly recommended. Some of these programs are equal to or better than commercial programs costing hundreds of dollars.

**The programs in this collection are available for \$9 per disk or \$7 per disk, if you order four or more.**

**THE BEST OF JR NEWSLETTER.** The best and most informative articles from twelve issues of jr Newsletter (June 1986 through May 1987 issues) are contained on this disk. More than 50 articles on compatibility, problem solving, software, maintenance, memory expansion, how-to projects, tips on using DOS, and more! 128K (Disk #54)

**PC-WRITE.** This extremely popular word processing program is both powerful and easy to use. A review in PC World said "PC-Write may well be more versatile than WordStar — it's certainly more straightforward." Version 2.5 runs well on 128K. Version 2.7 has more features, comes on two diskettes and requires 256K to run without the spelling checker, which requires 384K. (Order Disk #1 for 128K V2.5. Order Disks #2A and 2B for V2.7)

**PC-FILE III.** This excellent database manager will handle up to 9,999 records, such as names and addresses, notes, product descriptions, etc. Uses generic, embedded, soundex and wildcard searches. Global updates and deletes. Sorts on any field. Too many features to mention. (Disk #3 runs on 128K, Disk #4 needs 256K)

**PC-CALC.** A versatile spreadsheet program that can do up to 26 columns of adjustable size and 256 lines. Features on-screen prompts, many math and statistical functions, hidden column capability, many formatting options, 64 character cells, automatic global recalculation, and more. Has some limits on 128K, but still very useful. (Disk #5 runs on 128K, Disk #6 requires 320K and two drives.)

**EASYRITE AND LABFILE.** Easy Rite makes your jr perform like a typewriter, without learning complicated commands. On screen prompts are easy to follow. Labfile is also easy to use for printing labels and storing information. Runs well on 128K with Epson/Gemini coded printers. (Disk #7)

**PROCOMM.** This powerful, yet easy to use telecommunications program has become the one favored by more PCjr users than any other. Dialing directory, auto redial, XMODEM, Kermit and other file transfer protocols. auto logon, DOS gateway, keyboard macros, exploding windows and many other features. The editor of PC Magazine called Procomm "competitive with the best comm programs on the market." Manual on disk. 256K (Disk #15)

**PC-OUTLINE.** Review in PC Magazine called this program "really fine" and it outperformed many commercial programs. Word processing functions are merged, allowing greater control. Many customizing features. Nine windows. Many useful features. 128K, plus DOS 2.0 or higher. (Disk #17)

**PC-TOUCH.** Designed to teach and practice touch typing. As you type, an on-screen line shows the number of erroneous keystrokes, and your accuracy rating as a percentage of keystrokes. 128K. (Disk #18)

**3 X 5.** An information management program that works just like a 3 x 5 card file. It offers speed, versatility and simplicity in entering, indexing and retrieving data. Has an integrated word processor, powerful search commands, multiple windows so you can edit in one and search in another, etc. Requires 256K. (Disk #19)

**PC-DESKTEAM.** Enables you to have an alarm clock, calendar, typewriter, calculator, and phone book accessible from your keyboard. Can be a resident program while you are using other software if you have the memory. 128K will run it alone. Need more to run it with other software. (Disk #22)

**PC-PROMPT.** A memory resident program that provides the format for DOS commands in an on-line mode. Help screen toggles on and off. Also help screens for BASICA, Turbo Pascal, Debug and EDLIN. 128K. (Disk #23)

**PC-DOS HELP.** Similar to PC-Prompt, but takes up less memory (16K) as a resident program. Geared to DOS 2.1 with special PCjr commands included. 128K (Disk #24)

**PC-CHECK MANAGER.** A menu-driven program that can handle multiple checkbooks, unlimited payees and ledger account assignments. Requires 256K. (Disk #25)

**FAMILY HISTORY.** Includes complete manual on disk with how-to info on tracing and setting up your family tree with detailed genealogical information. Easy to use and modify as you gather more data. New compiled version runs faster than previous version. 128K order Disk #33 alone. 256K order #33 and #33A.

**NEW KEY.** Powerful, popular program that allows you to redefine keystrokes and assign series of keystrokes to one or two keys. Customize software to meet your needs. Many other useful features included. 128K. Disk #35)

**PIANOMAN.** A great music program!. Allows you to write your own music, store it and play it on jr's terrific sound system. 128K. Disk #36)

**PC-KEY DRAW.** A powerful graphics program that allows you to draw, paint, produce slide shows, store and print your work. 256K, two drives. (Disk #37)

**PC-KEY DRAW DEMO.** Contains a slide show demonstration which allows you to see the amazing results you can get with PC-KEY DRAW. Helps to learn the many graphic capabilities of PC-KEY DRAW. (Disk #38)

**PRINT HANDLER** — Excellent software for printing banners, sideways, etc. Contains custom font generator, print spooler, and other useful print control utilities for Epson and compatible printers. 128K. (Disk #51)

**IMAGEPRINT.** Produces letter quality print on dot matrix printers. IBM Graphics Printers, Proprinters, Epsoms and compatibles. Contains many format features, three quality levels, interfaces with word processors. 128K ok (Disk #50)

**JR POWER PACK.** A collection of particularly useful programs for PCjr owners. Set up RAM disks, address memory to 736K, turn a joystick into a mouse, set screen colors, keyboard click, scan and search text files, screenblinker, print spooler, and more. 128K. (Disk #52)

**SUPER UTILITIES.** The 15 utilities in this collection include Undelete, to recover a mistakenly deleted file; a powerful command editor; a clock, notepad, time and calendar; another to redirect file contents from printer to disk...and many more useful utilities. Under 128K ok. (Disk #28)

**MORE SUPER UTILITIES.** A collection of excellent screen and keyboard enhancements, useful file managers, color selectors, and more. Under 128K ok. (Disk #29)

**DOS 2.1 FIX.** Patches to fix the bugs in DOS 2.1. Cures most problems encountered when running memory intensive programs. Also patches to run BASIC and BASICA on DOS 2.1 without having Cartridge BASIC installed. 128K ok. (Disk #40)

**DOSAMATIC.** A nifty way to view the contents of disks, easily manipulate files and carry out DOS commands. Features a Mac-like "point and press" interface which allows you to select the commands you want from pull down menus. Also permits loading several programs at once and jumping from one to the other. 128K ok, but more memory needed for "multi-tasking." (Disk #49)

**PCJR PATCHES.** Many patches to fix software that ordinarily won't run on PCjrs. Includes patches for Starflight, Advanced Flight Simulator, Quick Basic, Turbo Basic, Turbo C, Double DOS, and more. (Disk #56)

**HOME BUDGET MANAGEMENT SYSTEM.** Easy-to-use system for keeping track of income and expenses. Create separate accounts for income tax categories and get a summary at end of year. Provides chart of accounts, transaction reports, sorted ledger entries, etc. 128K (Disk #57)

**HOME INVENTORY.** Taking an inventory of your home might even be fun with this easy-to-use software that takes you through the process step by step. Gives a complete record for insurance purposes. Also good for listing collections. 128K (Disk #58)

## GAMES

**GAMES.** An assortment of games for hours of fun and excitement. Includes Spacewar, Airtrax, Life, Wumpus, Wizard and more. All good with 128K. (Disk #8)

**DUNGEONS & WARS.** In Dungeon Quest you can choose to be a dwarf, elf, magic-user, fighter or other type of character. You select your strengths and weapons, too. Then you enter the dangerous dungeons on your Quest. Thermonuclear War pits the US vs the Soviets in a very real demonstration of what a nuclear war might be like. Combat is a strategic battle on the ground. 128K ok. (Disk #9)

**PINBALL RALLY.** A colorful collection of amazingly realistic pinball games. Using the Shift keys as flippers, the games get more and more complex until you get to Twilight Zone, which is the hardest because some parts are invisible. Runs on 128K. (Disk #10)

**ARCADE GAMES.** Includes Kong, Pango, PC-Golf, Pyramid and other exciting, colorful games for hours of fun. 128K. (Disk #30)

**BOARD GAMES.** Play Monopoly against the computer. Backgammon, Yahtzee and Four — a game your jr is especially clever at. 128K. (Disk #31)

**GAMES, GAMES, GAMES.** A wild assortment of games to test your wits and skills. Includes Slither, Xwing, Torpedo, ABM2 and Overreact, where you are in charge of a nuclear plant. 128K (Disk #34)

**PC-CHESS.** A full color many-featured chess program, with four levels of play. You can play against the computer or another human, save games to disk, set up the board yourself and switch sides if you want. It has two clocks for elapsed time for each player, allows castling, en passant and pawn promotion with validity checking, plus other features. 128K (Disk #44)

**ZAXXON/GALAXY TREK.** Two exciting high tech shoot-em-up games. In Zaxxon you fly through an obstacle course, shooting while you go, up and over walls, and eventually through space. Galaxy Trek makes you the commander of a Star Ship which you maneuver through the universe seeking to destroy a fleet of Megaton warships before they conquer the planets. 128K. (Disk #45)

**PHRASE CRAZE.** Based on the TV show Wheel of Fortune, you get to be the guest who guesses the mystery phrases and wins piles of money! The wheel spins to select the amount of money you win for correct guesses. It gets harder with each round you play. You can add your own phrases to this game or try to guess the ones provided on the disk. Lot of fun for adults as well as older kids. 128K. (Disk #46)

**GOLF/SAILING.** Two great games for sailors and golfers! The golf game has three courses, user definable club ranges, and a swing control that determines whether you hit a slice, hook or straight shot. Three nine hole courses (Novice, Pro, and Sadistic). In the other game, you try to sail the three legs of the Bermuda Triangle, avoiding, if you can, the creeping mists, alien crystals, vortexes and storms. Your boat is equipped with radar, rudder and sail (all of which you control) and an engine for emergencies. 128K ok for sailing. Need 256K for golf. (Disk #47)

**BOARD GAMES.** Eleven different games on one disk! Hours of fun with Monopoly, Yahtzee, Cribbage, Backgammon, Othello, and others. All run great on your PCjr! 128K (Disk #31)

**CASTAWAY/S. AMERICAN TREK.** Test your survival skills as the survivor of a shipwreck in the South Pacific. Or as an explorer of South America. Two novice text adventures from Jim Button. Ages 12 and up. 128K (Disk #53)

**SUPER BOARD GAMES.** Excellent versions of two popular board games — Monopoly and Risk. Very much like the board versions, except your computer keeps track of everything for you. All you have to do is make the right moves and have fun. 256K (Disk #55)

## EDUCATIONAL SOFTWARE

**ORIGAMI.** Learn the art of Japanese paper folding. This program shows you how, step-by-step, to create amazing animals and other objects just by folding paper. Fun for kids and adults, too. 128K (Disk #39)

**PLAY AND LEARN.** Educational games for kids five and up. Word match games, find-a-word puzzles, word scrambles, etc. made for PCjrs by school teachers. 128K. (Disk #32)

**WORD PROCESSING FOR KIDS.** Simple, fun and easy-to-use word processor designed especially for beginning writers. Allows children to express their ideas easily and then print them out in large type on your printer. Colorful opening menus make learning the simple commands very easy. Parents/teachers manual is on the disk. 128K (Disk #41)

**MATH FUN!** A great way to get kids learning how to add, subtract, multiply and divide. Includes a program called Math Tutor which has cleverly designed exercises for kids in Grades 1-6. Also Funnels and Buckets, a nifty math game that makes learning math fun. 128K (Disk #42)

**EARLY LEARNING.** A collection of colorful educational games for children ages 6-8. Sing-along alphabet, letter matching, alphabet tutorial, number/counting game, maze, pattern matching and time telling. 128K. (Disk #48)

\* \* \* \* \*

## jr Software Order Form

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\* \* \* \* \*

## Selecting A Monitor

Continued from page 11

mine. Just plug the unit into the audio jack on the back of your PCjr. This amplifier will allow you to hear any three note harmony you play on your PCjr.

### Which Monitor is Right For You?

The right monitor for you is one that compliments PCjr's video graphics abilities - and suits your purpose - and fits your budget.

For text mode you need a monitor capable of producing an 80-column-by-25-line screen. For graphics, get one capable of drawing in 16 colors and displaying at least 640 horizontal by 300 vertical pixels on the screen.

Some monitors can produce more colors and higher resolution, but PCjr can't send them the control information necessary to take advantage of their increased capabilities.

Color monitors that will work on the PCjr are shown below. The cost of these monitors varies widely, so check with your local dealers or mail order dealers.

Model	Price	Graphics mode	
		Screen Size	Display in Pixels
IBM PCjr Display	\$429	13"	320 x 200
IBM PC color Display	\$680	13"	640 x 200
Princeton Graphics HX12	\$695	12"	690 x 240
Amdek Color II Plus	\$559	13"	640 x 200

To connect another monitor to the PCjr you need IBM's Display Adapter, P/N 8600021. They are available from several suppliers for about \$20. This adapter cord connects the monitor plug to the special one on the back of the PCjr. They're hard to find so check those mail order dealers specializing in PCjr equipment. Several of those dealers advertising in this Newsletter carry them.

## Writing Assistant Tip

If you are using IBM Writing Assistant version 1.0 (not 1.01) and have been frustrated by your inability to create files larger than about 4 pages, the PC ID cartridge will reportedly solve your problem because it tricks the software into thinking it's running on a PC and will permit the creation and editing of larger files. The cartridge is available for \$15.95 from PC Enterprises, P.O. Box 292, Belmar, NJ 07719. Phone: 800-922-PCJR, or 201-280-0025.

(The above article was originally published in the Metro PCjr Journal.)

DON'T PLAY DISKETTE ROULETTE — MAKE BACK-UP COPIES.

## Integrity Makes Cartridge For Clock/Calendar Functions

Integrity Technology has produced a cartridge for the PCjr that will give you the time and date, just as if you had a clock/calendar built into your computer.

The cartridge, which sells for \$34.50, can be inserted into a cartridge slot at any time. Or you can keep it in place and add the line "GETIME" to your autoexec.bat file so the time and date will be accessed when you boot up.

The cartridge comes with a disk which has instructions as well as GET, SET and SHOW date and time programs. The calendar has automatic adjustments for months with less than 31 days as well as for leap years.

A three volt lithium battery is installed in the cartridge. They are supposed to last for more than five years and can be easily replaced by opening up the cartridge (an easier job than replacing the battery inside your computer or sidecar).

Integrity Technology, 105 Serra Way, Suite 230, Milpitas, CA 95035 (408) 262-8640.

## Questions and Answers

Continued from page 3

then free up your computer so you can use it while the printer continues to work. A print spooler is a software program that puts information to be printed into your computer's memory and feeds it to the printer. There are print spoolers on Disk #51 Print Handler and Disk #52 Jr Power Pack in the jr Newsletter Software Store, page 13. They work well and can be set for different sizes according to the amount of memory you want to allocate for the job. A print buffer is a hardware device that has its own memory which stores the information in a kind of holding pattern until the printer needs it. These devices are readily available, but are much more expensive than a software spooler.

**Q. Are there any sources for PCjr products and repairs on the West Coast?**

A. There are several. Paul Rau, 260 N. Lincoln Way, Galt, CA 95632 (209) 745-9284 has a wide range of PCjr items. Honey Computers, 3145 Geary Blvd., Suite 150, San Francisco, CA (415) 584-2456 is run by Vincent Honig, former president of the San Francisco PCjr Users Group and carries many PCjr products. If you live in the San Francisco area, you might contact the users group, which is an active and helpful group. Their address is 2336 Market St., San Francisco, CA 94114. Their BBS number is (415) 997-4874. Or the Eugene, OR PCjr Users Group, 1011 Valley River Way, Suite 220, Eugene, OR 97401 might have information on PCjr suppliers in Oregon.

**\* \* \* PCJR CLASSIFIEDS \* \* \***

**ASSISTANT SERIES** for sale. Like new versions 1.0 of IBM Filing, Planning and Reporting Assistants. \$40 each prepaid or all 3 for \$100. Larry Haas, 1037 E Crystal Lake Rd., Burnsville, MN 55337 (612) 435-5758. (10)

**IBM PCJR INTERNAL MODEM** — 300 baud. \$50. Jerry Johnson, 6 Guy St., Salem, N.H. 03079 (603) 898-4579 after 6 p.m. (10)

**IBM PCJR 128K**— One drive, monochrome monitor, letter quality printer, DOS 2.1, Homeword Word-processing, Visicalc, DAC Easy Accounting, Keytronics keyboard. Basic system, but all software runs beautifully. \$1,000. (313) 679-4480. (10)

**IBM PARALLEL PRINTER ATTACHMENT** — \$50, with instructions. Peter Zdenek, 8 Terrapin Lane, Trenton, NJ 08619 (609) 586-5860. (10)

**IBM PCJR ITEMS:** Connector for television (IBM) new \$15; IBM PCjr Internal Modem, incl. operating instructions \$45. Al Flores, 2817 Shady Hill Dr., Temple, TX 76502. (10)

**PCJR:** Color monitor, joystick, Legacy serial card, jr synchro cartridge, cartridge basic, DOS 2.1, KB5151jr, plus 2 extra keyboards, and serial cable. Legacy II 512K, clock cal, parallel port, 2nd drive. All software, tech ref manual, documentation. Have all original boxes. \$950. Will split up. Dennis Widdows, 9658 E Colette, Tucson, AZ 85748 (602) 721-4770 after 5 p.m. MST. (10)

**IBM PCJR Internal Modem** \$20; Power Expansion Attachment, \$20; Adapter Cable for Serial Devices, \$10; Add \$2 shipping ea. or \$3 for all. Ronald Baux, 432 Bristol Ct., Scranton, PA 18509. (10)

### **What is A CONFIG.SYS file?**

When your PCjr boots DOS, one of the first things it does is to check the diskette being booted for a CONFIG.SYS file. This file provides configuration commands which DOS will use until it is rebooted.

PCjrs with expanded memory require CONFIG.SYS files to tell DOS how to use the additional memory. There are five commands that can be put in CONFIG.SYS files: BREAK, BUFFERS, DEVICE, FILES and SHELL.

### **Have a Comment or a Tip?**

Share your experience with other PCjr owners by writing to: jr Newsletter, Box 163, Southbury, CT 06488. We'd like to hear from you.

**ORIGINAL IBM PARTS** for PCjr: One Parallel Printer Port \$50; One Internal Modem \$30. Phil Falcone, 402 E. Ridgewood Ave., Absecon, NJ 08201. (11)

**IBM PCJR** upgraded with factory installed 2nd disk drive, expanded to 512K and DMA by Racore, jr color monitor and both keyboards, serial adapter, parallel side car, IBM internal modem 300, basic and paint cartridges, assorted developer software, excellent condition and factory packaging, will ship for 1000. Call (215) 928-9044 or (302) 227-8030, ask for Xavier. (11)

**PARALLEL PRINTER ATTACHMENT** Almost new. Will sell for \$35 or best offer. Sam Kim, 19 W. Monterey Ave., Schaumburg, IL 60193. (312) 351-3227. (11)

**NEEDED: IBM PCJR** - compatible serial interface mouse and IBM Adapter Devices if applicable for the IBM PCjr ColorPaint program. Denise Watson, P.O. Box 276, Lincoln, AL 35096 (11)

**TECMAR MEMORY** - Captain and Cadet to bring 128K PCjr's memory to 640K. Original price over \$500. Asking \$200. J. W. Graves (904) 328-2972. (11)

**PCjr ROM CARTRIDGE KITS** Integrity Technology, 105 Serra Way, Suite 230, Milpitas, CA 95035-0604. *Classified Ads are free to subscribers of jr Newsletter. Just send us your typewritten ad (no more than 5 lines on an 8½ x 11 typed page) and we'll run it for you for two months. Ads for \$10 per issue for non-subscribers. Send to jr Newsletter, Box 163, Southbury, CT 06488.*

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