

## Improved Prodigy Works on PCjrs

by Zyg Skrobansky

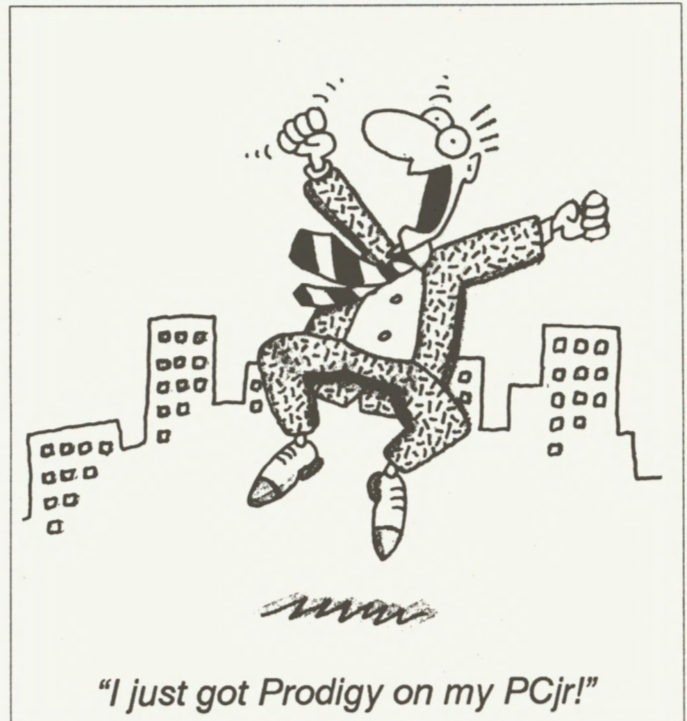
I love to know the my PCjr can do things that other, more modern, computers cannot. One such example is the ability to receive the *Prodigy* service in full color!

The other machines are able to get the service in color, but only if they are equipped with the more costly graphic adapter cards (such as EGA or VGA). My "other" computer at work is a 286 AT clone with a color monitor, but it cannot receive *Prodigy* in color because it has only a CGA color graphics adapter! I would have to obtain the proper graphics card to get color. The PCjr on the other hand, has a superior color system compared to the CGA. A scheme similar to the jr's was adopted by Tandy for use with their 1000-series computers.

*Prodigy*, owned by a partnership of Sears and IBM, is a sort of electronic magazine. What makes it different from services such as CompuServe or other Bulletin Boards is that it is an interactive system. *Prodigy* actually uses the computing power of your computer, rather than treating it as a "dumb" display terminal, which is how the other systems work.

Think of it, my PCjr which I purchased six years ago, not only works on the latest systems but it can display them better than more modern machines equally equipped!

Unfortunately, *Prodigy* does not officially support the PCjr. This was a real problem when the system started a



"I just got Prodigy on my PCjr!"

couple of years ago. The original software supplied with the startup kit was not jr friendly! Always resourceful, PCjr users came up with a simple patch to convert to Tandy compatible color (which is supported by *Prodigy*).

However, the software still caused the jr's to lock up frequently, and various techniques were adopted to make the system work. These problems and a lack of features in the service initially turned many PCjr users away from *Prodigy*.

Recently *Prodigy* has introduced a new software upgrade (version 3.1), added new features and generally improved service. Although still not officially supporting the PCjr, the new software can easily be made to work well with it!

So what needs to be done to the PCjr so that it can receive *Prodigy*? First of all you need to increase the memory of your jr to 640K or more. The *Prodigy* installation procedure is followed and the two "Personal Disks" A and B: are prepared. You should set aside as much memory for the video RAM as possible. Use the PCJRMEM.COM or CONFIGJR utilities in the main CONFIG.SYS file in the *Prodigy* Disk A: to establish the PCjr working parameters at time of "booting." (PCJR Autsetup V1.2, Disk #99 in the jrNewsletter Software Store will do this for you automatically - just select the telecommunications setup.)

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**PCjr Lives!**

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# PCjr Memory Expansion

By Larry Kaja

You can't just install additional memory in the PCjr and expect it to work. Even though the first screen may display the new memory total, there is something else you need to do that is *often overlooked*.

Each brand of PCjr memory expansion is a little different, but let's assume you have just installed an IBM 128K Memory Expansion sidecar on your PCjr. The instructions that come with the memory expansion sidecar will tell you to do a couple of things:

1. Set a switch on the back of the memory sidecar, based on how much memory your PCjr has.
2. Run an "INSTALL program: which puts the additional memory information on your DOS disk (and other bootable disks).

When you run the INSTALL program a few things happen:

\* A file called CONFIG.SYS is automatically created on your DOS disks.

\* The file called PCJRMEM.COM is copied to your DOS and other bootable disks, and a line is written in the CONFIG.SYS file.

\* If you're installing a RAM disk, the file called RAMDISK.COM is copied to your DOS and other bootable disks, and another line is written in the CONFIG.SYS file.

If you do a TYPE CONFIG.SYS command from the DOS prompt after you run the INSTALL program, you will see this:

```
DEVICE=PCJRMEM.COM
DEVICE=RAMDISK.COM /60 (if you specified a 60K RAMDISK)
```

It's important to remember that if you want to use your additional memory when you boot up a disk, then you *must* have these three files (PCJRMEM.COM, RAMDISK.COM CONFIG.SYS) on *any* DOS or bootable disk you use. If you don't want to run the INSTALL program from the PCjr Memory Options disk, then you can simply copy PCJRMEM.COM AND RAMDISK.COM from the PCjr Memory options disk onto your bootable disk and then create a CONFIG.SYS file. At the DOS prompt, type COPY CON CONFIG.SYS and press Enter. Then type in the two lines in the example above. Press "Fn6" and Enter after you are finished. This creates a CONFIG.SYS file on your disk.

You can even have a second RAM disk by simply putting a second DEVICE=RAMDISK.COM /nn line in your CONFIG.SYS file. (The "nn" represents any number you want to select for the size for your RAM disk. For example /100 will create a 100K RAM disk. This is equivalent to the -s100 you would use with JRCONFIG.) This second RAM disk will be drive "D." You can find more information on the CONFIG.SYS file in your DOS hard-cover book.

PCJRMEM.COM can appear three different ways in


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# Questions and Answers

By Rene Waldron



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 problem that I hope someone can help me with. After installing a second drive (3.5" from PC Enterprises) as instructed and following the software driver instructions, I find that the B: drive has disappeared and C: is the label and address of this new drive. With this arrangement, I cannot bring up my RAMdisk as needed for applications. I called PC Enterprises and they thought that my B: was being used up with something else. Is this possible? I have 640k with an Impulse side unit and it seems that I can only use a RAMdisk if I boot up NOT recognizing the 3.5" second drive. Can you help?**

*S. Fichter, June Lake, CA*

**A.** Here's what seems a classic example of unclear or incomplete installation directions for the driver software for the add-on disk drive. We don't know which version of DOS you're using or the device driver for the disk drive but here's the way the logic works anyway:

In the CONFIG.SYS or the AUTOEXEC.BAT file which either you re-wrote OR which the installation procedure re-wrote for you, the ORDER in which the drives are recognized is the most important factor. If the RAMdisk driver is read first in the booting process, then it could very well be the B: (the disappeared) drive and to access the RAMdisk you would have to change all your calls from C: to B: You can test this by simply trying to access the RAMdisk as B: at the DOS prompt. Activate a small RAMdisk then try to copy a small file to it. If you get no error, do a DIR to see if it really is there. If it is all OK and you have a B: RAMdisk. If any part of this fails then somehow your boot disk is simply telling DOS there is no B: drive, so the 3.5" becomes C: (By the way, your RAMdisk

should have become D: but your letter did not indicate this...)

A better solution, one which will not require re-writing all your batch files for this B: or D: drive, is to get the RAMdisk to C: where it belongs and get the B: drive to be the 3.5". Either TYPE the CONFIG.SYS file or study it in an ASCII word processor to determine at what point the second drive is recognized. If you are using Larry Newcomb's boot procedure use DEVICE=CONFIGJR.SYS -D2 -V32 (or whatever Vnn you need for video...) and this will recognize two (-D2) real physical drives A: and B: and get ready for a RAMdisk which you should then load separately using SETRAM or RAMDRV or some other ramdisk program. Any other part of the CONFIG.SYS setup should ONLY be to tell DOS that this will be a 720k 3.5" drive. Use something like DEVICE=DRIVER.SYS /D:1/ F:2 in DOS 3.xx, for example.

If you're still using DOS 2.1 then use the driver which will recognize the 720k aspect of the drive which came with it but be sure it comes AFTER the Larry Newcomb set-up in the CONFIG.SYS file or in an AUTOEXEC.BAT file. His .DOC file explains this pretty well. Do not use any Newcomb "-D" parameter at all if the instructions make no mention of needing any other device driver.

One other point: DOS drivers use the /D:0 as drive #0 (A:), /D:1 as drive #1 (B:) etc. while /F:2 is simply 720k format so don't be confused by this. You could also use FAST-BOOT in place of the "invisible" file on the first 100 bytes of track 0. This is a trouble free process and recognizes two drives and memory WITHOUT the re-boot which is so common.

One of our own jrs, before the hard disk add-on, had the following on a FAST-BOOT disk: (We slid the 3.5" drive into the jr and accessed it as A: and D:)

```
device=pcjrmem.com /e
device=ramdrv.sys
device=driver.sys /d:
0 buffers=15
files=20
```

Notice that the RAMdisk seems to be set up before the drive 0, but FAST-BOOT has already recognized the first and second drives so our RAMdisk is really C:, the third drive! The DRIVER.SYS next, is just to set up A: as a 3.5" drive...

*(Continues on page 4)*

# Questions and Answers

(Continued from page 3)

## Q. Will Windows run on the jr? Various Readers

A. Hard to believe, but Windows ver 3.xx does just that! It really isn't worth the expense to buy it though, it is so slooowww on 8088 & 8086 CPUs... AND it runs in monochrome only. Just for the experimenters out there, here's the scoop:

You MUST have a hard disk and at least 640k of total RAM.

First, copy ALL the 3.5" diskettes onto 5.25" floppies. This will take at LEAST two 5.25" for each 3.5", sometimes three because you can't split the share exactly in half. In our little experiment we wound up with sixteen 5.25" floppies. You must be sure to have \*.INFO and SETUP on the SAME 5.25" floppy and label it 1-A. Label the floppies 1-A, 1-B, 2-A, 2-B etc. to be organized about the original disk numbers because Windows Setup asks for them by the numbers. Just put disk 1-A into A: and type "setup" then simply follow the directions. If you have the wrong disk in place, that's OK, the instructions let you know about it. You just put in your #-B if the #- A won't

work or you just move to the next disk, feeding them into the slot as if it is a cookie-monster.

Part way through the set-up, Windows will come up on the screen, giving you a preview of what to expect when it is completely installed. Windows has absolutely the best installation procedure we have ever encountered!

Q. Some of the programs I have tried call for 512k and yet they won't run on my jr, Examples: In House Acct., Swift Desktop Publishing and Personal Publishing. I have a jr. Captain 512k expansion sidecar. What goes?

J. Coppola, Stamford CT

A. For those of you new to computing and those who have received holiday gifts here's what to look for and why:

The RAM as listed on the packages is the amount of FREE RAM, not total RAM of the computer. The jr uses from 32 to 132 of RAM for its own purposes such as DOS, video screens, TSRs, keyboard, etc. so the amount of free RAM is depleted by the amount used to configure the machine at boot-up. We generally subtract 128k from our installed memory to see if we fall into the range of the package requirements. This usually works. If we see something like a utility or a TSR (pop-up) which requires 512k - 640k then all bets are off. Either they really DO need all that memory, in which case no DOS standard machine can run anything else anyway, or the figure is meaningless and the program could actually run in a few k of RAM.

Q. Cannot find software which will allow printing on both my IBM Proprinter and my 3852-2 Color Jetprinter. Have checked on various BBSs and have been unsuccessful. Is there a printer conversion program which allows conversion of Proprinter to Color Jetprinter?

D. Sample, Hackettstown NJ

A. It seems you might be going in too narrow a direction. The first place to check are the software manufacturers for drivers which could be being supplied separately for the Color Jetprinter. You then enable the printer of choice at run time. If ALL the software companies you contacted do not have a driver then try to look for packages which support the largest number of OTHER color printers. Now the chore is to find a driver conversion from ANY of the other supported printers (not just the IBM Proprinter) to the Color Jetprinter. We are really surprised that this printer is as badly supported as you indicate.

Q. Would like to know if there is a scanner which will work on the jr. I have seen an ad. from Marstek inc. which requires only 384k plus a serial port.

D. Sorrenti Tempe AZ

A. We have had some difficulties with the software from Marstek, (Agile, Facile, Famouse etc) namely a

(Continued on page 19)

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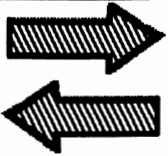
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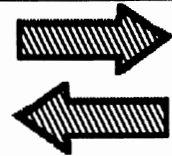


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# Reader Feedback



## Another Modem Solves Prodigy

This might help someone who still has trouble accessing Prodigy after trying recommended patches.

My modem worked on everything (BBS's CompuServe, Genie, etc.) except Prodigy. Suddenly my modem went totally. I borrowed one from a friend and was pleasantly surprised that I had no trouble accessing Prodigy. I just never thought it could be the modem.

If all else fails, try another modem.

*Albert Tedeschi, Westerlo, NY*

## Sick PCjr is Now Well And Running Better Than Ever

I thought you might be interested in hearing that, within the last month or so, my PCjr has gained a new lease on life! Although I personally now use a 12 Mhz 286 (and wishing I had a 486!), I've kept the jr for my 7 year old daughter to use.

Unfortunately, for most of 1990, Jessica wasn't able to use the jr much. Starting last spring it developed a problem wherein after it had been running for several minutes the screen would suddenly and without warning, "hiccup," random characters would change color and the whole system would lockup. Things deteriorated over a period of a few weeks to the point where the jr wouldn't even bootup properly.

On the suggestion of a fellow member of **CompuServe's** PCjr forum, I removed the back of the Color Display and, sure enough, one of the solder points on the metal plate at the back of the CRT yoke was cracked. I gingerly resoldered it but the problem persisted unabated.

For quite a while I was afraid to send the jr in for repair fearing how much it would cost (in addition to the above mentioned problem, one of the pins on joystick A port had broken off). Finally, early in December, I did send the jr to **Paul Rau Consulting**. Paul ran diagnostics on the motherboard but, aside from the joystick port, could find nothing wrong with it! Nor could he find anything wrong with the spare motherboard I had sent along with the jr, but which I also thought was defective!

Since he could find nothing wrong with it, Paul swapped out the original motherboard and replaced it with the spare. At the same time I had him do the Tandy modi-

fication to the spare motherboard and attach a cable to the LED light on my Nickel Express board so that it can now be visible from the IR port in the front of the jr. In the past, it was frequently difficult to know whether jr was in normal or turbo mode!

We got the jr back about a week later. To date it has performed flawlessly! Not so much as a flicker from the monitor! While it would still be premature to pronounce the patient cured, it nevertheless appears, at least, to be well on the road to recovery. Only time will tell for sure!

The **Tandy Modification** is chiefly what has given the jr a new lease on life. For a long time I resisted doing or having it done because I didn't want to "ruin" the motherboard. I realize now that had been a BIG mistake! Since getting the jr back, I've tested and found that **Flight Simulator 4.0b**, **Battlehawks 1942**, **Battle of Britain**, and **Prodigy** will run on the jr in Tandy Graphics! I haven't tested all the programs I have that support Tandy graphics but I suspect that most, if not all, will run on the jr in Tandy mode also.

I don't recommend trying to run the first three programs on a jr even if it has the Tandy modification UNLESS the Nickel Express or jrExcellerator turbo board installed. Even with the latter, the frame rate is very choppy. On my jr, which has the N.E., they are just barely usable. I'm giving serious thought to replacing the N.E. with the jrExcellerator! Also FS3, looks and runs better (i.e., has a smoother frame rate) patched for jr graphics (When is someone going to come up with a patch for FS4?!)

I should note here, however, that I have the Racore Drive II Plus w/DMA, and that, apparently, the Tandy mode will NOT work unless a ramdisk is setup via the config.sys file. I've tested it in jr mode without a ramdisk and in PC mode with and without a ramdisk (setup via the autoexec.bat file) and it will not function under any of these conditions! It has also apparently disabled my PC ID cartridge (no big deal since I don't use it anyway.)

Finally a note about running Prodigy on the jr. When it first became available in my area Prodigy ran fine on the jr (albeit, in CGA B&W). Since getting the Tandy modification, however, I can't seem to get it to work consistently on the jr. In fact, connecting to Prodigy on the jr is the exception rather than the rule now. When it tries to dial the modem Prodigy usually reports that the modem is not responding or that the baud rate is wrong (which is non-

*(Continued on page 6)*



## Reader Feedback

(Continued from page 5)

**MEAN 18 GOLF COURSES.** Three excellently designed courses for those who play "Mean 18," the commercial golf game. Disk #79 has Boca Woods North, Boca Woods South, both with especially challenging water holes, and Kearsage Valley, with fall foliage in full color. Disk #80 has TPC of Avenel, TPC of Sawgrass, with massive sand traps and a tough 17th green on an island, and TPC of Woodlands, which may be the most challenging of all. (Disk #79 and #80)

**PC-CHESS.** Two great chess games on one disk! A full-color, many featured chess program with four levels of play, allows such things as switching sides, setting up the board yourself, validity checking, en passant, etc. The other works on color or monochrome, has window showing options it considers before moving, adjustable difficulty level — but a powerful opponent at any level. 128K ok for one, 256K for other. (Disk #44)

**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)

**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, the hardest one of all. Runs on 128K. (Disk #10)

**PLAYER'S CHOICE.** Six different card games, some easy, some hard, but all excellent. Youngsters can have fun playing Memory or Even-Out, which are quite easy to master. Blackjack is hard to beat, and Poker, which has the ability to modify its play in response to your methods, is a real challenge. Also two fine versions of Solitaire, one with great graphics. Some need 256K. (Disk #78)

**REFLEX POINT.** Patterned on the TV show Robotech, this game follows the show's storyline, with the Freedom Fighters trying to reach the Reflex Point and destroy the evil Invid Prince. 128K ok. (Disk #12)

**SCRABBLE.** At last, an excellent Scrabble game that runs in 16 colors on PCjr's! Plays just like the board game. Expandable dictionary checks words. Keeps track of all premium score squares and scores for up to four players. Also contains WORDWHIZ, a nice vocabulary building game. 256K (Reviewed 5/90) (Disk #113)

**STAY ALIVE !!!** Three games that require all your wits to stay alive. Can you avoid the terrible nightmares and reach the highest level in Dr. Sleep? Or fight off the alien hordes on the Planet Iskib? Bet you can't shoot down the clever enemy pilots in Sopwith. If you can, you deserve a medal! 256K (Disk #89)

sense. I have an Avatec 1200 baud external modem and Legacy internal serial card on the jr. The former is kept at 1200 baud at all times). (There is an easy fix for this problem - see article on page 1 — ED)

Another user on Compuserve's JR forum suggest doing the following: First, add the line "modem type:0", which instructs Prodigy NOT to dial the modem, to the config.sm file. Then create and execute the following bat. file:

```
mode com1:1200
echo atdt***-****>com1:
call prodigy %1
```

Replace "\*\*\*-\*\*\*\*" with your local Prodigy access number. The "CALL" command requires DOS 3.3 to work. Unfortunately, I'm still using DOS 3.21 on the jr so I can't confirm whether or not this works, but I'm sure that it does. It was also suggested that one use the new AUTOLOGON feature of Prodigy (which automatically sends your id number and password so you don't have to enter them manually) in order to speed up the logon process. Once online, however, Prodigy runs and looks great in Tandy graphics!

Whew!! Sorry for being so long winded! I'd just like to close by saying that I get a sense of satisfaction booting up the jr and seeing it function well that I've never had running the 286 (or the XT clone before it). The jr has been part of my life for 5 years now and keeping it running, let alone as current as possible with today's machines, has been a real challenge. Ultimately, keeping the jr running will become a lost cause, but then, as someone has said, lost causes are the only ones worth fighting for!

*Steven S. Miller, Grand Terrace CA*

## Automenu Makes Novice PCjr User Very Happy

I have begun to use two fantastic products that can convert an unadventurous novice like me into an enthusiastic user who can't wait to get home to work or play on my Junior.

The first product is Automenu, a shareware program from Magee Enterprises. Prior to the recent release 4.7, it took a little technical skill to build menus that would automatically execute and return to the menu. With release 4.7, in "novice" configuration, the product will even build the required parts. Menu options and additional menu pages or separate menus are unbelievably easy to build.

Automenu is compatible with IBM PC, XT, AT, jr,



Portable, Convertible, 3270-PC, and all PS/2s. It requires DOS 2.0 or higher and uses only 32 K of memory (it's written in Assembler).

The other product, QDOS, is equally powerful and easy to use; it is an automatic hard disk manager. Directories and files are ridiculously easy to add, view, move, delete, etc. I don't have any details about the vendor. Believe me it is worth evaluating. I recommend it highly.

*Paul W. Shafer, St. Petersburg, FL*

**EDITOR'S NOTE:** QDOS, we'll have to check out. As for Automenu, we have evaluated previous versions of Automenu in the past and felt that it was too difficult to use for most of our readers, so we have not added it to our Software Store. On Paul's recommendation, we tested Version 4.7 and found it to be everything he says it is. A great way to start up your PCjr with a menu of selections, then just press a key and you're into your word processor. When you're done with that, the menu comes up again so you can select your favorite spreadsheet, telecom, game, or other application quickly and easily. The new version of Automenu is available from the jr Newsletter Software Store as Disk #123.

## Desktop Publishing Programs Recommended for PCjrs

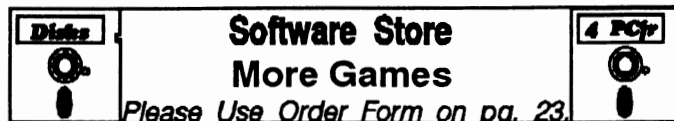
In one of your recent issues you recommended a desktop publishing program by Spinnaker for the jr. Well, I wrote them a postcard asking about the program... no reply. I then wrote them a letter... still no reply. Since the postcard and letter were not returned they must have been delivered. Do you know why Spinnaker would not answer their mail... don't they need the business? Has anyone else experienced this problem?

I have been using the **Newsmaster II** desktop publishing program from Unison World on my jr with good results. The first DP program I used was **Newsroom** which worked fine on my jr, but with rather crude results. I am always looking for new products, so just wanted to know how the Spinnaker program matched up against my "Newsmaster II."

*Forrest E. Johnson, Big Bend, WI*

**EDITOR'S NOTE:** We called Spinnaker and they definitely are alive and well. They acquired Springboard last year and so are the proud distributors of Springboard's Newsroom (\$19.95) and Newsroom Pro (\$39.95), both of which run well on PCjrs (384K recommended). You don't need to write to them—in fact you found out the hard way that they don't respond quickly. Just check with your favorite software dealer. Both Newsroom and Newsroom

*(Continued on page 8)*



**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. Need Cartridge BASIC (Disk #55)

**TOMMY'S TRIVIA.** Excellent trivia game with 3 ways to play against computer, 2 against human opponent. 2,500 questions in many categories, from entertainment to history. More Q's available. 16 colors on PCjr. Need 256K. (Disk #98)

**WAR ON THE SEA.** Based on World War II naval battles, this game allows you to command a fleet in seven different campaigns in the Atlantic and Pacific. Not a joystick game, this one will allow you to see whether you have the strategic skills to be an Admiral. 256K (Disk #100)

**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)

## Home & Family Management

**CALENDAR KEEPER V2.1.** Keep track of important dates, birthdays, club meetings, etc. and print monthly calendars with these dates clearly noted in the proper squares. Prints wall calendars on standard size computer paper. Easy to use, menu driven, can keep up to 10 databases of events and reminders. Many features. Need 256K. (Reviewed 7/90) (Disk #115)

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*(Continues on page 9)*

# How to Run Tandy Software On the PCjr

By Pat Calabria, PC Enterprises

While the PCjr has built in 16-color capabilities you'll never utilize this capability unless the programs that you run are designed to produce sixteen color screens.

Programs designed to run in PCjr, EGA, and Tandy modes will often produce 16-color displays, however, programs designed to work with a Color Graphics Adapter (CGA), will never produce 16-color graphics. That's because a CGA card cannot display more than four colors simultaneously.

Companies which publish software must decide which modes their products will support. Most publishers release a 4-color CGA version of their program. In addition, they often support any or all of the popular 16-color modes which are PCjr, EGA, and TGA (Tandy). The modes supported are normally listed on the box. Example: Supports CGA, EGA, and TGA graphics.

CGA modes normally produce primitive looking

graphics which are dull and not very exciting. Understandably so. Asking a software publisher to design detailed or exciting screen graphics which work with CGA is like giving them a piece of paper and only three crayons - then asking them to draw you a picture! You'll notice a night and day difference when you run your programs in a 16-color mode because the software designer now has 15 colors (plus background) to work with. The result is not only more interesting and exciting games, but also more detailed and easier to read screens when you run serious business applications.

Here's where we should all be thankful and supportive of software publishers such as Sierra On-Line and others who continue to support the PCjr's unique 16-color mode. When you buy one of their programs it will run on the PCjr in the PCjr's 16-color mode, without any difficulty at all.

Unfortunately, some software publishers do not support the PCjr's unique 16-color mode. Instead, these companies may only support EGA and Tandy modes. However, while the PCjr is not at all EGA compatible, with a little know how, PCjr users can successfully run many Tandy programs on their PCjr which produce EGA-like graphics - and without any drawbacks. If you'd like to know how, just keep reading.

Many companies, including PC Enterprises, offer a service in which they make modifications to the PCjr system board for increased Tandy compatibility. What's important to realize, however, is that while these modifications greatly increase the number of Tandy programs that run on a PCjr - the Tandy modifications are not always required. Some Tandy programs run on a PCjr without modification. But the only way you can tell whether a Tandy program will run correctly on your PCjr is to try it.

Before you attempt to run any 16-color program, you must first understand that all 16-color programs require 32K of memory to store the screen information. This means you must use your existing PCjr Memory Management Software to set up a 32K video buffer in your PCjr before you try to run the application program.

If the program you use to recognize your PCjr's memory is called JRCONFIG.NRD you should use the -T3 -V32 option to set up an 80 column display and a 32K video buffer. When you first try to get a Tandy program to run on your PCjr I strongly recommend that you use the .NRD program (not .DSK) and that you do not use any other options of the JRCONFIG program. It is also important that you do not have any other lines in your CONFIG.SYS file and that you do not have an AU-

## Reader Feedback

(Continued from page 7)

Pro are pretty limited in their features. **First Publisher**, though more expensive, offers much more publishing power to PCjr users.

## Computer Reset Service Praised

I would like to put in a good word for one of your advertisers, **COMPUTER RESET**, of Garland, Texas. I recently took my jr in for repair (it's about a three hour ride from my place). They were very helpful, friendly, reasonable, and did a good job. I really liked the fact that they don't run around in three-piece suits and talk down to their customers as so many other computer companies do.

My COMSPEC file was zapped recently, and I can't get jr to go to my hard disk the way it used to. It looks as if garbage got into the file and I can't find any documentation on how to recreate it. Any suggestions? I have two floppies, 640K and a 10 meg hard disk.

Mary Torchia, Pittsburg, TX

**EDITOR'S NOTE:** We are glad to hear you're pleased with the service Computer Reset provided. As for your COMSPEC software, it is on JR POWERPACK II (Disk #65). If you send us your disk, we'll copy a good version on your disk, no charge. Or, if you didn't get it from us, you can order Disk #65 from our Software Store.



TOEXEC file on your boot disk.

Although the -T3 -V32 option gives you the greatest degree of compatibility, it does waste 64K of memory because we did not also include the -S0 option. If you do run out of memory, try using the -S0 option, however, do not use -S0 unless it is needed because although this option will give you back the extra 64K, system performance and also Tandy compatibility will be compromised.

If you prefer to use the .DSK program or any other JRCONFIG options, or if you wish to have other entries in your CONFIG.SYS or AUTOEXEC file that's fine, but its important that you don't do so until you first determine whether you can get the Tandy program to run on your PCjr.

### Other Memory Programs

If the program that you use to recognize your memory is called PCJRMEM.COM, JRVBUFFD.SYS, JRVIDEO.SYS, JRVIDMA.SYS, or JRVIDMA2.SYS try using the /C option first, and if that doesn't work try the /E option instead.

After you have set up your PCjr to use a 32K video buffer (don't forget you must re-boot after you change your config.sys file) you are ready to run your first Tandy program. The next thing to do is select a program which runs on the Tandy in 16-colors. The best way to do this is to examine the box that came with the software. Look for programs which boast 16-color Tandy support right on the box.

Now you need to determine how to make the program run in the Tandy mode. This may be simple, or it may take a little research through the manual or perhaps a call to the software manufacturer.

Some programs come with totally separate versions for Tandy. For example the product known as PAPERBOY has been sold with three separate programs on the same disk. PAPERCGA, PAPERCGT, and PAPEREGA. In this case just type PAPERCGA to run the CGA version and PAPERCGT to run the Tandy version.

Other programs use an install or setup utility which must be run before you run the application program. Look for a program named INSTALL or SETUP on the application program diskette and run this program. If the program asks what type of computer or graphics adapter you're using tell it Tandy 1000 or TGA.

A similar technique is for a program to display a menu when it is first run. Once again, select Tandy 1000 or TGA. Certain versions of California Games fit into this category. If you tell the program you're using a Tandy 1000 it runs in 16-colors - even if you have not had the Tandy modifications performed on your system board.

Another technique commonly used is to add a parameter to the DOS command line when you first start the

*(Continued on page 10)*

Disk	<b>Software Store</b>	4 PCjr
Ⓚ	<b>More Home &amp; Family Management</b>	Ⓚ
<i>Please Use Order Form on pg. 23.</i>		

**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. 128 K. (Disk #57) Or v. 3.13 for improved screenwriting and disk access speed. 256K. (Disk #57A)

**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. Cartridge BASIC required (Disk #58)

**RESUME SHOP.** Makes preparing a professional looking resume easy. Guides you through all the steps of the process with a series of menus and suggestions. One page limit. 256K (Reviewed 12/90) (Disk #121)

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

**SAVE THE PLANET!** If you want to do your part to stop destruction of the earth's environment, this disk can help you. Let your PCjr explore this extensive database of information on the major environmental issues as well as what you can do to help. Charts, graphs, background facts, games and demonstrations all related to saving the only planet we have. Need 512K. (Reviewed 1/91) (Disk #120)

### Especially for Junior

**PCJR MUSIC SAMPLER.** A collection of classical music "concerts" performed with great precision to produce the highest quality sound you've ever heard on your PCjr. Disk includes a separate program to activate Junior's sound generator before running game software to get highest quality sound. 128K ok (Disk #119)

**JR MUSIC MACHINE.** If you want to write and play music on your PCjr, this program allows you to do it. Displays music as you write it using jr's 16 colors, and plays music back in three voice harmony. Features allow you to adjust key, tempo, note values, etc. Color Display required. 128K ok. (Disk #62)

**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)

*(Continues on page 13)*

## How to Run Tandy Software On Jr

(Continued from page 9)

program. Often this parameter is the letter T or perhaps the word Tandy or the letters TGA. For example, you may need to enter the name of the program followed by a space, then /T or /TANDY or /TGA. The proper letters to type can be found in the program's manual.

Regardless of which of the above techniques the software publisher has used, you should not have any trouble getting Tandy programs started on the PCjr. However, still another technique has become common which will often cause problems for PCjr owners. Some software companies try to figure out which type of computer you're using and never ask. These programs might check the computer's "System Identification Byte", test for Tandy specific hardware, or even search the computer's BIOS for the Tandy copyright notice.

These programs can be the simplest to run in 16-colors on the PCjr, but they are often the most difficult. The Dark Heart of Ukarall, for example, thinks its running on a Tandy and goes directly into the Tandy mode. This is great if your PCjr has had the Tandy modifications, however, if you don't have the Tandy Mods you can't run the program.

Other programs which attempt to automatically sense the type of computer used correctly determine that the PCjr is not a Tandy and often default to 4-color CGA graphics. To get these programs to run in Tandy mode you can sometimes defeat the auto-sensing "feature" by adding a special parameter to the command line (similar to the situation above). The problem is that in many cases the software publisher doesn't tell you what parameter to add. I suggest you try using /T, /TGA, /Tandy, or anything else you think might work even though the manual makes no mention of any such command. If all else fails, call the manufacturer.

### What to Ask Manufacturer

The first thing you should ask when you call a manufacturer is whether the program runs in 16 colors on a Tandy. This is important because if it doesn't run in 16 colors on a Tandy it's obviously not going to run in 16 colors on the jr. It's easy to be fooled because many companies list Tandy on the package even though their program only runs in four colors. So, unless the box states Tandy 16-color mode, you have to ask.

If you know that a program runs on Tandy computers in 16 colors but it only runs on the PCjr in four colors it means you are not running the Tandy version. Tell the software manufacturer that you're using a Tandy compatible (not a true Tandy). Ask how you can force the program to run in Tandy mode. Sometimes this takes a lot of persistence. For example, when I tried to run Where in

Time is Carmen SanDiego I typed CARMEN TANDY to start the program and received a "Graphics Adapter Not Available" message. After making six phone calls to Broderbund and speaking to three different people Broderbund told me to try TANDY!.

So we tried starting the program by typing CARMEN TANDY! and were pleasantly surprised. Although the program also needed the Tandy Modifications the exclamation point did the trick.

If you do succeed in getting the Tandy version of a program started on your PCjr, but the program does not run correctly, go back to your CONFIG.SYS file and try using different video buffer parameters. Instead of -V32 try using -V64 and -V96. Also try using -S0 switch.

If you try to run a Tandy program on your PCjr and the program comes up with every other line of graphics missing we call this the venetian blind effect. If this should happen the Tandy modifications will normally enable you to run the program. Other programs will work correctly until the program attempts to produce sound, at which time the display becomes trashed. These programs (PAPERBOY is one example) require the PB2 modification. Still others will run correctly until they attempt to read the floppy disk drive. These programs require the Disk Drive Address modification. All three of these modifications are available from a variety of PCjr product suppliers and are well worth the money.

---

## Software Helps You Use DOS Commands

PC-DOS Help, offers on-screen help for 43 DOS commands. The disk also contains a batch file that will customize the help files for the jr keyboard. It can be used as a stand-alone disk for reference when you want to use a DOS command you aren't thoroughly familiar with. Or it can be installed as a resident DOS reminder, taking up about 16K of memory. Designed by Chris Bailey, the user-supported program provides two levels of help for each of 43 DOS commands. The first level consists of a summary of the function and how to use it. This level serves as a handy reminder to be accessed just before using the command. The second level of help provides more detail about the DOS command and often helpful references to other commands used in conjunction with the command being discussed. The author also includes handy notes on how to use the command and specific examples of what each command might be used to accomplish. The disk in the jr Newsletter Software Store (Disk #24) is specifically for DOS 2.0 or 2.1 and can be configured for either, when it is being installed.



# The Sophisticated Sounds of Junior

By John E. Wilson

In the last article of this series (in the 12/90 issue) about the sound capabilities of IBM's PCjr we used a BASIC program to turn Junior into a keyboard musical instrument. (Incidentally, did you recognize the sample tune in that article as "America"?) In the process we learned quite a bit about sound and about music, but we didn't really take advantage of Junior's sophisticated sound generation hardware. Except for the option to turn off the computer's internal speaker and use a better quality external speaker, the BASIC program that we used would work equally well on just about any other computer in the MS-DOS world. In this article though, we will show you how to make sounds on Junior that cannot be made on most other computers.

Every PCjr has an integrated circuit chip which gives Junior sound generating capabilities that far exceed those of most other members of the PC family. This chip, made by the Texas Instruments Corporation, is the TI SN76496N. As far as I know, the PCjr and the Tandy 1000 series of computers are the only MS-DOS personal computers which have the SN76496N chip. It is a relatively small chip located on the left (as you face the computer) side, and towards the back, of the system board. Texas Instruments titles the chip the "Programmable Tone/Noise Generator" and IBM refers to it as the "Complex Sound Generator", but for simplicity we will usually just call it the "sound chip".

The standard method for virtually every other personal computer to produce sound is to use a timer chip to rapidly turn the computer's speaker on and off. You can control the sound's frequency in this way, but you cannot control the volume of the sound and the sound can only come from the computer's internal speaker, which is more of a beeper than it is a speaker. Junior can also use the timer chip method to produce sound but by using the TI sound chip Junior can:

1. Turn off the computer's small internal speaker and use a better quality external speaker. In fact, the TI sound chip will not even work with the internal speaker.
2. Control the volume of the sound.
3. Play up to three different notes at the same time.
4. Make special effect noises.

In this article we will experiment with the sound chip using Cartridge BASIC. Cartridge BASIC is the only version of BASIC (or any other computer language) that is set up to utilize and control the sound chip. In a future article we cover sound chip details and specifics so that you can utilize the chip without using Cartridge BASIC, but for now we want to concentrate on the capabilities of

the sound chip and not get bogged down into the details of registers and bits.

In Cartridge BASIC the TI sound chip is activated by the command: SOUND ON. When the sound chip is activated, the internal computer speaker is disabled and the sound is output through the speaker in the computer's color display, through the TV outlet port and through the audio jack to an external speaker. Of course, you don't have to use all three outputs, but you could. You might want to glance at the first article in this series (in the 11/90 issue of jr Newsletter) in order to brush-up on the several ways that the PCjr can output sound.

In the previous article we used BASIC's SOUND statement to produce musical notes and we will use this same statement in this article, but we will add some additional parameters to it. The full format, in Cartridge BASIC, of the SOUND statement is:

SOUND frequency, duration [, [volume][, [voice]]]

As you will probably recall from the last article, frequency is a number, ranging from 37 to 32767, which sets the frequency of the sound (in Hertz, or cycles per second) and duration is the length of time for the sound to occur. Duration is expressed in computer clock ticks, so a duration value of 18 will cause the sound to last about one second. In BASICA and in Cassette BASIC only the frequency and duration parameters are allowed. In Cartridge BASIC the two additional parameters, volume and voice, may be used. Volume can be any number from 0 to 15. The higher the number the louder the sound produced. Eight is used if no volume value is given. Voice is the number 0, 1 or 2, and we will explain what it means shortly. A SOUND ON command must precede any SOUND statement which uses the volume or voice parameters. You will get an "Illegal function call" error if sound is not ON (or if you attempt to add these parameters in BASICA or Cassette BASIC).

The short BASIC program in Listing 1 demonstrates the sixteen volume levels of the sound chip. There isn't much to the program. It uses a FOR/NEXT loop to make one-half second long middle C musical note sounds at volume levels from 0 to 15 and it prints the volume level on the screen as the note is played. The FOR/NEXT loop in line 140 does nothing except cause a short delay between notes. The words to the right of the single quote marks are comments to help explain the statements and do not have to be included in the program. You will notice that we did not use the voice parameter in the SOUND statement.

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# The Sophisticated Sounds of Jr

(Continued from page 11)

## Listing 1 A Demonstration of Volume Levels

```
10 CLS 'clear the screen
50 SOUND ON 'activate the TI sound chip

100 C=523 'frequency of the middle C musical note

110 FOR VOL=0 TO 15 'loop 16 times incrementing VOL each loop

120 PRINT "Volume Level " VOL 'print the volume level of the note

130 SOUND C,9,VOL 'play the note

140 FOR K=1 TO 300: NEXT K 'brief delay between notes

150 NEXT VOL 'go back to line 110

200 END 'end the program
```

The TI sound chip has the ability to play up to three notes at the same time. The result is similar to pressing up to three keys on a piano at the same time. In music, the term for playing several notes simultaneously is chord, but TI and IBM call this "voice". This is probably an appropriate term, since voice is similar to two or three people talking or singing at the same time. A demonstration of this three voice ability is given in the short BASIC program shown in Listing 2.

## Listing 2 Demonstration of Voices

```
20 CLS 'clear the screen
30 SOUND ON 'activate the TI sound chip

50 A=440 'frequency of the base octave A note

60 C=523 'frequency of the middle octave C note

70 F=698 'frequency of the middle octave F note

100 PRINT "ONE VOICE"

140 SOUND A,18,,0 'play one note

150 FOR K=1 TO 1000: NEXT K 'delay between chords

200 PRINT "TWO VOICES"

210 SOUND A,18,,0 'play the A note and the

250 SOUND C,18,,1 'C note at the same time

290 FOR K=1 TO 1000: NEXT K 'delay between chords

300 PRINT "THREE VOICES"

310 SOUND A,18,,0 'play the A note and the

320 SOUND C,18,,1 'C note and the

330 SOUND F,18,,2 'F note at the same time

400 END
```

This program first plays an A note for about one second, and then after a short pause both the A note and the C note are played. These notes are in separate BASIC statements, but because they are in separate voices, they will occur simultaneously. After another short pause, all three notes are played together. We did not use the volume parameter in the SOUND statements (notice the two commas) so BASIC used the default volume level of 8. This is a good program to experiment with. You can try out different combinations of notes, volume levels and durations. These can all be different in different voices. In this demonstration program, we selected three notes that sound well together. You will discover that not all combinations of notes result in pleasant sounds. I think that this three voice capability is the most interesting part of the sound chip, and we'll have another, more detailed, look at it in a future article.

It is possible to disable the simultaneous sounding of the different voices. Normally BASIC places the data for sounds into a buffer - a memory storage area - and the program continues on. In fact you can even play music as the computer is doing something else; drawing figures on the screen for instance. This is called the "Music Background" mode, and it is the default mode. You can turn this feature off, although I don't know why you would especially want to. If you add the line:

```
80 PLAY "MF"
```

to the program in Listing 2, BASIC will shift to the "Music Foreground" mode, and all of the notes, even though they are in separate voices, will occur separately.

The noise capability of the TI sound chip is handled in Cartridge BASIC by the, appropriately named, NOISE statement. The format of the NOISE statement is:

```
NOISE source,volume,duration
```

Notice that the statement has three parameters and that they must all be used, none are optional. The volume and duration parameters are the same as those in the sound statement, but source needs some explanation. First of all, the TI sound chip is able to produce two different types of noise - white noise and periodic noise. A white noise has a hissing or rasping sound while a periodic noise is more like a buzzing sound. Secondly, the sound chip is able to produce each of these two types of noise in a variety of frequencies. You can generate a high pitched white noise that sounds like static, and you can generate a low pitched white noise which has more of a rasping sound. Three of the frequencies are preset, but if none of these three preset frequencies suit you, you can set a frequency in the third voice and generate either a white or periodic noise in that frequency. BASIC handles these noise type and frequency variations by what it calls "sources". Source 0, for instance, is a high pitched periodic noise and source 5 is a medium pitched white noise.



These sources, their noise type and frequency are shown in Table 1. In the PCjr BASIC manual the source frequencies are given in a different (and, I think, more confusing) manner. The manual shows, for instance, the frequency of the 1 and 5 source numbers to be: 3,579/1024. What this really should be is 3,579,000 Hertz divided by 1024, which is 3495 Hertz.

Table 1

Source Number	Noise Type	Noise Frequency
0	Periodic	High - 6990 Hz
1	Periodic	Medium - 3495 Hz
2	Periodic	Low - 1748 Hz
3	Periodic	Frequency from Voice 3
4	White	High - 6990 Hz
5	White	Medium - 3495 Hz
6	White	Low - 1748 Hz
7	White	Frequency from Voice 3

All of this probably seems more complicated than it really is, and the best way to learn about the NOISE statement is to try it out. You don't even need to use a program to experiment with NOISE. Just start up Cartridge BASIC and type in: SOUND ON <Enter>, to activate the TI sound chip. You must execute a SOUND ON statement prior to using NOISE, or you will get an "Illegal Function Call" error. Next, type in:

NOISE 0,8,18 <Enter>

and you will hear a one-second long high pitched buzzing sound. Now move the cursor back up to the line you just entered, type a 4 over the 0, and press <Enter>. You will hear a one-second long high pitched static-sounding noise.

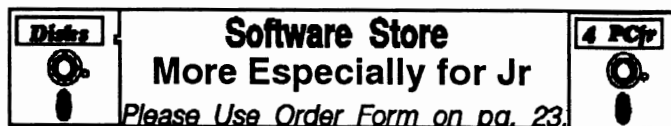
You can repeat this for all of the other source numbers except for numbers 3 and 7. To experiment with these two sources type in:

SOUND 1000,1,1,2: NOISE 3,15,36 <Enter>

and you will hear a two-second long low pitched noise that sounds a little like a tug-boat whistle. You entered two BASIC statements on one line, but you can do that if you separate them with a colon. Next move the cursor back up to this line and type a 7 over the 3, and press <Enter>. You will hear a wavering static sound. The SOUND part of this line sets the voice 3 frequency to 1000 Hz, and the NOISE statement bases the periodic noise on this frequency. The numbering system for voice is a little confusing. In the SOUND statement voice 1 is number 0, voice 2 is number 1, and voice 3 is 2.

To show that a noise from source 0 is really based upon a frequency of 6990 (See Table 1), type in this

(Continued on page 14)



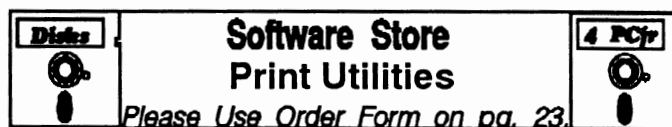
**THE BEST OF JR NEWSLETTER I.** The best and most informative articles from twelve issues of jr Newsletter (June 1986 through May 1987 issues) are contained on this disk. More than 50 articles on compatibility, problem solving, software, maintenance, memory expansion, how-to projects, tips on using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

**THE BEST OF JR NEWSLETTER II.** All the major articles and columns from June 1987 through May 1988 issues of jr Newsletter. Subjects cover most aspects of PCjr operations with tips on compatibility, DOS, expanding and speeding up PCjrs, best software, etc. Easy search function finds subjects quickly. 128K ok. (Disk #66)

**THE BEST OF JR NEWSLETTER III.** Disk contains most of the major articles published in jr Newsletter from the June 1988 issue through May 1989. Articles on compatibility, PCjr hardware and software tips, regular columns, letters from PCjr users, and other informative articles. Utility to search for subjects included. (Disk #91)

**BEST OF JR NEWSLETTER IV.** For your handy reference, disk has the most informative articles, columns, and tips published in Jr Newsletter from June 1989 through May 1990. Easy to use search utilities provide quick ways to find any subject of interest. 128K ok (Disk #118)

See More Software  
Especially for PCjr  
on page 22.



**IMAGEPRINT V3.33.** Produces near 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)

**PRINT HANDLER.** Excellent printer setting utility allows you to set features from a menu. Other software on disk for banners, sideways printing, custom font generator (Epson), print spooler, count pages before printing and more! Will work with most dot matrix printers. (Disk #51)

**Print It!** Selection of programs allows you to print large banners as well as tiny (but quite readable) documents on most dot matrix printers. Compress four pages on one sheet with Docsmash, print on both sides of computer paper with Both, reformat into tiny columns with Microtext (many other options), make wall-length banners with Bannerific! 256K (Disk #111)

# The Closest Thing Yet To Being On Tour

By Michael Chandler

There have been many golf games to hit the IBM computer software scene since the mid-80s. Among these are "Mean 18" by Accolade, "World Tour Golf" by Electronic Arts, "World Class Leaderboard" by Access, and "Jack Nicklaus' Greatest Holes of Major Championship Golf". Add Electronic Arts' "PGA TOUR GOLF" to the list. This game is far and above the best of the aforementioned games. It supports better graphics, has better gameplay, and has a much longer shelf life. This is definitely one of the games I play most often.

"PGA TOUR" begins with an introduction to the clubhouse. From here, a multitude of choices can be made. Since everything is icon-driven (meaning no actual typing is required), the game is very easy to run. The "Play" directory allows the player to go to the driving range or the putting green to practice, or to play a particular hole, round, or tournament. The game features four different courses: real-life Sawgrass, PGA West, and Avenel, as well as Sterling Shores, created by the game designers.

## The Sophisticated Sounds of Jr.

(Continued from page 13)

line:

```
NOISE 0,15,18: SOUND 6990,.1,1,2: NOISE 3,15,18  
<Enter>
```

You will hear two high pitched buzzes that sound the same. If you are using a 40 column screen this multi-statement line will spill over onto the next line, but that is all right.

It's fun to experiment with the NOISE generator, but it is difficult to create realistic sound effects. I've tried to make noises like fog-horns, train whistles, jet engines and explosions without much success.

In our next article we will use BASIC's PLAY statement, combined with the three voice capability of the TI sound chip, to make very nice sounding, three-part harmony with Junior. We will show you how, even if you're inept in music skills, to change just about any piece of written music into a form that will play on a PCjr. In the meantime, if you want to be inspired and to see just how capable Junior is in the music department, try out Disk #119, PCjr Music Sampler, from the jr Newsletter Software Store. This disk uses all three voices on the TI sound chip to play music by Mozart, Bach, and others. It is very impressive. The program is in an .EXE format so you do not need Cartridge BASIC to run it, although you do need a little more than 128K of memory.

The stats option allows the player to keep track of his current performance in the game. Such averages as driving distance, driving accuracy, and number of putts are found here.

Also, the money won and the scoring average of the player in the tournaments is tallied up and ready for the player to view.

The basic options (or setup) directory allows the player to control whether or not to use the superficial aspects of the game when it is played. These include the fly-by preview before each hole (truly a must see, at least once!), the information regarding the ball's lie on the course (this can be important, such as when your ball, which lies in the fairway, rests in a divot), an overhead view of the hole, close-ups of the green, and the music and sound effects. Also of importance is the game's file directory, which gives you the ability to save, restore, and resume the game at any time. Sometimes you may want a little insurance when faced with a crucial 10 foot putt!

It is clearly the "play tournament" option that makes this game so enjoyable. After the player selects the course he desires to play and the clubs he wants in his bag, he enters the tournament corresponding with that course (i.e. the Kemper Open with Avenel). The total prize money for the tournament is given, and the real fun starts. The player is pitted against sixty actual tour pros for the money, with cuts after both the first and second rounds. The up-to-date commentator keeps the player informed of what is going on around the course, and the complete leader board is given after every hole. The excitement is real when the player, trailing by a shot, makes a birdie on the 15th hole to tie, only to find that the leader has just eagled the demanding par 5 16th up ahead! This excitement is not found in the other computer games on the market.

Some of the more interesting options found within the game itself are the instant replay, chip, and punch shot commands.

The instant replay is automatically shown on an especially good shot, such as a chip-in from a bunker or a long, winding putt that drops. This replay option is also available if you want to see your previous shot again by simply using the pull down icons and pressing "I". The chip command allows the golfer to hit a running shot around the green so that it rolls like a putt. Believe me, this makes it much easier to save a stroke when you are just off the green. The punch shot command is one that comes in handy when you are in the rough and have a

bad lie, or when one of the many trees found on the courses is staring you in the face.

The game's four courses are super because of their diversity from one another, and the accurate representation they give of the real thing. The Sawgrass, PGA West, and Avenel layouts are all accurate with the actual course in terms of yardages, green contours, tree placement, etc. The Sterling Shores course is a welcome addition to the three, for while it is not quite as long, its greens are some of the trickiest you'd ever want to see on a real course! The player has the option of quitting a round and transferring to another course at any time if he/she so desires. The game itself is played in a very similar fashion to the other computer games on the market, with a power gauge used to control distance and accuracy. The wind in this game comes more into play than in the other games I've played, and this, combined with the backspin you can get with wedges and other lofty clubs, makes it more difficult and realistic. The 3-D views are awesome as well; when you hit a tee shot, the game pans back into the fairway so

---

***"With my new  
Jr Excellerator speedup board...  
all games run at least 1.5 times faster."***

---

you get to see the ball as it flies towards you from the tee. There is nothing even remotely close to this in any other golf game I've played.

"PGA TOUR GOLF" runs well on a Jr overall. The graphics are exceptional (sixteen colors when the "Tandy Graphics Mode" is used), but if you are playing on a 4.77 mhz system, even this game may not be worth the long wait. There is a glitch with the Jr's keyboard, in that the cursor tends to skip from icon to icon when you try to make selections. A way around this is using the joystick to make the selections for the game, and using the spacebar and arrow keys to play. You can use the joystick to play as well, and it works just fine. The keyboard glitch does not keep you from playing the game, but it can be quite bothersome to have the cursor jump around the screen when all you want is to move up or down a column or across a row. If anyone can develop a patch for this problem, please send it in to Jr Newsletter ASAP.

One thing that made this game all the more enjoyable for me was that I got to put my newly-purchased "Jr Excellerator" speedup board to use on it. This product (manufactured and marketed by PC Enterprises) enhances your Jr's speed to twice its standard, giving you 9.54 mhz. Believe me, you can see the difference it makes! All games I play run at least 1.5 times faster than before, and bootup time for my computer is quicker, too. The only drawback to this wonderful device is its difficult installation. First of all, as most of you Jr users out there

know, taking apart an upgraded Jr is no piece of cake.

The Jr Excellerator replaces your standard clock chip, which is located directly underneath your first disk drive, on the main motherboard. So after you finally get that Racore, Tecmar, or whatever Jr upgrade off, you still get to remove your first disk drive. After this is accomplished, you must remove your old 8088 microprocessor chip from its socket (you better hope it's not soldered in there!). This in and of itself is no easy task; that chip has a firm grip on its socket! Next, you must position the Jr Excellerator so that all of its prongs are aligned with their corresponding holes on the socket, and press it into place. The last step is the attaching of a little hook that extends from the Jr Excellerator onto another chip. This was the most difficult part. Pay careful attention to the instructions as to which chip and which prong you must place the hook around; it is VERY easy to misplace this. Unless the hook is on the right chip and its prong, the computer will not boot up. After this is finally done, you must set up the dip switches located on the Jr Excellerator to match your computer type. You also have the option of setting up an external switch through the Jr's remote control socket hole that controls what operating mode you will be in (PC/PCjr). So there you are, the installation of the "Jr Excellerator". By the way, you get the privilege of putting your whole computer back together now. It took myself and Jeff, a friend of mine, a good 30 minutes just putting it back together because we couldn't get the Racore second disk drive and memory expansion to properly align with the old Jr parts so that they would fit. Although an external speedup option would be a blessing compared to the difficult installation I just described, this is the Jr owner's best bet for doubling his computer's speed. It has definitely made my Jr a much better computer.

The game "PGA TOUR GOLF" is by Electronic Arts and is stocked in every major computer software store I know. It sells for around \$31.95, and this makes it a great buy because of its outstanding shelf life. The Jr speedup board "Jr Excellerator" is sold by PC Enterprises (1-800-922-PCJR) and sells for \$134.

### **Send a Form Feed Fast!**

Need a Form Feed in a hurry? Can't reach the switches easily? Try this, Bunkie...

Type the following;

ECHO Ctrl-L>PRN <Enter>

Voilà, the printer feeds to top of form!

Alternatively the command can be in a .BAT file with a name such as FF.BAT.



# Top Shareware Hits of 1990

Last year was a great year for shareware. As we sorted through new releases and tested programs in order to pick the best ones to add to the jr Newsletter Software Store, we often had so many good ones to select from that it was difficult to decide.

Here is a review of "The Best of 1990," based upon orders and comments from readers of jr Newsletter.

## 4DOS.

With 4DOS you can throw away your old DOS along with most of your favorite utilities. 4DOS replaces Microsoft's DOS (the one we've all loved and hated for years) with a much more powerful and easy to use system. It does all that the "old" DOS did, and adds 35 more very useful functions. It's got so much going for it that it took two fairly long articles in the January and February issues to describe them all. (Disk #102)

## THE WORLD.

Using a pointer which you can move to any location in the world, you can select a geographical area to zoom in on in more detail. It's as though you were up in a satellite operating a powerful telescope. You can also select areas to view by city or country name. And there's a bonus section on hurricanes. Even though it's not in color, this program is a lot of fun, and educational too. (Disk #105)

## LZEXE.

As software programs such as WordPerfect, Lotus, Dbase, and other powerful packages grow larger, disk space is at a premium, especially if you don't have a hard drive. LZEXE helps alleviate the shortage of disk space by compressing the software into less disk space and yet allowing it to operate just as it did before compression. Saves disk swapping, frees up disk space, or it can leave more memory free when using a RAM disk. More details on what this great program can do for you are in the review on page 11 of the May '90 issue. The October '90 issue has a longer article on different ways to put LZEXE to work for you. (Disk #112)

## DUOTRIS.

There's a reason why Tetris became a smash hit when it arrived in the USA from the Soviet Union -- it's fun! And, it's a challenge trying to steer those falling shapes into just the right spaces. Duotris (Disk #116) has two Tetris-like games on it. Double Blocks has sound effects and several skill levels. XTetris adds triangles to the shapes and gives players a "bomb" every once in a while to clear up some space. Great fun here for all ages!

## PCJR MUSIC SAMPLER.

Hear virtuoso performances of classical music on your PCjr's excellent sound system (better than most other computers, even by today's standards). The disk has 22 concerts which you can hear by simply selecting the one you want from a menu. It also has a small program for you to run before starting up games, so the 3 voice sound in your Junior will be activated. Makes your computer really sing! Check review in September '90 issue for more details. (Disk #119)

## ASIC.

If you've experienced the fun and satisfaction of programming in BASIC, but didn't want to spend the money for an expensive compiler, ASIC, the shareware BASIC compiler is for you. It's also a great way to ease into programming. Learn a little BASIC, then compile with ASIC, and you've got yourself an executable file that will run on any DOS based computer by just typing the name of the file. See the detailed article in the December '90 issue. (Disk #122)

You may have noticed that we didn't include any of the disks created by ourselves, specifically for readers of jr Newsletter, on this list. That's because PCJR AU-TOSETUP, JR TOOLKIT, PCJR COMPATIBILITY DISK, and the BEST OF JR NEWSLETTER disks, are not shareware. We wanted to focus on the best and most popular shareware we found in 1990.

## Shareware Success Story

Shareware has now become a national, maybe even a world-wide, success. Highly skilled programmers can now be pretty sure of making some money by creating good, useful programs to be distributed on the try-before-you buy system. Enough people are appreciative and honest enough to register their shareware copies and send in their fees to reimburse the author for his or her efforts. It's an honor system that's working.

The idea is, if you try shareware and you like it enough to keep on using it, you send the requested amount to the author. Usually this fee is well below what commercial software companies charge. We hope the readers of jr Newsletter are conscientious shareware supporters.

**Support Your  
Shareware Programmer!**

## PCjr Patches Disk Has Many New Patches

Twenty one new patches have been added to PCjr Patches (Disk #56) in the jr Newsletter Software Store. The new version is V.6.0.

The patches solve problems caused by software which either will not run on PCjrs, or will run in only four colors. The PCjr to Tandy 1000 modification usually solves this problem, so those who have made the modification will find many of the new patches of no use.

One of the new patches is designed to fix software which causes the PCjr disk drive to spin continually. This is a simple, but useful fix, since there are several programs which have this flaw, but which otherwise operate well on Juniors.

The other new patches are:

- 1 on 1 Jordan vs. Bird - 16 color, 3 voice sound.
- 688 Attack Sub - 16 color, 3 voice sound.
- Battle Chess - 16 color.
- Battle Tech - 16 color.
- Boxing II - 16 color, ID check.
- Genius Mouse - 11" power supply only (See 12/90 issue p.8)
- Grand Prix Circuit - 16 color.
- Indiana Jones - 16 color.
- Jack Nicklaus Golf - 16 color.
- Knight Games - 16 color, plus tips.
- Paperboy - 16 color, 3 voice sound.
- Shanghai - 16 color.
- Silpheed - Install problems fixed.
- Sim City - 16 color.
- Space Rogue - 16 color.
- Steel Thunder - 16 color, ID check.
- Strip Poker II - 16 color, ID check.
- Test Drive II The Duel - 16 color.
- Tetris - 16 color.
- The Games (Summer) - 16 color.
- Ultima IV - 16 color.

These patches all involve using DEBUG, the DOS program, to create the patch. Instructions are clear and easy to follow.

To order this new version of PCjr Patches, please use the form on page 23.

## Don't Just DO Crossword Puzzles, Try Making Them Yourself !

Crossword Creator provides a quick, easy way to make your own crossword puzzles. Using up to 200 words in the puzzle, this program will help you figure out word placement and puzzle design. Then print it out for others to try. See Disk #71 in the jr Newsletter Software Store.

## We Need Your Help!

Jr Newsletter is currently in the process of updating the PCjr Compatibility Disk and we'd like to ask you to send us information on your experiences with new software.

Please write to us with the software title, the manufacturer, version number and whether or not you have successfully used the software on your PCjr.

Additional information, such as memory required, special setup techniques, or specific steps required to get difficult software going would also be helpful.

Please send your software information to: Jr. Newsletter, Box 163, Southbury, CT 06488. Your help will make our PCjr compatibility listing more complete.

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## Improved Prodigy

(Continued from page 1)

A typical CONFIG.SYS file will be as follows:

```
DEVICE=CONFIGJR.NRD -j -t3 -v96
BUFFERS=20
FILES=20
```

I use V96(96k video memory) though I've read that v32 will also work. The PCJRMEM.COM if used will work with the /C mode.

The previous edition of *Prodigy* Software required the NOBEEP utility to prevent system lock-up's. Apparently the new version works well without it, however. I have included it in my AUTOEXEC.BAT file. If you are using any other CONFIG utility remember to include SWAPCOM, or a similar file or method, to avoid the PCjr problems with COM1 and COM2. (Again, PCjr Autoseup does this for you.)

If you have made the hardware Tandy modification, you just run the new *Prodigy* software, following the instructions as they are given on the screen, and being careful to choose the Tandy (320 x 200) option during the software installation. That's all there is to it, when you boot up, the color comes on immediately. I'm still very

## Numeric Keypad Makes Life Easier When You're Number Crunching

If you're tired of fumbling with the number keys across the top of your PCjr keyboard when you're working on a spreadsheet, the separate numeric keypad from PC Enterprises may be for asyou.

The keypad works side by side with the PCjr keyboard, allowing you to enter numbers quickly and easily. It has a square calculator-like format similar to the layout of numeric keypads on larger keyboards made for PCs and ATs.

Also available is a separate keypad for those who have upgraded their keyboards to PC and AT type keyboards. The separate keypad gives you numeric functions without having to use the numlock key. Thus you have both numeric and cursor movement ability at all times and don't have to keep track of whether or not the numlock key is activated. This keypad is compatible with Racore PC Keyboard Adapters.

The keypad for use with PCjr keyboard costs \$29.95. The other is \$39.95. From PC Enterprises (800) 922-PCJR.

### Tell Us When You Move

The Post Office will not forward your copies of jr Newsletter when you move, because the newsletter is mailed via Third Class Mail. So please notify us immediately when you plan to change your address.

impressed with the *Prodigy* color graphics, it really lets the PCjr show its stuff!

If you do not have the Tandy "mod" then you will need to make a patch to the *Prodigy* supplied software. The simplest way to do this is to obtain the required patch from the latest version of JR PATCHES DISK #56 in the jrNewsletter Software Store.

Another way of making the supplied software compatible with the PCjr is to modify the program yourself. This is easily accomplished using the DEBUG program. First run the *Prodigy* installation program and prepare the two "Disks A and B". The DRIVER.SCR on "Disk B" will need to be slightly altered at location 1BAE, by changing B8 to 18.

To make the change, copy the DRIVER.SCR file and the DEBUG.COM to a blank diskette. Type the following (the computer will prompt you), and press the ENTER key at the end of each line,

```
DEBUG DRIVER.SCR
-e 1BAE
XXXX:1BAE B8.18
-w
-q
```

After this has been done, copy the new "debugged" DRIVER.SCR to the *Prodigy* "Disk B." That's all!

The only problem that I have had with this new *Prodigy* Software on my PCjr has been Modem related. As the jr does not have DMA it cannot send instructions to the modem at the same instant it reads the disk drive. This will cause the jr not to respond to the initial software query to the modem, resulting in an error message and no dial out. *Prodigy* actually interrogates each modem as to model type, and then re-configures the software specifically for that particular modem.

To alleviate the modem problem, the *Prodigy* Service Center provided the remedy. Using a text editor, but NOT EDLIN, add the following line to the CONFIG.SM file in "Disk B":

```
modem type :1
```

This line is added directly BEFORE the line starting with, **modem\_str:**

This will provide a several second delay before the PCjr starts dialing out. The EDLIN program should not be used as a text editor in this case, as it is limited to lines having a maximum number of characters of 253. The line starting with **modem\_str:** has more characters than 253!

Any problems you may incur with *Prodigy* will probably be related ONLY to the modem or noisy telephone lines and NOT to the PCjr. I run my jr with an external modem at 2400 baud and only on rare occasions will a problem occur. In event of troubles, *Prodigy* will show an error screen providing an explanation of the error code.

After you have *Prodigy* up and running, you may



need to center the display on your monitor. This is achieved by pressing the CTRL, ALT and either the left or right arrow keys simultaneously.

The *Prodigy* Handbook will provide further information on the system and how to use AUTOLOGON etc. All the features of the *Prodigy* service are available for use by the PCjr. If you have converted the jr internal modem slot to a second serial RS232 connector, then you will be able to use the mouse feature as well. The PCjr does a really superb job of displaying the *Prodigy* color graphics. I particular enjoy the weather maps.

*(This article was originally published in the Orphan Peanut, by the Atlanta PCjr Users group.)*

## Questions and Answers

*(Continued from page 4)*

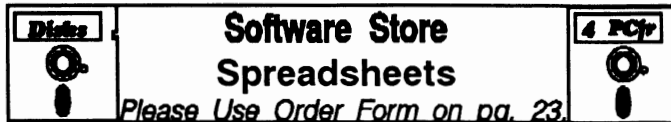
mouse on a jr. and we are still testing. The software and products from Kraft are well-done and so far, are compatible with the PC jr. One example is the Kraft Micro-Mouse, available for \$25.00 to \$30.00 bundled with Telepaint from various suppliers. This mouse really just plugs in and works perfectly and we're all familiar with their joysticks. If we can get a scanner we'll test it out but based on our past experience with Kraft, we THINK it'll work. If you decide to try ANY manufacturers' product, be sure you can return it if it turns out to be non-compatible. These problems are NOT unique to our jrs. A quick perusal of any computer magazine "how - to" column will show that even the most compatible of DOS and / or IBM standards machines have similar and often worse problems. The industry is getting more complicated each week.

**Q. I would like any information you might have about allowing Cartridge BASIC to access the jr's extra memory such as the 512k on a Hotshot board. I understand that JBASIC.COM can accomplish this. Please let me know where I can find such a program.**

*B. Boggess Lakeside CA*

**A.** Cartridge BASIC and JBASIC.COM, which is also disk BASIC, GWBASIC, BASICA etc. are all interpreters. These were not designed to access more than 64k at a time. On any machine with more than 128k there will be from 45k to 60k available for program and storage. These interpreters all limit themselves to this "block" of RAM. The way to get at the memory outside this "block" is to use the POKE and PEEK statements with interpreters. You would have to write your own routines to access that memory. Once the grunt work of converting assembler to machine language numbers is done and the numbers POKED into memory, you could write another set of routines to call these from your programs. Whew! Remember

*(Continued on page 20)*



**AS EASY AS.** Excellent, easy to use, spreadsheet program. Works like Lotus 1-2-3, with all spreadsheet functions. Can load and operate 1-2-3 files. 256K ok (Disk #67)

**AS-EASY-AS V.4.00** This is a MAJOR upgrade of the popular, powerful Lotus 1-2-3 look-alike spreadsheet software. Many useful features have been added to an already full-featured program. Earlier 256K version (2.05) is Disk #67. This upgrade requires 384K. Reviewed 2/90 (Disk #107)

**MINICALC.** A small, easy to use, spreadsheet program. 11 columns by 22 rows. On-line help function and manual on disk. In addition to performing calculations, will generate bar graphs. (Disk #27)

**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)

**PC CALC PLUS.** V2.0 More advanced than PC Calc (Disks 5 and 6), this is a very powerful spreadsheet program which includes graphing features. Excellent. 512K (Disk Set #2 (2 disks) \$10.)

## Utilities

**4DOS V2.21.** This is the "ultimate utility" since it replaces almost all DOS commands with new, improved versions. And it adds 35 more useful commands of its own! It will replace many of your favorite enhancement utilities. For example, 4DOS allows 40 character file descriptions, more flexible wildcards, multiple commands per line, handy conditional commands, command stacking, alias commands, faster batch processing — and MUCH more! A must for all serious computerists. Reviewed 1/90 (Disk #102)

**BAKER'S DOZEN.** 13 powerful utilities by shareware star Jim Button. Recover zapped files, save screen to files, print sideways, sort files, file management, locate text, pop-up calendar, powerful one screen spreadsheet, set screen colors, and more. (Disk #73)

**BATCH FILE UTILITIES.** A tutorial on how to create batch files and six utilities to use. 128K (Disk #26)

**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)

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## Questions and Answers

(Continued from page 19)

you'd have to be sure the memory you choose outside the 64k block is truly free to use if you choose to take this route.

Normally, overlays or called programs are made when huge programs are called for. To do this, write small individual routines, save them as programs then RUN each one from a main calling program of some sort. Remember to save any data to disk between calls because it disappears otherwise.

Now the last part of your question:

The latest version of QuickBASIC version 4.5 and the BASIC Pro. Dev. Sys. version 7.xx have removed the memory constraints and these two COMPILERS do it automatically. There are new statements which, in effect say, "hey! use the next available 64k block of RAM for this pile of data" and if your program itself is humongous, you can overlay WITHOUT losing the data between calls. What's more you can link with Assembler, "C" Cobol, Pascal and other compiled programs without a hitch, and you KNOW those languages don't have interpreted BASIC's memory constraints.

### PCjr Memory Expansion

(Continued from page 2)

your CONFIG.SYS file:

```
DEVICE=PCJRMEM.COM  
DEVICE=PCJRMEM.COM /E  
DEVICE=PCJRMEM.COM /C
```

PCJRMEM.COM will allow the *maximum* amount of memory to be available for your programs. In other words, outside of what DOS and the video buffer use, the rest of your memory is available to run your programs. If you're running a program that needs a lot of memory, then this is the best mode to be in.

**Note:** if you use this option, and you are using a RAM disk of about 100K, then your programs will run faster.

PCJRMEM.COM /E assigns a little larger piece of RAM memory for the video to use which results in full PCjr graphics capabilities. Simply put, the PCjr is well known for having a color display that can draw some incredible pictures while using a rainbow of colors. This option may be useful if you're running a game or special graphics program.

**Note:** If you use this option, and you are using a RAM disk of about 64K, then your programs will run faster.

(Continued on page 21)

## PCjr Memory Expansion

(Continued from page 20)

with good video.

**PCJRMEM.COM /C** assigns even more RAM memory for the video to use, which results in even greater multiple page graphics. Because this option uses more of your RAM memory, it's not the best mode to be in if you are trying to run a program that needs a lot of memory. If you are not using a RAM disk, and want speed, then this option may be the way to go.

If you find that a program will not run, or that the video doesn't seem quite right, then sometimes trying a different option of PCJRMEM.COM may help.

For further information, I recommend that you print the file called PCJRMEM>DOC from your PCjr Memory Options disk and read through it.

**NOTE:** The file names used in this article apply to IBM memory expansion units only, but the basic principles apply to other brands as well. They all come with software to set up your PCjr's additional memory.

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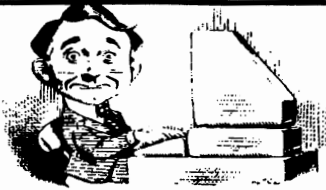
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The following disks from the jr Newsletter Software Store can help you to get the most out of your junior. To order, see the coupon on page 23.

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The software in the jrNewsletter Software Store is the best public domain and user-supported software for the PCjr we've been able to find. All software has been tested on our PCjrs and is highly recommended. Some of the programs are equal to or better than commercial programs costing hundred of dollars. These are offered for you to try at \$5.95 per disk. Some shareware requires additional payment if you continue to use it.

## Software Listings In This Issue:

- Games - page 6 & 7
- Home & Family Management - 7 & 9
- Especially for Jr - 9 & 13
- Print Utilities - 13
- Spreadsheets- 19
- Utilities - 19 & 20



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\* **NEW** \* **BEST OF JR NEWSLETTER IV.** For your handy reference, disk has the most informative articles, columns, and tips published in Jr Newsletter from June 1989 through May 1990. Easy to use search utilities provide quick ways to find any subject of interest. 128K ok (Disk #118)



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### # TITLE

- 1 PC-WRITE V2.5 (128K)
- 2a PC-WRITE V2.7 (256K), Disk 1
- 2b PC-WRITE V2.7 (256K), Disk 2
- 3 PC-FILE III. 128K
- 4 PC-FILE III. 256K
- 5 PC-CALC. 128K
- 6 PC-CALC. 320K
- 8 GAMES I
- 9 DUNGEONS & WARS
- 10 PINBALL RALLY
- 12 REFLEX POINT
- 14 ADVENTUREWARE
- 15 PROCOMM
- 16 BUSHIDO
- 17 PC-OUTLINE
- 18 TYPING INSTRUCTOR
- 19 3 X 5
- 20 EQUATOR
- 21 TIME TRAVEL IN HISTORY
- 22 PC-DESKTEAM
- 23 PC-PROMPT
- 24 PC DOS HELP
- 25 PC-CHECK MANAGER
- 26 BATCH FILE UTILITIES
- 27 MINICALC
- 28 SUPER UTILITIES

- 29 MORE SUPER UTILITIES
- 30 ARCADE GAMES
- 31 BOARD GAMES
- 32 PLAY AND LEARN
- 33 FAMILY HISTORY (128K), single
- 33A FAMILY HISTORY (256K), need both
- 34 GAMES II
- 35 NEW KEY
- 36 PIANOMAN
- 37 PC-KEY DRAW
- 38 PC-KEY DRAW DEMO
- 39 ORIGAMI
- 40 DOS 2.1 FIX
- 41 WORD PROCESSING FOR KIDS
- 42 MATH FUN!
- 43 BRAIN BOOSTER
- 44 PC-CHESS
- 45 ZAXXON/GALAXY TREK
- 46 PHRASE CRAZE
- 47 GOLF/SAILING
- 48 EARLY LEARNING
- 49 DOSAMATIC
- 50 IMAGEPRINT V3
- 51 PRINT HANDLER
- 52 JR POWER PACK
- 53 CASTAWAY/S. AMERICA TREK
- 54 THE BEST OF JR NEWSLETTER I
- 55 SUPER BOARD GAMES
- 56 PCjr PATCHES V.5.0
- 57 HOME BUDGET MANAGEMENT, 128K
- 57A HOME BUDGET MANAGEMENT, 256K
- 58 HOME INVENTORY
- 59 CHECK PROCESSOR
- 60 PC-JR COMPATIBILITY DISK, V3.5
- 61 BOYAN
- 62 JR MUSIC MACHINE

- 63 GAMES FOR EARLY LEARNERS
- 64 COMPUTER JOKER
- 65 JR POWER PACK II
- 66 THE BEST OF JR NEWSLETTER II
- 67 AS-EASY-AS, V.2.05 (256K)
- 68 DOUBLE TROUBLE
- 69 GALAXY
- 70 NAMEPAL
- 71 CROSSWORD CREATOR V3.30
- 72 LANGUAGE TEACHER
- 73 BAKER'S DOZEN
- 74 MIND READER
- 75 RAMDISK MASTER
- 76 PC-STYLE
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- 79 MEAN 18 GOLF COURSES-1
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- 89 STAY ALIVE !!!
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- 91 THE BEST OF JR NEWSLETTER III
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- 99 PCJR AUTOSETUP
- 100 WAR ON THE SEA
- 101 GAMES III
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- 103 TEXT UTILITIES
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- 105 THE WORLD V.2.6
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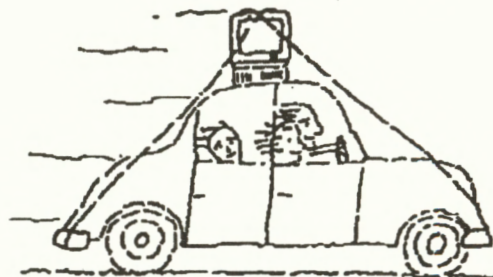
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