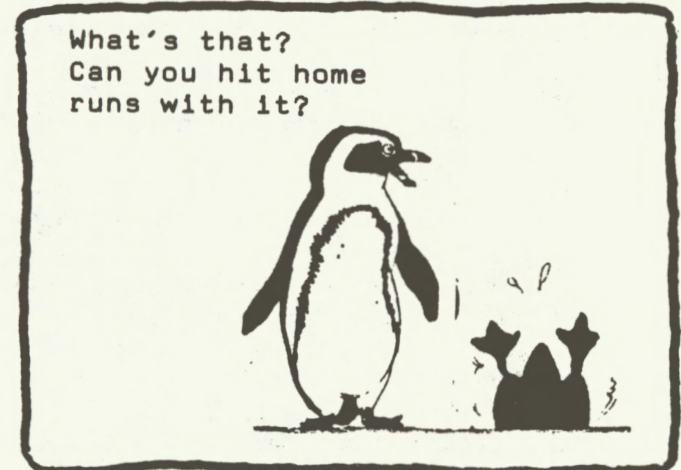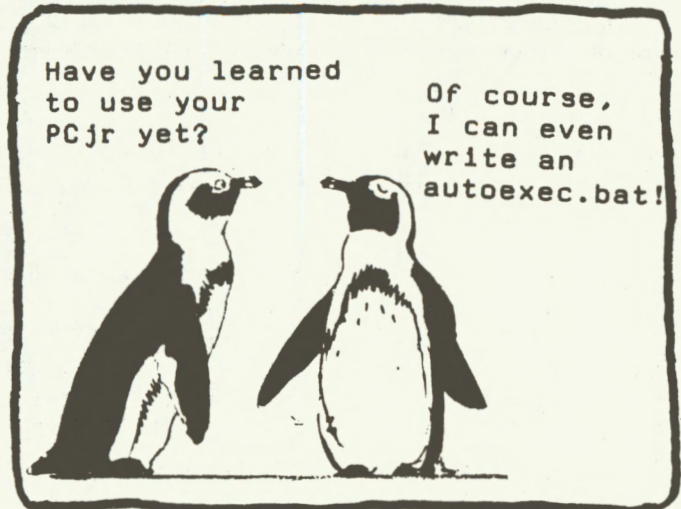## Reader Survey Shows PCjrs Used for EVERYTHING!

Students, professionals, homemakers, game-players, programmers, ham radio buffs, stock market charters, astrologers, business people, educators -- you name it, people are using their PCjrs for just about everything you could think of.

Our 1989 Reader Survey asked readers to tell us about their PCjrs and their experiences, both positive and negative. We read each of them very carefully and learned a lot about what you all are doing with your PCjrs. We thank all of you who took the time to send your surveys in, and are particularly grateful to those of you who told us how much you like the newsletter and others who made constructive suggestions for improvements.

We will be using the information gathered through the survey to come up with articles of particular interest to you. And we believe the survey has helped us to understand your needs a little better.

"The Most Unusual Use Award"

As we mentioned at the start of this article, PCjrs are being put to an extremely wide variety of uses. For example, there's Larry Harper, of Barstow, CA, who probably deserves the "Most Unusual Use Award." He told us in his survey "I use our PCjr for simple radio astronomy experi-

Have you learned to use your PCjr yet?

Of course, I can even write an autoexec.bat!

What's that? Can you hit home runs with it?

ments. These experiments include monitoring radio noise as different stars (including Sol) pass over my antenna. These signals are plotted on the screen and saved to disk for later analysis."

They are also being used by everyone from beginners to advanced, from tiny tots to grand parents. So it's quite a challenge to us. We have a lot of very different interests and levels of expertise to satisfy every month. This is why we try to have a balance of articles in each issue. You may find some of them are too technical, or not technical enough. Or the subject of one article may be of interest while another is not. But we certainly hope you find something helpful and interesting in each issue of jr Newsletter.

128K Still Prevalent

One thing that surprised us was that nearly 30 per cent of those who responded to the survey have PCjrs with just 128K. We had begun to feel that nearly everyone had ex-

PCjr Lives!

How's Your Config, Sis ?

By Ima Begin

"Hello, Mr. Guru, this is Ima."

"Ima who ?"

"Ima Beginr, remember? I called you a little while ago when I first got my computer. You helped me get started."

"Oh, yes Ima. How's it going?"

"Mr Guru, I keep seeing references to a file called CONFIG.SYS and I have no idea what that is. What is the file they are talking about?"

"Ima, the CONFIG.SYS file is a text file containing the names of any device drivers that are to be installed (stored) in computer memory. All PCjrs with more than 128K of memory need a special device driver to recognize the memory they've added above 128K. So without a config.sys file on the disk you boot up with, your PCjr would only be able to use 128K of its memory, even if it had more."

"When you say boot up, you mean start up my computer, I remember that. But I still don't get this config.sys thing."

"Config.sys is just the name of a file on a disk. Your computer automatically checks the disk that's in your A: drive when you start up to see if there is a file with that name on the disk. If there is, then it reads that file for instructions on how to configure your system. Config.sys configure your system, get it?"

"If you only have 128K on your PCjr, you probably won't have to worry about a config.sys file. But your computer, Ima, has a jr Hotshot memory expansion unit in it, giving you extra memory. So you need a config.sys file on your boot disk, that's the DOS disk you use to start up with. And the config.sys file is going to tell your computer how to use your added memory."

"So the computer knows to check that config.sys file when it starts up, huh? How would I know what to put in that file. I don't know what to tell a computer to do. It seems like my computer knows a lot more than I do."

"I know it seems that way, Ima. But actually you're the one in charge. You can tell it to do exactly what you want it to do. And if you learn what instructions to put in your config.sys file, you can really be in the driver's seat."

"But I don't know how to program with BASIC or anything like that, I'm a beginner, remember?"

"You don't have to know anything about programming to write a config.sys file, Ima. A config.sys file just has words in it, not special programming language, just words.

Like a shopping list. Very simple, really."

"Oh sure, I bet."

"Let me give you an example. You can look at the config.sys file on your DOS disk by typing the words TYPE CONFIG.SYS and then pressing your Enter or Return key. You will usually see one, or maybe a few lines of words. With a jr Hotshot system, the top line might say DEVICE=STD.SYS. With an IBM memory expansion unit on your PCjr, the line might say DEVICE=PCJRMEM.COM /C or something similar to that. Each type of memory expansion unit for PCjrs originally came with its own special device drivers to enable PCjrs to use the additional memory."

"So my friend, who has a Racore unit would have different words in her config.sys file?"

"Yes, but the line telling her PCjr how to use the additional memory would start with DEVICE=, just as yours does. When she first installed her Racore memory expansion unit, she would have followed instructions to write a config.sys file on her DOS disk."

"So it's only a bunch of words, then."

"Yes, but very important words. They have to be exactly right. But the important thing I want you to know right now is, that a config.sys file is only made up of words, and that you can easily learn what words to put in it to make your computer operate the way you want it to."

"All right, Mr. Guru, you've convinced me, it's not hocus pocus computer language. But I still don't know how to put the instructions in that config.sys file."

"You can use any word processor that has the ability to write a pure "text" file. That's a file without any formatting

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 an Okidata ML 320, IBM Pro w/ Epson emulator. It's fine for graphics but I have a problem with Word Perfect jr. and PC File +. In order to get the "¢" symbol on the screen I simply press Ctrl-V and 155. That's easy, but the symbol does not print out on the printer. I have not been able to figure out how to print special characters with this printer. Can you help me? E. Nagle, Portsmouth, VA.

A. First, you must be sure ALL the little DIP printer switches are set for the emulation mode you want to use. Don't go only half-way, i.e. be sure it is fully set up for IBM or fully set up for Epson emulation. Second, you must be sure that you are using the proper printer selection from the set-up list with Word Perfect jr. In your case BOTH the Epson and IBM printer drivers should work. Do not choose Okidata unless there is an option which includes IBM / Epson emulation right in the name selection. The same goes for PC File +. Third, to gain an understanding of how a printer is controlled, you should read the "Printer Controls" section of the printer manual. Now, these pages can be misleading. As you read, keep in mind that the "Escape" (or "Control") character they are addressing is really character #27 and has nothing to do with the Esc or Ctrl key(s) of the keyboard. (Yes, this IS CHAR$(27) in BASIC for LPRINT-ing...) When a printer receives char. #27 it "shifts" into a special mode and uses the next series of characters to do something in this mode only. The first of the series of characters is usually another control to tell the printer how many more of the following characters (separated by semi-colons) are to be used. The printer does the job, then simply "shifts" back to "normal" printing. Both PC File + and Word Perfect jr. should be doing all of this for you. The rea-son you must choose the correct printer from the list is that the series of characters sent immediately AFTER the "Esc" character (char. #27) varies among printer manufacturers for these special operations. Just about all printers recognize char. #27 as a control character, but that and the simple things such as Carriage Return, Line Feed, Form Feed (Top of Form) and Back Space may be all they have in common.

Q. My monitor (a jr. Color Display) sometimes fades to white. Some days it fades in and out several times. Am I at the limit of the power supply in the jr? I have upgraded to 640k via a 512k IBM sidecar. M. F. McKee, Pittsburgh, PA

A. You have upgraded properly and the load on the internal power supply is fine; it has nothing to do with the monitor which has its own power of 115v a.c. If the "fading" (we would tend to think of this as "brightening") to white is gradual and does not snap to white then the problem is usually the monitor. There is only a slight chance that the video chip(s) or the solder connections in the jr. are acting up from heat. Chip replacement could be necessary, and some of our advertisers offer repair and /or replacement services if this is the case. You could also contact a local reputable repair shop for service. If the whitening snaps on and off, then check the connections and / or the cable to the monitor and the back of the jr. You can wipe the contacts by simply un-plugging them and plugging them back in a few times. If this doesn't make any change, flex the cable right at the joint near the ends where they enter the plug. Watch the screen for any changes while you do this. You will also be putting a small amount of wiggle inside both the monitor and the jr. and if the problem shows up it could be an erratic connection inside either, so test accordingly to find which it could be. You get the idea; it is a process of eliminating those things that are OK, step by step. Be a detective, you'll save some unnecessary diagnostic charges even if something does need repair.

Q. If I connect a TTL monitor as described in previous issues, will the characters still look the same? R. Hoffman, Cambridge, MA

A. The characters will always look the same, no matter

Questions and Answers

(Continued from page 3)

what kind of monitor is connected. The reason, as has been discussed before, is that the jr is ALWAYS in CGA color mode even if MODE BWxx has been run. The "box" in which the characters are drawn will remain the same for both color and monochrome modes. In a standard PC the monochrome graphics card in BW mode "draws" each box with more horizontal and vertical dots (pixels) than when it is in color mode. Remember, too, the text character ROM (in which the patterns of the letters are stored) is not the same as in the standard PC, XT or AT. Early PCs needed a separate graphics card to switch to genuine graphics screens and were limited to four colors; that's how different the modes are. The straight monochrome card even drives the monochrome monitor with more horizontal (total from top to bottom) scan lines. The jr does not do this; in MODE BWxx it simply uses only black and white, but is still actually in color mode, no matter which kind of monitor.

Q. What is PC mode? R. Hoffman, again.

A. An over-simplified answer has to suffice. Some manufacturers and suppliers of peripherals for the jr realized that the only reason some software would not run on the jr was because the program(s) looked for PC, PC-XT, or PC-AT identification code in memory. If it wasn't there, and it isn't in a jr (the identification is, of course, PC-jr code) then the programmers decided that the machine wasn't an IBM, that it might be a clone, for example, and the program either crashed or shut down. The champions of jr compatibility found out that they could "change" the code in the jr to identify itself as a PC or XT etc. and most of the software would run without a hitch. The lazy, uncaring software programmers had simply not allowed for jr identification in their programs! Other differences, such as DMA (Direct Memory Access) were more difficult to overcome but as our advertisers indicate, pseudo-DMA has also been implemented in hardware/software combinations. PC mode, if you are wondering if there is a patch or command to set up this way, is not a mode you can switch to with a standard jr. Racore memory expansion units have a switch which changes the configuration from jr to PC mode and back again. There is also a PC-ID Cartridge which plugs into the cartridge slot. This cartridge fools software into thinking it is running on a PC when that software checks for the PC identification byte in ROM. It does not guarantee 100% compatibility, but it helps with some software. Call or write to our advertisers for more information if you would like this option.

Q. I read that the Logitech Paintshow / Mouse package will run in 16 colors, but I can't do it. I get only four colors. Can you help me? H. Sehestedt, Roswell, NM and P. Orlando, Colorado Springs CO

A. Because our experience with this software package is somewhat limited, but includes the information that the 16 color 640x200 is an EGA driver we can't say that there is a way to run in 16 colors on the jr. If, however, there is also a Tandy 1000 driver with 16 color mode then the hardware modification discussed in past issues of the Newsletter would be one solution. Software modification (such as a patch to one of the supplied video drivers) is more difficult, and we don't know of any at this time.

Q. I have replaced my second 5 1/4" disk drive with a 3 1/2" drive. I found out that I could use the 3 1/2" as either drive, adjust the boot procedure and get along just fine. I then added another set of contacts (a plug) to the cable so I could use all three drives up to C: and there's the hitch. It seemsthat the controller card, or something, cannot handle more than two drives. As a partner in a software discount store, I also have access to hard drives and wonder if there is some way to handle this "stack" of drives and even add a hard drive. I suspect a new controller is in order here. PC Enterprises tells me they only sell a whole package for the hard drive installation. Will I be inviting a power supply overload? J. Jerome, Greeley, CO

A. If you have access to hard drives then you might consider the SCSI hard disk controller and software from Paul Rau Consulting. You will need an external power supply, the necessary cable(s), and housing, all of which are also separately available. The compatible drive is almost any SCSI series hard drive. (In DOS 2.1 with its 10MB limitation, a single 20MB drive can be set up as two 10MB drives or a single 40MB as four 10MB drives, for example.) There are a couple of physical configurations available; unused modem slot plug-in or sidecar unit. You take your choice. That's one hard drive solution. As for the third floppy drive problem, have you moved the jumper on the third drive to position #2 or the next in line whatever that is? There are usually four positions on the card of the drive itself, indicating that it, at least, can be accessed higher than B: You might also try to configure for A: & D: and B: & E: or higher, rather than C: as the third drive. DOS, Microsoft and DOS oriented software often default to C: as a hard drive or ramdisk, sometimes even if it is not set up before the third physical drive is recognized in the config.sys file. These drivers are really sequential calls: A: B: C: D: etc. That's one reason why the order in which the drivers are read from the config.sys is so important. Set up your ramdisk or hard disk for the proper letter(s), as the drivers are loaded.
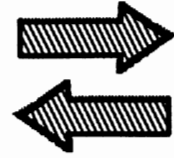
PCJR to Tandy with Switch
Plus Atari Joystick Adaptor

In reading the April issue, I have found the Tandy 1000 Modification to be an interesting project for myself. The modification seemed to be easy enough to do, except that it seemed to be a permanent modification. So to resolve that problem, I mounted the components on a circuit board with the addition, eight DIP switches. This allows me to configure the hardware in either jr mode or Tandy mode. The modification works well with all of my software, however, there are some problems with PCjr game cartridges (Mouser). If anyone is interested, I will consider making the boards for $24.95 plus $5.00 shipping and handling.

It should be advised that some technical skill is required, such as soldering and the cutting of one board trace. However, I feel that this modification is well worth the time and effort, considering it allows 16 colors that otherwise you would not have with many software programs.

I also have made a board that can modify a two button Atari style joystick to work with the PCjr. These joysticks are much more durable to use with games. However, the software has to have a joystick centering option, and a joystick adapter cable is required.

Anyone interested in either of the above can contact me at (401) 722-1925.

Anthony J. Marsella, North Providence, RI

Reader Urges Newsletter
To be "More Realistic" about PCjrs

I have been a PCjr owner for about 4 years. During that time I have used my jr for both business and pleasure. My current configuration consists of one 5-1/4"and 3-1/2" floppy drive; Racore expansion chassis with a Racore 512K memory board; NEC v20 chip; Thin-Font Module; Quicksilver Cartridge; and a Mouse Systems JrMouse. I use a ramdisk but only for program files. After you spend an hour proofreading and editing your wife's psychology paper that is due the next day and two hours trying to mentally reconstruct those changes after your computer has crashed in the middle of printing said paper which was only saved to the ramdisk, you learn that the extra time it takes to save a file to a floppy drive is cheap insurance.

Since 1986, I have been reading my mother-in-law's jrNewsletter (she is also a jr owner). To be honest, your publication has been a great resource for hints, batch files and tricks, as well as addresses and phone numbers of jr product suppliers.

During the past few months however, I have noticed a pronounced tendency towards "IBM-bashing," (by readers and columnists alike), as well as adamant "jr-defense" in the face of contradicting facts. Advocacy is one thing, but to maintain that the jr can stand up to a 286 machine running at two or even three times the speed with VGA graphics is ludicrous. One gentleman even stated in a recent issue that he has access to a PS/2 Model 50 and he uses his jr anyway! Why don't you find out where this man buys his hairshirts?

As for IBM Corp., the only thing they are guilty of is underestimating the needs and expectations of the home computer user. Out of the box, the jr did more than its fellow "orphans" (C64/128; Atari 400/800; Apple IIc). The problem lies in the fact that it didn't (and still doesn't) do as much as the business- class machines with which it had to (unfairly) compete at the time of its introduction.

I realize that the PCjr is a lot of computer for the money, especially with some judicious upgrading. The jr is quite sufficient for those people whose computing needs are limited to word processing, filing, and games. Attempting to run serious applications like Harvard Graphics, any Cad or Desktop Publishing Package, Lotus or Windows requires excessive disk-swapping and Ramdisk trickery just to make the thing functional. While I sit and wait for my Harvard chart to be drawn in barely legible CGA-quality resolution, I get to think about how fast and crisp those PS/2's are where I work.

Sure, a hard disk, some EMS memory, and maybe an accelerator board would solve some of the above mentioned items. But with a 40 meg (anything less is a waste of money) hard drive for a jr going for almost $900, I don't see it as a worthwhile upgrade. Especially when you consider that the money from the sale of my jr setup combined with that $900 would buy a 16MHz 286 clone with a 68 meg hard drive built-in! What's more, that clone would have a VGA mono graphics card that could be upgraded (imagine that).

I guess the point of this letter is to say "let's keep things in perspective." I still use my PCjr almost every day. It does many neat things for me, but not enough. I want to maxi-

Reader Feedback

mize the potential of the jr without spending the price of a PS/2 on a machine which can never even come close to that standard. Eventually, I will retire my jr, probably replacing it with an AT-bus machine of some sort. As the prices of those computers slip lower and lower, that eventuality gets closer and closer.

I believe that your readers would benefit from a more realistic editorial perspective. Check out the "Classic Computers" section of Computer Shopper Magazine some time. There are columns about Commodore, Atari, Adam, and even Timex/Sinclair computers. Published there, is a plethora of information and advice about each make of "orphaned" computer. The one thing that each of these columns avoids is pretending that their respective computers can compete with the latest offerings from Boca Raton and Silicon Valley. The authors know that each computer has specific strengths and weaknesses. The authors know that many people can operate very well within that somewhat limiting framework. They help the pool of users to take advantage of the potential that lies within each machine. Jr newsletter would do well to stick to this approach.

On a more technical note, in your April, 1989 issue you answered a question from a reader about replacing a 5-1/4" drive with a 3-1/2" drive in a Racore chassis. I can tell you from first hand experience that your answer was incorrect. When my second IBM-label 5 -1/4" drive failed, I moved my Racore 5- 1/4" to the A: drive slot. I purchased a replacement 3-1/2" drive from IBM. The physical and electrical hookup was a direct swap-out. Using Driver.sys from Dos 3.3, I configured the drive as both D: and B: (D: formats as a 720K drive, B: as a 360K drive) I didn't even have to change the step rate. The whole thing works like a charm. Maybe I lucked out as I hear that some controllers will work with the small drives and some will not. In any event, it's best not to make a categorical statement such as this. After all, IBM said you couldn't do a lots of things to the jr that we all know are possible.

Greg A. Priddy

Editor's Note: We feel that one of the most valuable things we do for PCjr users is to dispel the myth that their computers are good-for-nothing wimps. As we and many of our readers have discovered, the PCjr, when upgraded, can perform almost any function that higher powered (and high priced) computers can perform. Yes, PCjrs have limitations, which Mr. Priddy rightly notes we must recognize. But if we dwelled upon them, many PCjr owners would needlessly reject their computers and succumb to the hype for new computers. For people who do not run complex businesses or perform high level tasks on their computers,

the PCjr does just fine, and the extra power provided by a new computer is simply not necessary. It's a little like buying a car with the ability to go 140 mph. Some people want that, but who really needs it? And last the point about 3.5 drives. The answer Mr. Priddy refers to was given in the April issue. The question from a Racore user was: Is it possible to add or replace one of my drives with a 3.5 inch or hard drive without the expense of extra hardware? The answer given was "no, because you need a new controller card." This is not a wrong answer, but it was incomplete. Apparently you can do it on some Racore units while others require a new controller. Also, even when the existing controller will work, you will probably find the cable is too short and must be replaced.

Tips on a Tandy Mod, Game Patches, And A Trick to Get 3 Voice Sound

First of all I would like to commend your magazine for being the most thorough up-to-date newsletter dedicated to the support and continued longevity of the PCjr. I think what you are doing is just great and will continue to be an avid subscriber as long as you are in existence.

I would like to recommend the PCjr-Tandy 1000 hardware modification you described in your April '89 issue to anyone serious about great graphics. I for one know that there is no comparison between regular 4-color CGA graphics and the 16-color EGA quality graphics the PCjr is capable of producing (actually there is NO difference between 16-color PCjr graphics and the standard EGA. It is the high resolution EGA that beats our jr's in graphics quality.) I got the modification done for under $50 and it was done very fast. The computer electrician apparently understood everything you diagrammed for the modification without any difficulties. The 74S86 chip, the integral part in the modification, is not always easy to find. I purchased mine along with a V-20 chip from JDR Microdevices (1-800-538-5000). Their services and prices are simply outstanding! I bought the 74S86 chip for only 35 cents and the V-20 for only $7! I strongly doubt a better price exists anywhere! When buying the V-20 chip remember to specify that it is for a 4.77 Mhz system and that you want the V-20 chip not the V-20-8 chip which is for 8 Mhz motherboards and will not operate on a standard jr.

Bards's Tale II

Now to the REALLY good news. I have dabbled with programs in the past and I have been able to patch among others Police Quest II, Leisure Suit Larry II, and Bard's Tale II all for sixteen colors (I was able to patch the Sierra games BEFORE Sierra decided to renew support of the Jr. meaning I was playing Sierra games in 16 colors before they were even supposed to run on my computer!). The Bard's Tale II patch was really very simple when I figured

out what it was I had to change. The main reason for the PCjr-Tandy graphics discrepancy is the graphics addresses. The jr's is B80018 whereas the Tandy's is B800B8. I have found that when I know the location of the graphics drive and therefore the location of those nasty B800B8 codes usually all I have to do is change the last "B" in the codes to "1" so they will read "B80018" which is the jr's graphics address. This change gets rid of the horizontal lines that invariably cover a jr's monitor when an unpatched 16-color program is loaded up in Tandy mode. I have enclosed a copy of the Bard's Tale II graphics driver.

Battlechess with Sound

More good news! I saw you listed **Battlechess** as one of the programs you tested that ran in 16-colors after the Tandy 1000 modification. I strongly doubt you were able to access the incredible digitized sounds that are, in my mind, a vital part of the game. Well, if you just load the game up from DOS it will load up on fabulous 16 colors all right, but it will also be totally mute, even when the Music option is "on." Somehow, just by pure chance, I was able to get the sound option working, and believe me, it makes as much difference as 4 colors compared to 16 colors. What I did was boot up my computer and load up the Sierra game **Thexder**, a game that supports the jr's three-voice sound. I played it a little while, then got tired of it and decided to quit. I then decided to load up **Battlechess** from DOS. When I started playing the game, I was surprised and VERY happy to discover that I now had superb, digitized three-voice sound. After thinking about it for a while, a figured it out. When I loaded up the Sierra game, it activated the jr's three-voice speaker. You see, Sierra games recognize the Tandy speaker and the Jr speaker as the same thing, whereas other programs, such as Battlechess, for instance, only look for the Tandy speaker and therefore do not recognize the jr's speaker, that is, UNLESS you have already activated it with a program that does. I have found this procedure to work the same way with Electronic Arts' **Zany Golf**, a program that works in 16 colors due to the PCjr to Tandy 1000 hardware modification. I began playing it in silence, but now, I just load up Thexder, quit when the game starts and return to DOS, and then load up Zany Golf and play to nine different musical scores that I didn't even know existed before! Here is the full, in-step procedure:

Three Voice Sound

1) Load up any Sierra game (others may work; I haven't tried), and after you have heard the three-voice music play, quit the game and return to DOS (this doesn't work if you reboot the computer, so don't Control-Alt-Del your way out of the program.).

2) Stick in any program that you believe has three-voice sound but haven't heard when using it and load it up. I guarantee that if it does have a Tandy sound option, you will get that sound working for you!

3) Remember, Battlechess and Zany Golf are two programs that I have tried this on and have gotten outstanding results with!

Keep up the good work, jrNewsletter, and I hope this letter will be of assistance to the great PCjr users who read your magazine!

Michael Chandler, Dardanelle, AR

EDITOR'S NOTE: In reference to the PCjr to Tandy 1000 modification, we would point out that OOwl Software is offering to do it for $24.95 plus $6 shipping and handling, as opposed to the "under $50" price quoted here by Michael.

As for the Bard's Tale II patch, as you may have read elsewhere in this issue, we have added it to the latest version of Jr. Patches (Disk #56). We hope Michael's example will inspire more of you to "dabble" with patches for new software and send them to us when you get them working.

Three-voice sound is one of the PCjr's great features, and Michael has a good way of getting it. There is a utility that does the same thing which we plan to add to a new disk in our Software Store soon.

Expand Disk Space with a 3.5 Inch Drive

By Dave Turson

What is a 3.5" disk drive and why is it important to my PCjr? This question was asked at a recent workshop.

When you look at the way the PCjr is built and how it can be expanded you will find that the 3.5" drive provides a simple and not too expensive way to get more storage. After expanding the memory of the PCjr many users begin looking at the cost of a hard disk. The PCjr is not built to accept an internal controller card and does not have a big enough power supply to handle a hard disk. These two items account for $250 to $350 of the cost of a hard disk. When you price-shop hard disks you find 20 to 40 megabyte drives in the $600 to $800 area. Even though that price is reasonable many PCjr owners are reluctant to spend that much money when regular sized PC "clones" with a hard disk and using the Jr monitor are priced at about $1,000. Other choices do exist.

The addition of a 3.5 second disk drive is a good alternative. The storage capacity at 720K is twice the size of an internal ramdisk and will work on your available power supply. In short it is a $250 to $300 external ramdisk which leaves all of the memory and the 5.25 "A" drive available. "Two-disk" programs run and data is stored on a floppy. The changes to the junior are minor; a number of reputable suppliers furnish a ready-to-use unit, and the results are impressive.

One of our club machines was fitted with one of these drives. The top mounted version was chosen over the one which is housed in its own external case since the added cables, case, and power outlet are not needed. A top mounted unit comes with an expansion case matching the PCjr. The top cover of the PCjr is removed and an expansion case snaps onto the PCjr. Inside the case is a 3.5 drive, two cables, and a replacement controller card. I suggest you request a 1.4 meg capacity drive. It costs less than $20 extra, can read and write 720K disks, and will not need to be replaced when we figure out how to use the high capacity drive in the PCjr.

Easy Installation

Unplug the power connection from the existing 5.25 drive and plug it into a "Y" power cable. One part of the "Y" plugs into each drive which share the power source since neither drive uses power at the same time. Unplug the flat signal cable from the disk controller card and from the drive. Plug the middle connection of the 2 drive cable into the 3.5 drive and the end connection into the 5.25 drive. Plug the other end into the new disk controller board. Remove your old controller board and replace it with the new one. Make sure the cables lie flat and look neat before you snap on the top cover. That's it. You are ready to go.

You will get a software driver or a new boot disk containing DOS 3.2 with your unit. You must use DOS 3.2 or higher to support the new disk OR you must have a drive which works with DOS 2.1 to use the 3.5 drive. When you boot the system the drive gets recognized by DOS as the next available unit. This means that DOS knows drive A and B are reserved for 5.25 disks and C may be assigned to a ramdisk so it will make the 3.5 drive D. If you have no ramdisk it will make it drive C. You will see a message on the screen when you boot up telling you which drive DOS thinks it is. Remember that drive letter. You will only need to use that letter when you want to format a 3.5 disk. Except for formatting disks, DOS can use that new drive as drive B after you adjust your Config.sys file.

First use diskcopy to make a backup copy of your boot disk. Next print out (type) the contents of your Config.sys file. Next modify it to include the command Device=driver.sys /d:1. (This is what tells DOS you have a 3.5 disk and it is physically drive B; DOS will decide if it is drive C or D). Now copy the file driver.sys from the disk provided with your drive to your boot disk. You MUST have driver.sys on your boot disk. If your unit came with a configured boot disk then type out the config.sys file to see what it looks like. You only need one driver.sys entry to use the drive. Any other entries are used to setup your own PCjr.

In the sample config.sys file I have used the D2 and X entries to tell Jr Config.sys that I have a 3.5 Drive. The files and buffers entries makes DOS read files faster. You must

have the driver.sys entry but do not capitalize the /d:, part, it only works in lowercase. No entries are normally needed in the Autoexec.bat file to use the drive although I use a few which make the PCjr run better. I set up a tiny ramdisk and put Vern Buerg's LIST.COM program out there. This makes DOS think my 3.5 is drive D (But it will find it when I call it B:). I use the path command to let DOS check either drive for a program name when I run it. (This avoids the bad command entry when I am set at Drive A: when the program is really on Drive B:).

CONFIG.SYS for 3.5" Drive:

```
DEVICE-JRCONFIG.DSK -d2 -j -s1 -t3 -x
    REM.. D2 tells DOS you have two drives
    REM...x quiets noisy disks in DOS 3.2
FILES = 10
BUFFERS = 5
DEVICE = ANSI.SYS
DEVICE = DRIVER.SYS /d:1
    REM...driver for 3.5" disk
```

AUTOEXEC.BAT

```
PROMPT $e[33;44;1m$p$g$e[37;44;1m
    REM...color screen and prompt
PATH C:\:A:\:
    REM...tells jr to check both drives :
    REM...looking for programs run
COPY LIST.COM C:
    REM..Puts List into jr for later use
STATLINE
    REM...shows status caps/num/scroll lock
```

FORMATB.BAT

```
ECHO OFF
ECHO-- DRIVE B WILL BE CALLED
ECHO   DRIVE D SO I CAN FORMAT IT
        AS A 720KB DISK
ECHO- FORMAT D: REM...this is driver DOS
        thinks it is
```

So that's what it takes. The advantages really add up when you begin to put your programs or your data on the 3.5 disk (it holds the same as two 5.25 disks). 3.5 disks can be purchased for $13 a box of 10 if you shop around or use mail. To keep your PCjr from becoming out of date, I believe you will find the 3.5 disk drive to be one of the most practical additions to the jr.

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

The Bard's Tale II: A Mystical Adventure

By Michael Chandler

Bard's Tale II, an adventure role-playing game by Interplay and marketed by Electronic Arts, mixes all the elements of classic role-playing games with magic, mysticism and an exciting plot to create a first-class product. The graphics are great on PCjrs (in 16 colors with the patch that's been added to Jr Patches Disk #56 this month, or without it if the PCjr to Tandy 1000 modification has been done), and the game is definitely one of the most challenging role-playing adventures on the market. With all this, plus a variety of extras not included in the original Bard's Tale I, this game is a must for anyone interested in this type of computer gaming.

The game begins in the town of Tangramayne, which is much like the town of Skara Brae from Bard's Tale I. A major difference (and improvement) from the first Bard's Tale is the fact that Bard's Tale II has seven different cities to explore while the original only had one. The adventurer is allowed to transfer his characters from Bard's Tale I if he wishes, but is not forced to do so, because Bard's Tale II stands alone and does not require completion of the first game. If the characters being used are below level 13, it is suggested that they travel to the "Starter Dungeon" in Tangramayne to gain necessary experience and levels. Believe me, it is easy to get your party killed even if every character is beyond level 20!

When creating a character, which can be done at any of the seven adventurer's guilds (one for each city), the player chooses first between seven different races (such as human, elf, gnome, etc.), and eight different basic classes, although spellcasters may change their class type after they have attained at least the third spell level of their present class. After a spellcaster has mastered the four basic magic user classes (Conjurer, Magician, Sorcerer, and Wizard) he can become the Archmage, the most potent character you can have in your party and necessary for the successful completion of the game.

The characters in traditional role-playing games have different attributes, such as strength and dexterity, and this one is no exception. The characters are initially created on a random basis, and it's up to the player to choose which characteristics best fit his needs. For example, if it is a warrior the user wants to create, he should focus primarily on good points in strength for efficiency in battle, dexterity so the character has a greater chance of striking the first blow in battle, and constitution so the character will rise quickly in hit points as he gains levels. Eighteen is the highest possible in each of the six categories, so look for 14 and above in those areas that best suit what you intend to create.

The object of Bard's Tale II is to reforge the "Destiny Wand" a mystical object that supposedly makes the user immortal and ultimately, all-powerful. It is only with this grand object that the evil Lagoth Zanta (who has sent forth his evil minions on the cities and wilderness) can be defeated and the realm saved. The only problem is that the wand has been destroyed and separated into seven segments, each of which lies in a "snare of death".

A "snare of death" is a nasty thing indeed, for it is a timed puzzle (we're talking real-time here!) that either results in its successful completion or the deaths of every character in the party. If a snare is solved within the time limit, a member of the party is given a segment of the wand (according to what segments the party has already acquired). Throughout the many dungeons and towers there are many messages to aid the adventurer on his quest. All of these need to be recorded because they will help at one time or another. Many of these messages tell the party to seek the Sage and ask him about something or someplace. The Sage lives in an isolated hut outside the city of Corinth and answers questions about objects, people, and places for rather expensive prices. The information he gives is well worth the high price, though, and it becomes obvious early in the game that without the Sage the game would be impossible to solve.

Combat Options

There are a variety of options when engaged in combat, which is a definite improvement from the old "fight or flight" standard employed in early role-playing adventures. Each character in the party has the option to do the following:

1) ATTACK FOES - This can only be selected if the monster group is 10 feet away.

2) PARTY ATTACK - This would usually only be an option if you are arguing with a fellow player, but could be very valid if a monster that has joined your party turns against you or someone in your party has been stricken with insanity.

3) DEFEND - This would be a smart option is your back is against the wall and you do not have a chance of defeating your adversary.

4) USE AN ITEM - This is a great option to have. If a character has a magical item, he can simply use that item and get its full effect without the cost of losing spell points. Because of this, brutish warriors can use magic items to cast spells!

5) BARD SONG - This option is only available to the Bard, who can choose from seven different melodies to aid the party on their quest, with each of the melodies performing a special function.

6) CAST A SPELL - This is, of course, only available to the spellcasters.

7) HIDE IN SHADOWS - This is a special option available only to Rogues. When this option is selected, the Rogue becomes almost nonexistent to the enemies using hand-to hand combat on the party, therefore being spared of their vicious blows.

Only the first four party members are vulnerable to physical attacks, but all are in danger when magic is used on the group.

Many Improvements

There are many improvements in the second edition of Bard's Tale, but the one that sticks out the most is the save game feature. With this option, it is possible to take the party to the greatest depths of a dungeon where death lurks everywhere and save your characters while they are still in one piece. If they unfortunately get slaughtered a few minutes later, all the user has to do is reboot, reload and select the "L" option for loading a saved game. Previously, the user had to get the party all the way back to the adventurer's guild (which is at times nearly impossible!) to save the characters, but now that problem no longer exists.

Another improvement is the expanded magic system. Many more spells are now available, including the seven spell levels of the notorious Archmage. Also, the graphics are better than before, always a welcome feature to PCjr lovers! All in all, this is a really great game that is well worth its price. Its "shelf life" is outstanding, so you won't be getting another one of those "boot up, take a look, and put to the back of the disk case" games. I for one am definitely looking forward to the highly-acclaimed " Bard's Tale III-Thief of Fate. "

Discount Buying

When giving reviews, I will try to come up with the name and number of the dealer selling the product at the lowest available price. For Bard's Tale II, I have to go with Computability. I purchased the game around Christmas time for $31.95, which is almost $20 under its "suggested retail price", the price you would pay if you order Electronic Arts direct. The number for Computability is 1-800-558-0003. Hint books (in my opinion, a necessity for anyone who REALLY gets involved with this tough game) are available at most major dealers and of course Electronic Arts direct for $14.95. This price seems like an awful lot for a hint book, but it isn't really when you look at it and realize the magnitude and difficulty of the game. All dungeons and towers are mapped out and almost every answer is given.

Note: Some PCjr users may have trouble with the sound that plays during the first booting up of the program and picture disks. Occasionally on my system the sound goes haywire while the disk drives are running, and it re-sults in the game locking up. When this does happen, I have to reboot my system and start again, which is no big deal, just a bother. Expanded units with DMA (the game requires 512k) should not have any problem with this, for they can simply press V to stop the sound. Otherwise, I suggest setting up a configuration file that demobilizes the internal sound of the jr (this can be done with the memory management program on the Jr Power Pack II Disk #65).

If You Haven't Fixed DOS 2.1 You're Asking For Trouble

If you are a user of DOS 2.1 and you've encountered unexplainable difficulty with large database or word processing programs, your problems may be caused by fixable bugs in DOS 2.1. These bugs can cause the program to crash (at just the wrong time) or not to run at all. Fortunately, there is a way to fix DOS 2.1 so these problems will not occur. The patch for this is on Disk #40 in the jr Newsletter Software Store and the end of the newsletter.

Give Your Kids The Wizard To Improve Their Math Skills

How does a busy parent get his/her sixth grader, or any other child, to sit down and work out thirty or forty arithmetic problems without resenting the "punishment"? Can today's career-committed parent afford the time to write them out on paper and then, again and again, to correct them? But if the problems aren't checked, how can the parent know whether the child is progressing? And what better stimulates development than the acknowledgement of success?

WIZQUIZ (Disk #95) offers the solution to this dilemma. WIZQUIZ is a comprehensive, competitive exerciser for arithmetic. It lets child and parent work together. While Dad or Mom catch up on the news, in the next chair son or daughter improves his or her math: within earshot if frustration occurs. Father and mother don't have to waste time making up problems or correcting right answers. The WIZARD takes care of that. And after each 10 problem game HE calculates the new average, checks the score against the best ever and the player's own previous best performance, announces the score, and celebrates the player's progress. WIZQUIZ provides randomly generated, graded problems. Each type of problem has 10 levels. Each level has a target score. A score is determined both from the number of errors and the time it takes to solve 10 problems. WIZQUIZ keeps a record of the last 10 times each player attempts each level of each type of problem. It knows each player's best score, and can calculate his/her averages. Since WIZQUIZ asks for and remembers a player's age, it can and does restrict access to easier problems by age.

From age 13 up, WIZQUIZ presents the option of playing with negative numbers. Any level from 5 up of any type of problem may be played at any age level when using negative numbers.

WIZQUIZ provides the following types of problems:
1. Addition
2. Subtraction
3. Multiplication
4. Division with no remainder
5. Division with simple remainder - that is, the answer to 17 divided by 3 is 5 r 2.
6. Division with fraction remainder - the WIZARD demands that the answer be given as a proper fraction reduced to lowest terms; HE will not count you wrong for improper or non-reduced fractions, but HE will require you to keep trying until your answer passes both these edits; meanwhile time points are accumulating against you.
7. Division with decimal remainder - rounded to two places.
8. Levels 1-5 are for Least Common Denominator; levels 6-10 are for Greatest Common Factor.
9. Simple Fractions - levels 1, 2, 3, and 4 have the same degree of difficulty and are for addition, subtraction, multiplication, and division respectively; level 5 mixes the problem type at the same level of difficulty; levels 6 through 9 and level 10 up the level of difficulty a notch.
10. Advanced Fractions - just like 9 above but at still greater levels of difficulty; these are probably the most demanding problems in the game.
11. Find the Unknown (Add & Subtract) - levels 1, 3, 5, 7 are for addition; levels 2, 4, 6, 8 are for subtraction; levels 9 and 10 contain both.
12. Find the unknown (Multiply & Divide) - just like 11 above except for multiplication and division respectively.
13. Decimals and Percents - levels 1 through 4 are for addition, subtraction, multiplication, and division respectively (answers always rounded to two places); levels 5 and 9 ask"What is x% of y?"; levels 6 and 10 ask "What percent is x of y?"; levels 7 and 8 are for mixed computation with decimals.
14. Reciprocals - just as in fractions, answers must be given as reduced, proper fractions. A nice feature of WIZQUIZ is that it allows parents and teachers, and even students themselves, to keep track of each player's progress. This is done through WHOZWIZ. It is password protected; but the first time it is run it asks for the SUPER WIZARD's password. The SUPER WIZARD can look at anybody's scores.

WIZQUIZ (Disk #95) is suitable for grades 3-8, or anyone who wants to improve their math skills in the above mentioned categories. See page 23 for ordering information.

The Powerful FORMAT Command

The DOS FORMAT command is used to initialize a diskette to accept DOS information and files. It can be issued as a command on its own, or automatically invoked when using the DISKCOPY command.

When used on its own, it will tell you if there are defective tracks on a target diskette. This does not mean the diskette is unusable, just that those tracks should be avoided (which the COPY *.* command will do, but DISKCOPY will not).

If you add /S after the drive specification, you will have a copy of the operating system on the target diskette, making it bootable.

The addition of /1 will format only the first side of the target diskette.

Adding /V enables you to write a volume label, to appear above the directory.

New Typing Software Added to PC-Touch

Touch Typing Tutor, an excellent combination of typing lessons, speed tests and a typing game, has been added to PC-Touch on Disk #18 in the software store. Although PC-Touch is a great program in itself, we discovered Touch Typing Tutor recently and felt it had some additional features which PC-Touch lacks.

PC-Touch presents you with one line to type as fast and accurately as you can. Then the next line is shown, until you reach the end of the exercise. It shows you precisely your words per minute rate and your mistakes. With PC-Touch, when you make a mistake, you must go on without correcting it. That, says the author, is the best way to learn. Touch Typing Tutor, however, gives a series of actual lessons. In the exercises, you MUST correct your mistakes. And you have an opportunity to type as you would on a computer, with wordwrap in effect, or as you would on a typewriter, pressing the Return key at the end of each line.

In the lessons, a sample keyboard, showing the keys used for that lesson, along with information about finger placement, is shown. As you finish each exercise, the program tells you how you did and records your progress in a file.

TTT also gives you the opportunity to create your own files to use for the speed tests. In this way, if you need practise with special kinds of typing, such as documents that include matematical formulas, or legal terms, you can create a custom practice file.

The game section of TTT gives you a little variety and fun in your learning process, along with the ability to select from five levels of difficulty. This is a nice touch (sorry). To order the disk with both PC-Touch and Touch Typing Tutor, which we have now renamed Typing Instructor (Disk #18), please see the order form on page 23.

Spelling Checker Works Well Even With Little Memory

We added Spellr, a spelling checker that works with any text file, to our Software Store because we felt it would be useful for those of you who do not have sufficient memory on your computers to use a memory resident spelling checker.

Spellr uses a dictionary of over 40,000 words to check any text file. It is done after you have finished creating your text with your word processor, and so does not require much memory to operate. In fact, 128K is enough. It will work on a text file produced by any word processor.

To use Spellr, you simply type Spellr followed by the name of the file you want Spellr to check. It will go to work and then show you on screen or in a print-out, a list of words that do not match those in its dictionary. Along with each misspelled word will be a line and column number to help you find the location in your text.

You then go back and change the spelling of the words Spellr has shown to be wrong. This approach is not as handy as using a memory resident spelling checker, which allows you to make changes on the spot. But those types of checkers often work very slowly and, as we mentioned, unlike those spelling checkers, Spellr does not require much memory.

You can add your own list of words for Spellr to use, in case you are writing a document with many unusual or technical terms. To do this, you create your own ascii (pure text) file with the words separated by tabs or newlines, and then specify the filename when invoking Spellr. Complete, easy to follow instructions are on this disk. See page 23 for ordering information.

Moving?
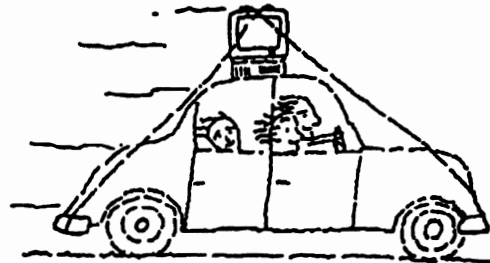
Please send your new address to us at least one month before you move. The Post Office will not forward your newsletters.

What Do You Know--
Our Readers Like Us

We know we shouldn't blow our own horn, but we thought we'd share some of the glowing praise we got recently from PCjr users.

Yes, we got a little criticism from our 1989 Reader Survey, but for the most part, we were glad to hear, our readers greatly appreciate our efforts to make jr Newsletter great.

Here are a few of the comments we received:

"Jr Newsletter is good because it is full of tips and suggestions that are really good for all the IBM and clone family. It's the best source of general (and specific) computing information I've found -- and I've looked a lot of places."
-- Rob Perschau, Grandview, MO

"I feel that jr Newsletter satisfies the needs of PCjr owners very well. It has both articles for technical and non-technical users, and you seem to really want to help solve our problems. Thanks."
-- Brian Gross, Tuscon, AZ

"This is a nice, honest newsletter. Thanks."
-- Lawrence Sullivan, Newport, RI

"Keep up the fine publication. It is my only contact with people who have a similar interest to mine in knowing more about PCjr computing. I am constantly referring to back issues of the newsletter."
-- Craig Uncapher, Kansas City, MO

"You folks have kept me from giving up on jr. Your efforts are much appreciated."
-- Hamilton Gray, Houston, TX

"It is difficult to balance complex and simple applications and articles, but you should be applauded for "best achievement" of all the computer magazines I have read."
-- William Masterson, Clark, NJ

"I have cancelled other mags which were not much use to me. Thanks again."
-- Jon C. Baptiste, Palm Bay, FL

"As long as jr Newsletter is in print I will subscribe. I find many articles helpful even when using a PCXT!"
-- Stella Delaney, Stanhope, NJ

"PCjr Power" Provides Help
For PCjr Enthusiasts

"PCjr Power," a book plus two disks package assembled by Oowl Software, the PCjr specialists in Columbus, Ohio, provides many ways to increase your knowledge and performance of your PCjr.

The book, in handy spiral-bound format, contains several sections of interest to both beginners and more advanced users.

In addition to basic information about the jr itself and about how to use DOS commands, the manual has a section called "Hints and Helps," on how to handle such things as monitor smearing, telecommunications, and cleaning your disk drive. Another section called "Junior Modifications," covers nine different improvements you can make to your jr, such as adding a reset button, modifying a disk controller, or making the PCjr to Tandy 1000 modification. Some of these can be done by beginners, while others require some basic electronics and soldering skills.

Thirteen pages of the 93 page manual are devoted to do-it-yourself patches for 16 software programs that either will not run on PCjrs without patches, or which can be improved by using a patch.

The book is written in simple, clear language which can be understood by every computer user who is willing to try. The two disks contain dozens of handy utilities, some of them specifically for PCjrs, such as jrconfig (now config.jr), jrclick, and swapcom2, and others, such as quickcat, a disk cataloguing utility, or list, a versatile text reader, are useful no matter what computer you may own.

All in all, Albert Allen, the author and owner of Oowl Software, has done an excellent job of providing a useful source of tips, reference information and utilities for PCjr users.

$18.95 plus $3 shipping from Oowl Software, 1435 Burnley Sq. N, Columbus, OH 43229.

Now's the time to do your Family Tree!
All the help you'll need is on FAMILY HISTORY (Disk #33). See page 22 for a full description of its features.

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.

Begin To Config

(Continued from page 2)

symbols. Or you can simply use DOS to do it."

"What? Come on now, I'm not that dumb. I know DOS isn't a word processor."

"No, it isn't. But it does have a very simple way for you to write words and store them in a file."

"So I could make my own config.sys file? But wait! Why in the world would I want to get involved in writing a config.sys file if there already is one on my DOS disk."

"Because the config.sys file gives you control over your computer. This is very important with PCjrs in particular. A lot of good things can be done with config.sys files on PCjrs. Many PCjr users have several DOS disks, each with a different config.sys file on it. Each one is custom made for a special purpose one for playing games, one for using a word processor, another for using a database program and so on."

"And they start up their computer with the right DOS disk for each purpose? Sounds like a lot of trouble. Why not just use the one I have?"

"You can use the same one all the time, but you won't get the best performance that way. You may have problems which you blame on your computer when it's not really at fault. And also, if you learn a few basic things about config.sys files, you'll probably find that you can get software to operate on your PCjr that otherwise might not run on it. The right config.sys file can solve compatibility problems."

"Wow! Ok, I'm convinced. Let's go. I'm ready to learn how to write these magical config.sys files!"

"Sorry Ima, I've got to take my dog, Chip, for a walk now. The lesson's going to have to wait 'till next time we talk."

"I guess I can wait. Ok if I call you tomorrow, same time?"

"Sure, Ima. And in the meantime, see if you can find anything in your DOS manual about the COPY CON command. You might find that interesting."

Using CONFIG.SYS Files
With IBM Sidecars

Using the right config.sys file can make the difference between having software run properly, or not at all. If your PCjr has memory beyond 128K due to the addition of an IBM memory expansion unit (sidecar, because it fits on the side of your PCjr) here are three different configurations and their uses.

The line DEVICE=PCJRMEM.COM in your config.sys file will set up the normal configuration. This puts a 16K video buffer and DOS in the lower 128K and makes the rest of memory available for running programs. This uses 52K with DOS 2.1.

DEVICE=PCJRMEM.COM /E is the enhanced mode. It sets up a 32K video buffer and makes all graphics modes available. It uses 84K with DOS 2.1.

DEVICE=PCJRMEM.COM /C is called the compatible mode and is the configuration most likely to run software, such as games, which make extensive use of graphics. It sets up a 96K video buffer in low memory and permits use of multiple pages as well as all graphics modes. It uses 132K with DOS 2.1.

In order to determine how much memory your PCjr will have available to run software, you must subtract the figures above from the total memory on your machine. Also keep in mind the memory resident programs you may have installed.

Many PCjr users have several boot disks, each with a different config.sys on it, to use for different types of software.

Add power to your PCjr with JR POWER PACK I & II. These two disks, which you'll find in the jr Newsletter Software Store, contain software designed especially for you and your PCjr. They make your computer easier to use, more productive and more fun!

(See page 23 for ordering information)

Reader Survey

panded the memories of their PCjrs, but apparently this is not the case. Many people asked us to recommend a particular memory expansion unit. That is something we can't do. That would be like saying Chrysler is better than an Oldsmobile. The fact is that there are many good choices available for PCjr memory expansion. One of the articles you will see very soon in jr Newsletter will list these options for you.

We already knew, but the survey confirmed this fact again, that many of you are at the beginning level of computing. We will keep the beginner's column going, and we will try not to talk above your heads in our how-to articles. We had quite a few requests for beginning-level topics such as dialing out with a modem, what is a patch?, how to set up a RAM disk, and using basic DOS commands. We'll follow up on these in future issues.

Many Helpful Suggestions

Readers came up with dozens of suggestions for adding to or improving jr Newsletter. We'll cite a few of them here.

A column on shareware, with specific tips on how to use PC-Write, Procomm, As Easy As, and many of the other excellent shareware programs is one suggestion we intend to follow up on. It may not happen every month, but we plan to have regular articles on this subject.

A discount buying service for hardware and software is something we have considered in the past, but have not been able to organize. The main problem with carrying out this suggestion, as with many other fine suggestions, is lack of time. We publish this newsletter with a small staff, on a mostly part-time basis and it is just about all we can do to write articles for the newsletter every month, find and test new software for the Software Store, answer reader questions, keep up with renewals and changes of address -- well, you get the idea........

This time and staff constraint also applies to another suggestion: that we establish a PCjr Hotline for answering questions and solving problems. We'd love to do this, but that would require a full time person and a dedicated phone line. We can't afford either one. This is why we encourage you to write to us with your questions, problems, suggestions, rather than calling us. We know this is not as good as a hotline, but it's the best we can do.

Several readers suggested expanding the Questions and Answers and the Reader Feedback section. We may expand the Questions and Answers column if Rene Waldron can find more time to devote to it each month. As for the Reader Feedback, we currently publish every letter we receive that we feel will be of interest to other PCjr users. We feel this is an excellent way to exchange information and we all benefit from the thoughtful and often quite detailed descriptions contained in many of the letters we receive. Since we do not have the time, money or staff to test all the new games and other software, or to test all hardware add-ons either, we depend upon the experiences of other PCjr users to share their information with us all. The number of them that are published each month depends on how many we have received -- so keep them coming folks, we all need to hear from you!

Learn Origami By Watching Your PCjr Do It On Screen!

Origami is a great program -- fun for both kids and adults. Origami is the ancient Japanese art of paperfolding, which has been perfected to such a degree that fantastically intricate shapes and amazingly real looking animals and other things can be created just by folding paper!

The Origami software program teaches you how to make these paper wonders -- by giving you a demonstration showing exactly what to do. In a way, it's better than taking a class in Origami because you can review each step of the process before going on to the next step, thus proceeding at your own pace.

Children love to just watch the forms take shape until they recognize what the animal or object being created is going to be. And older children as well as adults can take pleasure in their newly learned ability to create beautiful Origami figures.

Origami is Disk #39 in the jr Newsletter Software Store.

PCjr Users Select Their 277 Favorite Programs

Our 1989 Reader Survey included a request which read: "Please list what software you use and like best." The following list of software titles contains all software listed by readers in this part of the survey.

There is an amazing variety of software here, showing without a doubt how many great software programs are currently being run on PCjrs around the country (and the world).

We were especially gratified to see how many of you listed software that you had purchased from the jr Newsletter Software Store. For these programs to be selected as your favorites, in competition with commercial software, is quite a tribute to the quality of shareware.

This listing is obviously not a complete account of all software that is PCjr compatible. There are hundreds of other titles out there that run well on PCjrs. But if you see a title on this list, you can be sure that it not only is PCjr compatible, but that at least one PCjr user considers it one of his or her favorite programs. So if you've been thinking about purchasing a title you see on this list, but have been delaying due to doubts about its compatibility or general quality, you can now be assured of both.

ADJRAM (DISK #75)
AEA PAKRATT
ALPHA WORKS
AMY'S FIRST PRIMER
ANCIENT ART OF WAR
ANCIENT ART OF WAR AT SEA
ARCTIC FOX
ART STUDIO
AS EASY AS (DISK#67)
AUTO MENU
AUTOSKETCH
BACK TO BASICS
BAKER'S DOZEN (DISK #73)
BANK STREET WRITER
BASIC
BATTLECHESS
BEST OF JR NEWSLETTER (DISKS #54,66 & 91)
BEYOND WORD WRITER
BEYOND ZORK
BIBLE Q (DISK #85)
BLACK CAULDRON
BOULDERDASH
BOYAN (DISK #61)
CALENDAR CREATOR PLUS
CERTIFICATE MAKER
CHART
CHECKFREE

CHESSMATE 2000
COBOL (MICROSOFT) V3
COLORPAINT
COPY II PC
CP-EDIT
CREATIVE CALC
CREATIVE FILER
CROSSFIRE
CROSSTALK
CRUSADE IN EUROPE
CUTTHROATS
DAC EASY LIGHT
DBASE III
DBASE III PLUS
DECISION IN THE DESERT
DELUXE PAINT II
DESIGN CAD
DESK ORGANIZER
DESKTEAM (DISK #22)
DIRECT ACCESS HOME BANKING
DIRMAGIC
DONALD DUCK PLAYGROUND
DOS 3.3
EAGLE'S NEST
EARL WEAVER BASEBALL
EARLY GAMES
EARLY LEARNING
EASY AS ABC
EASY WORKING FILER
EASYWRITER
EIGHT-IN-ONE
ELECTRIC DESK
EMPIRE
ENCHANTER
EXPERT FORMS
EZCAD
FALCON
FAMILY ROOTS V3.5
FAST BUCKS
FILE EXPRESS (DISK #83-4)
FILING ASSISTANT
FIRST CHOICE
FIRST PUBLISHER
FLIGHT SIMULATOR SCENERY DISKS
FLIGHT SIMULATOR V1,2 & 3
FLOW DRAW
FONTASY
FORM KING
FORTRAN 4.1

Favorite Software

(Continued from page 17)

FOURTH AND INCHES
FRAMEWORK II
FRIENDLY WRITER
FUNNELS AND BUCKETS
F-15 STRIKE EAGLE
F-19
GALAXY (DISK #69)
GATO
GENEALOGY ON DISPLAY V3.0
GERTRUDE'S SECRETS
GOLD CUP CHALLENGE
GOLD RUSH
GRAMMATIK
GRAND PRIX
GRAPH MAKER
GT-POWERCOMM V14.02
HARDBALL
HARVARD GRAPHICS V2.1
HEROS OF THE LANCE
HOME ACCOUNTANT JR
HOME BUDGET JR
HOME INVENTORY (DISK #58)
HOME WORD
HOME WORD PLUS
HUNT FOR RED OCTOBER
IBM FILING ASSISTANT
IBM GRAPHING ASSISTANT
IBM REPORTING ASSISTANT
IBM WRITING ASSISTANT
IMAGEPRINT (DISK #50)
IMPOSSIBLE MISSION II
INFILTRATORS I AND II
INSTANT PAGES
INSTANT RECALL
JEOPARDY
JET
JR MUSIC MACHINE (DISK #62)
JR POWER PACK (I AND II)
JR TELE (DISK #86)
JRCONFIG (DISKS #52 & 65)
JUMPMAN
JYACC
KINGS QUEST (COMPLETE SERIES)
LEARNING DOS
LEISURE GENIUS SCRABBLE
LEISURE SUIT LARRY
LIPTICOE
LOTUS 123 V2.01
LOTUS FREELANCE
LOTUS REPORT WRITER

LQ
LUCID 3-D
MANAGING YOUR MONEY V.5
MATH BLASTER
MATH FUN (DISK #42)
MATH MAN
MATH RABBIT
MATHCADD
MEAN 18
MICKEY'S SPACE ADVENTURE
MICRO COOKBOOK
MICROLEAGUE BASEBALL
MICROSOFT WORD
MIND YOUR MONEY
MIXED UP MOTHER GOOSE
MONEY COUNTS
MONEYCOUNTS V5.0 PLUS
MOTHER GOOSE
MS WORKS
MULTIPLAN V3.0
MUSIC CONSTRUCTION SET
NAME PAL (DISK #70)
NEWKEY (DISK #35)
NEWSMASTER II
NEWSROOM PRO
NFL CHALLENGE
NORTON COMMANDER
NORTON UTILITIES
NYET
ONE-ON-ONE
OPPOSITES ATTRACT
OREGON TRAIL
ORIGAMI (DISK #39)
PCCS
PCJR COLORPAINT
PC-CALC (DISK #5-6)
PC-FILE R
PC-FILE (DISK #3-4)
PC-KEY DRAW (DISK #37)
PC-OUTLINE (DISK #17)
PC-PAINT
PC-PAINT PLUS
PC-TALK III
PC-TOOLS (AND DELUXE)
PC-TOUCH (DISK #18)
PC-WRITE (DISKS #1-2)
PERSONAL ANCESTRAL FILE
PFS PROFESSIONAL FILE
PFS PROFESSIONAL WRITE
PFS WRITE
PIANOMAN (DISK #36)
PK FAX
PLAY AND LEARN (DISK #32)
POLICE QUEST

POOL OF RADIANCE
POWER-UP POCKET ADDRESS
PRINT SHOP
PRINTMASTER
PRINTMASTER PLUS
PROCOMM
PROCOMM PLUS
PRODESIGN
PROJECT (MICROSOFT)
PRO-WRITE
PUBLISH IT!
PURSUE THE PENNANT
Q & A
Q & A WRITE
QEDIT
QMODEM
QUATTRO
QUICK BASIC V 3.0 AND 4.5
QUICK C
QUICK PRO II
QUICKEN
QUICKVERSE
READER RABBIT
REFLEX
ROGUE
SARGON III
SCOUT (DISK #81)
SCRABBLE
SELECT-A-FONT
SENTINEL WORLDS I
SESAME STREET'S CRAYON
SIDEKICK
SIDEWAYS
SILENT SERVICE
SMART MONEY
SOLO FLIGHT
SPACE QUEST II
STARFLEET
STARFLIGHT
STEPPING STONES
STOCK CHARTING
STREET SPORTS BASKETBALL
SUPER HUEY (I & II)
SUPER WRITER
SUPERCALC
SUPERCALC 3
SWIFTCALC
SYLVIA PORTER'S PERSONAL FINANCE
SYMPHONY
TAX ADVANTAGE
TEACHER'S QUIZ DESIGNER
TELIX
TEST DRIVE
TEXTRA V.5.2

THEXDER
THINK QUICK
TIMELINE V2.0
TOM SAWYER'S ISLAND
TOUCHDOWN FOOTBALL
TREKRUN
TREND POINT
TRIVIA 101 AND 102
TURBO C
TURBO LIGHTNING
TURBO PASCAL
TURBOTAX
TWIN
TYPING INSTRUCTOR
TYPING TUTOR III
ULTIMA SERIES
VIDEO PRO TITLER
VIDEOTEL
VISISCHEDULE
VOLKSWRITER DELUXE PLUS
VP PLANNER PLUS
WHEEL OF FORTUNE
WHERE IN THE USA IS CARMEN SANDIEGO
WHERE IN THE WORLD IS CARMEN SANDIEGO
WINE COMPANION
WINNIE THE POOH
WINTER GAMES
WORD PERFECT V.4.1, 4.2, 5.0 (AND WORDPERFECT JR)
WORDPROOF
WORDSTAR 2000
WORDSTAR V4.0
WRITE AND SPELL
XOR
XYWRITE
ZEN V3.0

Use That Modem On Your Jr To Explore A Jr BBS

If you have a modem on your PCjr, there's a lot of valuable information available. It's ready to be accessed by your PCjr, any time you want it. Here are a few of the best sources of PCjr info as well as places to chat with other PCjr users:

Jr BBS ,operated by the Metro PCjr Users Group, (301)468-0984.

San Francisco PCjr Users Group BBS (415)997-4874.

Many PC users groups around the country support the National PCjr Help Conference, where PCjr users exchange information. Try calling your local PC BBS and see if they provide access to this system.

Compuserve, the commercial BBS, has a PCjr Forum with PCjr info as well as downloadable software.

* * * PCjr CLASSIFIEDS * * *

WANTED - New PCjr owner wants to buy a PCjr color monitor, 1200 baud modem, a name brand dot matrix printer, manuals, software, or ? Leave a message for Steve at (213) 382-1557 (7)

IBM PCjr - 640K, Racore Drive II, extra 128K sidecar, PCjr Color Monitor, Keytronics 5151jr keyboard, several joysticks, vinyl covers, two new Fujitsu floppy drives, Quicksilver and speedup cartridges, DOS 2.1, many game cartridges, Koala Pad with software, many PCjr specific games, extra parts. $1,000. Call Diana at (203) 792-3796 evenings (7)

IBM PCjr - 640K, jr Color monitor, two 5 1/4 and one 3 1/2 inch internal drives, 150w internal power supply, parallel port w/ clock calendar, Datadesk 101 keyboard, two joysticks, Basic, Combo, and Configuration cartridges all w/ software and documentation. Excellent condition. $850. Call Larry at (718) 761-7886 (7)

FOR SALE - IBM PCjr, Excellent Condition, includes; IBM color display, Improved PCjr keyboard, 128K mem, 360K disk drive, PCjr manuals, Cartridge Basic, Two joysticks, PCjr carry case, parallel printer port sidecar, computer dust covers, Adult used only, will ship UPS in original boxes. $750. Epson LX90 Tractor feed dot matrix printer with PCjr Interface cable $190. BOTH $890. Call Bill at (615) 728-4697 (7)

WANTED TO BUY - RGB/CGA monitor for an IBM PCjr. Want to replace current composite monitor. Jay LeBlanc (504) 446-3640 (7)

IBM PCjr - 640K w/PCjr Color display, two 360K floppy disk drives, 20MB external hard drive with built-in surge protector, AT-style keyboard, parallel port, Microsoft mouse, joystick, DOS 2.1, Cartridge Basic, all documentation plus Thousands of $$$ worth of software. Call Nancy Blair at (916) 587-4821 eves and weekends. (7)

How to Submit a Classified Ad

Classified Ads are $12 per month. Send us your typewritten ad (no more than five lines on an 8 1/2 x 11 typed page). Send to Jr Newsletter, Box 163, Southbury, CT 06488

IBM PCjr COMPACT PRINTER - like new with 2 rolls of paper, original chicklet keyboard, PCjr keyboard, 300 baud internal modem. Call Nancy Blair at (916) 587-4821 eves and weekends. (7)

WANTED - MS-DOS version of PERFECT WRITER (1.2 or 2.0) by Perfect Software. Have CPM version, but need MS-DOS working version. Please write Rollin Golden, 2232 Pyramid Way, Sacramento, CA 95821 (916) 920-1139 (7)

FOR SALE: Two PCjr enhanced keyboards, $18 each. One 300 baud PCjr internal modem, $30. Call Rob Perschau, 816-765-1335 before 2 p.m. weekdays or anytime weekends. (8)

Software: Full original documentation and diskettes in original box. all run great on my 128K jr. Price includes COD U.S. Mail to you. Sierra's King's Quest II ($25), and IBM's Writing Assistant version 1.01 ($40). Dave at (208) 522-2830. No collect calls, please. (8)

IBM PCjr w/jr. Captain & jr. Cadet, 640K; DOS manual & disks; basic cart.; Basic manual & Guide to Operations. Color IBM monitor; Datadisk Turbo 101 + 2 original keyboards; cables + disk ribbon cable; + Star 103-232A acoustic coupler 300 baud + cables. $700 + Shipping. Call Patricia (216) 238-3183. (8)

Wanted: Defective IBM color monitors for PC and PCjr. Picture tube must be intact. Will pay $50 for repairable units. Hank Kennedy, 813 Chisholm Vly. Dr., Round Rock, TX, (512) 255-2812. (8)

Muppets Learning Keyboard and software, $55.00. PCjr cartridge BASIC with manual, $50.00. I'll pay UPS ground. J. Martin Anderson, (206) 545-5748 PST days, (206) 367-5150 PST evenings. (8)

For Sale - 2 external 1/2 height 5 1/4 disk drives, case, power supply and Remex drives. Only one drive works. 2 chicklet keyboards. 1 Tecmar jr Captain and Cadet. Call (402) 426-4840. (8)

What Is A File Manager?

A File Manager is a very handy type of software for copying, moving, deleting, renaming and doing other useful things to files without having to use DOS commands. Scout, Disk #81 in the jr Newsletter Software Store, is one of the best we know of. It can be "memory resident," which means it'll pop up any time you need it by just pressing two keys.

jr Newsletter Software Store

This software is the best public domain and user-supported software for the PCjr we've been able to find. All the programs in this collection have been tested on our PCjrs and are highly recommended. Some of these programs are equal to or better than commercial programs costing hundreds of dollars. The programs in this collection are available for $5.95 per disk.

* NEW * WIZQUIZ. The Wizard keeps track of your progress in solving math problems that range from elementary level through fractions and negative numbers. Extensive exercises, with scores and times recorded under each "player's" name. Compete against your personal best as you improve your skills. Grades 4 through adult. 128K ok. (Disk #95)

* NEW * SPELLR. Spelling checker that works independently of your word processor. Can check spelling of any text file with its 40,000 + word dictionary. Will also use custom word list you make. Produces screen or printed output of misspelled words. Works with all word processors. 128K ok (Disk #94)

* NEW * TYPING INSTRUCTOR. Disk contains both PC-Touch, a great typing exercise and speed testing program, and Touch Typing Tutor, a combination of lessons, including finger positions, speed tests and a typing game. 128K ok. (Disk #18)

* NEW VERSION * PCJR PATCHES V5.0. Patches to fix software that ordinarily won't run on PCjrs. V5.0 adds patches for Prodigy, Telix v3.x, Bard's Tale II,, Maniac Mansion, Designasaurus, California Games, and F-19. Also patches for Flight Simulator V3.0, Loderunner (v-20 chip), Arctic Fox, Managing Your Money V3, Autocad, King's Quest IV (early 512K ver), KQ II (PC ver), Turbo C, Quick BASIC V3-4, Starflight, Advanced Flight Trainer, Double DOS, Bard's Tale I, Turbo BASIC and BASICA. (Disk #56)

* NEW * TYPEWRITER. When you'd rather use a typewriter instead of a word processor, this is the one to use. Couldn't be simpler. Margins, tabs, type size all can be set. Disk includes two printer control programs for higher quality output. 128K ok (Disk #93)

* NEW * SPEED READ. If you'd like to double or triple your reading speed, and increase comprehension as well, Speed Read can help you do it. It provides instruction and exercises designed to break bad habits and improve reading efficiency. 128K ok (Disk #90)

* NEW * STUDY AIDS. Three great programs to help students. PHLASH - a computerized version of flashcards which you make and use for any subject. Multiple choice, true/false, and/or fill in blanks. FRACTIONS - a series of interactive exercises in fractions (many levels). And PHRASE - a program that picks out examples of bad writing in any document and suggests improvements. 128K ok (Disk #92)

* NEW * 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)

* NEW * HAPPY GAMES. Written by a mother to help her own preschoolers learn on their PCjr, this set of colorful educational games makes learning fun. Teaches colors, shapes, logic, eye-hand skills. 256K and joystick required. (Disk #88)

WORDCRAZE. Create your own word search puzzles and print them out for friends and family. Or tease their brains with Quotefall, a unique type of scrambled word puzzle. And then there's a high-level version of Hangman. Just try escaping from the noose in this one! 128K ok (Disk #87)

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 hords 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)

PCjr COMPATIBILITY DISK v2.0. Lists over 800 software titles, along with info on how they run (or don't run) on PCjrs. Also tips on how to make software PCjr compatible. 128K. Updated Feb. 1989. (Disk #60)

BIBLE QUIZ Excellent quiz game tests knowledge of both the Old and New Testaments. Provides answers and biblical references for each question. For one to three players. 128K OK. (Disk #85)

SCOUT. Excellent memory resident (or not) file manager, DOS shell. Move, copy, rename, volume label, search, sort, printer control, view files, and more - fast and easy. Best we've seen. (Disk #81)

SPELLING BEE. A game that builds spelling skills from Grade 3 level to adult. You are an Olympic athlete representing your country. Excellent color graphics. Four skill levels from very easy to very difficult words. Fun way to become a spelling champ! 128K ok (Disk #82)

FILE EXPRESS. (V4.22) Very easy to use database manager. Extensive menus and prompts to guide you. Excellent choice for maintaining mailing lists, etc. Many powerful features. 256K (Disks #83 and #84)

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)

GALAXY. One of the easiest to use word processors we've ever seen, Galaxy has all the features you need to write letters and do most word processing. It has many, but not all, advanced features. Its strength is its simplicity, with help menus always ready to assist you. You probably won't even have to read the manual. 128K ok. (Disk #69)

PC-STYLE. Perhaps the best of many programs that help you make what you write more readable. Jim Button made this a very slick, useful tool for improving your writing. It reads and analyzes what you write, then gives you a detailed analysis based upon several useful standards. Fasy, easy to use. 128k (Disk #76)

COMPUTER TEACHER. For those who want to learn how to use DOS commands and to undertand basic computer hardware terms, this interactive software will help you become computer literate. Helps you better understand those manuals and computer magazines, as well as how to do more with your computer. 128k (Disk #77)

RAMDISK. Use ADJRAM to create a RAM disk of any size and adjust its size at any time without losing the contents. Or use JRCONFIG to set up your PCjr. Both programs with complete instructions for creating and using RAM disks on you PCjr. Need 256K. (Disk #75)

MIND READER. Experience the wonders of artificial intelligence! Use a full-featured word processor that guesses the words that you're about to type. Works like a charm! 128K ok. (Disk #74)

IMAGEPRINT V1.5. Produces near letter quality print on dot matrix printers. IBM Graphics Printers, Proprinters, Epsons

and compatibles. Contains many format features, three quality levels, interfaces with word processors. 128K ok. (Disk #50)

JR POWER PACK II. Disk full of programs to make your PCjr more useful and powerful. Fix compatibility problems, set up ram disks, tiny wordprocessor, set up 3.5" drives, use DOS easily, and more. Need 256K for some, 128K ok for most. (Disk #65)

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

PC-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)

CHECK PROCESSOR - Easy to use software for financial record keeping. Balance checkbook, print expenses by category, etc. 128K (Disk #59)

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

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

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

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

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)

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

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

BOYAN. Selected Best of the Year by PC Magazine, this outstanding telecommunications program will astound you with its smooth functioning and innovative features. Supports all protocols. Need 384K. (Disk #61)

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)

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)

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)

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)

GALAXY. One of the easiest to use word processors we've ever seen, Galaxy has all the features you need to write letters and do most word processing. It has many, but not all, advanced features. Its strength is its simplicity, with help menus always ready to assist you. You probably won't even have to read the manual. 128K ok. (Disk #69)

See July Issue
for Additional
Software Titles.

jr Software Order Form

1	2a	2b	3	4	5	6	7	8	9	10	12	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29
30	31	32	33	33a	34	35	36	37	38	39	40	41	42
43	44	45	46	47	48	49	50	51	52	53	54	55	56
57	57a	58	59	60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79	80	81	82	83
84	85	86	87	88	89	90	91	92	93	94	95	96	97

_____ disks @5.95 each = $ _____

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Add 7.5% sales tax in CT $ _____

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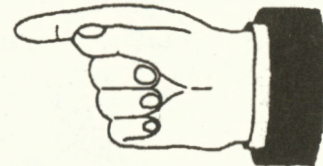
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