Reader Survey Shows PCjrs Doing Just About Everything

Students, homemakers, businesses, gamers -- you name it, they all have their PCjrs up and running with their favorite activities.

Responses from thousands of our readers show that PCjrs are used for just about everything you can image a computer to be used for. (No, not for that!)

If you want to do word processing, personal finances, play games, or trace your family history -- which were the top four computer related activities cited by readers -- you can find many excellent software packages that will run just fine on your PCjr.

With very few exceptions, PCjrs are perfectly compatible with the top rated software in each category. And when there is a problem with certain software, there is usually a solution (which you can often find right here in jr Newsletter!)

We found it fascinating to read what people a doing with their PCjrs, and we thought we would share some of our reader responses with you.

Bet you didn't think PCjrs were world travellers, but R.E. Williamson of Rock Island, IL, says, "I have taken my jr to South and Central America. I use it to train salesmen on selling farm machinery. We calculate owning and operating
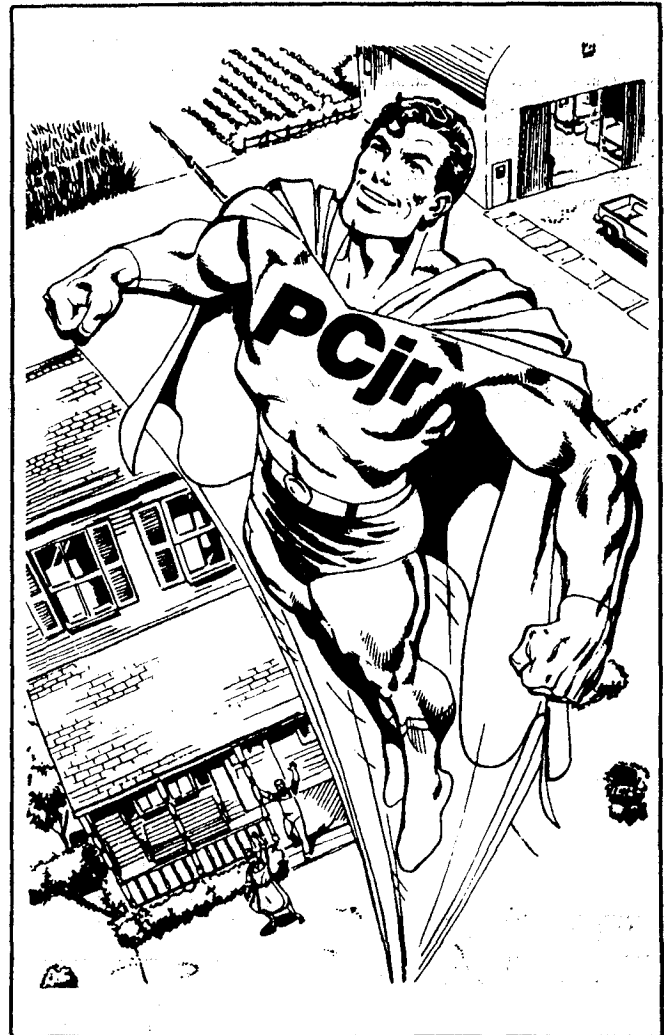
expenses for farm tractors vs. the competition. I also use a Commodore Amiga 1000 & 2000 and have blended input from my jr thru a Genlock into video movies for my training seminars."

Another reader, whose name we misplaced, would probably get top honors for "most unusual use of a PCjr." He said, "I generated full sized templates for rebuilding my boat's rudder." He wrote his own BASIC program to do this.

Many readers said they use their PCjrs for a variety of family work and fun. For example, JoAnn Schlott of Farmington Hills, MI, says, "I am the editor of my child's elementary school newsletter which I publish once a month

Updated Jr Patches Disk Adds Six New Patches

Last October we put several patches designed to make so called "incompatible" software run on PCjrs on a disk called Jr Patches (Disk #56). Those patches fixed **Advanced Flight Simulator, Starflight, QuickBASIC 3.0, Turbo Basic, Turbo C** and **Double DOS**. A lot of PCjr users found those patches useful.

Now we have six new patches installed on Jr Patches -- **King's Quest II, Arctic Fox, Autocad, Managing Your Money 3.0,** an additional fix for QuickBASIC, and an updated version of the patch for Turbo C. We are calling the expanded version of our disk Jr Patches V. 2.0 -- just like the big software companies do with their new versions.

As is often the case, several of these patches are necessary simply to remove the copy protection from the software. Otherwise, the programs run just fine on PCjrs. As software publishers become more enlightened about publishing software without copy protection fewer and fewer programs will present this problem to PCjr owners.

King's Quest II, Arctic Fox and Managing Your Money 3.0 all fall into this category. Copy protection interferes with their ability to run on PCjrs. And there are a wide variety of copy protection schemes. Some are easy to break, others are harder.

As Mary Burkoff, who designed the fix for Managing Your Money, said, "Managing Your Money uses a rather simple form of copy protection, basically a bad-sector, oddly-numbered scheme which is vulnerable to even older versions of CopyIIPC, or similar. I doubt that MECA is trying to give us all a break, but rather is constrained by the requirement that MYM run on a wide variety of semi-compatibles, such as the PCjr." Mary's patch stops MYM from asking for an "Authenticity Check" when entering Chapter 3.

Electronic Arts frankly states that Arctic Fox is not PCjr compatible, but, once again, it's just the copy protection that makes it so. Lou Davidson, who wrote the patch for Turbo Basic that was on our original patches disk, uses DEBUG to remove the copy protection from Arctic Fox. Electronic Arts also makes Patton vs. Rommel, which is also a problem for PCjr owners. This may also be due to copy protection, but as yet we know of no one who has run it successfully on thier PCjr.

Borland is Now PCjr Friendly

The updated Turbo C patch is the one Borland is now distributing, thanks to their enlightened response to complaints from PCjr users. When Version 4.0 turned out to be incompatible, many PCjr users complained bitterly that the company was abandoning what could and should be a host of faithful Turbo C users. Many of these complaints were registered on the Borland support SIG in Compuserve.

Apparently Borland President Phillipe Kahn responded to the messages. Borland says it is now making Turbo C and Turbo BASIC PCjr compatible.

The new version of the Turbo C patch supports comments in the .DIF files, allowing users to tell what is being patched.

Microsoft's QuickBASIC 4.0 has also presented problems for PCjr users. As we reported in April, Microsoft asked us for a copy of the patch on our Jr Patches Disk. We promptly sent it to them, but as yet we have no word on whether they will make future versions of QuickBASIC PCjr compatible.

Rene Waldron, who answers PCjr related questions in our Questions and Answers column, has written a refinement to the QuickBASIC patch which eliminates an annoying beep on PCjrs whenever the up or down arrows are pressed.

As for Autocad, although some PCjr users have experienced no problems with it, others have said it won't run on their machines. We never know when we hear somthing like this whether the problem is with the user, the software or the computer. It is common these days to hear from one PCjr user that they love a certain software package, while hearing from other users that the same software won't run on their computers.

The Autocad patch is specifically for Autocad-86, but may also apply to other versions. We don't know, because we don't have Autocad and so can't test it. The patch installs modified video drivers, both for packages containing Advanced Drawing Extensions and those without. Two different drivers are included, along with documentation on how to install them.

We plan to collect PCjr patches and to update the Jr Patches Disk whenever we have enough new patches to warrant it. We would also appreciate feedback from users who discover new ways around the compatibility problem.

To order PCjr Patches V.2.0 use the order form on page 23 to order disk #56.

readers that we cannot answer them all personally. So we try to answer those that we feel will be of interest to other PCjr users in this column every month. If you have a question that you would like to see answered here, please write to: jr Newsletter, Box 163, Southbury, CT 06488.

By Rene Waldron

Q. I want to teach myself how to write programs and am looking for some advice. I know enough now to modify BASIC programs but not quite enough to write them. Should I stick to BASIC since I already have it and have learned a little, or should I start new with something else? I am also confused about compilers and assemblers and what is necessary for their use. (I have a jr. with 640k and two disk drives.)

A. You have plenty of equipment and you may not realize it, but you can already write programs if you can modify existing ones. It is much more difficult to 'debug' or modify

BASIC you now have, writing short, clear programs which do simple things. Be sure to use plenty of 'REM' statements. Use the apostrophe (') in place of actually typing 'REM.' to document what the program is supposed to be doing in each phase. Do not GOSUB or GOTO any of the REMs with the cartridge interpreter. Go directly to action statements. This is one of the best ways to write longer programs in ANY language. Test and correct these little programs thoroughly for accuracy and "crashes", and then save them in ASCII (text) format by using the SAVE "FILENAME.BAS",A technique. Later, you will be able to put all these programs together into one large program using the MERGE command, or you can COPY them (append) to a single file from DOS. See the DOS manual for this special way to use the COPY command to join files together.

Two suggestions: (1) Try to use the GOTO statement as little as possible, it can make your programs difficult to follow and to do further work on later.

(2) Don't use screens 4, 5, and 6 if you want your programs to operate on the rest of the IBM family or clones, they don't have these enhancements. As you become more proficient (and you will) you will also become speed-crazy. The interpreter won't be able to assuage this thirst, so you will probably become interested in a compiler. Here's why: Compiled languages simply run faster in their final form. An easy step up to a compiler, which is nothing more than software by the way, is to buy one of the two most highly recommended BASIC compilers, namely Turbo BASIC by Borland International or QuickBASIC by MicroSoft Corp. This is a wonderful new ball game. You will be writing your programs within an included editor, just like a word-processor, without the restraints of line numbers, though you can use them if you want to. Then with the touch of a few keys the program is compiled into what is called an intermediate or 'object' file, LINKed with some LIBraries and DOS necessities and it becomes an assembled executable program. This sounds more complicated than it really is. For example in QuickBASIC, just touch Shft Fn-5 and all of this is done immediately and automatically, right in the editor as fast as if you were using the cartridge interpreter, then the program runs! The final program is dramatically faster than interpreted BASIC. Once the program is de-bugged and running properly, you can make the final program an .EXE file on disk which then can be run directly from the DOS prompt without loading BASIC or anything else. The equipment recommended for compiling is 512k and two drives or a hard

Questions and Answers

(Continued from page 3.)

disk, though we have done it with less memory on versions 1.0 through 3.0 of the MicroSoft product. You may also need the PCJRXTRA and the INT9SYS patches available from the Software Store in this issue. They take care of the video memory and keyboard differences of the jr as compared to the PC, XT, and AT and are required for the MicroSoft family of compilers.

Your final program will run on any IBM or clone. Your previous Cartridge BASIC programs, if you followed our two suggestions above, will be able to be loaded into the compilers and run, though there might be a few minor statement adjustments. Welcome to the world of programming!

Q. I have a question concerning the RAM of my computer. I already have the second disk drive attachment by Racore with the appropriate printer port sidecar. I have seen advertised a 512k memory sidecar for the jr. Is this a good buy and a reasonable way to expand memory? Can I use this and if so how?

A. It should work whether you attach it before or after the printer sidecar. It might shove everything to the right an additional inch or so. A better looking way to get 512k more of RAM is to install a jr Hotshot memory card into the 8088 socket of the jr. A third way is to get the 512k RAM board offered by Racore which plugs right into a slot in your second disk drive chassis. Contact the advertisers in this issue concerning prices, compatibility and further upgrades such as speed-ups. Some boards are erratic at the higher speeds, for example and you might want more speed in the future.

Q. I seem to be unable to enter into screen 6 of my Cartridge BASIC graphics screens even with 512k of RAM. I have been told there is an easy fix for the problem but so far none of the dealers I have seen seem to know what the solution is. Can you help me?

A. Yes! First the problem, then the solution. The video memory in the jr is not on its own dedicated board the way it is in the rest of the IBM family. Instead, it resides in LOW RAM, inside the first 128k of the jr. The calls to video screens (normally residing in hex A0000 and B0000, which are above the the TOP of the 640k of a PC for example) are "detoured" down to this LOW RAM by a special chip in the jr.

Now, let's see what's happening to all our machines which have more than 256k and/or additional disk drives when we want any of those enhanced screens 4 through 6. The boot and configuration changes required to recognize the extra memory and/or extra drives may disturb the allocation of the memory normally available for video so they place a "marker" preventing the "detoured" video calls from overwriting and disturbing the top segment of this part of memory. Some configurations don't place the marker and these screens look like hieroglyphics because other information has been already written here. Without expansion, even the BASIC interpreter and its program are squeezed in down there! As a result you have the same screens as a PC, XT or AT. Put another way, these are the same screens available in the disk version of BASICA.

Solution? Simple for you, but complex for the gentleman who wrote the fix, which properly reserves this memory for video and does some other fine things. Just get a copy of PCJRXTRA from the Software Store, follow the directions, re-boot and you have a jr with 6 (actually 10 modes if you count all the b&w and text) screens, memory recognition up to the amount actually installed and two disk drives plus a ramdisk if you want it. Use a ramdisk program such as RAMDRV.SYS - RAMDRIVE.COM which does NOT load into low memory! Re-read the above for the reason.

Q. I have a jr with Tecmar jr Captain and jr Cadet which gives me 640k. On advice of Tecmar I need IBM's CONPCJR program so I can run ANSI.SYS. Does anyone know how I can obtain a copy? I would gladly pay for this.

A. Strange advice indeed! CONPCJR is the software which Tecmar includes with THEIR hardware to recognize extra memory and additional disk drives. Though there is IBM software called PCJRMEM.COM which is supplied with IBM memory sidecars, it is fully copyrighted and can only be acquired with the hardware product or directly from the company.

Still, let's see if we can get you going, though you have to realize that ANSI.SYS (which is on the DOS Supplement disk) will slow your jr down to a crawl on some operations. Besides, much of what it does is already built-in on IBMs and your jr, though it does it differently.

First, make sure a copy of ANSI.SYS is on the booting disk, then re-make your CONFIG.SYS file to include the statement DEVICE = ANSI.SYS, and try it as the last statement in this file. If, for some weird reason, when you re-boot, ANSI.SYS won't load or won't operate normally, then once again we have the solution. Get a copy of PCJRXTRA from the Software Store and simply forget all the Tecmar files in your present CONFIG.SYS along with most of the additional Tecmar files in the AUTOEXEC.BAT file. You won't

need them and now ANSI.SYS will load and operate beautifully.

Q. Mentioned in a previous issue of the jr Newsletter was a list of software compatible with the jr. Among these were Lotus 1-2-3 and Symphony. I have tried using both of these programs on my jr and they work great except for one thing... I cannot see the graphs on the monitor. I have Quadram expansion to 640k. Is there a SYS change that might allow these screens to be seen?

A. For Lotus 1-2-3 there is a special driver for the PCjr. Contact Lotus Development Corp. They supply it free of charge. It can also be downloaded from many BBSs.

To expand your question a bit, the problem of invisible screen can crop up in other software. For example, with QModemjr V1.09 and Procomm V2.42, the help and menu screens are blank unless you have MODE CO80 in your AUTOEXEC.BAT file. This is mentioned in the documentation for these programs, but it is easy to overlook. This simple fix may solve your problem with Lotus and Symphony -- and other software as well.

Q. In using my joysticks with many games I have no problem, but some games only allow movement up or to the left. In researching the cause I discovered that in BASIC programs, the joystick reading in the maximum down or right side position is approx. 125. With some .EXE programs the same position results in a reading of about one-half, or 63. This appears to be the reason for the problem with the joysticks. Are there any patches or other changes using DEBUG that might correct this?

A. You have obviously checked the condition of the joysticks and the plugs, wires etc. The IBM joysticks use a potentiometer (a variable resistor in the joystick housing) coupled with a capacitor (making an R-C network in the jr) to determine a periodic time charge which is polled and fed to the 8088 which then gives you a number related to the time delay developed. Not all manufacturers of joysticks use the same values or quality for the potentiometers in the joysticks as does IBM and Kraft. Only if you knew all the exact places in the particular .EXE program where this number was used or where it was input could you use DEBUG to change the math operation. A rough proposition for a simple patch to cure, especially on copy-protected or self-booting, non-system programs.

One possibility is to try the following: Hold the joystick in the extreme lower right position while the game is loading. This may give initial values to the game program so it won't read the center (halfway) positions. Some products initialize or calibrate the joystick input this way and some do it just the opposite, i.e. hold it upper-left, or even half-way upper-left! We once wrote a program instructing the user "to calibrate, hold stick to upper left and press fire button," then, "now hold stick to lower right and press button again." Check the

documentation to see if there is some set-up before getting into the game to calibrate the stick input. If all else fails, raise Cain with the manufacturer(s) of the software or the stick.

Q. I have a jr with Racore, 640k, 10 meg hard disk, DMA, clock, AT type keyboard and the PC ID module. I leave the switch in the PC mode all the time. With DOS 2.1 all is OK but with DOS 3.2 and the PC ID module on, the keyboard freezes up right after booting. Without PC ID, DOS 3.2 runs fine with most other programs. One specific problem; SPF/PC Editor sometimes locks up. (Ed. Note: We have no information on this program.) Is this a bug in DOS 3.2 and if so is there a patch?

A. These may not really be insects in DOS 3.2; it was originally developed especially for the laptop. A general purpose patch may not exist though there are some specific ones. Did you know that there are at least two versions of each DOS? One is specifically for the IBM family and it is called PC DOS, The other is for Tandys, Compaqs, and other clones and it is called MS DOS. PC DOS (and IBM BASIC) work in conjunction with some ROM which only exists in genuine IBM computers.

We assume you have PC DOS 3.2. MicroSoft's documentation with my own QuickC compiler has a patch for Compaqs with DOS 3.2 to correct a keyboard problem, for example. Though you find that SPF/PC Editor works with 2.1, it does not insure that the SPF software is bug-free with 3.2. Contact them. They might have developed it before

Questions and Answers

(Continued from page 5.)

DOS 3.2 was available. If PC DOS 2.10 (developed specifically for the jr, by the way) works fine, why on earth are you bothering with 3.2 which takes more memory and gives you headaches?

Q. My jr has two IBM sidecars and the power module. How can I get the computer to recognize the memory in self-booting programs with their own operating systems? I have tried everything. I have Marble Madness by ECA and some other games. I would like to get others but I want to be sure they will run with my configuration. Marble Madness starts to boot up then keeps asking for disk A in drive A: (which is already there) and does this forever, never getting past this point. I saw two cartridges, jrVideo and PC ID. Will they do the trick?

A. You cannot do anything about self-booting programs which use their own operating systems, period. Our best information is that Marble Madness is incompatible. We once had a program which would only run when we took the sidecars off! We finally just threw it in the trash and don't buy from that company any more. Some programs are STILL copy-protected and cause exactly the problem you are experiencing. Recently we had to have our disk drive re-aligned because it couldn't read a copy-protected program. It did its thing this way: The header, and of course the manufacturer's logo came up, then it kept trying to access the disk in A: the screen would go blank, then the sequence would start all over again. The drive could not have been too far out because it would read the original DOS disks and any other floppy we fed it. We still have the feeling that the program CAUSED the slight mis-alignment. We threw that in the trash, too. Anyway, many programs (games etc.) which have their own operating system may not recognize all the memory you have. There is nothing in the start-up ROM to indicate how much memory is installed. Memory recognition in the jr is done with software, not just DIP switches. Read the previous Q's & A's to get an idea of what this means. The better programs, such as Flight Simulator can and do utilize whatever memory is available. In some instances, not yours, the PC ID cartridge overcomes the problem. An extensive list of software (including others you have asked about in your letter) compatible and incompatible, is available from the Software Store as Disk #60. On this disk are also comments as to what is needed to run various software products on the jr. Use it as a selection list when shopping for games, software, etc.

Q. I like the jr's three-voice music abilities. I copy sheet music to BASIC as a hobby. Here is the problem. There are certain times when I play the music back in repetitive measures that some of the notes fail to play, although they played perfectly OK the first time. I have tried

several different ways of doing it but it always falls silent on the same notes causing that voice to get out of "sync." Do you have any idea what causes this?

A. In Cartridge BASIC, The SOUND statement has four basic parameters (information that it needs to operate) plus options. They are: Frequency, Duration, Volume, and the Chosen voice. The one of interest here is Duration. If your program calls for the repeat of a note before it has finished playing the previous call, it cannot play because it is still playing! A musician would stop, then start the next note but the computer insists upon completing the task you have set it (first call to play a note) before starting another one. By then it may have missed the second request or put it on "hold". (The whole previous call is stored in memory and has to run its course.) You must shorten the playing time of the note (Duration) or not call for the repeat so quickly.

The Cartridge PLAY statement seems a little more complex because it has ten parameters but it is used the same way. The above idea applies here, too. For example, if you call for a whole note to play for 9/4 of its normal time by using two periods (..) after the note, it may be still playing when it is called upon to play again in the next measure or repeat. This is the "P" parameter. See pg. 4-276 of your BASIC manual. For de-bugging your own program, use the call as shown on pg. 4-280 and print the value of (n) on-screen to see what's happening. Be sure the total of the duration of all the notes is less than that allowed by the time you get to the end of each measure. Don't be afraid to have those little silences that may occur between some of the other notes.

Solution to Socket Damage

In a past issue we told a horror story about how easliy the sockets on the back of your PCjr can be damaged. They were not made to withstand much plugging and unplugging, or the kind of force exerted when your cables are twisted or pulled sideways as modems, printers, etc. are moved around on your cluttered desk.

Waldon C. Nason of Everett, MA, discovered that IBM has plastic socket protectors which can be obtained free of charge to PCjr owners. The protectors snap into the sockets, making the edges stronger. Having these protectors installed would help prevent damage to your sockets.

Ask for Part #6447163. They come in a plastic bag with installation instructions printed on the bag.

Tips From A Tecmar User

I have a PCjr with a **Tecmar Jr. Captain** sidecar, keytronics keypad, joystick, a second disk drive and a modem. I modified the IBM drive card to work with extra disk drives using the instructions in the TI 99er magazine. I have a Magnavox Green composite monitor with a built in speaker.

I modified the Jr. Captain board by cutting out the 64K memory chips with metal snips, and then soldered in chip sockets and pushed in 256K chips. The Jr. Captain has a jumper on the circut board to select for 256 or 64K chips.

I've made my own serial adapter cable and joystick cables. I use 2 by 40 "snappable headers" from JDR Electronics to make connectors for the back of the Jr. Solder your cables to the tabs on the headers, check them out, and then pot the whole connection in silicone sealer.

The regulator in my Tecmar Jr. Captain was cutting out occasionally, causing my programs to freeze or crash. I first suspected the staked connector pins, the wall transformer, or my chip sockets of causing my problem. Finally I noticed where the regulator had turned the nylon socket brown and brittle from heat, so I soldered it in place and have had few problems since. I have had to reseat the 256K chips in the dip sockets once or twice when I got memory errors or a low memory count on bootup. I suggest anyone installing memory chip sockets to buy good ones. I also blew the fuse inside the Tecmar wall transformer because the connection on the unit is very loose and I plugged it into the sidecar when it was in the wall plug. I shorted the Tecmar connector and the unit blew an internal fuse. Since then I have used twist ties to hold all the cables on the back into the Jr. cooling slots.

I sure would like to see someone make or publish plans for a bus connector that would attach to the Jr. bus 62 pin IDC connector on your last sidecar and convert it to 1 or more standard IBM PC card edge connections. I wouldn't mind running a few extra wires off of the Jr. motherboard to the edge connector if need be. This one single modification would open up the Jr. to a host of add-ins.

Jim Nugent, Peoria, Ill.

EDITOR'S NOTE: We are aware of someone who is working on this type of modification and will let our readers know if it is successful.

Reader Tips on ProComm
And Double Parallel Ports

I have two tips I'd like to pass along. First, I have found that the communications program **ProComm** and the printer controller **IBM4201.COM** (provided with the 4201 ProPrinter) do not seem to get along. If it is invoked from within ProComm, the PCjr will hang. On the other hand, if one shells out of ProComm (Alt-Fn4), then IBM4201 can be invoked and used with no problem. I would like to know if anyone else has used this particular software combination

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JrNewsletter Welcomes Questions

We enjoy hearing from fellow PCjr owners and will do our best to answer questions and help solve any problems you may have. Please, however, send your questions in writing. We are a part-time organization and are not set up to handle telephone calls. Please write to: jrNewsletter, Box 163, Southbury, CT 06488.

and if so, if this problem occurred for them.

Next, for any PCjr users possessing both the Tecmar jrCaptain sidecar and the IBM parallel printer sidecar, it seems possible to use them both at the same time. The IBM sidecar is hard-wired to be addressed as LPT1, while the Tecmar jrCaptain printer port can be switch-selected to be either LPT1 or LPT2. So one should be able to run two printers with one jr. I say "should" because I haven't actually done this, but it seems logical. Just be sure to put the IBM printer sidecar between the Tecmar jrCaptain and the system unit, because I believe that the Tecmar sidecar won't pass the power bus through.

One of your readers wrote in with a question: "When I buy shareware, such as PC-Write from you, am I obliged to send in the requested payment to the shareware authors?" You gave a good answer, but I would have liked to see you say that the shareware itself was not ever "sold". The fee is for the disk and the shipping. Paying the registration fee for the shareware would still depend on whether the user liked and used it.

Finally, I have a question. We bought a game called **Alf**, from Box Office. The package says the game requires 256K and a CGA, so we figured our 640K PCjr should be able to run it. The game loads ok, but when it starts to run, immediately stops and says that it didn't detect the CGA card. Apparently this code is looking for the CGA signature as would be present on an XT bus. The company replaced the disk with one they said would work on the PCjr, but it still does not work. I would like to know if there is any kind of patch that can be applied to this game to make it ignore the CGA signature test. I feel that it ought to run if we can just convince the code that there is indeed a CGA circut there.

I don't know if you are in the practice of relaying messages between readers, but if so, please ask Joe Pavlovich (Reader Feedback, April, 1988) if he would care to swap prints of artwork done on PC Paint Plus.

Thanks for the fine newsletter. I find it helpful and informative.

James Clark, Tucson, AZ

EDITOR'S NOTE: We haven't tried Alf and we don't know of a patch that would emulate a different CGA. If anyone knows of such a patch, we'd like to hear about it.

Book Recommended For New Users

After struggling to learn DOS and BASIC (beginning), I found a book named "The New jr: A Guide To IBM's PCjr," by Winn L Rosch. It is very informative and educational for beginners and first-time users.

I find jr Newsletter is very informative and helpful in aiding users of the PCjr, as well as carrying info on new hardware, software and compatiblilty. I also appreciate the fact that efforts are being made (by patches and write-in

campaigns to manufacturers) to get non-compatible programs to run on jr. Thank you for having the disks and programs made available to make the use of jr. more enjoyable and usable for flexibility. Would it be possible for jr Newsletter to sell books or pamphlets for the jr.?

Lowell Shigemi, Honolulu, HI.

EDITOR'S NOTE: We once considered selling books, but our limited staff is already overworked. Thanks for the tip, though.

Downloading Errors Fixed

You run a first class newsletter. The articles and services offered are top notch. Keep up the good work.

Just a hint to 2400 Baud users. I have a Tecmar memory expansion for a total of 640K. In using **Procomm** I had problems downloading any type of file with chksum errors. I was running a memory clock called "Tick" that came with the Tecmar disk. I cancelled the clock program and all is fine. You might forward that little tip that caused me hours of frustration to figure out.

Bruce Stanley, Quantico, VA

PCjr BBS in New Jersey

PARADISE BBS is currently run with FIDO & OUTER. Featuring On-Line games, contests, file & message services. Message areas include PCjr tech discussion, debates, programmer's conference with professional programming assistance and more. Files include PCjr specific utilities, comm., & games; IBM applications, etc. (201) 272-4249 3/12/2400 baud evenings & weekends

Robert Haller, Cranford, NJ

Solution to Racore Drive Problem And Warning About A Virus

Some of your people who bought the Racore expansion package may encounter some problems with the B: drive. This problem may show up as inconsistent formatting, inability to use a drive other than the Qume that came with it, problems copying files to the B: drive (it will read from the drive but not write to it),etc. The problem seems to lie with a particular batch of controller cards form Racore. I had the problem and have heard of several others who had it also. It almost drove me crazy until, through a process of elimination, I narrowed it down to the controller card. I purchased a replacement card from Racore and have had no

Reader Feedback

Continued from page 8.

problems since, but it took me almost ten months to get to the bottom of it. Anyone having similar problems may want to check with Racore (they're very good about working out the bugs in their systems).

There is a possible "virus" program floating around on bulletin boards called **CACHE.COM** — its only identification reads CACHE.COM (C) 1985 S. HOLZNER. I have encountered the following problems with the utility:

a. Using it in conjunction with **WordPerfect**, my machine froze up on me, causing me to lose what I was working on. On another occasion — I'm slow to learn — the File Allocation Table was messed up, causing a lock-up when I tried to go out of WordPerfect.

b. The utility seems to cause a loss of the File Allocation Table after several uses. My latest experience was when trying to get the copyright data off it using **LIST.COM**. Just calling it up with LIST caused the FAT to go bad, making it necessary to copy the contents of the disk holding LIST and reformat it.

I am not a programmer or a "certified hacker" so I don't know how to get into the program to find the flaw and I am not accusing S. Holzner, whomever he or she might be, with intentionally putting out a "virus" or "Trojan Horse" program, but there certainly seems to be something caw-caw about it. Have you or any of your readers encountered this program or had a problem with it?

Hugh R. Taylor, Los Angeles, CA 90068

EDITOR'S NOTE: There are a lot of "virus" programs floating around. We haven't heard of CACHE.COM, but we've heard of many others. Their names change every day, so we won't try to list them all. Although there is no perfect defense, the best way to prevent damage from a software virus it to write protect your disks, avoid putting new software (especially those programs downloaded from BBSs) on a

hard disk without testing them first on floppies, and generally avoiding software from sources of unknown reliability. The virus problem, caused by a few computer criminals, is causing many users severe headaches.

How To Quiet Noisy 3.5" Drives

I purchased a V-20 chip and P C Enterprises **Video Cartridge** based on your articles and info on best of jrNewsletter. Compuserve jrForum has been a great help to me in fixing problems, ordering hardware expansions, etc.

I recently installed a 3.5" disk drive (Mitsubishi) from P C Enterprises, replacing the second 5.25" floppy I originally got with the Racore expansion chassis. I had problems at first, it was very noisy even using the microdisk software I purchased along with it. This software allows the use of 3.5" drives at 720K with DOS 2.1. I almost sent the drive back but finally got in touch with the guy from P C Enterprises. He suggested that the problem was with the drive step rate. He was right! After adding ",3" to End Of Driver in my CONFIG.SYS, everything quieted down a lot. I thought this might be of interest to some readers.

G. Miller, St. Louis, MO

EDITOR'S NOTE: There is a program called **STEPRATE.COM** which is on **jr Power Pack II** (Disk #65) in the software store, page 22.

Source for Whisper Fans And Tips on Writing Assistant

Reference is made to the letter by Robert F. St. John in the "Reader Feedback" column of the October, 1987 Newsletter. He indicated that he was frustrated with the **Writing Assistant** word processor program because it could not produce an ASCII file. He is incorrect. Pages 5-9 and 5-10 of the manual clearly discuss how to make ASCII files. It is quite simple and I have done it many times. All you have to do is to substitute a drive designation (ie. A:. B:) in the "Print To" line of the "Print" menu instead of using "Printer" as is normally done. This generates an ASCII file and puts it on the disk that is in the drive that you select. Remember to change the line to "Printer" again after creating the file.

I run Writing Assistant in a 360K RAM disk and it really speeds up processing, especially the spell check option. The program's greatest virtue is its simplicity and ease of use. Others contain more features, but it has been my observation that few users take advantage of more than those that are presently in Writing Assistant. The program came free with my jr.

Attached is a copy of page 34 of Edmund Scientific's #8801 Catalog for your reference. It lists item X37,437, a 2 3/8", 12 volt DC whisper fan for $9.95. This is the same fan that

is used in the PCjr. And the Racore Drive II unit. The fan comes with a cable and connector and will plug directly into either power supply. It is apparently a surplus component from IBM's discontinued PCjr production. I bought and installed one in my Racore Drive II unit because of a heating problem that caused disk read errors when the system was on for several hours. It solved my problem, but the two fans did add slightly to the ambient noise level. The same fan is available from Racore for about $25.00. I hope this tip will help other PCjr owners.

Saverio Gaudiano, Seabrook, TX

EDITOR'S NOTE: If you are interested in the fan Saverio mentioned, write to Edmund Scientific Co., 101 E. Glouchester Pike, Barrington, NJ 08007, or call (609) 513-6250 and order it.

Reader Loves Learning on His PCjr

I've had my PCjr for 3 years; it's the only computer I've ever used and all I've learned has been on my own (using aids such as the software manuals, jrNewsletter, computer magazines).

Two things make all this fun: the entry into my den every month of a teacher, jrNewsletter; and the realization that it will never become old hat, simply because there's so much to learn.

Jim Howard, Voorheesville, NY

Reduce Disk Swapping With Managing Your Money

If you are tired of changing disks or waiting for something to happen in **MYM** only to find that the "Put Disk in Drive B:" message has popped up but is hiding in the text on the screen, a few changes in system protocol can remedy all that.

Here's a way to set up MYM version 3 or 4 on a single drive jr with 640K RAM that keeps disk swapping to a minimum and speeds up access time too.

1. Set up a RAM disk of 200K - 256
2. Create AUTOEXEC.BAT that gives control of DOS to the RAM disk using utilities found on "Jr Power Pack" (Disk #52 in the Software Store)
3. Copy the 0.CHP, all *.DB and all *.ark files to c:.

I use two batch files to do all this. My AUTOEXEC.BAT takes care of start up, giving control to the RAM disk, including the RAM disk in the search path, copying 0.CHP to the RAM disk, and passing off to CONTINUE.BAT.

CONTINUE.BAT takes care of Date/Time. Copying the DB and ARK files from my data disk to the RAM disk, starting MYM and at exit of MYM, for safety, it copies all data to my data disk.

With this system, I boot up my disk #1, which contains the batch files, COMMAND.COM, CONFIG.SYS with all its programs, MYM.EXE, and CHPS #0 and #1. All the data and 0.CHP files are in the faster RAM disk. Things move along with greater speed and I don't have to perform two disk swaps when changing chapters because 0.CHP is in RAM disk or hunt for the disk with COMMAND.COM if I want to exit to DOS or end a session.

AUTOEXEC.BAT

```
ECHO OFF
FOR %%FIN(JRVNT21 JRSYNCNP JRSYNC47)
    DO%%F
SET COMSPEC=C:\COMMAND.COM
FOR %%F IN(COMMAND.COM CONTINUE.BAT
    SDL30.COM)DO COPY %%F C:
COPY A:0.CHP C:
PATH C:\;A:\;B:\
FOR %%F IN(COMMAND.COM CONTINUE.BAT
    SDL30.COM)DO COPY %%F C:
COPY A:0.CHOP C:
PATH C:\;A:\;B:\
C:
CONTINUE
```

CONTINUE.BAT

```
ECHO OFF
ECHO ^G ^G
ECHO PUT DATA DISK DRIVE
COPY B:*.DB C:
COPY B:*.ARK C:
ECHO ^G ^G
FOR %%FIN(DATE TIME)DO %%F
ECHO OFF
ECHO ^G ^H
ECHO PUT MYM IN DRIVE
A:
MYM
ECHO ^G ^G ^G
ECHO PLACE MYM DATA DISK IN DRIVE "B:"
PAUSE
COPY C:*.DB B:
COPY C:*.ARK B:
```

Willis Gray, Andover, MA

Computer Reset Very Helpful

One comment: I recently had dealings with one of your advertisers - Computer Reset in Garland, TX and have found them extraordinarily efficient, courteous and cooperative. They even took some of my superflous hardware in trade on my new Racore Expansion. Some of the others I contacted were not nearly as cooperative.

Like probably so many PCjr owners, I was getting very unhappy with the limitations of this computer. However, with the advent of your magazine, I have now learned to love it all over again and am using many of the suggestions and software from your catalog to good advantage. I won't need a new and larger computer for a long time. Thank you.

Kent Oppenheimer, Los Angeles, CA

Be Sure to Get Unprotected Versions Of New Software For Your PCjr

Many software producers, including the big names -- **Electronic Arts, Borland, Ashton Tate, Microsoft,** and others -- distribute software in both protected and unprotected versions. Often the unprotected version will run just fine on your PCjr whereas the copy protected version will not.

A good example is **Chuck Yeager's Advanced Flight Trainer**. The copy protected version will not run on PCjrs (although we have a patch on the **JR PATCHES (Disk #56)**). Why bother with a patch when you can get the unprotected version which runs just fine?

If you ask a software dealer whether certain software will run on PCjrs, they will usually say NO, unless it specifically says so on the box. You can't blame them. They don't want to get you mad at them in case it doesn't run, and most of them think PCjrs can't run much of anything, so they just play it safe.

If you happen to purchase a copy protected version of software by mistake, don't give up. You can often trade it in for an unprotected version. This is the case with Electronic Arts, which will promptly replace your protected version of Advanced Flight Trainer if you request it. Other software producers often have the same policy -- so take advantage of it.

Tip on Fixing Color Display

I had problems with the PCjr Color Display loosing horizontal sync intermittently. It turned out to be the horizontal frequency pot on the board in the display. It was dirty. Turning the pot back and forth a few times did the trick. I also used some tuner cleaner to help clean the pot.

John Takish, Lansing, IL

How To Run Arctic Fox

EDITOR'S NOTE: Lou Davidson of MSC, a PCjr repair and expansion company in Baltimore, MD, wrote the following instructions for unprotecting Arctic Fox, the game by Electronic Arts. As is often the case, it it just the copy protection that makes this software incompatible with PCjrs. Lou provides a simple way to overcome this deficiency.

This is to help you get ArticFox working on a PCjr. It seems that the reason the program will not run is because of the copy protection that was used on the disk. Since EA does not want to correct this problem, I wrote the following patch that will remove the copy protection form the AFOX.EXE file. In the future I will try to get AFOX16.EXE to run on the jr.

First make a copy of all of the files on the ArcticFox diskette. Next copy DEBUG.COM from your DOS disk to this copy.

Now for the MEAT OF IT!

Using your copy, rename AFOX16.EXE   A

```
DEBUG A       [CR]
U125F         [CR]  ; You should see: JZ 1264
A125F         [CR]
JMP 1264      [CR]
              [CR]
U3F13         [CR]  ; You should see: INT 13
A3F13         [CR]
NOP           [CR]
NOP           [CR]
U3F1F         [CR]  ; You should see: INT 13
A3F1F         [CR]
NOP           [CR]
NOP           [CR]
              [CR]
U3F2C         [CR]  ; You should see: INT 13
A3F2C         [CR]
NOP           [CR]
NOP           [CR]
              [CR]
W             [CR]
Q             [CR]
RENAME A    AFOX.EXE
```

You now have a copy of ArcticFox that will work on the PCjr. To run you just type AFOX.

(You may be able to get an unprotected version from Electronic Arts and avoid the need for a patch.)

You've Got To Be Good To Win At Double Trouble !

We call the newest game disk in the Software Store "Double Trouble" because it contains two excellent games, both of which will guarantee to give you trouble if you move up to the higher levels of play.

The Amazing Maze, really will amaze you with its variety of challenges. After you try moving through one or two of the ten different mazes, you'll know why we called this disk "Double Trouble."

When the game starts, you are asked to select one of five levels of play, from Novice to Expert. Your selection will determine the speed at which your ball will move through the maze. And, since points are subtracted from your score every time you bump into a wall, the speed will definitely influence your score.

After you've picked your level, you select your maze from a menu of ten mazes with titles like "Rocking Horse," "Stair Stepping," and "Ultimate Challenge." Or you can select the "Multi-Level Maze," which shifts through all ten mazes as you complete each one. We recommend starting at the Novice level and staying away from the "Ultimate Challenge" until you feel like being humiliated.

Donovan Foster, who designed this shareware game, has done an excellent job of providing mazes that will tie your brain in knots and, if you're like us, you will be grateful to him for providing the Novice level to start out with -- because the higher levels are definitely trouble!

Willy the Worm is the second source of trouble on this disk. Even at the beginner level, Willy the Worm, a fast arcade style game, will beat you -- unless you're an arcade whizz kid. They should have called this Willy the Whizzer because he sure doesn't move like a worm ! He zips along different levels of a maze as you try to pick up presents (points) without being squashed by fast moving cannonballs. If you're quick, you can jump over the cannonballs, and even change directions in mid-air. But there will be more coming at you soon enough. There are several levels of play which you select at the beginning of each game. We confess, we never even mastered the first level, but it was fun trying.

An unusual feature of Willy is that you can modify the game to suit your fancy (or your skill level). A special program called EDWILLY gives you the power to alter the maze that will has to go through. This will make it harder or easier for you, depending upon the choices you make. EDWILLY also allows you to preview and practice on the higher levels of play.

With Willy's colors, sound effects, and modifying feature, we rate this one of the best shareware arcade games we've seen.

If you feel up to taking the challenge these two games will give you, select DOUBLE TROUBLE (Disk #68) from the Software Store, page 21.

For Crossword Puzzle Fans:

Like crossword puzzles? Like really hard crossword puzzles? The software store has just the program for crossword fans seeking a real challenge. Don't just **do** crosswords: **make** them!

Crossword Creator (Disk #71) helps teachers build student vocabularies. Crossword puzzles also strengthen spelling skills and can test specific knowledge. They are a good educational tool, and students enjoy solving crossword puzzles.

For serious puzzlers, though, the chance to create puzzles can be even more fun than solving somebody else's puzzles.

Crossword Creator provides the designer with a means of producing puzzles, either to print or use as a game on disk. It is not similar to the popular word scramble programs where the computer creates a puzzle from a list of entered words. With Crossword Creator, the designer is still the creator--the software puts your ideas into usable format.

The software accommodates puzzles with up to 200 words and clues. It handles words up to 33 characters long. Maximum size is 36 columns by 15 rows. The program will print completed puzzles in traditional crossword format, with numbered boxes and an indexed clue list. It can also print an answer sheet, if desired.

The program also allows the user to solve puzzles on screen, instead of on paper. When you think you have the answers all correct, just ask PCjr. He'll tell you if you got all the words right. If you didn't, he can give you a little hint by flashing the incorrect letters on the screen.

The program requires a minimum of 256 K memory and one floppy disk drive. An Epson compatible printer or an IBM Graphics printer will allow you to make printouts.

Re-Ink Your Ribbons
By Ray Stroud

I responded to an advertisement with this catchy headline, "Never Buy Another Cloth Printer Ribbon." Since my Panasonic ribbon was giving me a fading imprint, I decided to give it a try. So I mailed my ribbon along with a check for $2.50 (this includes postage) to Disk-Count Data Products, Rt. 5, Box 211, Hot Springs, AR 71913.

The outgoing postage was $.76. In about two weeks, my ribbon was returned along with a disk that included a couple of programs and three or four listings of program catalogues. So far, I have been pleased with the re-inking job. A good dark print. The lifetime of this re-inking is to be seen. However, the $3.26 seems to have been well spent. That is cheaper than a $12.50 Panasonic ribbon (Panasonic "clone" ribbons that I have used have been poor quality).

The catalogue features shareware and free ware disks for $2.00. So next time you need a printer ribbon and would like to get on the mailing list of a real discount source for programs, remember Disk-Count Data Products.

For Speed and Ease of Use, Galaxy's Got The Right Stuff!

If you want a word processor that takes about six minutes to learn, is packed with nifty features, and works exceptionally fast -- give Galaxy a try.

Version 2.1 of Galaxy is, in our opinion, a worthy contender for top honors among the shareware word processors. Until this version came out, we felt PC-Write was clearly the best. So that is the word processor we offered to readers of jr Newsletter in our Software Store. But now Galaxy is there, too (Disk #69).
Here's why:

We still use PC-Write as our word processor of choice and will probably stick with it because it does have more power and features than Galaxy has, and we use those features (such as extensive formatting and customized macros) in our publishing business. But for the average user or student who wants a word processor that will make letter writing or even report writing and editing a snap, Galaxy might be a better choice.

A special setup program that comes on the disk will allow you to quickly tell Galaxy what printer you are using and how to set itself for most of your wordprocessing needs. Then you just start right in.

Galaxy has "pull down" help menus. To see them, just type F1 and then select the category of help you need. Then a little list of the commands drops down from the top of your screen, kind of like a window shade (in color, if you have it). Just move the cursor down to the command you want, and press enter to execute the command. Or, if you don't want to use the menus, just keep a list of the Quick Commands by your side until you learn them. For example, use Alt-J to turn justify on or off, F7 to begin marking a block, Alt-B to mark a word for boldface, and so forth.

To activate the windows feature so you can work on two documents at once, select "open" from the windows menu. You can then move back and forth between the two documents using the switch command. With the Zoom feature, a window can be shrunk or expanded to any size from a single line to full screen. A DOS window command is also handy for jumping in and out of DOS from the text you are working on.

Galaxy supports almost all printers with its ready-made list which you pick from when you run the setup program. It also supports the most common printer codes for such things as double strike, underlining, italics, bold, super and subscript. These can be selected from the pull down menus, or invoked by command as you write your text. Two "user installed patches" are given places on the print menu for you to customize for special printer commands you use often.

A variety of tools are available for formatting text before you print it. You can set top, bottom, left and right margins, page length and font size, as well as select special printer codes.

Although Galaxy does not come with a spelling checker, it is designed to work with Borland's Turbo Lightning, and has a command on its menus to invoke the spelling checker, either for an entire document, or for a marked block.

Speed of operation is another of Galaxy's strengths. In a comparison with speeds of the top commercial word processors, Galaxy proved superior in many categories. For example, to save a file, Galaxy took 8.1 seconds compared with 26.7 seconds for Wordstar. Or, to move the cursor through a file, it took Galaxy 24.6 seconds where it took 75.7 seconds with WordPerfect. Searching and replacing speeds with Galaxy are blinding. Search to end of file took Galaxy 0.2 seconds whereas it took Microsoft Word 18.2 seconds. And Galaxy handled 400 replacements in 2.1 seconds as opposed to Wordstar's 25.3 seconds.

In a review of Galaxy, Hal Nieburg (Computer Shopper) said he suggests Galaxy to college students in classes he teaches. "My students seem to prefer the MAC-like menus and the simple command structure; they like its speed and its ability to handle very long files, its clean ASCII output." He concludes his review by saying, "This is a well-designed word processor, with features sensitive to real-world concerns of writers and typists of all varieties. It exudes elegance of code and concept, and should be in the disk library of every user, for the sheer pleasure of trying it, whether you register or not!"

The authors of Galaxy, Steve Schauer and Bob Foster ask for a $49.95 registration fee, which entitles you to a printed manual, telephone support, and free software updates. If you find yourself using Galaxy often, this fee is entirely reasonable considering the high quality of word processing Galaxy offers.

Galaxy runs fine on PCjrs with 256K and it uses PCjr color to nice advantage, particularly in its help screens. To order Galaxy, select Disk #69 from the Software Store order form on page 23.

Using the ALT key to Enter Extended Codes

When using the ALT key to enter the extended codes, the keyboard must be in Numeric Lock first. To put the keyboard into Numeric Lock, hold ALT and press FN, then N. (This is a toggle, to take the keyboard out of Numeric Lock, repeat the same procedure.)

Once the keyboard is in Numeric Lock, all 256 extended codes may be entered by holding down the ALT key and then typing in the numeric value of the extended code. See page 4-9 in the Guide to Operations Personal Computer - PCjr manual.

How Readers Are Using their PCjrs

using Springboard's Newsroom. I also am the secretary for a bowling league and maintain and print all records, etc., each week. Also keep database records on golf league. Kids use our PCjr for homework and we all play games." The Schlott's family PCjr consists of the Enhanced PCjr with a 128K Microsoft jr Booster, second disk drive, IBM Graphics Printer, Microsoft Mouse and IBM joystick.

Even the unexpanded PCjr with 128K and one disk drive is used for a wide variety of purposes, as Kyoko Nakayama of Colorado Springs, CO, shows: "I use the computer for word processing (writing reports, writing letters, doing estate inventories and doing a monthly newsletter for the church singles). My kids use it primarily for playing games, although they have used it to make cards and do reports for school." The Nakayama family's favorite software is **Writing Assistant, Print Master,** and **King's Quest.**

Kelley Ballard of Davis, CA, is representative of a more advanced grouip of PCjr owners. She says, "I build data systems for my pleasure using **BASIC, Pascal** and **dBase III.** As a computer analyst programmer, I use the PCjr to develop systems in dBase III."

An example of an advanced business use of a PCjr comes from Michael Edwards of West Deptford, NJ, who says he uses his 640K jr to communicate with VAX

mainframes at work where he accesses mainframe programs such as APL for engineering applications and MASS-11 for report writing.

John Moery of Chicago, IL, uses his 640K PCjr with X1 keyboard, V20 chip, Hayes 1200 baud external modem and Epson EX 1000 printer with color adapter mostly for business. He uses terminal emulation for dial-up use of his company's mainframe and says he likes **PFS Professional Write** for quick memos, **Microsoft Word** for "full blown presentations for print on Post Script laser printer at work." He also uses Lotus' **Freelance, SuperCalc** "for quick graphics", **PC Tools, SPF/PC** and **Duet.** For terminal emulation, John prefers **Crosstalk XVI.** And, to top all this off, he says he is using the Speech Synthesizer to "develop speech therapy applications for delayed son."

Here are some other interesting PCjr uses from our readers:

"Preparing school bus runs," Clarence Barnard, Vestal, NY.

"Speadsheet for taxes and budget reports," D. Roy Caldwell, Spokane, WA.

"Professional writing (with PC-Write)," Peri McQuay, Westport, Ontario.

"Desktop publishing (with First Publisher)," R.B. Hermon, North Vancouver, BC.

"Write educational software for the local school system," S.L. Thomas, Springfield, MO.

"To operate real estate business -- mail lists, newsletter, correspondence, filing, and telecommunicating with Board of Realtors Multiple Listing Service," Bill Hojnacki, Hurst, TX.

"Keep track of wines in cellar or tested (using **Micro Wine Companion**)," R. Debold, Nashville, TN.

Just to fill out this smorgasbord of PCjr uses, other readers of jr Newsletter said they use their jrs for ham radio operations, stock and commodities analysis, SAT preparation, will writing, home inventories, making signs and greeting cards, writing checks and balancing accounts, keeping inventories of records, video tapes, etc., names and addresses, favorite recipes.

Not bad for a computer that some people think is obsolete!

We hope you've enjoyed reading about how people use their PCjrs and that this report will encourage you to explore other uses for your mighty little computer. We thank all readers who took the time to respond to our reader survey which produced all this information. We will be reporting on other parts of the survey, such as favorite software, suggested improvements in jr Newsletter, hardware problems and solutions, PCjr compatibility, and other hot topics in future issues.

File Not Found?
DEBUG Can Save You

By Neil Steckley

There comes a time in everyone's computing career when you look for that one special file to work on and you can't find it. You look on your backup disk...not there! That sinking feeling sets in as you ponder where it is, hoping against hope that it's on a disk you forgot about somewhere on the shelf. You finally come to the realization that it's not where it should be.

You know you saved it the last time you worked on it, but the directory doesn't show it. Could the disk have crashed? Is it possible that the file is on the disk but you just can't see it? Very possible.

Just such a near-disaster happened to me which prompted me to write about it in case it happens to someone else and they think there is nothing you can do about it. The file has about 5K of personal information I was keeping for a cousin of mine and it was very important to me. I thought I had backed it up but found that the file was indeed on the disk but the directory did not show it nor could I read it into memory. So near yet so far! What do you do? First, call someone who knows more than you do...forget the ego, you can't know everything about these silly machines.

The advice I got was good but, when you start talking **DEBUG**, I think insects...novices think that way, yeah they do! However, with a little reading, I was able to understand enough to use it without too much trouble. DEBUG will load into memory anything that is on the diskette, providing you tell it where to start and how far to read. Sounds simple enough, but how do I find out where it is? And how long is it? Enter the Norton Utilities once again. Using the function to look at the disk entry by entry will give you the information to start the retrieval operation.

It showed that my file started at cluster 123 and was five clusters long. The only clusters I know have to do with bombs and peanuts! Reading further in the DOS manual I found that there are clusters within each sector of the disk. My file started at cluster 123 of sector 254 and was five clusters long. the file had 5067 bytes in it. Now for DEBUG.

After all that worrying about clusters, forget about them. You don't need them. The DEBUG L)OAD commands needs only an address in memory to put the data, a drive to read from, the beginning sector to start reading, and the number of sectors to read. The confusion arises because all of this information must be entered in hexadecimal notation. YUK! To make it easy you should use a calculator that converts decimal to hex. Not having the foggiest notion what memory location to use, I just copied the one from the example in the DOS manual. No problem there. I entered drive A:, the starting sector and the number of sectors. My L)OAD command looked like this:

L 4BA:100 A: FE A.
^ERROR.

That's what DEBUG gives you if you blow it, but it doesn't tell you what the ERROR is. I tried many different ways to enter the command, getting very frustrated in the process.

Then, instead of entering A: I entered just A and the ERROR went away, but the error message I got now read, "Error reading Drive K." Drive K? That's a lot of drives! It then hit me that I had been entering the drive letter instead of a number. "A" without the colon became the hexadecimal notation for drive K. "A" in hex is 10 and K is the 11th letter of the alphabet. (0 is drive A, 1 is drive B,...) Eureka! "A" became 0 and the Load command worked. Using the D)UMP command, I could see parts of the missing file. Now all I had to do was write it to the disk and the file would be recovered.

The W)RITE command seemed pretty straight forward, but a few things had to be done before it could be executed. The BX and CX registers had to be set to the number of bytes to be read. How does one change a register? If you read long enough in the DOS manual, you eventually find what you need and I finally found the R)EGISTER command. It is used to look at the values in registers and to set them to particular values. After giving the file name with the N)AME command and setting the registers, I wrote the file to the disk and Q)UIT the session with DEBUG.

The directory now showed my saved file brought back from almost certain loss. My word processor cleaned up a few extra bytes that had attached themselves in the process, and the file was again perfect. So, if you see FILE NOT FOUND, don't worry, you can find it with a little perseverance and DEBUG.

*(The Above Article Was Originally Published
In The San Francisco PCjr Users Group Newsletter.)*

Easy Way to Kick Sidekick Out

If you've ever had the annoying experience of trying to run a large program with Sidekick loaded into memory and received the message:

NOT ENOUGH MEMORY

then you'll be glad to know that there is a way to kick Sidekick out of your memory to make more room.

Although this feature is not mentioned in Sidekick manuals, it works:

With Sidekick displayed on your screen, hold down the Control key and then press Home and then press End. This will wipe Sidekick out and restore the portion of your computer's memory that Sidekick previously occupied.

Do you have any tips or interesting jr experiences you'd like to share with fellow jr owners? If so, send them to **jrNewsletter**, Box 163, Southbury, Ct., 06488.

How to Remove A Disk Drive And Install a V20 Speed Chip

By Albert Allen
President of Oowl Software

EDITOR'S NOTE: The following article is provided by Albert Allen of Oowl Software to those who purchase V20 speedup chips for installation in their PCjrs. Since it provides a clear description of how to remove a disk drive and how to locate and remove your 8088 chip (questions asked by many of our readers), we are reprinting the article for your information.

Many people have called to ask us the advantages of the V20 by 5 mhz. processor over the standard, IBM supplied, 8088 processor. We have used and tested the V20 in the PCjr's here for 3 years with very good results. (The game Loderunner will not run with the V20.)

The many speed measurement programs are just so much rhetoric when in point of fact you really cannot discern the speed increase with your senses. The speed increase with the V20 is really noticed in program sorts, searches and screen updating, or if, for any reason, the old 8088 is reinserted in place of the V20. These speed increases are from 10 to 40 percent.

We have heard of many people claiming to use the V20 by 8 mhz processor, but through numerous experiments the 8 mhz chip never responded with the correct timing function returns and would cause a no boot or system lockup situation.

The V20 installation is straight forward as it directly replaces the 8088 chip. The majority of PCjr's have a socketed 8088, but about 1 in 25 came off of the assembly line with a soldered in 8088. It is wise to check your chip before you make the purchase. The soldered in processor can be changed but it is not a job for the amateur and if you question your skill do not attempt it. To replace a motherboard can cost from $175.00 to $350.00 plus shipping.

Enough said, let's get on with the installation of the V20. First, turn off your junior and UNPLUG THE AC POWER CORD. At the top rear there are three notches, place a small flatblade screwdriver into the notches and pry upward. Remove the top cover completely and sit it aside.

DO NOT TOUCH THE DELICATE DRIVE MECHANISM. At the rear of the disk drive locate the wide gray cable and wiggle the cable connector off of the rear of the disk drive. The other end of this cable is connected to a vertical electronics board located to the left of the disk drive. Remove this controller board and cable as one assembly by pulling it straight up and out and set it aside.

The disk drive is in a plastic mounting bracket. The bracket has two mounting pins or feet at the rear that snap into the bottom of the case. The feet hold the drive in FIRMLY. Being aware of that, carefully grasp beneath the drive bracket, below the drive cable connector and to the right of the fan. Lift the rear edge up sharply. The drive will snap out. Sit the drive assembly outside of the junior with the remaining wires still attached.

The 8088 is located in about the center of the space occupied by the drive. Note that pin 1 of the chip is to the LEFT, the notched end of the V20 is installed to the LEFT. Remove the 8088 by prying it gently from its socket. The method that I use is to place a small flatblade screwdriver under the left end of the chip and turn the blade 90 degrees. This starts one end of the chip upward. Then I grasp the chip with my thumb on one end and forefinger on the other and rock the chip slightly back and forth until it comes out.

The V20 is somewhat sensitive to static shock, when you install it make sure to have your feet off of the carpet. To insert it, start the back 20 pins into the socket first and with some pressure on the chip align the front 20 pins into their holes. Push the chip down into the socket. Patience is the key to getting the chip into the socket.
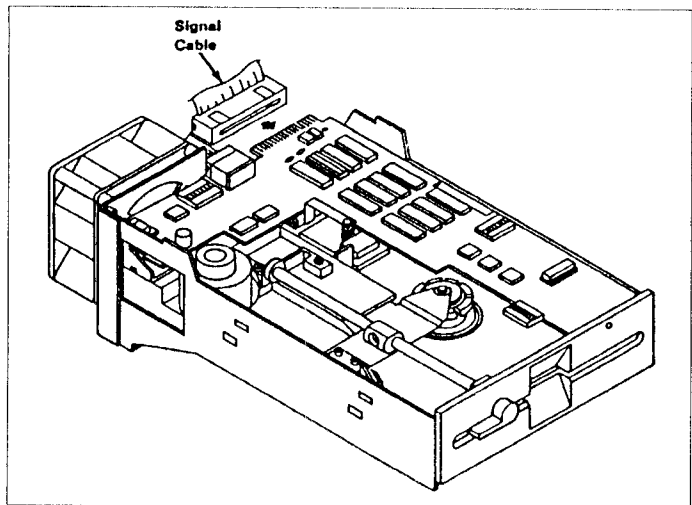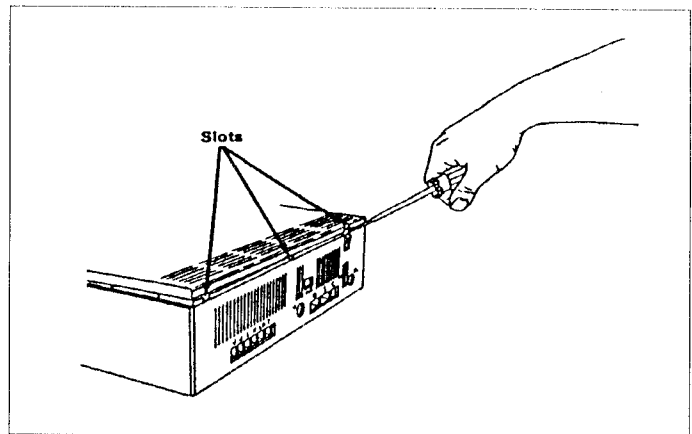
Ok, job well done, now make the quick test. Sit the drive into the junior without snapping in the mounting feet. Plug in the power cord and video cable. Turn on the machine, the 'M LOGO should appear just as before. GREAT, turn the machine off and unplug it again.

Replace the drive, the front goes in first. There is a lip for a tongue and groove fit along the front bottom edge. Lower the rear mounting feet into place. The power cable and fan wires should be to the rear of the left mounting foot. align the feet with their holes and snap the bracket back into the case bottom. Reinstall the disk controller board and attach the wide grey cable to the rear of the drive. Make sure all wires are connected before replacing the top. Remember to take this job slowly and check each step.

Your junior is ready to go back online. If you wish to check speed, try NORTON'S SI program in Norton Utilities package. Happy computing.

Rear Guide

Diskette-Drive Adapter

Diskette-Drive System Slot

Diskette-drive System Connector

Mounting Pins

Mounting Holes

Your PCjr Can Delight And Teach Pre-Schoolers

By Jack Anderson

I purchased an IBM PCjr several years ago because I needed an inexpensive DOS machine to learn about computing on. It's $899 price tag seems a little steep by today's standards, but in 1984, and including DOS, plus IBM's Writing Assistant as it did, it was a for sure deal.

Today I have different ambitions for my jr. I have become computer literate thanks mostly to my home machine which I still use. What is different today is that I have three boys under the age of six. Teamed with the right software, I think my jr will provide an excellent environment for the children's learning. Finding the "right software" is a challenge which is the point of this article.

Polarware Software, Inc. in collaboration with the Children's Television Workshop has created **The Sesame Street Crayon** series of on-screen coloring books. Big Bird, Cookie Monster, Bert, Ernie, Grover and friends will introduce your children to numbers in "Numbers Count", the ABC's in "Letters for You" and opposites in "Opposites Attract". Each $14.95 program has twenty to thirty black on grey line drawings that can be colored and re-colored by selecting from the sixteen color palette and then placing the crayon shaped cursor in the space to be filled and then clicking. While this series is targeted at the pre-school age group, I can tell you that older children and even adults have enjoyed coloring these pictures on my computer.

The Sesame Street Crayon programs support a variety of printers including some color printers. An interesting feature is that user input text and/or program generated calenders can be included with the printed picture. The input device is automatically selected in this order: mouse, joystick, keyboard. You may also select which to use in the setup menu.

Polarware, Inc. purchased an IBM PCjr with 256KB of RAM so that they could develop these programs to take advantage of the jr's ability to display sixteen colors. One technical note of caution, these programs require 256KB of memory. I had to change the video mode of my Racore configured jr from the /C (96 KB video buffer) to /E (32 KB video buffer) before the programs would display properly in sixteen colors. You select the sixteen color display option from the setup menu by indicating "16 color Tandy" as your display. (Maybe we should write Polarware and request that they include the IBM PCjr in the setup menu.)

Jeffrey Jay of Polarware was quite responsive to my request for help in making my first purchase run properly. In fact he sent me a new program disk, then a copy of the memory configuration program they used while developing these programs. This is the first really positive experience I have had in four years of dealing with software publishers and hardware manufacturers.

Call Polarware at (312) 232-1984.
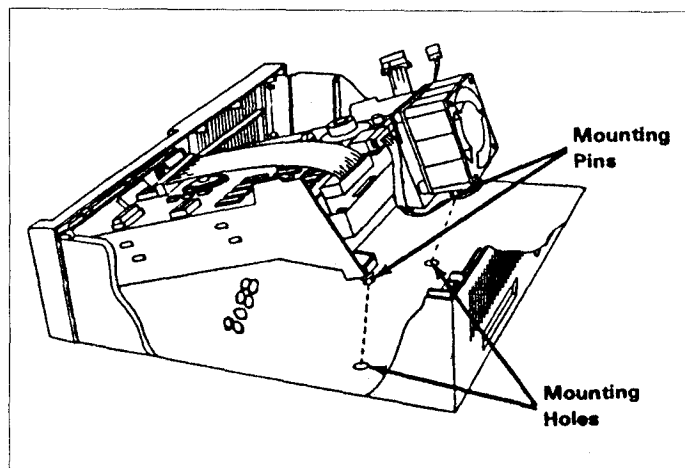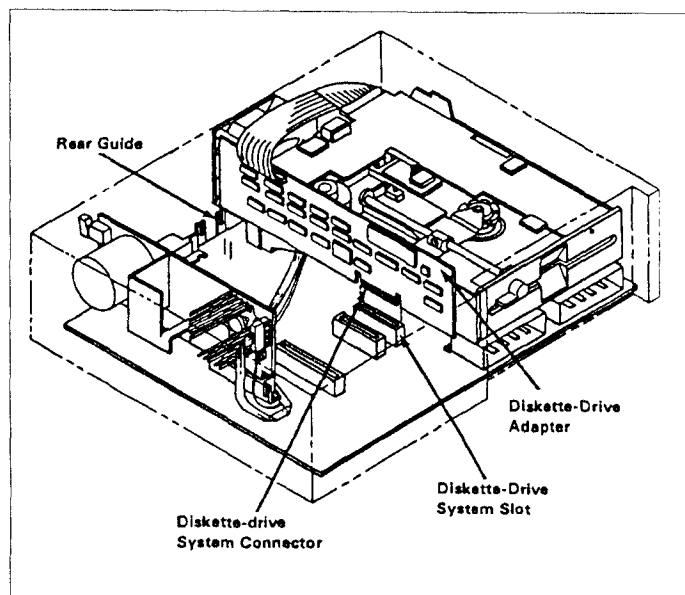
Your PCjr Can Give Itself a Checkup!

By Colin Tuttle

The PCjr has a feature which even the PC-AT doesn't have. It is a feature which can be essential to proper performance of your computer, yet many people have forgotten that it exists. It is the internal test program which you can call up by pressing the Control-Alt-Insert keys simultaneously.

The first thing the test checks out is the memory. You are then given a visual menu listing of test options. Within this menu, you can check out your Diskette Drive, your Video Display, Light Pen, Joystick, Sound, Keyboard, Modem, and Printer.

The test will tell you if each item is working properly, and if anything is wrong, the test will suggest that you take your computer in for service. By using the tests you can get an idea as to which item on your computer is acting up, rather than paying a technician to determine which item is working incorrectly. For more information on the test program on the PCjr check your "Guide to Operations" book which you received with your computer.

If you are a bit more technically inclined, and like to repair your own computer, you can also use the test point to tell you in greater detail what is wrong with your computer. To get this added information, you will need to purchase the IBM Hardware Maintenance And Service Manual for the IBM PCjr, IBM Number 1502294. It is getting difficult to locate this manual, but it is still obtainable through mail order companies. (Computer Reset and PC Enterprises both have them. See ads in this issue for addresses and phone numbers.)

If you get the service manual, you receive several strange looking plugs, which plug into the connectors in the back of your PCjr. When these plugs are used, you get additional codes on your test screen. You can look up the codes in the manual, and determine what could be wrong and possible corrective measures. The only real disadvantage of the manual is that many times, the corrective measures are costly replacements, such as to replace the system board, rather than replacing a specific chip on the system board. They are however, for the most part, not extremely difficult fixes. You are told to replace a board or part, as opposed to soldering a wire or chip. The manual also shows diagrams, how to replace most parts of the computer, as well as how to make some adjustments.

This manual is the manual used by technicians to diagnose any problem you encounter with your computer. If you feel comfortable opening up your PCjr (after all it is out of warranty) and taking it apart to try to fix it, then you should definitely get a copy of the Hardware Service Manual. If, on the other hand, you are intimidated by your computer, and would rather never look inside the case, then you should definitely avoid looking at this manual, as it shows you exactly how to dismantle your PCjr, and even more importantly, how to re-assemble what you have dissected.

(The above article on PCjr Check was originally published in the OKC Jr Orphans Chronicle.)

Boulder Dash Kit Continues Tradition

The Boulder Dash Construction Kit continues where Boulder Dash and Super Boulder Dash left off -- with excellent graphics and intricate strategy, it's one of the finest arcade games ever.

In case you haven't had the pleasure of playing either of the previous versions, Boulder Dash stars Rocdford the ant, who is quite a miner. He digs pathways underground, snatching diamonds along the way and avoiding (if he can) the many life-threatening dangers that spring up in the subterranean mazes.

In this version there are 15 cave screens, all of which require skill and smarts to master. Three new features -- slime, walls that grow, and hidden exits -- have been added. And, of course, since it's a construction kit, you can create your own games. It's easy with the menu of objects and screens provided.

This may be the best of the series, so if you liked the first ones, this will blow you away. Published by Epyx, $25 retail.

How to Print Graphics With DOS

Frustrated when you try to print a copy of the screen using the <Fn> <P> ("print screen") key combination and all you get printed out is a mess? Did you know that there is a program on your DOS diskette called **GRAPHICS.COM** which allows the contents of a graphics display screen (one that has more than just text on it) to be printed on an IBM Graphics Printer (or any printer that emulates one).

Pages 2-96 and 2-97 in your DOS 2.1 manual describes this handy program. All you need to do to make use of it is to type the word GRAPHICS after the A> when you start up you PCjr. Then run the program which has the screen you want to copy. When you get to that screen, press the <Fn> <P> key combo (or the <Shift> <PrtSc> keys on IBM PC type keyboards) and watch your printer go to work. (Printing may be slow and can take as long as three minutes.)

* * * PCjr CLASSIFIEDS * * *

PARALLEL PRINTER PORT - for PCjr - $35. Robert Peck, 230 Straitsville Rd., Prospect, CT 06712 (203) 758-5850 (6)

IBM PCjr - Color monitor, 640K, power & parallel sidecars, two joysticks, internal modem, keyboard cord, DOS 2.1, BASIC, Mine Shaft and Crossfire cartridges:$650. Second drive controller with external case but no drive:$100. W/ original boxes and manuals. Will sell parts seaerately. Jay Hofacker, 1584 Wellelsey Dr. S, Lexington, KY 40513-9401 (606) 231-0258 after 4pm. (6)

IBM PCjr - 2 Disk Drives - 640K/ 2nd Drive is Racore w/ clock-calendar, PCjr Color Display, Keyboard w/cable, one CH Joystick. BASIC, DOS 1.1, WordPerfect Jr., SuperCalc 3, Fontasy V2, List & Mail, Jet, King's Quest III, PC Pool, Sargon III. M.C./Visa/AM. Exp. $479 (includes shipping), 1-800-548-8050, Attention: Lou (6)

IBM PARALLEL PRINTER PORT - & 120K Memory Expansion: with original software, both units for $110. M.E. Dollar, 2751 Walker Lee, Los Alamitos, CA 90720, (213) 430-1569 (6)

IBM PCjr ColorPaint - (less than 5 hrs use) with joystick driver to allow use of an IBM compatible joystick rather than a mouse. Also, Quadram's version of Dr. Halo for the PCjr. All for $85. I will pay UPS shipping. Call (206) 545-5748 No collect calls. (6)

TECMAR JR CAPTAIN - 128K expansion board, software, and manuals. In excellent condition. $75. Call Tom (412) 367-9045 (5)

MEMORY UPGRADE - Impulse side car w/512K, Calendar/ clock, parallel port, software & manual $230. Parallel Port sidecar $45. Call Bob (617) 533-4307 from 6PM to 9PM EST. (5)

IBM PCjr 256K - one drive, color monitor, jr. Captain Sidecar, Executive Writer, Numberworks, Lots of Software. $750 - Will Negotiate. Tom Hosea (713) 499-6351 (5)

Classified Ads are free to subscribers of jr Newsletter. Just send us your typewritten ad (no more than five lines on an 8 1/2 X 11 typed page) and we'll run it for you for two months. Ads are $10 per issue for non-subscribers. Send to jr Newsletter, Box 163, Southbury, CT 06488

SUPER CALC3 FOR THE PCjr - Unopened copies of this integrated spreadsheet with data management and graphics, requires only 128K and one disk drive, originally retailed for $195, now only $13.95 (incl. shipping). Norm Shatz, Pres. Puget Sound PCjr Users Group, 6021 140th SW, Edmonds, WA 98020 (206) 745-9685 (5)

EXPAND IBM PCjr TO 640K - Tecmar Captain, Cadet, & jr. 128 Expansion Board will bring PCjr's memory to 640K. All manuals & software for install. & config. included. Orig. price over $500. Asking $200. M.W. Root (714) 974-6084 (5)

FOR SALE - IBM PCjr parallel printer attachment. Virtually unused. Asking $30. Call (609) 728-0747 (5)

MAGNAVOX COMPOSITE COLOR MONITOR - $125. Steve, nights, (609) 587-9287 (5)

WANTED - Tecmar jr. Captain expansion board for the PCjr, which includes the parallel printer port. Also, interested in an IBM parallel printer port, if I can not locate a used expansion board. Call Frank at (618) 345-0174 after 6 p.m. (5)

PARALLEL printer attachment ($20) serial adapter cable ($10) both with instructions. Rollin Golden, 2232 Pyramid Wy., Sacramento, CA 95821. (5)

PCjr Clock Cartridge & Rom Cartridge Kits. - INTEGRITY TECHNOLOGY, 105 Serra Way, Suite 230, Milpitas, CA 95035. (408) 262-8640 (P)

jr ATTACHMENTS - 1 IBM Internal Modem, 1 IBM Speech Attachment, 1 IBM PCjr Joystick, 1 IBM Cassette Cable, 1 Video Speedup Cartridge, 1 Keyboard Cartridge; All in excellent condition and all for $99 plus shipping. Alan Dias (401) 277-2442 during the day or (401) 434-1992 after 5:00 pm EST. (5)

FOR SALE - MicroSoft Sidecar w/128K & Mouse (can be upgraded to 512K) $75; AT style keyboard w/adapter for PCjr $85; IBM Parallel printer port side car $50. Joe Chouquette, 16 Waterford Ct., Staten Island, NY 10305 (718) 317-9124 (5)

IBM PCjr 256K - 2 jr. Joy Sticks, Parallel Printer Port, without monitor, $250. Contact Mike Timms, 2818 McManaway Rd., Midlothian, VA 23112, (804) 744-2501 (5)

JR USERS GROUPS -- WRITE TO US
ABOUT MEMBERSHIP SUBSCRIPTION DISCOUNTS

The DOS Dir Command -
Do You Know The Switches?

One of the first things most of us learn to do is use the DOS dir command to display the directory of files on a diskette. But there are a number of "switches" you can use with the dir command which are handy, but often neglected.

For example, if you have a lot of files on a disk, you can use dir/p to stop at the end of each screen full of file names, rather than scrolling through to the end of the list. You can use dir/w to print the list of files in five columns across your screen. This also makes it easier to read a long list of files on a disk. The /w switch eliminates the size and date, whereas the /p does not.

You can also combine the switches by typing dir/w/p, which will give you five columns across the screen and pause when the screen is full. Wildcards can also be used with the dir command. For instance, if you just want to display the files with .txt extensions, you would type dir*

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An Easy- to-Keep
Address File & Book

NamePal, an automatic address book, keeps lists of names, addresses, phone numbers & related comments in your computer and prints them into a pocket-size booklet.

This easy-to-use program is menu-driven and requires at least 128K of memory. It handles three categories of records--business, personal and notecards. Personal and business records are simple name and address records with places for phone number, category and comments. Personal records can be sorted by last name, but business records are sorted by key words. You can also sort them by zip code, record type, or category.

The notecard record accepts up to seven lines of comments, which can be lists of things to do, or detailed information to accompany notes on the business or personal records.

The menu system allows you to enter new records, look up or modify existing records, view records, or print them.

The information gathered and organized within NamePal can also be directed to mailing labels of varying sizes or to Rolodex or 3 x 5 file cards.

Program operation is based on menus, and help is always at hand in the form of help keys. You can add, change, delete, make inquiries, or print any record. It also has a handy feature called "model," which allows you to base subsequent entries on a previous one. That will come in handy if you need to compile lists which have certain elements in common, as when all the individuals reside in the same community. It's also useful when you want to make cards for several individuals at the same business.

Namepal is a versatile program. Its main menu lets you revise your categories within the listing. That can be very helpful when you start an address list and later realize there is a better way to categorize the names than the one you first started with.

Users will appreciate a handy little reference item on the main menu, as well. Choose the states and area codes listing menu, and you can find out the two letter abbreviation for each state which the Post Office has approved. It also tells you in what state a telephone area code is located.

Once you get your list of names together, NamePal will sort them according to your instructions, or pick out those records which fit criteria you establish. You could pick out all the people with the name "George," or all the people who live in a certain state, or all the people in your category "Attorneys."

NamePal allows for a variety of print options, including labels, address book, file cards, or custom labels. By itself, this little program makes a handy organizational tool. Those who register their software with the author will receive an Export/Import program to exchange NamePal data with other software packages.

To order your copy of NamePal, select Disk #70 from the Software Store order form on page 23.

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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 *   DOUBLE TROUBLE. Two of the most challenging, highest quality arcade style games we've seen -- Amazing Mazes and Willy the Worm. Ten different mazes and five levels of play will tie your brain in knots. And Willy, who is the fastest, jumpingest worm you'll ever see, will beat you for sure! You can even modify Willy to give yourself more (or less) trouble. 128K ok. (Disk #68)

* NEW *   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)

* NEW *   NAMEPAL. An excellent utility program for maintaining and printing name and address lists, address books or mailing labels. Keeps business and personal references and allows user to maintain free-form notes as well. Requires 128K Memory. (Disk #70)

* NEW *   CROSSWORD GENERATOR. Utility for crossword puzzle designer, which makes formats for puzzles, according to user'sinstructions. Handles puzzles up to 200 words and clues. Makes a standard cross-word puzzle print-out, or can save the puzzles for solution on disk. Requires 256K and Epson or IBM compatible printer for printouts. (Disk #71)

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)

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)

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)

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

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

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

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

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)

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

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

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

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

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

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

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

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

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)

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

PCjr COMPATIBILITY DISK. lists over 500 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. (Disk #60)

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)

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

PCJR PATCHES. Many patches to fix software that ordinarily won't run on PCjrs. Includes patches for Starflight, Advanced Flight Simulator, Quick Basic, Turbo Basic, Double DOS, and Bard's Tale (16 colors). (Disk #56)

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

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

GAMES

GAMES. An assortment of games for hours of fun and

excitement. Includes Spacewar, Airtrax, life, Wumpus, Wizard and more. All good with 128K. Need Cartridge BASIC (Disk #8)

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

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

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

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

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

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

EDUCATIONAL SOFTWARE

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

PLAY AND LEARN. Educational games for kids 5-12. Word match games, find-a-word puzzles, word scrambles, and many more made by teachers. 128K, need Cartridge Basic. (Disk #32)

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

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

EARLY LEARNING. A collection of colorful educational games for ages 6-8. Sing-along alphabet, letter match, counting game, maze, pattern matching and more. 128K, need Cartridge Basic. (Disk #48)

GAMES FOR EARLY LEARNERS Young children like Teach Tot's alphabet and counting games. Other activities teach spelling and telling time. For Preschool through grade 3. Cartridge BASIC, 128K. (Disk #63)

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