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p. 5 Extensions for files
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# The Junior Report®

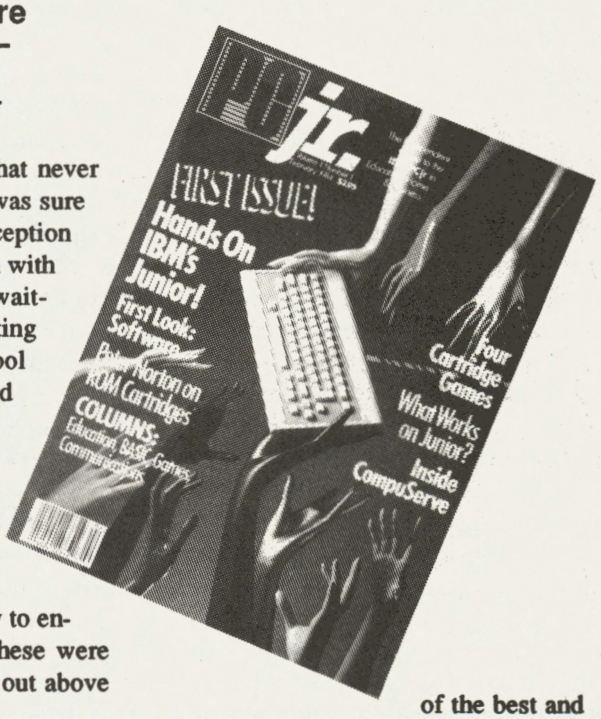
January 15, 1988 Volume 4 Number 1 The National Newsletter for PCjr Owners


Reviewed - limited info highlighted

# Once When Our Juniors Were Young

**There was a time when the jr was the darling of the computer industry, and the PCjr Magazine was there to court her**

It wasn't always this way you know. My grandfather once told me of a time when the PCjr was considered to be the future of home computing. Oh, there were rivals, of course, like the Apple IIC and Commodore 64, but everyone looked at the jr as the "can't miss" PC from the sharp-shooting company that never loaded its barrel unless it was sure to hit the mark. From inception to presentation, jr was born with a silver chip in its CPU, waiting to take on the computing world. Junior's high school yearbook inscription would have read "most likely to succeed," - the future was bright for the darling of the IBM family.




Even before the Junior was officially unveiled, there were the suitors ready to engage the PCjr owners. These were the magazines. One stood out above the rest, and that was *PCjr Magazine* published by Ziff-Davis. The computer publishing giant set many of its brightest and best writers to the task of covering the PCjr world. Filled with articles and reviews, the magazine was geared to take the jr owner on a one-way ride to PC computing productivity. But the ride was a short one. On March 22, 1985, IBM announced that it would no longer produce the PCjr, and Ziff-Davis ended *The PCjr Magazine's* life after just ten issues. But oh, what great issues they were.

Starting this month, The Junior Report will begin a series of reprints of the best and most helpful articles from *The PCjr Magazine's* short but sweet life. The first article is Editor Corey Sandler's opening editorial remarks about the future of PCjr computing. A lot has changed since then, and we will update and sometimes correct some of the articles as they appear.

It will be a very interesting series to say the least. Some readers will find them amusing, while others will read them with a bit of sadness, knowing that so many hopes only became memories. But we will all learn about our juniors from a time when they were young and promising.

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*By Harrison Day*

# Things I Got, and Things I Didn't Get

This is the Christmas 1987 scorecard: Kari got several new Cabbage Patch Dolls and accessories, Fisher-Price cooking sets, stuffed animals, and a set of Sony walkie-talkie headphones that Santa drop-shipped from the Sharper Image. At five, you get toys.

Jason got the Milton Bradley Shogun strategy game, assorted reptile and dinosaur books and toys (he's into that), a set of Air Raiders vehicles and battle figures, a new Chicago Blackhawk hockey jersey, sweaters, and stone-washed jeans. At ten, you get a combination of toys and new clothes.

My wife got a nice new winter coat, new outfits, and a Movado watch. At (DELETE) you get new clothes and accessories.

I got one of those little doo-dads that's supposed to make your old, matted sweaters look new. That was from Kari. Jason got me a new commuter coffee mug, you know, the kind that looks like a chemistry lab flask with a big bottom and small neck. It replaces the three other commuter cups that are stuck to my dashboard in my car. I'm afraid to look at what's growing inside of them. Santa got me PFS Professional File, Leisure Suit Larry in the Land of the Lounge Lizards, a Flight Simulator scenery disk, Test Drive, and a 3 1/2 inch PCjr drive to play with. At 36, you get practical gifts from your kids and computer toys from everyone else, provided you own a computer. Whether you're six or sixty, at Christmas you get toys in the form of hardware and software. You're a kid again.

Though I got a lot of nice programs this past holiday season, there are things I didn't get. Specifically, a game port adapter to allow me to attach a MAX flight simulator yoke to my Junior, and something, anything, to use to connect an EGA monitor to my Junior. The only problem is that neither item exists, at least as far as we know.

I am, admittedly, a flight simulator flying nut. I love that program, and when I saw that they were actually coming out with a flying yoke for the program, I was excited, to say the least. My enthusiasm was shattered when I realized that the device could only be connected via a standard 15-pin PC game adaptor port. Several joystick manufacturers once had joystick adapters that would allow you to use a standard PC joystick with the PCjr, but I haven't heard or seen anything from them in a long time. We're still searching for a solution to this problem, but if anybody has information about these adapters, please let me know. My ears and checkbook are ready.

The second item on my wish list is an EGA adapter for the PCjr. There are many deficiencies that the PCjr can overcome such as memory limitations, speed, etc., but I wish something could be done to improve the PCjr display. Now, I'm not saying that the PCjr color monitor is that horrible, but after several hours of typing, the eyes can get awfully tired. Connecting an IBM Color Display isn't much better; having EGA capabilities would be heavenly.

As I discussed last month, we have a lot to be grateful for this past year, with great new products such as 1.2 meg drives and Junior turbo boards leading the way. If someone can develop these two items this year, I would offer him free advertising space and a million dollars. Check that, how about just the free advertising space.

Last month we listed a number of jr vendors that were catering to the insatiable desires of the PCjr owners. One of them, **Computer Depot**, has ceased its entire PC computing business. The computer company tried but failed in its attempt to survive the shakeout from last year that claimed a lot of computer stores.

We have two new features starting this month. The first as described on our cover page is a series of reprints from that famous source of PCjr information - **PCjr Magazine** which was THE PCjr periodical before jr's demise. The first article appears on page 25 and sets the stage for future reprints. I hope you enjoy these articles; I know you'll benefit from them. The second feature is our **Classified Section** starting on page 27 of this issue. We hope that you'll get some great bargains to improve your PCjr computing.

Speaking of great bargains, one of our readers sent in an ad from Mendelson Electronics Inc. in Dayton, OH. They have PCjr carrying cases for $10., joysticks for $10., and incredibly, **speech attachments** for $30.! I have never seen this peripheral at such a rock-bottom price. Mendelson's address is 340 East First Street, Dayton, OH 45402. Call first before ordering to check on availability and shipping and handling costs.

This month we are also featuring another article reprinted from the club newsletter of the San Francisco PCjr users group. Though the members are currently in mourning due to the Niners' upset loss to the Vikings, they are still probably the most cohesive, knowledgable, and productive PCjr user group in the United States. This is due in large part to PCjr Squadron Leader John King, author of many fine jr articles. The group can be contacted at 1194 Idylberry Rd., San Rafael, CA 94403.

Lest we forget, great thanks from all PCjr lovers to Richard and Mo-

# The Junior Report

***A Publication of The PCjr Club***

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nique Byron of Computer ReSet who supplied the enclosed I Love My PCjr bumper stickers in the November issue.

It's nice whenever we see a new software program specifically mentioning PCjr compatibility, especially when it involves a unique application. For all of you **PCjr/model train lovers** Signal Computer Consultants (P.O. Box 18222, Dept. 33, Pittsburgh, PA 15236, (412) 655-7727) has developed a program which is a challenging, realistic simulation of the real life job of a Train Dispatcher. It retails for $25. and has a companion disk Track Builder for $15. which helps you design track layouts for use with the simulator. Write or call the company for more details and ordering information.

We're sorry that we do not have enough room in this issue for another installment of The Guggenheim Collection. Next month will probably be the last month of the current competition, and we will exhibit a couple of masterpieces, and then award a winner, and two runner-ups in the following issue. It's definitely not too late to send in one of your creations for this or the next contest.

We have just received a few IBM power attachments that are needed if and when your miniscule jr power supply is overworked or if you are using 2 or more expansion sidecars. We bought these at $25. a piece (normally they go for about $55. mail order) and if you are a member and need one or think that some day you may, just send a check for $25. plus $5. shipping and handling to us and we'll send you one while they last. Write Power Attachment on the outside of the envelope.

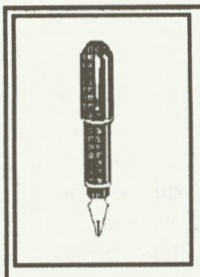
If you look carefully, you'll notice that we have changed our mailing address from a P.O. box to a regular street address. It gets pretty cramped working in those little boxes, and the new office should give us more room to better serve your Junior needs.

By the time you read this, our new telephone number should be installed. This number will be available for subscription purposes only, that is, if you haven't received an issue or have a mailing problem, you'll now be able to call to check our database for any errors. Missing issues, reprints, and other orders should now be processed in one day. Look for the Subscriber Services telephone number in the next issue.

It has been 8 days into the new year, and we are extremely excited about the coming year. We're hoping more new products are unveiled, more software is available, and we hope to share our PCjr experiences together. We all know that as PCjr owners, we shall always fight the uphill battle; we have been pretty successful thus far. All we need is to stick together. The one advantage we have is that we are aware that the PCjr has its limitations, and we are working within that knowledge to make our juniors as productive as possible. As long as there are PCjr lovers out there who are trying new ideas and products, we should be OK for 1988. Happy new year to you, your family, and your PCjr.

***We all know that as PCjr owners we shall always fight the uphill battle; we have been pretty successful thus far.***

# L E T T E R S



*By Dolores Jack*

*Thank you for your letters and comments. We're sincerely sorry that we are not able to answer all letters personally, but will attempt to cover as many questions and topics as possible in this column. All letters become the property of The PCjr Club and are subject to editing for length and clarity.*

## GUNSHIP, KING'S QUEST III, AND JR SPEEDUP

The information Mr. Fuehrer gave regarding the requirements for running Microprose's Gunship on the jr, in the December issue of The Junior Report, may not be entirely accurate.

I relayed the information to another member of Compuserve's PCjr Forum recently. Still another member responded saying that he had no trouble at all running Gunship on his jr which is equipped only with a Microsoft Booster and 640K memory. He uses JRCONFIG.SYS(Disk #82) to setup his memory. It would seem then, contrary to Mr. Fuehrer's remarks, that it is NOT necessary to have a Racore Drive II Plus with DMA in order to run Gunship on a PCjr.

Mr. Wilson mentioned three ways in his article to get software to run faster on the jr. There is a fourth and it does not require Racore software, a V-20 chip, or an 8087 co-processor. It does require, however, that your Junior have at least 384K of memory. To get software to run on the jr without any of the items mentioned by Mr. Wilson, all you have to do is to set up a 128K ramdisk. This will force software to load entirely into the expansion ram instead of splitting it up between the jr's original 128K and the expansion memory. As a result, programs will run as fast as if Racore's SPEEDMA2.COM (not SPEEDER.COM as mentioned by Mr. Wilson) program had been used (or DEVICE=JRVIDMA2.SYS /C in a config.sys file for jr mode).

Speaking of the Racore Drive II Plus, I'd like to warn readers that own it that they won't be able to run King's Quest III or SPACE M*A*X using Racore's software to recognize their expansion memory. However, they will be able to run these programs if they replace JRVIDMA2.SYS (jr mode) with JRCONFIG.NRD (the latest version of JRCONFIG.SYS). In the case of KQIII, a virgin copy of DOS will also work as the game includes software to recognize expansion memory on the jr.

Steven Miller
Grand Terrace, CA

*Thanks for the tip on Gunship. It is a lot nicer to be arguing upon which PCjr configurations a new software program DOES run than to discuss what DOESNT run on it. We haven't tried Gunship yet ourselves, but judging from your response and from those of others, it appears that Gunship will run on many PCjr configurations. It must be a very popular game as well.*

*You mentioned just one of the great benefits of using ramdisks. As stated many times before, we often prefer using a ramdisk as our second drive rather than a physical drive. This is especially true when playing any of the fine King's Quest programs because of their constant disk accessing. Not only will the ramdisks speed up the program play, but more importantly, it will save on the wear and tear of your disk drive.*

*We have found very few instances where using Larry Newcomb's JRCONFIG.SYS program (Disk #82) was not better than using the PCjr memory-recognition software that comes with jr memory expansion boards. It is a fine program that will often make an incompatible program compatible.*

## VIRUS COMMAND.COM

(I recently got this at work (see attached sheet) and I'm told that it is not a hoax. It concerns the VIRUS COMMAND.COM.)

Last week, some of our student consultants discovered a virus program that's been spreading rapidly throughout Lehigh University. I thought I'd take a few minutes and warn as many of you as possible about this program since it has the chance of spreading much farther than just our University.

We have no idea where the virus started, but some users have told me that other universities have recently had similar problems.

The virus: the virus itself is contained within the stack space of COMMAND.COM. When a PC is booted from an infected disk, all a user needs to do to spread the virus is to access another disk via TYPE, COPY, DIR, etc. If the other disk contains COMMAND.COM, the virus code is copied to the other disk. Then a counter is incremented on the parent. When this counter reaches a value of 4, any and every disk in the PC is erased thoroughly. The boot tracks are nulled, as are the FAT tables, etc. All Norton's horses

couldn't put it back together again. This affects both floppy and hard disks. Meanwhile, the four children that were created go on to tell four friends, and they tell four friends, and so on, and so on.

DETECTION: while this virus appears to be very well written, the author did leave behind a couple of footprints. First, the write date of the COMMAND.COM changes. Second, if there's a write protect tab on an uninfected disk, you will get a WRITE PROTECT ERROR message....So boot up from a suspect disk and access a write-protected disk - if an error comes up, then you're sure. Note that the length of COMMAND.COM does not get altered.

I urge anyone who comes in contact with publicly accessible disks to periodically check their own disks. Also exercise safe computing - always wear a write protect tab.

This is not a joke. A large percentage of our public site disks has been gonged by this virus in the last couple days. (Kenneth Van Wyk - User Services Senior Consultant, Lehigh University Computing Center, (215) 758-4988)

Alex Hrapunov
Goldvein, VA

*Mr. Van Wyk is not joking, though his warning is presented in quite an entertaining manner. Three other universities have been "infected" by this virus, but more and more organizations are becoming aware of the problem. It never ceases to amaze me as to the creativity of the unstable mind. We, as PCjr owners, have enough to worry about such as overpriced hard drives and incompatibility problems; now we have to wear a write-protect tab during casual computing. Nevertheless, it would be very wise for all users, including jr owners, to "practice safe computing" as Mr. Van Wyk and Dr. Ruth strongly advise.*

## SHAREWARE WOES

I recently purchased six shareware disks from you. Not having experience with shareware, I was at a complete loss as to how to get the programs booted much less run. Do you have some directions? I was able to get some to run, but not all of them and I need help. The programs I ordered were: Kids (7), Games (10, Educational Games (18), Imageprinter (25), Games (38) and Amy's First Primer. I would appreciate any help you can give me.

Marjorie Hindman
Osborne, KS

I recently received my software disks #7, 38, 45, and 56. I have been unable to access many of the programs shown in the directory. Sometimes I can get the program to work when I type the name in at the DOS prompt and other times I cannot. Are my disks faulty? Please give me some help in using these programs.

Tom Parker
Aston, PA

*Dear Marjorie and Tom,*

*Many of the programs you find when you do a directory on your diskette are only accessible from within other programs.*

*Programs which have the extensions of EXE or COM can be booted by typing the name of the program at the A>. On disk #7 for instance, WPK.EXE can be used by typing A>WPK. List52.COM and FUNNELS.EXE can be accessed the same way. Programs with the extension BAS are BASIC programs which can only be booted when your Basic Cartridge is inserted and you have entered BASIC. Then you can LOAD the program and RUN it. Some programs can be run by typing A>GO if there is a GO.BAT program on the disk.*

*Programs with the extension DOC or TXT or which are named READ.ME or README etc. can be read from the screen by typing A>TYPE WPK.DOC or can be printed out on your printer by typing A>COPY WPK.DOC PRN. If you have several DOC files on a diskette, and you want to print all of them you can type A>copy *.DOC PRN. (Those of you who are not speed-readers can read these from your screen without the frantic scramble to pause the scrolling text if you have a program like BROWSE or LIST. By typing A>BROWSE WPK.DOC.)*

*You can ignore just about any other extensions like DTA SCR, PIC, SCO and so on. These are part of the program and aren't meant to be used.*

## PCjr POWER SUPPLY

I have been told by a PC technician friend of mine that there are two different kinds of power supplies inside the original PCjr, one much less powerful than the other. Since I am planning to upgrade my junior, I would like to know how to tell the power supplies apart by either serial numbers or appearance. I am a novice.

T. Garrett
Chicago, IL

# L E T T E R S

*Facing the front of the PCjr CPU, the power supply card occupies the far left slot inside the unit. The older card has a part number of 8654399, while the newer, more powerful supply is #6135986. If you have to replace it, make sure you get the newer model. The easiest way to distinguish them, however, is to measure them. The older power card is about 7 inches and the newer one is about 11 inches, almost the full length of the unit.*

## ASTRO PCjr 3 1/2 IN. DRIVE

I am interested in more information on the Astro Extjr 3.5 inch disk drive you spoke of in your last editorial. If you can get it for $250. or less I would like one.

Wayne Peevyhouse
San Jose, CA

*We have received several letters expressing interest in purchasing the Astro Extjr, a 3 1/2 inch drive for the Junior, and a group discount. The review of this particular drive will appear in the next issue. However, we already know that there are several problems with that particular drive that may discourage you from purchasing it. We are planning to review two other models of the smaller size drives (Paul Rau and PC Enterprises) in the near future. So for now, save your money until next month.*

## IBM WRITING ASSISTANT

My current setup is 640K using a jrHotshot with which I am very satisfied. When I purchased my Jr, I also received the IBM Writing Assistant version 1.01. While it is very easy to work with for the short reports and letters I normally write, I question whether I can make a couple of changes and/or additions. I find it cumbersome to make font changes using the print command format in my instructions, and at the same time have options offered on the program under F5 (emphasize) to allow printing in red, green, and blue which my printer does not support. Is it possible to alter my program so that emphasizing text with these three commands would provide expanded, compressed, and italic, for example?

My second wish is a non-changeable form (mask?) I could create and then lock so that data could be entered by tabbing to appropriate locations, and then the form and data would both print. Is this possible with this program, or does a program exist with which I could create such forms and use them with the Writing Assistant? Is this possible with PC-Write 2.7? I recently ordered this from the shareware list and would consider switching over if I could have this capability, although at present I find PC-Write to be somewhat intimidating for my needs. Any suggestions would be greatly appreciated.

Timothy Burke
Caro, MI

*The Writing Assistant is a low-end word processor that was a great "throw-in" for most of us when we bought our Juniors. Though it has many features of the more expensive word processors (such as a spell-checker), it lacks those capabilities of which you speak.*

*The form-generating need you speak of would better be filled by a database than a word processor, though word processing programs are becoming more like databases and vice-versa. The sister program to The Writing Assistant program called The Filing Assistant, can generate the forms exactly in the manner that you have described. You may be able to obtain this program at a discount if you check around.*

## IBM, TECMAR, MICROSOFT EXPANSION BOARD UPGRADES

If you want to be the first kid on your block to have 256K chips in your IBM, Tecmar, or Microsoft expansion board, this one's for you. After replacing the 64K chips originally soldered in your JrCaptain or IBM expansion sidecar, adding new sockets, and inserting 256K chips, you will effectively have 640K of RAM in your PCjr to play with. All work will be done by qualified technicians headed by Brian Cook. What we want you to do, is to fill out the form below to let us know if you're interested. Once we have your form on file, you will be notified by phone or mail when we would like for you to ship your board to us for prompt work, hopefully within three weeks time. The cost of mailing the board to us and insuring it will be your responsibility, and the cost and care of returning your upgraded board to you via UPS in a safe manner will be ours. We want you Tecmar owners to send your power supply along as well, so that we can test the board with your own power supply before we do anything to it. The cost of this service will be $155.00 (U.S. Currency). If you should have any questions concerning this service, please let us know on your form. We will guarantee the work and the 256K chips for 90 days.

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## How To Write for The Junior Report

The Junior Report is accepting articles and reviews from readers and subscribers for possible publication in our newsletter. All articles should be submitted in pure ASCII text (single spaced) on diskette, accompanied by a printed copy. Hard copy-only submissions will still be considered for publication, but their inclusion in the newsletter may be delayed at the discretion of the editorial staff, or in other words, we may be too lazy to type out your article. Frequent authors will receive software to review in the future on a regular basis.


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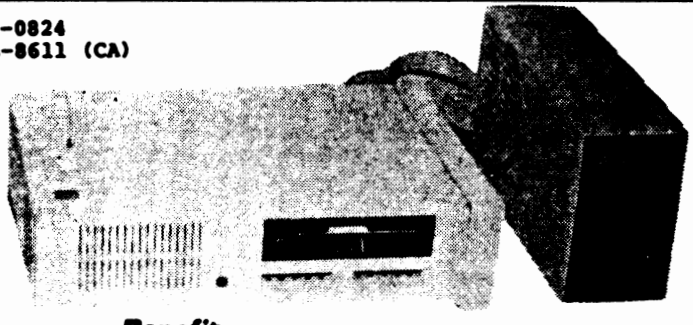

## SPC DISKITjr HARD DRIVE

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|---|---|
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# Space-capades on the PCjr

**Two flights are departing for space on your jr this month - it's up to you to decide which one you'll be on**

*It may not be a Japanese sci-fi classic, but you'll be able to create your own space adventures.*

**BY JIM PROSSICK**

Space the final frontier. From Hal of 2001 to PCjr and your living room. Now, with the help of your computer, you can seek out strange new worlds in the comfort of your own home. Two programs that will provide the fuel for that intergalactic trip are Accolade's *PSI-5 Trading Company* and Electronic Arts' *Starflight*. Both games require a good amount of strategy and are of the graphics-adventure variety.

PSI-5 is set up to run perfectly on a one drive 128K junior. It can be operated with either a keyboard or a joystick. Because of the quick response time required in the game, the keyboard seems to be the obvious choice. The graphics are quite good, but the color palette is the drab PC 1, 2, 3, 4. The game disk is self booting and runs just fine straight out of the package.

Starflight on the other hand will require a souped-up Junior with two drives and a recommended 320K, although I had the program up with 256K using Microsoft's memory.com command. Presently 640K and Tecmar's conpcjr -d2 -p7 command has my Junior in warp drive. But unless you have the right

## Space-capades on the PCjr

back issue of the Junior Report you may be stuck at the docking bay. Starflight does not come ready to run out of the package. A patch is required, since the original program disks do not set up Jr's video chips properly. EA will send you a copy of the patch, which is better than they do with some of their other software packages. Case in point, a recent purchase of Leisure Arts new Scrabble game left this junior user searching for the right four letter word. EA which distributes the game notified me that there is no patch available nor is one planned for the future. Luckily the product was purchased from a vendor with a "no questions asked" return policy. But, that still means no Scrabble for junior and me. If there is a patch out there let me know. Electronic Arts has forgotten that the PCjr is still a part of the computing universe.

Well enough space devoted to that, time to use the remaining space for what was intended. Starflight's graphics are superior. They run the gamut taking the player from starport to the controls of a starship to planetside and throughout the universe in an engrossing, enjoyable manner. The transitions are smooth and believable, adding much to the playability of the game. Unfortunately the color scheme is 2nd rate. Junior's sixteen glorious colors are not accessible through the present patch. Actually, that is not wholly true since sixteen colors are available if you are using a composite monitor. Trying the TV gave good color, but terrible resolution. Viewing the universe through a snow storm is not acceptable for space travel. The disks themselves are not copy protected, but the game is. In order to leave Starport and follow the proper course you must choose the correct coordinates from the Interstel Security Access Code Wheel. I haven't taken it very far so I don't know if the game will crash without the proper coordinates. I do know that, like Santa, the program knows when you've been cheating. EA's protection scheme is a beautiful answer to an ugly question. The program is strictly keyboard input. Junior owners with

*Trying the TV gave good color, but terrible resolution. Viewing the Universe through a snow-storm is not acceptable for space travel.*

standard boards may have some problems with the missing cursor keys. There also has been one too many keyboard freezes for this space cadet. Every instance has occurred while planetside and exploring in the terrain vehicle. When scanning new terrain the program has locked up several times. The keyboard input is groggy causing nervous keystrokes that may cause an overload with junior's lack of DMA. This may be due to a bug in the patch. Whatever the reason, it has caused this player great distress more than once.

PSI-5 has a few small problems of its own. It is one of those turn your computer on to start, turn your computer off to exit games. There is no way to exit the game without rebooting. Also the PSI-5's sound effects become obnoxious with time. They add very little to the strategy or atmosphere of the game and are begging to be turned off, if only there was a command that would do it. Putting those small nuances aside, PSI-5 is a fine game with a very novel game concept. Choose the proper people, well, lifeforms, to operate as a team, and take that team and its precious cargo to the colonist of the Parvin Frontier located on the other side of the universe. That may not sound like such a novel game concept, but it is when you consider that as captain of the space freighter your job is to hire the right man (there I go again), lifeform, for the five crew positions and then manage your choices successfully. The resumes from which the choices are made are great and each individual has a personality to match. Management of lifeforms, just as with people, can be difficult.

Life in the PSI-5 Universe is hectic for the captain. You assign tasks and monitor each crew member's progress from the communication console and the individual crew station. The program is menu driven and requires constant movement and split second decision making to succeed. Spending too much or not enough time with any one crew station can spell disaster. The communications console is the hub of the ship allowing access to each crew

station and monitoring of all ship systems and incoming messages from crew members. Learn to use the console to monitor the status of the ship's systems and to filter the crew's messages. A word about messages - I suggest you not go into auto acknowledge or you will be swamped with messages and unable to perform the necessary tasks for survival and success. Learn to prioritize each crew station according to the situation at hand. An example is keeping engine priority high on the engineer's list when not engaging the enemy and low when doing battle, transferring the energy to the shields and weapons where it is needed. It is important to note that the ship's capabilities are static; only the crew and captain change.

The PSI-5 Universe is one with boundaries that I can see but have not reached. There are four destination choices and six personnel choices for each of the five crew positions. Accolade has also given a clear and concise manual to help you enjoy the game. I must admit that after several crushing defeats I deferred to the back of the manual and read right past - Warning: Reading beyond this point may be hazardous to your enjoyment. That's the only bad advice in the manual, the explanations and guidance provided in the second half of the manual improved the game play and enjoyment of the game immensely. As a game and as an environment, Starflight provides the player with a universe without boundaries. The game itself is multidimensional requiring the player to have knowledge of commerce, politics and survival. It is many games wrapped into a unified whole. It allows the opportunity to select and train the crew of choice and configure a starship to your liking. To mine the riches of any planet in the universe. To search for useful information through alien encounters or just waste them on the spot if you don't like their looks. The goal of the game is to save the home world Arth and it's inhabitants from destruction through colonization or maybe through the discovery of some new or ancient technology. Needless to say I have not reached the conclusion of this noble task. The game environment is as boundless as the game itself. The Starflight universe is huge. Luckily EA provides a star map to help you get around. The size of the universe doesn't come without its drawbacks, namely the tedious game save procedure and the amount of disks it takes to keep the Starflight Universe in storage. Presently I am up to six set of disks including the original masters, the patched masters, three sets of backup disks and one set of play disks. All that trouble is made worthwhile when as captain you are given the chance to meet a member of the Heechee race one on one. Alien encounters are probably the most enjoyable part of the game. Trying to coerce, beg, or force information out of an alien being is quite entertaining. If the alien encounters are the icing on the cake than the search for endurium is the meat of the matter. Endurium is the fuel of the ancient empire of which Earth was a part. It is also the fuel that drives the starships and the Arth economy. Needless to say the search for information and products of monetary value is what drives the game. The game controls themselves are of the menu variety, easy to run, but sometimes sluggish. As the player you control every aspect of the game from a first person standpoint. The Starflight manual is first rate giving you a history lesson of Arth and the necessary input to run the game. But, if you want game hints you won't find many there. Starflight is a game to be explored and enjoyed.

***Both Starflight and PSI-5 Trading Company provide excellent entertainment value. PSI-5 is a game that can be played in one sitting. Starflight is highly addictive, long-playing, and good for the insomniac in the family.***

Both Starflight and PSI-5 Trading Company provide excellent entertainment value. PSI-5 is a game that can be played in one sitting, but will take constant improvement. Starflight is highly addictive, long-playing, and good for the insomniac in the family. Starflight's list price is $49.95 and PSI-5 Trading Company's list price is $39.95 As far as space goes I'd recommend you make room for both of these games in your software collection.

# ProComm and the PCjr Internal Modem

**So you got that internal modem for Christmas. John King describes how to use it with ProComm.**

BY JOHN KING OF THE SAN FRANCISCO PCJR CLUB

The greatest frustration in computing is trying to get software and hardware to work together properly when documentation for the specific use is not available. George Layton of jUMP expressed this so well in his article on the PCjr internal modem. In this column, I'll expand on his solutions and add a few hints both for the internal modem and PROCOMM version 2.42. The IBM PCjr Technical Reference has a section on the internal modem, pages 3-33 to 3-76. This is far more complete than the brief operating instructions in the owner's manual. The Tech Reference is in our SF PCjr Users Group library.

### Setting Up PROCOMM

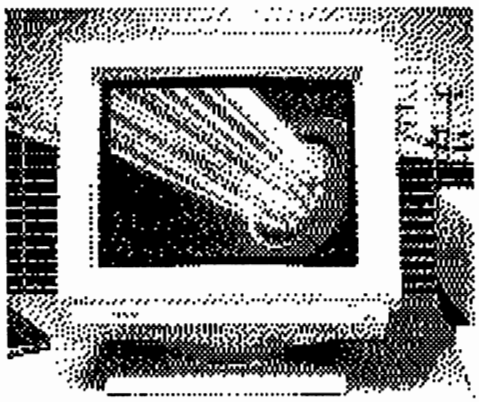
COMMAND.COM must be available for the Host Mode (Alt-Q), DOS Gateway (Alt-Fn 4), and Directory (Alt-F) features of PROCOMM to work. Copy COMMAND.COM to the PROCOMM disk, or set up a path to it on a ramdisk. If you have changed the PROCOMM parameters in attempting an installation, it might be best to begin at the default settings and make only the changes described here. Delete the PROCOMM files with the .PRM, .XLT, .KEY, and .DIR extensions. When you restart the program, new files with these extensions will be created. If you have already entered numbers in the dialing directory, don't erase the .DIR file, you can modify it later if necessary.

With PROCOMM running (you don't need to be connected to a phone line for the setup), press Alt-Fn 0 for the help screen. If you ever get confused, this help is always available.

Press Alt-P for Line Settings. Change the settings to 300,N,8,1,COM1 and save the changes. This is the most common setting for bulletin boards. It can be changed during a session, for instance, if you encounter a BBS using 300,E,7,1 which is the second most common setting. In the Operating Hints section, I'll cover this. Next, press Alt-S for the Setup Menu. New parameters must be entered on the Modem Setup screen. Optional changes may be made within Terminal Setup, General Setup, and Host Mode if you use this feature. In the MODEM SETUP, the Modem init string is "^NF 4!" to initialize the modem in N- 8-1 format so as to agree with the Alt-P setting. Don't enter the quotes, no space between the ^ and N or the N and F, but there must be one space after the F. If you often connect with E-7-1 systems, use that setting with Alt-P, and set the modem string to "^NF 3!". Ctrl-NF 3<Enter> is what you would type at the keyboard, but PROCOMM trans-

# ProComm and the PCjr Internal Modem

lates the ^N as Ctrl-N and ! as Enter when it reads this string. The Dialing command is "^ND P" for touch tone phones or "^ND I" for pulse dialing. Actually, "^NDspace" will work just as well for tone dialing. However, with "P" added you can see there is a space after the "D", and both dial equally fast. The Dialing cmd suffix can be simply "!", the Enter key which ends all internal modem command lines. If you plan to do uploading of COM or EXE files, you might try ",T FFFF!" as the dialing suffix. This will place the modem in transparent mode \H\7\#8 for every call. Transparent mode will end when you hang up. I'll cover transparent mode in greater detail later. The Connect string is "CONNECTED" in upper case, and the four No connect strings are "BUSY", "NO ANSWER", "NO DIAL TONE", and "UNSUCCESSFUL" as George described. The Hangup string is "^NH!", exactly as George stated. PROCOMM first attempts to hang up by dropping the DTR signal, since this works with the PCjr internal modem, the ^NH! string is not actually used. In the TERMINAL SETUP, the only change I suggest is to turn Line wrap ON (selection 8). In the GENERAL SETUP section, a good Default d/l path is "A:". This will save all downloads to a real disk even if you run PROCOMM from a ramdisk. My preference is to turn Sound effects OFF and have NO Exploding windows, but then I have enough "whoops" and explosions in my life. Finally, for HOST MODE SETUP, the Auto answer string can be "^NC 1!" to answer on the first ring through "^NC F!" to answer on the sixteenth ring. (This is one way to keep all but the most persistent people from accidentally calling your computer.) If you will be sending COM or EXE files from Host Mode, the string should be "^NC 1,T 0!". The modem will be permanently in transparent mode until a cold reboot. The DOS shell option within Host mode does not work on the PCjr.



Your machine will simply lock up requiring a reboot. Change the DOS shell password to something you couldn't hit by accident, !#X&*Pft, for example. All the other functions work.

Host mode is a good way to exchange files with a friend. Put your computer in Host mode and have your friend call. He can upload or download files just as if he were calling a BBS. Kermit and ASCII parameters do not have to be changed as far as I know. These are special protocols for file transfers, and less useful for BBS operation than Xmodem which requires no set up. Be sure to save your changes to disk at the Setup Menu or they will not be there the next time you start PROCOMM. However, if you want to experiment with some new parameters, enter them but don't save them to disk. They will be in effect for the current session only. The Dialing Directory must be changed to be consistent with the baud rate installed with Alt-P. Press Alt-D to bring up the directory. Enter each phone number with 300 for the Baud rate. Set Parity, Data and Stop bits, N-8-1 or E-7-1 usually. PROCOMM is now fully configured to work with your PCjr internal modem.

## Diagnosing Problems

When communications don't run smoothly, it can be very confusing sorting out what is wrong. My approach is to get all the info I can from the software and hardware.

The first thing I do is set the modem into half duplex if it is in full duplex. The Alt-E key is a toggle for this, but you may also want to change the entry in the dialing directory column E (for echo) from N to Y for half duplex. The status line at the bottom of the PROCOMM screen will tell you the current state of duplex. In full duplex, what is sent out through your modem by the program or by typing only appears on the monitor when it is returned by the receiving computer. This is the normal operating procedure during a call. Of course, if you did not connect successfully to another computer, nothing at all appears on the monitor when you

type at the keyboard. This is not very informative when you are having problems. In half duplex, everything is sent to the monitor before it is transmitted. Then it appears again when the receiving computer returns it assuming a good link exists. In this mode what you type usually appears with double letters: HHii tthheerree.. This allows you to see the Ctrl-N commands which are filtered out of the data stream by the modem and therefore not returned by the receiving computer. Note that they appear as single characters. To check the modem dialing command, change the N to Y in the E for Echo column for a dialing directory entry, then call that number. You'll be able to see any errors. Another toggle which can help make things clearer is the CR-CR/LF toggle, Alt-Fn 3. Normally this is in CR for carriage return only, but adding a line feed as well makes modem commands easier to read. Try this with Query which reports the modem status. Type Ctrl-NQ<Enter>, then press Alt-Fn 3 and try it again. With CR/LF, the command and response are on separate lines. Of course, if you are getting all double letters, double spacing or everything on one line during a call to our bulletin board, these toggles are how to fix the problem. The best settings can be saved in the TERMINAL SETUP section.

Lights on an external modem also provide information. BRKBOX.COM puts letters on the screen which provide data like lights on an external modem. This utility should only be used when you are having problems since it can cause other problems. It is available on the SF PCjr Users Group BBS and in the disk library.

### Operating Hints

When calling a BBS, and after you receive the CONNECTED message, hit the Enter key several times to complete the link up. Never use Fn Break or Ctrl-Break on the PCjr in PROCOMM. It will hang the program. Calling a BBS with the wrong format will put garbage on the screen. Lots of strange graphics and foreign language characters will appear and the screen is unreadable.

To change formats, from N-8-1 to E-7-1 for example, the format command must precede the line setting change. To change before making a call, set the dialing directory2 entry to E-7-1, but type Ctrl-NF 3<Enter> before calling. To change during a call type Ctrl-NF 3<Enter> first, then change the line setting with Alt-P. If the order is reversed, garbage or no characters at all may be visible.

Downloading, importing a file, works fine on the PCjr modem. There are no special commands needed; just follow the BBS and PROCOMM directions. Use Xmodem or XC on a Fido BBS such as the SF PCjr BBS. You do not need Transparent mode. Uploading, sending a file out, can add one small problem. If the file contains one of the Ctrl-N command strings, the modem will try to execute that command, and the file will not be transferred correctly. Straight ASCII text files are not likely to contain a Ctrl-N string, but COM and EXE files probably will. In order to do a file transfer, the modem must ignore the commands. This is what Transparent mode means. The modem ignores Ctrl-N strings. The modem is placed into transparent mode with the Ctrl-NT nnnn command where nnnn is a hexadecimal number from 0 to FFFF. After sending nnnn bytes, or at the end of the call if any value except 0 was given, the modem will again respond to commands.

***Downloading, importing a file, works fine on the PCjr modem. There are no special commands needed.***

The T command can be given as part of the dialing command suffix in the MODEM SETUP or during a call. On a BBS, type the T command before selecting U for upload. I just type Ctrl-NT FFFF<Enter> if the file is under 64K rather than its actual size. There is usually no need to give other modem commands during a call and transparent mode will end when I hang up. The Ctrl-NT 0<Enter> command places the modem in permanent transparent mode. The only way out is a power off reboot. Next month, I'll provide a utility which you can write with DEBUG to UN-T the modem.

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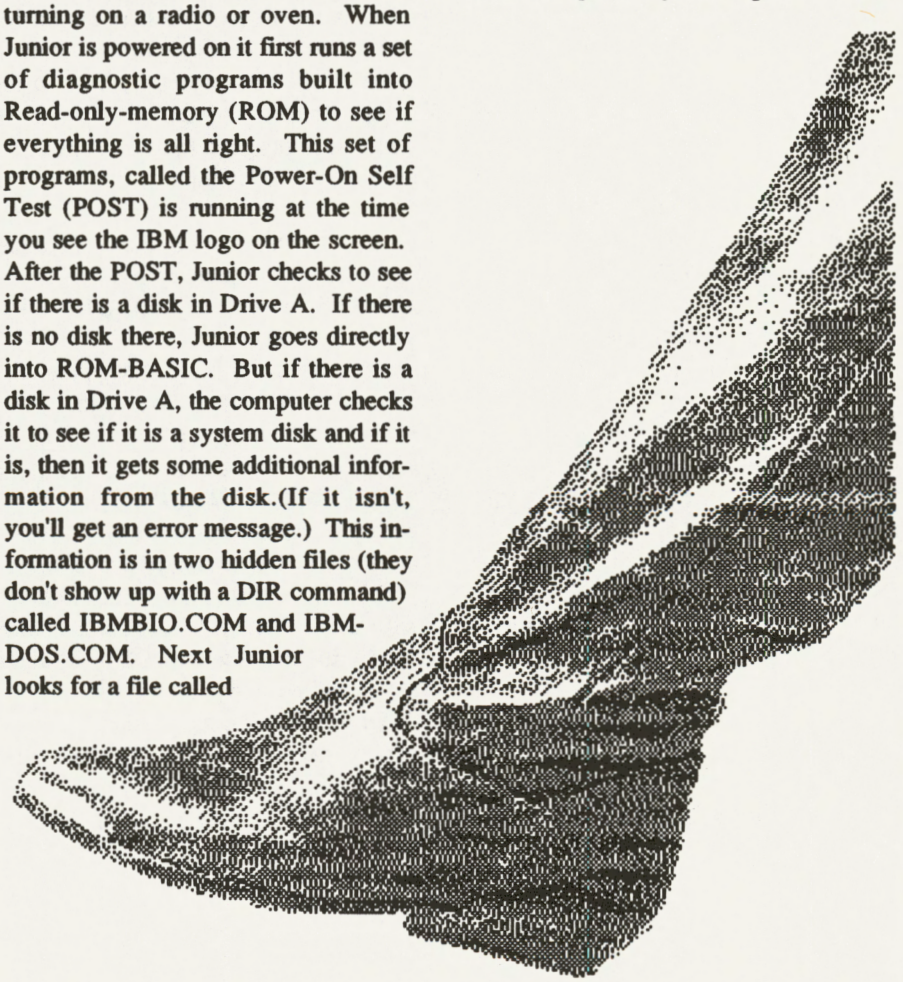
# Giving Junior The Boot

## Starting-up is hard to do - unless you really know how to give Junior the boot.

My PCjr is used for a wide variety of tasks and, consequently, I set up Junior with a wide variety of configurations. If I intend to use a paint program, I boot Junior with expanded video memory and with a mouse driver. For BASIC programs, I use no expanded memory at all, but for Lotus 1-2-3 I use all available expanded memory plus a speed-up program. Normally I use Version 2.10 of PC-DOS but for the program Fontasy, which is allergic to a bug in Version 2.10, I boot Junior with Version 3.1 of PC-DOS. For a session of Pascal programming, I use a boot disk that automatically loads a keyboard macro utility, Sidekick and Turbo Pascal. Altogether, I have about eight different boot disks to start up Junior.

Shortly I'll explain how you can make up special boot disks, but first let us see what happens when you boot Junior. Starting up a computer is a fairly complicated process and the term boot (which correctly implies that the computer pulls itself up by its own bootstraps) is really a better word to use than just "turn on". There is more to it than there is in turning on a radio or oven. When Junior is powered on it first runs a set of diagnostic programs built into Read-only-memory (ROM) to see if everything is all right. This set of programs, called the Power-On Self Test (POST) is running at the time you see the IBM logo on the screen. After the POST, Junior checks to see if there is a disk in Drive A. If there is no disk there, Junior goes directly into ROM-BASIC. But if there is a disk in Drive A, the computer checks it to see if it is a system disk and if it is, then it gets some additional information from the disk.(If it isn't, you'll get an error message.) This information is in two hidden files (they don't show up with a DIR command) called IBMBIO.COM and IBMDOS.COM. Next Junior looks for a file called CONFIG.SYS on the disk and it it's there Junior configures itself accordingly. Finally, Junior looks for a file called AUTOEXEC.BAT and follows the directions in that file.

Now, here's how you make a specialized boot disk. First format the disk using the System option. That



BY JOHN WILSON

## Giving Junior the Boot

is, you use the DOS command FORMAT /S, or FORMAT B:/S for a dual drive computer. This option places the programs IBMBIO.COM, IBMDOS.COM and COMMAND.COM on the disk and makes it a system disk.

The next step is to prepare a couple of short instructions for CONFIG.SYS and AUTOEXEC.BAT. The manuals for the hardware and for the programs you intend to use will give advice for the contents of the CONFIG.SYS file. The CONFIG.SYS file usually contains information for video, memory and disk management as well as hardware device drivers. This file may contain several commands, each on a separate line. As an example, my CONFIG.SYS file used to boot up PC-Paint is:

```
DEVICE = JRVIDEO.COM /E
DEVICE = VIDEO.SYS
DEVICE = MSMOUSE.SYS /2
```

The first line uses a Racore program to reserve 32K of memory for a video buffer. This allows PC-Paint to use 16 different colors. The second line is used by PC-Paint to set up the program and the third line activates the mouse on port 2.

In order to get Junior to boot with DOS 3.1 on my Racore expansion unit, I use the following CONFIG.SYS file:

```
DEVICE = ANSI.SYS
DEVIVE = JRVIDEO.COM
```

Your hardware and software manuals will also often give advice on the contents of an AUTOEXEC.BAT file. Often an AUTOEXEC.BAT file loads specific programs into the computer. You could execute the programs by typing in their names, but the AUTOEXEC.BAT file does it automatically. My general purpose AUTOEXEC.BAT file is:

```
PCVIDEO
POW2CLK
COLOR
```

These are just the names of three programs that DOS will execute. PCVIDEO is used by the Racore expansion unit for memory management, POW2CLK activates the clock in the expansion unit and COLOR is a short, homemade program (See the Junior Report, July 1987) that sets the screen to 80 columns with white characters on a blue background. You must, of course, copy any programs called by CONFIG.SYS or AUTOEXEC.BAT on to your boot disk.

After you have decided what the contents of the CONFIG.SYS and AUTOEXEC.BAT files will be, you must actually write the two files. You can do this with any ASCII text editor or wordprocessor (PC-Write or Sidekick work well), but I usually use EDLIN. EDLIN is a small editor that is included with DOS. I use it because it is always handy (its on the main DOS disk) and it is fast and easy to start and use.

To use EDLIN, place your DOS disk which contains EDLIN.COM in drive A and your boot disk in drive B. Then type in EDLIN B:AUTOEXEC.BAT or EDLIN B:CONFIG.SYS and press [Enter]. Note that this assumes you have two disk drives. If you have only one drive, copy EDLIN temporarily onto your boot disk and omit the drive designation in the start-up command. You should then get a message saying New File with an asterisk and a blinking cursor below the message.

Now, type an i and [Enter]. The i, which can be either upper or lower case, stands for insert. Then type in each line, pressing [Enter] to complete each line. After you have entered all of your lines, hold down the Ctrl key and press the C key.

To review your file, type in L (which stands for list) and press [Enter], and if you want to change a line, just type in the line number and press [Enter]. The existing line will appear on the screen and you can type in a new version on the line below. The line numbers are part of EDLIN and will not be included in your file. When you're all finished, type in E and [Enter]. Your file will be saved and you will be back into DOS. EDLIN will also allow you to add or delete lines if you want to change your file later. See your DOS manual for details on these and other features of EDLIN.

That's all there is to it. You will probably find that as your interests, programs and hardware change you will have more and more boot disks and find that your Junior is in many ways more versatile that a computer with a hard disk.

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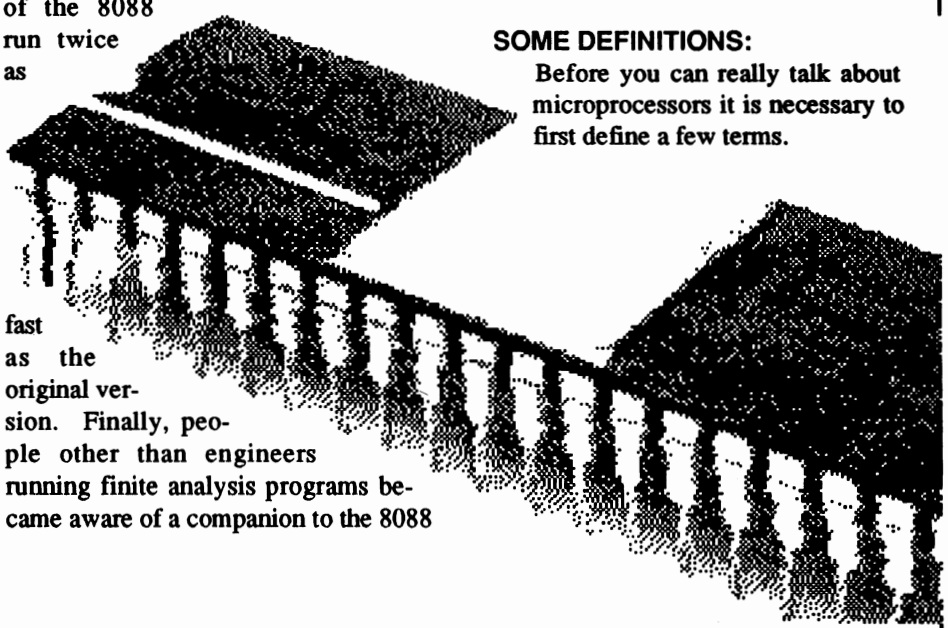
# Microprocessors and the PCjr

## Microprocessing chips are the brains of any computer. Where does the Junior fit in today's fast-thinking computing world?

Until just a couple of years ago the microprocessor in the IBM PCjr and the other members of the IBM PC family wasn't talked about much. Intel Corporation's 8088 running at a clockrate of 4.77 Mhz was the microprocessor used in almost all of the IBM Personal Computers, including the PCjr. True, the IBM AT computers had a 80286 microprocessor and ran at a little faster pace (6 Mhz), but you could buy a pretty good automobile for the price of an AT system and even in businesses there were not many ATs to be seen.

But then, as is normal in the computer world, the situation changed. AT clones started appearing, prices dropped dramatically (including IBM's) and computers with 80286 chips became common. Also, some clones with Intel 8086 microprocessors appeared, and to top it off even a clone of the 8088 itself appeared with claims to do everything the 8088 could do, and do it faster. Computers with 80386 processors have arrived, and newer versions of the 8088 run twice as fast as the original version. Finally, people other than engineers running finite analysis programs became aware of a companion to the 8088 named the 8087 Numeric Coprocessor.

Now none of the "in" computers use the 8088 and the 4.77 Mhz clockrate is slow-motion when compared to the current speeds available. Where does all of this leave those of us who still have Juniors? We'll take a close look at the 8088 and then compare it with the other microprocessors so that you can gain some idea of where Junior stands in the mist of all of this change.



### SOME DEFINITIONS:

Before you can really talk about microprocessors it is necessary to first define a few terms.

BY JOHN WILSON

# Microprocessors and the PCjr

**BIT.** You can think of a computer as having millions of tiny switches in its memory. These "switches" are always either on or off, open or closed, true or false, 1 or 0, set or not set, however you choose to think about them. In print, however, each "switch" is usually shown as a 1 when it is open and as a 0 when it is closed. Each "switch" is called a bit. (The word was derived from the term "binary digit".)

**BYTE.** There isn't really much that can be done with a single bit by itself but when you combine bits into groups (data units) there is a lot you can do with them. Through the years, a combination of eight bits has been found to be especially effective and has been given a name. An eight bit data unit is called a byte.

**WORD.** The eight bits that make up a byte can be arranged in 256 different different ways but often a computer needs an even greater number of combinations, so two bytes are often combined into one data unit. This combination of two bytes is called a word. Sixteen bits can be arranged in 65,535 different ways. (Usually this is rounded to 64,000, an often encountered number around computers.)

## AN INSIDE LOOK AT THE 8088

All of those bytes in a computer are worthless unless the computer has some means to retrieve them and to interpret them. This is the job of the computer's microprocessor. The microprocessor is able to follow a list of instructions (a program) which usually requires the microprocessor to pull bytes from specific memory locations and perform some sort of operation on those bytes.

Microprocessors are, as you might expect, extremely complicated so we will limit our look to only two parts of the 8088; the registers and the instruction set.

In the 8088 there are 14 special areas called registers where bits can be moved to and worked on. Operations such as adding, comparing, shifting bits and looping generally are done with these registers. Most of the 14 registers in the 8088 can hold up to one word at a time, and since one word is the equivalent of 16 bits, the 8088 is called a 16 bit microprocessor.

***All of those bytes in a computer are worthless unless the computer has some means to retrieve them and to interpret them. This is the job of the computer's microprocessor.***

Each of the 14 registers has a specific function to perform and is important but one of the most important registers is the named the Instruction Pointer (IP). There are almost 100 instructions that the 8088 is able to follow. It is able to move bytes and words from one location to another, it can do four function arithmetic, compare bytes or words, do loops and jumps, manipulate individual bits, and a lot more.

Whenever a program is loaded into the computer's memory, the IP points to the first instruction in the program and then proceeds to point to each succeeding instruction in memory as the program is executed.

Two things affect the speed at which an instruction is performed, which in turn affects the speed of the program containing the instruction. The complexity of the instruction operation and the speed at which the computer operates. Every step of an instruction is done in cycles at a rate determined by a clock within the computer. For example; to move a byte from a memory location to a register requires about 14 clock beats. The Junior runs at 4.77 MHz, which means there are 4,770,000 clock beats per second. So to move that byte from memory to a register takes about .000003 seconds (14 beats divided by 4,770,000). A couple of other examples: to add two words located in registers requires only 3 clock beats, but to multiply two words requires up to 133 clock beats.

# Microprocessors and the PCjr

### THE INTEL 8086 FAMILY.

As you might suspect, something as complex as a microprocessor is not developed in just one stage. The very first microprocessor by the Intel Corporation was introduced in the early 1970's and was called the 4004. As the numbers imply, it worked on 4 bits at a time. It was followed quickly by the 8080, an eight-bit processor used in many of the very first personal and home computers. The next generation of Intel microprocessors was the 8086, introduced in 1979 and it was a 16-bit processor.

When IBM was designing the original PC, there was a parts availability problem connected with the 8086, so Intel modified the 8086 somewhat and called it the 8088. Yes, the 8086 design is older than the 8088.

The next Intel microprocessor was the 80186 was never used much but the following chip, the 80286, was a hugh success and is still one of the hottest microprocessors around. The register set of the 80286 is the same as that in the 8088 but it has added instructions and runs faster and more efficiently.

The latest member of the Intel family is the 80386, which has 32-bit registers, even more instructions, and runs still faster. Intel is working now on a 80486 microprocessor. All of the Intel microprocessors are upwardly compatible.

### OTHER MICROPROCESSORS.

Two companies, Intel and Motorola, dominate the microprocessor industry worldwide. Motorola came out with a eight-bit processor at about the same time as Intel and currently Mororola has a 32-bit chip, the 68020, which is roughly equivalent to the 80386 and is used in Apple's latest Mac.

A third company, Nippon Electric Corporation (NEC), has attempted to enter the microprocessor market and they chose to do this by developing a chip that would be not only compatible with the Intel chips but which would perform better. They started with the V20 which could replace the 8088, and the V30 which could replace the 8086. The V20/30 chips have some internal data transmission improvements and they have some enhancements in addressing memory when compared to the 8086s. They also operate with much less power than the Intel chips and they have some additional instructions (which no programs utilize).

How well did NEC succeed? Intel and Motorola still dominate the market, but now a few computers are sold with the V20 or V30 as their microprocessor and a lot of us have replaced the 8088 with a V20 in our Juniors. It is relatively cheap and normally not much trouble to install. If you do have a V20 in your Junior you probably won't notice the difference. It does seem to be completely compatible with all programs and hardware, but on the other hand it will increase the speed at which your programs run by only about 5 or 6 percent. Not enough to really notice.

***It (the 8087) does this arithmetic about 50 to 100 times faster than the 8088 can do it and does it far more accurately.....The difference in speed depends upon how calculation intensive and how long the problem is.***

### THE INTEL 8087

The Intel family of microprocessors are designed so that their computing power can be enhanced by specialized auxiliary processors, called coprocessors, which run simultaneously with the main processor . Some computers, which are really beyond what we would call PCs, use coprocessors to assist in video display and in other input/output operations, but the only coprocessor used much in the PC world

is Intel's "87" family of chips which performs math functions very accurately and very fast. These Numeric Data Processors (That's their official name, but usually they are just called math coprocessors or simply coprocessors.), are the 8087 for the 8088 and 8086 microprocessors, the 20287 for the 20286, and the 20387 for the 20386.

At the time the PCjr was designed very few owners of PCs and XTs had bothered to put coprocessors in their computers and very few programs supported the chip so IBM decided to cut costs by not putting a socket for a 8087 chip on the Junior. But the capability of supporting a math coprocessor was always there and it is possible to buy a daughterboard for a PCjr that does add a socket for the chip.

The 8087 is not a general purpose accelerator chip. The only thing the coprocessor does is to, when called upon by the main processor, do arithmetic functions. It does this arithmetic about 50 to 100 times faster than the 8088 can do it and it does it far more accurately. There are eight 80-bit data registers in the 8087 (compare this with the 16-bit registers in the 8088) which handle the arithmetic. The spectacular speed improvement is strictly for the calculation itself, and when the program's routine operations and overhead is added in the improvement drops down to the five to 20 times range. The difference in speed depends upon how calculation intensive and how long the program is.

Not all programs are set up to utilize a math coprocessor. In fact, very few programs utilize the chip although the number is increasing constantly. Word processors, database programs and most games will probably never have any reason to use a coprocessor. Most commercial spreadsheets do use and benefit from a 8087 (although Lotus 1-2-3 didn't begin to until Release 2.0.) as do just about all of the newer releases of languages. (Which means that you can write programs that use the chip.) You cannot assume that a particular program supports a math coprocessor, so normally you must read the program's specifications to see if it does. Usually, if the publishers of a program don't say specifically that their program utilize the coprocessor, then it doesn't. The type of programs that most benefit from a coprocessor are CAD (Computer Aided Drafting) programs. CAD programs do an unbelieveable amount of calculations, and without a coprocessor they are generally too slow to be useful.

## CONCLUSIONS

Where do all of these recent improvements in microprocessors leave those of us who own PCjr's? We might as well face it. We do own an out-of-date, orphan computer. But we're not alone, the original IBM PC is just as out-of- date. But having an out-of-date computer doesn't mean that its not a useful computer.

Some computers that were very popular just before Junior was introducted, such as the portable KayPro, Osborne and TI, were based upon processors and operating systems that are completely obsolete and are now just barely supported. No programs of any significance are being written that those computers can use. Because the Junior has an 8088 microprocessor, it will be able to run new programs for many years to come.

There are still a lot of computers being sold that have 8088 microprocessors, and even IBM's new Model 25's and 30's are based upon a chip older in design than the 8088. True, they run about twice as fast, but accelerator boards for Junior are beginning to appear and, who knows, maybe we'll catch up with them.

***Because the Junior has an 8088 microprocessor, it will be able to run new programs for many years to come.***

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## REPRINTS

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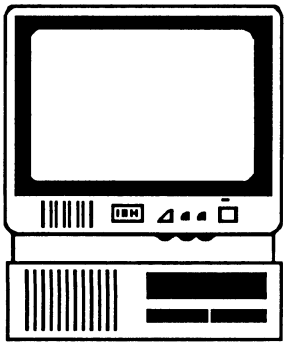
## Is Your Junior An Artist?

The PCjr has its drawbacks, but it performs a lot of computer chores admirably, such as word processing and database management. Another strength is Junior's graphic abilities. With or without a mouse, there is an abundance of good to great drawing programs that run well on the PCjr, and the best part is that they are all coming down in price. Whether you draw for fun or for profit, we would like to see your work. Just send in a printout of your masterpiece to The Junior Report, The Guggenheim Collection, 1121 Tower Rd., Schaumburg, IL 60193, and we'll feature some of the best pieces during the year, and at the end of the year, we'll pick the very best drawing and award a first (IBM PCjr speech attachment), second, and third place prize. Just send your masterpiece, a description of your PCjr setup, and the software you you are using. So let's see how good your PCjr really is with a brush. You may surprise your Junior and yourself.

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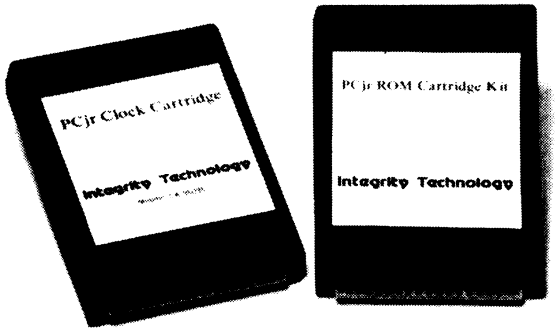


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***Jan 88***

# FIXQBjr Replay

Here is a BASIC program written by Blair Bieser that will create the COM file for FIXQBjr.

```
100 REM -- BASIC PROGRAM TO CREATE FIXQBjr.COM
110 OPEN "FIXQBjr.COM" AS #1 LEN = 1
120 FIELD #1, 1 AS A$
130 CHECKSUM = 0
140 FOR I = 1 TO 29
150    LINESUM = 0
160    FOR J = 1 TO 8
170       READ BYTE
180       CHECKSUM = CHECKSUM + BYTE
190       LINESUM = LINESUM + BYTE
200       IF (BYTE < 256) THEN LSET A$ = CHR$(BYTE)
210       PUT #1
220    NEXT J
230    READ LINECHECK
240    IF LINECHECK <> LINESUM THEN PRINT "Error in Line"; 280 + 10 * I
250 NEXT I
260 CLOSE
270 IF CHECKSUM = 18101 THEN PRINT "Successful Completion!" : END
280 PRINT "COM file is not valid" : END
290 DATA 233, 164,   0,   0,   0,   0,   0,   0, 397
300 DATA   0,   0,   0,   0, 156,  80, 228,  96, 560
310 DATA 168, 128,  88, 116,   6, 157,  46, 255, 964
320 DATA  46,   4,   1, 157,  46, 255,  46,   8, 563
330 DATA   1, 156,  61,   9,  37, 116,  16,  61, 457
340 DATA  33,  37, 116,  48,  61,   9,  53, 116, 473
350 DATA  46, 157,  46, 255,  46,   0,   1, 140, 691
360 DATA 216,  46, 163,  10,   1,  46, 137,  22, 641
370 DATA   8,   1, 184,   9,  37,  14,  31, 186, 470
380 DATA  12,   1, 156,  46, 255,  30,   0,   1, 501
390 DATA 139,  22,   8,   1, 161,  10,   1, 142, 484
400 DATA 216, 184,  10,  37,  72, 157, 207,  46, 929
410 DATA 161,  10,   1, 142, 192,  46, 139,  30, 721
420 DATA   8,   1, 184,   9,  53, 235, 238,  10, 738
430 DATA  70,  73,  88,  81,  66, 106, 114,  32, 630
440 DATA  45,  32,  67, 111, 112, 121, 114, 105, 707
450 DATA 103, 104, 116,  32,  40,  67,  41,  32, 535
460 DATA  49,  57,  56,  55,  32,  98, 121,  32, 500
470 DATA  77, 105,  99, 114, 111,  87, 105, 122, 820
480 DATA  97, 114, 100,  32,  83, 111, 102, 116, 755
490 DATA 119,  97, 114, 101,  13,  10,  36, 184, 674
500 DATA   9,  53, 205,  33, 140, 192, 163,   6, 801
510 DATA   1, 163,  10,   1, 137,  30,   4,   1, 347
520 DATA 137,  30,   8,   1, 184,  33,  53, 205, 651
530 DATA  33, 140, 192, 163,   2,   1, 137,  30, 698
540 DATA   0,   1, 184,  33,  37, 186,  33,   1, 475
550 DATA 205,  33,  60,  33, 116,   5, 184,   0, 636
560 DATA  76, 205,  33, 180,   9, 186, 111,   1, 801
570 DATA 205,  33, 205,  39,   0,   0,   0,   0, 482
```

# Bringing Up Junior

Forget about IBM's announcement of the PCjr personal computer, I mean, it was interesting—and a bit of a relief—to finally see the wraps come off the device that was simultaneously the best-kept secret in America and the worst-kept secret in IBM's history. But the real excitement here on Park Avenue, over there on Wall Street, across the continent in Silicon Valley, in Cleveland, Norcross, Ga., and most points in between was the significance of what IBM did *not* announce.

Here's the way IBM's harried public relations people disclosed the PCjr at an unusual press non-event in New York:

> BOCA RATON, Fla.: The IBM PCjr, the company's newest and most affordable personal computer, was announced today...
>
> The IBM PCjr features a 16-bit 8088 microprocessor, 64KB of permanent Read Only Memory (ROM), 64KB of user memory, a cordless 62-key keyboard, a desktop transformer, two slots for ROM cartridges, an audio tone generator and a 12-month warranty....
>
> The enhanced model includes an additional 64KB of user memory for a total of 128KB, as well as a 360KB, dual-sided, slim-line diskette drive. It also has the capacity to display up to 80 columns of information.

Now, that's hardly thrilling news: it sounds like a limited version of the IBM PC with a battery-powered cordless keyboard. You'd be able to run whatever IBM says you can run, and plug into it any device as long as it has IBM's name on it. Yawn.

But let me rephrase that announcement, as seen from here:

> NEW YORK: IBM has blown through another multibillion dollar door with its announcement of the PCjr, and once again they've left the portal wide open!
>
> The PCjr, a less expensive, fully capable entry-level version of the runaway bestseller, the IBM PC, will be introduced to every living man, woman, child and dog in America with a $50 million advertising blitz this year. Although IBM officially

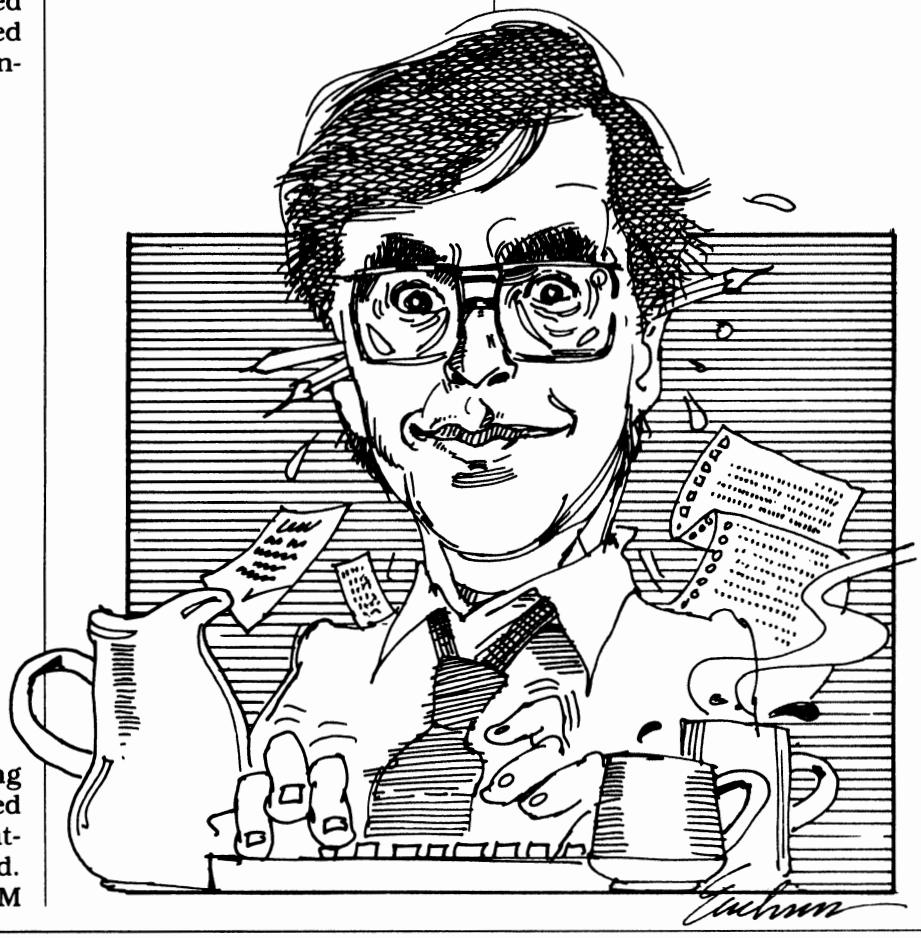

Illustration by Marc Ericksen

claims its enhanced model PCjr will end at one disk drive and 128K of RAM, technical experts from the company quietly acknowledged to reporters that IBM had done nothing to cripple the capabilities of its newest model. Within hours of the announcement, technicians at dozens of PC peripheral companies had retreated to their laboratories to begin work on scores of add-on boards, plug-in boxes and stick-in cables. And across America, hundreds of home programmers and closet hackers have already bid farewell to their tearful families and retreated to their basement rec rooms to crank out software and breadboard hardware.

**Leading the Pack** Yes, and we launched our magazine. Actually, we don't mean to brag, but we had a promotional issue of *PCjr Magazine* off the presses three weeks *before* IBM announced the existence and name of its new microcomputer. (Well, we can brag just a little—our inside sources are very, very good. Read on in this issue, and in months to come, for the inside scoop.)

What is the PCjr, and what will *PCjr Magazine* cover? You sure know how to ask a complex question. The PCjr will arrive in the home, that is for sure, but IBM is also going to sell many tens of thousands of the little kid to school districts. And, yes, we're going to see a few hundred thousand or so in the offices of America, Canada and everywhere else Big Blue can open a roadside

**Across America, hundreds of home programmers and closet hackers have already bid farewell to their tearful families and retreated to their basement rec rooms.**

stand. Read the fine print in IBM's press release—First, they're calling this a personal computer and not a home computer. Second, they're going to sell it through the same channels that worked so well for the IBM PC. They said *no* to K Mart, but *yes* to ComputerLand, the IBM Product Centers and IBM's national accounts division. The nationals are the folks who deal in sales by the truckload.

IBM officially supports *VisiCalc* and *MultiPlan* and *EasyWriter* 1.15. A few more pages into this issue you'll read about *PCjr Magazine*'s own tests of the machine and how to add many more products to Junior's high level of compatibility, including *WordStar* and *dBase* II. Indeed, hardware enhancements are already in the pipeline.

**Fantasy/Reality** At *PC Magazine*, where I served as executive editor for the past year, we used to devote the last page of each issue to something called the "Wish List." It was a section where the readers and editors could fantasize about new hardware and software items to run on IBM's personal computer. The section ran for about a year and then we had to kill it. Why? Because by the time the current issue would make it to the stands, all of our wishes would have been fulfilled.

So, I'm not going to call this a "Wish List." This is, instead, my "PCjr Expectation List." Soon after you read these words, most if not all of these products will appear in your neighborhood computer store alongside the IBM PCjr.

*Additional memory modules to go beyond 128K to allow PCjr users access to sophisticated spreadsheet, database, graphics and other programs.

*Second disk drives to upgrade the enhanced version of the PCjr plus standalone boxes to upgrade the entry version of the PCjr to two disk drive status.

*An expansion chassis with power supply to allow use of the hundreds of IBM PC add-on boards with the PCjr.

*Replacement keyboards to upgrade the PCjr to a more professional typing "touch" and to add back the function keys, keypad and other characters IBM left off.

*Sophisticated new joysticks and other types of game controllers to take advantage of the PCjr's

## PCjr was the best-kept secret in America and the worst-kept secret in IBM's history.

improved positioning as a game machine, and its advanced capabilities in sound and graphics.

*Other uses for the infrared eye on the front of the PCjr, perhaps in a home control system or for cordless joysticks or mice.

*Mice, (or sets of mouses, if you prefer) to allow quick movement of screen elements from hand controllers.

*Networks to connect PCjrs together in an office environment; networks to mix PCs and PCjrs, and finally connections from PCjrs to mainframes.

And, here's a free hint to a hardware company looking for a PC product—a plug-in ROM cartridge adapter to allow PCs to read software written especially for PCjr.

**On Our Own** Remember now, we are the *Independent Guide to PCjr Personal Computers.* The editors and publishers of PCjr Magazine do not own IBM (if we did, we probably wouldn't be working this hard). More importantly, IBM does not own us. We think very highly of that company, and we try to work closely with the people there, but we are in the service of our readers. Once the PCjr is out the door of IBM's assembly plant, it belongs to the free enterprise market, and the race is begun.

In this magazine you'll find out how to make the most of your PCjr personal computer wherever you use it. We'll talk about office and personal productivity; we'll examine home databases and financial planning; we'll teach you about programming in BASIC and LOGO and other languages; we'll explore games for fun and inner meaning; we'll teach you about educating with the PCjr. We've put a very high premium on quality of writing, gathering to our staff some of the most talented and lively writers in the microcomputer field. We want to help you use your machine, but without losing that sense of "Gee Whiz" that makes the electronic age fun.

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Tom Ritter
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# E Y E O N S H A R E W A R E

*By D. Glanville*

Well, many of you passed the test last month. Our Shareware department had two #98's, no #96 or #97, and we left out PCjr Patches, an important diskette for every Junior owner. Aw, we were just seeing how many of you would notice those glaring mistakes (You don't think we could actually make mistakes do you?) Anyway, we think we've got everything straightened out below, so please use the current order form on page 30, so that we don't get even more confused.

Below are the newest additions to our library. I think you'll really like them, and I think we can count now.

**BUTTON GAMES 2 (#103):**

BUTTON GAMES #1 are text adventure games designed for those who don't have much experience with this type of game. BUTTON GAMES #2 are a little more advanced. In NEBULA, you are a NASA explorer sent to investigate a newly discovered star system. In DARK CONTINENT you find yourself in Africa looking for King Solomon's Diamond. On the third day you awake to find your native bearers have deserted you and taken all your money and supplies. Will you make it?

**CITY DESK (#104):**

If you always wanted to be a publisher try this Shareware publication program. Automatic indexing, merged text files, headers and footers, includes Banner headlines and Layout options.

**GAMES (#105):**

Some really fun graphics on this disk include Aquarium (if you are tired of looking at an blank monitor you can turn it into an aquarium and watch the fish swim around), EYE if you'd like to have your computer look back at you, YAHT a colorful game of Yahtzee, Wizard is similar to Rogue and is addicting, MILLEBNS is a solitaire game of Millebournes.

**BAKER'S DOZEN (#106):**

Fourteen of Jim Button's best utilities. BTTNCALC is a one page spread-sheet. CALENDAR a programmable date calendar, DISKUTIL with many HELP screens you can change files or directories-restore lost files-patch files and much more, FILECOMP compare two ASCII text files, GKEY provides all keyboard information, LOCATE find any file on disk or in which file(s) given string occurs, PRO90 prints files at 90 degrees, PC_SORT sort files with up to four fields, PRN-FILE redirects all information normally sent to your printer to a disk file of your choice,RDIR remove subdirectory including all files and children directories, SNAPSHOT take pictures of any 80 column screen (not graphics) in any program, SWCOM12 switch RS-232 ports for COM1 and COM2, SWLPT12 switch printer ports for LPT1 and LPT2. Some of these utilities require 256K of PCjr memory.

**PC-STOCK (#107):**

PC-STOCK is a general purpose stock trend analysis program. It was developed with ease of use and graphic presentation of data as the primary objectives. PC-STOCK is entirely menu driven, making it very easy for the occasional user as well as the professional user to enter, modify, and obtain graphic trend analysis of stock data.

*(Continued from page 31)*

**GALAXY (#95):** powerful, easy-to-use word processor with pull-down menus. Highly recommended for the novice Jr owner.
**AS EASY AS (#96):** Called the LOTUS 1-2-3 of the shareware world, just spreadsheet looks and acts just like its famous commercial cousin. One of the best-selling shareware programs. **Requires at least 320K.**
**MOVIES ON LINE (#97):** user-friendly movie cataloging program with thousands of movies on file. **Requires 256K.**
**FILE EXPRESS (#98):** reviewed in the November issue, this database has received great praise from everyone. Its ease of use, menu format, mailing features, and report generator has made it quite popular already. **Requires 192K, 2 drives or one floppy plus a ramdisk. TWO DISK SET - $9.00.**
**PCjr PATCHES (#99):** Must have disk for all PCjr programmers. Contains fixes that will allow you to run Turbo BASIC, DoubleDOS(early versions), QuickBASIC 3.0, and Turbo C on the PCjr. As an extra bonus, there is a fix to run Chuck Yeager's very hot selling program **Advanced Flight Trainer** on the PCjr.
**A86 Assembler 3.07 and D86 Debugger 2.24 (#100):** Both of these famous programs come on this diskette. Written by Eric Issacson, A86 is a full-featured, fast assembler and D86 is a full screen debugger with powerful commands and features.
**GAMES (#101):** two great new games: SKYRUNNER, a challenging arcade game with impressive graphics, and MONOPOLY, a new version which allows full viewing of the game board, good color, and better game play.
**AMANDA'S LETTER LOTTO (#102):** Quite possibly our best educational diskette in our library. Contains 12 games for the pre-school child and features dazzling colors and graphics.

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# The Junior Report

*The perfect gift for the PCjr owner who has everything. Give 12 months of* **The Junior Report.** *If you know someone who loves his PCjr as much as you do - the best way to show your love is with a gift subscription to* **The Junior Report.** *Your friend or relative will gain a year's worth of insights, reviews, and reports of the PCjr world. It's a PCjr survival kit for just $18. a year. They'll love you for it.*

*And it's easy to do: just fill out the form to the right, include a check or money order, and mail it to The PCjr Club, Gift Subscriptions, 1121 Tower Rd., Schaumburg, IL 60193. We'll also send you attractive cards announcing your gift for you to send to your friends. Remember: It's 12 presents in one!*

The Junior Report

Borland Responds to PCjr Demands

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## Public Domain and Shareware Ordering Form

**To order any Public Domain disk, please send $5.50 (U.S. Currency) for each program ($10.00 for non-members) which includes shipping and handling and send to: The PCjr Club, Public Domain, 1121 Tower Rd., Schaumburg, IL 60193. Please allow four weeks for delivery. All orders outside of the United States and Canada, please include $10.00 (U.S.) per order.**

***Please circle one or more below***

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94
95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119

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***Check here if this order has six programs or more for FREE diskette holder*** _____

*Must use before January 31, 1988.*

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**ORDER FORM ON PAGE 29.** **Don't forget the new programs on page 28!!**

**PC FILE III (#1):** the classic, updated, full-featured database program that has set the standard for shareware programs. Considered by many to be better than most commercial programs. Version 4.

**PC WRITE (#2):** this best-selling shareware program is equal to or better than most word processors on the market. This is the latest version (2.55) and will run on the single drive, 128K PCjr.

**PC TALK (#3):** PCjr adapted version of one of the most popular communications programs.

**HOME MANAGEMENT (#4):** a reliable, general purpose financial manager.

**MONOPOLY (#6):** Colorful, electronic version of the most popular board game in history. **Requires 256K.**

**KIDS (#7):** a special children's disk composed of a kid's word processor, an intermediate math program, and a colorful counting game for the preschooler.

**PC-KEY-DRAW (#9):** the most powerful graphics program available in shareware. **Requires 256K.**

**GAMES (#10):** one of the best selling game disks has Combat, Dungeons & Dragons, & Global THermNuclear War.

**PC TUTORIAL (#12):** a course in computer and the PC-DOS environment.

**PC OUTLINE (#17):** an easy-to-use outlining program that's a must for writers and aspiring writers.

**EDUCATIONAL GAMES (#18):** features math exercises, thinking programs, and the classic Flashcards.

**LABEL MASTER (#19):** the original label making program has a variety of uses. **Requires 256K.**

**GAMES (#24):** Poker games, Battleship, Land Mines, Fire, Grime, and Hostages.

**IMAGEPRINT (#25):** A must-have printer utility that makes your dot matrix into a lean, mean, quality text producing printing machine. Can proportionally space text. Requires an Epson or IBM compatible printer.

**QMODEMjr (#26):** a special PCjr version of the popular communications program, allows easy access to BBS's.

**PC-LEDGER & PC ACCOUNTS RECEIVABLE (#27):** A very good business manager for the small and home business. **256K.**

**EZ FORMS (#28):** Create and print custom forms to fit every need. A business neccesity. **Requires 256K.**

**PC-STYLE (#29):** Written by Jim Button, helps improve your writing skills by analyzing your writing style. Easy to use, it wakes up your documents or prose, making your writing more readable and stylish.

**VISIBLE-PASCAL (#30):** A special version of Pascal for novice Pascal programmers.

**PC-CALC (#31):** A "visible" spreadsheet program that challenges those offered commercially. Income tax computations, calculating depreciation, computing loan interests, or just plain balancing your checkbook are just some of the chores this program can handle.

**PC-GRAPH (#34):** Also by Jim Button, create an assortment of graphs from databases such as PC-File, or spreadsheets. **192K.**

**DOSAMATIC (#35):** No, it doesn't slice and dice onions, but it is one heck of a DOS utility, that includes multi-tasking abilities, debugs, sorts, and much more.

**PC-DESKMATES (#36):** A memory resident that includes an alarm clock, phone book, calendar, notepad, and printer commands.

**GAMES (#38):** Frogger, Wa-Tor, R-Logic, and Zaxxon, among others.

**GAMES (#39):** Includes Yahtzee, Chess, Slot Machine, and Wizard.

**GAMES (#40):** How about a game of CoreWar, Keno, Othello, or Golf?

**GAMES (#41):** Features Striker, an arcade-style helicopter attack game that will make you swear you're in a real arcade. Also has Catacombs of Nemon, and JumpJoe.2 (A donkey Kong lookalike) **Requires 256K.**

**GENEALOGY (#42):** Contains both informal format and LDS format for you to see if you are related to the Czar of Russia.

**TRIVIAL TOWERS (#45):** Trivial Pursuit in a computer form, has six catagories from which to choose, or write your own questions and answers. **TWO DISK SET - $9.00. Also requires either RAMDISK or 2 drives.**

**GENERIC ADVENTURE GAME SYSTEM (#46):** Create your own exciting, adventure world where you are the hero or heroine. You supply the imagination and GAGS does the rest. **TWO DISK SET - $9.00.**

**ULTRA UTILITIES (#47):** features U-File, U-format, and U-Zap in a powerful collection of programs that will allow you complete access to the power of your PCjr DOS operating system and of your PCjr disk drive controller circuitry.

**CASHTRAC 5.15 (#48):** an excellent program intended for use by the household manager, club treasurer, small business, and expense account keepers. **Requires 256K.**

**PCjr UTILITIES (#49):** special utilities for Junior includes a print spooler, two text editors, and a program that can create special PCjr keyboard templates for WordPerfect 4.1, Reflex, PC-Write 2.55, and others.

**GOOD HEALTH (#50):** features PC-Recipe, a fun program that maintains recipe information, and allows you to display, update, add, change, and re-calculate recipes. Also has BioRhythm and ELIZA, the "artificial intelligent" companion.

**TUNE TRIVIA (#52):** Quick, for one thousand dollars, NAME THAT TUNE! For up to six players.

**GAMES (#53):** arcade-style games featuring Warrior, Empire, and Wumpus. **Requires 256K.**

**GAMES (#54):** play arcade-style, 3-D 3-DEMON. and also Afghanistan, Dominoes,and Hostages. **Requires 256K.**

**PROCOMM 2.42 (#55):** This has become the new standard in Public Domain communications software. Powerful and easy-to-use, this version is the one that works well on the Junior. **Requires 192K. TWO DISKS - $9.00.**

**GAMES (#56):** Includes three casino games led by Las Vegas Style Craps that includes its own tutorial, three text adventure games, and an assortment of other arcade games that should keep everyone busy.

**Jr MUSIC MACHINE (#57):** One of two music programs on this disk, this program lets you play and see music simultaneously, and utilizes Junior's special sound capabilities.

**GOLF HANDICAPPER (#58):** Allows you to compute, store, update and print golf stroke handicap information for up to 75 players, using the handicap formula established by the USGA.

**PC-FONT (#59):** A utility program which enables your Epson or IBM Graphics printer to print a variety of fonts that includes block graphic, engineering, scientific, foreign language, and other special characters.

**SLEUTH (#61):** A murder has just been committed, and your job is to mingle with houseguests, search the house, and solve the crime. Every game is different. If you like the game of CLUE, you'll love SLEUTH.

**SAN MATEO EDUCATION (#62):** Educational games for children 12 years and older. Includes scramble, states, nations, chemist, and many more.

**BUTTON GAMES (#63):** Includes Buttonware educational and adventure games SOUTH AMERICAN TREK (You are a special investigator for the Federal Geographical Magazine and you have been sent to gather information about each country in South America. Your travels will take you from one end of the continent to the other where you will be picked up by a friendly submarine), and CASTAWAY (You are shipwrecked in the Pacific, slowly drifting through the fog until you find a deserted island. There you find countless treasures, but they are worthless if you cannot return to civilization. Will you be able to get off the island?)

**PC WRITE 2.7 (#64):** Newest version of best selling Public Domain word processor. Now has Spelling checker. **Requires 256K. Two disks $9.00.**

**THE DESIGNER (#65):** a fantastic programming tool for BASIC users working with animated graphics on the Junior. You can draw on the screen in color, store your work in either "screen" or "sprite" form, and recall it later to make changes.

**MR. LABEL (#66):** many business and home uses - can create everything from simple reports to custom labels, prints envelopes, letterheads, price tags, ID badges, file folder labels, name tags, inventory slips, and much more. Will also retrieve and print information from databases such as PC-File and dBase III+. **Requires 256K.**

**QFILER (#67):** the famous file maintenance utility that also prints up its own function key template. **192K.**

**GAMES (#68):** includes PC BOWL, Backgammon, and NIM.

**SIDEWRITER (#69):** Prints text files sideways. A must for spreadsheets that cannot fit into 80 or 132 columns across.

**DUNGEONS AND DRAGONS (#70):** The most popular of all games in this genre, this will place you in a world where the fantastic is fact and magic really works.

**BEYOND THE TITANIC (#71):** Enthusiasts of Infocom's famous text-adventure games will find this as exciting as Zork or Planetfall.

**PC-CHESS (#73):** A true, stand-alone chess program that will challenge you like no other program before. This is a full-color multi-featured program that can run on a 128K Junior.

**JAPANESE (#74):** An introduction to this fascinating language. May be important to the businessman or traveler.

**PC-FILE+ (#75):** Power-pack update for the most popular shareware program of all time. **2 Disks - $9.00.**

**PINBALL II (#76):** For all pinball wizards and non-wizards. Provides hours of challenge. Requires a joystick.

**MAHJONG (#77):** One of the most popular games in the world, it employs extraordinary graphics, and has extensive documentation for the beginner. Color only for Racore owners.

**AMY'S FIRST PRIMER - PCjr Version (#78):** This is probably the best collection of educational games in the world of Shareware for the pre-school. Includes sing-a-long alphabet, letter-matching game, numbers-matching game, among others. Colors are spectacular.

**ORIGAMI (#79):** Brings the ancient art of paper folding to your Jr world. Create rabbits, jets, penguins, samurai helmets,etc.

**BIBLEQ (#80):** Bible trivia covers a wide range of topics such as geography, personalities, incidents, and teachings.

**JRCONFIG.SYS (#82):** Updated version of JrCONFIG.SYS & CONFIGJR.SYS. The only must have utility for ALL PCjr owners. The most powerful and flexible software for getting a PCjr to run with expanded memory and additional disk drives. The list of special PCjr features is too lengthy to print here.

**1-2-3 WORKSHEETS (#83):**Among others,loan amortization, check book manager, etc. **Req. 256K, 2 dr, & Lotus 1-2-3**

**WORLD STATISTICS (#84):**Simple, menu-driven database of statistical and demographic information about the nations.

**PHRAZE CRAZE (#85):** Like Wheel of Fortune gameshow, easy to learn and play. Great fun for the whole family.

**EMS & MAROONED (#86):**EMS is a employee management program that uses responses to descriptive statements, then analyzes them and prints out a 5 page report on the personality. Marooned is a text-based adventure game on an alien planet.

**EXTRA SENSORY PERCEPTION (#87):** Tests your ESP quotient. It makes for a very interesting time as you test yourself or your friends. This disk also contains a couple of versions of the game PAC-MAN for both monochrome and color systems.

**PC-DOS HELP (#88):** Good instruction and provides an on-line help capability for those DOS commands - just type HELP and the selected command for doing something. Two level explanations plus special batch files demystify the learning and usage of DOS. Special attention is given to the PCjr owner.

**MAKE MY DAY (#89):** A complete, computerized time management system for the PCjr owner. It contains an appointment calendar, a job scheduler, a time log, and an expense account manager.

**MEALMATE and others (#90):** Mealmate is a planning aid for people preparing meals for someone on a carefully controlled diet. Mealmate is the indispensable guide for anyone preparing meals that have to meet strict dietary requirements.

**THE GOLDEN WOMBAT of DESTINY (#91):** One of the better all text adventure games in our library. Your quest is to discover the Forbidden City of the Great Lost Empire and unearth the mysteries it contains.

**MATH TUTOR (#92):** This elementary grade level tutorial supplies age-graded exercises and tests for a variable student body, and can be redesigned for special problems. It is fun and easy. For grades 1-6. **BASIC required.**

**FOOTBALL POOL MANAGER (94):** written by fellow PCjr owner and loyalist Andy Kunz. This software program performs all of the tedious work that is involved with running a football pool such as generating the weekly pick sheets (+ and - odds), summary spreadsheets showing everyone's picks, and standings reports, among others. This has good documentation.

*(Continued on page 28)*

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