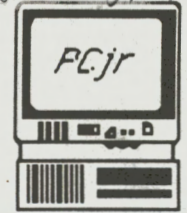


The Junior Report[®]



September 1988 Volume 4 Number 9

The National Newsletter for PCjr Owners

Is The IBM PCjr Finally Dead?

R.I.P. ?



Don't read this critical article on the future of the PCjr if you are weak of heart, but one reader thinks the time has come to put Junior out to pasture.

It is the responsibility of any computer magazine to present opposing views and what follows represents the view of one reader and does not represent the views of The Junior Report, but does illustrate some of the limitations of the PCjr. It is good for all PCjr owners to realize these limitations and to make their own judgments as to the future of their own machines. See if you agree or disagree with professional writer Hugh Taylor - is the IBM PCjr finally dead?

this, there is some good news for everyone who has based his or her computing life around DOS and has shuddered at the thought of having to one day switch over to the super elaborate and ultra-expensive Operating System-2 (O/S-2): It looks as if DOS is alive and well and has a long, long life ahead.

The first announcement came from INTEL, those wonderful people who started the first PC Revolution with the development of the 8086 and 8088 CPUs back in the 1970s. INTEL, it seems, has never been happy with the 16-bit 286 which they have admitted was only an interim step in the development of the multi-function capable, super high-speed 80386. But the computing public has been understandably reluctant to accept the 32-bit 386 machines. Though they have sold well in the corporate market place, non-commercial users have shied away from (a) the price and (b) the lack of software that would really

Two items which appeared in major computing magazines in June would seem to indicate that the erratic and sometimes story era of the PCjr is over - even for the diehards who have loyally and stubbornly clung to it for years. If the two technological advances heralded in *PC Magazine* and *PC World* come to pass - and there is every reason to believe that they will - the whole first generation of IBM PCs and PC compatibles, including the jr, the plain vanilla PC and the XT will fade from the scene.

At first glance, neither announcement seems to have much to do with the 8088-based generation of computer, but just as the PC and its DOS operating system killed the CP/M computer, the handwriting is on the wall for the 8088s.

However, in the midst of all

Contents

<i>Is the PCjr Finally Dead?</i>	1
<i>Editor's Notes</i>	2
<i>Letters</i>	4
<i>Managing Your Money on the PCjr</i>	8
<i>Adding a Reset Switch to the PCjr</i>	10
<i>Looking At Jr's Video Display - Part II</i>	12
<i>A Cure For "Smearing"</i>	24
<i>Classified Section</i>	26
<i>Eye on Shareware</i>	28

(Continued on page 18)



By Harrison Day

New vendors, old vendors, more PCjr hardware

As we head to a close to another year, all PCjr owners should take time out to thank the powers above for another year of PCjr survival. We're still alive and kicking, and kicking pretty solidly. There still seems to be an ample supply of PCjr parts available with the only problem being that of finding them. In that quest for all things PCjr, we at The Junior Report are fortunate to have those who have call and write to us who have not jr supplies. Such is the case in this month's column.

George Suppes of PC Dimensions (2700 56 St., N.W. #1-4, Rochester, MN 55901, (507) 288-1396) is one of the haves. George has several PCjr items for sale, one of which is the Tecmar JrCaptain Plus with 512K, parallel port, clock/calendar, and Tecmar's Treasure Chest of utility software. This expansion sidecar is being offered to readers for a discounted price of \$275., which isn't too bad of a deal

considering the cost of memory chips at this time. However, with the uncertain market in memory chips, it would be wise to call George for the exact cost and availability of the board. PC Dimensions has other products as well at discounted prices, so get a hold of George for more information and a list of other PCjr supplies that is available to the PCjr owner.

Another PCjr product vendor that we have learned about is Micro Products Corporation (6914 South 3000 East, Suite 104, Salt Lake City, Utah 84121, (801) 942-1396. Some of the products that they stock are sidecar memory expansion boards with or without real time clock/calendars, and printer ports with or without clock/calendars.

And then suddenly out of the Great White North comes Don Macmillan (P.O. Box 2623 Station D, Ottawa, Ontario, Canada K1P 5W7, (613) 749-1232) who also has many PCjr items to sell. Among other things, Don has power attachments, IBM PCjr parallel printer ports, joysticks, basic PCjr CPU's (64K, no disk drive), cassette cables, PC monitor to PCjr adapter cables, enhanced

keyboards, a few PCjr color monitors, Lotus 1-2-3 for the PCjr, 1200 baud external modems for the PCjr with the correct serial adapter cable, BASIC cartridges, and Tecmar expansion sidecars. For exact prices and a list of what is available, write or call Don for details.

From the old vendor department, Richard Byron of Computer ReSet in Texas (old in PCjr service and not age, Richard), P.O. Box 461782, Garland, TX 75046, (214) 276-8072, has acquired several hundred PCjr's which are already adapted to a LAN (local area network) system, and will soon make them available to individuals and schools who need them. If you can't wait, call ReSet for more information about the Juniors and the networked systems.

Another old PCjr vendor, Paul Rau of Paul Rau Consulting (260 N. Lincoln Way, Galt, CA 95632, (209) 745-9284, has come up with another new product for the PCjr owner. This time it's a PCjr cartridge slot adapter that allows two cartridges to access one jr cartridge slot. With the proliferation of many new PCjr products that utilize the

(Continued on next page)

The Junior Report

A Publication of The PCjr Club

EDITOR

Harrison Day

ASSISTANT EDITORS

Dolores Jack

Robert Murdoch

MANAGING EDITOR

Marilyn Dai

CONTRIBUTING EDITORS

Blair Bieser

Jim Booth

Ari Feldman

Tim Hallen

Jim Prossick

Jim Streator

John Van Dyck

John Wilson

Vincent Yuan

SUBSCRIPTION SERVICES

Marie Tabers

SHAREWARE COORDINATOR

D. Glanville

TECHNICAL ADVISORS

Brian Cook

Jacqueline B. Leddy

The Junior Report is published 12 times per year by the PCjr Club, P.O. Box 59067, Schaumburg, IL 60159-0067. Though we make every attempt to verify the accuracy of the statements and articles in this publication, the publisher, editors, or writers accept no responsibility for the accuracy or the reliability of the information in The Junior Report. In other words, we are not responsible for anything that may occur to you or your equipment. In fact, if you know of any other good disclaimers, let us know. We collect them. Reprint permission is freely given to any PC or PCjr user group publication provided proper credit is given to The Junior Report. IBM and the PCjr are registered trademarks of the International Business Machines Corporation, and is not affiliated with The PCjr Club.

EDITOR'S NOTES....

(Continued from previous page)

cartridge slots below the disk drive openings on your PCjr, this product seems like a natural. It is called the Cartridge Extender, and costs \$25.

Look for an announcement of another new dynamite product for the PCjr in next month's issue.

And here is some news for the PCjr owner about those PCjr CPU units that were going to be sold for \$150. Well, it is our sad duty to inform you that the units have been put on hold. The company who has these units is The Greystone Company (1820 Greystone Court, Suite #20, Marietta, GA 30068, (404) 642-8426. They have reconsidered their position (for no apparent reason) and will not sell the units to individuals, but might sell them en masse to a qualified buyer. Give them a call if you have some spare change lying around. Better yet, send the spare change here in care of Harrison Day.

What happens if your Junior breaks down? Well, naturally you would check out the local computer repair shop. However, more often than not, they may not have the PCjr expertise and knowledge to satisfy the jr owner. Art Thomas (611 Buckskin Drive, Round Rock, TX 78681, (512) 255-5739) will repair and replace as required all PCjr products including the PCjr color monitor at very reasonable prices. As a jr hacker and fanatic, he has acquired a large quantity of surplus PCjr

parts (such as motherboards, diskette drives, power supplies, etc). If you are looking for bargains in parts or service, try giving Art a call. And that's it for vendors for this month.

A lot of you have written about the PCjr compatibility of Microsoft's Flight Simulator 3.0 which sports superior graphics and EGA capability. Well, it certainly runs on the Junior (Praise be to God), however it does so in only a 4-color CGA mode. There are people working on getting our share of 16 colors for this great program, and I am confident that you will soon see all of them on your PCjr color monitor. So hang in there, start your engines, and be sure to buckle up before you fly.

We know we will upset some readers and PCjr loyalists with this month's cover article. But it's sometimes good to hear all viewpoints, complimentary and critical, which in the long run, will make your computing life more productive. It is our duty, of course, to make the PCjr as productive a computer as we can; I think everyone from writers to readers have done an outstanding job in keeping the Junior from becoming obsolete, and personally, I think the Junior and the PC have quite a few years left in them. To these goals, we meet monthly - not to bury the jr, but to praise it.



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.

SMALL BUT ACTIVE PCJR USERS GROUP

I chair the Columbia SC PCjr users group, the Jr offshoot of the biggest Palmeth PC Club, and have been receiving your newsletter for almost two years now. It is by far the best available. Thanks for making it available (it is shared by our whole group on a monthly basic).

We are small only about 13 members (the PPCC has an 800-1000 person membership total), so we do not publish a newsletter. But then why should we when a great newsletter like yours is available!

Thanks again,
Stephen A Burger
Columbia, SC

Thanks for the compliments. We gotta stick together you know. If anyone in the area would to join this wild and crazy group of juniorites, write to Stephen at 1625 Charleston HWY, P.O. Box 3200, Cayce-West Columbia, 29171-3200 for more information. You are not alone.

THE EASY WAY OF DOING IT

May I make a jr. suggestion? Why not print the order form for

shareware disks on the lower part of the inside back cover of The Junior Report? This way your subscribers would not have to make copies or lose some text by cutting it out of the inside pages of the Report. Also you would have the subscriber's address label on the back of the order form in case there was any problems reading the name and address on the order form.

The last good suggestion I had was when I suggested to myself to subscribe to The Junior Report. I hope this one will be as beneficial to you as that was to me.

Paul Burke
Philadelphia, PA

Sure, Paul, that would be the EASY way of doing it. Actually with all kidding aside, it is a great idea, and, of course, it took a smart PCjr owner like yourself to come up with it. Now, Paul, got any good ideas about investments?

ANOTHER GOOD IDEA

I fully understand that the PCjr Club does not have the staff to answer a volume of telephone calls from members, but would you consider putting in an answering machine? You could publish a standing item in The Junior Report regarding the types of calls to which you could respond (by mail or collect call). This qualification could also be put on your answering machine message. On several occasions, I've just wanted to know whether you actually received it or not (and if so, when shipment might be expected). It's not my intent to be critical of the time it takes for you to fill an order. All I'd like is some means of finding out whether the mail made it to Schaumburg, and if so, where my request stands among the many you must receive.

Thanks, and keep up the good work!
Bill Parker
Corpus Christi, TX

That is an excellent idea, so we have starting using an answering machine when no one is on line for "live" calls. As before, the line (312) 310-9033 is reserved for the following:

1. Sample requests
2. Subscription problems
3. Questions regarding the status of reprints, shareware, or expansion upgrade orders.

The line is not available for technical questions about the PCjr. Let's give it a try and see if it helps.

Q&A OKAY FOR PCJR OWNER

I wish to extend a million thanks to Mr. Clyde Dodge of Mountain View, California for sharing the keys for unlocking the IBM Assistant series Programs in the June/July issue of The Junior Report.

I like operating from my hard drive and it was quite frustrating not being able to copy the IBM Assistant Program to, and run it from my hard drive. The program could be run from the hard drive with the working copy in b: drive and an appropriate batch file. This letter, however, is being composed using Symantec's Q&A Write, version 3.0, which also works well with the PCjr and has many more features than the Writing Assistant.

In case you're interested, my PCjr system is equipped with the Tecmar jrCaptain, jrCadet, enhanced keyboard, b: floppy drive, SPC 20MB hard drive and, an antique, TRS-80 Line Printer VIII graphics printer. Except for the lack of DMA, I think the SPC Hard Drive is excellent, as well as the support provided by Bob Richard at SPC.

Last, but certainly not least, thanks

and a 'tip o' th' hat' to you and your entire Junior Report staff for the professional job that you are doing in producing such a superb, dedicated newsletter as The Junior Report. While I still have the floor, thanks to all of the PCjr contributors for sharing their expertise. The benefits that I have enjoyed from the many tips and editorials in The Junior Report have been a hundredfold.

Charles Wess
Columbus, OH

You bring up a very good point, Charles, what is a good next word processor for the PCjr owner who wants the ease of his trusty Writing Assistant added to more features. We agree with you that Q&A Write fits the bill quite nicely. In fact, we like the Q&A program of integrated software a lot also.

We also would like to thank you Charles for writing. The Junior Report has always been a joint effort of writers and readers who have come together to keep the PCjr a productive machine. I think at this junction in time, we, and I mean all of the PCjr owners, have succeeded and have surprised many a critic. As the famous sage Harrison Day once said, "We come not to bury jr, but to praise it." I think it was in this issue.

FANTASY SPORTS

I recently purchased a copy of a program from Potato League Sports that will setup a sports league and track results. This was advertised to operate on a PC or compatible with 256K. Since Fantasy sport leagues are played heavily in my area, it looked like a natural.

I have a PCjr boosted to 640K and duel disk drives from Racore. When I booted the program, I got "program too large for memory". I tried every combination for the autoexec.bat and config.sys files and still could not get it to

work. I was about to the point of giving up on my Junior.

I called Shawn at Racore and tried the combinations that he suggested, all to no avail. I sent him copies of the program and my DOS 2.1 booting disk. About a week later I called back and low and behold, he had it figured out. If I would boot with DOS 3.1 or 3.2 it works fine. My biggest thank you to Racore for all their help. I think I'll keep my Junior.

This program tracks several different sports and Fantasy sports seem to be the rage now. In talking with Potato League, this program will be sold nationally about January. I hope this helps any prospective jr buyers.

Lee Vaughn
Nashville, TN

You bring out one of the frustrating things about being a PCjr owner - that sense of uncertainty at times about PC compatibility. The PCjr is a good machine (a great machine for what most of us spent for it), but we do have this compatibility complex. Fortunately, more often than not, there is some kind of cure for the symptoms, usually in the form of changing the offending program itself through the use of patches, changing our "boot up" disk with another memory configuration scheme such as the jrconfig.sys program, or changing the DOS we are using. Since we don't have the program itself, we're wondering whether it is the bug in DOS 2.1 that may have hung you up. In any case, congratulations on the success and thank you for letting us know about the program.

DBASE III PLUS BLUES

I love my PCjr (still), but have had no success at getting dBase III+ to run on my Junior. Can you please point me in the right direction to obtain the necessary command modifications?

My junior has the Racore Drive II with DMA. Thanks.

H. Woodall
Houston, TX

dBase III PLUS version 1.0 will not run on the PCjr. However, version 1.1 will provided you have over 384K of memory.

DESPERATELY SEEKING PCJR USER GROUP

Of first priority. let me go on record to say how much I enjoy The Junior Report. Also to thank you for the buildup in esteem I get being an IBM jr owner and user much through the efforts of The Report.

I wonder if you could help me to find a user club in my vicinity. Temple City is just south and east of Pasadena. That puts it in the west San Gabriel Valley. Los Angeles is about 10 or 15 miles west.

If there is none that you know of, and I have researched the subject a bit, maybe you or one of your readers might suggest a way to get one started.

Thank you for your attention to this matter.

Jack Schmitt
Temple City, CA

We do not correspond with any PCjr user group in your area, however we know for a fact that there are a lot of PCjr owners in the greater Los Angeles area. Look in the local newspaper for community bulletins about the meeting times of PC groups. Often they will have PCjr SIG's (special interest groups) for the PCjr owner. Also check out the local library and computer stores in the area because they have access to the existence of various meetings. Finally, IBM has a number (404) 988-2782 in Atlanta that will provide the whereabouts of

many clubs across the country.

PCJR OWNER ADDS 3.5 IN. DRIVE, KEEPS PANTS ON

I recently added a 3.5 inch drive to my Junior but might not have done so if I had first read Dennis Rome's article "Adding A 3.5" Drive To Your PCjr" in the March 1988 Junior Report. Mr. Rome mentioned his encounter with the poor documentation for installing and starting the system, removing the chip, shaving plastic, and even mentioned a source for purchasing a replacement chip if you damaged yours in the process. All that for \$295.

That article scared the pants off of me!

My Junior has 640K via a Tecmar Captain and Cadet. It has an AT keyboard and a Hayes Smartmodem plugged into its serial port. This left the internal modem slot open for my 3.5 drive card.

The system I purchased consists of an enclosure with the 3.5 inch drive and power supply. Extending from the back of the enclosure is a flat ribbon wire with a connector at the end, another connector mounted halfway up and a carefully packaged driver card. Installation was a snap. Instructions were included but not really needed. I anxiously unplugged the ribbon connector from the back of Junior's 5.25 drive and plugged it into the new modem card. Then I took the ribbon wire extending from the back of my new 3.5 inch drive and plugged the end connector into the top of the new modem card and plugged the middle connector into the back of junior's 5.25 inch drive. All that remained was to plug the new modem card into the slot. The whole procedure took less than five minutes.

A driver file, which was included,

was copied to my boot disk and the DOS 2.1 COMMAND.COM was replaced with a DOS 3.2 COMMAND.COM. The CONPCJR.SYS command in the autoexec.bat file was changed from CONPCJR -P2 -L to CONPCJR -P4 -L in order to read DOS 3.2.

I attempted to replace the CPU cover, but didn't like the way the ribbon wire was being crunched as it exited the cover. A quick shave job to the lip of the cover gave the ribbon wire the freedom it should have.

I booted up and tried the new drive.

I booted up and tried the new drive. It ran surprisingly quiet, fast, and flawless, and still does....and I kept my pants on.

It ran surprisingly quiet, fast, and flawless, and still does.

All that for five minutes, \$219.95 and.....and I kept my pants on. The source? True data Products Inc., 115 South Main Street, P.O. Box 347, Uxbridge, MA 01569, (617) 278-6555.

A. Piano
Sparta, NJ

Well, Mr. Piano, that would have been the EASY way. Thanks for letting us know of your extremely happy experience with installing a 3.5 inch drive. It always nice when the PCjr owner has many sources to ex-

pand the capability of their lean, mean computing machines. And let me personally assure you that we are happy you kept your pants on.

KANAWATI-ED AGAIN

Has anyone told you today how wonderful you are??? After all these years...finally...the day has come, the day I have dreamed of is here: My Writing Assistant runs entirely from memory, quickly, silently, smoothly. I'm so happy. You're wonderful!

I also wanted to tell you that I am pleased to see nifty little utility programs in your publication. You guys are getting better and better all the time....except maybe your spelling. I mean, you've got "supersede" down pat now, I'm proud of that. But in the "Stars, Stripes, and the PCjr" letter (June/July issue, p. 10) you had a terrible time with "personal" (belonging to a person), "personnel" (a bunch of people), and "personnal" (no such word, as any spellcheck program will tell you). Even if it was the author of the letter who couldn't spell, you the editor are supposed to polish these things up (maybe you didn't know that). Or else put "(sic)" which means, "I, the editor, know that this is wrong, but I'm leaving it the way it was written on purpose."

Hey, you don't have to thank me. You do so much for me, I'm glad to help out! Seriously, June/July was without question the best issue yet, for a lot of reasons. I look back to my first issue - May '86 - and I see a tremendous difference.

Dianne Kanawati
Casselberry, FL

You know, Dianne (with two n's), spelling everything correctly would be the EASY way. I, as the editor, follow the editorial philosophy of live and let live, which means that,

"I, the editor, know this is wrong, but I'm leaving it the way it was written because to correct it would require me to think of the correct spelling and that would take much too much effort for the editor, and besides, it's my newsletter anyway." Now if any kids are out there reading this, don't try this at home - remember, we're professionals. On a serious note, Dianne, whenever we receive a letter from Casselberry, Florida (or is it Castleberry?) no one opens it, and it is quickly passed from one desk to another, usually in the form of a paper airplane. But be assured that after sufficient refreshment at the local pub, someone will open and read your letter, and at which point the guilty party is routinely whipped with a PCjr serial adapter cable. No one in his right mind wants to be Kanawati-ed. In closing, Dianne, we are always happy to hear from you, but remember one thing - we know where you live.

Owl Software



1435 Burnley Sq. N., Columbus, Ohio 43229
(614) 436-0219

JrHOTSHOT MEMORY UPGRADES —

256K w/CLOCK AND CAL \$190.00
256K MEMORY ALONE \$154.00

512K w/CLOCK AND CAL (CALL) w/2nd DRIVE (CALL)
512K MEMORY ALONE (CALL) w/2nd DRIVE (CALL)

RAM DISK SOFTWARE included free. Shipping is \$3.50 memory or \$7.00 memory + drive U.P.S. ground add \$2.50 if C.O.D.

COMPLETE 2ND DISK DRIVE ADDITIONS — Starting at \$187.95

2ND DISK DRIVE ADDITION KITS — \$44.95 Drive hardware available.

STAR NX-1000 PRINTERS 144 cps draft, 35 cps NLQ-\$189.95 plus shipping.

MODEMS 300/1200 BAUD HAYES COMPATIBLE — \$139.95 plus shipping, cables are available.

MEMORY SIDECAR UPGRADE INSTRUCTIONS — IBM and Microsoft 128K to 512K instructions. \$6.00 plus \$1.50 shipping.

V20 CHIPS w/INSTRUCTIONS just \$16.50 plus \$3.00 shipping.

PCjr JOYSTICKS — \$27.95 OR 2 FOR \$54.00 plus \$4.00 shipping.

MANY SPECIALS EACH MONTH PLUS
MORE HARDWARE AND SOFTWARE
Call or Write for your **FREE**
1988 SPRING CATALOG

Make someone really happy: give a gift subscription to

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 \$20.00 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, P.O. Box 59067, Schaumburg, IL 60159-0067. We'll also send you attractive cards announcing your gift for you to send to your friends. Remember: It's 12 presents in one!

TO: _____

TO: _____

FROM: _____

FINANCIAL BESTSELLER COMES TO JUNIOR

Editor's Note:

The 128K version of *Managing Your Money* is still available from some software outlets. However, many PCjr owners prefer the PC version which runs on the PCjr with enough memory.

The article to the right is reprinted with the permission of the Ziff-Davis Publishing Corporation.

Andrew Tobias adapts popular program for PCjr cartridge

By Michael Antonoff

Andrew Tobias' *Managing Your Money*, a home financial package available for the past year as a three-disk program for computers with at least 256K of random-access memory, has been reintroduced on two disks and a cartridge for PCjrs with 128K of RAM. Originally marketed by Micro Education Corporation of America, the new version is from IBM Software.

The \$199 disk-and-cartridge version is "functionally identical" to the original, according to Pete Polhamus, an advisory planner in the Lifestyle Products Division of IBM Software. "Ours will run somewhat faster in the Junior

version because of the use of the cartridge," he says. The basic driver program, which shuffles screens and controls the database, has been put on the cartridge. On the disk are the application programs and user data.

Gerald Rubin, president of MECA, adds that the Junior version is "slightly more advanced" because it incorporates 1984 tax law changes. Rubin is also the systems designer and one of the programmers on the original software.

Andrew Tobias' *Managing Your Money* is an integrated financial-planning program for tracking income, expenses, and investments. The hundreds of information screens included on the software were written by Tobias, a columnist and author of *The Only Investment You'll Ever Need* and *The Invisible Bankers*. The extensive on-screen help, which pops up whenever you hit Esc, demonstrates why the introduction to the program's spiral-bound manual is titled "Why This Manual is So Short." The program itself will prompt novice users on everything from disk-copying procedure to identifying the cursor.

By the Book The program is pre-

sented like a book, with a preface ("Hello, New User"), seven chapters of applications, and an index. Data entry is primarily made in the "Budget and Checkbook" and "Portfolio Manager" chapters. This data carries over into other areas. For instance, if you write a check to "Dr. Bob," you won't have to tell the "Income Tax Estimator" chapter that you have another \$50 medical deduction or "Your Net Worth" that you're 50 bucks in the hole. The other chapters are "Reminder Pad," for keeping abreast of when to sell that stock or open an IRA; "Insurance Planning," to help you figure out how much coverage you need, as well as how many more years you can expect to live (no guarantees on this one); and "Financial Calculator," to plan car loans, mortgages, and long-term returns on investments.

A Junior with 128K should be able to accommodate approximately 100 checks and budget categories, 100 portfolio items, 200 reminders, and 250 asset/liability categories at one time.

Besides the ability to print checks—fairly standard for these types of programs—*Managing Your Money* is laden with bells and whistles. Once you've booted DOS, a digital clock in the upper right corner of the screen will provide a continuous readout down to the second. Any time you want to do a fast multiplication or addition, one stroke produces pocket calculator



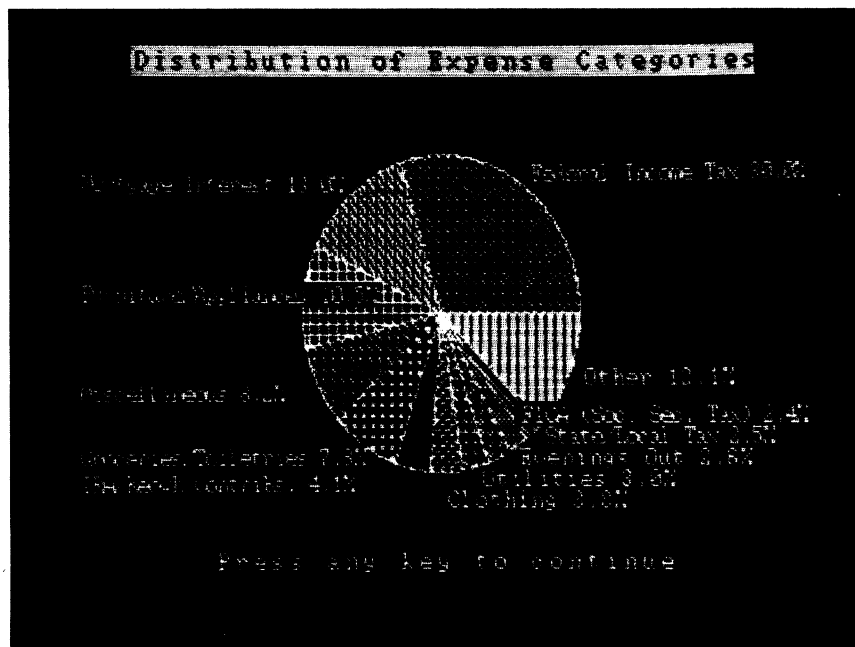
Tobias' program also comes on disk.

functions at the bottom of the screen. Totals can be automatically transferred to the data entry screen.

The program comes with 10 preset color combinations. Striking one of the function keys in the "Hello, New User" portion of the program will turn that text from green on blue to yellow on red. (I chose the latter combo to warn people to keep back. You may want to pick something more subtle.) The program also can play one tune, "Swanee River." Rubin calls it an "effluvial sound effect" representing cash flow.

Good Humor *Managing Your Money*

Managing Your Money can chart a family's expense categories.



is awash in humorous text. The index, a glossary of financial terms and function key sequences to get you to a particular screen, includes a listing for "Fake Disks for Cocktail Parties." The entry states: "If you want to show your friends how the program works without letting them see how rich you really are... or aren't... just make up a new set of disks and fill it with harmless understatements or exaggerations. When guests come, you can pretend you left the machine on by mistake."

Curiously, this idea of "But what will other people think?" was the reason that hours earlier, I had pondered over whether to save or erase my income tax file on the copy of *Managing Your Money* we were using at *PCjr Magazine*. No one needs to see how much... or how little... I make, I had told myself, and pressed the quit-without-saving key.

The "Income Tax Estimator" chapter, by the way, has a built-in tax table to compute your tax and bracket. (I defy your wristwatch calculator to pull that one off.) And even if you've typed in S for "Single" (the program is smart enough to fill in the "ingle"), you can play around with a J for "Joint" return.

Speculation "The program is good for 'what-ifs,'" explains Polhamus. "It does not print out in a form accepted by the IRS, but it's great for tax planning. It also does cash forecasting. You can look at what you've got in the bank and your expenses and see where you're going to be over the next 12 months. I just made a modification. In April I said, I'm going to buy a Datsun. Now we've gone into the red because we spent too much money that month. We can graph that. It will print out on a graphics printer."

The "Portfolio Manager" allows you to add up the value of your stocks. You can convert this function to tracking anything of value you collect or, as the index suggests, use it for keeping track of your frequent flier miles. Use airline abbreviations for stocks and assign a value—say 1.5 cents per mile—to see which promotion-minded carrier owes you the most.

This program has an inherent selling point: it's tax-deductible. Tobias suggests that you hire your son "the high-school math wiz," or daughter "the MBA student," to run the program. That way you'll be able to transfer some income out of your higher-tax bracket into their pockets. □

Adding a Reset Switch to Your PCjr

By Bob Horan

The article below is reprinted from the Metro PCjr Journal, and written by Bob Horan, Vice-President of the Metro PCjr user's group. This PCjr-exclusive users group, one of the finest and most active, is presided by Car Haub and produces a fine newsletter for the greater Washington D.C area. The club can be contacted at 11732 Cherry Grove Dr., Gathersburg Dr., Gaitersburg, Maryland.

Most of the newer personal computing systems have a very useful "quick" hardware function added. It is the computer "reset" switch. Believe it or not, this accessory function is very easily added to the PCjr. For a quick and easy installation, you must give up your keyboard infrared sensor, but for most jr advocates, this is not a problem, as keyboard cords have long been a "must" for jr users.

To do the job you need a **SPST Momentary switch**, such as Radio Shack's part #275-1566, a little wire (#26 or #28 or #30), and the ability to make **a few minor solder connections**. To get a little more sophisticated you can add two "push-in" connectors to your list. This will give you the capability of disconnecting the switch should you ever have to completely disassemble your computer to the point of taking

out the motherboard.

After you have gathered up these parts, you can begin the modification to your jr:

1. Disassemble your computer by taking off the top, remove the disk controller card, the 64kb memory card; the power supply, and the disk drive (bracket and all).

The disk drive and bracket are easily removed. After removing all the internal cards, place the jr on its side and carefully push the plastic compression stubs on the floppy disk bracket from the bottom of the computer's case with a small nut driver. You should carefully hold the whole floppy drive-bracket assembly with one hand, just in case the entire assembly should pop out.

Next lay the computer upright on the table and carefully reach under the back of the floppy disk bracket and pull up gently. This should release the entire floppy disk assembly so you can remove it. At some point you will want to disconnect the two power connectors from the floppy disk assembly and the power supply card. Be sure to note just how these connections are made so you can retrace your steps when you reassemble the computer at the end of the job.

2. Next you need to remove the infrared sensor from the jr's motherboard. This must

be done with great care so that you do not damage the motherboard. The sensor is secured with stubs much like the floppy disk bracket only much smaller. Some of these stubs or posts are easily pulled from the motherboard, some are held very tightly in place. Care should be taken not to crack the board; if the posts seem tightly wedged in place, it may be necessary to remove the motherboard and push these two posts out from the bottom of the motherboard. The motherboard of the jr is held in place by four screws at the rear of the computer case, two wedges at the left side, and, in some computers, by one screw in the left support of the left cartridge slot. Not all jrs have this small, very long screw in the cartridge slot support, so don't be concerned if your jr has none. If you must remove the motherboard, continue the job with the board removed from the computer case until you are ready to connect the switch using the connectors or by soldering the pair of wires in place to the switch, whichever method of completing these connections that you choose. However, if you choose to solder all four connections, you must reassemble the computer in the case before you solder the two final connections, as the switch I suggested mounts from the

(Continued on next page)

RESET SWITCH....

(Continued from previous page)

outside of the case to the inside. Read ALL the following instructions completely before beginning the actual work for the modification.

3. If you are using the push connectors, be sure you buy the correct size to fit the flat connectors on the SPST switch. Connect about four or five inches of the wire to each push-on connector; solder each wire to the separate connectors if you want a more positive connection than just a compression connector-to-wire connection. Strip about one quarter inch of wire insulation at the other end of your pair of wires. I recommend the use of the push-on connectors as the easier method of installing this option, as opposed to soldering all four connections - two on the switch and two on the cartridge buss bars.

4. Next your main soldering job begins. "Tin" (with solder) the bare wire you just exposed by removing the wire insulation. Next, using a small piece of very fine emery cloth, rub the top (and top only) of the first two buss connectors of the LEFT MOST cartridge slot on the inside of the computer (on the motherboard). I hold the computer upside-down, just to be sure the small amount of dust created falls out of the computer and not onto the motherboard. "Tin" the tops of the two buss bars on the cartridge slot and solder one of

your pair of wires to each buss bar. Be careful not to splatter any solder in the process; if this happens, it can create shorts on your motherboard.

5. Now install your SPST switch in the hole in the jr computer case that the infrared sensor used before you removed it from the motherboard. Connect the push-on connectors to the switch (it doesn't matter which wire is connected to which connector on your SPST switch) or solder the two final connections to the switch, if you choose that method of installation. Now reassemble your computer; the job is complete. You can now do a "hardware reset"

anytime simply by push the switch button.

Essentially, this switch functions just like inserting (or removing) a cartridge from the PCjr. It is very useful if you need a hardware reboot, such as when you're working on a new program. There are many times when a hardware reboot vs a warm boot (pressing Ctrl/Alt/Del) is useful, and it's certainly easier to push one button than punch three keyboard keys simultaneously. This little option once again proves that jr can in many ways keep up with the newer PC systems. Long Live the PCjr.....

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, P.O. Box 59067, Schaumburg, IL 60159-0067, 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, second, and third place prize. Just send your masterpiece, a description of your PCjr setup, and the software you are using. So let's see how good your PCjr really is with a brush. You may surprise your Junior and yourself.

Looking At Jr's Video Display II

John Wilson leads us through another segment on understanding the PCjr's video display.

The first article, in this series of three, concentrated on hardware in the IBM PCjr video display system. We examined the monitors that Junior can use and the chips within Junior which control the display. In that article we mentioned that the display system always operates in one of two basic modes, text or graphic, and that additional modes are within each of these two basic modes.

In this article we will take a close look at the Text modes. IBM refers to them as Alphanumeric (A/N) modes, but we'll call them text modes like the rest of the world does. The four text modes that Junior can use are shown in Table 1. The mode numbers shown are the ones used in Junior's BIOS (Basic Input/Output System) located in read-only memory (ROM) and are used by programs to set-up the display. All of these modes have 25 lines of text. Notice that in BASIC two commands are

needed to select a text mode, the WIDTH command and the SCREEN command. If the first parameter in the SCREEN command is a zero, the general text mode is activated but the WIDTH command is needed to finish the selection. The second parameter in the SCREEN command is color burst. A value of one enables color and a value of zero disables color. On a RGB display the burst parameter has absolutely no effect, but it is needed on a monochrome composite display to avoid grainy backgrounds and poor contrast.

If you're not in BASIC how do you change the text mode number? IBM set-up Junior to boot-up into mode number 0, while the other computers in the IBM family boot-up into mode number 2. Many application programs will set the mode to what they need (usually an 80 column mode), but not all of them do, so it is good prac-

tice to put something in your AUTO-EXEC.BAT file to set Junior to mode 2 or 3. You can use the DOS program MODE.COM with one of the commands shown in Table 1 to set Junior to the text mode you want. Again, if you have a RGB display you will see no difference between the monochrome and the color modes. The disadvantage to using the DOS MODE.COM program is that it is a relatively large program (3139 bytes in DOS 2.1 and larger in later versions), and sometimes you need every byte of space on a disk.

The July 1987 issue of The Junior Report describes how you can write a very short program that not only sets your computer to mode 3, but sets the screen colors also. If you're not interested in setting screen colors you can make up the following even shorter program using DEBUG. Just follow these directions exactly:

With DEBUG.COM on your boot-up disk type in DEBUG <enter> at the DOS prompt. You will get a blinking dash, which is the Debug prompt. Then type in:

```
a          <enter>
mov AH,0  <enter>
mov AL,3  <enter>
```

BY JOHN WILSON

TABLE 1 - The Text Modes

Mode Number	Number of Columns	Screen Type	Equivalent BASIC Command	DOS MODE Command
0	40	Monochrome	WIDTH 40 : SCREEN 0,0	MODE BW40
1	40	Color	WIDTH 40 : SCREEN 0,1	MODE 40
2	80	Monochrome	WIDTH 80 : SCREEN 0,0	MODE BW80
3	80	Color	WIDTH 80 : SCREEN 0,1	MODE 80

```
int 10    <enter>
int 20    <enter>
<enter>
n WIDTH80.COM <enter>
rcx <enter>
8         <enter>
w         <enter>
q         <enter>
```

You will then be back in DOS and the eight byte program will be saved on your disk and can be used in your AUTOEXEC.BAT file. Of course you can name it anything you want, but it must have the COM extension. This program uses Junior's BIOS services to activate screen mode 3. Use another number, from 0 to 3, in the mov AL,3 line if you want another mode. For example if you have a monochrome composite monitor you would probably want to use: mov AL,2 Incidentally, since DEBUG works only in the hexadecimal number system, all of the numbers in this program are hexadecimal.

The text modes are capable of displaying all of the characters that are in the ASCII character set. This is a standard code which represents characters with numbers so that they can be used by a computer. (Remember, numbers are the only thing that computers can understand.) The ASCII code has been

around for a very long time. When it was developed it used only seven of the eight bits in a byte, reserving the eighth bit for error checking. Since seven bits can represent a maximum of 128 numbers, there were only 128 characters in the original ASCII character set. The first 32 ASCII characters are not really printable characters. They are called control characters since they are used for things like end of line and end of file markers, the Enter key and beeps. The printable characters cover uppercase and lowercase letters, numerals, most punctuation marks and a space. In this code capital letter A is number 65, lowercase a is 97, a period is 46, etc. Since error checking bit is no longer needed, or used, IBM uses the eighth bit to extend the ASCII character set. Eight bits can represent 256 numbers, so the extended ASCII character set has 128 new characters. These characters include some foreign language characters, some mathematical symbols and some characters that can be used to draw lines and boxes. The BASIC manual, and many other books, contain a complete list of the entire ASCII character codes. Routines for printing the ASCII characters on the screen are in the Character Generator ROM that we mentioned in the first article.

All of the extended set ASCII characters can be printed on the screen by

using Junior's keyboard even though they are not normal keyboard characters, but it is generally rather awkward to do so. Many printers do not support the extended character set which further reduces their value, and they are probably most useful to dress up a screen display.

Text characters are formed by turning on pixels within an 8-wide by 8-high character box. You will notice that the forty column text modes correspond to the medium resolution graphic modes (Both display 320 pixels across the screen and 200 pixels down.) and the eighty column text modes correspond to the high resolution graphic modes (640 by 200 pixels). In the character box the character comprises the foreground, and the remainder of the box is the background. In the text mode each character box can be controlled, and thus characters with many different colors can be on the screen at one time. In the IBM manuals you will often see the term "attributes". This word is used to describe the characteristics that the displayed character is to have. Generally, the foreground color and the background color are the characteristics that we are mostly interested in, but blinking is another possible characteristic that is included in the attribute. We'll come back to attributes later in this article.

All IBM Personal Computers use

what is called a memory-mapped display system. The computer sets aside a section of memory, often called the video display buffer, to store the character that is to be displayed and the attribute. The location in memory determines the character's location on the screen, hence the term memory-mapped. Two bytes of memory are used for every possible character position on the screen. The first byte contains the ASCII code for the character to be displayed and the second byte contains the attribute. In the 40 column modes the memory map uses 2000 bytes (40 characters per line X 25 lines X 2 bytes), and in the 80 column modes the memory map uses 4000 bytes. Normally, Junior sets aside 16 Kbytes of memory for the video display buffer, but it can be made larger or smaller. The location of Junior's video display buffer varies depending upon how much memory is present, but to maintain compatibility with other computers in the PC family, the starting address of Junior's display buffer always appears to start at address B80000 (hex).

Here is how the memory-map is organized. The ASCII code for character which is to be displayed in the extreme upper left hand corner of the screen is in memory location zero of the display buffer (Computers like to start numbering at zero.), and the attribute for that character is in byte number one of the display buffer. The ASCII code for next character to the right is in video display buffer

byte number two and the attribute for that character is in byte number three. In a 40 column mode the rightmost character on the top line has its ASCII code in byte number 78 and its attribute in byte number 79. The ASCII code for the character is always in an even-numbered byte. Shortly, you can try your hand in using the display buffer to write directly to the screen.

Figure 1 below shows a diagram of how the attribute byte is normally defined. There is another way it can be defined which we will cover later.

Bit numbers start with zero and on the right. The first four bits control the foreground color and bits 4 through 6 control the background color. If a bit is 'high' (1) then that particular color is turned on. If the intensity bit (bit number 3) is high then the colors in bits 0 through 2 will be the light shade of the color. If the last bit is high the character will blink. This is all easier to show by examples than to explain. See Table 2 on the next page. Notice that combinations of the three basic colors create the other colors. Table 3 shows the resulting colors of all of the combinations of three color bits and the intensity bit, and gives the decimal and the hexadecimal number of the color. You will notice that it takes four bits in order to get 16 colors. Since there are only three bits available for the background color, only the first eight colors can be used for the background.

This table also gives a clue as to why the hexadecimal number base is so popular with programmers. See the

sidebar article "Why use Hexadecimal?" for details.

Before we use this knowledge to write a program give yourself a test to fix the attribute characteristics in your mind. For bits set as shown below, determine what the hex value of the byte is and what the attribute would be. Use table 3 as a guide. The answers are given below.

	<u>Attribute Byte</u>	<u>Hex Value</u>
1.	1001 1110	9E
2.	0011 0000	30
3.	1010 1111	AF

Attributes

1. Blinking yellow character on blue background
2. Black character on cyan background, no blinking
3. Blinking bright white character on green background

Now that we know about memory mapping and how to program the attribute byte we can load the ASCII code for a character and the attribute for that character directly into the video memory buffer and see the results. Type in the following BASIC program 1 on page 17:

When you run this program you should see the letters IBM PCjr in the upper left hand corner of the screen. IBM will be in white on a blue background, PC will be yellow on a blue background, and jr will be blinking yellow characters on a blue background. The characters are displayed directly on the screen by bypassing the

FIGURE 1 - Normal Attribute Format

Bit Number:	7	6	5	4	3	2	1	0
	on/off	Red	Green	Blue	Inten.	Red	Green	Blue
	Blink	Background			Foreground			

normal print commands, and the PRINT command in line 110 just gets the cursor down out of the way after the program runs. Memory mapping doesn't control the location of the cursor, so other ways must be used to move the cursor to the position you want.

The program poked the ASCII codes for these characters into the even numbered memory locations starting at B8000 hex and the attribute for each of these characters into the odd numbered memory locations. The first number following each POKE is the memory address, and the second number is the value you want to place in this memory address. The absolute address of the display buffer is at absolute address B8000 hex, but due to the way memory addressing works in BASIC the last digit is dropped. This program uses decimal numbers for memory offset locations and ASCII codes because they don't need the &H prefix that BASIC requires of hexadecimal numbers, but hex numbers were used for the attributes since it is easy to convert bit settings to hex.

This is a good program to experiment with. You can see what the results are with various attributes, characters and memory locations. The video buffer is 16 Kbytes (16,384 bytes) in size but the 40 character text mode only uses 2000 bytes. Are the other 14,384 bytes wasted? What would happen if you placed characters in the video buffer beyond the 2000 byte location in this program? Change, in line 30 of this program, the address following the first POKE from 0 to 2048 and the address following the second POKE from 1 to 2049. Make similar changes in lines 40 through 100. The address of the last POKE should be 2063. When you run this program not much will seem to happen. The cursor will drop down a line but your message will not show up on the screen. However, if you type in

Table 2

Attribute Byte	Characteristics
0 0 1 0 0 1 0 0	Red character, blue background, no blinking
1 0 1 0 0 1 0 0	Red character, blue background, blinking character
0 1 0 0 1 0 0 1	Light blue character, red background, no blinking

Table 3

Color Bit		Color Number	
I R G B	Color	Decimal	Hexadecimal
0 0 0 0	BLACK	0	0
0 0 0 1	BLUE	1	1
0 0 1 0	GREEN	2	2
0 0 1 1	CYAN	3	3
0 1 0 0	RED	4	4
0 1 0 1	MAGENTA	5	5
0 1 1 0	BROWN	6	6
0 1 1 1	LIGHT GREY	7	7
1 0 0 0	DARK GREY	8	8
1 0 0 1	LIGHT BLUE	9	9
1 0 1 0	LIGHT GREEN	10	A
1 0 1 1	LIGHT CYAN	11	B
1 1 0 0	PINK	12	C
1 1 0 1	LIGHT MAGENTA	13	D
1 1 1 0	YELLOW	14	E
1 1 1 1	BRIGHT WHITE	15	F

SCREEN „1 <enter>

you will see the words IBM PCjr located in the top left-hand corner. If you type in

SCREEN „0 <enter>

you will return to your original screen. You have now used display pages. Display pages are very similar to pages in a book. Characters are located in different sections of the video buffer just like characters are printed on different pages in a book and you can flip from one display page to an-

other just as you can flip pages in a book. In the 40 column text modes there are eight display pages starting at video buffer memory locations 0, 2048, 4096, 6144, 8192, 10240, 12288 and 14336. And in the 80 column text modes there are four display pages starting at locations 0, 4096, 8192 and 12288. You probably have noticed that the display pages start at kilo-byte locations and that a small amount of the video display buffer in each page is not used.

Display pages are not the same as scrolling through a file or word processor. Word processors save the characters in other portions of memory and in

order to be displayed those characters must be retrieved from their memory location and transferred to the video display buffer by several relatively complicated processes. In display pages the characters and attributes are already in the video buffer and can be almost instantly shown on the screen.

Control of display pages is done with the CRT 6845 controller chip located on Junior's system board (We discussed this chip in the first article.) and there are routines in Junior's Basic Input/Output System (BIOS) which programs can use in manipulating display pages. In BASIC the

SCREEN command can be used to control pages. There are four parameters that can be used with the SCREEN command. (Actually there are five, but we'll ignore the last one.)

SCREEN mode, burst, activepage,

Why Use Hexidecimal?

Computers use the binary number system. To them every number is based on either a zero or a one. We humans use the decimal number system. Why then do computer manuals and reference books insist upon using the hexadecimal number system which neither we nor computers use? Before we answer that question, we should first see why the binary number system is not used on a regular basis.

Small numbers in binary are not hard to work with, but large numbers, consisting of a long string of zeros and ones, are difficult read, hard to distinguish and require a lot of room to write. Imagine typing numbers consisting of nothing but ones and zeros into a program and then proofreading the program to be certain there are no mistakes. Try also to distinguish the difference between two 16 bit binary numbers or even between two bytes (8 bit numbers). Errors are easy to make and hard to find.

Therefore, a number system with more digits to work with (resulting in shorter numbers) is needed. But you need a number system that is easy to convert to and from binary, and decimal doesn't fill the bill. A four bit binary number can be, with just a little practice, converted to decimal by inspection, but conversion of an eight bit binary number to decimal requires the use of a pencil for most people; and beyond eight bits a calculator is needed in addition to the pencil. Converting from decimal to binary is even worse, except, again, for small numbers.

Hexadecimal, usually shortened to hex, is easy to convert to and from binary and even the largest numbers used in computers only have four digits. Hex is a number base, or system, in which 16 different digits are used. The first ten digits are the same as in the decimal base - 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. Letters are used for the last six digits - A, B, C, D, E and F. Decimal 10 is equal to hex A, 11 is equal to B, 12 is equal to C, 13 is equal to D, 14 is equal to E and 15 is equal to F. Of course all of the hex digit symbols are arbitrary. Some unique digit symbols could have been created, but the ones used are easy to remember and are found on all keyboards.

Conversion from binary to hex (and from hex to binary) is done with four bits at a time. In a four bit binary number the

bit on the right is equivalent to a one, the next bit is equivalent to a two, the next is equivalent to a four and the bit on the left is equivalent to an eight. To get the total value of the four bits you just add up the equivalent value of each bit. If there is a zero in a position then no value is given for that position. The highest value that a four bit binary number can have is decimal 15, or hex F. Here are some examples:

Binary	Decimal	Hex
1 1 0 1	13	D
1 0 1 1	11	B
0 0 1 0	2	2
0 1 0 0	4	4
1 0 0 1	9	9
1 1 1 1	15	F

For just four bit binary numbers it is no easier to convert to hex than it is to convert to decimal, but the relationship between hex and binary is such that for binary numbers of any size you just separate the binary number, from left to right, into groups of four bits and convert each group to its hex equivalent. The conversion from hex to binary is just as easy. Each hex digit has an equivalent four bit binary value. Here are a few examples:

Binary	Hex
1 1 0 1 0 0 1 0	D2
1 0 0 0 1 1 1 0	8E
1 1 0 0 0 0 0 0	C0
0 1 1 1 1 0 1 1 1 0 0 1	7B9
1 0 1 0 0 0 0 1 1 1 1 1	A1F

There are times, such as when working with attributes and graphics, that you want to place a particular bit pattern into a register or memory location. At those times the hexadecimal number base is very convenient.

visualpage

We covered the mode and burst parameters at the first of this article. The active page is the page which is written to by output statements to the screen. The visual page is the page which is to be displayed on the screen. The values can range from 0 to 7 in the 40 column text modes and from 0 to 3 in the 80 column modes. If you do not specify a visual page, then the visual page defaults to the active page. This is what we did in our example. If the active page is the same as the visual page then whatever is written to the screen is written to the page you are viewing, but if they are different then you will be writing to a page that is not currently visible. Obviously, display pages can be confusing but if you want to show a message on the screen very, very fast then flipping display pages is the way to do it.

If you refer back to Figure 1 you will notice that it shows the "normal" attribute format. It is possible to change the attribute format so that bits 0 through 3 control the foreground color (this is no change from the normal format) and bits 4 through 7 control the background color. Since this attribute format uses four bits for the background color it is possible to choose any of the 16 colors for the background, but you do lose the ability to have blinking characters. (The cursor will continue to blink.) This alternate attribute format is possible on both PCs and Junior, but the method to make the change is different. Of course, we will explain only the method to change the attribute format on Junior.

In Junior the definition of the attribute byte is controlled by Register Number 3 (Mode Control 2 Register) of the Video Gate Array. (We discussed the VGA in the first article of this series.) If the second bit in this register is 1, then blink is enabled and

BASIC PROGRAM 1

```
10 WIDTH 40 : SCREEN 0,1 : CLS
20 DEF SEG = &HB800
30 POKE 0,73 : POKE 1,&H1F      ' 73 is ASCII code for I
40 POKE 2,66 : POKE 3,&H1F      ' 66 is ASCII code for B
50 POKE 4,77 : POKE 5,&H1F      ' 77 is ASCII code for M
60 POKE 6,32 : POKE 7,&H1F      ' 32 is ASCII code for a space
70 POKE 8,80 : POKE 9,&H1E      ' 80 is ASCII code for P
80 POKE 10,67 : POKE 11,&H1E     ' 67 is ASCII code for C
90 POKE 12,106 : POKE 13,&H9E    ' 106 is ASCII code for j
100 POKE 14,114 : POKE 15,&H9E   ' 114 is ASCII code for r
110 PRINT
120 END
```

BASIC PROGRAM 2

```
10 WIDTH 80
20 SCREEN 0
30 X=INP(&H3DA)      'Read a byte from port 3DA
40 OUT &H3DA,3       'Signal a change is to be made to Register 3
50 OUT &H3DA,0       'Put all zeros into Register 3
60 COLOR 16,11,11    'Black foreground, cyan background and border
70 CLS
80 END
```

only eight colors are available for the background color. This is the default setting. If the second bit is zero, then blink is disabled and 16 colors are available for the background color. The other three bits in Register Number 3 are always zero in the text modes. Therefore, all we need to do to use the alternate attribute format is set all of the bits in VGA Register Number 3 to zero. In Junior you access the VGA through port number 3DA hex, and to make a change in the VGA you must first read a byte from port 3DA. You really don't care what is in this byte, it is just required to be read. Next, you must signify the number of the register to be changed and finally you place the desired value into that register. The BASIC program 2 above will set the screen colors to black text on a light cyan background.

Note that to get a high-intensity background color in BASIC you must

add 16 to the number of the foreground color that you want, and then put in the background color number. The BASIC manual implies that you can use only numbers 0 through 7, but with this format you can use numbers 0 through 15 for the background color. To enable blinking just repeat lines 30 through 50 except change the zero in line 50 to a 2. This same method to change the attribute byte definition also works in Assembly Language and in most other languages.

This concludes our detailed look at the text Modes. In the next, and last, article we will look just at the Graphic modes. Junior contains some graphic modes that no other members of the IBM computers have, and we will see what they are and how to use them.

Is The IBM PCjr Finally Dead?

(Continued from page 1)

take advantage of the 386's ability to tap into almost limitless memory, its fantastic speed and other promised capabilities. Therefore, in an attempt to ease the non-corporate buying public into the Promised Land of the 386, Intel has come out with a new 32-bit/16-bit chip, the 80386SX, that will, according to Richard Landry, writing in the July, 1988 edition of *PC World*, offer true multi-tasking (the ability to run two or more programs at the same time), access to greater memory, and a much higher speed of operation. What is even more significant, the 386SX will do all of this at a substantially lower price than the true 32-bit 386.

The 386SX, Landry says, will operate like a 16-bit 286 machine when needed and, at the same time, provide true 32-bit processing on demand. The former quality means that DOS-based programs will run on it, providing compatibility with the past, and the latter promises access to multi-tasking, better use of more memory through the opening of the "protected mode" door, and the newly emerging O/S-2 system. In other words, for a price just slightly higher than the 286, but well below that of the 386, the 386SE will be a switch-hitter giving users a choice between the new and the old.

The second item, appearing in John C. Dvorak's "Inside Track" column in the July, 1988, *PC Magazine*, tells of his experience in testing the Atari Mega4, the 4-Megabyte RAM and latest of the 68000-based ST machines from that company that was once considered a toy manufacturer and is

the grandpappy of the whole video game industry. According to Dvorak, the Mega4 works at 16 mHz - as opposed to 4.77 to 12 mHz for the 8088/8086 family of machines - and actually simulates the 8086 instruction set. (The 8088, which came in the jr, the PC and PC-XT, the V20 and V30, from NEC, and both the 80286 and 80386 in the AT and PS-2 machines are all outgrowths of the original 8086 system that has recently made a comeback because of O/S-2.) Like Intel's 386SX, the new 68000 machines will bat from both sides of the plate, keeping DOS alive while providing an entree into new programs coming down the pike.

Now, what does all of this mean? Does it indicate that PCjr owners will be dumping their beloved Baby Blues in search of the hyperspeeds of the next generation of PCs and the marvelous world of multi-tasking which may someday be offered by Operating System 2 (O/S-2)?

No. Speed has never been a real issue with jr owners. Many of us who have upgraded our machines to 640K of RAM have been using memory splitting software and, in a great many cases, V20 chips which combine to give us the equivalent of 15 or 16-mHz for sometime. Even those still plodding along at 4.77 mHz are happy with the speed and know that to go much beyond will scramble most of their games anyway.

The issue isn't the speed of the new machines nor the still faraway world of true multi-tasking provide, but the ability to handle the increasing number of byte-hungry programs on the market today and sure to come in the future. Limited by the 640K RAM barrier of the

8088 (or V20) chip, damned to a world in which expansion slots are non-existent, and unable to increase data storage without mortgaging the farm, PCjr owners are going to find themselves able to move into the real world of power computing with either 286-based systems at prices far below those of the past few years or the 386SX/68000 machines with their almost unlimited memory capabilities.

Allow me to illustrate this contention with my own story as a not untypical case history:

Four years ago, when I first got into computing with a 64K CP/M machine, I never thought I'd live to see the day when ten times that amount of memory, or 640K of internal RAM, was not going to be enough to do what I wanted. A year ago, when I stepped up this jr I'm writing this on from 128K to 640K with two 360K floppies, I thought I had reached the ultimate plateau from which I would never have to move. Sure, WordPerfect 4.1 consumed a lot of that 640K (512K actually available when I split up the memory for faster operation), but since I never loaded the machine up with a lot of other resident programs, I just didn't feel I would ever need any more. Okay, so I sometimes got bursitis of the arm switching 360K disks back and forth to use the speller, the thesaurus and the help menu, but that inconvenience was a small price to pay for all the machine was giving me. What the heck, I thought, no program in the world ever comes on just one disk anymore. No program worth its salt can be jammed into the 360K of the old 8088 ma-

chines. Everything takes two, three, four, or more disks to get it all available.

When I started reading about some of the other programs I could be running simultaneously if I had the available memory, and thought about how much easier it would all be if I had a hard disk I got a little wistful, but since hard disk systems for the jr cost as much as a complete PC-XT, I decided I could live without it. Why pay \$600 or \$700 for a hard disk for the jr when I could get the hard disk, a floppy and all of the innards of an XT clone for that same price? The XT, for all of the hoopla that accompanied its introduction several years ago, was still hounded by the same memory and disk drive limitations as the basic PC. If I was going to up-grade, I wanted to be able to do it all the way...to make it worthwhile.

Eventually I found myself wanting to do things with word processing that WordPerfect 4.1 wasn't capable of handling. And it became evident that I was going to have to upgrade the software to get some of the goodies that I wanted. But there the dilemma became even more acute. As I looked at those good deals to be had from programs like Windows and WordPerfect 5.0, something was painfully clear to me: To get where I wanted to go, I was going to need some memory, a hard disk, or a high density floppy system. Yet, no matter how much I shopped around, I found that my Racore expansion system with DMA put

limitations on me. Everything I wanted was either incompatible with the Racore system or cost an arm and a leg.

All of which brings me back to the announcements in the two computing magazines and the potential offered by them.

The birth of 386SX and Atari's breakthrough with their 68000-based machines mean that the price of the AT, 286-based machines is going to plummet by the end of the year.

***To paraphrase
the old spiritual:
"Free at last!
Free at last! Thank
God, I'm about to
be free at last!"***

Already the \$1,500 barrier on 286 machines has been shattered and some are now available - in bare bones configuration, to be sure - for less than a thousand. A good many of those priced 286s carry 1 Megabyte of RAM on the motherboard and all of them can go from 2 megs upward to eight or ten with add-in boards. In addition, competition in this new "low priced" marketing war is forcing manufacturers to offer more and more "extras" as standard equipment. Forty megabyte hard drives are selling for what 20 megs did just a year ago. 20 meg drives and 1.2 meg floppies are being offered as standard equipment

and upgrades to 40+ meggers are almost negligible in cost. The machines come with a host of expansion slots and even though the price of memory chips has gone up over the past year (thanks to the chip industry's insistence of congressional protection from the Japanese), it still doesn't cost that much to pump in another bunch of RAM on a board that will never go into the jr because of its lack of internal expansion slots.

In the meantime, IBM has closed the architecture on its PS-2 machines and the cost of OS/2 is astronomical. (Even without the micro-channel accessing which has been delayed more often than a Northwest Airlines commuter flight, the whole OS/2 set up still costs almost as much as a new car.) In response to this, a number of big names in the software/hardware world have countered by bringing out their own version of multi-tasking programs - some of which are free or almost so just to get consumers interest. What is more, the alternate multi-tasking programs are compatible with DOS and won't give the 286 a hernia as OS/2 MCA (Micro-Channel Architecture) is rumored to do.

All of this points to a new age in micro-computing. With the 286 rapidly approaching the price of a hard disk for the jr; with no one interested in solving the pricing or expansion problems of the jr; and with 286 machines capable of ten, twenty or thirty times the RAM of the jr, there is no longer any reason for jr owners to limp along using loyalty and stubbornness as an excuse for not moving up to

the new class of machines. In a few short months, when this new technology hits the market and the price of 286 machines begins its rapid drop, a hardware upgrade will be a genuine hardware upgrade, not just a moot exercise in trading of one set of limitations for another.

The advent of the 386SX is the first sign of this. At the same time, the entry of a former (ha, ha Atari!) game manufacturer is making a serious move into the field of true power computing, which means others will probably begin looking over that system and breaking away from the old IBM standard - which IBM has already trashed. Hundreds of 640K-limited computer owners are going to be jumping ship and, unfortunately, because they have been neglected, abused and misused for so long, the PCjr owners are going to be leading the pack. They will be followed by

PC owners, XT owners, and unfortunately for IBM whose arrogance prompted all of this, PS-2 Model 25 and Model 30 owners who got sucked into buying those pathetic 8086 machines with little or no expansion capability. I predict that within one year serious computing on the PCjr will be a thing of the past. Those jrs that remain in service will be used by youngsters for homework and games while serious users will be hacking away on 286-based machines or some other new family of low-priced machines based on something like the Atari with its 68000 chip. For the first time, jr owners, who have remained so loyal for so long, are going to see what they have been missing and they are going to be very, very unhappy with those who have held them in a price gouging vice grip for so many years. Some of those firms who have been holding a gun to the head of those

about to be freed jr slaves are going to find it difficult to sell to their former prisoners after their emancipation. Few former jr owners are going to want to deal with the people who have so completely milked them dry for so long.

It's sad, but when I move up, I really don't think I'll miss the jr that much. It was a Godsend for awhile, but technology has passed it by, as it does all things. I'll probably shed a tear or two the first time I see my grandson spill a soft drink into the disk drives or shower the keyboard with potato chips, but when I find I can write a book without changing disks forty times and having to make each chapter a separate file, I'll soon get over it.

To paraphrase the old spiritual: "Free at last! Free at last! Thank God, I'm about to be free at last!"
Hugh R. Taylor

Is The IBM PCjr Finally Dead? We Think Not.

Hugh Taylor makes some very valid points about the limitations of the IBM PCjr. The main premise of his article we believe is that with the two technological advancements that he mentions, almost all Junior owners will be forced to abandon their PCjr's for more powerful computers that can handle programs that use more than 640K. We disagree. With the millions of 8088-based computers being sold today, the market for powerful software that runs at or below 640K will provide plenty of incentive for most software manufacturers. Mr. Taylor assumes that every PCjr owner will need these great, memory-hungry programs to come down the pike. That is simply not true. Most PCjr owners have yet to tap the potential of the current crop of great programs like Lotus, WordPerfect, and Q&A, to name a few. We use WordPerfect 4.1 and I can assure you we don't know half of the features that are available to the WordPerfect user. And what about the thousands of PCjr owners who are perfectly satisfied with their Assistant programs? Maybe you won't be able to run a Fortune 500 company on a junior, but you certainly can run your own finances. In other words, what we are saying is that as long as there is compatible software available, a computer lives. We agree that the hard drive situation for the PCjr is costly, but not all PCjr owners require that much storage. Certainly a costly hard drive is not a reason for the premature death of a computer. It seems that the price is in the same range as another computer called the Macintosh. It sure hasn't hurt the Mac. Besides there are alternatives for increasing your storage such as 1.2 meg and 720K drives, both which are available for the PCjr.

As long as the PCjr is used productively, and it is, we feel the handwriting on the wall says the junior is going to be around for a while. But since most PC programs run on the PCjr, shouldn't you be asking, "Is the PC Finally Dead? We think not. And neither does the PCjr upon which this rebuttal has been composed.

COMPUTER RESET - YOUR #1 SOURCE FOR PCjr PRODUCTS

"PCjr FALL SPECIALS"

IBM PCjr INTERNAL MODEM reg \$ 79 NOW \$ 29
 (includes free software - when ordering please)
 (specify the memory capacity of your PCjr)
 AVATEX 1200E external modem reg \$ 99 alone
 NOW \$ 109 with software, serial adapter cable
 and information guide for the SOURCE

jr HOTSHOT MEMORY / CLOCK / DISK DRIVE UPGRADES

jrHOTSHOT Memory Board (without memory chips) \$ 110
 256 or 512K jrHOTSHOT Memory Expansion CALL
 256 or 512K jrHOTSHOT with Real Time Clock, Calendar
 with 2nd Floppy Disk Drive Controller CALL
 256 or 512K jrHOTSHOT with Disk Drive Controller CALL
 jrHOTSHOT can control 5 1/4" or 3.5" disk drives

Our PCjr Memory & Disk drive expansions each have
 PCjr Selected Utility Software including:
 RAM DISK, File Transfer, Screen Color Control, etc. etc.
 (due to the present unstable price of memory chips)
 (we can not publish a fixed price for these memory)
 (products: please call for the current sale price)

" IBM " BRAND ACCESSORIES

PCjr JOYSTICK \$ 29
 128K MEMORY EXPANSION sidemounted unit \$ 175
 PARALLEL PRINTER ATTACHMENT \$ 79
 KEYBOARD CORD for PCjr keyboard \$ 15
 ADAPTER CABLE FOR COLOR DISPLAY
 (connects PCjr to a standard RGB color monitor) \$ 15
 BASIC Cartridge (very hard to find) \$ 95
 POWER ATTACHMENT (recommended if 2 or more side
 mounted expansions are used on the computer) \$ 55
 300 baud INTERNAL Modem (with software) \$ 79
 CARRYING CASE (great for VCR or tools also) \$ 25
 CASSETTE CABLE (usable for joystick adapter) \$ 12
 CHICKLET KEYBOARD (the original PCjr Keyboard) \$ 19
 CHICKLET KEYBOARD OVERLAYS (pkg of 5) \$ 1
 CLUSTER ATTACHMENT (local area network interface) \$ 95
 PCjr ENHANCED KEYBOARD (standard PCjr keyboard) \$ 55
 REPLACEMENT POWER TRANSFORMER \$ 45
 HARDWARE MAINTENANCE MANUAL (how to find problems) \$ 55
 TECHNICAL REFERENCE MANUAL (has schematics) \$ 39
 TV ADAPTER (connect PCjr video/audio to TV or VCR) \$ 25
 WORD/SOUND "SPEECH" ATTACHMENT (with software) \$ 109

2ND FLOPPY DISK DRIVES

MODEM SLOT SYSTEM - Controller uses modem slot
 Comes Ready to Connect

5 1/4" 360K disk drive model \$ 199
 3 1/2" 720K disk drive model \$ 219
 (720K operation requires DOS 3.2 or greater)
 Modem slot 2nd Disk Drive Kit \$ 79
 (includes controller, signal cable, software)

2nd DISK DRIVE - jrHOTSHOT SYSTEM
 Controller board mounts the microprocessor chip.
 Can be used with IBM PCjr internal modem.
 Comes Ready to Connect

5 1/4" 360K disk drive model \$ 234
 3 1/2" 720K disk drive model \$ 254
 (720K operation requires DOS 3.2 or greater)
 jr HOTSHOT drive control kit \$ 79
 (includes: controller, signal cable, software)

5 1/4" 360K 2nd Floppy Disk Drive in Case, with
 Power Supply * for use with jrHOTSHOT Upgrade or
 the above kits \$ 155

3 1/2" 720K 2nd Floppy Disk Drive in Case, with
 Power Sharing Cable for use with jrHOTSHOT Upgrade
 or the above kits \$ 145

PCjr Three Disk Drive Controller:
 modified PCjr disk drive controller with cable
 and software - with exchange \$ 89

HARD DRIVES

20 Megabyte Complete System * ready to use \$ 700
 HARD DRIVE KIT (jrSASI interface and SASI drive
 control card, for ST-406 interface drive,
 with case & power supply) \$ 325
 HARD DRIVE BUILDER KIT prototype board, instructions
 IC's, connection cable for jrSASI interface board and
 software: Requires SASI drive control card, hard drive,
 case, power supply and electronic technical skill \$ 125

RACORE PCjr EXPANSION PRODUCTS

A 5 1/4" 2nd Floppy Drive, Clock, and Parallel Port in
 a nicelooking expansion chassis mounted on top of the
 PCjr with expanded memory contained inside

DRIVE II PLUS (with DMA) \$ 340
 DRIVE II PLUS (without DMA) \$ 290
 512K memory board for the DRIVE II PLUS \$ 175

OTHER ACCESSORIES

MODEMS - Avatex 1200E 300/1200bd external \$ 99
 Avatex 1200 HC 300/1200bd external \$ 129
 (includes software)

MICE - LOGITECH SERIAL with Plus Software \$ 89
 - with serial adapter cable for the PCjr \$ 109
 - with serial adapter cable & jrCOLOR PAINT
 (limited quantity of this software) \$ 145
 Logitech paint software alone \$ 35

LARGE KEYBOARDS - 84 key AT Style with adapter \$ 116
 - 101 Key ENHANCED AT Style with Adapter \$ 132

CLOCK - PLUG IN CARTRIDGE CLOCK
 give your jr the gift of time for only \$ 42

QUICKSILVER CARTRIDGE -
 for keyboard compatability and quicker boot up \$ 29

PRINTERS ETC.

Star NX - 1000 The best of everything dot matrix
 printer for graphics, near letter quality (30 cps)
 and plain text (160 cps), built in fonts \$ 199


Star NX - 1000 Rainbow - same as above and with
 seven colors \$ 239

Chrono Steel wire type printer stand \$ 19

SWITCH BOXES & CABLES -

PCjr parallel printer cable 6 foot \$ 19
 Serial male - male 6' - DB-25 connectors \$ 19
 Serial male - female 6' - DB-25 connectors \$ 19

I LOVE MY PCjr bumper stickers \$ 2 (no shipping chg)



**COMPUTER
RESET**

New & Used Computers

P.O. Box 461782 (214) 276-8072
Garland, Texas 75046

SEND FOR OUR FULL CATALOG OF PCjr ACCESSORIES & SERVICES

No Credit Cards: \$5 Minimum Shipping and Handling:
 Add \$2.75 for COD, All COD's sent to Cash or Money
 Order All checks held 15 days for clearance; Immediate
 shipment of stock-items when paid by Money Order or
 Cashiers Check.

OPEN ACCESS BULLETIN BOARD

for our complete list of PCjr & Other Products (214) 272-
 7920, 300 to 2400 BD, 8bits, 1 stop bit and no parity,
 no password or access fee, 24 hour operation.

EXPAND YOUR PCjr

- jr. Hotshot 512K Memory CALL
- Racore Drive II Plus w/DMA &
512K Memory \$500
- Quick Silver Cartridge..... \$ 30
- Jr Datadesk Keyboard \$130
- 20 Meg External Hard Drive System \$579
- 1200 Baud External Modem \$ 99
- JR-RS232 Modem Cable \$ 19
- 3.5" External Disk Drive \$299
- Nickel Express Jr 8MHz Turbo Board \$ 79
- Dual Font Chip \$ 19

For a complete list with monthly specials
send a stamped, self-addressed envelope to:

Paul Rau Consulting

260 N. Lincoln Way • Galt, CA 95632
(209) 745-9284 (FST)
voice 9 a.m. - 4 p.m. / data 5 p.m. to 8 a.m.

SUBSCRIPTION SERVICES

Are your newsletters coming to you mangled, torn, or like they've been through the laundry? Or have you missed an issue that you shouldn't have? Well, the mailing process is the only thing that we do not control, but if you could write a short note to The Junior Report, P.O. Box 59067, Schaumburg, IL 60159-0067, to the attention of Marie Tabers, Circulation Manager, or call our new number (312) 310-9033 (M, W, F 9AM to 3PM CST) explaining your problem, we might be able to do something. Remember, this number is for subscription problems only, and NOT for technical assistance. Please include your telephone number in your correspondence. We send out thousands of issues each month, so we expect some problems, and the best we can do is to solve them as quickly as we can to keep you happy. We would like to make your subscription with us as carefree as possible.

REPRINTS

Below is a list of reprints that are currently available for purchasing. Please use the order blank below and send remittance and form to: The PCjr Club, Reprints, P.O. Box 59067, Schaumburg, IL 60159-0067.

- NOV 1986 - PCjr ColorPaint Review jrHotShot Internal Memory Expansion Gato Review
- DEC 1986 - Readers' Survey #3 Jr BBS's Fontrix Converting IBM's Expansion Board to 512K
- FEB 1987 - PC-Write 2.7 Review PCjr Clubs DOS 2.1 Patch Basic Programming on the Junior
- APR 1987 - Inside the Jr Part II Microsoft Booster Upgrade StarFlight Fix Pockets Educational Software
- MAY 1987 - IBM Model 30 Hard Drives For Jr Part I NewsMaster Review Speeding Up Basic Programs
- JUNE 1987 - PCjr Trade-In PCjr & Comdex Inside the Jr Part III Powertext Formatter
- JULY 1987 - Hard Drives II Adding Color to DOS Sylvia Porter's Financial Manager Music on the Jr
- AUG 1987 - Updated PCjr Compatibility List Home Banking on Jr Inside the Jr Part IV Dam Busters Review
- SEPT 1987 - PCjr Turbo Boards Jr Diskette Drive Maintenance Corrected DOS 2.1 Patch
Setting Preferences on Jr BASIC and the PCjr
- OCT 1987 - New Clock and ROM Cartridges Turbo BASIC Patch Survey #5 Drawing on the Jr Part I
BASIC & Ramdisks Microsoft Letter
- NOV 1987 - PC File Vs. File Express SPC's 20 Meg PCjr Hard Drive Review More Than 640K on Jr
Learning to Draw on the PCjr
- DEC 1987 - Preventative Jr Maintenance jr Vendors Speeding Up jr Dual Fonts Review
QuickBASIC 4.0 on PCjr Mickey and Donald
- JAN 1988 - Starflight and Psi 5 Trading Co. ProComm & jr Pt. I Giving jr the Boot Microprocessors & jr
FXQBjr Revisited PCjr Magazine Reprint #1-Bringing Up Junior
- FEB 1988 - Upgrading a PCjr PCjr Magazine Reprint #2 - A Hard Look at the Jr ProComm & jr Pt.2
PFS Professional Write on the Jr DOS and the PCjr: Getting the Most Out of Debug
- MAR 1988 - PCjr Magazine Reprint #3 - Clustering PCjr's Adding a 3.5 inch drive to jr Turbo Pascal 4.0 on jr
Making WordPerfect Perfect on the PCjr The 128K PCjr
- APR 1988 - Shareware Survey Results Bankstreet Writer Review DOS Revealed Pt I
PCjr News Chuck Yeager's Flight Trainer SETBASjr and BASICjr
- MAY 1988 - Replacing jr's Disk Drive Microsoft PCjr Mouse DOS Revealed Part II
Writing Assistant & Racore Drive II Test Drive on the Junior Running GEM Software on a 1- floppy PCjr

Please Circle One or More Below

Nov 1986 Dec 1986 Feb 1987 Apr 1987 May 1987 June 1987 Jul 1987 Aug 1987 Sept 1987
Oct 1987 Nov 1987 Dec 1987 Jan 1988 Feb 1988 Mar 1988 Apr 1988 May 1988

Number of issues _____ times \$2.95 = _____ Amt. enclosed (Canada please use US m.o.)

Name: _____

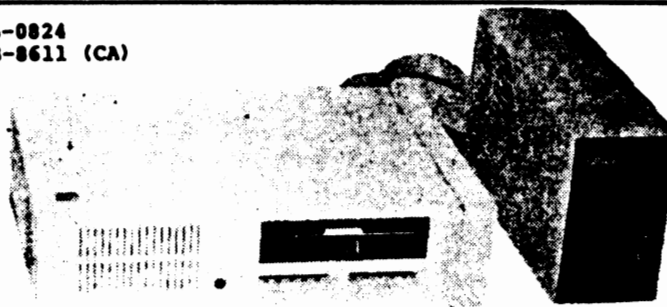
Please allow 4-6 weeks for delivery. All orders
outside of the United States and Canada please
add \$10.00 (U.S.) per order.

Address: _____

City, St, Zip: _____

SPC DISKITjr HARD DRIVE

DISKITjr 20C(22MB).....\$695.
DISKITjr 30C(33MB).....\$795. Reg. \$995.
DISKITjr 40C(44MB).....\$1195.
NEW! 35ms. option.....\$200.



Feature

IBM/PC Compatibility

If you ever decide to upgrade to any PC/XT compatible computer, just call SPC and arrange for a swap to an XT-compatible booting controller. Your Diskit will **never become obsolete**, and there's **no charge**.

Upgrade flexibility

Since our installation software is menu-driven, you can easily install a higher capacity Winchester in the future.

REMEDY OPTION

For a system with ever-expanding storage requirements, the REMEDY drive allows the user to remove the entire 20 Mb. file and replace it with another. It offers the same capability as the popular **Bernoulli Box** but at a fraction of the cost, only \$145.

Compatibility

The Diskitjr will work in conjunction with almost all other vendors' add-on products. The Diskitjr side-car simply plugs into the extended 60 pin expansion bus on the side and connects to the drive with a cable pair. It works with Tecmar, Quadram, Impulse, Racore (non DMA), Microsoft, etc.

The Diskitjr hard disk is the best system available at the lowest price. Terms are COD cashier's check or prepayment by mail (5% discount with order). Add \$15 for UPS two day delivery, or \$25 for next day. Call SPC at (800) 345-0824 to order, or mail your order to the address above, including the model desired. Prepaid orders or orders with deposits receive first priority. Please call for additional information.

*** ONE YEAR WARRANTY ***

PCjr Owners

Everything you'll ever need!

- Memory sidecars which increase memory to 736K
- Second & third disk drives which snap on top
- Disk drives which read & write 1.2 MB AT diskettes
- 3½" disk drives which store up to 813K
- 20 MB hard disk drives which are DOS compatible
- ROM's which make your display easier to read
- Upgrades which expand 128K sidecars to 512K
- Speed up & pseudo DMA cartridges
- Clock modules, printer ports & speech attachments
- Joysticks, optical mice & light pens
- Adapters to use your PCjr monitor with a PC
- Switching boxes for monitors and/or serial devices
- Full size keyboards & numeric keypads
- Keyboard, modem, printer & monitor cables
- Basic manuals & also Cartridge Basic
- Game cartridges, software & Paint programs

PLUS MUCH, MUCH MORE!!

Write to us or call our toll free number to receive a FREE catalog of PCjr add-on products.

PC ENTERPRISES

"The JrProducts Group"

Box 292 • Belmar, NJ 07719

(800) 922-PCJR

(201) 280-0025

The Junior Report

The National Newsletter for PCjr Owners

YES Enter my subscription to The Junior Report as indicated below:

- One year (12 issues) for only \$20. for U.S.
 One year (12 issues) \$26. U.S. Money order for Canada
- Two years (24 issues) for only \$36. for U.S.
 Two years (24 issues) \$48. U.S. Money order for Canada
- This is a RENEWAL

Name _____

Address _____

City _____ St _____ Zip _____

Telephone () _____

Mail completed form and remittance to:

The PCjr Club
MEMBERSHIP DEPT.
P.O. Box 59067
Schaumburg, IL 60159-0067

A Cure for "Smearing"

I guess you could say I'm a charter PCjr owner. What that means is that I bought my Junior hot off the assembly line back in 1984. What THAT means is that I paid two or three times as much for my junior as most of today's PCjr owners did. In fact, what I spent would buy a pretty nice EGA system at today's prices! I have to say, though, that I have never looked back. I firmly believe that IBM made a huge mistake when they abandoned Junior, and he's proved it by growing up quite well without his "International Big Mother" (to borrow a phrase from Russ Walter!)

In spite of his dependability though, Junior has begun to show signs of old age. (Regrettably, he is not the only one in this household who is doing that!) Fortunately, in his case, the old age process can be slowed, if not reversed. The May issue of "The Junior Re-

**This article deals with
a problem caused by
the aging of the video
circuitry of the PCjr
color monitor - and
how to solve it**

port" told about the PCjr's original disk drives beginning to fail; this article tells about another "old age" problem and how to correct it.

In any complex electrical circuitry there are certain values that can be affected by outside variables such as temperature and time. Most circuits are designed with this in mind, and are built to operate correctly over a normal range of temperatures. The time variable, though, can cause some of the

component values to change ever so slightly with age, so that eventually the circuit will not function correctly at some of those "normal" operating temperatures.

The problem that has surfaced in Junior has been dubbed "smearing" by those of us who have seen it. The scenario is as follows: you've been computing happily along for 20 or 30 minutes, and find yourself needing to reboot for one reason or another. Confidently you punch the magic combination, CTRL-ALT-DEL. Junior obediently blanks out the screen, consults his disk drive, and flashes his prompt at you. The trouble is, everything on the screen is "smeared" sideways, and you can't understand a single thing he's saying. Sometimes there seems to be diagonal motion, other times the mess is sta-

BY RUTH GROVE

tionary. You try the old "turn the computer off and try again" routine, only to get the same results. This is where the panic usually sets in. When it happened to me, I called a local computer dealer, who told me confidently, "Oh, yeah, your video controller card is going bad. It'll cost around \$400 for a new one." Now, I know I've already said that I didn't regret all the money I had spent on my PCjr, but there is a limit, you know? I mean, after all, my family has grown rather fond of eating, and I couldn't see them giving that up so that I could fix Junior. So, I decided to give up rebooting. Cold turkey. But cheer up, fellow PCjr owners, you don't have to go through that, because the good news is that eventually, I reasoned out what was happening, and discovered the cure for "smearing." Better yet, it doesn't cost a penny. So here goes with the technical stuff:

Step 1: Go put on some rubber-soled shoes, touch something metal to make sure you aren't carrying around any kind of static charge buildup, and grab yourself a phillips screwdriver. (An all-plastic one, if available -- if not, be sure and use one with a rubber or plastic handle.)

Step 2: Set your monitor in a place where you have plenty of space to work on it, but without having to disconnect it from your system and power source.

Step 3: Remove the eight screws that hold the back of the monitor cover in place. There are two in back on the top, one on each side of where the power cord enters the cover, and four on the underside.

Step 4: Slide the cover off and look down into the monitor at the circuit board. DON'T touch anything, because the monitor can contain a good sized voltage buildup, even when it is off, and you know Junior and I would feel really bad if you got zapped! Towards the center of the board you will see a small adjustable capacitor labeled "H-HOLD." (It will be flat and round, about 3/8" in diameter, with an "X" in the middle to accomodate the aforementioned screwdriver.)

Step 5: This is where things get a little bit tricky. In order to adjust the display, you obviously have to be looking at the display. This means that Junior will have to be up and running during the operation. Also, Junior will refuse to "smear" with his cover off -- things just can't get warm enough in there to make it happen. So, slide the cover back on (make sure the circuit board fits back into the little grooves on either side of the cover or it won't go back together properly) and start him up with your favorite program. Wait about 20 minutes to let things get good and warm.

I mean, after all, my family has grown rather fond of eating, and I couldn't see them giving that up so that I could fix Junior.

Step 6: Reboot and see if Junior "smears." If not, wait a little longer and try again. When he does, you're ready to operate. Carefully slide the monitor cover back off, and locate the "H-HOLD" capacitor again. Holding the screwdriver by its plastic or rubber handle ONLY, and being careful not to let the metal shaft OR your fingers touch any of Junior's innards, insert the tip of the screwdriver into the top of the capacitor and turn it until his display is back to normal.

Step 7: Slide the cover back on, screw all the screws back into their proper positions, pull up your favorite chair, and reboot to your heart's content.

Classified Ad Section

PCjr 640K with color monitor
new Fujica M2551 disk drive, Tecmar jrCaptain sidecar, all manuals, programs galore, joysticks, excellent. Send S.A.S.E for full details....best offer.

T.D. Gosman
9 Warner Court
Huntington, NY 11743

IBM PCjr Parallel printer attachment - \$50. or best offer. PCjr diskette drive signal cable and disk drive adapter - \$50. or best offer.

Libby Milito
1060 San Marco Drive
Marco Island, FL 33937
(813) 394-0897

New IBM cordless keyboards \$25., 128K single drive Jr with IBM color monitor, modem, DOS 2.1, BASIC cartridge, Hands on BASIC & Jr manual \$600. I would like to buy an Enhanced AT style keyboard for my Junior. (I would consider trading some items.)

Charles Mellinger
110 S. Ronks Road
Ronks, PA 17572
(717) 687-8223

IBM PC Compact Printer, excellent condition, \$50., DAC Easy Accounting version 1.0, \$25., Numberworks, (small spreadsheet), \$10., Documentation for all.

Wanted: If you're selling your PCjr, or not using it, sell me your second drive, preferably 5 1/4, or hard drive okay, must be working, and reasonably priced. Will pay cash or trade.

June Stewart
368 Park Avenue
Wheeling, IL 60090
(312) 459-4880

One Centronics GLP Printer \$30. plus shipping costs. Two 360K disk drives @ \$35 plus shipping. All items in perfect condition.

Chris Reeberg
111-67 145 Street
Jamaica, NY 11435
(718) 529-1528

Microsoft Mouse with Booster of 128K, Color Paint by IBM, Software for Mouse and Ramdisk Configuration. Asking price for above \$200.00.

Ronald Rukan
46 Rivercliff Drive
Milford, CT 06460
(203) 877-3035

Wanted: Unmodified Microsoft memory expansion sidecar w/128K for PCjr. Mouse preferred but not essential.

K.A. Edmundson
2317 Fairway Cir. S.E.
Decatur, AL 35601
(205) 895-5250 Day
(205) 353-7395 after 5PM CDT

IBM PCjr Speech Attachment \$40.

Doug Inglis
4111 E. Packard Hwy.
Charlotte, MI 48813
(517) 543-4499

IBM PCjr 640K via Tecmar with parallel port. Original color monitor, single drive, thermal printer, and manual. Software includes cartridge BASIC, Executive Writer, Numbers Works, Graph & Calc, etc. \$550.

Bill Tolson
159 Via Los Miradores
Redondo Beach, CA 90277
(213) 373-4104 E & W

IBM PCjr 512K, Legacy expansion, 2 drives, parallel port, color monitor, enhanced AT style keyboard, 2 joysticks, cassette storage recorder and cables, BASIC cartridge, video adapter, assorted cable sets, 2 extra PCjr keyboards, manuals and software. \$650. UPS paid.

Tom Kravcar
321 S. Hickory Ave.
Bartlett, IL 60103
(312) 289-5283

Wanted: Lotus 1-2-3 for PCjr

128K single drive
Ted Rogers
43 Hickory Lane
Brewster, MA 02631
(508) 255-5717

IBM PCjr w/Racore 2nd drive 640K expansion module serial port adapter cable, much more. \$700.

Bob Janacek
877 Buffalo Ave.
Calumet City, IL 60409
(312) 730-1215

Wanted - Desperately Seeking PCjr Color Paint cartridges for small elementary school. Traded up to something more powerful or simply letting yours collect dust? Let me know, I'll buy it!

Mike
(215) 566-4640 leave message, and I'll answer promptly and gratefully.

IBM PCjr 128K, single drive, color monitor, IBM compact printer, Jr keyboard, BASIC cartridge, PCjr Sampler, Guide to Operations, one roll printer paper, all original manuals and documentation. \$600. or best offer.

Chuck Larson
10348 Yates Lane NW
Bremerton, WA 98312

MEMORY 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 (you must already have 256K total RAM in your PCjr system. **IMPORTANT** If your Junior only has 128K total, you do not have a memory expansion sidecar attached, and you CANNOT utilize this service). 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. Canada please write.

Name : _____
Telephone no.: _____
Address _____
City _____ St _____ Zip _____

Mail form to:

*The PCjr Club
P.O. Box 59067
Schaumburg, IL 60159-0067
ATTN: Brian Cook*

(206) 830-4861 after 6 PM weekdays
or anytime weekends.
(206) 830-0153 for messages.

IBM PCjr 128K, PCjr color monitor, one disk drive, parallel port, V-20 chip, enhanced keyboard, Guide to Operations Manual, WordStar for the PCjr, Friendly Ware PC Introductory Set. All Excellent+ in operation and condition. \$395, UPS paid.
William Shimonkevitz
8927 Park Forest Drive
Springfield, VA 22152
(703) 451-1751

IBM Parallel Printer Attachment with instructions \$40., IBM Diskette Drive Adapter and Signal Cable with instructions \$25.
Jim Crowther
7504 Bear Canyon Road, NE
Albuquerque, NM 87109
(505) 821-0172

DESERATELY SEEKING IBM's Writing To Read Program to send to missionary friends overseas who are teaching their children at home. I already have the speech attachment, now what I need is the program!

Kathleen C. Jaeger
712 Sedgefield Dr.
Newport News, VA 23605
(804) 595-5764

PCjr Parallel Printer Attachment
New, never opened, \$25. Lotus 1-2-3 w/driver for the jr version 1A \$100., Easy Writer version 1.1 \$25., PFS Plan \$30., Hayes Smartcom II \$35. Jumpman, Zyll, PC Pool Challenge, Touchdown Football, \$12. for all. IBM Personal Communications Manager version 1.0 \$15., IBM Writing Assistant version 1.01 \$15., Sidekick version 1.5 \$20., Turbo Lightning \$20., DOS 1.1 \$10., All original w/ manuals. Hayes Smartmodem 1200 \$165.
Dick Wendelburg
1335 Vernon North Drive
Dunwoody, GA 30338
(404) 393-9916

IBM PCjr 512K, Quadram expansion, 2 drives, jr Color monitor, internal modem, mouse, joysticks, manuals, and more...\$750.
Steve Brown
1465 N.W. 178th Place
Beaverton, OR 97006
(503) 645-8727

AMDEK ORANGE MONITOR
\$60., IBM Thermal Printer \$45.
Charles Ellmers
9690 Glenstone Dr.
Kirtland, OH 44094
(216) 256-3091

WANTED: 1 USED PCJR W/
WILSON-JONES Color monitor,
640K, 2 dr., w/ Racore enhancement, 1
color graphics adapter, 1 ramdisk software,
1 book on mastering Symphony,
1 book on mastering Lotus 1-2-3.
John Veltre
P.O. Box 982
Cartersville, GA 30120
(404) 382-3841

128K PCjr, SINGLE DRIVE,
parallel port, color monitor, dust cover,
Filing and Writing Assistant, software
manuals, other software.
Excellent condition. \$500. or best
offer.
Brenda Royce
263A West 19th St. #915
New York, NY 10011
(212) 677-3918

EYE ON SHAREWARE

By D. Glanville

First off the bat, we want to steer your attention to the right where we have created a sample receipt from the program **Astronomer, Wheel, and Receipt (Disk #132)** from last month's offering. Again, it's nice to be able to provide multiple receipts for refunds or whatever if you have lost the original. We think it's a pretty valuable program, along with the other two on the diskette.

Other updates of fine shareware programs we have received this month are an update of **Football Pool Manager (Disk #94)**, which is now version 1.2, and offers a slew of major enhancements. Some of them are faster execution time, an NFL Team Preload module (team names and abbreviations, including the power packed Phoenix Cardinals, are already in the program, team numbers have been added to speed up data entry, the ability to customize the display colors, a report generator that will provide a list of any individual's picks to avoid any confusion, and much more.

Bowling League Secretary (Disk #122) has been updated to version 4.1, and like the Football Manager, has many more features. Mixed and junior leagues are now supported and a new entry system includes a superior scores

entry program which minimizes key strokes.

Here are some new programs:

RUBIK'S CUBE (#135): This is the original commercial program that has now gone the route of shareware. It can solve any Rubik's cube problem, is fun, and has nice graphics. If you find it entertaining, we emphasize that you reward the original author with some form of registration as with the other shareware programs listed in this section.

BASIC PROGRAMS (Disk#136): This disk contains six BASIC programs along with documentation that programmers will find indispensable. These include **BASKEY**, a utility for defining function keys 1-10 for use while working in BASIC (provides all information, options, and operations on a single screen), **MENU** and **MENUEEDIT** for creating and maintaining a menu from

J C NICKELS

09/16/88

APRL	4.77	*
GEN	1.65	*
APRL	9.99	*
APRL	6.99	*
AUTO	2.47	*
PHAR	7.83	*
SUB-TOTAL	33.70	\$
SALES TAX	2.78	+
TOTAL	36.48	*

Thank You

Sample receipt created with #132.

which BASIC programs can be run, and **MENU.DOC** explains how to set up a library in which control returns to the **MENU** program after a called program ends. These programs, written and adapted by Mike Graff, afford flexibility and capability that you will find most desirable.

ORDER FORM ON PAGE 31

- 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.
- 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.
- 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 necessity. **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.

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.

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 categories from which to choose, or write your own questions and answers. **TWO DISK SET - \$10.00. Also requires either RAMDISK or 2 drives.**

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.

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 - \$10.00.**

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 \$10.00.**

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.**

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.

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 - \$10.00.**

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.

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.

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.

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 - \$10.00.**

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.

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 a 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 dir-

ectories, 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.

XWORD (#108): A crossword puzzle maker program. XWORD will enter your words, prompt you for clues and print out the completed puzzle, clues and solution. This is a great program for those who like to have puzzles that use special word lists (religious words, spelling words, family names etc). The printout looks very professional. Highly recommended. **Requires 256K.**

WORLDX (#109): This dandy little program will locate and print out maps of countries, states, cities and capitals from the whole globe. Just choose country, state or city you want to see then choose the map scale. Another option is POINTER. A mercator type projection of the world is displayed with a pointer located in the Atlantic Ocean. Use your cursor or number keys to position the cursor at the location you desire to examine. As the cursor moves its latitude and longitude will be indicated. When it is near where you want it, hit the enter key and the cursor will become the center of an expanded view. You can now reposition the cursor and expand again by hitting enter. Including the full world map you have five expansions. After a few expansions the names and locations of visible cities will be plotted. This program is not just instructional - it's fun! **Requires 300K.**

THE GAMBLER (#110): Three different programs to help you choose your lottery numbers and a BINGO game. PLOTTO by member C. A. Bates, not only makes selections, it tells you which selection the program feels has a better chance of winning. When you've made your choice you can have PLOTTO print it. If the lottery doesn't appeal to you try BINGO. This program will print out Bingo cards, then choose the BINGO numbers. A nice program for Bingo addicts. All's that missing is the parish, the shouting, and the prizes. Well, you can't have everything.

BRIDGE PAL (#112): A bridge game with instructions. There are three ways to play BridgePal. SOLO bridge is for one player. The SOLO game is the only one that lets you replay the hand, if you wish. TWO PLAYER bridge provides scoring for two people, who take turns playing random hands. Similarly, DUPLICATE scores for two, but deals the same sets of hands to both players. If you want help with your game, HELP is also available. Just push "H" and the computer will make your bid for you. Are you sure this is how Omar Shariff started?

AMPLE NOTICE (#114): An appointments calendar program. Appointments can automatically set up a 'pop-up alarm clock'. The disk also has alarm clock program and a utility which prints addresses sideways so that envelopes can be addressed from a standard dot matrix printer.

DMAIL (#115): A professional mailing list system that can create any number of lists, limited only by disk space. You can sort addresses on any of nine sort keys, copy selected addresses from one list to another, target your mail by city, zip code, area code, key word, etc. A powerful program. **512k required.**

ENCHANTED CASTLE (#116): Your adventure begins at midnight in the center of a medieval castle. You will search for the Star Diamond and escape with the handsome (beautiful) prince(ess). The Enchanted Castle is full of traps and dangers! The castle consists of over one hundred rooms and escape will require many hours of play. **256k required.**

HAPPY GAMES (#117): Four great educational games for the very young. The first three are an excellent aid to pattern perception for young children and WIGGLEWORM is a nice arcade style game for one or two children.. I highly recommend this disk. **Joy-stick required.**

MEAN 18 COURSE DISKS (#118) and (#119): These two offerings are meant to be used with ACCOLADE'S best-selling "MEAN 18" golf game. Each of these disks has three courses. Disk 118 has Eagle River, Bay Tree and Palmer courses. Disk 119 has Firestone, Bear Creek and Desert Inn Country Club courses. Those of you who have MEAN 18 will want to have these extra challenges; those who don't have MEAN 18 are missing a lot of fun.

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
120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146

Number of program disks wanted: _____ times \$5.90 = _____
_____ times \$10.00 = _____
Total enclosed : _____

Check here if this order has
six programs or more for
FREE library case _____

NAME _____

ADDRESS _____

CITY _____ ST _____ ZIP _____ PHONE # _____

THE NEWEST IN THE SHAREWARE LIBRARY

BY THE NUMBERS (#120): A numerology program guaranteed to entertain even the skeptics among us. You can find your lucky numbers, your lucky colors and your destiny. We know this is all hogwash (isn't it?) but it's still fun to read. After all it did say I was versatile, quick-minded and courageous, all of which is true. Of course it also said I might be irresponsible and and vulgar, but then no program can be right all the time. **384k required.**

TYPING ASSISTANT (#121): If you want to learn to type or if you can type but need to increase your speed, this is the program for you. This program was designed to help the beginning touch typist and to help experienced typists sharpen their skills. Written by a fellow PCjuniorite, so give it a try!

BOWLING LEAGUE SECRETARY (#122): So many of you requested a bowling program similar to our GOLF HANDICAPPER that we found this disk just for you. Spare yourself all the work. This system can handle 18 teams, up to 5 bowlers per team, and up to a 50 week season. Programs are provided to enter scores, print standings (weekly), prepare Book average listings, and more.

ABC FUN KEYS (#123): This program was written with imagination and aimed at children aged two to five. There are four programs intended to help you teach your child letter recognition and to encourage him to pick out, from your computer keyboard, the letter showing on the screen. The color graphics are attractive and will be enjoyed by the very young child.

FAST FOOD (#124): Even though more Americans than ever are watching their calories, sodium and cholesterol, fast food restaurants are springing up all over the country. We all use them. This disk lists the nutritional values of the menu items of fifteen of the most popular chains in the country. **256k req.**

SPANISH FOR TRAVELLERS (#125): Even without an audio tape, you will find this disk a real help if you are planning a trip south of the border this summer. The program consists of eight formal lessons with a few tests and quizzes thrown in, and an additional phrase/verb menu. **256k required.**

ASTROLOGY (#126): A full-featured astrology program for those of you who want to cast their horoscope. This program will help you calculate your chart and print out the results. Charts can be displayed in either graphic or cartwheel form. This program requires **256k** and two disk drives but it can be used with 640k using a RAM disk.

FORM LETTERS (#127): One hundred different forms and form letters for personal and business use. You will find a thank-you note, an absentee record, a demand for payment, a request for a refund, a letter of resignation and even a nasty letter cancelling an order placed with a pushy door-to-door salesman. All these letters are saved in ASCII form and can be imported to your word-processor. You can fill in the spaces or tailor the letters to your exact needs.

ASTRONOMER, WHEEL, AND RECEIPT (#132): Astronomer is a program designed to calculate important astronomical data for major planets for a specified place and time. The program uses current date and time when the computer is turned on. **256K REQ.** Wheel is another version of Wheel of Fortune and Receipt is a nifty little program created to print a cash register receipt for those refunds. You know how annoying it can be if you've ever got a refund form, bought the product and then lost your cash register receipt, or you have only one register receipt and several refunds requesting it. You can make a pretty credible copy of your receipt with this.

WAR AT SEA (#133): This program is a high level strategic and tactical situation using typical World War II naval campaigns. Some ships are limited to battles in which they actually took part and others may be used without having actually taken part in the battle. This is not a hand/eye coordination game, it is a strategy game. You may choose from seven campaigns including Pacific (U S. vs. Japan), Solomons (Japan vs. U.S.) and Atlantic (Germany vs. England). You will be asked to select your navy from a large stockpile and you are given information which will assist you in choosing your ships. Then you have to choose your targets. **MAN YOUR BATTLE STATIONS! 256K REQ.**

BASIC TUTORIAL(#134): Two basic tutorials, one for adults and one for youngsters. Introduction to Basic touches on statements, commands and functions. You will learn how to do simple programming. A friend told me she learned more from this program than she did from a whole semester of Basic Computing at night school. You'll learn how to LIST it, LOAD it, LOOP it, LET it, and that's just the L of it. You will understand RND, GOTO, INT, TRON, TROFF, DELETE, REM, DE-DUG, READ, RUN, SAVE and IF THEN. ARCHIE, the tutorial for kids is well presented and amusing. Your child will have the opportunity to study simple Basic structures at his own speed. This is an excellent disk for anyone wanting to learn more about the BASIC language. **BASIC CARTRIDGE REQ.**

THE PCJR CLUB
1121 Tower Road
Schaumburg, IL 60193

BULK RATE
U.S. POSTAGE PAID
PERMIT NO. 327
SCHAUMBURG, IL

