

pp 5-6 Writing Asst → Random
p. 12 DOS Interworkings

The Junior Report[®]



April 15, 1988 Volume 4 Number 3

The National Newsletter for PCjr Owners

The Verdict Is In For Shareware Survey # 5

The results from our Reader's Survey #5 have been tabulated, providing important feedback for PCjr users.



The PCjr was originally introduced as a "home alternative" to the office PC. Unfortunately, the original price was so prohibitive, that the Junior did not really gain "home" acceptance till a Christmas sale in December of 1984 made it one

of the best PC bargains of this time period.

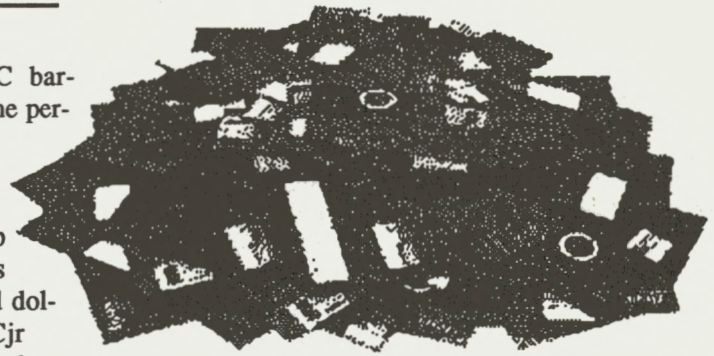
Accordingly, since the cost of a Junior setup was usually less than a thousand dollars, many PCjr owners have found

the purchase of many software programs unreasonable due to high costs.

Many Junior owners have found a satisfying alternative to the high costs of commercial software through the purchase of shareware. The shareware concept is a unique one that allows the user to try out a program first at a nominal fee, and then if and only if the user should find the program useful, he may pay the author a registration fee which provides the author monetary compensation for a job well done, as well as provide more incentive and funds to improve his product.

Usually, the cost of registration is well below the cost of similar commercial programs, making the the world of shareware very attractive to the PCjr owner.

Reader Survey #5 which appeared in the October 1987 issue of The Jun-



ior Report attempted to gain feedback as to how Junior owners were utilizing this concept.

The survey generated a good amount of interest with over 1100 readers returning surveys. Most respondents were emphatic about their favorite shareware program as well as their least favorite. Ninety-eight percent of all respondents felt that the shareware concept was a very valuable part of their PCjr software system, and that they would continue to try out these programs on a regular basis. About a third of those returning surveys provided additional comments on the back of the survey, some of which are reprinted on page 21.

The first section of the survey dealt with the quantity owned of shareware programs compared to that number actually used by the PCjr owner. The re-

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By Harrison Day

PCjr Networking surge by Racore, and other notes of interest.

This week we received a call from Ms. Seb Hughes of The Racore Corporation (170 Knowles Dr., Los Gatos, CA 95030, 408-374-8290) who informed our offices that Racore may be on the verge of a campaign to heavily push their networking system for the PCjr. According to Ms. Hughes, the educational arm of IBM in Atlanta has contacted Racore to encourage them to actively push their system, allowing thousands of PCjr's currently in school systems across the country to remain "current" in the technological picture.

The Racore system would use an IBM Model 60 or 80 as a file server for up to fifteen PCjr's. For those of you who don't understand the networking mania, it is a system whereby many computers (PCjr's for example) can be hooked up to one computer outfitted with a hard drive. Each of these "terminals" can access the database or program that is on the host system. This would of course save many companies thousands of dollars over the years since they would not have to buy a separate program for each workstation. Of course, many companies have to have their data in one place, and networking would allow more than one operator to access or update the file

or database.

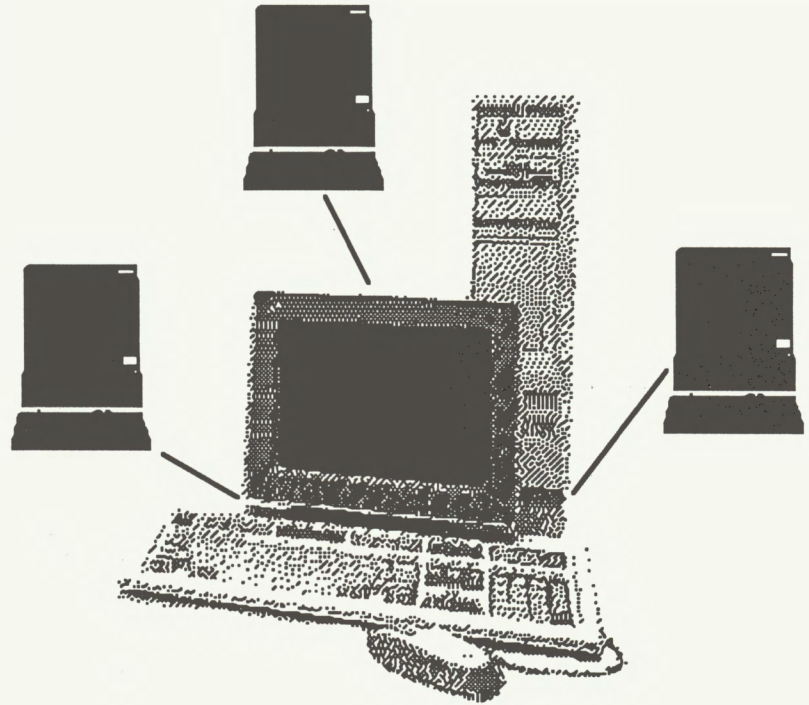
The problem right now for Racore is that it really doesn't know the strength of demand for the systems. If the price is reasonable, many private individuals could still upgrade to a IBM Model 60, per se, and have the Junior linked and part of a powerful computer system. Again, it is a big if, but it certainly remains in the realm of possibility. We encourage anyone, especially school computer department heads, to write to either Ms. Hughes or to our offices for more information. A vital networking system for the Junior would be a big boost to the fortunes of all PCjr owners.

In a side note, we have also found out that the marketing of Racore products will now be handled by the Triton Corporation in Foster City, California. Racore will still be producing the PCjr products, but is allowing Triton to handle the non-technical stuff. Racore will continue to support the Junior owner. Ms. Hughes recommends readers to write to us with a PCjr

"wish list" of products that they would like to see produced for the PCjr, and we can then relay them to Racore. Start writing - and wishing.

Okay, so you could barely read the solution of the crossword puzzle on page 16 of last month's issue. That's why they call it a puzzle. Well a new and improved, mostly readable version of that same puzzle appears on page 16 of this issue. We apologize for any undue eyestrain that we may have caused you last month.

Two months ago we said that we were waiting for a Honeywell Keyboard 84RX which has received rave reviews from many keyboard aficionados. Unfortunately the keyboard failed the ultimate PCjr compatibility test - we plugged it in with an adaptor and it beeped us rather rudely and continuously. Scratch one more keyboard. So the search for the ultimate Junior keyboard continues. Next stop - the Grand Islands of Tahiti where Omar Shariff uses his Writing



The Junior Report

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Assistant on his PCjr overlooking the most beautiful bay in the world!

May we have the envelope, please. And the winners are in our Shareware Survey #5 drawing are Hank Kennedy of Round Rock, TX, R. J. Patterson of Raleigh, NC, Paul Greenough of Williamsville, NY, and Bobbie Jauch of New Orleans, LA. Each will receive an Infocom software game. Congratulations to these fine individuals who through their sheer courage sent in a completed survey.

There are still a few IBM PCjr Power Attachments available to PCjr Club members for the nominal cost of \$25. Please include \$5.00 shipping and handling for those living in the continental United States. Please write in you live elsewhere for shipping costs.

There is a new BBS dedicated to PCjr users and it is called Jr Tech RBBS and it is operated by Grey Mull of Charlotte, NC. The number is (704) 365-6855 3PM - 11PM Mondays through Fridays, and is also open all weekend.

We have received lots of kind letters applauding our renewed interest in the 128K PCjr. Some have expressed interest in more commercial programs for the 128K jr. This month we are reprinting a fine review of Broderbund's Bank Street Writer originally published in the April 1984 issue of PCjr Magazine. This program can still be ordered at most software stores, or can sometimes be picked up at basement prices at computer flea markets. Look for it.

This month we are also fortunate to have a report from the frontline from our ace field reporter Mike Graff which appears on page 21.

Steven Miller of Grand Terrace, California writes to us with a simple solution to the problem of obtaining two serial ports for the PCjr. Legacy Technology in Nebraska has a serial

Nevertheless, I'm still happy that our piles are of the paper kind and not of the organic, but that's just me.

interface card which can be placed in the internal modem slot inside the PCjr. This according to Legacy provides a true RS-232 interface to the jr and supports up to 9600 baud, though Steven feels it may be more like 4800 baud. Steven has connected his external modem to the new serial interface (COM1) and his Logitech serial mouse to the original "S" port on the back of the jr via a PCjr serial port adaptor. He does point out, however, "that sometimes the mouse will not install properly and I have to disconnect it, wait 5 seconds, re-connect it and then it will install properly." Thanks for all of the important information.

Our office here often resembles an unkept kennel - there are piles everywhere. Fortunately, these piles are of the paper nature rather than the organic kind. Though the piles seem to grow at will and sometimes can be seen moving across one's desk onto another, the most amazing thing is that they sometimes change into different kinds of piles altogether. For example, last month, the Washington State pile became the Uh-oh-we-forgot-to-add-this-to-the-regular-mail pile, therefore those issues went out a few days later. Our apologies to our Northwest subscribers; we were very upset and very embarrassed. Nevertheless, I'm still happy our piles are of the paper kind and not the organic, but that's just me.



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.

WHERE ARE THEY NOW

Dear Harrison:

What you don't realize is that *PCjr Magazine* is not really dead...in fact, Willie's Dad, Doctor Don, Matt the Merciless, Pac Woman, Jay Bird and the whole demented crew are in fact locked away in a secret chamber deep beneath the streets of Metropolis, hand writing and copying issue after issue --- we just finished Vol. 4 Number 2 and are waiting for our next supply of carbon paper before publishing Number 3.

No, that's not true.

Would you believe: The editors and staff of *PCjr Magazine* were kidnapped by a religious cult that worshipped membrane keyboards and are being held hostage in an abandoned IBM warehouse in Boca Raton?

You wouldn't?

Oh, all right: In any case, we live, and were delighted to receive a copy of your January 1988 "Junior Report" in which you began a series of reprints from *PCjr Magazine*. Thank you for the kind things you had to say about us and the magazine -- we agree. *PCjr Magazine*

was an unusual experiment in computer publishing, more of a lifestyle magazine than a technical journal, and we are very happy that we are remembered, and that a new generation of *PCjr* owners will discover some of our work.

For your information, Corey Sandler (*PCjr Magazine's* Editor) and Don Kennedy (*PCjr Magazine's* Associate Editor) are alive and well and living in Boston, where we are, respectively, Editor and Executive Editor of another computer publication, "Digital News."

We send our regards to the faithful.

Sincerely,
Corey Sandler and Don Kennedy

P.S. We'd really love to contribute some contemporary stuff to The Junior Report if you're interested.

We're interested - very interested. In fact, we can't wait. We appreciate your letter and we hope that we can continue the fine work set by you and your staff. Basically, all we really need is about a \$500,000. infusion from Ziff-Davis. Talk to them for me, will ya Corey? Thanks.

We really do hold your magazine in reverence, it was really the only great PCjr Magazine on the market. Though it is standard reading for the entire staff, it is not true that I sleep with one issue under my pillow every night except when I'm on the road. We do try to make our little magazine

a lifestyle type publication: the life of the PCjr owner is unique. We all know that the Junior was the best computer bargain of the '80's, yet we're not foolish enough to call it a perfect machine. Our job at The Junior Report is to maximize both the productivity and enjoyment of owning one of these great bargains and have a fun time doing it. Though there are 500,000 PCjr owners out there, the Junior owner remains special. Though we grit our teeth when we encounter an incompatibility problem, we quietly smile and rejoice when a \$500. program runs effortlessly on our favorite machines. That is the life of the PCjr owner.

One more point - do you realize that if IBM hadn't pulled the plug on poor Junior that you would be answering my letter in your column? Strange but true.

*Thanks again for writing.
Harrison Day*

MEMORY EXPANSION

I live at an APO address and our mail, especially bulk rate, takes extra time. Can you do anything about it? Thank you for your consideration in this matter.

I also have a question about expanding my *PCjr*. I presently have a Microsoft Booster 128K expansion with a mouse, upgrading my Junior to 256K. I would like to upgrade to 640K and am considering adding either a 2nd drive or a hard disk or both in the future. I will not send my computer through the mail and do

not wish to chance my abilities at soldering. My questions are:

1. Can I add additional memory packages until I reach 640K or must I remove the Microsoft Booster in order to upgrade to 640K?
2. Will a second disk drive or hard drive present problems?
3. If I must choose, based on the fact that I have a Microsoft Booster, what expansion units will work?

Since I live outside the United States and have no access to "Junior knowledgeable" stores/outlet, any help would be greatly appreciated

Alan Reed
APO New York

We apologize for the delay in receiving your monthly Reports. We could not survive if we had to send every issue first or second class mail, especially with the recent rate increases. However, we feel that those serving our country with an APO or FPO should receive special treatment, and we have started changing our mailing database and procedures to include first class postage for those in the military. Don't thank us - we thank you.

One thing nice about PCjr memory expansion products is that almost all expansion products are compatible. You can add either a Tecmar board with 384K or even a jrHotShot internally to create a lean, mean 640K machine. You may have to experiment with which PCjr expansion memory software will work the best with your setup, and more importantly, with whatever software you normally run. We have found that jrConfig.sys (#82) seems to be the most versatile in this respect, though we keep a DOS boot-up disk with each particular kind of memory expansion software always handy.

If you should decide to get a Racore second disk drive with 384K, you can place the Microsoft Booster on the

outside of the Racore unit.

As far as other second drives or hard disks are concerned, we have not heard of any incompatibilities yet, except that the Racore hard drive must be used with a Racore system only. To play it safe, purchase your expansion unit from a vendor who allows returns due to any unforeseen hardware incompatibility problems.

WRITING ASSISTANT PROBLEMS SOLVED AGAIN AND AGAIN

Last month we reprinted a letter from reader Richard Chumat who, among other things, wanted to run The IBM Writing Assistant program from a ramdisk. Since that letter, we have received several solutions that will fulfill Richard's wish. A few were identical methods, and we have tried to credit everyone who submitted a solution. Thanks to all for helping out one of their PCjr brethren. We start with the easiest solution as outlined by Tony Law of So. San Francisco:

Mr. Richard Chumat asked how to load the IBM Writing Assistant into ramdisk to avoid too many disk swapping. Your reply was to purchase a program at \$159.95 is not needed. I am using the Writing Assistant from the ramdisk right now.

Mr. Chumat, my Junior has 640K memory with Racore's 2nd disk drive but without DMA. To load the Writing Assistant into ramdisk and run from ramdisk:

1. Set your ramdisk at 360K if you have 640K total memory.
2. Copy the IBM Writing Assistant into Drive C (ramdisk) using the DOS COPY command.
3. Leave the Writing assistant Disk in Drive A.
4. Change the default drive from A to C and type Write. The program will

check the drive A for the original. After the Menu Screen appears on the screen you can remove the Program disk from Drive A, and replace it with a data disk. There will be no more disk swapping. When using the spell checker, you will notice how fast it now runs.

I have learned a lot from The Report articles, and now I have a chance to help one of my fellow Jr. partners and it makes me feel just great!

Tony Law
So. San Francisco

J L Schneider of Reeseville, Wisconsin also uses the Writing Assistant from ramdisk using the same method and illustrates further:

Enclosed is a copy of the directory of my Writing Assistant disk and a copy of my autoexec.bat file. I have never had any problems running Writing Assistant on Drive C:. However the program disk must have the autoexec.bat file copied just as it is. The program will operate from drive A: on G:bat or from drive C: ramdisk on c.bat. My directory:

```
WRITE    EXE
SETUP    EXE
G        BAT
WRITE    SWP
PRINTERS LC
WORDPRF WDL
LOGO     EXE
C        BAT
WORDPRF ADL
```

My autoexec.bat file:

```
type c.bat
copy A:write.* C:
copy A:wordprf.* C:
C:
write
```

Herb Jester of Muncie, Indiana adds,

But Men cannot get files from disk in A

** unless type A: [A: name]*

The copy-protect is in a hidden file, INSTRUCT.PFS, that is searched for when you boot up the WRITE file. If it is on "A" drive, the computer will find it.

I made a DOS disk to boot a 300K ramdisk and a Writing Assistant disk with files needed (G.BAT, PRINTERS.LC, WRITE.EXE, WRITE.SWP, WORDPRF.WDL, and INSTRUCT.PFS). The G.BAT file has:

```
COPY *.* C:
C:
WRITE
```

If you do not have a copy disk, leave off the "WRITE". in the "G.BAT" (autoexec.bat file), replace the special Writing Assistant disk with the regular Writing Assistant disk, and enter WRITE. You may now put your data disk in your drive and go to work.

You'll notice some variation from technique to technique, but basically they all have the same idea. Bill Bruins of Rochester, MN also adds that this method works for the other programs in the Assistant series as well.

Now, that was group one, and we thank all of these readers who have written. There is another way, however, that one can run the Writing Assistant from a ramdisk without spending \$159.95 for Unlock or have the original program disk in drive A. This method is to "unlock" or remove the copy-protect system on your own, using a DEBUG program submitted by Clyde Dodge of Mountain View, CA, or another program submitted by Louie Levy, Editor of The Eugene PCjr Newsletter (The Eugene PCjr Club, 1011 Valley River Way, Suite 220, Eugene, OR 97401). Due to the length of these programs, these two programs will be printed in their entirety in the next issue. Thanks guys, and we'll be talking to you next month.

EXPANDED MEMORY FOR PCjr

Does the PCjr have the capability to run an EMS (expanded memory specification)? I would be the first to admit that I am not a technical genius, but it would seem to me the PCjr has the potential to run an EMS.

Walt Glasspool
San Jose, CA

The answer is YES according to a company in Verona, Pennsylvania. EMS (expanded memory specification) has been utilized by many PC users for some time now. Though DOS recognizes only 640K for applications, the user can immediately use the rest of the memory for ramdisks, and some applications such as Lotus 1-2-3 can use the expanded memory in a process called bank-switching.

Mr. Paul G. Crumley is head of At-

tic Technology (P.O. Box 354, Verona, PA 15147) and is somewhat of a folk hero to many jr owners for some of the innovative things he has done for the PCjr. The Macintosh people have their Bill Atkinson, the Juniorites have Paul Crumley. Paul will modify an IBM sidecar to 512K EMS for \$250., thereby bringing your total PCjr memory to 1 Meg. We'll be covering the whole EMS issue and the PCjr in the next issue.

JRHOTSHOT SPEEDUP

I've owned my Junior for a year and a quarter now, and it recently has grown to 640K via a no-frills jrHotShot. During my exploration of the hardware and software that both came and didn't come with the thing, I have found yet another way to speed the computer up

Owl Software



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(614) 436-0219

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- 256K MEMORY ALONE \$154.00
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- 512K MEMORY ALONE \$199.00 with 2ND DRIVE \$429.95
- RAM DISK SOFTWARE** included free. Shipping is \$3.50 memory or \$7.00 memory + drive U.P.S. ground add \$1.50 if C.O.D.
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L E T T E R S

some more. What came with the board (jrHotShot) was a disk with a label on it that exclaimed "jrHotShot" about forty times, and it contained a few device drivers that do or don't set up ramdisks. The resulting speedup was impressive. I had gone and bought the jrConfig.sys disk from your now extensive shareware software library, plugged that into the CONFIG.SYS file, made sure it set up a ramdisk and pressed the infamous key combination Ctrl-Alt-Del. I tried out a few games, and they seemed to go twice as fast as they did with the programs on the jrHotShot disk, and a whole heck of a lot faster than they did before the upgrade. So, I urge jrHotShot own-

ers to buy Larry Newcomb's fine program if you happen to be a speed demon.

I have acquired a nasty habit of pulling out the BASIC cartridge slightly and pushing it back in to re-boot whenever Ctrl-Alt-Del doesn't work. Is that as dangerous as I now realize it might be? I have always hated powering down and up again because the memory check takes so long.

I want to thank the Man Upstairs (IBM, of course) for making this machine. Before I got involved with computers, I taught myself that they were the enemy, that I should stay away from them because they would serve to hurt us. Now that I own

one, I have learned that they are our friends, are here to help and unify people.

Jeff Kruys
Peachland, B.C.

Pulling the cartridge in and out is a quick way to restart your Junior without going through that agonizing memory count. It shouldn't hurt your PCjr, per se, but it's murder on the contacts on both the cartridge and cartridge slot. Paul Rau Consulting in California (209) 745-9284 has a Quick Silver cartridge (\$30.) that eliminates the memory count upon re-booting, and this is probably your safest bet.

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Ian Garvey

IN COLD TYPE

Bank Street Writer:

*Designed
by educators,
Bank Street
Writer is a
word
processing
program for the
family. Its main
virtue is its
simplicity.*

Teacher's Pet

In a classroom not long ago, I watched 10-year-old children slam *Bank Street Writer* disks into computers, load them into the RAM, pull them out, slam in data disks, and begin writing at once. "Nothing to it," said a girl as she inserted the word

"ghoulish" into a scary Halloween story. And as sure as simplicity is a virtue, there's nothing to using this low-priced word processing program, which is now available for use with the IBM PCjr. But that nothing is really something.

Bank Street Writer is a word processing system that serves the typical family well. Kids as young as 8 years can learn to use it in about two hours' time. Most adults, largely because of lingering computer paranoia, may take an hour or two longer.

It's safe to say that the creators of *Bank Street Writer* had kids and

IN COLD TYPE

parents in mind when they put together this simple word processing program. *Bank Street Writer* is a collective product of the Bank Street College of Education (a private, teacher's graduate school located on New York City's Upper West Side), Franklin E. Smith, and Intentional Educations, Inc. The Bank Street graduate school operates on the principle that the business of training teachers is

Learning to use *Bank Street Writer* is a little like helping the kids put together a Tinker Toy only to linger and play with it until you're finally chased away.

.....
best accomplished when classroom theory is put into practice. Thus, the faculty and students spend as much time as possible working in community schools.

Bank Street's word processing program, *Bank Street Writer*, then, is a natural extension of the college's "theory into practice" outlook. Since learning theory has it that writing is a process of thinking words onto paper, and thinking is rarely an orderly process, it's not unusual to write a paragraph only to find that the sentences are organized like a pile of blocks knocked over by a 3-year-old. It is also not unusual to write a series of paragraphs only to discover that paragraph seven really should be where paragraph two is. And, it is possible to discover that you really did use the word *possibly* 17 times. To write means to change your mind.

So, putting theory into practice,

the people at Bank Street decided a word processing program with flexibility and speed was needed. You need these two attributes to take you through the thoughtful process of making revisions and changes in a way that's pleasing to the visual and tactile senses. Happily, *Bank Street Writer* is constructed to facilitate the process of writing.

Family Friendly While it's true that *Bank Street Writer* will not necessarily amaze you, even experienced users of high-powered word processors will smile affectionately at this little gem. *Bank Street Writer* is the kind of word processing software that you'd design for your own children.

However, that doesn't mean it is just for kids. *Bank Street Writer* supports just about any kind of writing anyone in the family does, including the 8-year-old's limericks, Mom's personal letters, and full-scale high school, college and even business reports.

Amusement Start The fun begins with the program start-up. The easy-to-follow instructions tell



Bank Street Writer

.....
Broderbund Software, Inc.
17 Paul Dr.
San Rafael, CA 94903
(415) 479-1170

List price: \$79.95

Requires: 64K of memory, DOS 2.10, one disk drive.

.....
CIRCLE 437 ON READER SERVICE CARD

how to load your DOS 2.10 disk into your PCjr, pull it back out when you see the A> prompt, put in *Bank Street Writer*, type INSTALL1, and follow the on-screen prompts to put first the program and then DOS into and out of the disk drive several times. (I meant to count how many times, but the procedure went so fast and smoothly that I forgot.)

Once you've done this, you can start up your word processing system without having to use your DOS again. Simply insert *Bank Street Writer* into your disk drive, turn the PCjr on, type in the DOS date and time, press RETURN, and you are ready to write or edit within 20 seconds. And, you can do both on either a 40- or 80-column display.

When the program comes up on the screen you will see a rectangle about the size of a 5 x 8 inch file card. A cursor—your choice of a blinking inverse square or a blinking line—waits at the upper left-hand corner.

Screen Editing Above the rectangle are a few lines of instructions describing the use of both the Back Space and Delete (Del) keys for erasure, cursor movement with arrow keys, and a start type at cursor order for the 18 lines of text within the rectangle.

Using two keys for erasing errors is an unusually handy feature. Back Space erases errors to the left of where you left off a tap at a time or with a glide when you hold down the key. If writing is composing to you, you will probably use the Back Space key more than the Del key, which erases to the right of where you are working. Eventually, the use of these keys becomes so intuitive that you won't even need to think about it.

Inserts (Ins) are easily made, too. As in *EasyWriter*, the inserted

IN COLD TYPE

word pushes along the text, coming after it like a train. The two delete keys remove the excess, and, wonder of all wonders, the text almost always rearranges itself after either an insert or a delete. That means there are no odds and ends of lines sticking out and tumbling in like Beat Generation poetry.

Juggling Text At the top of the page is PRESS ESC FOR EDITING FUNCTIONS. Press the Escape (Esc) key, and the copy you have produced stays in the rectangle, and at the top you will see a list of the editing operations you can perform.

You use the PCjr's Tab key to move to the functions you desire. For example, if you want to erase a block of copy, press Tab once, and ERASE lights up in inverse video. A prompt then tells you to place the cursor at the beginning of the text you want removed. Do that, press RETURN, and another prompt appears, telling you to put the cursor at the end of the text you want to expunge. Move the cursor and the text you want to delete is then highlighted. But before any erasure is made, another prompt appears. "Are you sure you want to erase the highlighted text? Y/N." Type Y for yes, and the text instantly disappears; type N for no, and the inverse video disappears, and all is back the way it was before you started.

Even if you erase the copy, *Bank Street Writer* gives you another chance to change your mind. As long as you do not leave the editing mode, you can move into UNERASE to bring the text back from Junior's RAM. Once safely back in the rectangle, the text will sit there in inverse video while you ponder your delete decision. If you respond to the prompt, "Do you want the highlighted text put back in? Y/N" with a Y for Yes, it slips back

into your text.

Of course, there are other editing commands such as MOVE, MOVEBACK, COPY, and REPLACE, and each is easy to use. With MOVE, you can shift up to 15 lines up or down to some other location, let it rest there a bit to see how it looks. As long as you do not leave the *Bank Street Writer's* editing function, you can use MOVEBACK to have still another look before

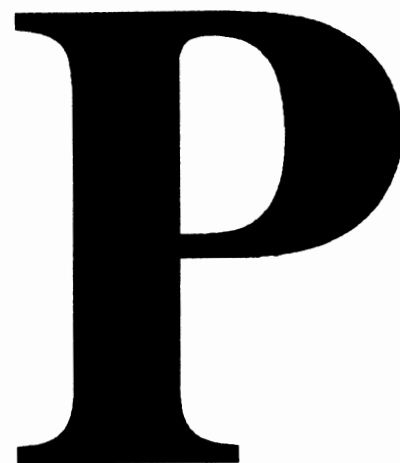
Bank Street Writer
offers a full range of
printing commands
which are marked by
the simplicity of
their operation.

.....
making the relocated text a permanent placement. The same general principle applies to COPY and REPLACE.

Unlike *EasyWriter's* whimsical UNDELETE, which brings back copy one silly backward letter at a time, *Bank Street Writer's* functions have real value to the thoughtful writer during the revision-editing process.

Though you cannot write while you are in the editing mode, it took me only 12 seconds to jump from writing to editing and back again to erase and touch up a seven-sentence block of copy. That's fast enough to please even the swiftest of writers.

Printing Plant *Bank Street Writer* offers a full range of printing commands which are, again, marked by a simplicity of operation. Once you call up the printing function through the editing mode, you are asked a series of pleasant questions before your printer takes copy.



DOS REVEALED

IBM PC-DOS is more than just a startup program for your PCjr, and in this article, John Wilson unveils some of its mysteries.

It is safe to say there is one particular program that every IBM PCjr owner has and that this program that is used far more than any other. It is used more than any word processor, more than any game, more than any spreadsheet, and more than any data base manager. In fact probably every time anyone uses Junior this program is used, and it is in use from the time that Junior is booted up to when Junior is shut off. This program, of course, is PC-DOS, the operating system for Junior.

This series of articles will take a close look at PC-DOS. We will see

what it does and how it does it. You will learn the limitations and the powers of PC-DOS and even the reasons for some of the peculiarities and for some of the error messages we all receive from time to time. Additionally, they will help you decide which version of PC-DOS you should be using, how to get more out of DOS, and will even show you how to write a short program that uses DOS to control the output of your printer.

Virtually every computer, from laptops to supercomputers, has an operating system to connect the computer with the real world. Some of the well

known operating systems are: UNIX, XENIX, CP/M and, of course, PC-DOS, and some not so well known are QNX, PC-MOS and the p-System. You probably have also heard of the brand new operating system being pushed by IBM and Microsoft, called OS/2, which has been the source of much recent discussion and controversy.

It is possible for a computer to function without an operating system, but every program would have to con-

BY JOHN WILSON

DOS Revealed

tain lengthy sections devoted to controlling and operating the computer and there would have to be many versions of the program so that it could run on different computers. In effect, each program would have to have its own operating system. There have been a few programs, mostly games, that contained their own operating system, but the vast majority of programs for Junior and other members of the PC family rely upon DOS to take care of their needs.

The operating system is itself a program. It is a program which interfaces between the computer's Basic Input/Output System (BIOS) and the application program (which is Writing Assistant, or 1-2-3, or whatever program you are running). Tandy recently introduced a computer in which the operating system (a version of DOS) is built into the computer's Read Only Memory

(ROM), but normally, the operating system is loaded into the computer's memory from a disk. And for IBM computers you have to buy the operating system as an option, even though the computer is virtually helpless without it. The advantage of having the operating system on a disk, rather than in ROM, is that it can be upgraded and modified when needed and you can customize it to fit your particular needs.

We have talked about the importance of an operating system, but what really does it do? Basically, the duties of an operating system can be separated into three broad categories: to manage devices, to process commands, and to control and service programs. Later we will discuss each of these three functions in detail, but for now here is a summary of each.

DOS, as you undoubtedly know, stands for Disk Operating System, and

the DOS function of managing disks and files is one that is highly visible and familiar to us. DOS formats our disks, saves our programs and data on disks, loads our programs and data from disks into Junior's memory for us, and many other tasks connected with the management of disks. But DOS also manages other devices including the display, the keyboard and even, to some extent, the printer.

We are also all familiar with DOS's function of processing commands. We type in DIR, and DOS shows us information about the files on a disk. We type in COPY (with its several parameters) to make copies of files; DEL to delete a file; or FORMAT to prepare a disk for use. When we start a program by typing in the filename of the program, we are also using the command processing function of DOS. DOS's terse and sometimes chilling error mes-

TABLE 1
Versions of PC-DOS

<u>PC-DOS Version</u>	<u>Date</u>	<u>Hardware Released</u>	<u>Changes in DOS</u>
1.0	Aug 1981	Original PC	The first operating system for IBM-PCs
1.1	May 1982		Some bugs fixed, and support for double sided diskettes added.
2.0	Mar 1983	IBM-XT and hard disks	DOS is extensively rewritten, it is a new operating system.
2.1	Oct 1983	IBM-PCjr	Half-height drives supported. Some bugs fixed.
3.0	Aug 1984	IBM-AT	High density disks supported.
3.1	Mar 1985		Networks supported. Some bugs fixed.
3.2	Dec 1985	IBM Convertible	3.5 Inch disks supported.
3.3	Apr 1987	IBM PS/2	High density 3.5 Inch disks supported.

sages (Abort, Retry, Ignore?) and the famous DOS prompt (A:>) are also part of this ability of DOS to carry out our commands.

Less familiar to us is the third DOS function which is controlling and providing services for programs. DOS controls memory location and use, how a program starts and how it stops. DOS also provides services to programs, so that they can read input from the keyboard, write characters on the screen or send them to the printer and, of course, DOS takes care of a program's disk management needs.

You may be wondering, "If DOS is a program to control Junior, then how does DOS itself ever get started?" Whenever you turn on Junior, instructions in a section of ROM (Read Only Memory) starts an internal program called The Bootstrap Loader which in turn looks for a disk in the disk drive. If a disk is present, then Junior reads the very first sector (the boot sector) of the disk. (If there is no disk present, then DOS is not loaded and Junior goes into Cassette BASIC which is contained in ROM.) This boot sector, which is present on every formatted disk, checks to see if two key files are on the disk.

These two key files are IBM-BIO.COM and IBMDOS.COM. IBMBIO.COM contains hardware specific information about BIOS in the IBM family of PCs, and through this file instructions (called drivers) to control the display, the keyboard, the printer and some other devices are placed into Junior's memory. The other file, IBMDOS.COM, transmits information that is independent of hardware and is used by programs for memory management, character input and output and file and record

management (these are named system functions). Both of these files, which are called hidden files because they do not show up in a file directory, are placed on a disk whenever it is formatted with the system option.

See the Sidebar article "Looking at the Boot Sector". DOS comes in two, almost identical in appearance, versions. There is PC-DOS which most of us PCjr owners use, and there is MS-DOS which is used by most PC compatible computers. Both versions are supplied by Microsoft Corporation. PC-DOS is intended to be used exclusively by the IBM family of computers, including the PCjr, and contains the files IBM-BIO.COM and IBMDOS.COM mentioned above. In MS-DOS, hardware specific drivers are in a file called IO.SYS (rather than IBMBIO.COM) and this file is based upon information provided by the manufacturer of the computer. System functions in MS-DOS are in a file named MSDOS.SYS (rather than IBMDOS.COM). The COMMAND.COM file is usually a little different also. Many PC compatibles are able, and do, use PC-DOS rather than MS-DOS. In fact, this is one test of the compatibility of a clone PC.

The Evolution of DOS

It is not necessary to know the history of DOS in order to use it, but its history is interesting and helps explain why DOS is the way it is. In 1980, when IBM was making plans to introduce their Personal Computer to the world, the most widely used computers were based upon the eight bit microprocessors, and the most widely used operating system for these computers was CP/M (which stands for Control Pro-

From the very beginning, several decisions were made that greatly and permanently affected DOS.

gram/Microcomputer) by Digital Research. IBM, for some unknown reason, did not select Digital Research to develop an operating system for their new computer. Instead, IBM selected a relatively small software company, Microsoft, located in a Seattle suburb.

Microsoft did not have an operating system, and not wanting to start from scratch to develop one they purchased the rights of an operating system already in existence. A small computer company, Seattle Computer Products, had written an operating system, named 86-DOS, for computers using Intel 8086 microprocessors, and this is the program that became the famous PC-DOS (IBM was going to use the Intel 8088 microprocessor in their Personal Computer. Intel's 8088 and 8086 microprocessors are almost identical.).

From the very beginning several decisions were made which greatly and permanently affected DOS. First, in order for existing programs to be easily adapted and also to minimize difficulties for users to adapt, the new operating system was purposely kept as similar to CP/M as possible. Anyone who has ever used CP/M can confirm how closely DOS mimics CP/M, and I have wondered why there never was a "look and feel" lawsuit

against Microsoft and IBM by Digital Research.. Secondly, it was assumed that only one person at a time would use the computer and that the computer would need to do only one thing at a time (such as either computing or printing). Finally, although the 8088 was capable of addressing over one million bytes of memory, IBM and Microsoft decided that 640k bytes would be more than anyone would ever need and they only established that much memory area in their new system.

There have been numerous changes in DOS, but those basic decisions remain. Table 1 lists all of the versions of PC-DOS that have been released. Most of the time each version of PC-DOS has been released in conjunction with the release of a significant new piece of IBM hardware. Each new version of DOS included drivers for the new piece of hardware, and at the same time fixed bugs and added new features. Originally only PC-DOS was released, but beginning with PC-DOS 1.1, versions of MS-DOS, with version numbers comparable to those of PC-DOS, were also released.

As you can see from Table 1, there have been three basic versions of PC-DOS. The differences between Version 1 and Version 2 are so extensive that, in effect, they are different operating systems. Most of the DOS services that we will discuss later were added with Version 2 and this is the reason that almost all programs require DOS Version 2 or later in order to run. The changes between Versions 2 and 3 were not extensive and virtually all programs now being written will run with Version 2.0 and 2.1 of DOS.

Each new version of DOS also adds a couple of new features or commands. Version 3.0 added a ram disk utility, Version 3.2 added a couple of

LOOKING AT THE BOOT SECTOR

As explained in the main article, whenever Junior is started he looks at the boot sector of the disk that is in drive A. Every formatted disk has a boot sector. It is interesting and easy to look at the contents of the boot sector. If you have the Norton Utilities, or a similar program, you can use that program to look at the boot sector, but if you don't you can use a small program that comes with DOS. Here's how you do it. First, find the program DEBUG.COM that is on your DOS Supplemental disk. Next, copy Debug to another disk (any formatted disk will work) and be certain that you are in an 80 column mode. Then:

Start Debug by typing: `DEBUG <Enter>`.

Debug will quickly load and you will see a dash on the screen followed by a blinking cursor. This dash shows that Debug is ready for a command. All Debug commands are single letters, followed by parameters. We will use the L command (which stands for Load) to load the boot sector into computer memory. The parameters for this command are:

`<address> <drive> <starting sector> <number of sectors to load>`

The parameters are separated by a space. The drives are designated by number. Drive A is 0, Drive B is 1, etc. The boot sector is always Sector 0 on the disk. If Debug is in drive A, we'll look at the boot sector that is on the same disk.

Type in: `L 0 0 1 <enter>`

The boot sector data will load into memory and the debug prompt will reappear. The next Debug command we'll use is D (for Dump), and we will use a single parameter of `<address>`.

Type in: `D 0 <enter>`

The contents of the first 128 bytes of the boot record will be displayed on the screen in eight lines. There will be three sections. On the far left of the screen is the computer memory address that debug loaded the data in, and we're not really interested in that. In the middle, taking up most of the space, is the actual data in the boot sector. It is in hexadecimal numbers and it doesn't make much sense to most of us. On the right side of the screen is this same data translated, where possible, to English and that is the section we're really interested in. On the very first line in this section you should see the letters IBM and numbers showing the version of DOS that the disk was formatted with. On most of my disks the boot sector shows something that I don't understand. It shows that the version of DOS is 2.0, but I use version 2.1. For the few disks that I have formatted with PC-DOS 3.1, the correct version number is shown in the boot sector.

To see the next 128 bytes, type in just the letter D `<enter>`. There isn't anything in this data that means anything to most of us. This may also be true for the next 128 bytes (It depends upon which version of DOS you're using.). In the final group of 128 bytes (The boot sector is, as are all disk sectors, 512 bytes long.) you will see some messages that are used if you attempt to boot with a non-system disk and you will also see the names of the two hidden files (IBM-BIO.COM and IBMDOS.COM).

If you continue with the dump command, you will start getting a bunch of zeros in the middle section of your screen, and dots in the right. This means simply that there is no data.

To quit Debug, type in: `Q <enter>`.

DOS Revealed

(Continued from previous page)

new commands to assist in making copies of files and Version 3.3 has a command to assist programs in locating support files.

DOS has grown in size with each new version. Version 2.1 has a resident size of 24,672 bytes, Version 3.1 a resident size of 36,896 bytes and Version 3.2 a resident size of 46,304 bytes. You should keep this in mind if you are considering using a new version of DOS. Unless you really need the features, you are just taking up memory and disk space that could be used for other purposes, and for those of us with floppy disk machines, PC-DOS 2.1 is the version to use.

Jr Puzzle

1 B	E	2 G	3 M	4 E	5 N	6 T		7 D	8 B	9 A	10 S	11 E
Y		12 R	I	C	H	E	R		14 L	U	N	A
15 S	L	A	S	H		16 M	O	N	I	T	O	R
T		17 P	R	O	M	P	T		18 N	O	B	
E		19 H	I			L			20 K	B		
21 M	A	I	N	F	R	A	M	E			O	
S		25 C	G	A		26 T	I	M	E	O	U	T
				27 T	E	E					T	

Jr Crossword Puzzle Solution - Again

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Chuck Yeager's Advanced Flight Trainer on the PCjr

Have you ever looked at some new outstanding software and wondered if it would run on a Junior? Even if the sales person says, "No. It will not run on a Junior," does this really mean you can not run it? From my experience - it just "ain't" always so. Read on.

Chuck Yeager's Advanced Flight Trainer is one of the most popular software programs on the market, and it was with great excitement that I decided to test one of these hot-flying programs out. But before I could fly, I had to take off - on my Junior, and that was my problem. One dealer I contacted said Chuck would not run on a Junior. Another said he did not know but probably not. A third said definitely not. A lot of us Junior users have found that much software will run on our machines. However, we may have to boot the Junior a bit differently than other machines. Such is the case for Chuck Yeager's Advanced Flight Simulator.

Since I like a challenge and since

**There's a lesson to be
learned in this review;
don't always take no
for an answer if you're
a Junior owner.**

my son ran Chuck on a Tandy and kept bugging me to buy a copy, I took the plunge and ordered Chuck. It came to my office and I tried it on a PC clone. All worked well with stunning results. I brought it home, booted the Junior to recognize 640K and started to run Chuck. Lo and behold! Chuck showed his face. But, alas, that was all he showed.

I had a brilliant idea. Why not call Electronic Arts and ask them how to run Chuck on a junior. Surprise! I was told it could not be done using the protected disk I had purchased. If I sent in the protected disk, they would replace it with a non-protected

disk and this would run. I did and it does! Electronic Arts was quite nice and very prompt in sending a new disk. Why I did not call them before ordering is a good question. I guess every family has a stupid streak.

Although Chuck can be run on a computer with 256K memory, I certainly do not recommend it. Without a hard disk, you really should have 640K memory. There is considerable disk access and especially on the Junior, this is slow. Create a 360K ramdisk using whatever method you use. Make a copy of the original disk. A program called INSTALL.BAT is included on the disk. Entering INSTALL C either at the keyboard or from an autoexec.bat file will start you on your merry way. The INSTALL program simply transfers the AFT.EXE and 132 (!) other files to the ramdisk. This transfer process takes a long time on a junior. However, once it is done, the physical disk needs to be used only for storing procedures you develop. The installation instructions recommend you add a BUFFERS=24 line to your CON-

BY JIM STREATOR

FIG.SYS file. You will find such an addition speeds up the program considerably. Such an addition will probably speed up a lot of your programs. Try it.

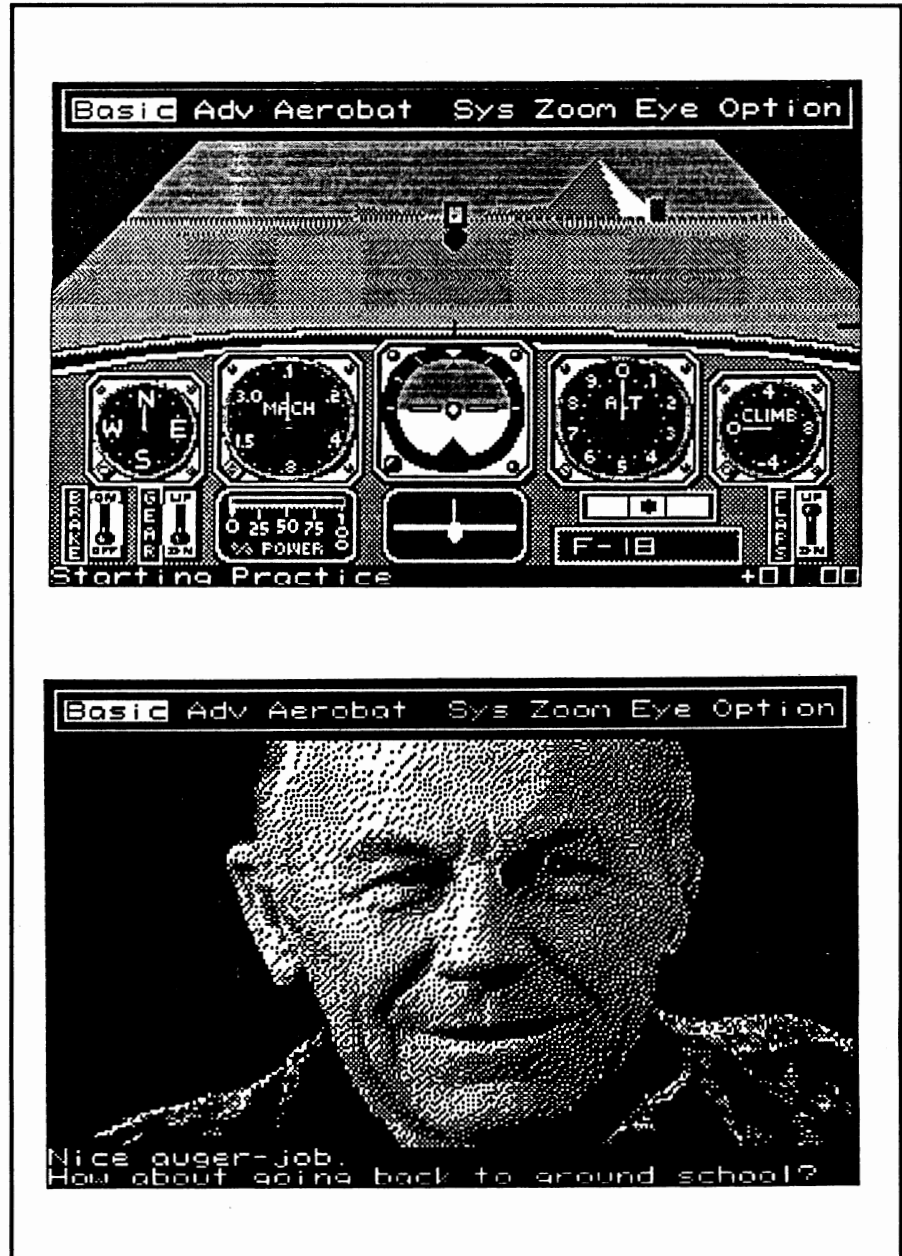
Manipulation of the cockpit controls can be done with a mouse, a joystick or the keyboard. If you want to use a mouse, be sure to include the necessary mouse driver file in either your CONFIG.SYS or AUTOEXEC.BAT files. I find input easiest using a joystick especially if you have a regular Junior keyboard.

Generally, the instructions for setting up your system are understandable and correct. However, the preliminary instructions should not use the term "buy the farm" or the word "auger". These are explained early in a separate document called "The Manual". Instructions designed to set up a program should not use catch phrases when these phrases are explained in a document designed to be read after setting up your system. Once the necessary files have been transferred to the ramdisk, running the program is done by entering AFT from a C> prompt. You will see Chuck and be asked a question about one of the planes in the Trainer. If you answer correctly, the program will proceed. If not, try again. Since you need a manual to find the answers, I presume this procedure is supposed to act as a modest type of copy protection.

Now the fun begins. You can fly any of 15 planes including one not in the manual, the Soarer, a sailplane. You can also read words of wisdom from Chuck Yeager. These are sprinkled liberally throughout the manual. If you expect the Advanced Flight Trainer to be a new version of

the Flight Simulator, you will be disappointed .. or thrilled. My son summarized what I mean when he said, "Someone who simply wants to play

games won't like this. You've got to think." If your enjoyment comes from purposely crashing into Lake Michigan or hitting the Sears Tower, go out and



Screens from Chuck Yeager's Advanced Flight Trainer.

treat yourself to some extra scenery for your Flight Simulator.

Chuck Yeager's Advanced Flight Trainer is a top piece of software. But it has some irritating aspects. For example, if you pull an auger-job (crash) smiling Chuck comes on and asks you if you want to go back to ground school. While this may be funny once or twice, a help screen would be more instructive. The large number of files needed to run the program could have been cut considerably by judicious combinations. I imagine the files were handled this way to allow the pro-

gram to run on a 256K machine. Some of the cutesie sayings and instructions could have been omitted or changed. But these irritations aside, you can have hours of fun designing your own flying strategies, racing, doing stunts and probably "buying the farm" (crashing). Once you have a good strategy, you can save it for future use. You will learn a lot about various planes and manipulation of them but remember - you might have to think. But as Chuck says, "When I started, the instructor just slapped your butt in the front seat, demonstrated the airplane, then moved you back - and you had to learn." So there!

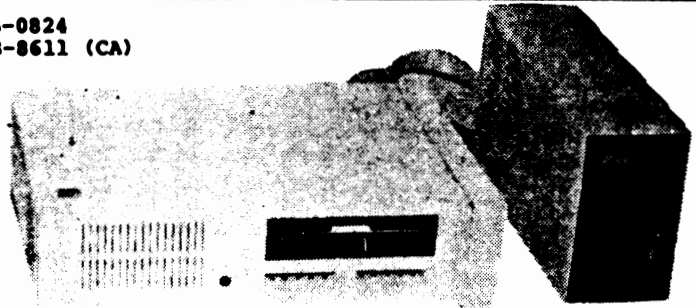
If you expect the *Advanced Flight Trainer to be a new version of Flight Simulator, you will be disappointed...or thrilled.*

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NEWS FROM THE FRONTLINE

What's new and exciting in the PCjr world? Mike Graff reports what is and what isn't in the life of your favorite computer.

Broderbund's **Search and Destroy** game in the IBM/Tandy version does work on PCjr machines. It is a low-cost, graphics based, "find the submarine and sink it" game that comes with a nice pamphlet of information and instructions. It is worth the time (about one hour) to watch the four demonstration missions that are included. The program is copy-protected, but it can be installed on a hard disk.

The **Ford Simulator** from the Ford Motor Company does not work on my PCjr -- at least the simulator programs don't work. I've not had the courage enough to try the other items on Ford's disk. The simulator starts OK, but then it gets "hung" in a disk reading activity. I've been unable to break out of the disk activity and always wind up having to turn off and restart the computer in order to regain control of the machine.

PC Resource magazine has a lot of good stuff in it. Most of the explanations and tips apply to the PCjr as well as its heftier relatives. Of particular use are the "MS-DOS Insert" cards in each issue. They are sized to fit the DOS ring binder. Each insert completely addresses one issue, in English, and with examples. Very handy!

Advanced BASIC for the IBM PC and Compatibles: Tips and Techniques by Larry Joel Goldstein (a Brady book published by Prentice Hall) leaves much to be desired. It is an intermediate level book at best, and not "advanced". The text appears not to have been checked before printed and much features jumping around plus inconsistencies. Left and right, as well as up and down, get confused. Some figures are mislabeled while others do not

contain material cited in the text. Worst of all, some flat-out wrong information is included. I found no "Tips" on how to speed up a BASIC program. In fact, while the sluggardly pace of a bubble-sort routine is lamented, the recommended solution is to compile the routine! There is no mention of Shell Sort, Quick Sort, Heap Sort or other readily available sorting routines that run much faster than a bubble-sort, with or without compiling. Hence, while the book does provide some useful information, it is so laden with errors and oddities as to comprise something of a test for BASIC programmers in the form of "do your own editing" hurdles. Those seeking tips and techniques for NASIC may find Eric Anderson's **Software Construction Set for the IBM PC and PCjr** (Hayden Book Company) more useful.

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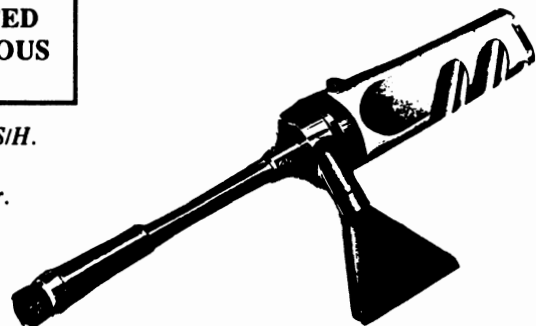
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Are your newsletters coming to you mangled, torn, or like they've been through the laundry? Or have you missed an issue that you shouldn't have? Well, the mailing process is the only thing that we do not control, but if you could write a short note 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 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, 60159-0067.

- NOV 1986** - PCjr ColorPaint Review jrHotShot Internal Memory Expansion Gato Review
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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
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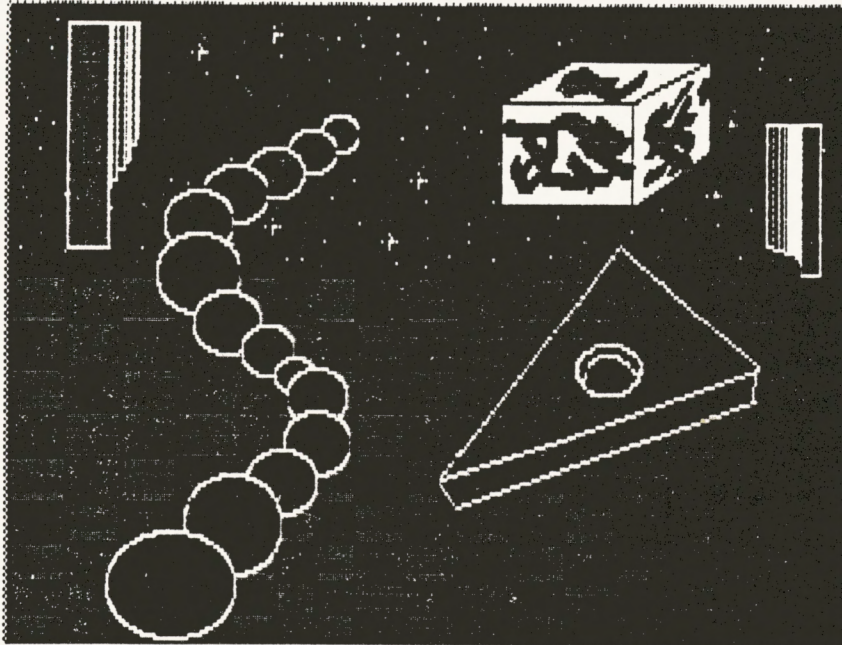
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The Guggenheim Collection

This entry in our PCjr art competition comes from Dave Simonic of Camp Hill, Pennsylvania. The rendition suffers greatly from being reproduced here in black and white - the color original is outstanding. Dave used PCjr Colorpaint on an expanded PCjr, and printed his artwork on a Okimate 20 thermal color printer.



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Apr 88

Shareware Survey #5

(Continued from page 1)

sults of the survey showed that most owners used about a third of their shareware programs on a regular basis. This ratio is greater than what we had expected because many of the respondents were avid modem users who have downloaded hundreds of programs. Though we have never seen studies to support this, we believe a 33% daily usage of shareware programs compares favorably to the ratio of commercially-bought programs versus those actually used.

One of the major complaints that is often lodged against shareware programs is that adequate documentation is woefully lacking. That charge seemed to be refuted from the results of our survey which found that 86% of all users felt that documentation provided on shareware disks was adequate enough to run most of the programs. Comments about documentation ranged from "usually better than commercial programs" to "absolutely horrible."

The favorite shareware portion of the survey provided some interesting results. The favorite programs that garnered the most votes were as follows:

1. PC Write (all versions)	21%
2. PC File III v. 4	13%
3. JrConfig.sys	12%
4. ProComm	9%
5. PC Calc	5%
6. QModem	5%
7. PC File+	3%
8. CashTrac	4%

Note that the updated version of PC File (PC File+) received fewer votes than the earlier version. Other programs that received more than 10 votes were PCjr Utilities, Amy's First Primer, PC Deskmates, Games (#38), Galaxy, and File Express.

In the least favorite category, two programs stood out from a much smaller group of software programs - PC Chess and PC-Key-Draw. The rap on PC-

Some Choice Comments from the Readers

Even though I may not use the shareware products often - the beauty of them is that I was able to try them out at a reasonable price; I could never have afforded to explore all of the various programs if I had to pay the going retail price....

*A. R. Trazzi
Towson, MD*

I think the quality of Shareware software varies widely, just like commercial programs. The difference is you can give Shareware a good tryout before you decide to invest in it. This is a major advantage.

*M.D. Ramsey
King of Prussia, PA*

Documentation obscure. Mostly too skimpy or over the head of a normal user.

*Mungo Miller
Milwaukee, WI*

The support offered by shareware authors such as John Friel (QModem) is outstanding. You get BBS and voice support directly from the author. This is something I have never received from IBM or Microsoft.....

*Richard d'Erizans
Scarsdale, NY*

Visible Pascal does not handle real variables, how can they expect you to program without them? I purchased TurboPascal instead.

*Alan Peters
Cleveland, OH*

I tend not to think of any as "bad" programs that are distributed by shareware. You never feel burned because if you don't like it - just erase it!

*Martin Mattingly
Cedarburg, WI*

Chess was mainly due to the inability of joystick use with the Junior (one reader said that the program cheats), while PC-Key-Draw was criticized for its difficulty of use. No other shareware program received more than one vote.

The overall feeling of the survey generally reflected a positive feeling towards shareware products as reflected by a 64% vote that shareware programs are as good as commercial programs. 18% of the respondents said that they felt shareware programs were generally better than commercial programs, while an

equal percentage (18%) felt that shareware programs were usually worse.

In a most important segment of the survey, 66% of all respondents reported that they have at least once registered with a shareware author, a very high percentage by any standard. It may reflect the PCjr owner's genuine appreciation for any good program that is Junior-compatible and the owner's hope that the payment will encourage the author to continue to make it PCjr-compatible.

SETBASjr and BASICjr

SETBASjr and BASICjr are two programs that let PCjr owners take full advantage of cartridge BASIC even if they have memory expansion boards.

By Blair Beiser

PROBLEMS WITH BASIC

If you have extra memory, you may have figured out some easy ways to hang your PCjr when you're using BASIC. For example, you can put your memory device in "compatible" mode (e.g. "/C" with IBM boards) and run the following program in cartridge BASIC:

```
100 CLEAR,,,32768
110 SCREEN 5
```

Or how about creating a 256K ramdisk and then typing "BASIC".

SETBASjr and BASICjr make these adventures a thing of the past.

SYSTEM REQUIREMENTS

1. Your memory device driver must be in "compatible" mode or in other words, active:
(e.g., DEVICE=PCJRMEM.COM /C for an IBM expansion board).
2. If you have a Racore Drive II, the switch must be on "jr".
3. Your cartridge BASIC must be in the rightmost slot.
4. You must have at least 65K of RAM available for executable programs (e.g., if you have 256K total memory, you should not install a ramdisk greater than 63K, since the "compatible" mode reserves the first 128K).

USING SETBASjr and BASICjr

The first thing you should do is put a disk with DEBUG.COM in the current drive and type what's in lower case letters below (comments are in parentheses):

```
A>debug
-r cs
CS XXXX (doesn't matter what the
:e800 numbers are)
-u c e
E800:000C E98201 JMP 0191
-q
```

A> (you are done)
If something other than "JMP 0191" showed up, let me know and I'll tell you how to fix BASICjr.COM for your version of cartridge BASIC.

Otherwise, you can go ahead and run SETBASjr. This is a memory-resident program that patches your memory device driver. It should only be run ONCE after booting your PCjr and should NEVER be used when your driver is in "normal" or "enhanced" mode.

Now, just type "BASICjr" instead of "BASIC" and into cartridge BASIC you'll go. Since BASICjr is not a memory-resident program, you can run it over and over just like cartridge BASIC. To see if BASICjr is working, execute the program below:

```
100 CLEAR,,,32768
110 SCREEN 5
120 LINE (50,50)-(100,100),1
```

A blue line should show up on your screen. If not, check to make sure your system meets the requirements listed in the first part of this article. Also, try to remember whether you ran SETBASjr first. If you still can't get BASICjr to work, then you need to contact me. If you do need technical support or a copy of the source code, please send 50 cents and a self-addressed, stamped, business-size envelope to the address at the end of this article. I'll make every effort to help anybody who asks. Just be sure to provide as much information as possible about your particular problem. Also, if you want me to try to solve some other compatibility problems, let me know (SETBASjr and BASICjr were the result of a long distance request from a reader in Goshen, Alabama).

Although SETBASjr and BASICjr are donated to the Public Domain, they may not be distributed under different names or without this documentation. Thanks, and happy BASIC computing!

Blair Beiser can be contacted at:

1900 S. Eads Street
Apt. 807
Arlington, VA 22202

SETBASjr

```
100 REM -- BASIC PROGRAM TO CREATE SETBASjr.COM
110 OPEN "SETBASjr.COM" AS #1 LEN = 1
120 FIELD #1, 1 AS A$
130 CHECKSUM = 0
140 FOR I = 1 TO 15
150     LINESUM = 0
160     FOR J = 1 TO 8
170         READ BYTE
180         CHECKSUM = CHECKSUM + BYTE
190         LINESUM = LINESUM + BYTE
200         IF (BYTE < 256) THEN LSET A$ = CHR$(BYTE)
210         PUT #1
220     NEXT J
230     READ LINECHECK
240     IF LINECHECK <> LINESUM THEN PRINT "Error in Line"; 280 + 10 * I
250 NEXT I
260 CLOSE
270 IF CHECKSUM = 10303 THEN PRINT "Successful Completion!" : END
280 PRINT "COM file is not valid" : END
290 DATA 235, 83, 144, 0, 156, 83, 139, 220, 1060
300 DATA 54, 129, 127, 6, 0, 232, 116, 7, 671
310 DATA 91, 157, 46, 255, 46, 0, 1, 176, 772
320 DATA 112, 91, 157, 207, 10, 83, 69, 84, 813
330 DATA 66, 65, 83, 106, 114, 32, 45, 32, 543
340 DATA 67, 111, 112, 121, 114, 105, 103, 104, 837
350 DATA 116, 32, 40, 67, 41, 32, 49, 57, 434
360 DATA 56, 56, 32, 98, 121, 32, 77, 105, 577
370 DATA 99, 114, 111, 87, 105, 122, 97, 114, 849
380 DATA 100, 32, 83, 111, 102, 116, 119, 97, 760
390 DATA 114, 101, 13, 10, 36, 184, 18, 53, 529
400 DATA 205, 33, 140, 192, 163, 2, 1, 137, 873
410 DATA 30, 0, 1, 184, 18, 37, 186, 4, 460
420 DATA 1, 205, 33, 180, 9, 186, 28, 1, 643
430 DATA 205, 33, 205, 39, 0, 0, 0, 0, 482
```

BASICjr

```
100 REM -- BASIC PROGRAM TO CREATE BASICjr.COM
110 OPEN "BASICjr.COM" AS #1 LEN = 1
120 FIELD #1, 1 AS A$
130 CHECKSUM = 0
140 FOR I = 1 TO 12
150     LINESUM = 0
160     FOR J = 1 TO 8
170         READ BYTE
180         CHECKSUM = CHECKSUM + BYTE
190         LINESUM = LINESUM + BYTE
200         IF (BYTE < 256) THEN LSET A$ = CHR$(BYTE)
210         PUT #1
220     NEXT J
230     READ LINECHECK
240     IF LINECHECK <> LINESUM THEN PRINT "Error in Line"; 280 + 10 * I
250 NEXT I
260 CLOSE
270 IF CHECKSUM = 9545 THEN PRINT "Successful Completion!" : END
280 PRINT "COM file is not valid" : END
290 DATA 80, 87, 86, 252, 180, 8, 142, 192, 1027
300 DATA 165, 180, 28, 171, 70, 70, 177, 126, 987
310 DATA 243, 165, 190, 254, 255, 180, 8, 142, 1437
320 DATA 216, 142, 192, 137, 12, 94, 95, 88, 976
330 DATA 46, 255, 46, 37, 1, 145, 1, 0, 531
340 DATA 232, 66, 65, 83, 73, 67, 106, 114, 806
350 DATA 32, 45, 32, 67, 111, 112, 121, 114, 634
360 DATA 105, 103, 104, 116, 32, 40, 67, 41, 608
370 DATA 32, 49, 57, 56, 56, 32, 98, 121, 501
380 DATA 32, 77, 105, 99, 114, 111, 87, 105, 730
390 DATA 122, 97, 114, 100, 32, 83, 111, 102, 761
400 DATA 116, 119, 97, 114, 101, 0, 0, 0, 547
```

PCjr Classified Section

Classified ads are free to subscribers of *The Junior Report*. Please submit ads a month in advance; we will run the ad for two months unless notified. *The Junior Report* and its staff are not responsible for errors, omissions, or problems associated with this section.

SOFTWARE: 1-2-3 ROM version \$100., Managing Your Money ROM version \$50., Books: *The New Jr* by Winn Rosch, *Discovering the PCjr* and *Exploring the PCjr* by Peter Norton, *IBM PC Programs* by William Barden \$10. each or \$35. all 4. Serisl adapter cable \$10.

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By D. Glanville

We do a little house cleaning, and play golf, too.

The results from Survey #5 has allowed us to weed out some of the less desirable programs that many of you had reported to us. We have also eliminated some of the programs that have not generated much enthusiasm in your orders, so that we can have more space to insert better shareware programs. Like movie reviews, we may like some programs that may not elicit the same kind of enthusiasm in you as in us, and you may like some programs that leaves us cold. That's why we appreciate all the feedback we can get from all of you, and we thank those who have written to praise certain programs and thank those who unveil the

"dogs".

We have some interesting shareware programs this month. My personal favorite is By The Numbers which I have used to plot out both my present and re-incarnated life. I guess that's a two for one deal.

Also this month you'll find that our cost for each diskette is now \$5.90. each, up from \$5.50. which we have used for over a year now. This slight increase per diskette should offset some pretty hefty postal rate increases for mailing our shareware orders.

MEAN 18 COURSE DISKS (#118) and (#119):

Our first two offerings this month 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.

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 its 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 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. It looks like this program is right up your alley. (Sorry about that?) 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, final team/bowler standings, and either display or print individual team/bowler record sheets. See you at the fifth frame.

LAST MONTH'S NEW PROGRAMS

PIRATE (#113): A graphic adventure game with over 30 different color graphic screens. You find yourself moving through tunnels, caves and rooms looking for the pirate's treasure. When you find it you have to bring it home. Very well done with graphics as good as a lot of games I've bought commercially.

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. **Joystick required.**

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

PC-STOCK (#107): PC-STOCK is a general purpose stock trend analysis program. It was developed with ease of use and graphic presentation of data as the primary objectives. PC-STOCK is entirely menu driven, making it very easy for the occasional user as well as the professional user to enter, modify, and obtain graphic trend analysis of stock data.

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

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!

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.

THE*MENU (#111): Menus make computing easier and faster, too bad they don't have them on all disks. THE*MENU can do it for you. THE*MENU is a user-oriented personal computer programs organizer that provides custom visibility and control of all your PC software. It is easily updated to include your particular software programs. It can display program choices and call any program with a single keystroke from nested menus. THE*MENU is memory resident with step-by-step introduction, on-line help and instructions, using function keys F1 through F10 as keyboard keys to call up your software programs. Highly recommended.

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?

To order any Shareware disk, please send \$5.90 (U.S. Currency drawn on a U.S. Bank) for each program (\$10.00 for non-members) which includes shipping and handling and send to: The PCjr Club, Public Domain, P.O. Box 59067, Schaumburg, IL 60159-0067. Please allow four weeks for delivery. All orders outside of the United States and Canada, please include \$10.00 (U.S.) per order.

Please circle one or more below

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Number of program disks wanted: _____ times \$5.90 = _____
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Check here if this order has
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FREE library case _____
Must use before May 30, 1988.

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

- PC FILE III (#1):** the classic, updated, full-featured database program that has set the standard for shareware programs. Considered by many to be better than most commercial programs. Version 4.
- PC WRITE (#2):** this best-selling shareware program is equal to or better than most word processors on the market. This is the latest version (2.55) and will run on the single drive, 128K PCjr.
- PC TALK (#3):** PCjr adapted version of one of the most popular communications programs.
- HOME MANAGEMENT (#4):** a reliable, general purpose financial manager.
- 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 THERM Nuclear 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 - \$9.00. 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 - \$9.00.**
- GAMES (#56):** Includes three casino games led by Las Vegas Style Craps that includes its own tutorial, three text adventure games, and an assortment of other arcade games that should keep everyone busy.
- Jr MUSIC MACHINE (#57):** One of two music programs on this disk, this program lets you play and see music simultaneously, and utilizes Junior's special sound capabilities.
- GOLF HANDICAPPER (#58):** Allows you to compute, store, update and print golf stroke handicap information for up to 75 players, using the handicap formula established by the USGA.
- PC-FONT (#59):** A utility program which enables your Epson or IBM Graphics printer to print a variety of fonts that includes block graphic, engineering, scientific, foreign language, and other special characters.
- SLEUTH (#61):** A murder has just been committed, and your job is to mingle with houseguests, search the house, and solve the crime. Every game is different. If you like the game of CLUE, you'll love SLEUTH.
- SAN MATEO EDUCATION (#62):** Educational games for children 12 years and older. Includes scramble, states, nations, chemist, and many more.
- BUTTON GAMES (#63):** Includes Buttonware educational and adventure games SOUTH AMERICAN TREK (You are a special investigator for the Federal Geographical Magazine and you have been sent to gather information about each country in South America. Your travels will take you from one end of the continent to the other where you will be picked up by a friendly submarine), and CASTAWAY (You are shipwrecked in the Pacific, slowly drifting through the fog until you find a deserted island. There you find countless treasures, but they are worthless if you cannot return to civilization. Will you be able to get off the island?)
- PC WRITE 2.7 (#64):** Newest version of best selling Public Domain word processor. Now has Spelling checker. **Requires 256K.**

Two disks \$9.00.

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

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

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 - \$9.00.**

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

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

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

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

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

JRCONFIG.SYS (#82): Updated version of JrCONFIG.SYS & CONFIGJR.SYS. The only must have utility for ALL PCjr owners.

The most powerful and flexible software for getting a PCjr to run with expanded memory and additional disk drives. The list of special PCjr features is too lengthy to print here.

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

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

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

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 - \$9.00.**

PCjr PATCHES (#99): Must have disk for all PCjr programmers. Contains fixes that will allow you to run Turbo BASIC, Double-DOS (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 an blank monitor you can

(Continued on page 29)