The Junior Report®

August 15, 1987 Volume 3 Number 8 The National Newsletter for PCjr Owners

At long last, A Guide to What's Available for the PCjr

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Most of the programs listed are compatible with the standard PCjr setup (128K and one disk drive). In other cases, simply adding more memory to your PCjr will allow you to run other software packages. Then there is a third group that requires a particular setup, such as a DMA requirement, in order for that software program to be Junior compatible. Some programs that ran on a Racore setup could not be run on a Tecmar-expanded system, and vice-versa. In fact, some programs could only be run on a basic 128K PCjr! The many different PCjr configurations demand that you follow the PCjr Golden Rule - NEVER buy any software that cannot be returned if it should not run properly on your particular setup.

The list itself not only provides the PCjr owner with a detailed software what's what, but

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IBM Announces New Home Computer

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Though these may appear trivial to some of you, they are problems that a lot of novices may encounter with Public Domain and shareware programs. First of all, please read all of the "README or READ.ME" files before attempting to run any of the programs. This is essential because the programs or files may need special instructions to operate. You can read these files directly off of your PCjr screen, or if your printer is on-line, you can print the information as you would print any documentation. One way to do this is to type COPY *.DOC PRN at the A> prompt, which will produce a hard copy of all files with the .DOC extension (documentation). In like manner, typing COPY *.TXT PRN will print out all text files which also may contain important information about the programs. Basic programs can be another area that may cause potential problems for some of you. Every program or file that contains the extension .BAS must have the PCjr basic cartridge inserted in either of the slots directly below the PCjr disk drive. At the A>, type BASICA XXXXX where XXXXX is the name of the file without the .BAS extension (XXXXX.BAS). For example, to load the program FUNNELS.BAS, simply type BASICA FUNNELS, and the program will load into Junior's memory, ready to be run at the touch of the F2 key. Public Domain and shareware programs are great ways to check out thousands of programs available for the Junior, but they aren't much fun if you can't run them.....Seen at the front desk at a local computer store - EXPRESS LANE - $10,000. or LESS.....

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LETTERS

For those of you who have too much RAM to worry about, I found out that having one disk drive and 640K of RAM it is very convenient, in many cases, to have the RAM disk as the boot-up disk. What I mean actually is to redirect the DOS to search for the command.com file from drive C: (RAM drive) instead of from drive A:. Many applications call for the command.com frequently, so for those applications, having the command.com file read from a RAM disk speeds up initiating those programs quite a bit.

Assuming one has the CONFIG.SYS file set up correctly for setting up a RAM disk as drive C:, the following lines should be inserted in the AUTOEXEC.BAT file of the system disk:

```
md c:\system
copy command.com c:\system\dos.com
set comspec=c:\system\dos.com
```

After successful re-bootup with the above modified AUTOEXEC.BAT, the DOS will find dos.com in the \system directory in drive C: instead of command.com in drive A: whenever it needs the command.com to be executed. From then on, one need not have the command.com file in drive A: unless one reboots the system with a different system environment.

Y. So
Ann Arbor, MI

Dear Mr. So,

Thank you for the hot tips on placing the command.com in the RAM disk instead of keeping it on the DOS disk in drive A. How many times have each of us seen the dreaded message "Insert COMMAND.COM disk in Drive A and strike any key when ready"? Most PCjr owners have expanded memory but still have one disk drive, so this little routine will help a lot. A similar program can be found on the shareware disk JRCONFIG.SYS (#82) that will also switch command.com to the RAM disk.

I have been a member of The PCjr Club for the past two months. While I enjoy receiving the *Junior Report*, I am still really a novice with it. I am interested in upgrading my memory, and even though you addressed that in the July 15th issue in the Letters Section, I am still very much in the dark.

I have gone into many computer stores to ask my questions, so that I could understand the few different ways that this may be possible. But, this is all to no avail. I say that I have a PCjr and they look at me as if I have a contagious desease and tell me to save my money. I attempt to read anything I can find on the Junior but I still often don't understand. I cannot order anything through the mail because I don't know what it is I may be ordering, and I have spent money all all over the country calling numbers that seem to have information and supplies on and for the Junior.

I also called IBM direct for information. They were very nice (by the way I got my parallel port directly from them and it was cheaper than anywhere else) and gave me the numbers of the parts to upgrade my memory. I called the order number and gave the person the numbers. I was then told that if I purchased them on the exchange program, I would have to pay $49. instead of $199. for some kind of memory upgrade. Needless to say I didn't order anything because I didn't understand what it was I had to exchange and the person on the phone couldn't help me either.

At the present time, I have 128K, a single disk drive, a parallel port, and a printer. I am using Writer's Choice for my word processing and also use Print Shop and Print Shop Companion. Friends of mine who have IBM's and compatibles have given me programs (PC Write and Certificate Maker for example) for the Junior, and when I tried to use them, it came up with insufficient memory and/or no core. What do I do? Stay put and use what I have and not waste any money on the junior as everyone seems to say, or somehow, somewhere try to get the answers to my questions.

I am turning to you for HELP! What I was wondering is if there are any members in the club that live in my area of New York. If there are, would it be possible for you to send me some names, addresses, and phone numbers so that I could call and speak directly to some of the other members of the club as to suggestions of what

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they did to upgrade their Juniors. By being able to speak directly to people who have gone through the same thing, I feel will better enable me to finally get the answers to my questions. Also, would you have information on places where I can know for sure that the programs I am interested in purchasing would run on a Junior. I see programs that I might be interested in, but they most times don't say anything about working on a Junior even with upgraded memory.

Maybe the club could put out a directly of members by geographical locations. This could prove very helpful to all of us. I can't be the only person with a Junior having all the problems.

Thank you very much for your time and trouble in listening to my complaints, but this situation is absolutely frustrating.

Catherine Trezza
Syosset, NY

Dear Catherine,

You sound desperate. But it really isn't that bad. There is hope.

All of us have experienced that wonderful feeling of entering a computer store, professing your PCjr allegiance, and then being looked upon as if you had just landed from another planet. Well, as a Juniorite, you must learn to turn the other cheek, for they know not what they do, especially computer salesmen. As PCjr owners, we speak a different language that contains terms like JrCaptain, sidecar, jrHotshot, and adaptor cable. Fortunately, there are 500,000 of us who speak the same language.

The programs that you mentioned (PC Write and Certificate Maker) should run on your PCjr. The original PC Write version 2.55 requires only 128K so we not sure as to why you're experiencing some problems, unless you have PC Write 2.7 which will need 256K of total memory on your Junior. Certificate Maker will need 256K in order to run on the Junior, according to the manufacturer. The LEAST expensive way to push your PCjr to the maximum 640K that is allowed by DOS is via the jrHotShot 512K memory board that can be purchased for $189. This compares very favorably to what it would cost to add 512K to any clone or PC. The jrHotShot, unlike the other PCjr expansion boards, goes inside the Junior rather than being attached to outside of the CPU via an external sidecar. The only requirement is that the Junior 8088 microprocessor must be socketted and not soldered (see July 1987 issue), though some highly qualified technicians can carefully unsolder it for you if it is.

Getting in touch with your fellow Juniorites in your geographical area is a great idea. It would certainly be helpful for everyone if you could just pick up the phone and call someone who may have experienced a particular PCjr problem. We see only two problems here, though they are not insurmountable. One, not everyone wants his or her name passed out to other people, regardless of this PCjr-blood relationship. Secondly, it would take a lot of work and time to compose such a directory. The work doesn't bother us, but we usually have a scarcity of time. What we could do, however, is to have every member who would not mind having his or her number and address given to other members in a particular geographical area write to us with this information. We will not publish this information in the newsletter, so some degree of privacy will be retained, but will instead send to each member who has responded the particular information. Look for some kind of a form in the next issue.

Should or should you not sell your PCjr and invest in a clone is a tough question. Let's put it this way. Ideally, you should first buy the software that you would like to run, and then buy the hardware that can run it. In this sense, most PCjr owners are perfectly satisfied with their systems because their Juniors do what they want them to do. Word processing, graphics, spreadsheets, and databases are ideally suited to the PCjr, regardlessly of the total amount of memory. High-powered design programs and professional desktop publishing are not Junior's strengths. You have invested a thousand dollars in your system already, spending about $200. more for the added memory seems quite reasonable to us.

At the time most of us bought our Juniors (Christmas of 1984), it was the best buy in the

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computer world, bar none. A comparable IBM PC cost about $1800. more and clones were less than reliable. Where in the world could anybody buy a computer to run Lotus 1-2-3 for under a thousand dollars with an RGB color monitor? It has been almost three years since then and the prices of everything have dropped to ridiculously low levels, so it is really unfair to compare the Junior that we bought three years to some of the clones that are available today. In fact, it is unfair to compare the original IBM PC and XT to the clones today. When you decide exactly what role you require of your PCjr and then find a compatible piece of software to perform it, you should start feeling better about yourself and your PCjr.

I am a new subscriber, and after reading my initial Junior Report, I felt like a dumbkopf.

1. Why did I wait so long to subscribe.
2. Is it possible to upgrade the Junior by substituting 256K chips for the 64K chips?
3. What type of modem internal or external is best suited for the Junior?

Please continue to help the "orphan", and thank you for any assistance.

Eugene Cooper
Philadelphia, PA

Dear Eugene,

1. Mental lapse.

2. No, you cannot simply replace the 64K chips in your PCjr with 256K chips and expect to get higher memory. You must have an additional memory card to hold these extra chips.

3. Internal modems for the PCjr lag in number and in quality from their external brethren. Currently there are only two internal modems for the PCjr that we know - the IBM Internal Modem (300 baud) and the ERA 2 PCjr Internal Modem, which has been discontinued but can still be found at certain computer flea markets. The PCjr will run almost any external modem, provided the modems are Hayes-compatible, and you have a special PCjr serial port connector cable to connect with. Many of our readers currently use the Hayes 1200 External modem on their Junior with excellent results. An ecomomy external modem that is also popular is the Avatex 1200 baud External Modem.

I am an avid reader of the Junior Report and an owner of a PCjr, which I like, but which I am still learning about. I would like to share some of my experiences and ask some questions.

My first problem was to make a serial printer (Smith-Corona TP-1) which I already had from a previous computer setup work with the PCjr. Years earlier, I had plugged it into an Apple and it worked right off. But the PCjr doesn't have the standard RS232 serial port connector. I discovered the little PCjr serial port adaptor cable available from IBM, but it doesn't work. I tried ComputerCraft, but after four weeks, they gave up and gave me my PCjr back with a blown power supply. Eventually I received a new power supply from them. I then discovered IQ Technologies, who make an "intelligent" cable for the serial printer with the PCjr. I bought one, tried it, and still no results. But when I tried them by phone, they suggested to "wiggle" the connector in the PCjr. Suddenly, everything starts working! Lights on their intelligent cable show when everything is right, and they show that the connector on the back of my PCjr makes contact only if you push it a certain way. So I fixed it in the proper position with a lot of scotch tape, and it has been working beautifully ever since. Of course I had to make the MODE changes to redirect LPT1 to COM1 and set the parameters. Seems to me there was a note in the July issue of the Junior Report that this connector can break if pushed around, and maybe mine is broken. But since it works fine now, I'm going to leave well enough alone.

The next problem, which also appeared after I got my PCjr back from ComputerCraft was that every time I powered up, the thing would count memory and then beep a couple of times, then indicate ERROR B, and then stop. If I did the CTRL-ALT-DEL warm reboot, it would then run fine, and everything tested okay, including the keyboard. I think ERROR B refers to the keyboard, but there is no mention of it anywhere in the IBM Technical Reference Manual, and of course the repairman at ComputerCraft didn't know anything about it; and considering my experiences with them, I thought it

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might be better not to give it back to them. Suspecting that the infrared connection to the keyboard may have been the problem, I ordered a keyboard cable for the PCjr keyboard, and the cable, as expected, got rid of the ERROR B. I prefer the Cable to the infared connection anyway; it feels more secure.

While in a NYNEX Business Center the other day asking about PCjr stuff, the salesman suggested I add a 512K sidecar memory expansion. This was new to me, but it seemed to be a great idea, so I ordered one immediately, which arrived in a few weeks and has been working fine great ever since. It gives me a total of 640K RAM memory, and I use the RAM disk for two-disk programs such as Value/Screen, placing the program on the RAM disk and the data disk in the physical disk drive. Many programs (such as PC-Calc) run much faster this way, even if you don't need two drives.

Incidentally, I much prefer the PCjr version of PC-Calc because there is room on the disk for DOS and MODE and the memory expansion programs and even some files. And with the proper autoexec.bat file, the whole thing is self-booting and goes right into the program when you fire up your PCjr.

Will Turbo Basic or Quick Basic run on the Junior? So far, this has not been a problem for me because my BASIC programs are usually short, but I can see how it might some day.

Finally, I would like to see the Junior Report do an in-depth study of modems for the PCjr, together with some discussion of what you can do with them. In the July issue of the Junior Report, a reader mentioned dealing directly with her bank using the PCjr and Managing Your Money by Andrew Tobias. Details of the modem and programs would be very interesting.

Since I am using COM1 for the printer, will I have a problem installing a modem? Do PCjr modems work differently from regular PC modems? Is software compatible? Can we connect with services like Compuserve, Dow/Jones, etc.?

Any suggestions would be greatly appreciated.

Louis Stevenson
Houston, TX

Dear Louis,

Thank you for relaying your very extensive experiences with the rest of our readers. We all learn from each other's problems, mistakes, and revelations, and your letter will help many readers.

We have not experienced the problems that you had encountered with your serial port and your keyboard infrared system. We do use the Smart Cable that you mentioned in your letter, and we feel that it will help solve many connection problems associated with the PCjr. As you had mentioned also, we did relate a story about connectors breaking off at the back of the PCjr main unit in a previous article. In that case, however, the peripherals would not work at all, so we don't think you have the same problem. What you have are ill-fitting connections from different manufacturers, and whether it is scotch tape or just whittling down certain angles of the connectors, whatever works, works.

We, too, love using our PCjr's with a nice, fat ramdisk to hold the bulk of a program. The increase in speed is so obvious that most of us would much rather use a single drive Junior with a ramdisk over a two-drive system.
The ramdisk is the PCjr's equalizer for its lack of speed in most cases.

Unfortunately, Borland's Turbo Basic does not run on the PCjr at the present time. Microsoft's Quick Basic versions 1.X and 2.X will run on the PCjr, though the newest version 3.0 does not. We are currently in communication with the product support team of Microsoft as to if or how this situation will be remedied.

The problem you'll have with adding a modem to your system is not that you're using COM1, but it is that you're using the one serial port of your PCjr for use with your serial printer. This requires that you use an internal modem with your PCjr. You would have to change your printer parameters to recognize COM2 for your printer communications, as COM1 is now reserved for the internal modem. The PCjr can use most external modems that are on the market today, provided you have the serial port free, and have the serial port adaptor cable from IBM for the necessary connections. Many of our members are frequent participants in CompuServe, Dow/Jones, and other electronic services.

Banking On Junior

By Susan Dennis

I remember when I could only do my banking during the hours that the bank was open... I remember standing in lines... I remember trying to get account information from tellers who regarded me with what I imagined was the same way they regarded bank robbers.

The good news is that those are now just fading memories.

Today with my PCjr, Managing Your Money, Chase Manhattan Bank's Spectrum Service and my modem, I have at my finger tips any information I want about my accounts, any time I want it - no lines, no waiting and no sneers!

First, let me cover my hardware. My PCjr has 640K (an upgraded IBM memory sidecar), two drives (5.25") and is attached to a Hayes 1200 Smartmodem. All of the applications I describe here could be done with a basic PCjr (128K - one drive - IBM internal modem).

Now, the software... Managing Your Money is a fairly sophisticated financial package which offers about four times more function than I use, but is designed so that someone who doesn't know beans about accounting can keep track of the grocery money. For now I just ignore the facility for keeping track of my investment portfolio. MYM is produced by MECA and has taught me a lot about my finances!

You do not need MYM to operate Spectrum - or vice versa - however, using them together maximizes both. But, using one without the other is still a far cry from the old scribbled check register!

Spectrum is the software that Chase Manhattan uses to provide individuals with computer access to their bank accounts and other nifty stuff. It costs $5.00 a month and a call to their toll free number (1-800-645-6300) will bring to your mail box a demo diskette and a bunch of information on the service and opening a Chase Manhattan account.

The Spectrum service comes with a round-the-clock toll free access number as well as a toll free number to call for help (the latter is available from early morning until late at night).

To pay your bills via Spectrum, you first have to "register" all those people to whom you might want to send money. These are called your Payees (clever folks, these bankers). A Payee does not have to be an institution that accepts electronic funds transfers. To check it once, I set myself up as a Payee and paid myself $5.00. The check arrived two days after I authorized the transaction. Chase says that it takes 5 days to set up a Payee. Some of mine took a day and one took three weeks and two reminder notes.

Your account balance is available in two forms - total and available. The difference covers those checks that have been deposited into your account but not yet cleared. You can see every transaction, those that have occurred and those that are pending (say you set up your rent to be paid in three weeks).

There are also a host of other offerings on Spectrum. There is a facility for sending and receiving electronic mail, there are various conferences for interest groups and an interest group can be set up by anybody on any topic. (A few already set up are North Carolina Users, Managing Your Money, Gays, Arts and Entertainment, etc.) There is a Financial Planning facility which helps you in figuring your taxes and savings plans. There is even an on-line financial game you can play.

There are some problems. The system is slow. It uses 40 column mode so you are constantly having to flip through screen after screen to get information. It is not particularly elegantly written software, nor does it behave as sophisticated software should. You are constantly aware of being on the cutting edge of technology and I often wish that I was a couple of years in the future when it will be faster and slicker.

One major problem that I ran into right away, has been solved now, but was oh so painful then and that was the length of time it took to set everything up. They do not tell you to count on at least six weeks from the time you send in your initial deposit until the time you have access to those funds. It takes at least that long. It was almost four

(Continued on next page)

Banking on Junior.....

(Continued from previous page)

months before I had all the accoutraments of my account in my hands. (If you can make a trip to a Chase Manhattan branch, I think you can speed this process up considerably.)

The good news is that although my PCjr does not have a cash dispenser on the side, Chase uses the PLUS network of automatic tellers, so I can get cash easily enough.

Managing Your Money keeps track of not only my Chase account, but also my credit cards and my budget and, hopefully, my taxes for next year.

Normally I bring up MYM and instruct it to pay whatever bills I want and allocate budget categories for those expenses. Then I call Spectrum and instruct it to read the information from my MYM diskette. Those instructions are then transferred to Spectrum and the bills are paid. Spectrum also puts information onto the MYM diskette about my account (checks that have cleared, deposits that have come in, the account balance, etc.). The next time I bring up MYM all the information is there to enable me to reconcile my account.

I have run into a few problems that have landed me between the software crack. When I call Spectrum they say it must be an MYM problem, when I call MECA, they aren't as specked up on Spectrum as they should be. But, by and large, this hasn't happened real often and has never caused a major problem.

Overall I find the whole thing amazing and fun. If you are a familar and comfortable with accounting methods and have a good handle on your finances and are looking for the fastest way to handle your money, I don't think this is a good idea for you. I am as fascinated by my ability to do it all as I am with the information and services, so in my case getting there is half the fun.

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Inside the PCjr: Part IV

By Ari Feldman

This installment of Inside the Junior will provide an overview of the more important and lesser known aspects of the PCjr's internal components, such as the BIOS (Basic Input/Output System), and the ROM (Read Only Memory).

Let's start things off with the BIOS. The BIOS, as mentioned in an earlier article, is a collection of 8088 programs permanently stored in the PCjr's ROM memory, and is found in the last 32 KB of the PCjr's spacious 64 KB ROM area. When the PCjr is first switched on, the BIOS scans the Junior's various machine ports to determine what hardware devices have been installed. Once this is completed, it then initializes these devices, beeps the speaker (to signal that everthing is okay), and sets up the Interrupt source structure. The BIOS also determines if a disk drive is present in the system, if one is, it will proceed to boot (load) DOS. Another function of the BIOS is to provide the minimum level of software support necessary to control and operate the diverse range of hardware attached to the Junior. Because of this programmers are able to call the various BIOS routines via the 8088 microprocessor's INT (Interrupt) instruction. Functionally speaking, the PCjr's BIOS is nearly identical to that found in the IBM PC. In fact they're so similar to each other, that upwards of 90% of existing PC software will run on the Junior. To increase the Junior's level of compatibility with the PC, it's BIOS has provisions to allow such future hardware uprades as a second disk drive and a DMA (Direct Memory Access) chip. There is, however, one main difference between the BIOS of these computers, this being the lack of the proper PC Identity Byte value in the Junior's BIOS. The PCjr's ID Byte can be found at memory address FFFF:FFFE (hexadecimal notation), and has a value of FD (hex) or 253 (decimal), the PC on the otherhand has an ID byte value of FF. This difference in the ID byte value can cause compatibility problems for the Junior when it attempts to run certain programs, namely old PC games and business software. The reason for this incompatibility is that some software checks the ID byte value to tell whether or not it's being run on an IBM PC. If the software doesn't detect the PC's ID byte value it won't work. Fortunately for us, most software doesn't do this anymore. The above is one of those sneaky steps that IBM turned to in the attempt to prevent its software from operating on PC clones. For the handful of programs still out there which require the correct ID byte value, Racore Inc. has developed a cartridge for use with its product line to trick the problem causing software into thinking that it's being run on a PC. With all compatibility problems aside, having a different value in the BIOS has it's uses. For example, the PCjr's ID byte value is checked by programmers who want to develope software that takes advantage of the Junior's enhanced audio/visual capabilities. The BIOS provides a wide range of hardware functions. Below is a list of the PCjr's BIOS Routines. If you have a working knowledge of the DOS utility, DEBUG, these routines should look familiar.

PCjr BIOS ROUTINES

BIOS Function	Responsible for
1. INT 10	Video display
2. INT 13	Disk drive I/O
3. INT 14	Serial Port I/O
4. INT 16	Keyboard
5. INT 17	Printer I/O
6. INT 1A	Time of Day

Beginning at memory address F000:0000 (hex) is 32 KB of ROM which contains among other things, Cassette Basic, the PCjr's Diagnostic programs, and PC's Keyboard Adventure. Cassette

(Continued on next page)

Inside the Junior.....

(Continued from previous page)

Basic is activated whenever you turn on the Junior without a disk inserted in the drive. It happens to be the lowest and least powerful version of the Basic language that runs on the Junior. It's rarely ever employed though, because relatively few Junior owners use cassette players for storage since the disk drive is the de facto standard in IBM computing.
The built-in Diagnostic programs are a set of some of the most useful ROM based programs found in any computer. Few if any home computers on the market have such a feature in their ROM. This assortment of programs can be activated by pressing the Ctrl - Alt - Ins key combination. The Diagnostic programs can test just about every concievable device you can possibly attach to your Junior. There are programs for testing the Video display, speaker, internal modem, light pen, disk drive, and even the joysticks. Each test returns a special code upon its completion in an attempt to determine the working order of the device in question. These tests are by no means the most advanced or extensive available, but they can prove themselves very valuble in helping to isolate potential problems with your system.
PC's Keyboard Adventure is run by pressing the Escape key as soon as you enter Cassette Basic. It's an extremely simple and entertaining (for the kids at least) introduction to using your PCjr's keyboard. However, it lacks the long term utility and sophistication to deem it a truly useful part of the PCjr's built-in software.

One of the most interesting and powerful features of the PCjr and its architecture is the ability to accept plug in cartridge modules. The PCjr's Cartridge ROM starts at memory address E000:0000 and ends at address EFFF:FFFF. Within this memory area is 64 KB of ROM that can contain any user program. Running a cartridge based program has two distinct advantages over a disk based program. First and foremost, cartridge programs don't take up any user memory. This means that more memory is available for working with your program. All of the program data is stored in the PCjr's ROM with up to 32 KB of program code per cartridge. This capability has enabled software developers such as Lotus (the makers of 1-2-3) and Alpha Systems (the makers of Electric Desk) to squeeze their large, complex, and memory hungry disk based programs into the cartridge format, thereby allowing these otherwise huge programs to be run with a minimum of fuss on a computer with a small standard memory capacity, case in point - a 128 KB PCjr. Secondly, due to their construction, cartridges are often refered to as "Firmware", and tend to be much more durable than the more commonly encountered disk based medium. This accounts for the higher reliability rating among cartridges. Additionally, cartridge programs run slightly faster than disk based programs. This is due to several factors that include the nature of the memory types that both media use, RAM for disks - ROM for cartridges: ROM is much faster that RAM because the microprocessor addresses it first. Also, cartridge programs ususally run the instant the computer's power is turned on, while disks must first be loaded into memory before the programs on them can be executed. The PCjr's two cartridge ports also provide an alternate method of system expansion which can help to get around some of the Juniors design short comings. Small hardware devices such as clock/calendar chips, keyboard light indicators, and even screen graphics coprocessors can be interfaced to the Junior via these slots. Unlike other computers that sport cartridge slots, the PCjr has a somewhat more sophisticated cartridge handler mechansim. Most other computers lock up or become damaged if a cartridge is removed with the power on. In this situation, the Junior simply resets and reboots itself if it can't detect the prescence of a cartridge. This system protects both the cartridge and the PCjr from serious harm.

The next and last installment of Inside the Junior will cover the PCjr's serial communications and sound generation hardware. Until next we meet - Happy PCjr computing!

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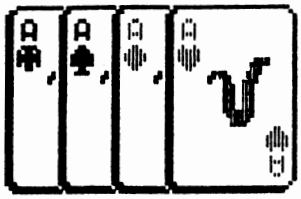

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DIE PER ADD

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BALL FALL

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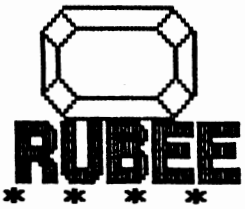

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DIE PER ADD, BALL FALL, and POT SHOT are all original games.

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SOFT WARE

Program Reviewed
Dam Busters
Publisher
Accolade
20833 Stevens Creek Boulevard
Cupertino, CA 95014
Minimum requirements
256K RAM, one disk drive
Price
$39.95 retail
Mail order $25.
Reviewer
Jim Prossick

Attention troops, time for a little military diversion and arcade action. First let's take the dust covers off junior and insert the game disk. Now, boot up and strap yourself in your Lancaster Bomber. Time for a trip over the English Channel to show Jerry what for. Let's hope for a good game and a successful bombing mission.

The time is spring 1943. The game is Accolade's Dam Busters. Your objective is to take a Lancaster Bomber through enemy territory and knock out the three dams which supply the water for German industry in the Ruhr Valley. If you succeed you may be knighted, if not, well God Save The Queen. Dam Busters is a game that attempts to combine strategy, computer simulation and arcade action, not an easy mission.

Running the Lancaster is a difficult task. It's much like trying to be in two places at the same time. There are eight positions to monitor and you can bet your knickers two or three will require your undivided attention at once. The player, excuse me Captain, cycles through the positions making sure everything is running smooth. In the pilot position there are some basic controls to monitor, but all you really do is steer the bloomin' stick. Controlling the throttle and boosters is done at the first engineer position. What about the flaps and rudder? Well, the second engineer handles that along with the landing gear. Cycling through the positions is accomplished by either keyboard or joystick. Was this how those Brave Brits flew the real Lancasters in the Big One - W W Two. Probably not and needless to say Dam Busters is not a real flight simulator. It is only a game.

Knocking down a few Jerrys can be good for the spirit. Jump in behind the machine guns and pump some lead. There is an endless supply of ammo, so fire away. If you have a joystick you can put it to good use. Shooting down fighters is pretty easy game. The searchlights and ground artillery are not quite as simple. This is the same kind of fun a pocketful of quarters and a long stay at the local arcade's shooting gallery game used to give.

Accolade's packaging of Dam Busters makes it look like you're in store for some good graphics, but read the fine print those screens are from the Commodore 64 version. The graphics on the IBM version of Dam Busters are very basic and not the least bit exciting and the use of color is limited. Incoming fighters look fairly realistic, but the rest of the scenery is quite barren. You are afforded a brief close up view of the dam when it is time to let the bombs fly. While setting course you see a lot of cities, military outposts and industry on the map. But, when you fly the bloody plane all you see is a bunch of purple dots. This is not even close to realism, but again remember Dam Busters is only a game.

Dam Busters gives one the illusion of a strategy game, but actually there is very little strategy involved. There is a map to use to navigate the bomber's course, but you can only fly from point A to B by way of the shortest distance. No way is provided to accurately plot your route around enemy encampments and other obstacles. There is no consideration made for use of fuel, ammo consumption, amount of bombs on board or of the status of the crew. As long as you can keep the Lancaster in the air you can keep going. One does need to master some skills in order to complete the bombing mission. Knocking down enough planes and knocking out enough searchlights to get the old Lancaster to the Dam is one. Setting the plane at the proper altitude and speed and releasing the bomb on time is another. Also, if you get to the Scrampton Field Level you will need to coordinate

the speed, flaps and trim of the aircraft for a successful takeoff. These are not necessarily easy tasks to master and should keep the enthusiast busy for quite some time. The problem is that they are tasks and no more. There is no real thought that goes into accomplishing the bombing mission, just a question of doing things in the right order.

Some other problems with the mechanics of the game exist as well. First, there is no way to calibrate your joystick until you have already begun the game. That leaves you with a rambunctious joystick running all over the screen, whilst you try to set course or shoot down a fighter. Not a good way to start one's first bombing raid of the day. It is also difficult to control some of the calibrated controls, like the throttle control, and to move between the controls on certain screens with the joystick. Then let's try it in keyboard mode. That works great for everything except shooting down fighters, where one needs to be a bit more nimble. It's a shame you couldn't use them both at the same time. There are some other bugs. At times one of the fighters gets hung up on the top of the screen, reminiscent of a squashed bug on the windshield.

Dam Busters has a copyright date of 1985, but it has the feel of a game from an older era. The game started on the Commodore 64 and as far as I'm concerned it should have stayed there. Most often games are modernized or tweaked up when released for a new computer, by all indications this program was mummified and tweaked down when released for the IBM. Dam Busters lacks direction in its attempt to give the user a taste of arcade action, computer simulation and strategy. It leaves you hungry for more.

You could call me a software snob, but for $39.95 I expect a bit more for my money. The competition for the software dollar is fierce and there are plenty of programs out there that play better and cost less. In all fairness, Accolade has marketed some fine programs for IBM machines. Mean 18 and Psi 5 Trading Company are two examples, but Dam Busters is not.

IBM AND TECMAR EXPANSION BOARD UPGRADES

If you want to be the first kid on your block to have 256K chips in your IBM or Tecmar expansion board, this one's for you. After replacing the 64K chips originally soldered in your JrCaptain or IBM expansion sidecar, adding new sockets, and inserting 256K chips, you will effectively have 640K of RAM in your PCjr to play with. All work will be done by qualified technicians headed by Brian Cook. What we want you to do, is to fill out the form below to let us know if you're interested. Once we have your form on file, you will be notified by phone or mail when we would like for you to ship your board to us for prompt work, hopefully within two 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 $145.00 (U.S. Currency). If you should have any questions concerning this service, please let us know on your form. We will guarantee the work and the 256K chips for 90 days.

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New Home Computer.....

(Continued from page 1)

able PC clone deals going around these days. The basic, low end education model aimed at the primary and secondary school level features an 8086 microprocessor, a single 3 1/2 inch 702K disk drive, 1 1/2 internal expansion slots, 512K of memory, and the VGA graphics capabilities of its "big" brother the Model 30. The Model 25 will cost $1,350. with a monochrome monitor, and if color is important to you, expect to pay $1,695. for a color version. The "collegiate" version of the same model will sport two disk drives and an additional 128K of RAM, bringing the total to 640K. These additional goodies will increase the price to $1,883. for the monochrome version, and $2,228 for the color version. Though IBM will heavily discount these models to school systems, staffs, and teachers (up to 40% off, possibly), the average consumer will probably see some form of discounting at the local IBM authorized dealer.

So is this the new PCjr? Not according to an IBM spokesman, who states these machines are "replacements for the original IBM PC." Still comparisons between the Model 25 and the venerable PCjr are inevitable. In its basic version, the Model 25 has about the same footprint as the Junior (the size of the CPU unit), making it possible to use the computer on a school desk, in typing wells, and in dorm rooms. Both have enhanced graphics for their time, and have these special graphics capabilities built-in, rather than on a separate, optional expansion card. IBM introduced a special educational software program entitled Writing To Read to increase the attractiveness of its original PCjr package, and again it has announced new software specifically designed for both configurations of the Model 25. Both came into the market at a higher cost than comparable PC clones, a gamble IBM continues to play.

The dissimilarities between the old and the new are obvious, with the most remarkable difference in the computer speed. According to the IBM spokesman, the Model 25 should perform twice as fast as the old IBM XT. The PCjr, on the other hand, performs slower than the original PC in many computer activities due to its special screen handling characteristics. This lack of speed is quite apparent to some PCjr owners, but is generally insignificant to most Junior owners. Though the inclusion of 3 1/2 inch drives in the new machines is big news for other IBM PC users, it is not totally alien to the PCjr, since a version of the PCjr (the JX) was introduced in Europe with the same disk drives in the smaller format. Even current Junior owners can utilize what may possibly be the new standard in PC disk drive standards (see sidebar below). The basic Model 25 system is monochrome, while the PCjr was always meant to play up its color capabilities. Less significant differences between the Junior and the Model 25 are attributed to IBM's own revelation of the PC sophistication of the consumer market - gone are the references to cassette tape storage devices and computer to color TV connections.

Whether the IBM's new home and educational computers succeed in this highly competitive war is under great debate. Most feel the challenge will be between the advantages of new hardware improvements of the new models versus the advantages of remaining with the old 5 1/4 inch disk format of current PC's that has the bulk of all programs available to PC owners. While the battle wages, the PCjr owner can just sit back and enjoy his entertaining and productive little computer. Sometimes it's awfully nice to be a civilian.

Adding 3 1/2 Inch Disk Drives To Your PCjr

There are some advantages to having 3 1/2 inch disk drives, and being a PCjr owner you're not excluded from realizing them. Whether you have a portable computer that uses them or just desire to have a disk that can contain 720K worth of data, adding a one of these drives is simple enough. One manufacturer that can supply all of the hardware and software for the Junior is J&M Systems in New Mexico which offers a total kit for the low price of $349. which includes: a Panasonic 3 1/2 inch 720K drive, their PC2C floppy drive controller to which three additional drives can be added to your Junior (a grand total of four), their Mach 3.5 device driver software that enables the PCjr to format the 3 1/2 inch drive at 720K, and the standard case, power supply, and cables. You must DOS 3.2 to take advantage of the 720K. Without the special device driver, the 3 1/2 inch drive thinks it is a 5 1/4 360K drive in 3 1/2 inch clothing. For more information, call J&M Systems at (505) 292-4182, and ask for Richard Allen, and tell him The Junior Report sent you.

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jr HOTSHOT drive control kit	$ 79

Kits include: control card, 2 drive signal cable software and installation / setup instructions you must supply the disk drive & power supply

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PCjr Compatibility.....

(Continued from page 1)

also gives the rest of us some idea of what programs are currently the most popular among your fellow Juniorites. Lotus 1-2-3, Managing Your Money, Flight Simulator, and the King's Quest series showed up often on many a readers' list which was expected. Other programs, like My Calc, an inexpensive spreadsheet, and the Ancient Art of War also proved very popular among the PCjr crowd. Revealing favorite PCjr-compatible programs wasn't the only beneficial feature of Survey #4 however. The survey, like our other surveys, offers a means of communication between newsletter and reader. At the end of this article are some of the questions, problems, or situations that we haven't experienced ourselves, but may have been by some of the other PCjr owners. Read through them, learn from them, or please send us a solution if you have solved any of the problems. In other words, the list is not final. We expect all of you to write to let us know new programs that you are enjoying on your PCjr screen, and some programs that are giving you fits. For example, some of you have AutoCad, the premier PC design program, as PCjr incompatible. However, two of you out there, wrote that you were having a fine time running the same program. Write us to let us know your exact PCjr setup, and we will be eternally grateful. We expect to present an updated list at least twice a year to help everyone.

All in all, one glance at the list of software that can be run on the PCjr should be heartening to most of us. One way or another, the PCjr can be upgraded to run almost any PC software program. One thing to keep in mind is that it is the quality and not the quantity of PCjr-compatible software that is important. There are enough high quality software today to last a Junior owner's lifetime. Numbers are important to some, however, and the good news here is that the list is vastly incomplete. We didn't include hardly any of the hundreds and hundreds of fine Public Domain and shareware programs available for Junior. Then there are new programs introduced everyday just waiting for the Junior owner to try out. Sink or swim, get out there and test the waters. And who says that the life of a PCjr owner is never exciting?

SURVEY #4 COMMENTS & QUESTIONS (To be continued)

Kid's Stuff is the best childrens software that I have. My 4 year old has been using it for two years. It teaches spelling, matching, and counting using bright colors and many animated pictures.

Lyle Rhodebeck
Mansfield, OH

I still haven't found somebody with a Tecmar JrWave that knows how to use 736K. In fact, I am getting to think that maybe I bought the only one in this universe.

Robert Comtois
St-Eustache, PQ

I have purchased Generic CADD but can't seem to run it. I have 640K via a Tecmar JrCaptain with Racore Drive II. I've tried the "Conpcjr" for various allocations but the program just locks up when I try to type "CADD". Anyone have any suggestions?

Don Bowen
Hillsboro, OR

WordPerfect jr is the best word processor designed for the PCjr and I have tried 12 of them.

Paul Solomon
Whitestone, NY

Has anyone experienced temperature sensitivity problems with Racore's 20meg hard drive?

Mark Wilton
London, Ontario

PCjr Compatibility List

Numbers = RAM REQUIRED R = Racore system 2 Dr rec = 2 drives recommended PD = Public Domain DMA = Direct Memory

Software Program	Restrictions / Comments	Software Program	Restrictions / Comments
A+ Series		Calendars and Stationary	
A> Cook		Casino Parlor Games	
Ability	384 2 dr rec	Castle Wolfenstein	
ABT's Project Workbench	360	Certificate Maker	
Accounting for Micros		Championship Boxing	
Adventure		Championship Golf	
Agent USA		Championship Lode Runner	
Alge-Blaster		Chart Master 6.2	
Alphabet Zoo		Chiwriter	256
Alter Ego		Chem Lab	
Amazon		Chessmaster 2000	
The American Challenge		Christmas Kit	
Amulet of Yendor	PD >256	Circus Maximus	
Amortizer III		Classmate	
Ancient Art of War	256	Clip Art Volume I & II	
Andromeda Conquest		College Decision	
APBA Baseball		ColorScreen Print 2.02	
Arcade I		Computer Baseball	
Arcade II		Conflict in Viet Nam	
Archon		Copy IIPC	
Art Gallery I & II		Cornerstone 5.2	
Artificial Intelligence		Craps	
Art Studio		Creative Contraptions	
Auto CAD	R 512 2 dr	Crime and Punishment	
Auto Sketch	R 512 2 dr	The Crimson Crown	
Balance of Power	512	Crossfire	
Ballyhoo		Crosstalk XVI 3.61	
Bank Street Story Book		Crusade in Europe	
Bank Street Writer Plus		Cut & Paste	
Baron's Computer SAT		Cutthroat	
Bartender's Guide		DAC Easy Accounting	
Basic Building Blocks		Dam Buster	
Battle for Normandy		dBase II 2.4	
Battle of Antietam		dBase III Version 1.1	256
Black Caudron		dBase III Plus Version 1.1	384
Below the Root		Deadline	
Board Games		Decision in the Desert	
Bop 'N Wrestle		Delta Drawing	
Borrowed Time		Demon's Forge	
Boulderdash		Desqview ver 1.02	R DMA
Breakers		Diagram Master	R DMA 512 2dr
Bridgemaster		Disk Optimizer	
Bruce Lee		Dollars and Sense	512
Build a Book		Donald Duck's Playground	
Bumble Games		DOS 3.1	
C Compiler 4.0		Dragon World	
Calendar Creator		Draw-it	256

Early Games for Young Children	
Easy as ABC (PCjr version)	
Electric Desk PCjr version	
Electric Desk PC ver	256K
Enchanter	
Evelyn Wood Dynamic Reader	
Executive Filer	
Executive Writer	
Executive Suite	
F-15 Strike Eagle (New Version)	
Face Maker	Mouse
Fahrenheit 451	
Fancy Font	
Felony	
Filer's Choice	
Finance I & II	
Flash 5.0	
Flash Calc ver 1.0	256
Flight Simulator	
Fontasy	384 640rec
Fooblitzy	
Forbidden Castle	
Form Worx	256
Fraction Fever	
Friendly Writer	
Friendly Speller	
Gambler	
GATO	
GBA Championship Basketball	256
Generic CAD ver 1.0	512 2 dr 8087 rec
Getrude's Puzzle ver 1.1	256
Get Organized	
Gettysburg	
GFL Championship Baseball	256
GFL Championship Football	256
Ghostbusters	
GMAT	
Goldfinger	256
Golf's Best	
Grammar Gremlins	
GrandSlam Baseball	
Graphics Library I & II	
Graphics Scrapbook	
Graphics Sports	
Graphix Partner	
Graphix Toolbox	
Greatist Hits	256
Greeting Cards	
Gulf Strike	
GW Basic ver 3.2	
Hacker I & II	
HAL	512 Hard Drive rec
Hellcat Ace	R 256
Hey Diddle Diddle	
High Stakes Guide	
Hitchhiker's Guide	
Hobbit	
Holy Grail	
Home Accounting Plus	
Home Budget Jr.	
HomePak	
Homework Helper Reading	
Hopper	
IBM Assistant Series of Productivity Software	
IBM Countries and Capitals	
IBM DFT DISK	
IBM JustEdit	
IBM Logo	
IBM PDS-DATA	256 384rec 2 dr
IBM Private Tutor	
IBM Software - The Directory	
Inca	
Indiana Jones	256
Infiltrator	
Instant Replay	
Interlude II	
It Figures	
Javelin	R DMA 512 2 dr rec
J.K. Lasser's Your Money Manager	
Jet	
Jot (Shorthand program for wp)	
Jim Fixx's Running Program	
Jingle Disk	256
Jumpman	
Karateka	
Keyboard Cadet	
Keyworks	
Kids on Keys	
Kids' Stuff	
Kidwriter	
KinderComp	
King's Quest I, II, III	
Knowedgeman	384
Lattice C ver 3.1	
Learning DOS	
Leather Goddesses of Phobos	
Lettrix	256
Linkword French	
Linkword German	
Linkword Spanish	
Loderunner (PCjr version)	No NEC V20
Lotus 1-2-3 (PCjr cartridge version)	
Lotus 1-2-3 (Disk version requires 256K and special driver from Lotus)	

Lovejoy's SAT		One on One	
Lunar Explorer		Oo-Topos	
Luscher Profile		Orbiter	256
Macro Assembler 4.0		OrCAD	512 mouse
Managing the Market	256	Pac Man	
Managing Your Money	256	Paper Airplane Construction Set	
Mastertype		Paperback Speller	
Math Man		Paperback Writer	
Math Maze	R DMA 256	Paradox & PAL	640 R DMA 2 dr hard rec
Math Monster		Partner	256
MathPlan 2.1		PC Desk	
MaxThink	256	PC Paint Plus	
Mean 18	256	PC Paintbrush ver 3.0	256
Mickey Mouse's Space Adventure		PC Palette	mouse, 256rec
Micro Braille Program		PC Personal Investor	256
Micro Cookbook		PC Planetarium	
Micro Expert ver 1.0		PC Pool	
Microleague Baseball		PC Pool Challenges	
Microsoft Access		PC Speech	
Microsoft Chart 2.0		PC Storyboard 1.0	
Microsoft Multiplan 2.01		PC Stock	
Microsoft Quick Basic 2.0		PC Trek	
Microsoft Windows	R DMA 512 2 dr (2.1Patch?)	PC Tools	Sometimes unpredictable
Microsoft Word		PCjr ColorPaint	128 only
Millionaire		Peach Text series Accounting	256
A Mind Forever Voyaging		Peanut's Maze Marathon	
Mind Mirror		People Organizer	
Mindprober		Perfect Score	
MineShaft		Perry Mason Games	
Mirror 3.6	R 256 DMA PC ID cart	Personal Development	
Monster Math		PFS: First Choice	
Montezuma's Revenge		PFS series of productivity software	
Moonmist		PFS Professional Write	
Moptown Parade		Piece of Cake Math	
Mouser	cart basic req	Pinball Construction Set	
Mr. Cool		Pitstop II	
Mr. Pixel's Paint Set		Planner's Choice	
Multimate 3.31	256	Come Play with Pockets	
Multiplan ver 3.0	R DMA	Pockets Goes to the Carnival	
Murder by the Dozen		Pockets Goes on a Picnic	
Music Construction Kit		Pockets Leads the Parade	
Music Studio		Pockets Goes on Vacation	
My Calc		Print Boss	
My Letters, Numbers, & Words		Print Shop	
Newsmaster	256	Print Shop Companion	
Newsroom	>256 rec 2dr	Print Works	
Newsroom Pro		The Printing Press & Graphics Libraries	
NFL Challenge	384	PrintMaster and Printmaster Plus	
Night Mission Pinball		Pro Design II ver 1.5	R 512 2 dr
Norton Commander		Pro Manager	
Norton Utilities 3.1		Prokey 4.0	
Number Works		PSI 5 Trading Co.	
Oil's Well		QModem	192

QModem Jr		Success with Algebra	
Quick Key		Summer Games II	
Quicken	192	Super Boulderdash	
Rambo	256	Super Calc III	
Reader Rabbit 2.0	Box says 128, but 256	SuperKey	
Real Software		Super Sunday	
Reflex 1.1		Superkey 1.1	
Reflex Workshop		Swiftcalc	
Remember		Sylvia Porter's Personal Finance	
Rendevous with Rama		Symphony	384
Rhymes & Riddles		Tapper	
Risk Jr	128 only	Tass Times	
Robotron	cannot use joystick	Tax Advantage	192
Rocky's Boots		Tellstar 2	
Rogue		Temple of Apshai trilogy	
Run for the Money		Textra 4.0	256
Sargon II & III		Thinktank	
Savvy PC Database		3 in 1 Football	
Scenery Disks for Flight Simulator		Ticket to Paris	
Scorecast		Tink Tonks	
Settling America		Touch	
Seven Cities of Gold		Touchdown Football	
Shamus		Tournament Bridge	
Shanghai		Toy Shop	
Sidekick 1.5		Transylvania	
Sideways 3.11		Traveling Sidekick	
Sierra Championship Boxing		Trinity	
Sign Master 5.1		Trivia Fever	
Silent Service		Trivia Savant	
Smart Com II		Tune Trivia	
Smart Money 1.0		Turbo Database Toolbox	
Snake		Turbo Editor Toolbox	
Snooper Troopers		Turbo Gameworks	
Snoopy's Reading Machine		Turbo Graphix Toolbox	
Solo Flight		Turbo Lightning	
SongWriter		Turbo Pascal 3.0	
Sorcerer		Turbo Prolog	
Space Games	256	Turbo Tax	
Space Quest	256	Turbo Tutor	
Spell It		Turbo Word Wizard	
Spellbreaker		Turtle Power	
Spiderman		TV & Cinema Trivia 101	
Spitfire Ace		Twist and Shout	
Sportsman		Type!	
The Spreadsheet Auditor	256	Typing Made Easy	
Star Trek		Typing Tutor III	
Starfleet		Ultima I,II, &III	
Starflight (requires software patch)		Up and Add'em	
Strategy Games		Utah Cobol	
Strip Poker	Req Cart Basic	Value Time software	
Studymate		VolksWriter 3	256
Submission		Voodoo Island	
Sub Battle		VP-Planner	

Webster's New World Speller		
Webster's New World Thesaurus		
Webster's New World Writer		
Where in the World is Carmen SanDiego?		
Wilderness		
WillWriter		
Wines on a Disk		
Winnie the Pooh		
Winter Games		
Wishbringer		
Witness		
Wizard of Wall Street		
Wizardry		
Microsoft Word 3.1		
Word Challenge	256	
Word Writer	256	
WordPerfect		
WordPerfect Jr		
WordPerfect Library		
WordProof 2.0		
Wordstar ver 3.31	256	Works best in RAM disk
Wordstar 2000	256	
Wordstar ver 4.0	256	
Work Force II		
Workstation Manager (similar to Sidekick)		
World Karate Championship		
World's Greatest Baseball Game		
Writer Plus		
Writer's Choice		
XLisp ver 1.6	Public Domain	
XTree		
Zaxxon		
ZBasic ver 3.01		
Zork I, II, & III		
Zyll		

AND HERE ARE SOME THAT WON'T WORK

Battlezone
CopyWrite
Cruise Control
dBase III Plus 1.1 ver 1.0
Decathalon
Dig Dug
Double DOS
Framework
Joust
Microsoft Quick Basic ver 3.0
Story Machine
Tank
Borland's Turbo Basic
Volkswriter 2.2
World Tour Golf

New Shareware

LOTUS 1-2-3 WORKSHEETS (#83):

Contains a variety of spreadsheets, from printing utilities to common financial applications (loan amortization, checkbook manager,etc). Also great for math, small business control, time management, and mail list database. **Requires 256K**, 2 disk drives, and of course, Lotus 1-2-3.

WORLD STATISTICS (#84):

This is like having an encyclopedia inside your PCjr. World Statistics is a simple, menu-driven database of statistical and demographic information about the nations. All the information is compiled from "The Encyclopedia Britanica Year Book for 1986" and "Countriesof the World and Their Leaders Yearbook 1986."

PHRASE CRAZE (#85):

Version 1.05 is for those who love to outguess those people on TV quiz shows. Easy to learn and easy to play. Great fun for the whole family. Similar to Wheel of Fortune but without Vanna White.

EMS & MAROONED (#86):

Two great programs for the price of one!

EMS (Employee Management System) is a system for describing a set of personality characteristics that would fit a certain job and then using them as a benchmark to test prospective employees with. EMS uses responses to descriptive statements, analyzes them, and then prints out a 5 page report on the personality.

Marooned is not the standard text adventure game - it's logical. Marooned on an alien planet, utilize clones on the orb to escape with your life, if you can.

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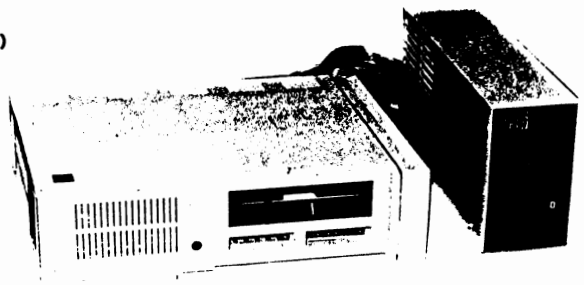

SPC DISKITjr HARD DRIVE

```
DISKITjr 10C(11MB).....545
DISKITjr 20C(22MB).....695
DISKITjr 30C(33MB).....~~995~~..795
DISKITjr Controller Kit......245
```

Feature	***Benefit***
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.
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.

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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 - IBM ColorPaint jRHotShot Internal Memory Expansion Gato
DEC 1986 - Readers' Survey #3 Jr BBS's Fortrix Converting IBM's Expansion Board to 512K
JAN 1987 - PCjr Software Compatibility List Doctoring IBM Writing Assistant Carmen SanDiego on Jr
FEB 1987 - PC-Write 2.7 PCjr Clubs DOS Patch 2.1 Basic Programing on the Junior
MAR 1987 - Art Studio Cassette Cable to Joystick Adapter Inside Your Jr Part I New Jr Products
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 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

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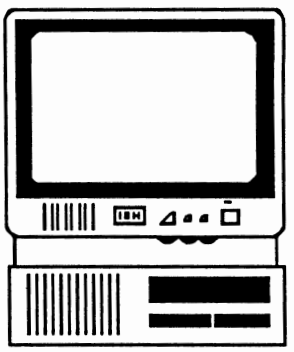
"Upon this rock"...Matt. 16:18

MOVING?

Make sure you let us know way ahead of time of your next move, so that you don't miss any of the breath-taking issues that are on the way. Please include your former mailing label in your correspondence, and address it to the attention of Lily Fischbach, Circulation Manager. She's ready for you.

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 you are using. So let's see how good your PCjr really is with a brush. You may surprise your Junior and yourself.



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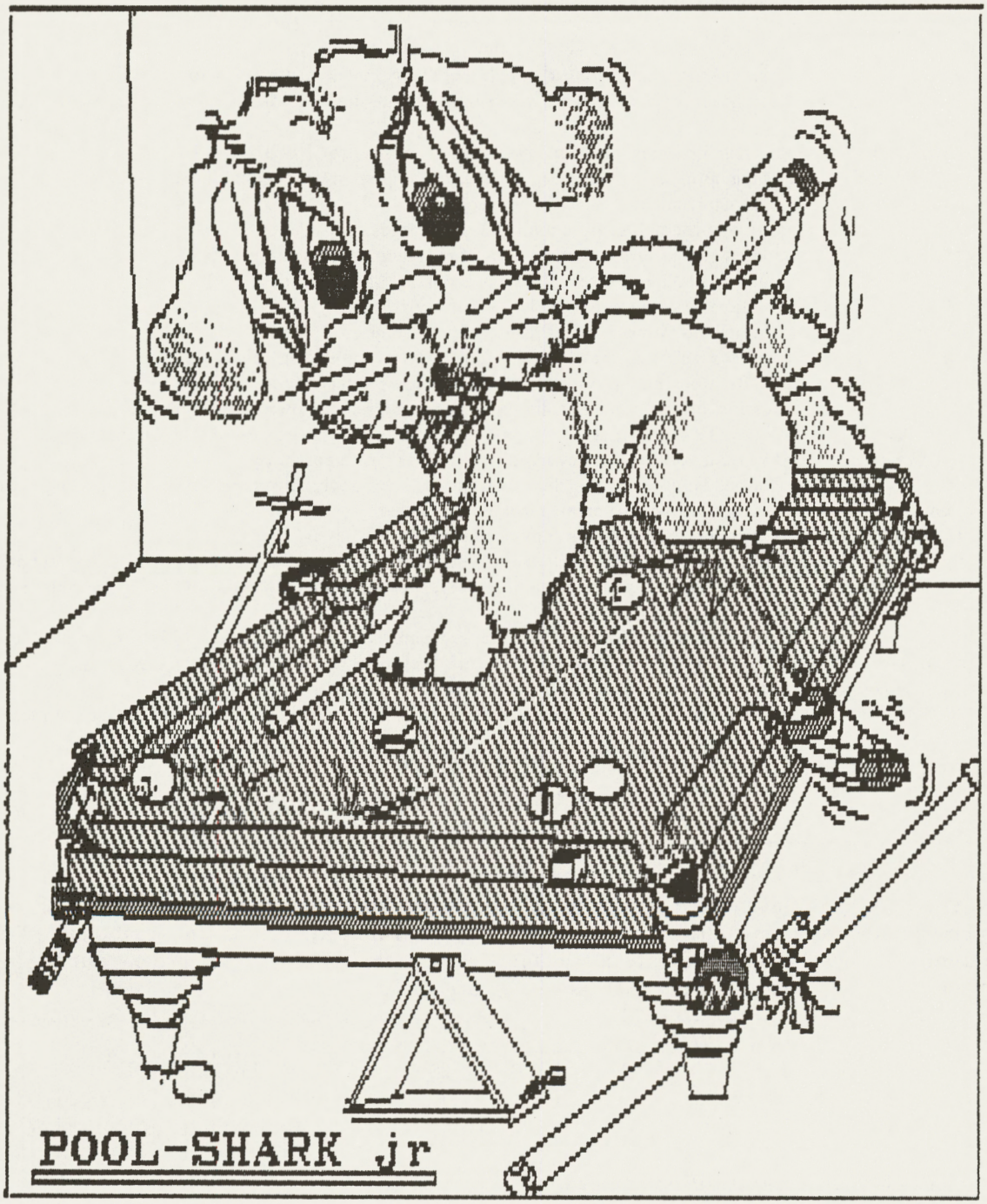

By Mr. Lay Taing of Olympia, WA.
JUNIOR SETUP: 640K, Microsoft Mouse, and the IBM Proprinter
SOFTWARE: PCjr ColorPaint

PUBLIC DOMAIN AND USER SUPPORTED SOFTWARE

Don't forget the new programs on page 22!!

PC FILE III (#1): the classic, updated, full-featured database program that has set the standard for shareware programs. Considered by many to be better than most commercial programs. Version 4.
PC WRITE (#2): this best-selling shareware program is equal to or better than most word processors on the market. This is the latest version (2.55) and will run on the single drive, 128K PCjr.
PC TALK (#3): PCjr adapted version of one of the most popular communications programs.
HOME MANAGEMENT (#4): a reliable, general purpose financial manager.
MONOPOLY (#6): Colorful, electronic version of the most popular board game in history. **Requires 256K.**
KIDS (#7): a special children's disk composed of a kid's word processor, an intermediate math program, and a colorful counting game for the preschooler.
PC-KEY-DRAW (#9): the most powerful graphics program available in shareware. **Requires 256K.**
GAMES (#10): one of the best selling game disks has Combat, Dungeons & Dragons, & Global THermNuclear War.
PC TUTORIAL (#12): a course in computer and the PC-DOS environment.
GAMES (#16): includes PC-versions of Pac-Man, Missile Command, Asteroids, and Centipede.
PC OUTLINE (#17): an easy-to-use outlining program that's a must for writers and aspiring writers.
EDUCATIONAL GAMES (#18): features math exercises, thinking programs, and the classic Flashcards.
LABEL MASTER (#19): the original label making program has a variety of uses.
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.
EZ FORMS (#28): Create and print custom forms to fit every need. A business neccesity. **Requires 256K.**
PC-STYLE (#29): Written by Jim Button, helps improve your writing skills by analyzing your writing style. Easy to use, it wakes up your documents or prose, making your writing more readable and stylish.
VISIBLE-PASCAL (#30): A special version of Pascal for novice Pascal programmers.
PC-CALC (#31): A "visible" spreadsheet program that challenges those offered commercially. Income tax computations, calculating depreciation, computing loan interests, or just plain balancing your checkbook are just some of the chores this program can handle.
PC-GRAPH (#34): Also by Jim Button, create an assortment of graphs from databases such as PC-File, or spreadsheets, too.
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.

PUBLIC DOMAIN AND USER SUPPORTED SOFTWARE

To order any Public Domain disk, please send $5.50 (U.S. Currency) for each program ($10.00 for non-members) which includes shipping and handling and send to: The PCjr Club, Public Domain, 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.

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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

Number of program disks wanted: _____*times $5.50 =* _____
_____*times $9.00 =* _____
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NAME _____

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PC-FILE+ (#75): Power-pack update for the most popular shareware program of all time. A must for any serious database user.

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 on PCjr screen.

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.

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