Add Some Mousepower to Your PCjr

If you find yourself doing a lot with drawing, painting, desktop publishing CAD, or even word processing software, chances are you could benefit from using a mouse.

There are several types and many brands of mice available, most of which will work on PCjrs. Since they are becoming more and more popular, we decided to give you a rundown of what mice can do and which mice work well on PCjrs.

This was not an easy task since it would be impossible for us to test all types of mice with all software. So, to help in assembling the information for this article we asked several months ago for readers to send us descriptions of their experiences with mice on their PCjrs. We received several letters on the subject (thank you faithful jr supporters!), and we are including excerpts from some of those letters here. But we should caution you that this is still not the last word on using mice with PCjrs. Instead it's a collection of information from various sources (all reliable, of course) which we hope will help you decide whether you want to plug a mouse's tail (cable) into your jr, and if so, which one would best suit your needs. This article should provide a basis for deciding whether or not you want a mouse and help you ask some intelligent questions when you check with mouse suppliers. We suggest you check with at least two before deciding which mouse to buy.
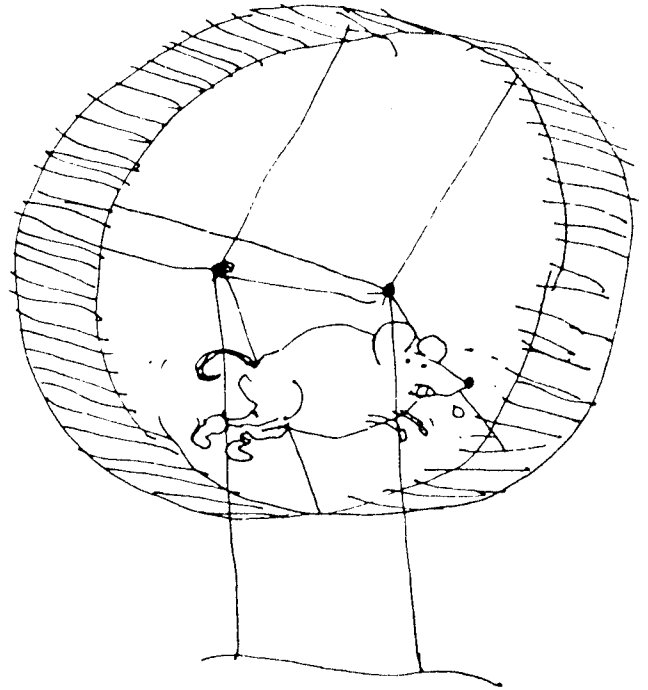
A mouse is a device that allows you to rapidly move the cursor around your screen by simply pushing the mouse around on the surface of your desk (or a special pad). It has from one to three buttons on it for making selections and executing commands. Essentially, it is an alternative to the up, down and sideways arrows on your keyboard. You push the mouse away from you on the desk, and watch the cursor zip up toward the top of your screen. Move the mouse toward you and to the right, and watch the cursor move diagonally down and to the right. If you happened to have started that move at the start of a paragraph while using a word processor, and stopped your diagonal move at the end of the paragraph, you could have "marked" that paragraph for a "cut and paste" operation. It's a lot faster to do something like that with a mouse rather than with the arrow keys.

Types of Mice

There are three types of mice: mechanical, optical and opto-mechanical. Mechanical mice usually have a ball on the bottom, which turns encoders inside as you move it. Optical mice use a special pad with a reflective surface and a grid pattern to "read" the direction of movement. Opto-

PCjr Lives!

Using DOS To Check Your Disks

By Doug & Betty Bullman

For those of you PCjr users who are beginners, learning how to use the DOS commands is the way to start learning how to control your computer. In past articles we have covered several very useful DOS commands.

Now we'll give some pointers on the CHKDSK (check disk) command. We are not power users. Our equipment consists of 640K memory and two disk drives. Therefore, the following demonstration uses two floppy disk drives only.

Here is a glossary of terms used below:

Chains - A sequence of location points that connect (or chain together) parts of a disk file.

Contiguous file - A file whose parts occupy adjacent sectors on the disk.

Non-contiguous - A file whose parts are scattered across two or more non-adjacent sectors on the disk.

Logged disk - The disk in the active (or default) disk drive.

Parameter - an addend to a specified file name which changes its character. For example, FORMAT/S B: The addends are /S and B. CHKDSK is an external DOS command which does not reside in memory when DOS is booted. It is treated like any other conventional program file and can be deleted, copied and renamed. Its main purpose is to check disk space showing space occupied by files and space remaining on disk for use. Why do we need to check disk space? When copying files to a heavily used diskette, it is wise to know the amount of space available. Otherwise, you might run out of space before the whole file is copied. Its general form is: CHKDSK B: - This will check the disk in drive B. If no drive is specified, it will check the logged disk.

CHKDSK/V - The /V parameter displays the files in each directory in the designated drive and also displays any disk errors found.

CHKDSK/F - The /F parameter is used to recover disk space that has been misallocated in the directory.

CHKDSK filename - checks the designated file and displays a message telling whether the file parts are contiguous or non-contiguous.

CHKDSK *.* - The wild card * stands for any filename and any extension. This command is used to check all the files on the designated disk and display the name and number of non-contiguous blocks of those files having more than one contiguous block.

For the following exercise you will need your DOS disk-ette and a well used data diskette that has had files added, deleted or edited.

1. With your computer turned on, place your DOS disk-ette in drive A and check it. Remember that <cr> stands for "enter".

A>CHKDSK<cr>

The message displayed should give total disk space, bytes in hidden files, bytes in user files and bytes available. A second message should display bytes in total memory and bytes free.

2. Check your data diskette in drive B.

A>CHKDSK B: <cr>

You should get a similar message displayed as in #1. However if errors are found you should get a message similar to the following: "Errors found, F parameter not specified. Corrections will not be written to disk." The message might then tell you the number of lost clusters found in the number of chains and ask you if you want them converted to files (Y/N). If you enter Y, the next message tells the number of bytes of disk space that would be freed. CHKDSK with the /F parameter would now be used to recover the lost disk space.

3. Check the files on your data disk for errors encountered in the directory.

A>CHKDSK B:/V <cr>

All the files are displayed as they are being checked and any errors encountered are recorded.

4. Check a specific file on your data disk.

A>CHKDSK B:filename <cr>

You should get a similar display as in # 1. and a

Questions and Answers

By Rene Waldron

EDITOR'S NOTE: jr Newsletter gets questions in the mail from PCjr owners every day. So many, in fact, that we apologize for not being able to answer them personally. This Questions and Answers column is our way of responding to the questions readers ask about their PCjrs. We can't answer all of the questions we receive, but we try to answer those that are either asked by several readers or those we feel will be of interest to PCjr owners in general. If you have a question that you do not see answered here, or elsewhere in this newsletter, please feel free to write to us at jr Newsletter, Box 163, Southbury, CT 06488

Q. Are all .BAT files the same? Do they do the same thing? Can you tell me how to write them? (Various readers have asked these or similar questions.)

A. Perhaps the reason for some confusion is the difference between AUTOEXEC.BAT files and others. The important thing to remember about AUTOEXEC.BAT files is that they are AUTOmatically EXECuted upon booting or rebooting. DOS looks for an AUTOEXEC.BAT right after running the CONFIG.SYS file. If it finds one, the DOS commands or statements in the file are executed, one at a time.

Both AUTOEXEC and other .BAT files can be executed by merely typing the name of the file at the DOS prompt, without the .BAT extension. This appears to act almost the same, from the user's point of view, as an .EXE or .COM file; just type the name and presto, the file executes.

In the case of a .BAT file, DOS finds the file from the name typed in, reads the commands one line at a time and executes them accordingly. That's why, in a simple .BAT file the manual requires <Enter> after each command or statement. It is a copy of what you would do if you were typing in each command at the keyboard. DOS internally keeps track of which statement it has just read and executed and goes to the disk for the next one as needed. If you have ever seen "insert disk with BATCH file and press any key to continue..." on the screen, now you know why. DOS has not come to the end of the .BAT file yet and knows it.

You can have some interesting fun by having two disks with .BAT files of the same name, but different commands in them and switching disks before all the commands in the first one are completed. More fun can be had by calling one .BAT file from within another. Depending on your DOS version, and the particular commands executed, you just might crash, because DOS could not come back down the sequential .BAT files "ladder" in the proper steps.

We have described the COPY CON: technique for writing short .BAT files in previous columns but did you know you can write long, elaborate ones using word processors or line/screen editors? The thing to take into consideration about this alternate method is that the file written to disk MUST be in PLAIN ASCII format and that there IS a Line-Feed/Carriage-Return actually placed at the end of EACH line (command). DOS reads this as the end of a command to execute whether it come from the keyboard or in a .BAT file. Most word processors and editors have this facility as an option when saving to disk.

One more note: Don't use the same name for a .BAT file as any .COM or .EXE file on the same disk, or one which will be inserted; DOS gets confused about which one you want to run. If you MUST have the same name, the extension of the file(s) must always be used, and even this may not clear up the confusion, (depending on the version of DOS) because DOS 2.1 for example, reads the first part of the name, then looks for the named file with extensions of .COM then .EXE BEFORE taking into consideration the extension then looking for .BAT! Interestingly, The BASIC program extension of .BAS causes no problem.

Q. Is there a way to add EMS memory above 640k to the jr while in PC mode? I have tried the IBM sidecar as outlined in the May issue of the Jr Newsletter, but this does not work well with Writing Assistant and other programs I have tried. I have tried various CONFIG.SYS files to try to get it to load above the first 128k but never succeeded in booting without garbage on the screen. -- J. Larry Moss, Richmond TX.

A. The way to add EMS memory above 640k requires both the software and the special wiring which Paul Crumley does to IBM sidecars. Remember, he and others mention that the memory increase above 640k (especially the increase to 732k) is ONLY for the jr. PC mode may defeat this because the original PC could not access anything above 640k and programs written for the PC won't even try to use this extra memory. The commercial software you

Questions and Answers

(Continued from page 3)

choose to run, once EMS is installed in your machine, must also be able to use EMS memory via DOS, which sets up the management. Much of the software available simply doesn't recognize the extra memory and cannot take advantage of it. Without knowing exactly what is in your trial CONFIG.SYS files we cannot determine why you are getting garbage on boot-up.

Q. I have two disk drives and 512k memory. I cannot get DisplayWrite 2 to work. It gets to the point "Program Loading" then it locks up.

A. DisplayWrite version 2 is a favorite for jr owners. It only needs 256k of free memory but it must use a second drive, or a RAMdisk if more memory is available, such as you have. You should try to load DisplayWrite while NOT having any Terminate and Stay Resident programs already installed. (Pop - ups , Sidekick, etc.) Besides taking up memory space they may also cause conflicts with the keyboard interrupts as used by DisplayWrite. As in the question above, your CONFIG.SYS and/or an AUTOEXEC.BAT file may be where the problem lies.

Q. I am having some trouble with Poor Man's Mouse, which I received on Jr Power Pack (Disk #52) from The Software Store. It doesn't seem to work with PC Paintbrush or Logicmouse. -- P. Orlando, Colorado Spgs. CO.

A. As the instructions indicate, this is not a true replacement for a mouse driver. It is a Terminate and Stay Resident program which does, however, control the CURSOR in ways not usually available from the arrow keys on the keyboard, such as speed of motion. It also allows programming the joystick buttons as keys of your choice. Some programs may completely override the interrupt drivers of Poor Man's Mouse when they load and thus make it inoperable. Just about any program which allows control (cursor, drawing, etc.) from the keyboard as an alternate for a mouse when one is not installed should operate fine with Poor man's Mouse.

Genuine mouse drivers generally have nothing to do with the normal cursor, and even have one of their own, the pointer. They even do different things, though the functions may seem to overlap. The appearance of the mouse pointer on the screen is usually different from the normal cursor to prevent confusion as to which does what. (Both the cursor and the mouse pointer are often on the screen at the same time.) Some programs, however, may utilize the mouse driver information to handle the cursor when the cursor and the pointer are to be used for the same purpose such as drawing a line, etc. If a program asks whether a mouse driver is installed, and Poor Man's Mouse has been installed, do NOT answer "Yes." Mouse drivers are written for access via the COM port or special serial boards which come with some versions, and there will be NO signal from Poor Man's Mouse to indicate that a driver is operating from these inputs. Yours will be plugged into the joystick port, remember?

A final note: Cartridge BASIC is one of the problem programs, but it's not very serious. Reserve plenty of low RAM and/or use disk BASICA. The bug shows up only AFTER programming with the cartridge version when one returns to DOS. The various BASIC Compilers seem to be not only compatible in their editors, but can use Poor Man's Mouse for some neat operations in the finished .EXE programs. Using Poor Man's Mouse with word processors such as PC Write, Better Working Writer, etc. could be entrancing for those of you who are becoming rodent-addicted, but would like to try something "mousey" before going to the full expense of a purchase.

Q. Is there some way around the following problem? Here's what it is: Hard disk installed, plenty of memory and Quicksilver Cartridge. Upon booting up, the Cartridge is so quick that the hard disk cannot even get up to speed to read boot-sector and other booting files, including COMMAND.COM. Same with warm-boot, ie. Ctrl-Alt-Del. -- B. Israel, New York N.Y. & Others...

A. One way which you might try, if the hard-disk has its own separate power supply, is to turn it on first, wait 2 or three seconds, then turn on the computer. Another possibility is to have a time-delay relay on a centralized power switch which does this for you. One shop mentioned about $100.00 for this job! I think it could be done for about $12.00 to $20.00 with parts from Radio Shack and some ingenuity. If the computer can be re-configured to boot from the A: drive, THEN change the default to C: this problem should not occur.

Q. I have written a Home Financial Tracking program in Basic. A problem arises when a number has been alternately placed in the "red" then in the "black". This should mathematically become zero, yet it does not. It becomes a tiny + or - amount. After playing around with it, I found that the problem was repeatable and predictable which finally convinced me that this was hardware oriented rather than software. Can you tell me the cause of this idiosyncrasy? -- P. Palker, Jeffersonville VT.

A. Yup. The cause can be considered either software or hardware, take your choice! We assume in your case to be dealing with either Cartridge or Disk BASIC(A). Here's what it's all about: Computers use a numbering system (binary) which is basically incompatible with parts of the

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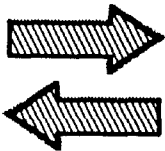
Reader Feedback

Compatible 3-D Drawing Software And Info on Quadram Clock

You can add "Image 3-D" version 5.0 by The Quest Company of Fresno, California to your list of Software that runs on a PCjr. It requires 640K to run. It is an excellent 3 dimensional drawing program which features 3 axis rotation, hidden line removal, expansion of drawings and when printing out a drawing you can print out any single view (front, side, top or angle) as well as a combined drawing showing all three sides and angle drawing.

I have 2 PCjr's. One with Quadram 2nd diskette drive and 640K, the other with Racore 2nd diskette drive and 640K.
The answer to Ronald Pyzik of Kirkland, WA's question about setting the Quadram clock is to have the Quadclok.com files on the diskette, and enter:
QUADCLOK /DATE = mm/dd/yy and
QUADCLOK /TIME = hh:mm:ss
Keep up the good work.

Don Bigbee, Seattle, WA

Bridge Player Recommends Software

Your publication has been the best thing (regarding computers, that is) that has happened to me since I bought my PCjr. One of the features that has been helpful to me is the information concerning software compatibility. Since I have benefitted from your outputs I am happy now to provide some input of interest to the bridge players among your readers.

Tom Throop of Great Game Products (8804 Chalon Drive, Bethesda, MD 20817) has responded to us bridge-playing Pcjr owners by producing a PCjr-compatible version of his Bridge Baron II program. Bridge Baron II has a lot of neat features. Using very colorful graphics, it provides options for different modes of play to satisfy most bridge players. In addition, it is fast in its response to bidding and play of the cards. And, if you don't know how to bid or play the hands, the Baron will show you how.

The Users Manual is easy to read and understand. So, another software producer has recognized that PCjr users have needs. (Several years ago, I approached CBS Soft-

ware to try to get them to provide a jr-compatible version of their Goren, Learning Bridge program; they turned a deaf ear.) Jr Newsletter fills needs too and it's appreciated.

Arthur N. Fried, Redwood City, CA

Reader Shares Compatibility News

My previous letter to you concerning the incompatibility of **Golf's Best** with my Racore 640K expanded PCjr was not solved by your suggestions about booting original DOS. However, the folks at First-Step Software really came through by simply sending me a free new version of Golf's Best-Pinehurst. I applaud their efforts to keep their customers happy.

Secondly, I have discovered that the 512K version of **King's Quest IV** does not run on my PCjr. Do I need to send in and swap for the 256K version or is there a patch or other fix to help it run? Please reply.

Thirdly, **Manhunter-New York** (Sierra) runs beautifully on the PCjr. Please inform your readers that it helps greatly to play with a joystick.

Bob Fukano, Seattle, WA

EDITOR'S NOTE: You can either get the 256K version of King's Quest IV, which runs fine on PCjrs, or you can use the patch we just added to JR PATCHES (Disk #56), which allows you to run the 512K version on your PCjr. The new version of JR PATCHES also adds a patch to run Loderunner with a v-20 chip installed on your PCjr.

Reader Finds Software Supplier With PCjr Compatibility Listing

I really enjoyed your free copy of the newsletter and your disk of games that are compatible with the PCjr. For three years I owned only an Atari 800XL. Disgusted with the lack of software I decided to invest in an IBM. I chose a PCjr upgraded to 640K with a Hot Shot. When I owned the Atari I received a catalog which sells Apple and IBM software. I

Reader Feedback

kept it and saw something which will benefit your readers.

Family Software Catalog, Evanston Educators, Inc., 915 Elmwood Ave., Evanston, Ill. 60202, has a compatiblity chart in the middle of its catalog. It includes the IBM PCjr! It lists **Alge-Blaster, Early Games for Young Children, First Math** (needs basic), **Gato, Grammar Gremlins, Kids' Stuff** (needs basic), **Math and Me** (needs basic), **Math Magic, My Letters, Numbers and Words** (needs basic), **Picture Perfect, Pinball Construction Set**, and **Race the Clock**.

The catalog has an advisory board of PHD's and teachers. It is colorful, easy to read and reasonable in price.

Margaret Kunc, Swartz Creek, MI.

Reader Reports His Experiences Using a Mouse with First Publisher

In your Sept-Oct issue you asked for experience with mice. I use the **Mouse Systems** 2-button mouse designed for the PCjr, the one that plugs into both the serial port and the light pen. I use it for drawing and desktop publishing, with **First Publisher, PC Paintbrush, PC Paint Plus** and **ColorPaint**.

I am completely satisfied with it. It's accurate, controllable and predictable. The only other mouse I've tried, a rolling ball type, was none of these.

I'm very pleased with First Publisher. I had earlier tried **Newsmaster** and **Newsroom**, and found them limited in their capabilities and crude in their print quality.

Other readers who use First Publisher might be interested in my method of making my own drawings for it. I'm no artist, so I trace pictures from photos, magazines, etc., on to transparent letter-size acetate sheets normally used for overhaed projection. I then plaster the sheet against the IBM Color Display screen - static will hold it there, and it just fits - and trace the picture. My hand isn't steady enough to use the pencil tool, so I use the straight line tool, clicking the mouse button for curves and corners.

The Junior's graphics adapter causes First Publisher's picture to be compressed horizontally, so the tracing must then be stretched vertically or squeezed horizontally, or both, so that it will print out properly. Then it has to be edited, using the Magnify option, to clean up lines, eliminate the thickening of horizontal lines caused by vertical stretching, and add detail. I have found it a lot more satisfying to create my own illustrations this way than to use the canned pictures that come with the program.

I have not been able to use the Snapshot/Snap2art utility that comes with the program, that enables you to import graphics from other programs to First Publisher. I suspect it's because of the differences between the Junior and the PC. If any of your readers could help me I'd be grateful. There must be many others among your readers using the Junior for desktop publishing. I would like to see articles on the subject, particularly reviews of programs available and solutions to problems encountered using them.

Richard B. Hermon, N. Vancouver, B.C., Canada

Reader Needs to Unprotect Writing Assistant

Count me among your avid fans. I, too, have forsaken all other computer magazines in order to absorb all the good info you provide to help us PCjr owners. Through your advice and a jr Hotshot from Paul Rau I now have 768K total, which I plan to use with RAM disk up to 360K and I have your disk #52 to set it up.

There is one problem, however, that some of your other readers apparently have been able to solve: the IBM Writing Assistant and Filing Assistant don't copy to the RAM disk, and I have tried so often that I can't even regenerate a backup copy, due to copy protection limitations. IBM is no help, of course, wanting me to buy new versions of the software--which seems an unnecessary expenditure in view of the high price I paid originally.

Peter D. Tilton, South Padadena, CA

EDITOR'S NOTE: As we reported in the January issue, there is a DEBUG routine to unprotect Writing Assistant. It's available, ready to use from Clyde A. Dodge, 1075-285 Space Park Way, Mountain View, CA 94043.

Reader Shares Useful Info And (Whoops!) Finds Mistakes

I have been a jr. owner (and a subscriber) for 2 years now; my jr. carries a Tecmar Captain (expanded to 640K by PC Enterprises), and prints through a Proprinter. I can't claim to be a total neophyte, but I am still far from expert, as the following questions/comments will show.

Like most computer users, my focus is speed and convenience. (1) I would appreciate your comments on the pro's and con's of cartridges such as JRSYNCRO,

Using Flight Simulator to its Fullest

By Carl Haub

Flight Simulator is a great program, perhaps the greatest entertainment software yet developed for PCs. Many users enjoy flying about buzzing the Statue of Liberty or the Sears Tower, but leave FS's real power untouched. A frequent comment is: "Yeah, it's really super, but I've never actually LANDED the darn plane." Too bad, because FS's real value lies in its completely faithful duplication of an aircraft's control "feel" and its reaction to the pilot's actions.

The difficulty many have with landing is a direct result of the program's realism - one must fly it like a real airplane if one wishes to plant its feet on the runway without fuss. This is, in fact, not difficult for the heads-up pilot with some basic flight instruction who flies "by the numbers." By the numbers simply means operating the aircraft within a fixed set of parameters, such as RPM settings, flap postions, etc. - and not deviating from those procedures.

Since it's relatively simple to fly and land using FS, this two-part series will cover two fundamental aspects of flying: basic flight and landing under VFR (Visual Flight Rules) conditions and, secondly, IFR, or instrument flight during bad weather when you can't see out of the cockpit. This latter scenario is one where FS's true-to-life portrayal of the real world really excels. The original - version 2.X of FS, the one in the green ring-bound manual - will be used as a reference since many users may not have the newer version, 3.0 (reviewed in the November 1988 issue of jrNewsletter).

If you're brand new to FS, review the keyboard diagram foldout on p. 113 in the manual, p. 115 if you use a regular PC-type keyboard. FS can be flown without a joystick, but it is much easier with at least one joystick for turn, banks, and climbs. A second joystick can be used for throttle in the free-movement (non-centering) mode and allows throttle adjustment without taking one's eyes from the screen (nice during those last sweaty moments on final approach).

Instrument Panel

First things first. Of all the dials on the panel (p.111 in the manual), only six are needed for basic flight. Beginning at top left, the airspeed indicator is of paramount importance. It gives speed through the air, not over the ground; in the calm wind conditions we will use, however, the two are the same. The normal cruise speed is about 100 knots - check it often; higher speeds mean that you're diving, lower speed may indicate the approach to a stall. "Stall" means that the plane is no longer flying fast enough to maintain lift and it will drop. Stall occurs at about 70 knots; a loud "horn" will sound to warn of a stall.

To the right of the airspeed indicator we find the "artificial horizon." This ingenious device diplays the plane's attitude vis-a-vis the horizon(!). The roll, ascent, or descent of the horizon is depicted here and will reflect the view out the window; this is a vital instrument to accurately judge the plane's pitch (nose up or down), roll (wings level or banked), and yaw (nose pointed left, right, or straight ahead). In short, a three dimensional report in a single instrument. Study its reaction in flight carefully.

Next on the right is the altimeter, which may need little introduction. It's clock-like hands report altitude - above sea level. The short hand clicks off altitude in thousands of feet, the long hand in hundreds. Directly below the altimeter is the VSI, or Vertical Speed Indicator, a very important instrument to spot check, particularly during landing. This instrument tells how fast the plane going up or down vertically. On landing, this should indicate a descent of 500 -

Flight Simulator

(Continued from page 7)

750 feet per minute; a speed of 1000 or higher will likely result in much bouncing or worse. One fault of the VSI is its noticeable lag in an accurate reading after a change in attitude or engine RPM setting. It will take a bit for the VSI to adjust, so give it time.

To the VSI's left is the heading indicator. This instrument returns an accurate indication of the plane's compass heading and will be quite important when flying a landing pattern. Lastly, the the sixth vital instrument is the engine RPM gauge in the bootom right corner of the panel. Idle speed is 600 (you will notice that FS always adds 5 to RPM readings, who knows why), full takeoff power, 2500. Cruise power for level flight is 1750-1800.

There is one other important panel instrument, actually, one that does not appear in real airplanes. The control position indicator between the VSI and the heading indicator shows the position of the elevators and ailerons with little arrows. These should be in the centered position before takeoff with controls neutral, i.e., "hands off." If you use a joystick for flight controls, select it in the editor (see pages 34-35 and 56-57 in the manual) and then calibrate them by hitting the "K" key. You can also use the adjustment wheels on the PCjr joysticks for "trim." After hitting "K," both arrows on the control position indicator should be centered. Don't take off if they aren't.

Taking Off

The key to a happy landing lies in the ability to control the aircraft at slow speeds, an airspeed less than cruise. FS users who try to land by simply pointing the plane at the nearest runway, doing nothing else, probably approach at 140 knots and execute a procedure known as "buying the farm." This we wish to avoid.

Most students learn to land with the "full stall" landing, meaning that the aircraft is brought to the end of the runway at approach speed (80 or less knots for our Cessna) and then stalled so that it "quits flying" at a (hopefully) very low altitude above the runway. To get the hang of this first, however, the student practices "slow flight" and stalls at altitude where mistakes will not prove detrimental to the instructor's longevity.

To practice slow flight, it is, of course, first necessary to take off. We will be using the airport at Kankakee, Illinois, as a practice field since it has black runways, not the white line patterns of so many FS airports and has some ineresting scenery to boot. To get situated at Kankakee, start the program by typing "FS" at a DOS prompt. Starting the program at a DOS prompt will enable you to use any PCjr "speedup" type options you wish. If you have expanded memory, be sure to answer the menu question on speeding up the display "yes."

Enter the editor by hitting "Esc" and type in North coordinate "16845" and East "16595." These differ from the manual's coordinates for Kankakee, but will place you just beyond the end of Runway 4. Runway numbers indicate the compass heading and are most important for landing. Runway "4" means that the runway is oriented 40 degrees on the compass, i.e, it is oriented to the northeast. Set field elevation "0" even though Kankakee is 625 feet above sea level. Setting a value higher than your exact field position can cause an inadvertent crash. The altimeter will automatically adjust to your actual elevation. Anyway, "0" works.

Taxi to the end of the runway by increasing engine RPM to about 1200 (1205 is actually shown on the RPM gauge). Cut the throttle and coast if you're going too fast. Use brake - repeated hits or holding down of the period key - and try to stop on the runway number 4. No big deal if

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Many people never experience the true value of Flight Simulator.

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you don't. If you try fiddling to aim the plane straight down the runway, notice that your heading will be about 38 degrees, not 40; runway numbers are rounded to the nearest ten.

Apply full power, keep the white runway centerline straight and let the aircraft take off by itself. The plane will lift itself off at about 100 knots, too fast for a real Cessna, but it avoids messing with the elevators on takeoff for rookie pilots. Normal takeoff comes at about 75 knots by raising elevators a bit (pulling back on the joystick a bit). It will lift off (on its own) before the short cross runway 16-34. Raise landing gear by hitting "Shift-G" and throttle back to to 2000 RPM. Climb to 2000 feet and set the throttle to about 1750. Lower the throttle setting BEFORE you actually arrive at 2000.

After the aircraft settles down - airspeed about 100 knots, VSI indicating no altitude gain or loss, altimeter steady, try some basic maneuvers. Raise the nose without doing anything else and see what happens. The aircraft will point upwards, but airspeed will bleed off quickly. When airspeed drops below 70, the stall horn will sound. Let go of the joystick (or center the elevators) and the aircraft will level itself out. Try this several times. Now increase throttle to full power, without doing anything else. The aircraft's nose will rise slightly and it will begin to climb. These are keys to a successful landing. Altitude is gained by increasing power, NOT by raising the nose by pulling back on the

stick. Raising the nose slows the aircraft by increasing the "angle of attack" of the wing. Got it? Try it until it becomes clear.

Next, try slow flight by reducing power to about 1600 and try to keep the aircraft flying. Do this by raising the nose slightly and try to maintain a balance between a RPM level that is too low and a slightly raised nose to maintain altitude. Try combinations until you get a feel for it. The stall horn will squawk to warn of impending stalls.

While you're up here, practice turning to headings. If you took off directly from Kankakee 4, you're likely headed about 040 degrees or thereabouts. Try turning to heading 300 and hitting that heading exactly - without going past it. Notice how you must "lead" the aircraft a little. As you approach the desired heading, bring the wings back level ahead of time. Try that for a while. If it doesn't work for you, bank the plane briefly, center the joystick and see how long it takes for the plane to "right itself." It will return to level flight on its own.

Finally, experiment with flaps since they're critical to landing. Lower ten degrees flap (one press on the "N" key) and see what happens. The nose will rise briefly - lift has been increased - but the extra drag will soon slow the aircraft and point the nose downward.

Experiment with all of these items fully and then we're ready for the real thing - landing.

Conquering Kankakee

Here we go. Set up at Kankakee again (see above), taxi to the end of the runway and apply full power. Then:

1. On takeoff, reduce power at once to 2000 and raise gear. Have a look backwards at your nice takeoff by hitting "5" and "B." Look forward again with "5" and "T." (Controls refer to PCjr keyboard)

2. Let the aircraft climb to 2000 feet, reducing power to 1800 RPM before you approach 2000. At this point, you will have flown over the Kankakee River.

3. Turn to heading 310 (the runway heading, less 90 degrees). Look at your position on the map by pressing "4" and then "-" to bring the airport into view. You are heading away from the airport on a 90 degree angle to the takeoff direction of 040. Got it? If not, stop a minute and sketch it out on a piece of paper.

4. When well over the city (the black area by the river), turn to heading 220. You are now on the "downwind" leg of the pattern, flying in the opposite direction of the eventual landing. Landings and takeoffs are made into the wind, so if you're flying in the opposite direction, you're going downwind.

5. Reduce power to 1700. Pattern altitudes are typically 800-1000 feet above field elevation - remember Kankakee is 625 feet. If you sink below 1700 altitude, increase power to 1800 to maintain it. Don't expect this to happen at once, let the aircraft respond.

6. Look left towards the airport or use the map - the "4" key. Keep flying until you are beyond the approach end (Runway 4) and 45 degrees or more beyond it. The 45 degree line can be projected by using the map view mode and eyeballing it. Using the map isn't really cheating with FS, since runways don't show as well as we might like on the computer.

7. Then turn to "base" leg, heading 130 (runway heading 040 plus 090 - get it?). You should now be passing below 1700 feet, if not add a little power.

It's so accurate, you get "drag" when you lower landing gear.

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8. Look at the airport by pressing "5" and "R." This will give you a view under the left wing at a 45 degree angle. As the airport begins to pass under the wing, turn to the runway heading of 040.

9. Immediately lower flaps ten degrees by hitting "N." Reduce power to 1500. Let the aircraft settle into a descent. Lower landing gear with Shift-G. Notice that FS is so accurate that the drag of the exposed landing gear will result in a slight drop in airspeed. Lower flaps one more notch. Airspeed must be below 80.

10. Watch the movement of the runway. If it moves rapidly towards the top of the screen, increase power to maintain altitude. Raise power only to 2000 RPM, except in extreme conditions. This technique is often called "dragging it on with power." Line up the aircraft with the runway by making gradual banks to the left or right. The Kankakee airport has one main runway with a taxiway to the right of Rwy 4, aim for the one on the left. Be sure airspeed is below 80.

Keeping the runway centered and straight is critical to a successful landing. The center of the screen, by chance, is closely approximated by the left edge of the VOR receiver, the instrument just to the right of the altimeter. Or measure it and stick a small piece of tape on the screen.

11. We're here. As the runway rises to meet you, watch the altimeter. As you approach the field elevation - remember Kanakakee is 625 feet - raise the nose slightly.

Flight Simulator

(Continued from page 9)

Watch the small arrow on the control position indicator and keep it a bit above center. Judging height here is important. When the larger hand on the altimeter is about two needle widths above field elevation, come back on the stick, and then come back back a bit more. Don't worry if the stall horn screeches now, "full stall" landings are a time-hnored technique.

Final landing tips. Lowering flaps is a an important phase in landing since it slows the aircraft, drops the nose, and also lowers the speed at which the plane will stall. An additional adjustment to lower flaps two notches (20 degrees) will slow the plane further. Exactly when are flaps lowered? It is difficult to say precisely since different users of FS will be at different distances from the airport (and different altitudes) until they establish a regular routine. It may be better to lower 10 degree flaps on the base leg (earlier than suggested in step 9. above), then lower them to 20 degrees after turning final.

Don't make many changes all at once, at least when learning. Lowering flaps, reducing RPM, and lowering gear at the same time will result in a confusing series of changes in flight attitudes. Finally, it's better to come too low than too high. If too low, you can increase RPM and drag it on. But, if too high, forget diving toward the runway. Period.

Well, that's about it. Proper landing technique is difficult to impart without a live demonstration. The above will provide the basic steps and, with some practice, landings will seem almost natural. The writer is a former private pilot and did not make a successful landing until about 20 attempts (or was it more?). Landing in FS is simple but it does take an organized approach - no particular pun intended. Try the above steps, use the pause "P" key to take time and view the situation. After several attempts, it will begin to come clear. AND: if anyone actually lands the first time, based upon these instructions, let me know. There must be a PCjr Distinguished Flying Cross award out there somewhere.

No, REN is Not a Little Bird

The DOS command RENAME or REN is used to change the name of a file. It does't affect the contents of that file. It's an internal DOS command, which means you can use it at the DOS prompt without inserting your DOS disk into the logged drive.

To rename a file, type REN and the existing filename and extension, then type a space, then type the new file name and extension.

King's Quest IV Patch Added to Jr Patches Disk

Our latest version of JR PATCHES (Disk #56) now has a patch which will allow you to operate the 512K version of King's Quest IV on your PCjr. The 256 K version runs fine on PCjrs, but the 512K version requires a patch.

The newest version of JR PATCHES also has a patch to allow you to run two versions of Loderunner on a PCjr with a V-20 chip installed. Loderunner runs fine on PCjrs with original CPU. Patch fixes problem caused by installing V-20 speedup chip.

JR PATCHES also has patches for Flight Simulator V3, Arctic Fox, Managing Your Money 3.0, Autocad, King's Quest II (Non PCjr version), Turbo C, QuickBASIC 3.0, Starflight, Advanced Flight Trainer, Double DOS, Bard's Tale (16 colors), Turbo BASIC, and one for running BASICA on PCjrs with expanded memory.

To order JR PATCHES, circle #56 on the order form on page 23.

Numeric Keypad Makes Life Easier When You're Number Crunching

If you're tired of fumbling with the number keys across the top of your PCjr keyboard when you're working on a spreadsheet, the separate numeric keypad from PC Enterprises may be for asyou.

The keypad works side by side with the PCjr keyboard, allowing you to enter numbers quickly and easily. It has a square calculator-like format similar to the layout of numeric keypads on larger keyboards made for PCs and ATs.

Also available is a separate keypad for those who have upgraded their keyboards to PC and AT type keyboards. The separate keypad gives you numeric functions without having to use the numlock key. Thus you have both numeric and cursor movement ability at all times and don't have to keep track of whether or not the numlock key is activated. This keypad is compatible with Racore PC Keyboard Adapters.

The keypad for use with PCjr keyboard costs $29.95. The other is $39.95. From PC Enterprises (800) 922-PCJR.

New Bible Quiz Game

The newest addition to the jr Newsletter Software Store is a quiz game based upon the Bible.

Bible Quiz (Disk #85) can be played by 1 to 3 people. It asks each player a question based upon five categories: Old Testament 1 (Genesis through Ruth), Old Testament 2 (1 Samuel through Malachi), New Testament, Geography, and the Life of Jesus. You can select the level of difficulty yourself, or you can play in automatic mode with the program selecting questions of varying levels of difficulty at random. At the end of the game, a scoreboard screen shows each player's total points.

The questions are all multiple choice, with four answers to choose from. After you've made your selection, the word "right" or "wrong" flashes on the screen. If you were wrong, the right answer will flash. Whether you are right or wrong, you are also given the reference citing the book, chapter and verse upon which the question was based.

The software has 1,000 questions in all, equally divided among the five categories. Here are a few samples:

Where were two disciples headed when Jesus joined them as a stranger?

    a) Bethany
    b) Hebron
    c) Bethel
    d) Emmaus

This question is from the Geography category, difficulty level 1 (the lowest) and is worth 100 points. The answer is "Emmaus". We know because we got it wrong and the right answer flashed on the screen, along with the reference: Luke 24:13.

The next question is from the Old Testament category, difficulty level 3:

What language was the Old Testament written in?

    a) Hebrew
    b) Greek
    c) Syriac
    d) Persian

The answer is "Hebrew" and if you got it right, you got 300 points.

Some questions ask you to complete a quotation, such as this one, from the Life of Jesus category, difficulty level 4 (hardest):

Finish: "He causes his sun to rise on the _____ and the good."

    a) evil
    b) pure
    c) clean
    d) chaste

The answer is "evil", and the reference is Matthew 5:45.

The author of this software, Robert S. Smith, says he has also written a program called Quizzle, which allows you to write your own questions and create your own Bible Quiz. Quizzle will also print out tests on the questions you have written. He sells quizzle for $25 and asks those who use Bible Quiz to send $18 to register the shareware version. In return, you'll get a registered version of Bible Quiz containing more questions, along with a special bonus a program called "Daily Bread", a calendar with a Bible passage and a Bible reading for each day of the year.

If you want to try Bible Quiz, order Disk #85 in the Software Store, page 23. For the other programs, write to Robert S. Smith, 557 Plantation Rd., Pelican Lake, WI 54463.

Support Your Faithful Programmer

If you are enjoying the use of user-supported software and have not yet sent in the requested payment, please do so. The fees requested are very reasonable. And you will be helping to continue the availability of "try before you buy software" - a concept that benefits all computer users.

Zap! Blip! Zing!
Who Makes The Best Games?

By Andrew Fussner

ZAP!

In the beginning--there were computer games, or what people considered games. The first games were all text and structured to be boring.

Then there was light--with the rise of the computer came the rise of the computer game. Graphics that were geometrical were introduced along with text. But the graphics continued to get better and so did the games. Today there are many companies which produce games of exceptional quality.

BLIP!

Their names may not be as well known as Lotus or Ashton-Tate, but they are out there, and they are making money.

Who is the best though? Well, there is no clear cut winner, but many stand out from the crowd. I feel that there are four major companies in the game market.

Electronic Arts

Electronic Arts, which makes such excellent products as: Chuck Yeager's AFT, World Tour Golf, Bard's Tale, Starflight and Earl Weaver Baseball (my personal favorite), may be the best company ever to produce games for the IBM. Their graphics are superb and I find I get the most enjoyment from playing their games. On a down side, though, strategy and thinking for these games is, for the most part, not very intense.

Mindscape

Mindscape, which produces such games as: Balance of Power, Super Star Ice Hockey, and the Cinemaware games (S.D.I., Defender of the Crown, and Three Stooges), makes a serious run at Electronic Arts. These games are just as enjoyable as Electronic Arts' and the graphics (especially from Cinemaware) are the best in the industry. Mindscape keeps a nice balance of strategy and thinking between their games, ranging from shoot-em-up to arcade to intense strategy games.

Sierra

Sierra, a company famous for its King's Quest (I-IV), Space Quest (I-II), Police Quest, Leisure Suit Larry, and Championship Boxing, also is a major competitor in the computer entertainment field. While their graphics started out as boxes they have taken giant strides to better graphics. Their games are fun to play and require a lot of strategy, but unless you like sitting down for months to solve a game, these games can get boring and even frustrating. But with the coming of these long-term games also came the birth of hint books for those individuals who feel there's nothing wrong with a little cheating here and there.

Epyx

The last of the big four is Epyx. They make: Sub Battle Simulator, 4X4 Off Road Racing (not PCjr compatible), L.A. Crackdown, the Street Sports Series (Soccer, Basketball, Baseball -- not PCjr compatible), and the Olympic Games Series (Summer, Winter, World, California). Next to Mindscape, Epyx has the best graphics. Since most of their games deal with sports their strategy rating is low, but those games are fun and exciting to play. Epyx could be called the opposite of Sierra. Epyx makes games for the arcade player, not shoot-em-up games, but games that can be played in one sitting.

And the others

Two other major game producers include: Accolade--Test Drive, Mean 18 Golf, Hardball, Card Sharks. Broderbund produces--Ancient Art of War, Ultima I-V, Karateka, and the famous Where is Carmen SanDiego series. Broderbund, also the maker of Print Shop, has put much of its gaming interests into games that are fun and have a teaching value. The Carmen series can be found in many schools, as well as homes, in the United States.

There are many other companies of smaller proportions like Strategic Simulations, Sharedata, Action Soft, Spectrum Holobyte, and Data East, who make excellent games, but just can't match the big boys.

Conclusions

If you really want to know more about each company's products, simply find a good computer magazine or other periodical and look for a listing of these companies and their addresses. Write to them asking for information about their software (and particularly about PCjr compatibility). All of the companies listed in this article, except Sharedata and Spectrum Holobyte, sent me very nice pamphlets with descriptions, pictures, and prices of all their major products.

ZING!

Who is the best? And then there was man...to be the judge.

(The above article was originally published in the Pinellas User Group newsletter.)

Function Keys Save Time With DOS

by Larry I. Schwartz

Many users are aware that pressing the ESC while at the DOS command prompt causes the current command line to be erased. However, most users don't know that there are a number of editing functions built into DOS for use at the command prompt (or in EDLIN). These are described in the DOS User's Guide, a "spiral " bound book that comes with DOS. In the DOS 3.3 version, see Chapter 2.

Fundamental to the editing process is the fact that DOS uses an input buffer. If you don't clear it, e.g., by pressing ESCape, it contains the last command you typed. We'll call the last command the "line".

For samples, just use the input line "rem abode". "rem" is the "op code" for a "remark", and nothing will happen.

In all of these actions, INSert and DELete work on the remainder of the line in the buffer. Also, you can mix any of the actions on a single line.

F1 - Pressing this key, (Fn-1 on the jr keyboard) or the cursor right key, will play out the last line, one character at a time. Hold it down until you get to the part of the line that you want to change then let go. Now begin typing the remainder of the changed command. After typing the changes, hold down F1 until the rest of the line is played out (or press F3 to play out the rest of the line).

F2 - Pressing F2 and then a character, plays out the line, up to but not including the character. This is useful if you want to play out the line up to a specific character, make some changes, and then play out the rest of the line (perhaps using F3). You can use F2 more than once on a single line.

F3 - Pressing F3 plays out the remaining characters in the line.

F4 - Pressing F4 and then a character does the opposite of F2. It deletes characters from the start of the line but not including the character whose key you pressed. Although not displayed, the line is still in the buffer. You can play it out, optionally making changes, or you can overstrike it, starting with the position of the letter whose key you pressed. You can also use INSert, etc.

F5 - Pressing F5 causes the current line, as displayed, to be placed into the buffer. The command you typed is not executed. You can use this action to place an edited line into the buffer and then continue the editing process.

You should try using these keys; they'll save you a lot of time.

For Easier Reading
Try a Thin Font Module

I recently installed a chip in my Junior called Thin-Font Module. It was acquired from the jr Products Group of PC Enterprises at a cost of $19.95 plus shipping and handling.

Thin-Font is a combination replacement character generator chip and two software programs.

Why Change Chips?

Some people find the letters on a PCjr display to be too fuzzy and difficult to read because they blur together (especially in the 80 column mode). This is because the PCjr Color Display is not a monitor with a high quality resolution (although it is of very good quality).

The PCjr's "motherboard" has, as one of its chips, an integrated circuit which translates the input from the keyboard into designs on the screen. The result is letters drawn in the form of two-pixel wide lines.

The Thin-Font module replaces the existing chip with an integrated circuit which can generate either the original character shapes (serif style) or a set of thinner ones (a modified San Serif style) which are made of lines one pixel wide. (See the Illustration.)

Installation

The chip is a little tricky to install and not a task for the unadventuresome Junior owner, or the faint of heart. However, with the help of the detailed manual sent with the module, most diehards can quickly install the new chip.

After unplugging Junior and removing the top, the Diskette Drive Adapter Card, the 64K Display and Memory Expansion card must all be removed, along with the Infrared Sensor Module. This provides access to the existing Character Generator ROM Chip.

After the original chip is pried loose, the new module is inserted in its place. A wire, which comes off the new chip and has a clip attached, is connected to a resistor that is part of the cassette motor relay device. (This connection provides the switching power to convert back and forth between the Thin-Font and the normal PCjr character display modes. It does interfere with the use of a cassette player, but I have heard of absolutely no one who uses a cassette as a read/write device with their Junior.) The IR Sensory Module is a bit tricky to reinstall, but the other cards "are a snap."

Software:

Two programs come with the chip: THINFONT AND SETFONTS.

THINFONT is a Terminate and Stay Resident (TSR) program. If you put it in your autoexec.bat file, it is always available to use to switch between the normal-wide font and the thin font. The switching occurs when you simultaneously press the <Alt>, <left Shift>, and <Right Shift> keys. This key combo can be changed, however, if you want a different set of keys to press.

The second program option is SETFONTS and is non-resident. At the DOS prompt you run the SETFONTS each time you want to switch the screen character sets.

Personal Thoughts:

I experienced no trouble getting the module installed. Some people may want the presence of another PCjr owner for moral support, but most of the installation fears are eliminated by following the fairly clear instructions in the manual.

The only error I found in the manual was on page 8. The first line should be:

    EXAMPLE: THINFONT/N
        instead of:
    EXAMPLE: THINFONT/T

Some of the pictures in the manual were rather illegible. Jr Products Group would have better served its customers with line drawings or clearer pictures.

The improved monitor legibility, the flexibility of being able to switch between display styles, and the ability to change the "hot keys" makes THINFONT a good addition to any PCjr's motherboard.

(The above article was originally published in the Eugene PCjr User Group Newsletter)

Add a Clock/Calendar To Your PCjr
By Colin Tuttle

If you are tired of typing in the date and time every time you boot up, Integrity Technology of Milpatas, California, has a product which will do that automatically for you. The item is the PCjr Clock Cartridge, and plugs into one of the front cartridge slots on the PCjr. The cartridge contains a five year, 3 volt Lithium battery, to keep track of the time and date when the computer is turned off.

Once it is plugged in, it will always remember the date, functioning similar to the way in which your BASIC cartridge operates. The cartridge automatically considers months with less than 31 days, and takes into account leap years. Accuracy is within one minute per month. It comes with the required disk software for installation, and is available for $34.50 each, with a quantity discount available. For more information on the ROM Clock cartridge, contact Integrity Technology at 105 Serra Way, Suite 230, Milpitas, California 95035, Phone (408) 262-8640.

Computer Eyestrain Verdict Still Unclear

Although there is reason to suspect that some eye problems are caused or worsened by spending several hours daily in front of a computer screen, studies on this subject are still inconclusive.

A report published last year in the Journal of Occupational Medicine indicated that computer terminal eyestrain was no worse than that caused by any other type of close focusing work.

However, preliminary findings in a study done by the School of Optometry at the University of California suggest that working regularly in front of a VDT (Video Display Terminal) may cause a premature loss in the eye's ability to focus. A more extensive study will be done to see if these findings can be substantiated.

The people of Suffolk County in New York were sufficiently concerned about the problem to pass laws requiring employers to pay for eye checkups for workers using VDTs, as well as for their glasses or contact lenses. Since the problems tentatively being identified with extensive VDT watching can usually be corrected by the proper glasses, those who put in a lot of time in front of computers should probably have more frequent checkups.

The University of California "Wellness Letter" recommends the following:

-- If you already have corrective lenses, you may need a special prescription for work at a terminal. Your regular reading glasses, designed to focus at about 18 inches, may not be right for VDT work if the screen is farther away.

-- Bifocals may not be well suited for VDT work because the near-vision part of the lens is designed for looking down. Even trifocals may not help, since thee field of vision in the medium-distance range will be too narrow to take in the whole screen. If you wear glasses and use a VDT, you'll probably find that single-vision lenses are best for this distance.

There are other ways to cut down on VDT eyestrain:

-- Use a glare reducing screen cover or choose a monitor with a non-reflective screen. To cut down on reflections, make sure there is no reflected glare from windows or lights in the room. Overly bright light can be worse than inadequate lighting.

-- Keep the reference document as close to the screen as possible and at the same level, so that you needn't change reading focus as you work. Light it at the same intensity as the screen.

-- Keep your screen 10 to 15 degrees below the straight-ahead eye position.

-- Take frequent breaks -- 15 minutes every hour or two -- to perform non VDT work. Look away from the screen frequently but momentarily to rest your eyes. Blinking more often than usual can also help.

If you find yourself spending long hours in front of your PCjr, you may want to try modifying the type that is displayed on your screen. Many people find the thinner font produced by the Thin-Font Module is more readable. This module can be obtained from many of the advertisers in this issue.

We Are Testing $2 Modification To Make PCjrs Run Like A Tandy

Since many new programs, especially games, include the Tandy 1000 on their list of compatible computers, it would simplify the life of the PCjr owner to be able to pretend you have a Tandy 1000.

A modification, which involves installing an inexpensive chip on top of an existing chip in your PCjr, plus a few more fairly simple steps, seems to do this. The procedure can be performed quite easily by those who are used to performing basic electronic work, but probably should not be tried by those who have no experience.

The modification does seem to work on a great deal of software. In games that have thus far required a patch to run in 16 colors on PCjrs, such as Flight Simulator 3, the modification works perfectly.

We plan to test the modification with a wide variety of software and talk to others who have tried it before publishing the details of how to do it. Right now it looks promising. Stay tuned....

Mode 80 or CO80 ??

The correct use of the DOS MODE command is somewhat confusing. One problem is, you would think you would use MODE CO80 in order to operate programs in color. But plain old MODE 80 will give you color, if the software provides it. In fact, you will get color if you type MODE BW80. The distinctions between these commands were made in order for IBM PC owners to be able to switch between their monochrome and their color graphics boards (which jr owners don't have to worry about).

Jr owners might find the MODE BW80 command useful, however, if you want to see a more readable display on a black and white monitor. The color graphics adapter in jr sometimes translates colors into unreadable shades of gray.

Mousepower

mechanical mice roll along the surface of your desk just as a mechanical mouse does, but the direction interpretation is done optically inside the mouse with a phototransistor.

The first mouse used with PCjrs (in fact, made especially for PCjrs) was the Mouse Systems Mouse. A two button optical mouse, it works well, but does not have the ability to adjust resolution (number of dots per inch) that some other mice have.

Richard Hermon of North Vancouver, B.C., Canada, wrote to say this about his experience with the Mouse Systems mouse: "I use it for drawing and desktop publishing, with **First Publisher, PC Paintbrush, PC Paint Plus** and **Color Paint. I am completely satisfied with it. It's accurate, controllable and predictable." James Clark of Tucson, AZ, also likes the Mouse Systems mouse. He points out that "it is entirely solid-state, with no moving parts other than the switches on top. The PCjr version of the mouse has two switches, while the "standard" version has three. The outer two switches appear to be the only ones used. I have seen no applications which use the middle switch, but should it be needed with the PCjr version, it can be simulated by pressing both switches simultaneously." Along with his letter, James sent printouts of two nicely detailed color drawings he had made using PC Paint Plus.

One warning about PC Paint Plus was sent in by Patrick Delahanty of Elkhart, IN, who was disappointed that it did not support his Star NX10 Printer. So, check to be sure that the software you intend to use with your mouse supports your printer.

PCjr Mice Suppliers

Before we go on, we should mention the brands carried by PCjr suppliers. PC Enterprises carries the Mouse Systems mouse just mentioned.

Oowl Software has the Kraft Micro mouse, a three button optical mouse that comes with software for making menus and some existing menus for popular word processing and drawing programs. Albert Allen, who runs Oowl, says he's tested the mouse on PCjrs with a lot of software, including many shareware titles, and it operates well with all of them. The Kraft Micro mouse sells for $59.95 including the required serial cable. Unlike the Mouse Systems mouse, which plugs into both the serial and the light pen ports in the back of the PCjr, the Kraft mouse only goes to the serial port and has its own power supply to bring the necessary extra power to the mouse.

Richard Byron of Computer Reset says his PCjr company has just received a supply of Pro Corp mice, which come bundled with Dr. Halo III, an excellent graphics program, for $69. The Pro Corp mouse is a mechanical mouse with 250 dot resolution, higher than some others. (Com-

patibility note: To get Dr. Halo to operate on a PCjr, tell it you have an IBM PS/2 Model 30.)

Paul Rau Consulting carries the Logitech C-7 mouse along with Logipaint Paintshow, for $75. The C-7 is an optomechanical mouse with 200 dots per inch resolution.

When you buy a mouse, be sure to ask what type of cable you'll need to hook it up to your PCjr. Most require a serial adapter cable, which costs about $20.

This brings up another consideration: since the mouse will be plugged into your serial port, you'll have to unhook it when you want to attach something else to that port, such as an external modem. Most people can live with the inconvenience of an occasional plug change, but those who use both mice and modems extensively may want to purchase a switch box ($25-30) or a second serial port ($100-$125).

From Compuserve's PCjr Forum, we get this info about the Logitech mouse from Scott Miller, who says, "I highly recommend it." He goes on to point out a quirk that we have heard from other PCjr users. You can't touch the mouse until the mouse driver software has completed its initial loading procedure. If you touch the mouse before it's done, it won't load properly. Other Logitech users have also reported that they have to turn their computers off when switching between software while using the mouse. If you can overlook these slight inconveniences, the Logitech C-7 gets high marks.

We also have good reports about the Genius mouse and PC Mouse (the three button Mouse Systems mouse). In fact, we don't know of any mouse that works from a serial port that won't operate on a PCjr as long as you get the PCjr serial adapter cable with it.

So, if you want a handy little pet scurrying around on your desktop, pick up the phone and order a mouse!

PCjr LIVES !

Ramdisks: Disk Drives In Your Computer's Memory

By Colin Tuttle

If you have a single disk drive and on occasion wish that you had a second drive, you can easily create the equivalent of a second disk in memory.

This may sound confusing, but it isn't. I am describing a handy little item, a ramdisk, which is a software utility which allows you to partition off some of your memory and create a pseudo disk drive. By using a ramdisk program you create an imaginary C drive which you can use the same way in which you would use your A drive.

You can create a ramdisk of virtually any size. The only limits are the size of your memory. If you have a highly souped up jr with 640K you can easily build a huge ramdisk of say 360K (or greater) while still leaving enough memory to run other programs. You must remember that any memory you partitioned off as a ramdisk can't be used to run programs, as it has been allocated for storage. One of the handiest uses for ramdisks is for un-archiving programs. If you put the archived program on the ramdisk and un-archive to the ramdisk you will have no disk access, thus the un-archiving will take less time than with the traditional method, as everything is being performed with the computer's memory. You also save some wear and tear on your disk drive.

Another way to use a ramdisk is for downloading programs. Again, there is no disk access so downloads can be accomplished in a much quicker manner than writing to a disk. A ramdisk is also very useful when you wish to copy programs from one disk to another. If you have one disk drive, you are constantly switching disks. With a ramdisk, you copy the desired files to the ramdisk (or C drive) and then switch disks, and copy the files back to the A drive. You will note that the time taken to transfer from the ramdisk to the floppy is very quick. If you use a database program which accesses the disk numerous times during a search, or a spelling checker which constantly goes to the disk, a ramdisk can speed things up quite a bit. It is almost like having a fixed disk, or hard disk, on your computer, with the added benefit that the response time is much quicker.

Warning

One word of warning on ramdisks; when you turn off your computer, they are gone, and any file on the ramdisk is gone forever. If you have a power surge or your computer locks up, you have lost the files in your ramdisk. So if you use a ramdisk for your data disk on a database program, and add or modify data, make sure you back it up to a floppy disk frequently. If all you are doing is searching the database, a ramdisk will speed up the search time tremendously.

So the next question is, where can you get a ramdisk program? Simple. By downloading it from a BBS--or ordering Disk #75 from jrNewsletter Software Store. Most ramdisk programs are created when you boot your computer, and are there until you turn if off. This public domain ramdisk program allows you to create and remove ramdisks of any size at any time from the DOS prompt. This is especially helpful if you wish to create a large ramdisk to copy programs and then delete it in order to allow enough memory to run a large program.

Be Careful Switching From One DOS to Another

Although MS DOS and PC DOS are very similar and your computer can run either, if you plan on upgrading your system by installing a hard disk and want to use DOS 3.0 or higher, you should stick with one or the other. The hidden files, IBMBIO.COM and IBMDOS.COM on PC DOS, are different for MS DOS, which can cause "non-system disk or disk error" messages. Once one system is installed on your hard disk, that's the one you should keep on using.

Questions and Answers

real (analog) world. Real numbers must be converted to binary numbers for all the functions in your computer. There are times in the conversion process where there are inaccuracies. First of all, there is no problem with whole numbers (we call them integers) numbers such as 5 or 2,357. A number such as 5/7 or 10/3 however is another story.

Let's take 10 and divide by 3 as an example: 10/3 This fraction can also be seen as 3.33333333333... strung out forever. And it still won't be accurate! Proof: If you multiply it by 3 (the opposite of what you just did by dividing) you get 9.9999999999... strung out forever, not 10! This is in the real world and without conversion to another numbering system!

What's to be done? Well, software developers have taken various steps to keep the inaccuracies to a minimum. The BASIC program you are using is an excellent example of one method. Type in this short program:

```
10  DEFDBL B-D,H,S
20  CLS: PRINT
30  CASH = 100.12: PRINT "Cash=";CASH
40  DEBT = 200.26: PRINT "Debt=";DEBT: PRINT
50  HALF = DEBT / 2: PRINT "Half=";HALF
60  DIFF = DEBT - HALF: PRINT "Diff=";DIFF
70  REM
80  REM Here's one way to convert to integers for
90  REM comparisons to zero or any whole number....
100 REM
110 BHALF = INT(HALF*100): BDIFF = INT(HALF*100)
120 REM Convert back to decimal
130 SHALF = BHALF / 100: SDIFF = BDIFF / 100
140 REM
150 REM Now let's look at them...
160 REM
170 PRINT BHALF, BDIFF
180 PRINT SHALF, SDIFF
190 END
```

When you run this program the first surprises are the values of CASH and DEBT as printed out in lines 30 and 40! Now change line 10 by placing an apostrophe just before the DEFDBL statement which will cancel this statement. Run the program again. You will understand a little better how numbers are stored when you see this new result.

Microsoft has simply chosen (in BASIC) to round numbers under certain circumstances in an attempt to keep accuracy within certain bounds, especially when mixed math manipulations are performed because the tiny (as you mention) decimal amount is not really zero. You can see why most programmers choose to use integers for

tests such as =, >, <, etc. You would be advised to test for numbers otherwise by a statement such as IF X < .01 THEN X = 0 if you don't want to convert to integers as in the above program.

Beginner's Corner

message indicating if the file is contiguous or if there are non-contiguous blocks.

5. Check all your files on the data disk for continuity.
A>CHKDSK B:*.* <cr>

You should get a similar display as in #1. and a message which gives the name of the file(s) and the number of non-contiguous blocks in each one.

6. If there are files with non-contiguous blocks and you wish to convert them to contiguous files, copy them to a new formatted disk (formatted with the /S parameter if you want system on the disk) with the internal COPY command. To do this, place the data disk in drive A and the new formatted disk in drive B and enter the command:
A>COPY *.* B:<cr>

The files will then be copied in contiguous blocks to the B:disk. To verify this, type:
A>CHKDSK B:filename <cr>

You should get a similar display as in #1. and a message indicating if the file is contiguous or if there are non-contiguous files on the disk.

The DOS Dir Command - Do You Know The Switches?

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

For example, if you have a lot of files on a disk, you can use dir/p to stop at the end of each screen full of file names, rather than scrolling through to the end of the list.

You can use dir/w to print the list of files in five columns across your screen. This also makes it easier to read a long list of files on a disk. The /w switch eliminates the file size and date, whereas the /p does not.

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

Reader Feedback

(Continued from page 6)

JRVIDEO, KEYBOARD BUFFER, etd., vs. RAM-Resident software such as ZANSI, JRSPOOLER, etc. There is an obvious trade-off of RAM consumption vs. cartidge cost, but I am interested more in learning what differences exist, and in choosing the best combination for me. (Would also appreciate your naming any favorite software and/or cartridges which accelerate boot-up, screen writes, provide print buffer, etc.)

(2) Page 8 of the Sept/Oct issue states (in a letter from Craig Tregillus) that ZANSI.SYS is on disk #52; I have #52, but it is not there. How can I get it (together with FASTSCRN & SLOWSCRN)?

(3) According to the documentation on both Disk #52 and Disk #40, John Wager's program for patching basic operates from the command "PATCHJR". NOT SO! The command is PATCHBAS. (I hate to confess how long I spun my wheels before tumbling to this one!)

(4) "README" on Disk #52 implies that simply running any program which lacks a DOC file should be adequate to understand it. That may be true for more knowledgeable people, but I'd appreciate an explanation of the following:

-JRDRIVE.COM - which simply answered with "IN-VALAD PARAMETER"

-SILENC.COM - which told me another program was using the system clock

-JRCLICK.COM - (which I assume is to turn the keyboard click on/off, but which did exactly nothing)

-SCRBJR.COM - which scrubbed things so completely that a cold boot-up was needed.

(5) I am just now finding my way around "Mindreader," and am very impressed by some of its features. However, it prints at a pace that is truly glacial, and won't recognize JRSPOOLER; unless I can solve those problems, there's no way I'll adopt it!

6) Per your request for comments on software, I have/use:

-DOS 2.1 - patched with your Disk #40

-DOSHELP - which I keep on the DOS disk

-DOS 3.2 - used only when one of its special features is needed

-Wordstar 3.30 - which is less than perfect only in that moving blocks is harder than it should be, and I haven't yet found a good way to change fonts

PCWRITE, v. 2.7 - which didn't seem enough better to change versons

LOTUS 123 - invaluable, and, if you know your way around it, all but impossible to beat

TURBOTAX - great, but lacking some key forms

PFS:FILE - far from the best, but adequate for my lim-ited needs

PCTOOLS, PKARC, SIDEKICK, and SIDEWAYS - all good utilities which work well on jr.

I have about 20 games, mostly from magazines such as Compute's PC, which all work, but which are seldom used, so I won't report on them.

In closing, I find your newsletter very worthwhile, and hope you keep it going in the same vein. For me, the Q. and A. column has been especially helpful.

T. Donald Wood, Brevard, NC

EDITOR'S NOTE: We'll try to answer your questions in order:

1. Yes, that's a good idea for an article. We'll try to do one in the next month or so.

2. ZANSI.SYS is on jr. Power Pack Disk #52. We don't know how you could miss it, unless you accidentally erased it. Check again and let us know, we'll send you a new copy if it isn't there.

3. We apologize for the mistake in the instructions. We wrote an article recently with the correct command and changed it on the disk. We urge any of you who have tried and failed to patch BASIC to try again using the command PATCHBAS. It works fine.

4. You caught another mistake. Those programs were included among the 60 files on DISK #52 in error. They are unnecessary and we'll delete them.

5. If you are unhappy with Mindreader's printing speed, you might try printing with other software, such as Imageprint (Disk #50), which has several selectable speeds as well as many formatting and print quality levels.

6. Thank you for your feedback on compatible software. We hope other readers will continue to support the PCjr community by sharing their experiences as you have done.

Reader Likes WordPerfect 5.0

I haven't seen anyone noting that WordPerfect 5.0 does work well with the jr, provided that it is expanded to 640K and has a second disk drive.

I have Racore expansion hardware on my PCjr and aside from typical glitches, WordPerfect is **very** satisfactory. And, for us non-techies, it is about as complicated as I want to or have time to ever work with.

Albert LeDuc, Miami, FL

Tell Us When You Move

The Post Office will not forward your copies of jr Newsletter when you move, because the newsletter is mailed via Third Class Mail. So please notify us immediately when you plan to change your address.

* * * PCjr CLASSIFIEDS * * *

PCJR Qume 142 half height double-sided 360K disk drive, good condition, 460 or best offer; chiclet-style jr keyboard w/o cord, new never-used, $15 firm. (I'll pay shipping on either or both). George Malko (212) 265-0872 (1)

PCjr Accessories in original boxes. COD shipping. 7-color Display Adaptor Cables, $10 ea.;3-Serial Cables $10 ea.;6-cassette Adaptor Cables $8 ea.; 6-TV Connectors, $12.50 ea.; 6-PCjr Cluster Att. $50 ea.; 10-Cluster Cable Kits $25 ea.; Chicklet Keyboard, $10; 2-PC Cluster Attach, $50 ea.; Cluster Software, $25. CALL Tom Porpiglia (716) 544-8536 after 5 p.m. EST. (1)

WANTED -- IBM PCjr with 512K or 640K, two drives, color monitor, parallel printer (graphics), upgraded keyboard (Keytronic 5150,. etc.) Lotus software, Peter Palker, RD1 Box 76E, Jeffersonville, VT. 05464 or call (802) 644-5796 (1)

PCjr LOTUS 123 1A for sale - Best offer. Also WANTEd functioning Microcom ERA-2 Modem for PCjr. Call evenings (203) 431-0777 - phone messages will be answered. (1)

JR CPU, KEYBOARDS (2), TWO DRIVES - Jr. Hotshot card, 640K, Cartr. Basic, Mouse, Joystick, Printer attach, Serial Cable, TV Connector. Software: DOS 2.10, PCjr BASIC, 123 1A*, Multiplan 3.0, Electric Desk, Prokey 4.0, Microsoft Flt Sim, Dac-Easy Accounting 2.0 & Word II, Utilities, & more. $795 (714) 845-3373 (1)

SOFTWARE FOR SALE, VP-planner, VP-Info, DOS 2.1, Dos 3.0, DisplayWrite 1 and 2, IBM Graphing Assistant, IBM Reporting Assistant, pfs file, IBM Filing Assistant, Easy Writer, Logo, Professional File, Professional Word, Multiplan, Personal Communications Manager. Various Versions of PC tools, 123 Report Writer, Disk Optimizer, SQZ!, Sideways, Lightning, Sidekick, Copy IIPC, other jr programs! Ask! Best offer evenings to 203-431-0777. I'll answer your messages in case you meet my machine. HARDWARE: Taxon amber composite monitor. Joysticks, Keyboards, Cables. (1).

IBM PCjr 640K, Legacy second drive, IBM PCjr Color Display, Okidata microline 182 printer. MS Dos with Legacy DOS version installed. Original containers. Used sparingly by elderly couple. Excellent. $550.00. Will Witte, 12612 Glenwood Ave. SW TAcoma, WA 98499 (206) 584-4716 (1)
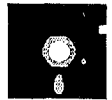

Do you have any tips or interesting jr experiences you'd like to share with fellow jr owners? If so, send them to jr Newsletter, Box 163, Southbury, CT 06488.

IBM PCjr, 128K, $250; IBM Parallel sidecar, $40; IBM Graphics Printer, $80; or all for $350. I have original cartons and will pay UPS. Paul Peacock (317) 9626-0814 after 6PM ERT. (1)

GOLF SOFTWARE - for the PCjr. Mark's Course, 18 holes of golf features 16 color graphics, music, animation. Creates a new course with sand, water and rough every time you play. $15. Also IBM compact serial thermal printer. $50. Mark S. Foster 908 Panna Lane, Cleveland OH 44109 (216) 398-0489 (1)

IBM PCjr COMPACT PRINTER good condition with 2 rolls of paper $40 UPS paid USA. Original chicklet keyboard $15 UPS paid USA. Lawrence Allan, 700 Chestnut St., Neenah, WI 54956 (414) 722-2192. (2)

TECMAR jr Captain sidecars with manuals and software for $60. Also have a PC Enterprises PCjr monitor adapter that change PCjr monitor to PC for $15. James Read, Voyles Rd., Rt 3 Box 361, Pekin, IN 47165 (812) 967-2498. (2)

IBM PCjr Racore 2nd drive, 512K, Racore DMA, DOS 2.1, 2 IBM keyboards, plus one XT style keyboard. Original Hayes 300 baud modem, Koala Pad, cables and adapters, tons of software. Will ship COD, ask for price. Call Hermann Reiner at (212) 608-5920 and leave message on machine. (2)

WANTED FOR PCJR - 1) 2nd 5.25 disk drive with installation instructions. 2) 256K or 512K memory upgrade with instructions. Call Bill Bizovi (914) 679-8874 from 7-11 EST. (2)

WANTED TO BUY: Cartridge BASIC and manual, if any; Wordstar Install (1.00) disk for PCjr. (I accidentally erased my original) and Castle Wolfenstein game by Muse for DOS 2.1. I have 256K memory. Maureen O'Connor, (617) 522-9523. Leave message on machine and I'll return call. (2)

jr Newsletter Software Store

This software is the best public domain and user-supported software for the PCjr we've been able to find. All the programs in this collection have been tested on our PCjrs and are highly recommended. Some of these programs are equal to or better than commercial programs costing hundreds of dollars. The programs in this collection are available for $5.95 per disk.

* NEW * BIBLE QUIZ Excellent quiz game tests knowledge of both the Old and New Testaments. Provides answers and biblical references for each question. For one to three players. 128K OK. (Disk #85)

* NEW VERSION * PCJR PATCHES V.4.0 Patches to fix software that ordinarily won't run on PCjrs. V.4.0 adds patches for the 512K version of King's Quest IV, and for running Loderunner with a V-20 chip. Also patches for Flight Simulator V.3, Arctic Fox, Managing Your Money V.3, Autocad, King's Quest II (PC version), Turbo C, Quick BASIC V.3.0 and 4.0, Starflight, Advanced Flight Trainer, Double DOS, Bard's Tale (16 colors), Turbo BASIC, and BASICA. (Disk #56)

* NEW * SCOUT. Excellent memory resident (or not) file manager, DOS shell. Move, copy, rename, volume label, search, sort, printer control, view files, and more - fast and easy. Best we've seen. (Disk #81)

* NEW * SPELLING BEE. A game that builds spelling skills from Grade 3 level to adult. You are an Olympic athlete representing your country. Excellent color graphics. Four skill levels from very easy to very difficult words. Fun way to become a spelling champ! 128K ok (Disk #82)

FILE EXPRESS. (V4.22) Very easy to use database manager. Extensive menus and prompts to guide you. Excellent choice for maintaining mailing lists, etc. Many powerful features. 256K (Disks #83 and #84)

AS EASY AS. Excellent, easy to use, spreadsheet program. Works like Lotus 1-2-3, with all spreadsheet functions. Can load and operate 1-2-3 files. 256K ok (Disk #67)

GALAXY. One of the easiest to use word processors we've ever seen, Galaxy has all the features you need to write letters and do most word processing. It has many, but not all, advanced features. Its strength is its simplicity, with help menus always ready to assist you. You probably won't even have to read the manual. 128K ok. (Disk #69)

PC-STYLE. Perhaps the best of many programs that help you make what you write more readable. Jim Button made this a very slick, useful tool for improving your writing. It reads and analyzes what you write, then gives you a detailed analysis based upon several useful standards. Fasy, easy to use. 128k (Disk #76)

COMPUTER TEACHER. For those who want to learn how to use DOS commands and to undertand basic computer hardware terms, this interactive software will help you become computer literate. Helps you better understand those manuals and computer magazines, as well as how to do more with your computer. 128k (Disk #77)

RAMDISK. Use ADJRAM to create a RAM disk of any size and adjust its size at any time without losing the contents. Or use JRCONFIG to set up your PCjr. Both programs with complete instructions for creating and using RAM disks on you PCjr. Need 256K. (Disk #75)

MIND READER. Experience the wonders of artificial intelligence! Use a full-featured word processor that guesses the words that you're about to type. Works like a charm! 128K ok. (Disk #74)

IMAGEPRINT V1.5. Produces near letter quality print on dot matrix printers. IBM Graphics Printers, Proprinters, Epsons and compatibles. Contains many format features, three quality levels, interfaces with word processors. 128K ok. (Disk #50)

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

JR POWER PACK II. Disk full of programs to make your PCjr more useful and powerful. Fix compatibility problems, set up ram disks, tiny wordprocessor, set up 3.5" drives, use DOS easily, and more. Need 256K for some, 128K ok for most. (Disk #65)

PC-WRITE. This extremely popular word processing program is both powerful and easy to use. A review in PC World said " PC-Write may well be more versatile

than WordStar; it's certainly more straightforward." Version 2.5 runs well on 128K. Version 2.7 has more features, comes on two diskettes and requires 256K to run without the spelling checker, which requires 384K. (Order Disk #1 for 128K V2.5. Order Disks #2A and 2B for V2.7)

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

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

CHECK PROCESSOR - Easy to use software for financial record keeping. Balance checkbook, print expenses by category, etc. 128K (Disk #59)

PROCOMM. This powerful, yet easy to use telecommunications program has become the one favored by more PCjr users than any other. Dialing directory, auto redial, XMODEM, Kermit and other file transfer protocols, auto logon, DOS gateway, keyboard macros, exploding windows and many other features. The editor of PC Magazine called Procomm "competitive with the best comm programs on the market." Manual on disk. 256K (Disk #15)

PC-TOUCH. Designed to teach and practice touch typing. As you type, an on- screen line shows the number of erroneous keystrokes, and your accuracy rating as a percentage of keystrokes. 128K. (Disk #18)

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

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

JR MUSIC MACHINE. If you want to write and play music on your PCjr, this program allows you to do it. Displays music as you write it using jr's 16 colors, and plays music back in three voice harmony. Features allow you to adjust key, tempo, note values, etc. Color Display required. 128K ok. (Disk #62)

PC-KEY DRAW. A powerful graphics program that allows you to draw, paint, produce slide shows, store and print your work. 256K, two drives. (Disk #37)

PC-KEY DRAW DEMO. Contains a slide show demonstration which allows you to see the amazing results you can get with PC-KEY DRAW. Helps to learn the many graphic capabilities of PC-KEY DRAW. (Disk #38)

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

PCjr COMPATIBILITY DISK. lists over 700 software titles, along with info on how they run (or don't run) on PCjrs. Also tips on how to make software PCjr compatible. 128K. (Disk #60)

BOYAN. Selected Best of the Year by PC Magazine, this outstanding telecommunications program will astound you with its smooth functioning and innovative features. Supports all protocols. Need 384K. (Disk #61)

DOS 2.1 FIX. Patches to fix the bugs in DOS 2.1. Cures most problems encountered when running memory intensive programs. Also patches to run BASIC and BASICA on DOS 2.1 without having Cartridge BASIC installed. 128K ok. (Disk #40)

BAKER'S DOZEN. 13 powerful utilities by shareware star Jim Button. Recover zapped files, save screen to files, print sideways, sort files, file management, locate text, pop-up calendar, powerful one screen spreadsheet, set screen colors, and more. (Disk #73)

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

HOME BUDGET MANAGEMENT SYSTEM. Easy-to-use system for keeping track of income and expenses. Create separate accounts for income tax categories and get a summary at end of year. Provides chart of accounts, transaction reports, sorted ledger entries, etc. 128 K. (Disk #57) Or v. 3.13 for improved screenwriting and disk access speed. 256K. (Disk #57A)

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

GALAXY. One of the easiest to use word processors we've ever seen, Galaxy has all the features you need to write letters and do most word processing. It has many, but not all, advanced features. Its strength is its simplicity, with help menus always ready to assist you. You probably won't even have to read the manual. 128K ok. (Disk #69)

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

CROSSWORD CREATOR. Helps crossword fans design their own puzzles. Handles puzzles up to 200 words and clues. Makes a standard cross-word puzzle print-out, or can save the puzzles for solution on disk. Requires 256K and Epson or IBM compatible printer for printouts. (Disk #71)

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

PC-DESKTEAM. Provides memory resident notepad, alarm clock, appointment calendar, typewriter, calculator, phone book, auto-dialer. Some say better then Sidekick! Quick, easy, powerful. (Disk #22 V1.04)

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

PC DOS HELP. Similar to PC-Prompt, but takes up

less memory (16K) as a resident program. Geared to DOS 2.1 with special PCjr commands included. 128K. (Disk #24)

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

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

**See January Issue
for Additional
Software Titles.**

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jr Software Order Form

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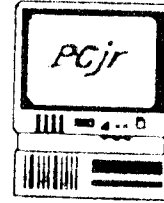
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