Beware of the Computer Virus!

If you've got a computer, chances are good that someday you will come face to face with that dreaded beast--the computer virus! Virus protection has become a major concern to computer users of all levels. A computer virus can be a relatively harmless prank or so serious as to cause the loss of all the data on your drive. It can be a minor nuisance, or it can cause such havoc as knocking down a computer--even in a life-or-death situation in a major hospital.
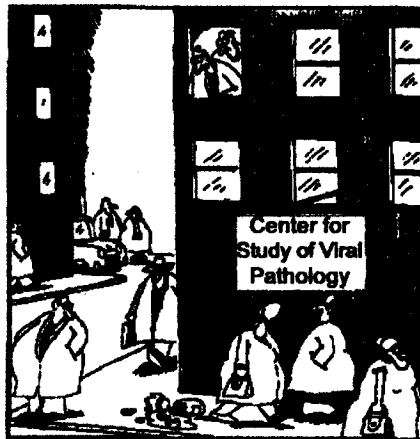
Will Your Jr Get A Virus?

Virus programs are so widespread, that all sorts of users are being hit with viral infection. In this

In This Issue:

PCjr Lives!

"Uh-oh"

writer's experience, I have found virus infection on machines belonging to all types of users. From the casual home computer user, whose children bring home games from their friends, or who take computer files with data on them to work and back home; to the small business user; to computers used in Fortune 500 companies where hundreds of employees have access to hundreds of disk drives, the computer virus eventually strikes an open system. It's not really a question of **will** you get a virus infection, but **when** will you be exposed, and will you be **prepared** for that exposure or will you get infected through lack of precautions?

Viruses are transferred from computer to computer, sometimes knowingly, but more often unsus-

Introduction To Printers for PCjrs

By David Wilson

If you're going to do more than play arcade games on your PCjr, you're going to have to have a printer. That's one of the earliest things you learn, and most people get one at the same time they buy their computer. The problem here is that most Junior owners bought their machine as a first-time computer purchase and didn't know much about the CPU, much less such peripherals as printers, mice, modems and such. We just assumed that if it came with the PCjr, it must be the best thing for it. Wrong! As an old Army Commanding Officer told me many times, "Assumption is the mother of ALL foul-ups!" (Of course, he did put it a little more colorfully, but this is a GP-rated Newsletter.)

The fact is that the only really good thing about the IBM PCjr Printer is that it doesn't require special cables or interfacings to connect it to the PCjr. The rest is better left to IBM - it won't do you much good. It's a thermal printer, which means it's slow and uses special paper which looks and feels as though it would be more comfortable wrapping fish than recording important documents. If you don't have one, don't get one. You can do much better.

There are basically two types of printer that you'll want to consider: the "Daisy- Wheel" and Dot-matrix types. We'll take a quick look at both. (A third type, the Laser printer, is completely beyond the scope of this article. You're on your own if you want one of those. Ink-jet printers will be considered as a specialized type of dot-matrix.)

A daisy-wheel printer is in essence a typewriter adapted for use with a computer. It used a fixed "typeface" like a typewriter does to write out your documents. These are fast, efficient, and provide clear, sharp impressions ("Letter Quality"). You can use most kinds of paper in these printers, so they're well-suited for business communications and for writing the Great American

Questions & Answers

By Rene Waldron

Q I have 640k of RAM from Impulse and have had no problems until now. I recently purchased Check It Out from Hooper and was that told many jr owners are running the program. It is a two disk program. Because I only have one disk drive I may be at a disadvantage.   I can make a ramdrive and have tried that but this program uses an overlay and the C: drive just can't be big enough to contain that whole program and still leave enough memory to run the program and load data... I am back to using the shareware version which, though limited does work. Can you help? T. Bell, Nashville TN

A. There are a number ways we might get this style of program to work. If the program is using only one overlay we would make the C: ramdrive ONLY large enough to hold the overlay. Do not try to put BOTH parts of the program on it. Before you start the program running, get rid of ALL the other memory-eating TSRs etc. Now switch to the ramdisk as the default so you have a C:> prompt. To start the program type "A:PROGNAME" then press <Enter. The program should run and find the overlay on the default (C:) drive when it needs it. If it doesn't even start then there may be some .CFG files it needs. These will be on the A: drive so they might be put on C: just to get started. Once running, even if it isn't 100% right, you should try to configure for whatever drives the program needs for the overlay and data. You might have to shell out to DOS to set this up, and there is still the possibility it won't run. Hang on, there is still another, perhaps better way to go.

You can set up the C: drive to be an extension of the A: drive instead of some of the above arrangement. How? You can use the DOS "APPEND" command. It's fairly simple, check the DOS manual, and put the command and options in a batch file. Once executed, this command allows any program to search a list of drives (and directories) for NON-EXEcutable files and OVERLAYS as needed. Use this in conjunction with the PATH command which does the same thing but for EXEcutable files only. You see, you still have quite a few options to get this program up and running.

If these still don't seem to work,

Questions & Answers

try experimenting with various combinations of the above or even reversing the usage of the drives; i.e put ONLY the PROGNAME.EXE on the C: drive and use the A: drive as the default for overlays and data.

Something ought to work, as you have 640k and a normal system. Some of these same techniques could be used for the other problem programs you mentioned in your letter. Remember, clean out any unnecessary TSRs before you start and neutralize both APPEND and PATH commands when you're done!

Q. I really would like to link my jr to my other (AT clone) computer but with reasonable speed. I guess I'm hoping for some kind of LAN so I can use at least some of the facilities of the other computer. The ones you've discussed so far are pretty expensive. Anything else available? G. Somers, Bellevue WA

A. We have tried and tested the parallel/serial kit "Lantastic Z 4.0" by Artisoft between a jr and a 16MHz '386 and it worked without a hitch using the parallel set-up. As a matter of fact, with the parallel cable arrangement, the jr would read and load from the hard disk of the '386 faster than its own hard disk! This is a two-computer kit which sells for about about $40.00 and requires a free serial or parallel port on each computer.

Novell is finally getting into the two-computer game, but theirs is an expensive way to go.

Another system which should perform just as well is the jrLAN package as it is specifically designed for jrs. This is from Synectics Software & Systems in Boise Idaho. Call (208) 939-0250 for information or to order. They will also supply second serial ports etc. We haven't tried their product but the jr has been set up in many networks. Perhaps IBM meant it that way -- remember they made a Cluster Card Attachment for the jr to connect to their networks!

Also check with PC Enterprises for their latest information and their Compatibility Cartridge to preclude any semi-related problems. The software for LANs will be either TSRs or DOS Drivers, so be sure you understand the supplier and do what the documentation describes. Actually they all seem to work just fine but you will have to learn a tiny bit more jargon...

So far, we do not have any information about the (famous?) $25.00 IMODES network from B.G. Micro, Dallas TX (214) 271-5546 and others but we suspect it will also work OK unless it uses some really crazy kind of incompatible TSR for the software. If you're interested, give 'em a call and see if they'll take it back if it doesn't work. We've found them to be a reasonable company. By the way, we'd like to hear from those of our readers who have this or any other LAN system operating. Networked, the jr's capabilities are extended immensely.

Trius Won't Support As-Easy-As versions using less than 360K

Some time ago, I purchased disk #67 As Easy As, V2.05. When I mailed the check, to the them, Trius returned my check and said that only version 5.0 is available, requiring 360K. I only have 256k. They have a new spreadsheet called ALITE that is good for 256K.

I am enclosing copies of their letters. You may want to discontinue offering disk 67 and 107.

John J. Doyle, Simsbury, CT

Dear Mr. Doyle,

Thank you for your interest in As-Easy-As. Unfortunately version 2.05 has been out of print for several years. It appears that version 5 requires more memory than your computer has available. Enclosed is a brochure describing another of our programs, ALITE, that may be right for your needs.

Susan Cronin, Customer Support, TRIUS, Inc. 231 Sutton St., Suite 2D-3, Post Office Box 249, North Andover, MA 01845-1639.

ALITE SHAREWARE PROGRAM RELEASE:

TRIUS, Inc., the creator of As-Easy-As, is pleased to announce the release of ALITE, a "lite" version of As-Easy-As. ALITE is a powerful spreadsheet program with graphics and minimum hardware requirements. The program should run on any IBM or compatible computer having 256k or more, equipped with a MONO, Hercules, CGA or EGA monitor.

Graphics may be printed on any 9-pin EPSON or graphics compatible printer, or PIC files may be created for inclusion in other programs. ALITE features 2,048 rows by 128 columns; mathematical, logical, statistical, financial, string, user defined, date and time functions; macro command language; five types of graphs with merge and split screen features; file merge, file extract and file linking; .WKS and .WK1 file compatibility; Data Sort; Data Regression and much more ...

EDITOR'S NOTE: We have tried the new ALITE and added it to our software store as Disk # 149. It is a very nice spreadsheet, but it lacks one feature of the earlier programs--that of using identical key strokes to the classic program, Lotus 1-2-3. If you want to do graphics with your spreadsheet, ALITE is great; if you want to have the same keystrokes as in classic 1-2-3 spreadsheets, stick to disks 67 & 107, save the registration cost, and get an instruction booklet for 1-2-3 Versions 2.x.

Games

ADVENTUREWARE. Six different text adventures with titles like Island of Mystery, Terror in the Ice Caverns, and Moon Mountain Adventure, all test your wits and take you to strange mysterious places. 128K (disk #14)

ARCADE GAMES. Includes Kong, Pango, PC-Golf, Pyramid and other exciting, colorful games for hours of fun. 128K. (Disk #30)

BOARD GAMES. Eleven different games on one disk! Hours of fun with Monopoly, Yahtzee, Cribbage, Backgammon, Othello, and others. All run great on your PCjr! 128K. Need Cartridge BASIC (Disk #31)

BUSHIDO. Test your skills in martial arts combat. Fighters kick, spin, duck, punch, etc. Requires 256K and keyboard with function keys (Disk #16)

CASTAWAY/S. AMERICAN TREK. Test your survival skills as the survivor of a shipwreck in the South Pacific. Or as an explorer of South America. Two novice text adventures from Jim Button. Ages 12 and up. 128K. (Disk #53)

COMPUTER JOKER. Disk full of jokes, wisdom, and visual tricks to play on your computing friends. 128K ok (Disk #64)

DOUBLE TROUBLE. Two of the most challenging, highest quality arcade style games weve seen Amazing Mazes and Willy the Worm. Ten different mazes and five levels of play will tie your brain in knots. And Willy, who is the fastest, jumpingest worm youll ever see, will beat you for sure! You can even modify Willy to give yourself more (or less) trouble. 128K ok. (Disk #68)

DUGEONS & WARS. In Dungeon Quest you can choose to be a dwarf, elf, magic-user, fighter or other type of character. You select your strengths and weapons, too. Then you enter the dangerous dungeons on your Quest. Thermonuclear War pits the US vs. the Soviets in a very real demonstration of what a nuclear war might be like. Combat is a strategic battle on the ground. 128K ok. (Disk #9)

Put the World on Jr!

World29, an update to to the JrNewsletter Software Store disk #105, is a map-making program which:

1. Computes distance between points all around the globe,

2. Locates Cities and Countries by name or latitude and longitude,,

3. Shows the capitals of 150 nations, each state, and other cities of note,

4. Allows you to enter new locations in the database by entering the city name and its latitude and longitude. These can be added through the program or with an ASCII text editor,

5. Allows you to track storms in the Atlantic, Pacific or Indian Ocean,

6. Allows you to plot a journey, print out a map, and save it as an ASCII text file for future editing,

7. Features an educational Name-That-City game, which displays a map centered around a randomly selected State or National capital, and asks the question "What's My Name?" The city featured will be a state capital about 20% of the time. As you try to answer the questions, the program will give you score for each correct answer.

The program is educational and easy-to use. The one short-coming of the program is its limited print-out capabilities, which provide just a print-screen dump to your printer. On most printers, you get a printing which includes only the city names

and none of the line drawings are preserved. It works as a rough diagram of an area, but it's not really designed to print maps.

The program works with or without a mouse on CGA or EGA. It requires only 320K and one 360K disk drive. World29 is Disk #105 in the Software Store. See pages 29-30 for ordering information.

Printers for PCjrs

(continued from page 2)

Novel. The drawback is that you can't use them to reproduce graphics, and thus they aren't as attractive to many Junior users as the dot-matrix type. There are some very inexpensive models of these printers available, but the better ones are surprisingly costly. (You can hook up an IBM Selectric to a PCjr with the right interfacing cables, but you'll want to do some research on how to make it work.)

Dot-matrix printers are by far the most dominant type currently being offered. The print head consists of a block of tiny "pins" or "wires" which may be electronically "fired" at a target (the paper), first striking an inked ribbon to make a mark. The characters are formed by selectively firing the pins in the desired pattern. There are normally from nine to twenty-four pins in the cluster, with the higher numbers being more expensive but also more desirable - they can form virtually

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TPC of Avenel, TPC of Sawgrass, with massive sand traps and a tough 17th green on an island, and TPC of Woodlands, which may be the most challenging of all. (Disk #79 and #80)

PC-CHESS. Two great chess games on one disk! A full-color, many featured chess program with four levels of play, allows such things as switching sides, setting up the board yourself, validity checking, en passant, etc. The other works on color or monochrome, has window showing options it considers before moving, adjustable difficulty level but a powerful opponent at any level. 128K ok for one, 256K for other. (Disk #44)

PHRASE CRAZE. Based on the TV show Wheel of Fortune, you get to be the guest who guesses the mystery phrases and wins piles of money! The wheel spins to select the amount of money you win for correct guesses. It gets harder with each round you play. You can add your own phrases to this game or try to guess the ones provided on the disk. Lot of fun for adults as well as older kids. 128K. (Disk #46)

PINBALL RALLY. A colorful collection of amazingly realistic pinball games. Using the Shift keys as flippers, the games get more and more complex until you get to Twilight Zone, the hardest one of all. Runs on 128K. (Disk #10)

PLAYERS CHOICE. Six different card games, some easy, some hard, but all excellent. Youngsters can have fun playing Memory or Even-Out, which are quite easy to master. Blackjack is hard to beat, and Poker, which has the ability to modify its play in response to your methods, is a rel challenge. Also two fine versions of Solitaire, one with great graphics. Some need 256K. (Disk #78)

BRIDGE PLUS. Play Contract Bridge Or Mahjong. Realistic bridge practice in bidding and playing against the computer. Good way to practice the game, but need some knowledge of the game or a rule book. Mahjong rules are included on the disk. Requires 256K Reviewed 9/91 (Disk #131)

(Software Store continues on pg 10)

Printers for PCjrs

any pattern your software can call for, including pictures or special alphabet characters. There are methods to convert your keyboard to the German, Russian, even Greek alphabets, but you've got to have a printer that will form the character you typed. A dot-matrix printer will.

Most 9-pin models won't give you true "LQ" or letter-quality printing, but the "NLQ" or near letter-quality of the newer models approaches the sharpness and clarity you want in your correspondence. In addition, most dot-matrix printers will print special typefaces such as Italic, Bold,or Compressed, which can be controlled by settings on the printer or by software commands. Most good Word Processing software has this capability built into it, but you must remember to set up, or "configure", the software for your brand and model printer.

All this versatility must be expensive, you say? Not really - you can get an excellent 9-pin printer for well under $200.00 today. Shop around - you may be surprised at what you can afford.

**To Save a _Heap of Money_ --
Order your PCjr Programs
in our Software Store!**

Back Issues of jr Newsletter Available.

The following back issues of jr Newsletter are available in limited supply for $2.00 each. Some of the feature articles in each issue are listed below:

You can obtain articles from issues not listed here by ordering Best of jr Newsletter Disks. To order back issues, please use the order form on page 31 of this issue.

June, 1986: First issue of jr Newsletter. Collector's item. Only a few left.

January 1989: Using a Modem / PCjr BBS's / How Video RAM Works / Ink Jet vs. Laser Printers / Scout (review).

February 1989: Using a Mouse / Flight Simulator Instructions / The Best Games / More Readable Font for Your Monitor / RAMDISK Software.

May, 1989: IBM Support to Last at Least 5 More Years / Low Cost Introduction to Modems / How PCjr Memory Works (I) / Keyboard for Young Learners / Advanced DOS Commands.

June, 1989: 80286 Board for PCjrs / Books for PCjr Users / Games for PCjrs / How PCjr Memory Works (II) / Great PCjr Hard Drive / New PCjr Shareware.

September-October, 1989: Jr Newsletter Welcomes Junior Report Readers / PCjr 286 Boards Now on the Shelves / Cookbook Software / Flight Simulator Scenery Disks/ PC-Calc Plus / Start a PCjr Users' Group / Fix Disk Drive Problems / PCjr Compatibility Guidelines / Battlechess Review / Install DOS on PCjr Hard Drive / How PCjr Memory Works (III).

November, 1989: New PCjr Megaboard Adds 1,024K to PCjr Memory/ Mesa 286J / PCjr Compatibility Disk Updates / Solution to Sidecar Shorting / Shareware / Rocky Makes Learning Fun / Games III.

December, 1989: Many Options for Boosting PCjr Memory / Fix a Tecmar Sidecar / Great New Sierra Game--Hero's Quest / Lotus 2.2 and the PCjr / Compatibility Update / Introduction to Databases.

(Continued on page 26)

(Continued on page 26)

PCjr Software
(Order form on pages 29-30)

REFLEX POINT. Patterned on the TV show Robotech, this game follows the shows storyline, with the Freedom Fighters trying to reach the Reflex Point and destroy the evil Invid Prince. 128K ok. (Disk #12)

SCRABBLE. At last, an excellent Scrabble game that runs in 16 colors on PCjrs! Plays just like the board game. Expandable dictionary checks words. Keeps track of all premium score squares and scores for up to four players. Also contains WORDWHIZ, a nice vocabulary building game. 256K (Disk #113)

STAY ALIVE !!! Three games that require all your wits to stay alive. Can you avoid the terrible nightmares and reach the highest level in Dr. Sleep? Or fight off the alien hordes on the Planet Iskib? Bet you cant shoot down the clever enemy pilots in Sopwith. If you can, you deserve a medal! 256K (Disk #89)

SUPER BOARD GAMES. Excellent versions of two popular board games Monopoly and Risk. Very much like the board versions, except your computer keeps track of everything for you. All you have to do is make the right moves and have fun. 256K. Need Cartridge BASIC (Disk #55)

TOMMYS TRIVIA. Excellent trivia game with 3 ways to play against computer, 2 against human opponent. 2,500 questions in many categories, from entertainment to history. More Qs available. 16 colors on PCjr. Need 256K. (Disk #98)

WAR ON THE SEA. Based on World War II naval battles, this game allows you to command a fleet in seven different campaigns in the Atlantic and Pacific. Not a joystick game, this one will allow you to see whether you have the strategic skills to be an Admiral. 256K (Disk #100)

ZAXXON/GALAXY TREK. Two exciting high tech shoot-em-up games. In Zaxxon you fly through an obstacle course, shooting while you go, up and over walls, and eventually through space. Galaxy Trek makes you the commander of a Star Ship which you maneuver through the universe seeking to destroy a fleet of Megaton warships before they conquer the planets. 128K. (Disk #45)

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Utilities

DISKCAT. Creates a catalogue of all files on all your disks, so you dont have to push disk after disk in your drive looking for that 1987 letter to the IRS. Makes table of contents for each disk, too. 128K ok Reviewed 10/91 (Disk #133)

MEMSIM. Simulates Expanded Memory on the Jr's hard disk (or floppy) through the use of a swap file, enabling you to run programs which require more than 640K. 384K recommended. Reviewed 12/91. (Disk#135).

4DOS V2.21. This is the ultimate utility since it replaces almost all DOS commands with new, improved versions. And it adds 35 more useful commands of its own! It will replace many of your favorite enhancement utilities. For example, 4DOS allows 40 character file descriptions, more flexible wildcards, multiple commands per line, handy conditional commands, command stacking, alias commands, faster batch processing and MUCH more! A must for all serious computerists. Reviewed 1/90 (Disk #102)

LHA V.2.11 Powerful archive software will compress even more than PKZip, (though not as fast). Many extra features to update, delete, list files in arcxhive, even extract and run. 256K (Disk #128)

POWERBATCH. Compiles batch files into .EXE files, which run as much as three times faster. Additional commands add power, control, & flexibility. Requiires DOS 3.0 or above. (Disk #127)

BAKERS DOZEN. 13 powerful utilities by share-ware 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)

BATCH FILE UTILITIES. A tutorial on how to create batch files and six utilities to use. 128K (Disk #26)

Questions & Answers
(Continued from page 9)

Q. Can I put labels, such as the Avery line, in my Epson MX printer to save time and just print to them directly or do I need something special? I use a couple of word processors and I can set up to print addresses with either of them. D. Meladin Boston MA

A. Yes you can put just about any labels in the printer. Be sure to adjust the pin strike distance (sometimes called the number of copies adjustment lever) for the additional thickness of the backing paper and the labels. The pin-feed labels are just fine for all printers. Occasionally you can use the non-pin types with the friction setup but it's a pain in the neck. We recommend that you do not leave either kind of labels in the printer for any length of time, such as overnight as the labels may start to come away from the backing paper because of the curve of the platen. Even the best quality labels sometimes do this, especially if the labels are on heavy paper.

Now, for any readers who do not have straightforward addressing capabilities in their word processors, you can get disk #97 - Mr. Label, from the Software Store. This will allow setup, alignment and printing to all sorts of labels, simplifying the whole thing from start to finish.

Q I like BASIC programming and use it a lot. I wonder why my BASIC won't write a normal text file to disk like a word-processor even though I tell it to save with

"NAME.EXT",A just as the documentation instructs? It would be, in a limited way, like a quick line editor, wouldn't it? J. Ives Louisville KY

A. Keep up the programming. Actually if you're using BASICA or Cartridge JrBASIC or GWBASIC, we don't see how you type in the text without line numbers. These interpreters look for line numbers and keep putting "syntax errors" all over our screens when we try. Even if you do put in line numbers the "syntax error" will pop up unless the text all the way to the carriage return/line feed is a valid BASIC statement.. The above interpreters DO save in ASCII (Text) - they save PROGRAMS, not lines or paragraphs or plain text.

If you're using QBasic, which is supplied with DOS 5.0, it's a slightly different story. Line numbers are not required and not desired. You CAN use the QBasic Editor in its normal form to do ASCII text, as it ALWAYS saves files that way. For the others, you can either use the apostrophe as the first character of each line (this is true in any of the BASICs) or for QBasic you ignore the pop-up errors and just keep on typing lines, hitting the OK in the error box.

This all seems an exercise in extra work, however, as DOS 5.0 already has taken the QBasic Program Editor and made a super Text Editor for ASCII text. Its name is EDIT.COM and it even has useful on-line Help built-in! This little utility, included with DOS 5.0, is a gem

for doing the quick CONFIG.SYS or *.BAT file maintenance! EDIT.COM loads quickly and does a really neat job with full ASCII compatibility. We use it often, sometimes just to look at various files. It is automatically mouse-aware and gives you an idea of how the Quick BASIC Compiler environment works if you've never tried that system for programming or editing. Microsoft must have had thoughts similar to yours about editing text and editing programs because their latest Language Programming Editors all allow the options of loading, editing and saving files as "Documents" as the options box shows. You can also turn off Syntax Error Checking so the file can be virtually switched from a program to a text file even if you're in the middle of it! Remember, the complete IBM PC DOS 5.0 upgrade usually costs less than a word processing program... and you get QBasic, too!

Q. Can you explain a "patch" and how to use it? I have a disk full of patches and can't seem to figure out what to do. BCS & Readers

A. We've covered this before, but it must be worth repeating, we get so many queries about it.

A patch is usually applied to an existing file and changes some part of it to make it operate differently. A few are actually replacements for the original and some are simply little TSRs to run before running the offending program. The file being changed can be any kind from .EXE

Questions & Answers

to .DAT or .CFG. In general, patches actually re-write a part of the machine code of the file. To do this, the file, the patch and the method of applying the patch must all be accessible, usually on the same disk. We always recommend using a copy of the file to be patched, never the original.

On the disk of patches are groups of related files for the patches. You can usually tell which belong together by the file names; the extensions will suggest what their function is. The important extension to look for is .DOC or something with README in its name. The first step is to read all of these documentation files, whether you think they refer to your patch or not! They are the instructions and you MUST read the instructions! Use a word processor, Vernon Buerg's LIST.COM or simply type "TYPE FILENAME.EXT | MORE" then press <Enter>. You will have to have MORE.COM available, of course. It comes with DOS and you should have it. In any case, be SURE to read all the documentation before starting to apply any patches. Read the .BAT files, too, they will be instructive.

Copy ALL the files related to a single patch to a working disk and on the SAME working disk put a copy of the file to be patched. If the documentation calls for it, copy DEBUG.COM to the working disk as well. DEBUG.COM has, among its

Questions & Answers

talents, the ability to do line-by-line assembling to machine code and that's what we're after; this mini programming language.

Now, some patches are applied automatically. All you do is run a .BAT file and wait for the .BAT file to finish. If the files needed are on the disk, everything should work out fine.

Other patches require you to do some typing or to run DEBUG from the keyboard. Become a little familiar with the list of DEBUG commands in the DOS Reference Manual so you can understand a little about what you're going to do. In this case you must also print out the disk-based documentation so you can do the work step by step and without error. The "-" (hyphen, or minus sign) is the DEBUG prompt so don't be surprised if you've never used DEBUG. Just follow the instructions carefully, even blindly, (no one expects you to be an Assembly language expert) and you will be applying the patch!

■■■■■■■■■■■■■■■■■■■■
■ ■
■ **Make your jr More Powerful!** ■
■ **(and easier to use)** ■
■ ■
■ **Jr POWERPACK III** ■
■ **(DISK 140)** ■
■ **Software Especially** ■
■ **for PCjrs.** ■
■ ■
■ **Includes the latest** ■
■ **version of jrConfig** ■
■ ■
■■■■■■■■■■■■■■■■■■■■

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)

PKZIP V.1.02. The new and increasingly popular file compression utility used by more and more BBSs. Includes PKUNZIP, the one you need to uncompress downloaded ZIP files, and many other features. 128K ok Reviewed 2/90 (Disk #104)

RAMDISK. Use ADJRAM to create a RAM disk of any size and adjust its size at any time without losing the contents. O 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)

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)

SPEECH. Make your Junior talk! With this software you can make your PCjrs internal speaker say anything you want. Very easy to use. No additional hardware required. 128K ok. (Disk #114)

SUPER UTILITIES. The 15 utilities in this collection include Undelete, to recover a mistakenly deleted file; a powerful command editor; a clock, notepad, time and calendar; another to redirect file contents from printer to disk...and many more useful utilities. Under 128K ok. (Disk #28)

TEXT UTILITIES. Includes V7.0 of List.com, the powerful text viewing software, which adds many handy new features in this version. Also on disk: A versatile directory listing and disk labeler; the fastest text searcher weve seen; a handy copying utility with many features; a memory resident protection against overwriting precious files. 256K Reviewed 2/90 (Disk #103)

TYPEWRITER. When you'd rather use a typewriter instead of a word processor, this is the one to use. Couldnt be simpler. Margins, tabs, type size all can be set. Disk includes two printer control programs for higher quality output. 128K ok (Disk #93)

Virus Protection
(Continued from page 1)

pected, as people take files to and from work, as computer users share disks and data, and as they use telecommunications and Bulletin Boards.

New Commercial Programs Can Also Be Infected

Viruses have even been found in brand-new shrink-wrapped software put out by nationally recognized software publishers.

If you want to positively avoid a virus on your machine, the only sure-fire prevention is never to turn it on. Or, you might get away with using your computer--if you stopped adding new software and getting new data files for your machine. Short of that, you can be reasonably safe from massive data loss, by adopting regular programs of prevention and detection, and keeping disinfection tools handy for when needed. All these operations can be conducted with programs provided in our Virus Protection Kit (Disk Set #8), reviewed in this issue.

This article concentrates on the major types of virus programs and how they work. The time to learn and worry about viruses is **before** your computer gets one!

There is no official naming of virus programs and no standard way of testing or diagnosing them. Different detection programs often diagnose a virus infection differently than other detection programs.

A leading expert on computer virus programs is Dr. Fred Cohen,

the author of **A Short Course on Computer Viruses**, ASP Press, 1990. This well-known pioneer in virus research has also written dozens of technical papers on the subject. He defines a computer virus as a program that can infect other computer programs by modifying them in such a way as to include a (possibly evolved) copy of itself.

A program does not have to do real damage (such as deleting or corrupting files) in order to be called a "virus". Any sort of program that tries to hide its function and tries to spread onto as many computers as possible is generally considered a virus.

Main Types of Viruses

Viruses come in two major classes, those which infect files and those which infect the boot sector.

File infectors attach themselves to ordinary program files, usually infecting .COM and/or .EXE programs. Some of them can infect any program which may be executed, such as .SYS, .OVL, .PRG, & .MNU files.

Some file infectors choose another program or programs to infect each time the infected program runs, often at the time the infected program is started. Others reside in memory after an infected program is run. The virus will then infect other programs which are executed. Most viruses are resident-type.

A separate category of viruses is the system or boot-record infectors. Every disk has a boot sector,

Data Bases

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)

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)

MR. LABEL. Extremely versatile, this software enables you to make labels ranging from the very simple to the very sophisticated. Its the best of many we've tried. 128K ok. (Disk #97)

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)

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)

Print Utilities

IMAGEPRINT V3.33. 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. 256K ok. (Disk #50)

PRINT HANDLER. Excellent printer setting utility allows you to set features from a menu. Other software on disk for banners, sideways printing, custom font generator (Epson), print spooler, count pages before printing and more! Will work with most dot matrix printers. (Disk #51)

Virus Protection

even if it has not been made "bootable" with the necessary system files. The boot sector is simply that place in which the computer, by default, looks for the starting point of the boot sequence. In the MS-DOS environment, "boot sector" on a floppy diskette and the Master Boot Record on a hard disk is where the computer finds a definition of the disk and information about the next step in the boot sequence.

On a bootable disk, the "bootable" sector points to the location of files containing the programming necessary for the operating system. On a "data", or non-bootable, disk, the same area has information on the disk specification and a small program informing the system, or operator, that the disk is "non-system." In either case there is a program in the boot sector. This is the major strength of boot sector infecting viral programs-they always have a practically invisible place on which to attach themselves.

Most boot sector infectors "displace" the existing boot sector, and move it to another location on the disk. This gives the viral program a chance to install itself in memory before it passes control to the original boot sector.

The Boot Sector Infector (BSI) gets first crack at the system, before most "protection" is loaded. Examples of BSI include Brain, Stoned, Empire, Azusa, and Michelangelo.

Such viruses are always resident viruses.

Variations Make Viruses Hard to Detect

Finally, a few viruses are able to infect both programs and the boot sector (the Tequila virus is one example). These are often called "MULTI-PARTITE" viruses.

FILE SYSTEM or CLUSTER viruses are those which modify directory table entries so that the virus is loaded and executed before the desired program is. The program itself is not physically altered, only the directory entry is.

Viruses can use a variety of strategies to keep the user unaware of their existence.

Stealth-Type Viruses

The Stealth-type virus hides the modifications it has made in the file or boot record. Usually it forges the results of system functions so that programs which try to read the infected areas see the original uninfected form of the file instead of the actual infected form. If a stealth-type virus is resident in memory, when an anti-viral program is loaded, the detector program may not detect the modifications being made by the virus because the virus "fakes" the correct data to fool the detector.

That's why it is **imperative** to boot from a clean disk before running an anti-viral program. You should set aside a clean boot disk--preferably an original system diskette which has always had a write protect tab on it. Do it as soon as you

finish reading this magazine.

Consider an infection by the Brain virus, a boot-sector infector which re-directs any attempt to read a Brain-infected boot sector to the disk area where the original boot sector is stored. Once the virus has been opened by booting on an infected disk, it hides all evidence of the damage it is inflicting. You must have ready a "clean" system for bootup and virus-detection software before you get hit by a virus so that you will have some defense when you do get hit.

New strains of viruses appear all the time. A polymorphic virus can reproduce itself in a variety of forms. Virus scanners or detectors may not be able to detect all instances of a polymorphic virus, as well as new viruses which appear frequently.

How To Protect Yourself:

Virus scanners will search your files for codes made by known viruses and will reduce the risk of undetected infection. But new viruses are appearing all the time. No virus detector can be programmed to detect the viruses that are going to be programmed in the future. You have to adopt extra measures. Pay **CLOSE** attention to your system.

Keep a Record of
Your System Benchmarks

Check your memory map or configuration as soon as you start the computer. For users of MS DOS 5.0, the MEM program with the /C switch is very handy for this. If you

Virus Protection

have an earlier version of DOS, use CHKDSK. You don't have to know what all the numbers mean, only that they change. Run these diagnostics and send a copy of the output to your printer. Date the results and save them for future comparisons. If you run the diagnostics weekly and compare the results, you should be able to detect changes due to virus activity.

You should also use a viral detection program on a regular basis. These programs will check your memory and scan your drives, looking for indications of viral activity. They can usually diagnose what type of virus is present, if any, and often can recommend a method to disinfect any viruses found. Our **Virus Protection Kit** (Disk Set #8) features **Scan**, a virus detection program. A companion program, **Clean**, has disinfectants for many viruses.

An extra measure of protection can be added through the use of resident programs which monitor your system for the presence of virus activity or infected files and the insertion of infected diskettes. One such program featured in our Virus Protection Kit is **VShield**.

Integrity Protection

The final method of virus protection is the use of an integrity check. While Scan, VShield and VCopy, rely on information about known viruses, they do not provide protection against new, unknown virus strains.

An integrity checker will compute a small "checksum" or "hash value" for files when they are presumably uninfected. Later they compare newly calculated values with the original ones to see if the files have been modified. This catches unknown viruses as well as known ones. However, since file modifications are often file updates or configuration changes, the user must decide which modifications are intentional.

The program **Integrity Master** is featured in our Virus Protection Kit. It will check all your files and generate a CRC number for them. The next time it is run, it will compare the CRC numbers and will notify you if there have been any alterations to the file.

As with all computer data issues, there is no guaranteed, 100% fool-proof, measure to protect against all possible infection (short of not using the machine). But with these protection systems in place and a regular back-up program, you will minimize any problems resulting from viral attack.

When it comes to computer viruses, the best advice is "Keep your guard up!"

Remember the Michelangelo Virus?
The Threat is Back!

Remember the Michelangelo virus threat which made such big news a year ago? Well the virus is still very common in the United States. If you've got it and don't do anything about it, you could lose all your data on March 6th!

First discovered in April, 1991, the Michelangelo Virus causes disk directory damage; hard disk format; and cuts into total system and available memory

This Floppy and Hard Disk Partition Table Infector (See lead story on page 1, for information on virus types) can be detected with the Scan program included in our Virus Protection Kit (Disk Set #8), and another included program, Clean, will provide a disinfectant to remove the nasty virus from your system. (Please see review on page 20.)

Michelangelo is a memory resident infector of diskette boot sectors and the hard disk partition table. It is similar to the Stoned virus in its infection methods, though very different in its behavior.

The Michelangelo virus becomes memory resident the first time the system is attempted to be booted with a Michelangelo infected disk. After the system is infected, total system and available free memory, as shown in the DOS CHKDSK program usually decreases by 2,048 bytes.

Once Michelangelo is memory resident, it will infect other disks as they are accessed. It infects the hard disk partition table when the user attempts to access a file on the hard disk.

The virus moves the original boot sector to another location on the disk. On 360K 5.25" diskettes, it is moved to sector 11 in the root directory. On 1.2M 5.25" diskettes, the information will be moved to sector 28, which is also part of the root directory. Since the original boot sector now resides in the root directory, any entries which happened to be in the overwritten sector of the root directory will be lost at the time of infection. But that is not the end of the damage.

Michelangelo will infect the partition table of the hard disk, moving the original partition table information to Side 0, Cylinder 0, Sector 7 on the hard disk.

The payload of the Michelangelo virus activates on March 6, when it formats the hard disk by overwriting it with random characters from system.

If you have a hard disk, now is the time to check your files in order to avoid a disaster which may be in the making. Even if you do not have a hard disk, it's a good idea to check your files. The Michelangelo virus has been found infecting many computers with only floppy diskette systems. Such a machine can unwittingly introduce the virus to other computers. So it's a matter of common courtesy to be sure that you're not introducing major trouble onto the hard disks of other people's machines.

Virus Protection Kit Added to Softstore

Everything needed to keep your computer safe from virus atttack

A Virus Protection Kit has been added to the JrNewsletter Software Store. It is Disk Set #8. It contains four diskettes and is available for $15.00. The kit includes three programs from McAfee Associates, including **SCAN**, **CLEAN**, and **VSHIELD**, and an unrelated program called **INTEGRITY MASTER**.

The three McAfee Associates programs provide all the basics for virus detection, disinfection, and protection. The Integrity Master is included, although it duplicates many of the validation processes found in McAfee's SCAN, partly for a few additional features, but mostly because it allows the user to check his machine with programs from two different software publishers. Thus, if a future virus manages to fool the McAfee programs, Integrity Master might alert the user to the problem, adding another layer of protection to the system.

Finding Virus Infections

VIRUSCAN (SCAN) can detect 865 viruses, or counting all the different variants, 1,561 different infections. SCAN checks files, subdirectories, diskettes or entire systems for pre-existing computer virus infections. It will identify a virus infecting the system and the area where it was found, giving the name of the virus and an I.D. code

Virus Protection Kit
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to use with CLEAN-UP to remove it. SCAN detects known viruses by searching the system for strings (sequences of bytes) unique to each computer virus. Some viruses encrypt or cipher their code so that every infection of the virus is different. SCAN's detection algorithms use statistical analysis, heurstics, or code disassembly to detect these viruses.

Spotting the Unknown

SCAN can also check for unknown and new viruses. SCAN uses Generic and Family virus detectors to look for new viruses which are derivatives of older viruses. In addition, validation codes of all your files can be periodically checked to spot changes made by a virus to files or system areas. SCAN has two levels of validation. The simplest is a 10-byte long validation checksum appended to .COM and .EXE files. If a file has been modified, it no longer matches the checksum and SCAN will report possibility of infection.

An advanced 52-byte validation and recovery data checksum can also be created. This can be appended to the end of files like the 10-byte checksum, or stored in a separate log file which can be offline (e.g., on floppies) for recovery purposes.

SCAN requires 320K of RAM and DOS 2.0 or above (some features require DOS 3.1 or above).

Virus Protection Kit

Getting Rid of Infections

CLEAN-UP (CLEAN) can restore infected files, partition tables, or boot sectors using information from SCAN. Infected files can be removed using the /D switch in SCAN to erase the file, or with the CLEAN universal virus removal (Disinfection) program. CLEAN will search through the partition table, boot sector, or files of a PC to remove viruses specified by the user. In most instances CLEAN repairs infected areas of the system, restoring them to their pre-infected state. CLEAN eradicates all viruses identified by the current version of SCAN. CLEAN will also remove unknown (new) viruses from .COM and .EXE files, the partition table, and boot sector using recovery information stored by the SCAN program.

CLEAN runs on any PC with 320K and DOS 2.00 or above.

Daily Protection

VSHIELD is a virus prevention program for IBM PC and compatibles. It prevents viruses from infecting your system by alerting you to their presence. When VSHIELD first loads it will search the PC for known computer viruses in memory, the partition table, boot sector, system files, and itself before installing itself as a Terminate-and-Stay-Resident (TSR) program. VSHIELD can check for viruses by

scanning for virus signatures and/or validation codes added by SCAN as programs load. All programs are checked before they are allowed to run; if a virus is found, VSHIELD will not allow it to execute. VSHIELD also prevents reboots from disks infected by boot-sector viruses.

VSHIELD has an option to check for viruses as files are copied or accessed. VSHIELD optionally provides access control functions to reduce the risk of virus infection from unauthorized software.

Choose Either Level Shield

Two related programs are available. The first, VSHIELD.EXE, checks for viruses using virus signatures and validation codes added by SCAN. The second, VSHIELD1. EXE, only checks validation codes added by SCAN. Both programs monitor all program loads from all disks unless otherwise specified. VSHIELD will run on any PC with 256Kb and DOS 2.10 or above. VSHIELD1 uses 6Kb of memory. VSHIELD uses 40Kb of base memory if loaded normally, 3Kb if swapped-to-disk, or 416 bytes if loaded into upper memory.

VSHIELD has four user-selectable levels of protection:
- Level I protection, provided by VSHIELD1, checks validation codes added by VIRUSCAN . Programs failing the validation check will not be allowed to run. VSHIELD1 also checks the partition table and boot sector validation codes, if present. Level I provides minimal protection

Especially for Junior

PCJR MUSIC SAMPLER. A collection of classical music concerts performed with great precision to produce the highest quality sound you've ever heard on your PCjr. Disk includes a separate program to activate Juniors sound generator before running game software to get highest quality sound. 128K ok (Disk #119)

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 jrs 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)

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)

THE BEST OF JR NEWSLETTER I. 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 compatibility, problem solving, software, maintenance, memory expansion, how-to projects, tips on using DOS, and more! 128K (Disk #54)

THE BEST OF JR NEWSLETTER II. All the major articles and columns from June 1987 through May 1988 issues of jr Newsletter. Subjects cover most aspects of PCjr operations with tips on compatibility, DOS, expanding and speeding up PCjrs, best software, etc. Easy search function finds subjects quickly. 128K ok. (Disk #66)

THE BEST OF JR NEWSLETTER III. Disk contains most of the major articles published in jr Newsletter from the June 1988 issue through May 1989. Articles on compatibility, PCjr hardware and software tips, regular columns, letters from PCjr users, and other informative articles. Utility to search for subjects included. (Disk #91)
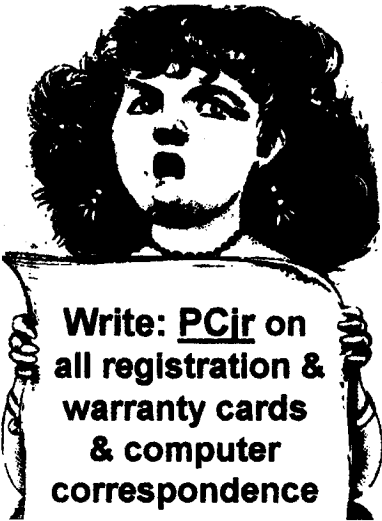
Virus Protection Kit
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only and is not recommended for normal use, VSHIELD is recommended instead.

- Level II protection, provided by VSHIELD, checks programs for virus signatures, the pattern of code unique to each virus. If a virus is found, VSHIELD will not allow the program to run. VSHIELD will also prevent reboots from disks infected with a boot sector viruses.

- Level III protection, provided by VSHIELD switches, incorporates both Level I and Level II protections.

- Level IV protection, provided by VSHIELD /CERTIFY, incorporates Level III protection with access control, specifying which programs can be run.

Each level of protection has its advantages and disadvantages.

Integrity Master

The Integrity Master calls itself the world's most powerful anti-virus and PC integrity software. Written by the author of PC Magazine's PCdata integrity toolkit, Integrity Master can be configured for a variety of security levels. It is easy enough to install and operate for novice users.

Integrity Master recognizes known viruses by name, describes their characteristics and guides you through their removal. Integrity Master can alert you to as yet unknown viruses. It detects changes and damage to sectors and files that were damaged by a virus (or other source).

Integrity Master provides specific diagnosis and recovery of critical areas of your disk. It can reload system sectors on disks which are so badly damaged that DOS can no longer recognize them. Because Integrity Master detects any form of file or program corruption, not just that caused by viruses, it is a good security tool. It will detect if anyone changes, adds, or deletes any of your files and can even detect hardware errors.

Hard Disk Protection

If your hard disk dies (whether from a virus or other cause), DOS often will not even recognize it as a disk. Integrity Master can often diagnose the problem and reload your partition and boot sectors to "fix" your disk!

Installation of Integrity Master is easy, with a pull-down menu. The first time it goes through your disk, it makes suggestions about your system. If, for example, you have both a LOOK.EXE and a LOOK.COM in the same subdirectory, it will point out that only one of the files will operate. By erasing or renaming the other file, you make it easier to spot those programs which use a "corresponding file technique" of infection. For example, the AIDS II virus, which was the first known virus to employ this technique of infection, never changes the original TARGET.EXE file. Instead, the virus takes advantage of the DOS convention that if a program exists in both .COM and .EXE form, the .COM file will be executed. The virus does not actually infect .EXE

files. Instead it stores a copy of the virus in a corresponding .COM file. The .COM file will be run when the user tries to execute the .EXE file. With Integrity Master installed, the presence of the new file will be noted. This provides protection against viruses which now using the "corresponding file technique" and even against as yet-undeveloped strains which will use that technique in the future!

Scan, Clean, Vshield and Integrity Master are on four disks in Disk Set #8 and available from the Software Store for $15.00. See pages 29-30 to order.

Back Issues Available

(Continued from page 9)

··· *PCjr* ··· CLASSIFIEDS

How to Submit a Classified Ad

Classified Ads are $12 per month. Ads for items offered for $75 or less or for swap or trade, are $6 per month.

Send your typewritten ad (no more than five lines on an 8 1/2 x 11 typed page). Send to Jr Newsletter, Box 163, Southbury, CT 06488.

Ads received by the 10th of the month will be printed in the next month's issue.
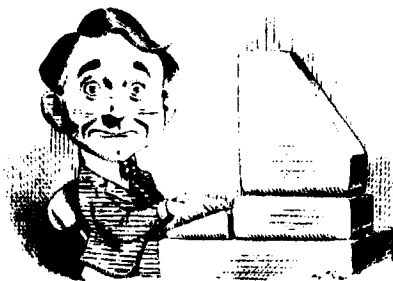
Need Help?

The following disks from the jr Newsletter Software Store can help you to get the most out of your junior. To order, use the form on pages 30-31.

PCJR AUTOSETUP. A beginner's dream: Just select from a menu to make separate boot disks especially for each type of software you use. Automatically creates the right config.sys and autoexec.bat files for RAM disks, games, word processing, telecommunications and other software to run at maximum power and efficiency on your PCjr. Designed especially those who haven't mastered the art of customizing their computers. This one does it for you! 256K (Disk #99)

JR TOOLKIT V3.0. A collection of upgrades, modifications and repairs. Some easy, some require experience. Includes adding second 5.25" drive (easy) or 3.5" drive (easy), PCjr to Tandy 1000 Mod (harder), power supply upgrade (harder), reset button (harder), V20 speedup chip (easy), how to quiet drives (easy), adjust monitors (easy), plus many others. (Reviewed 3/90, 6/90, & 8/92) (Disk #110)

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)

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

JR POWER PACK III A disk chock-full of utilities to get the most out of the PCjr, including the latest version (4/92) of jrConfig, a program to increase disk space from 360K to 420K, a quick bootup disk for DOS 3.X, multipurpose compatibility drivers, keyboard patches, ramdrive programs, and many more useful utilities. 256K Reviewed 4/92 (Disk #140).

PCJR COMPATIBILITY DISK V4.0. Tips on how to run hundreds of software titles, includes PCjr compatibility info, tips on running software, and how to make some incompatible software operate. Powerful search feature finds titles quickly and easily. 128K ok. Last update April 1991. (Disk #60)

PCJR PATCHES V6.0 Patches to fix software to run on PCjrs. Most enable 16 colors. V6.0 adds patches for 1 on 1, 688 Attack Sub, Battle Chess, Battle Tech, Boxing II, Genius Mouse, Grand Prix, Indiana Jones, Jack Nicklaus, Knight Games, Paperboy, Prodigy (thru V3.1), Shanghai, Silpheed, Sim City, Space Rogue, Steel Thunder, Strip Poker II, Test Drive II, Tetris, The Games (Summer), Ultima IV, plus new patch to stop disk drive spin. Dozens of older patches, too. (Reviewed 2/91) (Disk #56)

jr Newsletter Software Store

The software in the jr Newsletter Software Store is the best public domain and user-supported software for the PCjr we've been able to find. All software has been tested on our PCjrs and is highly recommended. Some of the programs are equal to or better than commercial programs costing hundred of dollars. These are offered for you to try at $5.95 per disk. Some shareware requires additional payment if you continue to use it.

Buy Two Disks, Get One Free!

Newest Releases

* NEW * ALITE. ALITE is a powerful spreadsheet program with graphics. Graphics may be printed on any 9-pin EPSON or graphics compatible printer, or PIC files may be created for inclusion in other programs. Need 256K. Reviewed 1-2/93. (Disk #149.)

* NEW* THE WORLD29. View the world on your computer! Locates cities and countries by name or latitude and longitude, shows the capitals of 150 nations, each state, and other cities of note. Allows entry of additional locations, storm-tracking and features an educational Name-That-City game. 320K required. Reviewed 1-2/93. (Disk #105.)

NEW VIRUS PROTECTION KIT. This disk set includes **SCAN, CLEAN,** and **VSHIELD,** and **INTEGRITY MASTER** Scan will check your disks for viruses. Clean will disinfect any disks which have a virus. VShield can be used as a TSR to prevent viral infection. Integrity Master will protect your computer against unauthorized changes and additions to your files without your knowledge. Reviewed 1-2/93. (Disk Set #8; 4 disks, $15.00.)

* NEW * SHARE-Tax92. Great Shareware 1040 tax preparation software. Prints 1040 and other IRS-approved forms.370K free RAM & 1 floppy disk. Reviewed 12/92. (Disk #148.)

* NEW VERSION * SKYGLOBE 3.1. Newest version includes mouse support, runs from main executable file for faster operation. View map of heavens customized to your location, date and time. Many useful features, including find, print, zoom in and out. Reviewed 11/92 Requires 250K free for mono, 440K full color mode. (Disk #129)

jr Newsletter Software Store
Buy Two, Get Another Free!

Please circle the diskette #'s of your choice

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1   PC WRITE V3.02 (3 disks-$12)
2   PC CALC PLUS. 512K (2 disks-$10)
3   PRINTMASTER LIB. (2 disks-$10)
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5   PC-WRITE LITE (2 disks-$10)
6   PRESIDENTS IN PCX (2 Disks-$10)
7   PC-WRITE SL (4 disks-$15)
8   VIRUS PROTECT KIT (4 disks-$15)

 #   TITLE

1   PC-WRITE V2.5 (128K)
2a   PC-WRITE V2.7 (256K), Disk 1
2b   PC-WRITE V2.7 (256K), Disk 2
3   PC-FILE III. 128K
4   PC-FILE III. 256K
5   PC-CALC. 128K
6   PC-CALC. 320K
8   GAMES I
9   DUNGEONS & WARS
10   PINBALL RALLY
12   REFLEX POINT
14   ADVENTUREWARE
15   PROCOMM
16   BUSHIDO
17   PC-OUTLINE
18   TYPING INSTRUCTOR
19   3 X 5
20   EQUATOR
21   TIME TRAVEL IN HISTORY
22   PC-DESKTEAM
23   PC-PROMPT
24   PC DOS HELP
25   PC-CHECK MANAGER
26   BATCH FILE UTILITIES
27   MINICALC
28   SUPER UTILITIES
29   MORE SUPER UTILITIES
30   ARCADE GAMES
31   BOARD GAMES
32   PLAY AND LEARN
33   FAMILY HISTORY (128K), single
33A FAMILY HISTORY (256K), need both
34   GAMES II
35   NEW KEY
36   PIANOMAN
37   PC-KEY DRAW
38   PC-KEY DRAW DEMO
39   ORIGAMI
40   DOS 2.1 FIX

41   WORD PROCESSING FOR KIDS
42   MATH FUN!
43   BRAIN BOOSTER
44   PC-CHESS
45   ZAXXON/GALAXY TREK
46   PHRASE CRAZE
47   GOLF/SAILING
48   EARLY LEARNING
49   DOSAMATIC
50   IMAGEPRINT V3
51   PRINT HANDLER
52   JR POWER PACK
53   CASTAWAY/S. AMERICA TREK
54   THE BEST OF JR NEWSLETTER I
55   SUPER BOARD GAMES
56   PCjr PATCHES V.6.0
57   HOME BUDGET MANAGEMENT, 128K
57A HOME BUDGET MANAGEMENT, 256K
58   HOME INVENTORY
59   CHECK PROCESSOR
60   PC-JR COMPATIBILITY DISK, V4.0
61   BOYAN
62   JR MUSIC MACHINE
63   GAMES FOR EARLY LEARNERS
64   COMPUTER JOKER
65   JR POWER PACK II
66   THE BEST OF JR NEWSLETTER II
67   AS-EASY-AS, V.2.05 (256K)
68   DOUBLE TROUBLE
69   GALAXY
70   NAMEPAL
71   CROSSWORD CREATOR V3.30
72   LANGUAGE TEACHER
73   BAKER`S DOZEN
74   MIND READER
75   RAMDISK MASTER
76   PC-STYLE
77   COMPUTER TEACHER
78   PLAYER`S CHOICE
79   MEAN 18 GOLF COURSES-1
80   MEAN 18 GOLF COURSES-2
81   SCOUT
82   SPELLING BEE
83   FILE EXPRESS, DISK 1
84   FILE EXPRESS, DISK 2
85   BIBLE QUIZ
86   JRTELE V2.1
87   WORD CRAZE
88   HAPPY GAMES
89   STAY ALIVE !!!
90   SPEED READ

Circle your disk choices, Tear out page for order!

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94 SHARESPELL V2.2	124 WILLS
95 WIZQUIZ	125 WORD GALLERY
96 EDNA`S COOKBOOK	126 MATH & LOGIC
97 MR LABEL	127 POWERBATCH
98 TOMMY`S TRIVIA	128 LHA ARCHIVE
99 PCJR AUTOSETUP	129 SKYGLOBE
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