

Jr Newsletter

February, 1992

Newest Trend in Software: Bigger is *Not Necessarily* Better

There's a new trend showing up in the latest software releases, both in commercial software costing big bucks or shareware programs with modest registration fees. Software authors are finally realizing what PCjr "die-hards" have known all along--Small *is* beautiful and bigger is *not necessarily* better.

The PCjr owner can benefit from the emerging popularity of laptop computers. These little laptops have been sold in large numbers, from the basic 640K with one or two drives to the 386 (probably also 486 by the time this reaches our readers) machines with a 30 MEG hard drive and VGA screen. Programmers and sales people now see a market niche for simple programs that run with a minimal system. This counter-trend is running directly opposite the direction of Windows 3.0.

Software design has changed over the years. As the price of available hardware has come down, the software designers have programmed more and more hardware demands into their programs. At last, there is a willingness to offer products that are less gargantuan in their hardware needs.

WordPerfect Grows, then Shrinks

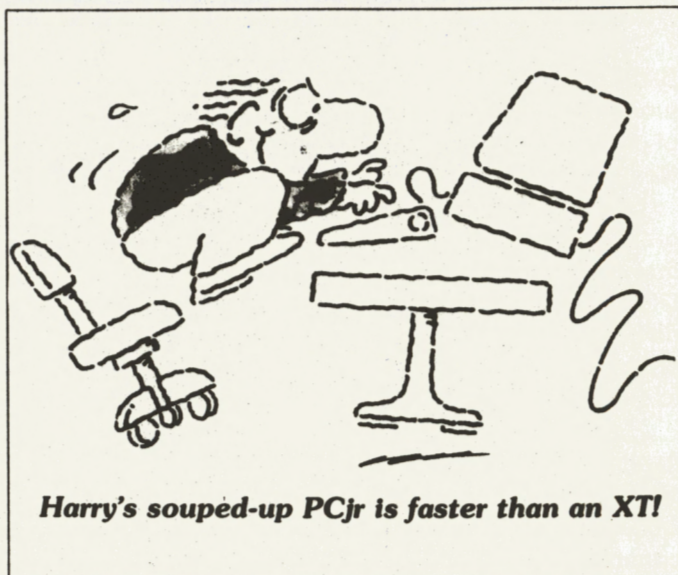
That terrific commercial word processor, WordPerfect, was an early example of the process. Version after version was released. Each could perform some tasks that

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PCjr Lives!



Harry's souped-up PCjr is faster than an XT!

Put Your PCjr to Work Around the House!

by Augusto Figuerola

It used to be science fiction that one was able to have the complete command of the electrical system of a house. Remember in 2001, Hal would even turn on the oven of the spaceship and cook dinner for the crew and do other small hi-tech tasks besides supervising the major functions of the spaceship?

Well, you can now use your PCjr to cook dinner for you, wake you up to stereo music, light up your bed-room, kitchen or living room, start the coffee and do other small tasks as Hal took care of the spaceship. Amazingly, your PCjr can do all this while you work on another program or while it is switched off!

How can this be done? You need only your PCjr with at least 128K of memory, the Powerhouse X-10 interface unit, a few appliance and wall switch modules and the right software. With less than the cost of a few timers you can equip your Jr. with all the items needed aid control your home. You must connect the Powerhouse interface unit to the serial port of your PCjr. For that purpose you have adapter cable (which is inexpensive) for your PCjr. Then you plug the interface into a 120 volt outlet. Also you must plug the appliance modules into the electrical outlets of your house and replace the wall light switches with wall switch modules. You can then control everything electrical

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Are you a programmer? You are probably thinking of BASIC, Turbo Pascal, Turbo C, or the Assembler language programs from this column. However, there is another form of programming which almost all of us do. We write batch files.

Your AUTOEXEC.BAT file is a batch language program. Like any program, it contains a series of instructions that the computer executes. These instructions can be DOS commands such as DATE, TIME, COPY, DIR, or the name of a program to run. Whether you are a professional programmer or a new PCjr owner, you can use batch files to simplify your computer operations.

Now, here is the best news for the new user. In addition to the familiar DOS commands, this programming language has only seven new commands. Of course, it is limited in what it can do, but it is easy to learn. All the new commands, with many examples, are covered under Batch Commands on pages 2-13 to 2-32 of the DOS 2.1 manual.

You can write a batch file in your word processor since it is in plain English, or as close to English as DOS instructions can be. Each line of the file is just a command that you could type at the A> prompt. When you save the file to disk, you must give it a name with the extension .BAT, so DOS will know to read the instructions it contains. Also, you must save the file in ASCII format (check the manual for your word processor.)

To run the batch file, you enter its name at the DOS prompt. Each line in the file is executed just as if you were typing it at the keyboard.

Let's try a very simple example to be sure that everyone is together at this point. If you aren't sure about that ASCII format business with your word processor, you might use EDLIN, the small editor on your DOS disk, which writes only in ASCII. Or, for this simple example, just use the COPY CON command and write the file directly from the keyboard. Hit the Enter key at the end of every line.

```
COPY CON MYFIRST.BAT
REM Show me the batch files on A.
DIR A:*.BAT
REM Now, show the .COM files on A.
DIR A:*.COM
Ctrl-Z
```

DOS will report "1 File(s) copied" when you hit the Enter key after the Ctrl-Z (hold the Ctrl key down and hit Z, or type Fn-6). You can type in upper or lower case.

REM is one of the seven new batch file commands. It

stands for REMark, a line to display only not to execute. Only six new commands left, and we won't cover two of them in this article.

When you enter MYFIRST at the DOS prompt, the batch file will display the first remark, list all the .BAT files, display the second remark, and list all the .COM files on drive A.

If you want a cleaner display, you can use the ECHO command. First, turn ECHO OFF to prevent the commands in the batch file from being displayed. Then, ECHO comments to display them, rather than using the REM command. With ECHO OFF, REMs are not displayed. You can turn ECHO ON if you want to see these. Here is SECOND.BAT to illustrate the second new batch file command, ECHO.

```
COPY CON SECOND.BAT
ECHO OFF
CLS
ECHO Let's look at .EXE files on A.
DIR A:*.EXE
Ctrl-Z
```

If you want a blank line between commands, ECHO two spaces in DOS 2.1. I am going to assume that you are using DOS 2.1. If you have upgraded to a later version, you may want to make a few changes to take advantage of some of the extensions added to the batch language.

The third new batch command is PAUSE. All it does is stop execution of the file and display "Strike a key when ready..." until a key is struck. It is the same as hitting Fn-Pause on the PCjr keyboard (Ctrl-Numlock on the PC). This can be very useful in allowing time to read the screen. Also, a PAUSE provides a convenient place to end a batch file and exit to DOS by Fn-Break (Ctrl-Break on PC key-

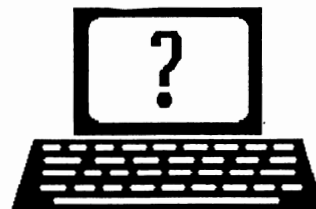
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Questions and Answers

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. As I have loaded my hard disk with so much data and programs, I have begun to wonder about one of the so-called "file compressors" or disk doublers. Are they compatible with the jr. and are they SAFE?

A. The only one we (Q&A) have tried is **STACKER**. We installed it on a 20 Meg SCSI hard disk by Paul Rau. This is the RIM installation. We have DOS 5.0 running, but there should be no problem with other, earlier versions. As you'll see, this is a well-behaved program.

We took this as an opportunity to clean house by deleting junk files. Then we saved to floppies the files we wanted to archive (in the true sense of the word) for our own storage. We deleted these from our hard disk, too. The next step was to de-fragment and fully optimize what was left on the disk. CHKDSK showed about 16 Meg of files still on the disk with 4 Meg free. We then backed up the whole disk to floppies for safety and braced for what we thought would be a battle...

Only after all of the above was done did we install **STACKER**. We chose the defaults (2:1 compression, for example) and the whole job went exactly as it was supposed to. We actually could have chosen a compression ratio of 3:1 or even higher but at some sacrifice in file compression speed. You'll be fascinated watching the drive get compressed, de-fragmented once again, optimized and tested for reliability during the installation. It's a good thing, too, because it can take twenty minutes or more for the whole operation!

We normally boot from our A: drive so we copied our CONFIG.SYS and AUTOEXEC.BAT files to the C: drive before starting so **STACKER** could make the necessary changes. When the **INSTALL** was done, we booted with

our ordinary A: boot disk then copied the CONFIG.SYS and AUTOEXEC.BAT files back to the A: disk. When we re-booted with this, the **STACKER** disk was set up and recognized. The job is not really complicated anyway, it's just that we're a mite lazy. The written instructions, however, **MUST** be read completely and must be entirely understood before even touching the disks! We haven't the faintest idea as to how to set up if one uses the Cartridge boot-up system but it should pose no problems. A section of the hard disk is set up as un-compressed for all the booting files. The cartridge suppliers would be the best sources for further information.

Anyway, after the re-boot we used the supplied **SCHECK** to find our new disk size. The same 16 Meg of files were there, and all compressed, but now we had about 23 Meg of free space indicated! Our original 20 Meg was now almost 40 Meg! Though DOS's CHKDSK agreed, it is recommended that the supplied utilities are used because in some instances DOS's reading could be inaccurate. The documentation explains this very well. A quick test of file access speed showed a slight **DECREASE** in read/write time which we really did not expect. Anything which speeds up the jr's disk access has a lot going for it! Disabling **FASTOPEN** (which is included in DOS 3.xx and later) made almost no difference in speed, so we no longer load it in the AUTOEXEC.BAT. **STACKER** advises against it and cannot do all its things such as de-fragment or check sectors, etc. if **FASTOPEN** is installed. Read the sections on Norton and **PCTOOLS** in the book carefully. Your system won't crash, it just rejects certain of the **STACKER** commands...

This is a true enhancement which compresses files (program or data, it makes no difference) on the way to the hard disk and decompresses them on the way from the disk. This is all done "on the fly" and is quick. The algorithm is contained in what is really a device driver. It is loaded up via the last stage of your CONFIG.SYS file during booting. You retain and recognize your additional memory, other drives etc. exactly the same as before. This additional device driver makes an extra (ghost or partition) drive which holds all your compressed files. To the user, the system will seem precisely the same as before. The whole operation is transparent.

It doesn't take up much memory (the size is ideal to load below 128K to help "fill in" the low, slow RAM but for best performance put it in fast RAM) and is really one of the most well - behaved utilities we've had the pleasure of

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Questions and Answers

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trying in a long time. The method(s) seem to be as safe for your data as the standard disk read/writes are. By the way, you can set up to "double" the available space on your floppies, too.

There are other disk file compression utilities obtainable. One is called "Disk Doubler" and another called "SuperStor." We have not yet tried either of these yet so if any of our readers have, we'd like to hear from you.

Q. Several years ago there were instructions in the JR Report for Writing Assistant to be used on a PC jr with more than 128k. We upgraded via the Hotshot to 640k and some software, including IBM Writing Assistant won't load or if they do do not recognize the extra memory. The enclosed will show you how I tried and show you the list of files on the diskettes. Writing Assistant won't load at all. Can you help? My daughter would like to use the Jr for writing school reports.

D. Sander, E. Lansing MI

A. Make copies (clones) of the Writing Assistant disks and use these copies, not the original disks. Store the originals away. Do the following once you've made a Working disk: Copy the WRITE.EXE from the copy of the Sampler disk to the working disk. Delete WRITE.SWP from the Working disk. Copy WRITE.NON from the copy of the Sampler to the Working disk and you're done. This will allow the entire program to load into your extra memory, along with larger editable text files. Just be sure to call for "B:FILENAME" so you'll be prompted to put a separate data disk in the drive for saving the text files. You'll also need to put the Working disk back in if you switch to the Spell Checker. It appears from the data you sent us that WRITE.NON is missing from the Sampler disk and is the culprit. Something happened to it or it never got written!

With a copy of Norton's and someone who knows how to use it, try to "undelete" or "recover" the missing file, either from the working disks you have or from a TRUE clone of the original. This clone would have to be made by using PC Copy II from Central Point Software or, as a last resort, by just using the DISKCOPY command of DOS.

If you can't get the file called WRITE.NON, you will want to consider using a different word processor. You might want to try one of those from The Software Store, as they recognize all of your memory, do spell-checking, implement the newest bells and whistles and are well suited and thoroughly tested for the jr.

Q. I have noticed much written material on RAM disks. Wouldn't I be really loading the programs or data

TWICE (once on the RAM disk and once into memory) in my jr, taking up valuable RAM? Why would I want to use one?

A. Why? Three words - speed, speed and convenience. Do we use up extra RAM? Absolutely right! You may even use up MORE than twice the usual amount of RAM in the jr when you have a RAM disk set up! Remember there's the space taken by a directory AND the device driver itself. Let's look into it. You set up a RAM disk; maybe you set it up at a particular size in lower RAM (to get above the 128k address) and never even use it - there's wasted space right there. Now balance that against the increased speed of every program you run! So now you transfer, say, a spell-checker word list into the RAM disk and still don't use it all up. Well, you'll just have to make your own speed measurements for how fast the spell checker can access the RAM disk as compared to either a floppy or a hard disk to really appreciate the difference. We think you'll NEVER go back to the old way...

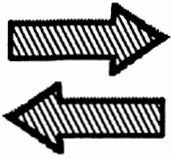
This speed difference is so great for ALL uses (not just data) of a RAM disk that some people use a huge RAM disk for every possible thing they can jam on it! They load overlays and programs on it ahead of time and when they want to access the programs the transition is so fast it's almost like task-switching. Speaking of which, even in 386 or 486 machines running at their breakneck speeds, with Windows and other fancy operating systems, RAM disks are recommended for a great number of the utilities and basic uses of these powerhouses.

Back to the jr... if you positively need every last drop of RAM for one of those memory-hungry, monster programs which are getting so common, you can use a RAM disk which can be re-sized or switched on and off completely, freeing up some, or all, of the usable RAM for the program requirements. This can all be done without even re-booting. Now that's tailoring the machine for nifty performance.

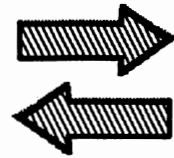
Another dandy use is for those who have no hard disk and a single floppy drive and who want to transfer files from one diskette to another. Just copy to the RAM disk then copy from the RAM disk to a fresh floppy. It seems elaborate, but will take considerably LESS time and frustration than the copying of A: to B: floppy shuffle technique. With the same physical setup and the necessity to run programs which call for two drives it may be the only realistic way to get the task handled. We (Q&A) find those RAM disks with the sizing and or switching out abilities most appropriate.

Q. I read in a rather prestigious (expensive) journal that for batch file editing, EDLIN was actually better than the Editor supplied with DOS 5.0. The reason

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Reader Feedback



Proud PCjr User Loves His Computer

Two years ago I bought my Jr for my daughters to use for school. I was excited, until I told some people about it; they all said I was crazy. I subscribed to your magazine and started learning about the Jr (let me add that I never even turned on a computer before this). The more I was laughed at, the more I was determined to learn how to use it! And I did learn enough to write pretty good programs in Basic, make my own batch files, learned about Vdisk and even did the Tandy modification myself.

I have added to my 256K single drive Jr the following; self powered 5 1/4" and 3 1/2" drive from OOWL, a 2400 internal modem, Tandy mod, and a MS MOUSE. But my biggest and most important add-on was a PC Enterprises 512 Sidecar. I am thinking seriously about the PCE VGA upgrade and a hard drive. Also on my list is a PCE mod to make my Jr run at 9.54 Hz.

My friends I talked about earlier are now buying 386's and 486's, but I still find a lot of "closeness" with my Jr. We all use our computers mostly for fun, so what if I have to wait a millisecond or so longer for a program to do its thing!

Before I end I would like to recommend some programs I bought through your newsletter; 3x5, Speech, ASIC, Namepal and especially my latest, Calendar Mate. Of course, my first ones were the JrPowerpacks. I do register and am proud to say that whenever I get feeling blue my Jr always makes me smile!

Orphan? Yeah, right!

*Howard J. Litz
Williamsville, NY*

Reader offers Tips

While looking through back issues of the newsletters I noticed that somebody had a question concerning using the speed attachment. Last time I mentioned I used the AlarmTalk software, not realizing I did not explain what it was. If you look at the documentation with the speech unit, it shows how to program for the speech units internal vocabulary. This can be done, but is awkward. The documentation also explains how to record and play back sounds with a microphone.

But this too is not exactly graceful. PCE does have a package called MakeTalk which is a nicer way to do both of these tasks. The speech recording software even shows a

graphic image of what is recorded. You also do not need BASIC to playback. I use both the synthetic speech (which includes some sound effects) with recorded sound in batch files for information. When my PCjr starts up, it laughs at you and says it is ready if you are.

The AlarmTalk program takes prerecorded sound and plays it back at a certain time. I have a number of digital recordings of my kids on hard disk and floppy. My wife is notorious for setting the AlarmTalk TSR on me when I step away from the computer, without my knowing it until the trap springs. I recently backed up all the recordings to floppy and put it in a safe place. I save it like I save photographs. I have a tape deck which could make even better recordings, but nobody ever thinks of bothering with that.

For all you serious hackers out there, I have noticed one thing. IBM educational software uses much more voice than is documented with the speech attachment. Even the MakeTalk software only used the documented set of vocabulary. There is more in there if somebody could figure out how to get at it. Young kids do enjoy IBM Bouncy Bee, which does a nice job with the speech unit. I picked it up for a song and a dance one day. It probably is still around with others.

The kids also enjoy Sierra On-Line's Mixed Up Mother Goose. There was an article about it in the March 1990 Newsletter, but it is worth mentioning again. The graphics and sound are like Leisure Suit Larry, which is to say real good. With no reading involved, the joystick working just fine, and my sound output going through the stereo, it is an impressive package. At two years old, a child can move the character around - a big thrill. At three years old, a child can seek objects and return them to the owner with only a little help. Not to mention, when was the last time you actually saw a complete listing of the words to mother goose rhymes!

In the November 1991 issue, Rollin Golden had some good news about scanners but indicated he was using a switch box for his printer port. I have found it is better and actually cheaper to add a second printer port rather than A/B switch. There is something called a Print Adaptor mentioned in your July 1988 Newsletter which would do that. I have not tried it. Best approach would be to try one (Paul Rau, Owl) using it for the actual printer and keep using the known working Lpt1 for the scanner.

Now I have a question, instead of information. I don't
(Continues on page 6)



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 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)

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)

BEST OF JR NEWSLETTER IV. For your handy reference, disk has the most informative articles, columns, and tips published in Jr Newsletter from June 1989 through May 1990. Easy to use search utilities provide quick ways to find any subject of interest. 128K ok (Disk #118)

BEST OF JR NEWSLETTER V, The best, most informative articles, columns, reviews, Questions and Answers from the June 1990 thru the May 1991 issues. Includes powerful search utility so you can find and read any subject easily. 128 ok (Disk #130).

Reader Feedback

(Continued from page 5)

expect an answer right away, but it is worth looking into. Anybody who is not a serious bit twizzeler, might just as well skip to the next topic.

About two weeks ago I was fooling around with cartridge BASIC, trying to use the patch routines in the newsletter. I also did some experimenting with my new UNIX boot floppy (not really UNIX, I was still in IBM 3.3). Something most unusual happened. My computer began running much faster. I first noticed it when I was taking a break and playing Battle Chess. The pieces were moving almost double speed. I've used Battle Chess on a 386 computer before and the pieces did not move that fast. On the 386 the delay from the time they are suppose to move until the time they do move is eliminated, but they still move at the same pace. I am sure they are suppose to move at the same speed no matter what computer they run on. This is true of lots of games. Maybe you know already the reason for that. I am hoping that is a hint of what was going on.

Another hint is that the sound was distorted. The sound only took about half as long to complete for each turn, and was higher in frequency. I got out of Battle Chess, and went right to my AutoSketch. Sure as heck, this was the first time I saw the redraw time cut in half. This I had timed previously, so I know it was almost exactly half. I got out of AutoSketch and tried a couple of other things with the same results. Except that sound was distorted, there seemed no other problems with the new speed increase. Even working in straight DOS would show directories with DIR much faster.

The only problem is I am not sure how I did it. I have tried to repeat the sequence of events that caused this situation without success. I swear it, I am not making this up. I would not have believed it if I had not seen it myself. I got my wife out of bed to see it, to make sure I wasn't dreaming. So what happened ?? Anybody have any guesses ?

I asked an engineer who designs workstation applications, who told me I must have accidentally created a special memory map. This map somehow must have confused the computer by crossing a memory boundary in a particular way. He confirmed there is a valid reason why games run at about the same speed on different hardware. I forget what he said, something about a system timer, but maybe I divided the timer in half. But what he didn't know is why the computer didn't crash soon after. It may have something to do with it being a PCjr. Whatever it was, if it can be made repeatable, creates a true Turbo mode. Turbo modes are suppose to make the computer run faster than designed with the user responsible for any chances for crash or corruptions; as opposed to what most computers

call Turbo mode being only their real operating speed, and anything else just being a divide down speed that is rarely used. If I come up with anything else on this I will let you know right away.

The recent hardware add ons possible for the jr are exciting. The thought of using a SCSI interface means 300 MB hard drives for less than \$400 & using CD-ROMS. A VGA adaptor that can do ATI style EGA emulation to a CGA monitor is a neat trick. The SuperVGA will require device driver support. It seems that whatever is coming out with computers is finding its way to the PCjr. But I, for one, would like to express concern before investing in some of these new upgrades (and I have probably sunk more than most into my jr). I need to know that I will be able to transform jr into a 1990's platform. That means full compatibility with at least a 386SX processor.

An ideal situation would be a new motherboard that looks at the current motherboard as just another expansion board. All memory would have to be on the new board (I say this after myself having purchased a Megaboard). Normal 16 bit expansion slots should be available. The IBM PCjr ROM chips would probably be placed on the new motherboard, shadow RAMmed, and then modified by the ROM BIOS of the new motherboard to make the new computer PCjr compatible, not violate IBM licenses, and have proper performance.

If it all worked slick, functioned like a real 386 (i.e. ran UNIX, OS/2, used any ISA expansion board) I think a lot of us would certainly invest in it. Sooner or later most PCjr owners who want to continue using computers will have to buy such a thing or just buy a new computer. I am sure the possible vendors of such would like to know there is interest before they contract out to the clone motherboard company who probably would do it due to slow business. If such a thing were in the works, probably lots of PCjr owners would hold out for a while longer.

I still don't like MS-5.0 for a DOS. I do use DR-6.0 on a 486 though. That is a slick operating system. It has all of the features of MS-5.0 and lots more. It also has none of the strange effects. Any hope of somebody making this one work on jr ?

One release of DR-6.0 works on all AT clones with no patches for any software. The disk storage utility doubles hard disk storage space, the disk cache software is really PC-Kwik which is the best around, and the task switcher has to be (although they don't say) Software Carrousel because it is just like it (awesome!). The enhancements to batch file writing and config.sys writing begin to approach a real Job Control Language. People who worked on this DOS obviously were familiar with UNIX. They also must have been working with the people at Norton. It reminds me of the New York Yankees of a few years ago, the best team money could buy ! Do I care how they did it? (no!) If

(Continues on page 10)



Art & Music

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)

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ORIGAMI. Learn the art of Japanese paper folding. This program shows you how, step-by-step, to create amazing animals and other objects just by folding paper. Fun for kids and adults, too. 128K. Requires Basic Cartridge. (Disk #39)

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)

PCJR MUSIC SAMPLER. A collection of classical music concerts performed with great precision to produce the highest quality sound youve 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)

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)

PRINTMASTER LIBRARY. Two disk set full of graphic images for use with PrintMaster. (Disk Set #3 - 2 disks, \$10)

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Tips on Repairing PCjr

EDITOR'S NOTE: The following article contains tips on repairing PCjrs in order to solve some of the more common failures. Jr Newsletter received these tips from a source we believe to be reliable, but since we are not technicians, we cannot guarantee their accuracy or completeness. We also recommend caution in attempting any repairs. Don't try to do anything you are not competent to do, and always beware of potential static electricity damage. As a general rule (except in cases mentioned here) always unplug your computer before attempting any repair, and realize that your computer monitor may contain hazardous levels of electricity even when it is unplugged from the power source. **USE CAUTION !!**

It has been my experience that the majority of dreaded 2 beep errors as well as the 3 beep error, no beeps and generally the A & B errors, are attributable to the 64k memory chips on the mother board or the 64k card. To confirm rough location of problem, strip PCJR down to raw mother board with only the power card in place. Attach only the monitor. Keyboard can be infra-red or cable. If the infra-red receiver is removed then the cable **MUST** be plugged in or you get the 2 beeps for this reason. If Jr boots normally then add the removed options one at a time to pin down the problem.

When problem is confirmed to be the mother board the following technique can be used in most cases although definitely not all. Note: This method also works with the 64k card and memory sidecars but a great deal more care is required.

As a preliminary step, leave power on the failing system for about 15 minutes. Using a finger check, look for any excessively hot memory chip. A warmer than usual chip indicates a shorted condition and the chip needs to be replaced. If all memory chips appear normal then proceed.

1. For testing purposes, a known good chip of 250 nano-seconds or better can be used. I.E. 200ns, 150ns etc. The test chip should of the same memory size as the chip being tested. That is don't use a 256k chip across a 64k chip.
(When a defective chip is found however, it should be replaced by a 150 nano-second or better chip of the same size to preserve the original circuit spec.)
2. Form the leads using a straight edge for a friction fit when piggy-backed on top of another chip.
3. Locate the eight 64k memory chips on JR's mother board. They are in the left front corner in line with the power supply card.
4. This procedure is easier if you have or can borrow the older design 7" power supply card. The 11" gets in the way.

5. With power off (incidentally there are no dangerous voltages in this area) piggy-back one of the eight chips being careful to align the sixteen pins as close as possible to those on the original chip. Make sure that the orientation of pin one, the notched end etc. match for the piggy-backed chip.
6. For insurance gently hold the piggy-backed chip in position with one finger and turn on power to PCJR. Wait for indication.
7. If error indication still present, power down and move to next chip. 8. If Jr comes up normally, you know which chip must be replaced. If after the first pass you don't find a bad chip then repeat the process on the chance that you might have had a bad connection.

If you suspect more than one chip is at fault, you can carefully piggyback all eight chips with known good chips and repeat the test. If JR then works, you can remove one chip at a time to isolate the chips needing replacement. On one 64k card I found four bad chips this way. The darlington regulator chip on the 7" power card had shorted causing a +20 volt spike on the +5 volt line before the fuse blew. The result was one blown chip on the mother board and four on the 64k card.

If the 64K memory chips happen to be made by "INMOS" corp I recommend that they all be changed. These chips; very few JR's should have them, were disqualified and replacement was mandatory due to poor reliability.

Another known problem that causes similar symptoms is smeared lands on the solder side of the mother board. The location is always under the plug in cards and is caused by the case mother board supports rubbing the pads. This problem was corrected in the yellow mask newer level EC mother boards.

If you are confident that your problem is not a memory chip and you have not reworked the mother board in any way, then your best bet at this point is to seek a replacement mother board.

It may still be worth while if problems persist and if you are not interested or able to take the \$134.00 or so exchange from Boulder, to socketize all eight of the chips and replace them with a new set of chips. No guarantees of course, and I would assume that you would have swapped all the original socketed JR chips such as the CPU and the BIOS ROMS with another JR first. Also check with JR vendors and various parts houses for used or surplus mother boards.

In one other case the problem did not indicate beeps but the color monitor screen turned green. That turned out to be a bad gate array chip. There are about Four non-available chips on the mother board. The gate array chip

and the two bios ROM chips. There is also the Character generator ROM and a Memory control PROM located under the diskette drive (24S10). The ROMS can be copied if you have another PCJR and an EPROM burner. The PROM can also be copied if you have the proper equipment to read and burn those kind of chips. When any of these are bad the usual recourse is to exchange the board with IBM provided of course that the board is unaltered.

Another technique I recently discovered while working on a crumlyzed 512K sidecar which had several opens due to poor workmanship was to use a 16 led 5v tester which is commercially available. You could also make up a two lead tester with an led in series with a current limiting resistor. All terminals of a working 64K or 256K chip except pins 2 and 16 should light the led. With the two lead tester secure one side to pin 16 assuming you have a good ground circuit and simply test each lead of each chip recording the results on a table.

If all else fails, and you are inclined to try to repair the PCJR mother board, I will try to outline the general procedure I use.

The most useful and probably mandatory tool to obtain is a logic probe. Available from Radio Shack for from \$17.00 to \$20.00.

The most difficult to service problems are the no response, no beep and immediate two beep errors (I will assume that all power supplies have been checked OK.)

Remove the mother board from its case. Examine solder pads in the area of the daughter cards on the solder side of the board. There have been many cases of smeared pads in these areas causing shorts.

For all testing of the mother board, simply lay the board on a non-conductive surface. Observe all the standard Anti-static precautions that you can. It is best to work in a high humidity environment.

There are no dangerous voltages anywhere in the PCJR. The maximum supply coming from the brick is around 30 volts A.C.

Attach only the brick, the monitor, and the keyboard w/ cable.

Power up and verify that the problem still exists. Power down whenever removing chips or when you are not measuring circuits.

The first step is to remove the 8088 CPU chip from its socket.

Incidentally I power the logic probe from the disk drive cable socket on the power card. The red lead goes to the bottom (+5v) pin and the black lead goes to either of the two center pins (ground). Do not connect the probe to the top (+12v) pin.

Measure all 40 pins of the socket using the logic probe. Readings should be as follows with power on.

Open (no probe indication): pins 2 thru 16 and 23,25,30 and 34 thru 39.

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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 weve 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)

Educational

ARE YOU READY FOR CALCULUS? Excellent review of Algebra and Trigonometry skills youll need before taking Calculus. Provides help in needed areas. Designed by professor in University of Arizonas Math Department. 128K ok Disk #117)

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)

BRAIN BOOSTER. Includes IQ Builder, a program that both teaches and tests your ability to solve number, analogy, synonym and antonym problems like those on IQ and SAT tests. Also includes Algebra and Chemistry programs. For high school and up. 128K (Disk #43)

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PCjr Repair Tips

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Logic Low: pins 1,17,20,21,22 and 31.

Logic High: pins 18,24,26 thru 29,32,33 and 40.

Logic Pulses: pin 19. (This verifies that Osc circuit is working.)

Any pin not matching the above table will require additional circuit investigation. The most obvious indicators are pin 19--the clock circuit is not working and pin 18--the interrupt chip is stuck.

The plastic clock chips (8284) had a high failure rate. The ceramic chip version was much more reliable. If you determine that the crystal is not oscillating, try reversing the leads. Strangely enough, that sometimes cures the problem.

If all pins are normal, then follow on schematic to find all the various buffer chips especially ZM49, ZM57 and ZM66. Compare logic levels of similar data and address lines exiting the chips looking for abnormal highs or lows. A fair percentage of the time you will detect a shorted data or address line. The problem then becomes one of where could the short possibly be. The only answer I can give at this point is to divide and conquer using the binary technique of separating the circuit into two parts and then the remainder etc. until you identify the shorted component.

If pin 18 of the 8088 socket is stuck (interrupt error) and other pins of the CPU socket especially pins 2 thru 16 show errors then usually the 8259 interrupt controller chip is bad. Unsolder the 8259 and with both the 8259 and the 8088 out of the board retest the 8088 socket pins. Pin 18 should now be logic open. Any other abnormal pin of the 8088 must be investigated.

Check the removed 8259 and or replace with a known good 8259.

Recheck 8088 socket pins. If pin 18 is still not high then one of the IRQX (IRQ0 to IRQ7) interrupt lines is probably stuck.

The interrupts 0 thru 7 are in priority order. The highest is 0 and comes from the 8253-5 timer chip.

Any replacement parts work on the mother board should be followed by clipping any excessive lead length. The case has been coated with silver paint or it has been tin plated. In other words, it is conductive.

The usual problem with parallel printer sidecars is a smeared land pattern around the top rear mounting hole. The smeared solder is simply removed. Likelihood of a repeat problem is slim, especially if the sidecar is not overtightened. As insurance, the plastic surface which caused the smear should be scrapped clean of solder residue or a circular paper hole reenforcer can be laid over the surface.

Reader Feedback

(Continued from page 7)

anybody has gotten this to run on jr, please let me know !

I do like the Microsoft editor though. So I use that on my DR-6.0. On my PCjr, the EDIT & QBASIC locked up on IBM 3.3. Not that I care, since I have QuickBASIC, which EDIT & QBASIC are both subsets of. The MONEY.BAS program is of value. It is source code for using pull down windows for QuickBASIC. Thank-You very much ! Be sure to include the /L option when running it in the QuickBASIC environment instead of QBASIC.

How did I find out about DR-6.0 ? When I purchased NetWare Lite for \$49.00, DR-6.0 comes free ! Digital Research is now owned by Novell. If Microsoft won't consider PCjr worth their time, perhaps a new 386 jr could have a special version of DR-DOS.

One last comment about DOS. In the November issue you stated that MS-5.0 was "tighter and faster" than previous versions. I don't know about speed, I haven't noticed much speed changes between any DOS, but MS-5.0 is definitely larger than MS-3.3. It is a bigger DOS. This was even stated by John King in his article about DOS 5.0. I have great respect [envy ?] for John's abilities even though I'm bashing the Microsoft operating system he so cleverly figured out how to run on jr.

Well anybody wanting to learn UNIX either has a real need or is out of their mind. In a computer world where people give up trying to get DOS syntax down, and live their whole computer lives on DOSHELLs and GUI's, what kind of people would want to learn probably the most user hostile operating system ever invented ? Probably a lot of the same folks who own a PCjr !

I mean that only as a compliment to jr users actually. A lot of you software tinker types (like myself) who don't know DEBUG from a can of RAID, but like batch programming and might be learning a little 'C'; might take right to UNIX. I currently (starting about three months ago) have to use SCO UNIX and Interactive UNIX on a number of machines. I am getting used to it, is about as best as I can put it. To help me, I broke down and bought a nice software package for my PCjr. It is called the MKS Toolkit. MKS means: Mortice Kern Systems Inc. 35 King Street North Waterloo, Ontario, Canada N2J 2W9 (519) 884-2251

MKS may not be heard of in the DOS world, but they are well known in the UNIX world for software utilities that run on UNIX. The MKS Toolkit comes in two flavors, DOS & OS/2. I use the DOS version on jr of course. It doesn't matter what version (or brand) of DOS. I had no problems. There are no graphics, and everything interfaces through the operating system properly.

Joseph F. McLean, Worcester, Ma 01605

(This letter to be concluded in March Issue)

Complete Guide to Cows

Edited by Eric W. Tilenius

```

      ( )
      (oo)
 /-----\ /- *
 / |      | | \
 * ||-----|| *
 \ / | ( / ) ( \ / ( , , /
 Cow munching
 on grass
  
```

Cow at 10,000 meters

```

      ( )
      (@@)
 /-----\ /
 / |      | |
 * ||-----||
 Cow who ate
 psychedelic mushrooms
  
```

```

      ( )
      (oo )
 /-----\ /
 / |      | | \
 * ||-----||
 / | | | | | | | | | | | | |
 * | | | | | | | | | | | | |
 / \ \ \ \ \ \ \ \ \ \ \ \ \
  
```

This cow belonged to Pablo Picasso

```

      ( )
      (oo)
 /-----\ /
 )*) ( \ / * / *
 \ | | | / ) | / ( (
 \ | | ( \ / | ) ( \
 Grass munching
 on cow
  
```

```

      ( )
      (oo)
 /-----\ /
 / |      | |
 * ||-----||
 American Cow
  
```

```

      ( )
      (xx)
 /-----\ /
 / |      | |
 * ||-----||
 Cow who used Jolt to
 wash down psychedelic
 mushrooms
  
```

The above is from the front cover of the *Tokyo PC Users' Group Newsletter*.

```

      ( )
      (oo)
 /-----\ /- *
 / |      | | \
 -----
 Cow in water
  
```

```

      )_( (
      (oo)
 *-----\ /
 / |      | |
 / | | |-----| |
 vv      vv
 Polish Cow
  
```

```

      o_o
      (oo)
 /-----\ /
 / |      | |
 * ||-----||
 Cow at Disneyland
  
```

Side	Front	Side	Back
()	()	()	()
(oo	(oo)	oo)	()
^_	^	_^	/^

It is from "The Complete Guide to Cows," edited by Eric W. Tilenius (President of the Princeton Planetary Society). All bovines are strictly ASCII (i.e. <128) and there are an awful lot of them. Mr. Tilenius encourages distribution via BBS, etc. of his anthology of cows (and bulls), and also welcomes additions to his digital livestock.

```

      ( )
      (oo)
 -----
 Cow in trouble
  
```

```

 vv      vv
 | |-----| | *
 | |      | /
 / \-----/
 (oo)
 (--)
 Australian Cow
  
```

```

      \-|-/
      (oo)
 /-----\ /
 / |      | |
 * ||-----||
 Cow visiting the
 Statue of Liberty
  
```

Please send your submissions to:
 ewtileni@pucc.
 Princeton.DEU
 //entileni@pucc.BITNET.

```

      ( )
      (oo)
 /-----\ /
 / |      | |
 * ||-----||
 Cow at 1 meter
  
```

```

      ( )
      (oo)
 /-----\ /
 / |      | |
 * ||-----||
 Cow who drank Jolt
  
```

```

      ( )
      (o o)
 / ----- \ /-----
 / |      | | \ / |      |
 \ | | | | | | | | | | |
 * | | |-----| | | |
 / \ \ \ \ \ \ \ \ \ \ \
 This was Salvador
 Deli's favorite cow
  
```

(If, like most of us, you are not a BITNET user, simply upload your cow to any BBS and chances are it will eventually make its way to Princeton.)

```

      \
 /---v
 * |--|
 Cow at 100 meters
  
```

New Software Trend: "Simplify It."

(Continued from page 1)

the previous version could not do; each version increased the amount of disk space and RAM required. By the time WordPerfect 5 arrived even the headers in the data files grew. On a document of less than one page, the header could be double the size of the actual text. So even the demand for data storage space bloated!

With each upgrade, the product became harder to learn and required more costly hardware. What had been simple became complex; what had run with just two 360K disk drives, now required a hard drive. The new features attracted some users from competing products. They also scared away users who were unwilling to learn the complexities of the program and those who wanted to send a note to Aunt Sally without having to spend a fortune upgrading their home computers.

WordPerfect came up with LetterPerfect--a trimmed-down, easier to learn and use program which runs on basic home machines. It required only 330K of RAM and 460K of disk space, making the product useful on many comput-

ers which cannot run WP 5.1.

The strategy has been adopted by others, such as Borland. They took their great database program PARADOX 3.5 and made a new program for less intensive users. They call it Paradox Special Edition, and sell it for a fraction of the price of the full program. For most home users and even many small offices, it's all the database they'll ever need.

Borland also adapted their spreadsheet QUATTRO PRO 4.0 and created a trimmer version for those who do not need all it's advanced features -- Quattro Special Edition.

These Special Editions save money, are easier to learn and demand less from computer hardware.

Now that Borland owns dBase, let's hope they do the same thing for that database program.

Even Desktop Publishing Goes Light

The powerhouse desktop publisher, Aldus PageMaker, has joined the "Simplify it" bandwagon with Aldus Personal Publisher. It occupies a niche between The New Print Shop Companion and heavy-duty commercial desk-

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Put Your PCjr to Work Around the House!

(Continued from page 1)

using the Powerhouse interface with your PCjr and the supplied software.

How does it work? The Powerhouse interface controls your lights and appliances by transmitting digitally encoded signals over your existing house wiring. The appliance and wall switch modules then respond to the control signals from the interface. You can turn on and off, dim and brighten, lights, turn on your electric oven, TV, etc. at preprogrammed times. You can switch on appliances and lights at even specific days. For instance, you would ask your Jr. to wake you up at 6:30 am except Saturdays and Sundays or turn on the TV only for the time and days the Johnny Carson show is aired. I use it in particular when I must eat TV dinners. After work, when I arrive home, Jr. has already "cooked" supper for me and he knows to reheat my dinner if I have not arrived on time.

I bought the Powerhouse interface a few months ago after a relatively long back-order wait. I found that the manuals that come with it are thorough in the explanation of the set-up and use of the interface. There is a manual specifically for writing your own software if you are adept at basic programming. The owner's manual explains whatever is necessary to get started with the interface unit. In addition, the supplied software is simple to learn and use.

I only had two small problems at first with the unit. The Powerhouse interface software is set up for use with the

IBM PC. So, I had some trouble trying to set it up to use COM2 instead of COM1 as it was originally configured. I contacted X-10, Inc. at 1-800-526-0027 about this and they sent me a diskette with a set-up file at no extra cost. With this set-up file I was able to not only change COM1 to COM2 but also to use different screen color combinations for the program. The original software disk which is included with the interface allows only black and white. The other problem, which was not really specified in the Troubleshooting appendix, developed after I installed the modules and programmed the computer. Sometimes the computer would not respond to the preprogrammed tasks, in particular the off and dim tasks. I found out that the problem originated from the electrical wiring of my home.

There was some noise interference in the wiring caused by my 220 volt wall heater and probably some other major appliance. This interference affected the encoded signals sent by the X-10 unit. The way to get rid of this electrical noise was to install a small capacitor, 0.1 microfarad, 600 volt minimum, on the 220 volt breaker panel circuit of my house. A word of caution, unless you are experienced in electrical systems, do not do it yourself. It is easily installed in no more than 5 minutes, but you must be competent at this, otherwise a good experienced electrician can do this for you inexpensively.

After fixing both problems, PCjr acted like Hal but fortunately so far it has not taken over the house.

(This article was originally published in the Atlanta PCjr Users Group newsletter.)

New Software Trend: "Simplify It."

(Continued from page 12)

top publishers. There's competition growing in this new field already.

Microsoft has recognized the market opportunities for simple, economical programs in the Windows environment. **Microsoft Publisher**, **Microsoft Money**, and **Microsoft Works for Windows** are all gaining popularity.

Microsoft Publisher will give Aldus Personal Publisher a run for the money and Microsoft Money directly competes with **Quicken**. Microsoft Works for Windows brings the popular integrated word processing, database and spreadsheet package from DOS to Windows.

Shareware Offers Down-Sized Versions

The "Simplify it" idea is growing in the shareware world as well. For example, **PC-Write** has been around for a long time and became the standard of excellence as a shareware word processor. It started out pretty simple. The version 2.5 (Disk #1 in the Jr Newsletter Software Store) required only 128K in RAM. By version 2.7 (Disk #2A and 2B in the Software Store) required 256k to run without the spell checker, which required 384K. The full-featured version 3.02 (Disk set #1 in the Software Store) requires 512K. Here at Junior Newsletter, the newer versions were added to the Software Store, but we kept the older versions available for those with limited systems. Bigger is not necessarily better for everybody.

Perhaps the author noticed that software suppliers were still selling the earlier version. Recognizing the need and market for the simpler word processor, **PC-Write Light** (Disk Set #5) was introduced. It is easier to learn and needs about only 384K to run.

With the heavy-duty programs getting down to basics with their leaner versions geared for laptops, we expect other programmers to follow the trend. The popularity of the laptops has created a broad market for useful programs that don't gobble up disk space and RAM. As these new laptop owners begin to re-adjust the way they find and choose their programs, they have to readjust their thinking and recognize that bigger is not always better.

Pass a Few Tips to Your Friends With Laptops

PCjr users have learned to operate programs within smaller systems than other computerists. They have the special knowledge and experience to recommend reasonably sized programs to their friends with laptops. Be sure to tell them about these wonderful shareware programs we've been using on Junior all these years. They'll appreciate the tip and the lighter software will increase its market share even more.

That will bring a bonus to the PCjr users in the form of

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Software

(Order form on page 23)



COMPUTER TEACHER. For those who want to learn how to use DOS commands and to understand 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)

CROSSWORD CREATOR V3.30. Make your own puzzles up to 36 columns by 22 rows. Many helpful sorting and placement features. Prints out on virtually any printer. 256K (Disk #71)

EARLY LEARNING. A collection of colorful educational games for ages 6-8. Sing-along alphabet, letter match, counting game, maze, pattern matching and more. 128K, need Cartridge Basic. (Disk #48)

EQUATOR. An excellent way to learn and review 35 basic equations used in math, finance and science. Learn to compute the volume of a cylinder, compound interest, or average velocity and much more. Manual on disk. 128K (Disk #20)

GAMES FOR EARLY LEARNERS. Young children like Teach Tots alphabet and counting games. Other activities teach spelling and telling time. For Preschool through grade 3. Cartridge BASIC, 128K. (Disk #63)

HAPPY GAMES. Written by a mother to help her own preschoolers learn on their PCjr, this set of colorful educational games makes learning fun. Teaches colors, shapes, logic, eye-hand skills. 256K and joystick required. (Disk #88)

LANGUAGE TEACHER. Helpful exercises for both French and Spanish language students. Hundreds of vocabulary words and verb conjugations. 128K ok. (Disk #72)

MATH FUN! A great way to get kids learning how to add, subtract, multiply and divide. Includes a program called Math Tutor which has cleverly designed exercises for kids in Grades 1-6. Also Funnels and Buckets, a nifty math game that makes learning math fun. 128K. Need Cartridge BASIC (Disk #42)

PLAY AND LEARN. Educational games for kids 5-12. Word match games, find-a-word puzzles, word scrambles, and many more made by teachers. 128K, need Cartridge Basic. (Disk #32)

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New Software Trend: "Simplify It."

(Continued from page 13)

more reasonably-sized programs to choose for Junior. We're all going to benefit from the new attitudes in programming that has come about because of the emerging popularity of the laptops.

Aside from PC-Write Lite, which we know runs well on PCjr's, we have not yet tested the trimmed down versions mentioned in this article. If you purchase one of them, be sure your software source will take it back if it doesn't run on your computer. And please let us know so we can pass the word to other junior users.

(P.S.: Please try not to gloat or snicker because Junior's monitor is so much more legible than most laptop screens.)

Questions and Answers

(Continued from page 5)

given was that the Editor is a full screen editor and cannot show CR-LF symbols on the screen. This was all in the context of correcting the extra DOS prompts which can show up at the end of a batch file routine. Is this another DOS 5.0 shortcoming or what?

A. Yeah, I read that, too. Here's the scoop: If you press <Enter> at the end of the last line in a batch file before writing it to disk (no matter what editor you're using) you will see TWO DOS prompts after the batch file is executed. The DOS batch file processor simply writes a prompt to the screen whenever it reads the CR-LF pair. That particular writer probably feels that one has to SEE the extra CR-LFs to get rid of them.

The solution is not to go back to EDLIN but to use a different technique with the Editor. The technique should work with just about ANY editor. Here it is: Place the cursor at the end of the last line of the batch file and hold down the Delete key until the computer beeps at you! Everything after and below the cursor position will be deleted, including any extra CR-LFs. Leave the cursor at the end of that last line and save (write) the batch file to disk. This is at least ten times more efficient than using EDLIN.

We automatically try to avoid having the computer beep at us because of the association of the beep with a mistake or something. Remember, it's just the computer doing one of the many things it was designed to do! There's no more harm having the beeper sound off than writing text to the screen or saving data to a diskette.

Batch File Programming

(Continued from page 2)

boards.)

Try this batch file. If you don't want to do the second DIR, enter Fn-Break when the file pauses.

```
COPY CON THIRD.BAT
DIR A:*.EXE
PAUSE
DIR A:*.COM
Ctrl-Z
```

REM, ECHO, and PAUSE are the three easiest batch commands, but they allow important control of the screen display.

A special feature of batch files is the "replaceable parameters". At first this confused me, but it is really very simple. When you type the name of a batch file at the DOS prompt, DOS remembers any groups of characters after the file name. For example, if you had a batch file called OLDER.BAT, and you typed:

```
OLDER Morning John 40 50
```

DOS will hold Morning, 40, and 50 in memory. Now let's write an OLDER.BAT that can use these values.

```
COPY CON OLDER.BAT
REM Good %1, %2.
REM How's it feel to be over %3?
REM Oh well, %4 is still ahead.
Ctrl-Z
```

DOS will replace the %1 with Morning, %2 with John, etc. Why %1? I don't know, but DOS needs some way to distinguish a simple number from a variable and the % sign was selected to be the identifier. The variables can be groups of any characters separated by spaces.

The command "OLDER Morning John 40 50" will display:

```
Good Morning, John.
How's it feel to be over 40?
Oh well, 50 is still ahead.
```

You can use up to 9 parameters, %1 to %9, in this simple fashion. If you have a need for more than nine items on the command line, you can use the SHIFT command, but that is so unusual that I don't intend to cover it here. Read your DOS manual!

The %0 has a special significance. It is the name of the batch file minus the extension. If a drive letter was specified, that is included. For OLDER.BAT called from the default drive, %0 is OLDER. This is not useful very often, but it explains the difference between %0 and %1 to %9.

We will use replaceable parameters frequently in batch

files because they allow us to write a general file and insert the specific values when the batch file is run.

Now try this example.

```
COPY CON D-TEST.BAT
IF %1!==D! GOTO DO-DATE
IF %1!==d! GOTO DO-DATE
GOTO END
:DO-DATE
DATE
:END
Ctrl-Z
```

This is not a useful batch file. Entering D-TEST D or D-TEST d will call the DOS date function. Without the D or d, it does nothing at all. However, it illustrates the last two new batch file commands that we'll cover in this article, the IF statement and the GOTO instruction.

IF allows testing for one or more characters, whether a file exists, or a peculiar thing called the "errorlevel". Errorlevel we'll hold for a later discussion. In D-TEST.BAT, we test the replaceable parameter from the command line against D and d. If %1 is equal to one of these, the command on the line following that IF will be executed. In plain English, the IF statement is read: if the first value on the command line after the batch file name (%1!) is equal to D!, execute the GOTO DO-DATE instruction. If it is not equal, skip to the next line in the batch file.

You might wonder why I used "%1!" rather than just %1. That is a peculiarity of DOS. Repeating any symbol on both sides of the double equal signs (another DOS peculiarity) avoids "Syntax error" messages when no value is used for %1 on the command line.

GOTO is the last new batch command we will cover. It allows jumping around a batch file from the line with the GOTO to the "LABEL" which is named immediately after GOTO. Labels always start with a colon and can be up to eight characters long. They are not case sensitive, so :DO-DATE and :do-date are the same.

If neither D nor d are on the command line, the IF statements will not be true, and neither of the first two GOTOs will be executed. Therefore, the GOTO END will be executed.

At this point, you may begin to see the power of these few new commands. Even a simple batch file can perform alternatives based on how it is called or upon what files exist on a disk. Now, let's write something more useful.

Finding the date 1-1-80 on files always annoys me because I know they are not that old, only that someone didn't bother using DATE when they booted up. There are public domain utilities to simplify entering the date and time, but batch files are available to everyone. So, let's write one for those of us who don't have battery powered clock chips in our PCjr's.

Since the hour a file is created is really not as important

to me as the date, here is DAY.BAT to make entering the date easier when you boot up your computer more than once in the same day.

The first time you boot up, call DAY.BAT with today's date on the command line: DAY 3-1-88 or DAY 3/15/88. If you boot up again on the same day, just type DAY and the date will be entered automatically.

```
COPY CON DAY.BAT
IF %1!==! GOTO NO-DATE
ECHO %1> TODAY
REM Leave no space between %1 and ">".
:NO-DATE DATE < TODAY
Ctrl-Z
```

The ">" (greater than) and "<" (less than) symbols are the DOS redirection characters. The ">" in the ECHO line redirects the output of the ECHO command to a file called TODAY. If TODAY does not already exist, it is created. TODAY will contain %1, the date typed when DAY.BAT was called. When DATE is called, the contents of TODAY will appear as input on the "Enter new date:_" line because the "<" redirects the contents of TODAY into DATE.

(Continues on page 16)

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Batch File Programming

(Continued from page 15)

If you enter DAY without a date, the GOTO NO-DATE jump occurs, and the TODAY file is used for the DATE input. Each time a new date is given, a new TODAY file is created and used as input to DATE.

DAY.BAT is very simple, but like many programs that are very simple, it doesn't handle errors very well. If you forget to include the date the first time you run the program, the TODAY file will not exist, and you will exit to DOS without calling DATE. Of course, if an old date is in TODAY, that will be entered automatically.

We can improve the file a bit using the other batch file commands we have learned to avoid the "no TODAY" problem and to make the display more informative.

```
COPY CON D.BAT
ECHO OFF
CLS
IF %1==! GOTO NO-DATE
ECHO Saving today's date, %1.
ECHO %1> TODAY
REM No space between %1 and ">".
:NO-DATE IF EXIST TODAY GOTO SAME-DAY
ECHO No date specified or stored.
DATE
GOTO END
:SAME-DAY
DATE < TODAY
:END Ctrl-Z
```

Now, if you forget to add the date and TODAY does not exist, you get a reminder, and DATE is called for input from the keyboard. Of course, if an old TODAY file exists, the wrong date will still be set.

You might make the last line of your AUTOEXEC.BAT file a reminder to call D.BAT, so you don't forget. Finally, if you want to set the time as well, just add the line TIME at the end of the file before the Ctrl-Z.



PCjr Quick Tip.



If you're using a RAM disk as Drive C: to hold a few of your favorite utilities, you can run them more easily by including in your AUTOEXEC.BAT file the line:

PATH = C:

Then, even when you're logged on to another drive, you can simply type in the name of the program you want to run and DOS will look for it on Drive C:.

For example, if the utility WAP.COM is on Drive C:, but you are currently logged on to drive A:, instead of typing C:WAP, you can simply type WAP and you'll have it. No big deal, but it saves a few keystrokes.

DOS Tips Ease Computing

Printing Directories

The simplest way to make a copy of the directory on a disk is to type at the A> prompt:

```
DIR >PRN
(ENTER)
```

This will give you a copy of the current directory without displaying it on your screen. If you want to see the directory as it is being copied, first press the Fn and the E (echo) keys on your PCjr keyboard and then type at the A> prompt:

```
DIR (ENTER)
```

Some Facts About DISKCOPY

The DOS command DISKCOPY is one way to copy the information from one diskette to another, but keep these points in mind: It makes a "carbon copy" of the diskette you are copying from. This means if you use a single sided diskette as your source, your copy will be formatted as a single sided disk, too. (So you won't be able to add files to it once the single side is full.) Also, unlike the COPY *.* command, if there are any bad sectors on your target diskette, DISKCOPY will still try to write to them and will give you a copy that may be imperfect. The preferred way to copy diskettes is to FORMAT first and then use the COPY *.* command. It's slower, but your copy will be more reliable.

When DISKCOPYing Keep RAM Free

The time it takes to copy diskettes, when using the DISKCOPY command will be reduced if you keep your RAM memory free. When you are DISKCOPYing, DOS transfers data from your source diskette into memory before dumping it to your target diskette. So if your memory is occupied there will be less space for the transfer, and the copying process will require more steps.

Watch Out for File Fragmentation

The organization of files on a diskette that has been used for a long time with many deletions and additions can become very inefficient. This is caused by the storage of more recent files in the spaces left by previously deleted files. One file may be stored in several places on the diskette, requiring DOS to skip around in order to find the information.

The diskette will still function, but DOS will take longer to handle its files. This can slow you down, particularly with wordprocessing or spreadsheet files.

One way to reorganize these files is to format a new diskette and then use the COPY *.* command to copy the old diskette's files to a new diskette. The files will be copied contiguously, making the job of handling them easier and faster.

How to Label Your Diskettes

If you want to put a label on your diskette (not the kind you stick on the outside, but one appearing above the directory), use the FORMAT B:/V command. This will

enable you to write an eight character label or volume number which will appear every time the DIR command is given.

The Powerful FORMAT Command

The DOS FORMAT command is used to initialize a diskette to accept DOS information and files. It can be issued as a command on its own, or automatically invoked when using the DISKCOPY command.

When used on its own, it will tell you if there are defective tracks on a target diskette. This does not mean the diskette is unusable, just that those tracks should be avoided (which the COPY *.* command will do, but DISKCOPY will not).

If you add /S after the drive specification, you will have a copy of the operating system on the target diskette, making it bootable.

The addition of /1 will format only the first side of the target diskette.

Adding /V enables you to write a volume label, to appear above the directory.

Using Wildcards to Find Files

DOS allows the use of two wildcard symbols, the * and the ?. These symbols can be useful in many ways, but the one we'll discuss here is using wildcards with the DIR command to find files quickly and easily.

Each of the symbols means something different. The * will match any number of characters, while the ? will match just one character. Here are some examples:

If you type DIR *.DOC, you will get a listing of all the files in your directory with the file extension .DOC. To get even more specific, if you type DIR A*.DOC, you will see all files whose names begin with A and whose extensions are .DOC.

Since the ? represents a single character, if you type DIR FILE.DO?, you will get a listing of all the files named FILE with extensions that have DO as the first two letters. If you keep these wildcards in mind, you can not only speed up your searches for files, but you can create file names and extensions that will help you organize and find them later.

When DOS Growls, Don't Panic

DOS has a lot of error messages, such as "Disk Boot Failure," "File Not Found," "Bad Command or Filename," and other depressing statements. But 90 per cent of the time, the problem indicated by the error message is minor. For example, unless you're perfect (in which case, please let us know, we'll do an article on you in our next issue), you may have simply made a typing error. Your PCjr is VERY particular about which keys you press when communicating with it. Or, some slight misalignment, dust particle, flea or gnome may have caused the problem and then disappeared. In which case simply trying again will do the trick.

Some Fascinating Facts About jr's Keyboard

Although many PCjr owners have put their original jr keyboards on the shelf and are now using larger keyboards, the jr's so-called "freeboard" is not without its strengths. We're not talking about the original original jr keyboard, the one called the "chicklet" board because it had no letters written on the keys. We mean the replacement original keyboard which IBM supplied to jr owners after a barrage of criticism buried their baffling entry model.

First of all, some people, including the editor of this newsletter, like the feel of the jr keyboard much better than that of most other computer keyboards. While some people complain that you have to pound the keys when word processing, those of us who grew up with mechanical typewriters developed a pounding approach to transferring words from brain to paper. So the resistance that jr's keyboard puts up to the initial touch of a key is considered to be GOOD by some of us.

In reading through a book on the jr, called "The New jr: A Guide to IBM's PCjr," by Winn L. Rosch, some fascinating facts about jr's keyboard can be found. For instance, Mr. Rosch points out that jr's keyboard "was the first major

(Continued on page 18)

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Some Fascinating Facts About jr's Keyboard

(Continued from page 17)

product to use AID's (Advanced Input Devices) ErgoKey technology, a new keyboard mechanism that combines very few parts (keeping its cost down) with long life and most important, near-perfect tactile feedback."

The Hidden Construction

He goes on to explain that there is a resilient rubber boot under each key which is designed to offer initial resistance to being collapsed when your finger first pushes the key, but which becomes more easy to press as it approaches the bottom of its travel. The high initial resistance keeps you from accidentally pressing a key with light pressure while the lower part of the stroke almost "pulls" your finger down once you have committed to that key-stroke.

Inside the rubber boots, which are molded together into a matrix under the keys, there are carbon buttons that connect two electrical circuits on a printed circuit board

when the keys are depressed. Most other keyboards operate by detecting changes in capacitance or inductance so they are always drawing electricity. Not so with the jr keyboard, which only draws power when keys are used, thus enabling it to operate more efficiently on battery power.

The author also pointed out that unlike the PC keyboard, which is considered a non-serviceable item by most repair persons, jr's keyboard can be repaired. But, due to its design, which renders it almost completely unaffected by moisture (unlike the PC's again) jr's keyboard is much more durable than most others.

Target Diskette May Be What?

Although it should happen very infrequently, when using the DISKCOPY procedure to copy diskettes, you may get beeps from your PCjr and messages saying "Unrecoverable read (or write, or verify) error" and finally, when DISKCOPY stops you will read: "Target diskette may be unusable."

In our experience, it may also be usable. But to be sure it is better to try again with another target diskette if the messages you got during the DISKCOPY procedure were "write errors".

If the messages were "read errors", then simply try again with the same diskettes just in case it was a quirk -- you know, one of those unexplainable things that might not have really happened. Sometimes, the copy will be made without a hitch on the second try.

If you continue to get read errors you might have a problem on your source diskette. Or it could be your drive. Sometimes drives that need lubricating will produce read errors. So if your drive is particularly noisy (which means noisier than the usually noisy PCjr drive), you should try lubricating the drive. (This is a simple procedure which we have explained in a past issue. If you want a copy of the article, send us \$2).

Another possible solution to read errors is to format a new diskette and then use the COPY *.* command to copy the files from your source diskette to the new diskette. This may work flawlessly. At the very least, it should copy most of the files from your source so you don't lose everything on that diskette.

Here's another option: Just wait until tomorrow and try again. More than one problem we've encountered has disappeared into the night.

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The "Did You Know This?" Dept.

The early model of the IBM PC, sold in 1981, had 48K of Random Access Memory, came with a single disk drive, and cost over \$2,000. That was without the display.

Don't Be AFraid of Your Jr!

by David England

Computers are horrendously complicated devices. Just ask anyone who's taken a look inside one and come away scratching his head. And because of the intimidation factor, a lot of people wind up hauling their equipment down to the shop to be looked at by an expert, only to find out later that the problem was disgustingly easy to fix.

It isn't for humor that the troubleshooting routine in the Junior's Guide to Operations first asks you to be sure the equipment is plugged in. There's a real chance that a user may become so disconcerted at crash time that obvious things are overlooked. Even if a solution isn't so obvious, that doesn't necessarily mean it will take half a benchful of diagnostic equipment to put things in order. You may be able to do it all yourself if you keep your wits about you and use a little horse sense.

This was illustrated when we were testing new hard disks. One of the drives wouldn't run, and we were able to find out where the trouble was by plugging in different components from it into a package that did work until that package wouldn't work either. The trouble was traced to a length of cable which was hammered on a bit until the right connections were made. This took some time and effort, but is much better than paying a shop \$50 an hour to find the same thing, or worse, mailing something back somewhere. We at least had the convenience of having a working unit on hand to check the faulty one against. But sometimes you have to just tear things apart and look.

A PCjr user named Ramana Rao had been having system crashes. Ramana found that the crashes stopped when his jrCaptain was not attached, so he called Tecmar and found that the minimum charge for repairs was very expensive. With this incentive, Ramana decided to look inside the sidecar before sending it in. He found that the problem was with the power supply connection, the plug didn't fully seat. It was easy to fix, and a lot cheaper than having an expert do a simple job. (Ramana learned later that other jrCaptain owners have had this problem. So, if you have a jrCaptain which crashes every once in a while, this may be the cause.)

The main thing is not to be afraid to poke around. You'll never find out if something is loose unless you tug at it or jiggle it, but this is a stumbling block that a lot of people never get past. Next, the main way to find out where the trouble is, is to find out where it isn't and, thus, narrow your search down. This takes some organization and requires a rather methodical turn of mind. It's a bit like using an algorithm to write a program; the procedure is seen in trouble shooting guides in statements like, "If the answer is No, proceed to Step 4 on page 35; if the answer is Yes, proceed..." If you can think like this, you can fix anything.

(Continued on page 20)



Software

(Order form on page 23)



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(Continues on page 20)

	<h1>Software</h1> <p>(Order form on page 23)</p>	
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(Continues on page 21)

Don't Be AFraid of Your Jr!

(Continued from page 20)

Last but far from least, don't throw in the towel when you're tired. Set everything aside and try again later. If you decide the answer is beyond you, do it when your mind is fresh instead of after a long session of trouble shooting. If you aren't used to taking things apart, it's easy to get tired because of tension.

(Article from the OKC Jr Orphans Chronicle.)

Increasing Disk Buffers Often Speeds Up Software

If you have more than 256K on your PCjr you may want to experiment with an increased number of disk buffers to gain speed for certain software. What are disk buffers?

You may not be aware of it, but every time you boot up, DOS reserves a certain portion of RAM for disk buffers. Usually about 528 bytes, a disk buffer is a part of your computer's memory where DOS can temporarily store information that it is asked to read or write to disk. It generally does this when the information it is asked to read or write is not the same size as a disk sector. When the buffer gets full, DOS will write the information on disk.

The upshot of this is that if you are using software that reads and writes to disk very often, you will be able to operate that software faster if you tell DOS to reserve more than the usual two disk buffers. Generally, database and spreadsheet software benefit from a higher number of buffers. But it depends upon how the software is written.

So the best thing to do is experiment with the software you use most often. The way to set the number of disk buffers available for DOS is to put the line `BUFFERS=nn` in your `config.sys` file. (nn stands for whatever number you select.) Although theoretically the greater number of buffers the better, when using DOS 2.1, you will find that the optimum number is usually somewhere between 10 and 20. DOS 2.1 tends to become bogged down with more than 20 buffers. DOS 3.0 and higher, on the other hand, can handle up to 50 or 60 buffers without getting bogged down.

For those of you who are not familiar with modifying your `config.sys` file, you can do it with any word processor. Just add the line `BUFFERS=10` (or whatever number you want to try.) Or you can write a `config.sys` file from scratch, either with a word processor, or by typing at the DOS prompt:

`COPY CON CONFIG.SYS.`

Then type the lines you want. When you are done, press F6, then Enter.

If you use the copy con method, you will be starting from scratch, which means before doing this you should have a record of what your existing `config.sys` file says. You should preserve the other parts of it while adding the buffers line (as a separate line.)

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Software

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The following disks from the jr Newsletter Software Store can help you to get the most out of your junior. To order, see the coupon on page 23.

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)

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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, screenblinker, 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)

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jr Newsletter Software Store



The software in the jrNewsletter 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.

Especially for junior, page 6
Art & music, page 7
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Games, 20, 21



- **NEW VERSION • 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)
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- **NEW • BITE BY BYTE.** Let your PCjr design a sensible diet especially for you, and help you plan meals so you can lose weight without too much deprivation. It's fun to do and it really works! 256K Reviewed 10/91 (Disk #134)
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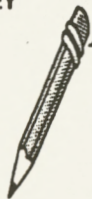
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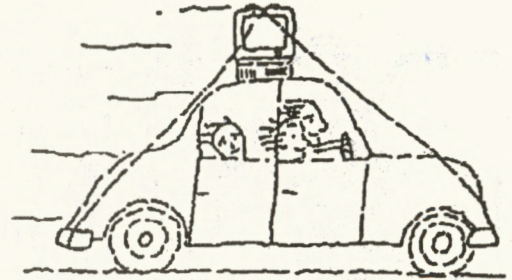
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